Springwell Solar Farm

Environmental Statement

Volume 1
Chapter 4: Reasonable Alternatives Considered

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

EN010149/APP/6.1
November 2024
Springwell Energyfarm Ltd

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4. Reasonable Alternatives Considered

4.1. Introduction

4.1.1. This chapter outlines the reasonable alternatives that have been considered by the Applicant for the Proposed Development to date, including the initial selection of the Order Limits and the development of the design.

4.1.2. This chapter also details how the assessment of sites and design alternatives has been undertaken, and details the factors that have been considered, and the main reasons for discounting alternative design options.

4.1.3. The **Statement of Need [EN010149/APP/7.1]** submitted in support of the Development Consent Order (DCO) Application sets out a detailed and compelling case as to why the Proposed Development is urgently required and at the proposed scale. This assessment of alternatives is set in the context of the clear and urgent need for the Proposed Development.

4.2. Planning Policy and Legislation

4.2.1. **ES Volume 1, Chapter 1: Background and Context [EN010149/APP/6.1]**, sets out the overarching planning policy relevant to the Proposed Development, comprising National Policy Statement (NPS) EN-1 **[Ref 4-1]**, NPS EN-3 **[Ref 4-2]** and NPS EN-5 **[Ref 4-3]**. These have been considered during the options appraisal process for the Proposed Development. Regarding the consideration of alternatives, paragraph 4.3.9 of the NPS EN-1 states that:

"…the relevance or otherwise to the decision-making process of the existence (or alleged existence) of alternatives to a proposed development is in the first instance a matter of law."

4.2.2. It goes on to state that *"This NPS does not contain any general requirement to consider alternatives or to establish whether the proposed project represents the best option from a policy perspective. Although there are specific requirements in relation to compulsory acquisition and habitats sites, the NPS does not change requirements in relation to compulsory acquisition and habitats sites"*.

4.2.3. Regulation 14(2)(d) of the Environmental Impact Assessment (EIA) Regulations **[Ref 4-4]** requires *"a description of the reasonable alternatives studied by the applicant, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the development on the environment"*.

4.2.4. Schedule 4 of the EIA Regulations **[Ref 4-4]** requires *"a description of the reasonable alternatives (for example in terms of development design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects"*.

4.2.5. Regarding the consideration of alternatives, paragraph 4.3.15 of NPS EN-1 states that:

"Applicants are obliged to include in their ES, information about the reasonable alternatives they have studied. This should include an indication of the main reasons for the applicant's choice, taking into account the environmental, social and economic effects and including, where relevant, technical and commercial feasibility."

4.2.6. This highlights that in addition to the requirement under the EIA Regulations set out above, which requires applicants to include information in the Environmental Statement (ES) on the reasonable alternatives studied, there are other specific legislative requirements and policy circumstances that may require the consideration of alternatives.

4.2.7. These include requirements (when triggered) under the Conservation of Habitats and Species Regulations 2017 **[Ref 4-5]**, the requirements (when triggered) of the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 **[Ref 4-6]** and also in relation to avoiding significant harm to biodiversity and geological conservation interests, flood risk, and development within nationally designated landscapes set out in Sections 5.4, 5.8 and 5.10 of NPS EN-1.

4.2.8. NPS EN-1 states that given the level and urgency of need for new energy infrastructure, the Secretary of State should, subject to any relevant legal requirements which indicate otherwise, be guided by the following principles set out in the NPS EN-1 when deciding what weight should be given to alternatives:

- the consideration of alternatives in order to comply with policy requirements should be carried out in a proportionate manner;
- only alternatives that can meet the objectives (see **paragraph 4.2.11**, below) of the proposed development need to be considered;
- whether there is a realistic prospect of the alternative delivering the same infrastructure capacity (including energy security, climate change, and other environmental benefits) in the same timescale as the proposed development;
- the Secretary of State should not refuse an application for development on one site simply because fewer adverse impacts would result from

developing similar infrastructure on another suitable site, and it should have regard as appropriate to the possibility that all suitable sites for energy infrastructure of the type proposed may be needed for future proposals;

- alternatives not among the main alternatives studied by the applicant (as reflected in the ES) should only be considered to the extent that the Secretary of State thinks they are both important and relevant to the decision;
- the Secretary of State must assess an application in accordance with the relevant NPS (subject to the exceptions set out in Section 104 of the Planning Act 2008), if the Secretary of State concludes that a decision to grant consent to a hypothetical alternative proposal would not be in accordance with the policies set out in the relevant NPS, the existence of that alternative is unlikely to be important and relevant to the Secretary of State's decision;
- alternative proposals, which mean the necessary development could not proceed, for example, because the alternative proposals are not commercially viable or alternative proposals for sites would not be physically suitable, can be excluded on the grounds that they are not important and relevant to the Secretary of State's decision;
- alternative proposals which are vague or immature can be excluded on the grounds that they are not important and relevant to the Secretary of State's decision; and
- potential alternatives to a proposed development should, wherever possible, be identified before an application is made to the Secretary of State (so as to allow appropriate consultation and the development of a suitable evidence base in relation to any alternatives which are particularly relevant). Therefore, where an alternative is first put forward by a third party after an application has been made, the Secretary of State may place the onus on the person proposing the alternative to provide the evidence for its suitability as such, and the Secretary of State should not necessarily expect the applicant to have assessed it.

4.2.9. Considering the planning policy and legal requirements as well as the iterative approach to the design to date, the following alternatives have been considered for the Proposed Development and are discussed in this chapter:

- Alternative sites;
- Alternative renewable technologies;
- Alternative solar technologies; and
- Alternative development design, size and scale.

4.2.10. The consideration of 'no development' as an alternative to the Proposed Development has not been considered a reasonable alternative as it would not deliver the proposed renewable electricity generation capacity required to meet the United Kingdom (UK)'s net zero greenhouse gas emissions target by 2050, which was passed into law by Government in June 2019.

