Gate Burton Energy Park

Local Impact Report (Draft)

EN-010131

West Lindsey District Council (GABE-ISP002)

July 2023

Contents

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1. Executive Summary

1.1. Gate Burton Energy Park Limited has applied for a Development Consent Order (DCO) for the Gate Burton Energy Park project. The application is for the construction, operation and decommissioning of a solar photovoltaic (PV) electricity generating facility, energy storage facility and export connection to the National Grid.

1.2. The application for the DCO has been submitted to the Planning Inspectorate, with the decision on the DCO being made by the Secretary of State of Business, Energy and Industrial Strategy (SoS) under the Planning Act 2008.

1.3. As part of the process, West Lindsey District Council (WLDC) are invited to submit a Local Impact Report (LIR). The LIR provides details of the likely impacts of the proposed development on the authority's area and is given weight in the decision making process.

1.4. The proposed Gate Burton Energy Park will exert a range of environmental, social and amenity impacts.

1.5. This report constitutes WLDC's LIR. It provides details of the likely impact of the proposed development on the district of West Lindsey and will be submitted to inform the examination of Gate Burton Energy Park Limited's application by the Examining Authority (ExA) on behalf of the SoS.

1.6. The key impacts identified and expanded upon in the LIR include:

- Approach to project design (including site selection and alternatives;
- Landscape and visual;
- Ecology;
- Biodiversity (including Biodiversity Net Gain);
- Climate resilience;
- Agricultural land;
- Socio-economic impacts;
- Cultural heritage;
- Cumulative impacts with other projects;
- DCO 'requirements'; and
- DCO articles.

1.7. Some of the impacts relating to the above are able to be resolved through clarifications and/or the provision of further information by the applicant. More significant impacts may require more material amendments and/or the submission of further information to enable the project to be determined with all required information before the examination.

1.8. Having identified the local impacts, WLDC maintain a commitment to engage with the applicant to seek to address the adverse impacts. Matters of agreement and disagreement will be set out in a Statement of Common Ground between the parties.

2. Terms of Reference

Introduction

2.1. This report comprises the Local Impact Report (LIR) of West Lindsey District Council (WLDC).

2.2. WLDC have had regard to the purpose of LIRs as set out in s60(3) of the Planning Act 2008 (as amended); Department for Levelling Up, Housing and Communities' (DLUHC) Guidance for the examination of applications for development consent; the Planning Inspectorate's Advice Note One, Local Impact Reports; and the Planning Inspectorate's Example Documents, in preparing this LIR.

Scope

2.3. The LIR primarily relates to the impacts of the proposed development as it affects the administrative areas of WLDC; however, it also assesses the impacts of the proposals as a whole, where appropriate.

2.4. The LIR does not describe the proposed development any further, relying on the applicant's description as set out Volume 1, Chapter 1 of the Environmental Statement (ES) (Doc. Ref. EN010131/APP/3.1). The extract set out below is taken from section 1.2 of the aforementioned document and provides an overview of the project:

> *"1.2.1 The Scheme comprises the installation of solar PV panels, on-site battery storage (referred to as the Battery Energy Storage System (BESS)), and associated infrastructure including access provision and an underground 7.5km 400kV electrical connection to the National Grid Substation at Cottam Power Station. Subject to obtaining the necessary consents, construction is anticipated to commence in Q1 2025 and be completed ready for operation in Q1 2028. It is anticipated that the Scheme will have an operational lifetime of approximately 60 years, with decommissioning in 2088, however, if equipment is still operating successfully and safely, the Applicant may choose to operate beyond the Scheme's originally anticipated design life.*
>
> *1.2.2 The location of the Scheme is shown in ES Volume 2: Figure 1-1, with the Order limits shown on ES Volume 2: Figure 1-2 [EN010131/APP/3.2]. The land within the Order limits and its surroundings are described in Chapter 2: The Scheme [EN010131/APP/3.1], with the consideration of alternatives and progression of the site layout described in Chapter 3: Alternatives and Design Evolution [EN010131/APP/3.1]. The Site comprises approximately 824 hectares (ha) of land for solar PV, battery storage, a grid connection and associated infrastructure and landscaping and biodiversity measures"*

2.5. Section 2.4 of the Volume 1, Chapter 1 of the ES (Doc. Ref. EN010131/APP/3.1) also sets out key components of the Scheme which include

- PV tables (mounting structures) and panels;
- Inverters;
- Transformers;
- An on-site Substation;
- Onsite cabling;
- A Battery and Energy Storage System (BESS);
- An underground 7.5km 400kV electrical connection to the National Grid
- Substation at Cottam Power Station;
- Fencing and security measures;
- Access tracks; and
- Landscaping and biodiversity enhancement.

Purpose and Structure of the LIR

2.6. The primary purpose of the LIR is to identify the policies in the Central Lincolnshire Local Plan in so far as they are relevant to the proposed development and the extent to which the development accords with these policies. It does this under topic-based headings reflecting the likely nature of impacts. The key issues for the local authorities and the local community are then identified, followed by commentary on the extent to which the applicant addresses these issues by reference to the application documentation, including the DCO articles, requirements and obligations, as relevant.