Approach to Site Selection

4.2.11. The Applicant undertook a systematic process to determine suitable sites. A range of technical, environmental, and economic factors are considered when investigating and assessing any potential site for large-scale solar developments. A **Site Selection Report** has been prepared and forms Appendix 1 of the **Planning Statement [EN010149/APP/7.2]**, to provide an overview of the site selection process undertaken by the Applicant to identify the location of the Proposed Development. It also describes the evolution of the design development and the main alternatives considered.The process of site selection is repeated below, in tandem with the project objectives.The Applicant sought to develop a single new Nationally Significant Infrastructure Project (NSIP) scale solar project generating a minimum of 250 – 500 Megawatt (MW) (based on a site comprising minimum 1,000 acres) which:

- Would contribute to meeting the UK's urgent need for low carbon energy generation;
- Would be in close proximity to an available grid connection or part of the transmission network in which capacity exists;
- Would avoid impacts on sensitive landscapes and environments as far as practicable;
- Would be readily accessible from existing strategic road network to facilitate; construction access
- Would be delivered on land which could be acquired voluntarily thereby avoiding the need for large scale compulsory acquisition.

4.2.12. It is generally acknowledged that large scale solar developments require three fundamental attributes. NPS EN-3 identifies these core attributes, amongst other considerations:

- Existence of sufficient land to deliver the project and meet the scale of the Proposed Development's aims;
- Availability and capacity of a suitable Point of Connection to the National Electricity Transmission System; and
- Solar irradiation levels to support the development's potential to produce an efficient and economic energy yield.

4.2.13. There are limited locations in the UK that satisfy all three of the above core site selection requirements (land availability and suitability, feasible irradiation levels and grid connection availability). For example, high population density and a large extent of designated land limits opportunities for large-scale solar development in the South East of England. The need for proximity to existing and available grid connection capacity limits opportunities in the South West and East Anglia (where irradiation is also high).

4.2.14. Therefore, it cannot be expected that large-scale solar is located only where irradiation is highest in the UK, only where suitable land is available, or only in close proximity to existing grid substations with available capacity. Developments will therefore be proposed at locations which have a blend of the required characteristics, albeit unlikely that each of the required characteristics will be at their most advantageous in a single location.

4.2.15. As detailed in **Appendix 1: Site Selection Report** in the **Planning Statement [EN010149/APP/7.2],** the Applicant's site selection exercise considered general factors associated with irradiance and site topography and found that much of the East Midlands distribution network region is characterised by large swathes of flat or undulating land (which is highly suitable for solar generation) as well as suitably high levels of irradiation to support the commercial viability of such development.

4.2.16. The Applicant started engagement with the National Grid Electricity System Operator (NGESO) in November 2020 to discuss the potential opportunities for a new connection offer within the target region identified above. Existing grid connection points / National Grid substations with spare capacity, are finite. No grid connection offer was available to the Applicant at existing substations due to capacity restrictions, in the target region. Indeed, as set out in Section 7 of the **Statement of Need [EN010149/APP/7.1].** there is no capacity at any existing NGESO infrastructure within 50 kilometres (km) of the Site to accommodate new connections of Springwell's magnitude before 2033. This is somewhat inevitable given the urgent national need for renewable energy (including solar), as developments have already been proposed to use existing substation capacity where it occurs.

4.2.17. Further to meeting with NGESO in November 2020, the Applicant prioritised its searches for sites around two 400 kilovolt (kV) overhead lines (OHL): the West Burton to Bicker Fen line and the Cottam to Eaton Socon line. This is because engagement with NGESO identified both OHLs as having available capacity due to the decommissioning of the coal plants at Cottam and West Burton. As the fossil fuel heavy power generating infrastructure is phased out, capacity within the existing OHLs is created which allows for new connections to be made without major

upgrades to the circuits. However, while capacity existed in the OHLs there were no available connection points for a new solar project to plug into the network at locations which were considered suitable for solar (see paragraph 4.1.27 and Section 7 of the **Statement of Need [EN010149/APP/7.1].** The Applicant understood this meant that there would be a need for more entry/exit points, to make the most of such capacity and that National Grid would deliver new infrastructure, i.e., a 400kv substation to enable connections near demand centres, for example, near Navenby to meet needs for connections in this area.

4.2.18. The Applicant considered the fundamental attributes required for NSIP scale solar photovoltaic (PV) development to be sufficiently favourable to pursue potential sites in this region.

4.2.19. The Applicant undertook a site search along the 400kv lines for suitable areas of land for NSIP scale solar development. The site search criteria, set out in paragraph 4.2.22, drew on the principles that were later enshrined in the draft and subsequently adopted policy in NPS EN-3 and provided a framework within which site selection was developed. These were not absolute tests but laid the foundation for the balancing of different constraints and opportunities in order to both identify an appropriate site but also guide how the site will be designed over time.

4.2.20. The Applicant initially set out a minimum requirement for land of 1,000 acres but with a preference for larger sites on the premise that more suitable land would enable greater low carbon energy generation. A site area of 1,000 acres could provide a project with an output in the range 250MW - 500MW, commensurate with the Applicant's desire to develop a NSIP scale proposal (using the rule of thumb set out in paragraph 2.10.17 of NPS EN-3 of 2-4 acres per 1 MW output).

4.2.21. In addition, the Applicant sought land which had a maximum of two landowners, but ideally an individual landowner willing to voluntarily enter into agreement. It is a significant benefit in the site selection process to seek a site which has fewer landowners. A single landowner removes much of the complexities associated with the ability to deliver large scale solar development. The simplicity of a single landowner on a large holding helps reduce barriers to site assembly, allowing more flexibility in micrositing and provides the Applicant with the opportunity to maximise efficiencies of land use across the Site. It also means, in principle, that there is potential to minimise the impacts of the temporary loss of land on the existing landholding by, for example, seeking to make use of available land which may be considered less productive from an arable perspective.

4.2.22. Following an investigative land ownership exercise that sought to identify landholdings with a minimum 1,000 acres and maximum of two landowners, the Applicant set out high-level criteria to evaluate the

characteristics of a site. The criteria that formed part of this initial high-level exercise were:

- Grid Security (capacity within the OHL line)
- Proximity of OHL to site (no further than 3km from OHL)
- Accessibility (readily accessible from major roads with appropriate connections to local road network)
- Available acreage within landholding (minimum 1,000 acres)
- Agricultural Land Classification (ALC) grade (preference for non-agricultural or lower grade ALC)
- Flood Zone (preference for Flood Zone 1)
- Cultural heritage assets (avoidance of statutory assets)
- Visual Impact (capability of solar PV development to be broken up/hidden in landscape)
- Regularity of field parcels (preference for larger regular field parcels for ease of construction and layout)
- Landowner appetite (preference for landowner to express desire to be part of proposal and ease of reaching voluntary agreement)

4.3. Alternative Sites

4.3.1. The Applicant's search generated five landholdings across Lincolnshire, Rutland and Cambridgeshire, including the now application Site, which performed sufficiently well against the criteria listed in **paragraph 4.2.22** of this chapter to warrant the Applicant engaging in exploratory discussions with the relevant landowners. Each of these sites had either a single or a maximum of two landowners and in all but one case were located directly adjacent to either the Cottam - Eaton Socon or Bicker Fen - West Burton OHL. The general location and size of available landholding of the other potential sites were:

- Land north-east of Sleaford (approx. 2250 acres total)
- Land south-east of Grantham (approx. 1200 acres total)
- Land south of Rutland Water (approx. 1000 acres); and
- Land south-west of Peterborough (approx. 3500 acres)

4.3.2. From an early stage the land at Blankney Estate performed extremely well against key considerations; it represented the largest landholding of all sites considered with a highly regular field pattern, favourable topography, good accessibility and limited environmental constraints.

4.3.3. In addition, discussions around voluntary acquisition of these other potential sites did not materially progress, meanwhile negotiations with Blankney Estate were constructive and provided the Applicant sufficient confidence to bring the Proposed Development forward. The Applicant therefore considered that the alternative sites no longer represented viable alternatives and so were discounted with the focus of bringing forward the land at Blankney Estate.

4.4. Alternative Renewable Technologies

4.4.1. Alternative types of renewable energy generation technologies, such as wind and hydrogen, were not considered by the Applicant. The Site is not considered to be well suited for onshore wind energy generation due to the low, flat topography of the local area, which would likely give rise to greater landscape and visual effects in comparison to Solar PV development due to the height of the turbines. In addition, the proximity to residential dwellings may result in adverse effects associated with shadow flicker and wind turbine noise.

4.4.2. In terms of hydrogen, the project objectives were to deliver a NSIP scale solar project to export directly to the National Grid, not to generate electricity to deliver something different, for example, hydrogen (which is not a generation technology in its own right). Equally, it was not considered suitable due to the construction and commercial viability for this type of energy generation in comparison to solar energy generation. It was therefore never considered to be a realistic alternative to the Proposed Development.

4.4.3. It is also important to frame the consideration of alternative technologies in the context of Government policy around future energy generation. While very recent policy changes to the National Planning Policy Framework have opened the door to potential onshore wind development, for example, that does not place a higher policy emphasis on the delivery of a specific type of generating station. Indeed, during the development of the Proposed Development, there was no realistic possibility of a proposal for onshore wind having sufficient support in policy terms to be considered a viable alternative technology.

4.4.4. In addition, offshore/marine based alternative technologies such as offshore wind and/or tidal power have not been considered because of the proximity to where capacity in the transmission networks exists.

4.4.5. As set out in the **Planning Statement [EN010149/APP/7.2]**, the British Energy Security Strategy and Net Zero Strategy commit to delivering up to a fivefold increase in solar capacity in the UK by 2035. Therefore, while there is a requirement to bring forward multiple renewable technologies, it should be considered in the context of the infrastructure being delivered concurrently rather than as an alternative to another form of generation.

4.4.6. It is therefore considered that solar technology is the best renewable energy generating solution for the Site.

4.5. Alternative Solar Technologies

4.5.1. The parameters of the DCO Application will maintain a degree of flexibility under the Rochdale Envelope to allow for the latest solar technology to be utilised at the time of construction; further information can be found in **ES Volume 1, Chapter 3: Proposed Development Description [EN010149/APP/6.1]**. Notwithstanding this, several alternative solar technologies and design options have been considered throughout the design process to date, several options have been discounted and the preferred options taken forward for further consideration.

4.5.2. The reasoning for discounting the solar technologies and design options is detailed in **Table 4.1** below.

Table 4.1 Alternative Solar PV Configurations

Configuration type	Reason for discounting
Tracker panels	Tracker panels have been discounted based on the landscape and visual impacts due to the increased height in comparison to fixed panels. Although small areas within the Order Limits were considered suitable to support tracker panels, the majority of the land within the Order Limits was considered unsuitable due to anticipated visual effects. It was therefore considered that installing tracker panels solely within these small areas, in comparison to a complete fixed panel installation, would not be commercially viable and would lead to greater environmental effects, particularly from a landscape and visual perspective due to the increased height, compared to fixed panels.
East-west fixed panels	East-west fixed panels have the benefit that they have a different energy production curve, with energy production higher in the evening and the morning. The benefit of east-west fixed panels would not be considered a benefit for this Site due to the inclusion of Battery Energy Storage System (BESS) as part of the Proposed Development, which will introduce flexibility around energy production and will allow the storage and distribution of energy when required throughout the day and during peak hours.