2.7. The proposed Gate Burton Energy Park would have an installed capacity of circa 531MWh. Over the estimated 60-year lifespan, the solar farm is expected to generate nearly 27TWh, which equates to around 396,700MWh per annum. In addition, the applicant proposed approximately 500MWh of battery storage which could be used to store electricity that would otherwise not be used.

2.8. The LIR identifies relevant policies within the Central Lincolnshire's Local Plan and the extent to which the proposed development accords with these policies. Topic based headings are used as a framework to set this assessment of the impacts within and key issues are identified along with commentary on the applicant's approach to mitigating these impacts.

3. Local Context

Central Lincolnshire and the West Lindsey district

3.1. West Lindsey is a district council located in Central Lincolnshire, a collective area that encompasses the City of Lincoln, North Kesteven and West Lindsey. The West Lindsey district covers an area of over 1,150km^2 and is located within Lincolnshire County Council who are the county council and are also impacted by the proposed solar farms.

3.2. Central Lincolnshire is characterised by a population that lives in a range of settlements that vary in size and character. Lincoln is the largest settlement with a population of approximately 110,000 living in the principle urban area. Lincoln acts as a service centre over a wide geographical area, with villages sourcing most services and employment requirements in the city, effectively extending its catchment population to around 165,000.

3.3. West Lindsey borders North Lincolnshire and North East Lincolnshire to the north; East Lindsey in the east; North Kesteven and the city of Lincoln in the south. The River Trent forms a natural boundary to the west where the district meets Bassetlaw District Council and Nottinghamshire County Council, both of which are affected by the proposed Cottam solar farm and the grid connection.

3.4. The West Lindsey district hosts main towns such as Gainsborough, Caistor and Market Rasen, which serve the northern and southern parts of the wider Central Lincolnshire area. Gainsborough experienced significant growth during the 19th century as an industrial and engineering centre, with a shift of focus to manufacturing on the 20th century. It now provides a thriving manufacturing/engineering sector with national and international companies headquartered in the town.

3.5. WLDC is predominantly rural and interspersed with settlements across the area. The district provides an attractive setting for its three market towns of Caistor, Gainsborough and Market Rasen. The district is the 13th most sparsely populated area in England with a population of 95,153 and a density of 82 people per km^2 based on 2021 census data from the Office of National Statistics (ONS). The population has increased by 6% since the last census in 2011. Over 23% of the population of West Lindsey in the census are over the retirement age compared to 19% in the rest of the United Kingdom

3.6. The remainder of Central Lincolnshire and the West Lindsey district is predominantly rural, characterised by a settlement pattern of villages as well as the smaller towns of Market Rasen and Caistor. The average population density is amongst the lowest in lowland England, with the majority of settlements not exceeding a few hundred people.

3.7. Collectively, the rural area nonetheless accounts for over half of Central Lincolnshire's population. Functionally, the rural villages typically operate as clusters that share key services, with larger villages acting as local service centres upon which communities rely for basic facilities and as social hubs.

3.8. The Ministry of Defence (MoD) has a strong presence in the West Lindsey District and the wider Central Lincolnshire area. Active Royal Air Force (RAF) bases at Scampton, Waddington, Cranwell and Digby make a significant contribution to the area's demographic and economic make up. Former bases have been utilised to deliver new housing and employment development. Central Lincolnshire is home to the Red Arrows and its RAF heritage (including Lincolnshire's historic role as the centre of Bomber Command and the neighbouring base for the Battle of Britain Memorial Flight in East Lindsey) support the expansion for the area's existing visitor economy.

Landscape character

3.9. Central Lincolnshire's natural environment is varied and contrasting, characterised by gentle chalk and limestone uplands with low lying fens and fenland. The Lincolnshire Wolds Area of Outstanding Natural Beauty (AONB) falls partly in Central Lincolnshire, with its distinctive landscape of rolling hills and nestling villages.

3.10. The wider rural landscape of Central Lincolnshire comprises a sweeping character with big skies, and is a highly valued asset, making a significant contribution to local distinctiveness and attractiveness.

3.11. The escarpment of the Jurassic Lincolnshire Limestone, known locally as the Lincoln Edge, runs the full length of Central Lincolnshire, forming a unifying topographic feature and, as a key factor in the origins and historic development of Lincoln, makes a strong contribution to its present quality and character.

3.12. Outside of the urban areas, land use in Central Lincolnshire and West Lindsey in particular is predominantly agricultural with intensive arable crops dominating. Soils are typically fertile and of high quality for agriculture.

3.13. West Lindsey and the wider Central Lincolnshire area hosts a wide range of natural habitats, including wetland, woodland, calcareous grassland and remnants of heathland fen, which together provide ecological networks and nodes of sufficient scale to support wildlife adaptation and environmental resilience to climate change.

3.14. Biodiversity in the area is experiencing pressure from factors including climate change, habitat fragmentation, development and large scale intensive agriculture. Major landscape-scale initiation are proposed to restore and enhance the areas ecological networks and corridors.

Socio-Economic

3.15. As set out in the Central Lincolnshire Local Plan, which is the Local Plan adopted by West Lindsey, Central Lincolnshire is located within the Greater Lincolnshire Local Enterprise Partnership (GLLEP) area and represents roughly 30% of the GLLEP area's population, employment and business base. The draft Local Industrial Strategy (LIS) notes that Greater Lincolnshire has an economy of £20.7bn with an ambition to grow the Gross Value Added (GVA) by £3.2bn by 2030. The GLLEP area boasts a mix of traditional manufacturing, a comprehensive agri-food sector, energy and services, and is strong in health and care and the visitor economy. In these sectors and others the area benefits from a large number of small businesses – a distinctive feature of the economy.

3.16. The GLLEP's priority sectors include; agri-foods, energy and water, health and care, visitor economy and ports and logistics, but this should not diminish the important roles of other sectors, including manufacturing and engineering, to the local economy. The Central Lincolnshire Authorities will play a key role in the delivery of the vision for most of these sectors.

3.17. The Economic Needs Assessment (ENA) (2020) projects the economic growth and job growth to 2040, which in turn was influenced by the LIS and other work being produced by the GLLEP. The ENA highlights that there has been strong growth in recent years, outstripping anticipated growth, and projects forward a growth of approximately 992 jobs per year.

Hydrology

3.18. Water is an important aspect of Central Lincolnshire's environment. The area has a long history of land drainage and flood management, and significant areas of low-lying land are maintained for agriculture by pumped drainage. River flooding is closely controlled through embankments and washlands as part of wider management plans for the main river catchments. Conversely, Lincolnshire is already experiencing pressure on its water resources from increasing trends in consumer and commercial demand, coupled with predicted increases in the frequency and severity of drought due to climate change. Major new infrastructure to supply the Lincoln area with water abstracted from the Trent was completed in July 2014.

3.19. Due to its topographical characteristics, the area has a history of land drainage and flood management, and significant areas of low-lying land are maintained for agriculture by pumped drainage. River flooding is closely controlled through embankments and washlands as part of wider management plans for the main river catchments.

Site description and surroundings

3.20. The majority of the proposed Gate Burton Energy Project (hereafter referred to as 'the Scheme') is located within West Lindsey District Council (WLDC). The application site is characterised by a rural setting surrounded by agricultural land, with scattered villages and farmsteads located across the landscape. The Site comprises approximately 824 hectares (ha) of land for solar PV, battery storage, a grid connection and associated infrastructure and landscaping and biodiversity measures.

3.21. The land within the Solar and Energy Storage Park mainly consists of agricultural fields interspersed with individual trees, woodlands, hedgerows, linear tree belts, farm access tracks, and local transport roads.

3.22. The land is predominantly Grade 3b (moderate quality agricultural land) with some 3a (good quality agricultural land). The hedgerows within the Order Limits are predominantly low and intermittent. The arable fields are large and generally of regular shape. Woodland is more prevalent in the north of the Solar and Energy Storage Park. 3.2.3 Villages in proximity to the Solar and Energy Storage Park comprise:

- Gate Burton approximately 50m to the west;
- Knaith approximately 200m to the west;
- Marton approximately 500m to the south west;
- Willingham by Stow 700m to the east; and
- Kexby 1.8km to the east.

3.23. The Scheme will connect to the National Grid at Cottam Power Station. Cottam Power Station was a coal fired power station on a site extending over 250 hectares to the west of the River Trent at Cottam, near Retford.

3.24. The Grid Connection Corridor passes from the Solar and Energy Storage Park to Cottam Power Station through largely agricultural land, to the immediate south and east of Marton, 400m to the north of Brampton in Lincolnshire, then 50m to the north of Cottam and 300m east of Rampton to connect with Cottam Power Station in Nottinghamshire.

Key challenges

3.25. West Lindsey District and the wider Central Lincolnshire area is facing a range of challenges. These include the requirement to improve social and economic conditions, including health, housing, jobs and the range and quality of facilities, whilst also ensuring that the environment is improved and that growth does not erode the area's environmental and heritage assets, or increase pressure on natural resources.

4. Legislative & Policy Context

4.1. WLDC recognises the application as one made under the Planning Act 2008 (PA2008) for a Development Consent Order (DCO) for development that falls within the definition of energy generating stations set out in section 15 of the PA2008.

4.2. The proposed development comprises the construction, operation and decommissioning of solar arrays for the generation of electricity, also including a Battery and Energy Storage System (BESS), the import/export connection to the National grid and onsite converter stations.

4.3. The PA2008 provides for two different decision making procedures for NSIP applications;

i) Sec. 104 - where a relevant National Policy Statement (NPS) has been designated and has effect; and

ii) Sec.105 – where there is no designated NPS or there is a designated NPS but which does not have effect.