Configuration type	Reason for discounting
	East-west fixed panels have been discounted as they reduce the potential for biodiversity net gain and enhancements due to the reduced space between the panels. The reduced space between the panels would significantly reduce the level of light reaching the ground and would limit any biodiversity planting beneath the panels. The increased coverage and decrease of spacing between the panels for east-west fixed panels in comparison to south facing fixed panels would also lead to an increase in water accumulation on a smaller area of the Site, which would increase run-off.

4.6. Alternative Site Layouts

4.6.1. The design and layout of the Proposed Development has formed part of an iterative process which has been informed by the ongoing environmental assessment process, site selection assessment and taking into consideration the Project Principles and controls and engagement with stakeholders and consultees.

4.6.2. The design evolution described within this chapter outlines the reasoning for discounting an alternative design at each stage of the design process. This has comprised of three distinct stages:

- Design Stage 1 – Initial stage of the design following the identification of the Site and the Order Limits. Early plans and proposals showing the Stage 1 design were published in January – March 2023 as part of a non-statutory (phase one) consultation and in the EIA Scoping Report in March 2023. These are illustrated in **ES Volume 2, Figure 4.2: Stage 1 Zonal Masterplan [EN010149/APP/6.2]**.
- Design Stage 2 – This stage of design was undertaken following the non-statutory (phase one) consultation to take account of the consultation feedback and the emerging results from ongoing environmental surveys. Updated plans and proposals showing the outcome of this stage of the design as illustrated in **ES Volume 2, Figure 4.3: Stage 2 Zonal Masterplan [EN010149/APP/6.2]** were published in January – February 2024 as part of a statutory (phase two) consultation and informed the assessment detailed within the Preliminary Environmental Information Report (PEIR).
- Design Stage 3 – This stage of the design was undertaken following the statutory (phase two) consultation and targeted consultation held in July – August 2024 to take account of the consultation feedback, ongoing

engagement and the findings of further environmental assessments. Updated plans and proposals showing the outcome of this stage of the design form the basis of the ES and DCO Application as illustrated in **ES Volume 2, Figure 3.1: Zonal Masterplan [EN010149/APP/6.2]**.

4.6.3. It should be noted that this chapter describes the design of the Proposed Development in relation to the maximum parameters that were assessed within the Scoping, PEIR and ES as illustrated in the Stage 1, Stage 2 and Zonal Masterplan which are provided in **ES Volume 2, Figure 4.2: Stage 1 Zonal Masterplan, Figure 4.3: Stage 2 Zonal Masterplan** and **Figure 3.1: Zonal Masterplan [EN010149/APP/6.2]**, respectively.

4.6.4. Engagement on this process has included the non-statutory and statutory consultations, focused workshops with residents, and technical meetings with statutory consultees comprising:

- North Kesteven District Council;
- Lincolnshire County Council;
- Relevant Parish Councils;
- Historic England;
- Natural England;
- Environment Agency;
- National Highways;
- Lincolnshire Wildlife Trust;
- Ministry of Defence and Royal Air Force (RAF) Digby; and
- Lincolnshire Fire and Rescue.

4.6.5. The feedback from the engagement has informed the ongoing design development.

4.6.6. Further information on the consultation process and how it has informed the Proposed Development is provided in the **Consultation Report [EN010149/APP/5.1].**

4.6.7. The layout of the Proposed Development and the extents of the Order Limits have undergone several stages of design, which are described below.

Design Stage 1

Solar PV Development

4.6.8. Following an initial assessment, which included desktop assessments, site surveys, and consideration of environmental, social and economic factors,

the Applicant identified fields within the Order Limits that were considered unsuitable for accommodating Solar PV development and were therefore discounted.

4.6.9. The reasoning for discounting these fields during Design Stage 1 is detailed within **Table 4.2** below and should be read in conjunction with **ES Volume 2, Figure 4.1: Field Numbering System** and **Figure 4.2: Stage 1 Zonal Masterplan [EN010149/APP/6.2]**.

Table 4.2 Reasonable alternatives considered at Design Stage 1

Field	Reason for discounting
C1, C2, C3	The extent of solar development in the north of Springwell East, adjacent to the B1188, was discounted to reduce the potential impacts on the landscape character and visual setting of Blankney village from the B1188 and due to the proximity to the Blankney Conservation Area and to set back development from the existing Spires and Steeples Trail.
Md05, Md06	These fields directly to the north of Scopwick were discounted due to the proximity to the residential settlement of Scopwick and the visibility to the Scopwick Cemetery and the adjacent children's playground and communal open space.
By01	The northernmost field that forms part of Springwell East was discounted due to the presence of high quality grassland that is suitable for reptiles.
C10	This field to the south of Springwell East, directly north of Kirkby Green, was discounted due to the visual proximity from residential dwellings and potential impacts on the setting of the village.
Bk13, Bk17, Bk18	These fields immediately south of Scopwick were discounted due to the topography of the land which rises to the south as well as the proximity to residential properties and the setting of Scopwick village and the Scopwick Conservation Area.
Bk03	This field, located directly south of Heath Road, was discounted due to direct views from Heath Road as part of the approach into Scopwick from the west and the proximity and foreground of views towards Scopwick Mill which is a key local landmark and heritage asset.

Field	Reason for discounting
E1a, E2	These fields directly to the north of Brauncewell village were discounted to reduce the impacts on the setting of Brauncewell Medieval village scheduled monument and line of sight to the Grade II listed Brauncewell Church.

Battery Energy Storage System

4.6.10. There were two options for the BESS considered at Design Stage 1, distributed BESS and consolidated BESS.

4.6.11. The distributed BESS option would involve locating several separate BESS compounds across the Site, adjacent to the Collector Compounds.

4.6.12. The consolidated BESS option would involve locating all of the BESS infrastructure within one compound within the Site, adjacent to Springwell Substation.