4.4. The application to fall to be determined under section 105 of PA2008 due to electricity generation by solar generating stations being excluded from the scope of NPS' EN-1 and EN-3. Energy storage infrastructure also does not fall within the scope of NPS' EN-1 and EN-3. There is therefore no designated NPS that has effect in relation to the proposed development.

4.5. Section 105 of the PA2008 states that in determining the proposed development, the decision maker must have regard to:

a. Any local impact report (within the meaning given by section 60(3)) submitted to the Secretary of State before the deadline specified in a notice under section 60(2);

b. Any matters prescribed in relation to development of the description to which the application relates, and

c. Any other matters which the Secretary of State thinks are both important and relevant to the Secretary of State's decision.

4.6. The Central Lincolnshire Local Plan (Local Plan) forms the adopted development plan for the West Lindsey district. The Local Plan was adopted on 24th April 2023 and therefore represents a wholly 'up to date' statutory development plan. WLDC considers that the Local Plan should be considered 'important and relevant' for the purposes of section 105 and should be afforded significant weight in the decision making process.

Central Lincolnshire Local Plan (April 2023)

4.7. The Central Lincolnshire Local Plan forms part of the development plan for West Lindsey (replacing the previous Central Lincolnshire Local Plan, adopted in 2017). The Local Plan was adopted on 13th April 2023 and therefore represents an 'up to date' statutory development plan to which significant weight should be afforded in decision making under section 105 of the PA 2008. The full plan is included at Appendix A of this LIR.

4.8. The relevant policies and a brief summary of each are set out are set out below.

Table 4-1 – Central Lincolnshire Local Plan Policy

Policy	Summary
Policy S1: The Spatial Strategy and Settlement Hierarchy	The spatial strategy will focus on delivering sustainable growth for Central Lincolnshire that meets the needs for homes and jobs, regenerates places and communities, and supports necessary improvements to facilities, services and infrastructure. Development should create strong, sustainable, cohesive and inclusive communities, making the most effective use of previously developed land and enabling a larger number of people to access jobs, services and facilities locally.
Policy S2: Level and Distribution of Growth	The economic vision and strategy of this plan is to seek to facilitate the creation of 24,000 new jobs over the plan period, 2018-2040. To help facilitate that target and ensure the provision of new homes is in balance

	with job creation, this plan aims to facilitate the delivery of 1,325 dwellings per year, or 29,150 dwellings over the Plan period.
Policy S10: Supporting a Circular Economy	The Joint Committee is aware of the high energy and material use consumed on a daily basis, and, consequently, is fully supportive of the principles of a circular economy. Accordingly, and to complement any policies set out in the Minerals and Waste Development Plan, proposals will be supported, in principle, which demonstrate their compatibility with, or the furthering of, a strong circular economy in the local area (which could include cross-border activity elsewhere in Lincolnshire).
Policy S11: Embodied Carbon	All development should, where practical and viable, take opportunities to reduce the development's embodied carbon content, through the careful choice, use and sourcing of materials.
Policy S14: Renewable energy	All major development proposals should explicitly set out what opportunities to lower a building's embodied carbon content have been considered, and which opportunities, if any, are to be taken forward.
Policy S15: Protecting Renewable Energy Infrastructure	The Central Lincolnshire Joint Strategic Planning Committee is committed to supporting the transition to a net zero carbon future and will seek to maximise appropriately located renewable energy generated in Central Lincolnshire (such energy likely being wind and solar based). Proposals for renewable energy schemes, including ancillary development, will be supported where the direct, indirect, individual and cumulative impacts on the following considerations are, or will be made, acceptable. i. The impacts are acceptable having considered the scale, siting and design, and the consequent impacts on landscape character; visual amenity; biodiversity; geodiversity; flood risk; townscape; heritage assets, their settings and the historic landscape; and highway safety and rail safety; and ii. The impacts are acceptable on aviation and defence navigation system/communications; and iii. The impacts are acceptable on the amenity of sensitive neighbouring uses (including local residents) by virtue of matters such as noise, dust, odour, shadow flicker, air quality and traffic. Permitted proposals will be subject to a condition that will require the submission of an End of Life Removal Scheme within one year of the facility becoming non-operational, and the implementation of such a scheme within one year of the scheme being approved. Such a scheme should demonstrate how any biodiversity net gain that has arisen on the site will be protected or enhanced further, and how the materials to be removed would, to a practical degree, be re-used or recycled.
Policy S16: Wider Energy Infrastructure	The Joint Committee is committed to supporting the transition to net zero carbon future and, in doing so, recognises and supports, in principle, the need for significant investment in new and upgraded energy infrastructure. Where planning permission is needed from a Central Lincolnshire authority, support will be given to proposals which are necessary for, or form part of, the transition to a net zero carbon sub-region, which could include: energy storage facilities (such as battery storage or thermal storage); and upgraded or new electricity facilities (such as transmission facilities, sub-stations or other electricity infrastructure.
Policy S17: Carbon Sinks	Existing carbon sinks, such as peat soils, must be protected, and where opportunities exist they should be enhanced in order to continue to act as a carbon sink.
Policy S20: Resilient and Adaptable Design	Adaptable design Applicants should design proposals to be adaptable to future social, economic, technological and environmental requirements in order to make buildings both fit for purpose in the long term and to

	minimise future resource consumption in the adaptation and redevelopment of buildings in response to future needs.
Policy S21: Flood Risk and Water Resources	Flood Risk All development proposals will be considered against the NPPF, including application of the sequential and, if necessary, the exception test. Development proposals that are likely to impact on surface or ground water should consider the requirements of the Water Framework Directive.
Policy S28: Spatial Strategy for Employment	In principle, employment related development proposals should be consistent with meeting the following overall spatial strategy for employment. The strategy is to strengthen the Central Lincolnshire economy offering a wide range of employment opportunities focused mainly in and around the Lincoln urban area and the towns of Gainsborough and Sleaford, with proportionate employment provision further down the Settlement Hierarchy
Policy S29: Strategic Employment Sites (SES)	SES will meet large scale investment needs that requires significant land take. Proposals for the development of SES should be progressed through an agreed masterplan which includes a travel plan and associated infrastructure to promote sustainable modes of travel for the site as a whole wherever possible prior to or alongside a planning application. Small scale, ancillary and/or piecemeal development that prevents or otherwise detracts from the delivery of large scale investment on an SES will be refused.
Policy S31: Important Established Employment Areas (IEEA)	IEEA make a substantial contribution to the Central Lincolnshire economy. They are defined as sites located in tiers 1-4 of the Settlement Hierarchy in Policy S1 (Large Villages and above), on sites of 2ha or more and have at least 8,000sqm of ground floor space and with five or more units occupied by different businesses.
Policy S43: Sustainable Rural Tourism	Development proposals within villages named in the Settlement Hierarchy in Policy S1 that will deliver high quality sustainable visitor facilities including (but not limited to) visitor accommodation, sporting attractions, and also including proposals for temporary permission in support of the promotion of events and festivals.
Policy S45: Strategic Infrastructure Requirements	Infrastructure Planning permission will only be granted if it can be demonstrated that there is, or will be, sufficient infrastructure capacity to support and meet all the necessary requirements arising from the proposed development. Development proposals must consider all of the infrastructure implications of a scheme; not just those on the site or its immediate vicinity. Conditions or planning obligations, as part of a package or combination of infrastructure delivery measures, are likely to be required for many proposals to ensure that new development meets this principle. Consideration must be given to the likely timing of infrastructure provision. As such, development may need to be phased. Conditions or a planning obligation may be used to secure this phasing arrangement.
Policy S47: Accessibility and Transport	Development proposals which contribute towards an efficient and safe transport network that offers a range of transport choices for the movement of people and goods will be supported. All developments should demonstrate, where appropriate, that they have had regard to the following criteria: a) Located where travel can be minimised and the use of sustainable transport modes maximised; b) Minimise additional travel demand through the use of measures such as travel planning, safe and convenient public transport, car clubs, walking and cycling links and integration with existing infrastructure; c) Making allowance for low and ultra-low emission vehicle refuelling infrastructure.

Policy S53: Design and Amenity	All development, including extensions and alterations to existing buildings, must achieve high quality sustainable design that contributes positively to local character, landscape and townscape, and supports diversity, equality and access for all.
Policy S54: Health and Wellbeing	The potential for achieving positive mental and physical health outcomes will be taken into account when considering all development proposals. Where any potential adverse health impacts are identified, the applicant will be expected to demonstrate how these will be addressed and mitigated.
Policy S56: Development on Land Affected by Contamination	Development proposals must take into account the potential environmental impacts on people, biodiversity, buildings, land, air and water arising from the development itself and any former use of the site, including, in particular, adverse effects arising from pollution.
Policy S57: The Historic Environment	Development proposals should protect, conserve and seek opportunities to enhance the historic environment of Central Lincolnshire.
	Listed Buildings Permission to change the use of a Listed Building or to alter or extend such a building will be granted where the local planning authority is satisfied that the proposal is in the interest of the building's preservation and does not involve activities or alterations prejudicial to the special architectural or historic interest of the Listed Building or its setting.
	Conservation Areas Development within, affecting the setting of, or affecting views into or out of, a Conservation Area should preserve (and enhance or reinforce it, as appropriate) features that contribute positively to the area's character, appearance and setting.
	Archaeology Development affecting archaeological remains, whether known or potential, designated or undesignated, should take every practical and reasonable step to protect and, where possible, enhance their significance.
Policy S58: Protecting Lincoln, Gainsborough and Sleaford's Setting and Character	**Gainsborough** g) Take into account the Gainsborough Town Centre Conservation Area Appraisal and Gainsborough Town Centre Heritage Masterplan; h) Protect and enhance the landscape character and setting of Gainsborough and the surrounding villages by ensuring key gateways are landscaped to enhance the setting of the town, minimise impact upon the open character of the countryside and to maintain the setting and integrity of surrounding villages
Policy S59: Green and Blue Infrastructure Network	The Central Lincolnshire Authorities will safeguard green and blue infrastructure in Central Lincolnshire from inappropriate development and work actively with partners to maintain and improve the quantity, quality, accessibility and management of the green infrastructure network. Proposals that cause loss or harm to the green and blue infrastructure network will not be supported unless the need for and benefits of the development demonstrably outweigh any adverse impacts. Where adverse impacts on green infrastructure are unavoidable, development will only be supported if suitable mitigation measures for the network are provided.
Policy S60: Protecting Biodiversity and Geodiversity	All development should: a) protect, manage, enhance and extend the ecological network of habitats, species and sites of international, national and local importance (statutory and non-statutory), including sites that meet the criteria for selection as a Local Site; b) minimise impacts on biodiversity and features of geodiversity value;