4.6.13. During Design Stage 1, the Applicant carried out a constraints mapping exercise and assessment to identify fields within the Order Limits that would be unsuitable for the Collector Compounds and BESS based on the information available at the time of the assessment.

4.6.14. The reasoning for discounting fields for the distributed and consolidated BESS options is detailed below and should be read in conjunction with **ES Volume 2, Figure 4.2: Stage 1 Zonal Masterplan [EN010149/APP/6.2]**:

- Proximity and visual impact to the residential settlements of Blankney, Scopwick, Kirkby Green, RAF Digby, Rowston Top, Scopwick Low Field Farm and Slate House Farm and Cottages;
- Impact on the setting of Scopwick Conservation Area;
- Landscape setting and visibility from Heath Road;
- Views towards Blankney and Scopwick from the Spires and Steeples Trail;
- Impact on the setting of Grade II listed Scopwick Mill;
- Presence of Flood Zone 2 or 3; and
- Proximity and location of Public Rights of Way (PRoW), particularly in Springwell East, where several PRoW cross fields.

4.6.15. Following this assessment, it was determined that all fields apart from Fields Bcd141, Bcd140, Bcd139, Bcd138, E1, Bcd128, Bcd114, Bcd106,

Bcd082, Tb2 and Tb1 were considered unsuitable for the consolidated BESS.

4.6.16. Several fields, as detailed below, were discounted for the location of distributed BESS based on a combination of the above:

- Springwell East: Field By01, By02, By03, By05, By12, By03, C4, By10, By20, By28, Lf11, C1, C2, C3, C6, C7, Md02, Md03, Md04, Md05, Md06, Lf12, Lf13, Lf16, C10, Lf08, Lf09 , Lf02;
- Springwell Central: Bk03, Bk07, Bk06, Bk15, Bk09, Bk13, Bk18, Bk17, Bk12, Bk11, Bk05, Rw08, Rw04, Rw10 Bk01; and
- Springwell West: Bk076, Bcd078, Bcd079, Bcd084, Bcd086, Bcd088, Bcd093, Bcd108, Bcd118, Bcd109, Bcd129, Bcd120.

Springwell Substation

4.6.17. The Design Stage 1 process also involved a constraints mapping exercise and assessment based on site visits, surveys and desk-based studies available at the time to identify areas that would be suitable for the location of the Springwell Substation.

4.6.18. These fields (Fields Tb1, Tb2, Bcd082, Bcd106, Bcd114, Bcd128, Bcd138, Bcd139, Bcd140, Bcd141 and E1) were identified due to the topography and screening from existing woodlands or tree belts that may help to reduce the landscape and visual impact.

Design Stage 2

4.6.19. Following the non-statutory consultation held in January - March 2023, the initial design was reviewed and revised to take account of the consultation feedback and the emerging results from ongoing environmental surveys. This process involved undertaking a detailed environmental review and targeted engagement with statutory consultees and stakeholders alongside several technical design workshops.

4.6.20. The reasons for discounting fields and elements during Design Stage 2 is described in **Table 4.3** below and should be read alongside **ES Volume 2, Figure 4.1: Field Numbering System [EN010149/APP/6.2]**.

4.6.21. The use of borrow pits were considered in Design Stage 1 for the construction phase; however, these were discounted during Design Stage 2 due to the potential biodiversity, landscape, visual, soil and groundwater impacts.

4.6.22. Opportunities to provide environmental enhancement and/or community benefits were also identified as part of the Design Stage 2 process. Consequently, there was a minor amendment made to the Order Limits at

the time to account for a proposed new permissive path to connect Scopwick and RAF Digby.

4.6.23. As a result of the Design Stage 2 process a revised layout for the Proposed Development was produced, as presented in **ES Volume 2, Figure 4.3: Stage 2 Zonal Masterplan [EN010149/APP/6.2]**.

Table 4.3 Reasonable alternatives considered at Design Stage 2

Location/element	Reason for discounting
Fields Lf09, Lf03, By27, By18	Fields that were identified as comprising solely of Grade 1 or 2 land were discounted from the area of Solar PV development to reduce the impact on Best and Most Versatile (BMV) agricultural land so that it is avoided where possible.
Fields Bcd141, W2, Bcd111, Bcd120, Bcd108, Bcd100, Bcd079, Rw10, Rw11, Rw12, Rw08, Rw07, Rw06, Rw05, Rw04, Rw02, Bk01, Bk07, Bk08, Bk09, Bk10, Bk11, Bk12, Lf10, By05, C4, Lf13, Lf16, Lf12, By13, By16, Md03, Lf10	Fields that comprised a majority of BMV agricultural land were reviewed to identify whether those parts of the field that contained BMV could be discounted, whilst retaining the non-BMV parts of the field. In some cases, part of the field was discounted in combination with other environmental factors as identified in this table.
Fields Bcd141, Rw10, Rw11, Rw12, Rw06. Rw04, Bcd079, Bk07, northern section of Bk06, Bk15, Bk08, Md04, C7, Lf12, By12	Following the completion of the geophysical survey, these fields that were identified as having high archaeological potential were discounted, in conjunction with other environmental factors identified within this table.
Fields C7, Md03, Md03	The fields located to the west of the Spires and Steeples Trail, adjacent to the B1188, were discounted to reduce the impact on the landscape character and visual settings towards Blankney and Scopwick from the PRoW, alongside views of Scopwick Church from the B1188.
Fields Lf12, Lf13, By16, C7, Md04, Md03	Following further survey work and site visits, several fields were discounted from the area of Solar PV development due to the high landscape and visual impacts on PRoW, particularly the Spires and Steeples Trail and Trundle Lane, to reduce the cumulative