	c) deliver measurable and proportionate net gains in biodiversity in accordance with Policy S61; and d) protect and enhance the aquatic environment within or adjoining the site, including water quality and habitat. Mitigation of Potential Adverse Impacts Development should avoid adverse impact on existing biodiversity and geodiversity features as a first principle, in line with the mitigation hierarchy. Where adverse impacts are unavoidable they must be adequately and proportionately mitigated. If full mitigation cannot be provided, compensation will be required as a last resort where there is no alternative. Development will only be supported where the proposed measures for mitigation and/or compensation along with details of net gain are acceptable to the Local Planning Authority in terms of design and location and are secured for the lifetime of the development with appropriate funding mechanisms that are capable of being secured by condition and/or legal agreement. If significant harm to biodiversity resulting from development cannot be avoided, adequately mitigated, or, as a last resort, compensated for, then planning permission will be refused.
Policy S61: Biodiversity Opportunity and Delivering Measurable Net Gains	Following application of the mitigation hierarchy, all development proposals should ensure opportunities are taken to retain, protect and enhance biodiversity and geodiversity features proportionate to their scale, through site layout, design of new buildings and proposals for existing buildings with consideration to the construction phase and ongoing site management.
	Biodiversity Net Gain The following part of the policy applies unless, and until, subsequently superseded, in whole or part, by national regulations or Government policy associated with the delivery of mandatory biodiversity net gain arising from the Environment Act 2021. Where conflict between the policy below and the provisions of Government regulations or national policy arises, then the latter should prevail.
Policy S62: Area of Outstanding Natural Beauty and Areas of Great Landscape Value	**Areas of Great Landscape Value** Areas of Great Landscape Value (AGLV) are locally designated landscape areas recognised for their intrinsic character and beauty and their natural, historic and cultural importance. A high level of protection will be afforded to AGLV reflecting their locally important high scenic quality, special landscape features and sensitivity. Development proposals within, or within the setting of, AGLV shall: e) conserve and enhance the qualities, character and distinctiveness of locally important landscapes; and f) protect, and where possible enhance, specific landscape, wildlife and historic features which contribute to local character and landscape quality; and g) maintain landscape quality and minimise adverse visual impacts through high quality building and landscape design; and h) demonstrate how proposals have responded positively to the landscape character in relation to siting, design, scale and massing and where appropriate have retained or enhanced important views, and natural, historic and cultural features of the landscape; and i) where appropriate, restore positive landscape character and quality. Where a proposal may result in adverse impacts, it may exceptionally be supported if the overriding benefits of the development demonstrably

	outweigh the harm – in such circumstances the harm should be minimised and mitigated through design and landscaping.
Policy S66: Trees, Woodland and Hedgerows	Development proposals should be prepared based on the overriding principle that: • the existing tree and woodland cover is maintained, improved and expanded; and • opportunities for expanding woodland are actively considered and implemented where practical and appropriate to do so.
	Hedgerows Proposals for new development will be expected to retain existing hedgerows where appropriate and integrate them fully into the design having regard to their management requirements. Proposals for new development will not be supported that would result in the loss of hedges of high landscape, heritage, amenity or biodiversity value unless the need for, and benefits of, the development clearly outweigh the loss and this loss can be clearly demonstrated to be unavoidable. Development requiring the loss of a hedgerow protected under The Hedgerow Regulations will only be supported where it would allow for a substantially improved overall approach to the design and landscaping of the development that would outweigh the loss of the hedgerow. Where any hedges are lost, suitable replacement planting or restoration of existing hedges, will be required within the site or the locality, including appropriate provision for maintenance and management.
Policy S67: Best and Most Versatile Agricultural Land	Proposals should protect the best and most versatile agricultural land so as to protect opportunities for food production and the continuance of the agricultural economy.

Central Lincolnshire Statement of Community Involvement (January 2023)

4.9. The Statement of Community Involvement (SCI) outlines how the Central Lincolnshire Joint Strategic Planning Committee (CLJSPC) expects to involve and consult the public and stakeholders when preparing planning policy documents, namely local plans and supplementary planning documents. This may be used to inform WLDC's approach to consultation during the DCO examination.