Location/element	Reason for discounting
	impact of the Proposed Development in conjunction with other factors identified within this table.
Fields Bcd088, Bcd079, Bcd118, Bcd108, Rw12, Rw11, Rw10, R108, Rw07, Rw05, Rw04, Rw02, Bk07, Bk10, Lf12, Lf13, Lf16, By05, By13	Following feedback from consultation and initial site visits to neighbouring properties, a residential visual amenity assessment was undertaken. This assessment identified the following fields within the Site boundary to be discounted due to a combination of particularly high residential amenity impacts and landscape and visual impacts for the property. The extent of the discounting of Solar PV development was reviewed for each individual location to provide a suitable offset reflecting the existing landscape.
Fields Bcd110, Bcd111, Bcd120, By05, By13	The fields located to the east of the B1191 in Springwell West that are located within an area of Flood Zone 2 and 3 were discounted from the area of Solar PV development, in conjunction with other factors identified within this table.
Sections of particular fields were removed, including an area within the fields Bcd106, Bcd107, Bcd104, Bcd115, Bcd108, Bcd118, Bcd128	Sections of these fields were discounted from the area of Solar PV development to provide areas for mitigation and habitat connectivity across the Site.
Mitigation and enhancement	The fields discounted from Solar PV development, as detailed above, were retained within the Order Limits as Mitigation and Enhancement Areas to potentially provide ecological mitigation, green infrastructure opportunities, access and cable routing.

4.6.24. In addition, the Applicant sought to work with the landowners to understand relative productivity (including accessibility) of the land to focus on areas of land with poorer yield and to determine if fields that were discounted for development would be suitable would be accessible for continued agricultural use. This was an ongoing factor that contributed to the design development in conjunction with other factors identified within **Table 4. 3**.

BESS siting

4.6.25. Distributed BESS were discounted as there was limited locations deemed suitable for distributed BESS in Springwell East and Springwell Central, particularly due to landscape and visual impacts and the proximity to the residential settlements of Blankney and Scopwick.

4.6.26. Following further assessment work, two potential locations within the north and south of Springwell West were considered suitable for the BESS due to the close proximity to the A15 to faciliate access and the presence of existing screening, as presented in **ES Volume 2, Figure 4.3: Stage 2 Zonal Masterplan [EN010149/APP/6.2]**.

Springwell Substation

4.6.27. The option of locating the Springwell Substation in the south of Springwell West, was discounted due to the proximity to Bloxham Woods Nature Reserve and effects on the PRoW and users of the reserve, alongside the greater effects on biodiversity in comparison to the northern option.

4.6.28. The central location within Springwell West, adjacent to the A15 was discounted as it was considered to be in an exposed location within the landscape and would have increased landscape and visual effects.

4.6.29. The proposed location in the north of Springwell West was proposed for the Springwell Substation as this was the preferred option in comparison to the options outlined above and it was located in close proximity to the proposed National Grid Navenby Substation which would reduce the extent of the 400kV Grid Connection cable route, as presented in **ES Volume 2, Figure 4.3: Stage 2 Zonal Masterplan [EN010149/APP/6.2]**.

Grid Connection Corridor siting

4.6.30. Given the short connection length, this corridor was chosen as it is the most direct route to minimise impact on the land, whilst avoiding key environmental constraints, including Gorse Hill Covert. Any alternative route would unnecessarily increase the length of the Grid Connection cable route, involve further road crossings and associated environmental impacts, including increased hedgerow and tree removal.

Design Stage 3

4.6.31. Following the statutory consultation held in January - February 2024, the design of the Proposed Development was reviewed and revised in light of the comments received from stakeholders. This process involved undertaking a detailed appraisal of feedback and engagement with statutory consultees, alongside several technical design workshops. The

findings of further environmental assessments were also taken into account.

4.6.32. The reasons for discounting fields and elements during Design Stage 3 is described in **Table 4.3** below and should be read alongside **ES Volume 2, Figure 4.1: Field Numbering System [EN010149/APP/6.2]**.

4.6.33. The zonal masterplan for the Proposed Development for which development consent is sought is provided in **ES Volume 2, Figure 3.1: Zonal Masterplan [EN010149/APP/6.2]**.

Table 4.4 Reasonable alternatives considered at Design Stage 3

Location/element	Reason for discounting
Solar PV modules	Solar PV modules at a height of 3.5m and 4m within the areas of flood zone 2 and 3 were discounted. The heights have been reduced to 3m, and 3.5m within areas of flood zone 2 and 3, to reduce the visual impact on sensitive receptors.
Fields By05, By01, By13, C1, C2,C3, C4 C5, C16, Lf12, Lf13, Lf16, , Lf09, Lf10, C10, Bk12, Bk18, Bk17, Bk13, Bk01, eastern half of Bk11 and Bk10, Rw04, Rw05, Rw06, Rw07, Rw08, Rw10, Rw11, western portion of Bcd096, Bcd109, Bcd110, Bcd111, Bcd120, E1a, W2	These fields have been discounted from the Order Limits as they are no longer required for mitigation or underground cable routes.
Springwell East	
Field By02	This field has been discounted from Solar PV development and the Order Limits as several overhead utility lines cross it. Removing Solar PV development from this field also reduces the impact on users of the Blankney Circuit PRoW.
Field By20	This field has been discounted from Solar PV development due to its proximity to Brickyard Farm, for which a Class Q

Location/element	Reason for discounting
	Conversion application has been submitted. Field By20 is now being proposed for green infrastructure.
Field By12	This field has been discounted from Solar PV development and the subsequent Order Limits to provide an offset from the property to the north-east following discussions with the landowner.
Field Lf02	This field has been discounted from Solar PV development in response to further visits as part of the landscape and visual assessment to reduce the visual impact on Scopwick Low Field Farm and on users of the PRoW, which runs to the west and south of the field.
Fields C7, Md04, Md03, Md05, Lf03, By27, Rw12, Bk03, Bcd088, Bcd118, By18	These fields are not required for mitigation and enhancement and have been removed for this purpose; however, these fields are still within the Order Limits as they are required for the cable route and will be returned to agricultural land once the cable route has been constructed.
Field Md02	This field has been discounted from Solar PV development following feedback received during statutory consultation and further design reviews to increase the distance between the Proposed Development and Scopwick and to provide a visual break and reduce the landscape and visual impact along the Spires and Steeples Trail and Trundle Lane PRoW which run adjacent to the western and southern boundaries of the field.
Field Md06	This field has been discounted and the majority of the field has been removed from the Order Limits as this area is no longer required for mitigation and enhancement purposes. However, as shown in **ES Volume 2, Figure 3.1: Zonal Masterplan [EN010149/APP/6.2]**, the western part of the field is proposed as a community growing area. This is a result of the feedback that was received during the non-statutory and statutory consultation. This location has been proposed for a community growing area as it is easily accessible to residential dwellings in Scopwick.
Field C6	The western section of this field has been discounted from Solar PV development to reduce the visual impact on the Spires and Steeples Trail. This area will instead provide

Location/element	Reason for discounting
	ecological and landscape mitigation connecting to the existing woodland block.
Fields Lf05, Lf07	The northern edge of these fields has been discounted from Solar PV development to set back and create a break in the development, reducing the visual impact for PRoW users.
Springwell Central	
Fields Bcd148, Bcd066, Bcd065, Bcd068, Bcd067	The Order Limits have been reduced following the refinement of the cable corridor between Springwell East and Springwell Central.
Fields Bk06, Bk15, Bk08, Bk09	These fields have been partially removed from the area of Solar PV development following further work to determine the visibility from the ridge line to Heath Road and Scopwick Mill in order to reduce the landscape and visual amenity and cultural heritage impacts.
Springwell West	
Fields, Bcd076, Bcd078, Bcd073	Removed from the Order Limits following consultation with the Ministry of Defence (
Fields Bcd086, Bcd084, Bcd079	These fields have been removed from Solar PV development following consultation with the Ministry of Defence. These fields are retained within the Order Limits for underground cabling across the Site or for mitigation purposes (Green Infrastructure). .
Fields Bcd100, Bcd104	These fields have been removed from the Order Limits to increase the offset from Ashby Lodge and to take account of consultation feedback.
Field Bcd140	This field has been removed from Solar PV development as the western section of this field and Field Bcd141 were identified in the geophysical survey to be in an area of high archaeological potential.
Fields Bcd139, Bcd140	The southern location for the BESS has been discounted due to the combination of noise impacts to Peacock Cottages, archaeological potential and distance from the

Location/element	Reason for discounting
	proposed location of the Springwell Substation in the north of Springwell West.
Field Bcd102	The location of the Satellite Collector Compound in field Bcd102 has been refined to the south west corner of the field, discounting the north and eastern section of this field to take into consideration the proximity to residential dwellings, noise and to reduce the visual impact from the A15.
Field Bcd082	This field has been removed from Solar PV development to reduce the landscape and visual and noise impacts on Toll Bar Cottages.
Field Tb1	This field was not deemed suitable for the Springwell Substation, BESS and Main Collector Compound due to the landscape and visual impacts to Temple Bruer and Gorse Hill Farm. This field has therefore been removed from the Order Limits.

BESS siting

4.6.34. The considered location of the BESS at the south of Springwell West, adjacent to Bloxham Woods, was discounted due to the likely noise effects at residential receptors located to the north and following feedback from statutory consultees.

4.6.35. The location of the BESS within the north of Springwell West was refined, discounting the Fields Tb1 and Bcd082 and the northern and eastern sections of Field Tb2 based on the outcome of further landscape and noise surveys and modelling, and to balance the effects on properties at Toll Bar Cottage, Gorse Hill Farm and Thompson's Bottom Cottages.

4.6.36. The north western corner of Field Tb2 is at a lower elevation than the southern edge, therefore, the taller elements of the Springwell Substation were located at a lower elevation reducing visual impact. It was also located in this area of the field to take advantage of the existing screening provided by Gorse Hill Covert which provides screening from the north and a backdrop from the south and east. The north western corner, in particular, was selected in part to push the taller elements of the development in Springwell West as far away from the A15 as possible and allow space for an earth bund to be created alongside the A15 within this field, to reduce the landscape and visual impact to users of the A15.

4.6.37. The location of the proposed BESS is presented in **ES Volume 2, Figure 3.1: Zonal Masterplan [EN010149/APP/6.2]**.

Springwell Substation

4.6.38. The location of the Springwell Substation in the north of Springwell West was refined based on the outputs of further landscape and noise surveys and modelling which sought to increase the distance to the surrounding residential receptors to the north west and south-east.

The location of the proposed Springwell Substation is presented in **ES Volume 2, Figure 3.1: Zonal Masterplan [EN010149/APP/6.2]**.

Grid Connection Corridor siting

4.6.39. The western section of the Grid Connection Corridor has been discounted and removed from the Order Limits to increase the distance from Gorse Hill Covert and reduce the impact to high priority hedgerows and trees.

4.6.40. Fields N1, N2, N4 and N4 have been removed from the Grid Connection Corridor as they are no longer required for cabling.

4.6.41. The location of the proposed siting zone for the Grid Connection Corridor is presented in **ES Volume 2, Figure 3.1: Zonal Masterplan [EN010149/APP/6.2]**.

Satellite Collector Compound

4.6.42. The location of the Satellite Collector Compound in Field By22 has been refined, discounting the northern and southern sections of this field to consider impacts on the PRoW to the north and south and archaeology findings (a probable Iron Age enclosure) in the southwest corner of the field.