Lincolnshire County Council

4.10. Lincolnshire County Council (LCC) is the county council that governs the non-metropolitan county of Lincolnshire, apart from the areas governed by the unitary authorities of North Lincolnshire and North East Lincolnshire. The council is responsible for public services such as education, transport, highways, heritage, social care, libraries, trading standards, and waste management.

4.11. The council has several policies, strategies and plans which cover planning and the environment. Those which are relevant to the solar DCOs are set out below.

Table 4-2 – Lincolnshire County Council Policy Documents

Policy Document	Summary
Carbon Management Plan (Jan 2019)	The Carbon Management Plan (CMP) sets out their strategy and action plan for continuing to reduce carbon emissions over the next 5 years.
Joint Lincolnshire Flood Risk and Water Management Strategy 2019-2050	LCC is the Lead Local Flood Authority (LLFA) for the administrative county of Lincolnshire. Because of this role, since 2010 the Council has been responsible for implementing and monitoring a local flood risk management strategy. The purpose of the strategy is to manage the impact of flood risk to people, businesses and the environment across Lincolnshire.

Policy Document	Summary
Green Masterplan	The Green Masterplan is a multi-year programme running until 2050 to ensure that LCC meet the national carbon reduction targets of being net zero by 2050. The Green Masterplan is backed up by an Initial Action Plan and has three guiding principles: Don't waste anything; consider wider opportunities; and take responsibility and pride.
Local Enforcement Plan (Nov 2020)	This plan sets out our priorities for investigation, explains what will be investigated and what will not, and the priorities for responses to complaints and the timescales for these responses. Although this is plan does not refer to Nationally Significant Infrastructure Projects, it is likely to be a material consideration during the construction phase of the development.
Local Transport Plan 5	This plan is designed to cover the short, medium, and longer-term time horizons for transport and highways for the whole of Lincolnshire. The plan does not cover the impacts of construction traffic, but it is likely to be a material consideration in LLC's stance on the DCOs, particularly during construction and how this could impact the plan.
Statement of Community Involvement (Sep 2019)	The statement of community involvement outlines how the council plans to involve and consult the public and stakeholders in relation to the minerals and waste local plan. This may be used to inform LCC's approach to consultation during the DCO examination.
Travel plan guidance (Dec 2021)	This guidance sets out the highways authority requirements for development travel plans and identifies when they are required in support of a planning application.
Minerals and waste local plan	The minerals and waste development scheme identifies the documents that make up the minerals and waste local plan and sets out the timetable for preparation and review. Part of the Grid Connection Corridor is also located within a Mineral Safeguarding Area for Sand and Gravel. However it was confirmed with NCC and LCC that there is not a need for a standalone Mineral Safeguarding Assessment to accompany the DCO Application.

Neighbourhood Plans

4.12. Thirteen Neighbourhood Plans within the WLDC administrative area are either being prepared or adopted in close proximity to the Order Limits of the DCO application and/or are likely to experience impacts from the proposed development.

4.13. The following Neighbourhood Plans are adopted:

- Corringham;
- Gainsborough;
- Hemswell and Harpswell;
- Lea;
- Morton;
- Saxilby with Ingleby;
- Sturton by Stow; and
- Willoughton.

4.14. All of the adopted Neighbourhood Plans have been appended to this report (Appendix D – K).

4.15. The following Neighbourhood Plans are being prepared (at draft stage):

- Blyton;
- Ingham;
- Laughton; and
- Upton and Kexby.

4.16. The adopted Lea Neighbourhood Plan (NH) covers a plan period of 2017 – 2036. Lea is located to the north of the Gate Burton site, covering the village of Lea and its surroundings to the end of Knaith Park. The NP provides 8 'Community Objectives' which include, inter alia, 'to protect and, where possible, enhance the natural environment and open countryside and avoid coalescence with nearby settlements'.

National Policy

4.17. National policy governing the principle of development for renewable energy proposals within its scope is the National Policy Statement (NPS) for renewables EN-3, which should be read together with the Overarching NPS for Energy, EN-1.

4.18. Given that EN-3 does not have any technology-specific policy relevant to solar photovoltaic projects, it is not considered that it has effect for the purposes of section 104 of the Planning Act 2008, as has been recognised by the Applicant. Nonetheless, it is a material planning consideration in the DCO process but not the only policy that the proposal needs to take into account.

4.19. A review of the energy NPSs has resulted in the publication of a draft EN-1 and EN-3, which are not yet designated (and therefore also do not 'have effect' for the purposes of section 104) but have clear relevance to the Gate Burton Energy Park not least due to the inclusion of solar photovoltaic-specific policy in draft EN-3. It is WLDC's view that these NPSs, both current and draft, are likely to be matters the Secretary of State will consider relevant and important.