4.6.43. The location of the Satellite Collector Compound in Springwell Central has been refined, discounting the northern section of this field. This takes into consideration the proximity to residential dwellings in RAF Digby, particularly in relation to noise emissions and the topography and associated landscape and visual impacts from Heath Road and Scopwick Mill.

4.6.44. The locations of the proposed Satellite Collector Compounds are presented in **ES Volume 2, Figure 3.1: Zonal Masterplan [EN010149/APP/6.2]**.

Access

4.6.45. The considered secondary Heavy Goods Vehicle (HGV) construction route utilising the B1202 to access Springwell East and Springwell Central was discounted following feedback received during statutory consultation and concerns over the safety of the A15 junction.

4.6.46. Following further assessment work undertaken in Design Stage 3, which included a detailed swept path analysis, it was determined that minor highway works would be required at the bends adjacent to RAF Digby and at Ashby de la Launde on the B1191, alongside the Navenby Lane/B1191 junction to ensure two HGVs can safely pass each other. These locations were included within the Order Limits and subject to targeted consultation which was held between 17 July – 16 August 2024. Further detail on the highways improvements are included in **ES Volume 1, Chapter 14: Traffic and Transport [EN010149/APP/6.1]** and outlined on the **Streets, Rights of Way and Access Plans [EN010149/APP/2.4]**.

4.6.47. The proposed location of the Primary Construction Compound and access location into Springwell East presented at Design Stage 2 was discounted and has been moved further north to the southern boundary of Field C7 to reduce the visual impact and potential noise to the group of properties located on B1188 and the users of the Spires and Steeples Trail.

4.6.48. The proposed access on the B1188 to the south of Scopwick was discounted as this is no longer required for access into Springwell Central due to the reduction of Solar PV development.

4.6.49. The access location from Heath Road into Springwell Central has been refined to the increase the distance from the Grade II listed Scopwick Mill, minimise the hedegrow removal and to take into consideration the highways visibility requirements.

4.6.50. The location of the proposed construction and operational access points is presented in **ES Volume 2, Figure 3.4: Indicative Construction and Operational Access [EN010149/APP/6.2]**.

Construction Compounds

4.6.51. Temporary Construction Compounds have been reduced in size to be located within the areas of Solar PV development or in close proximity to an access point within the Order Limits to minimise the extent of ground disturbance outside the area of Solar PV development.

Green Infrastructure

4.6.52. Following statutory consultee feedback, several additional PRoW routes were considered during following Design Stage 3, as detailed below:

- Extension to the proposed PRoW to facilitate a connection to the existing hard-standing footpath in Scopwick to provide a direct route between RAF Digby and Scopwick; and
- Following engagement with Lincolnshire County Council, an extension of the existing PRoW to extend the existing PRoW which currently ends at the edge of Field Rw01 into the highway boundary at RAF Digby was proposed and consulted on as part of the targeted consultation held in July – August. Following consultation feedback, this PRoW extension was discounted from the Proposed Development.

4.6.53. Following statutory consultation feedback, a community growing area is proposed in Field Md06, which is located in close proximity to Scopwick village, as detailed in **ES Volume 2, Figure 3.1: Zonal Masterplan [EN010149/APP/6.2]**.

4.6.54. An alternative design option for the Proposed Development would have been to provide minimal green infrastructure, and to seek to mitigate significant adverse visual impacts. However, during the design development stages and following engagement with statutory consultees including Natural England, Lincolnshire Wildlife Trust, Lincolnshire County Council and North Kesteven District Council, the Applicant identified opportunities to provide areas of landscape and ecological enhancement in areas within the Site proposed for mitigation to provide biodiversity net gain and for local community enhancement which is supported by the feedback received from consultation and within NPS EN-3 **(Ref 4-1)**. The extent of proposed planting is outlined in the Green Infrastructure Plan presented in **ES Volume 2, Figure 3.3: Green Infrastructure Parameters [EN010149/APP/6.2]** and secured in the **Outline Landscape and Ecology Management Plan [EN010149/APP/7.9]**.The **Biodiversity Net Gain Assessment** is provided in **ES Volume 3, Appendix 7.14 [EN010149/APP/6.3]**.

4.6.55. Green infrastructure, including strategic planting of hedgerows and trees, forms an inherent part of the Proposed Development as embedded mitigation to mitigate environmental impacts, particularly landscape and visual and cultural heritage impacts. Further detail on the embedded mitigation measures are detailed in **ES Volume 1, Chapter 3: Proposed Development Description [EN010149/APP/6.1]** and **Chapter 5: Approach to EIA [EN010149/APP/6.1]**.

4.6.56. Further detail on the evolution of the design of the Proposed Development is detailed within the **Design Approach Document [EN010149/APP/7.3]**.

4.7. References

- **Ref. 4-1**: Department for Energy Security and Net Zero (2023). Overarching National Policy Statement for Energy (EN-1). Available online: https://www.gov.uk/government/publications/overarching-national-policy-statement-for-energy-en-1
- **Ref. 4-2**: Department for Energy Security and Net Zero (2023). National Policy Statement for Renewable Energy Infrastructure (EN-3). Available online: https://www.gov.uk/government/publications/national-policy-statement-for-renewable-energy-infrastructure-en-3
- **Ref**. **4-3:** Department for Energy Security and Net Zero (2023). National Policy Statement for Electricity Networks Infrastructure (EN-5). Available online: https://www.gov.uk/government/publications/national-policy-statement-for-electricity-networks-infrastructure-en-5
- **Ref. 4-4:** The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017. Available online: https://www.legislation.gov.uk/uksi/2017/572/contents/made
- **Ref. 4-5:** The Conservation of Habitats and Species Regulations 2017. Available online: https://www.legislation.gov.uk/uksi/2017/1012/contents/made
- **Ref 4-6:** The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017. Available online: https://www.legislation.gov.uk/uksi/2017/407/contents/made

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