4.20. Section 105 of the Planning Act 2008 states:

"105 Decisions in cases where no national policy statement has effect

(1) This section applies in relation to an application for an order granting development consent if section 104 does not apply in relation to the application.

(2) In deciding the application, the Secretary of State must have regard to –

(a) any local impact report (within the meaning given by section 60 (3)) submitted to the Secretary of State before any deadline specified in a notice under section 60 (2),

(b) any matters prescribed in relation to development of the description to which the application relates, and

(c) any other matters which the Secretary of State thinks are both important and relevant to the Secretary of State's decision."

4.21. This LIR may refer to the NPSs, primarily EN-1 and EN-3, to highlight potential compliance issues in some of the topic areas but WLDC are mindful of the role section 105 of the Planning Act 2008 plays in this process.

Summary

4.22. There are a number of relevant local policies which the Examining Authority (ExA) and/or the Secretary of State may consider relevant and important.

4.23. Each of the issue specific sections sets out an overview of key policies relevant to that topic.

5. West Lindsey District Council Identified Impacts

Introduction

5.1. The following sections identify the relevant policies within the development plan and other local policy, the key issues raised by the proposed development and the extent to which the applicant addresses them and thus the proposal complies with local policy.

6. Alternative and Design Evolution

Summary

6.1. The applicants approach to the assessment is considered to be sufficient; however, there are several points which require further investigation and explanation. The key points are set out below:

- Stage 4 of the assessment does not provide the assessments. This means the methodology cannot be assessed.
- There are areas of land outside of the 'contiguous' site. These sites create an ad-hoc, scattered and unplanned approach to the site land assembly.
- The project has failed to avoid Class 3a agricultural land.
- There does not appear to be any consideration for local landscape and visual impacts, rather focussing on national.
- There is an intention to use construction access points from single lane minor roads despite also proposing two from two-way highways which is not justified.
- There is a lack of focus on the cumulative transport impacts during the construction phase within the grid corridor.

Legislation and Policy Context

National Policy

6.2. When considering assessment principles, adopted National Policy Statement (NPS) EN-1 paragraph 4.4.1 states that '*As in any planning case, 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, detailed guidance on which falls outside the scope of this NPS. From a policy perspective this NPS does not contain any general requirement to consider alternatives or to establish whether the proposed project represents the best option*'. This paragraph is retained without amendment in Paragraph 4.2.11 of the Draft NPS EN-1 (Ref 3-4).

6.3. NPS EN-1 paragraph 4.4.3 goes on to state that: '*where (as in the case of renewables) legislation imposes a specific quantitative target for particular technologies… the IPC should not reject 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*'.

6.4. Paragraph 4.2.13 of Draft NPS EN-1 similarly states that: "*the SoS 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*".

6.5. In view of the above, there is no general policy it is recognised that the requirement to provide consideration for alternative sites. However, there is a requirement to provide information for reasonable alternatives is required under the Environmental Impact Assessment (EIA) Regulations 2017, as set out below.

6.6. NPS EN-1 and Draft NPS EN-1 do, however, highlight that in addition to the requirement under the EIA Regulations, there are other specific legislative requirements and policy circumstances which require the consideration of alternatives.

6.7. There are policy requirements to consider alternatives where there are likely significant effects on biodiversity and geological conservation interests; where there is development in areas of flood risk; and where there is development within nationally designated landscapes (see sections 5.3, 5.7 and 5.9 of NPS EN-1 and 5.4, 5.8 and 5.10 of Draft NPS EN-1). Paragraph 4.4.3 of NPS EN-1 (paragraph 4.2.13 in the Draft NPS EN-1) states '*where there is a policy or legal requirement to consider alternatives the applicant should describe the alternatives considered in compliance with these requirements*'.

Legislation

6.8. Paragraph 2 of Schedule 4 of the Environmental Impact Assessment (EIA) Regulations 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*'.

6.9. There is also a requirement under the Habitats Directive, as transposed into UK law by the Conservation of Habitats and Species Regulations 2017. A Habitats Regulations Assessment has been submitted alongside the DCO application [EN010131/APP/7.2], it concludes there would be no likely significant effects on any European site from the Scheme alone or in-combination with any other plans or projects.

Applicant's Approach to Assessment

Approach to site selection and design

6.10. The applicant has submitted an 'Outline Design Principles' as a submitted application document (EN010131/APP/2.3). The document sets out the guiding principles for the detailed design of the Scheme and is secured through 'requirement' number 5 in the draft Development Consent Order (dDCO).

6.11. The Outline Design Principles document serves to reiterate the Scheme description and the application documents within which they are expressed, lists the control documents in respect of operation and decommissioning phases, and includes a table listing each element of the Scheme ('authorised development) and its 'Design Principle' as a specification and/or parameter.

Environmental Impact Assessment

6.12. Chapter 3: Alternatives and Design Evolution of the Environmental Statement (ES) sets out the applicant's approach to the alternatives that were considered during the design of the Scheme, against the requirement to adhere to the legislative and policy requirements.

6.13. Section 3.3 of Chapter 3 sets out the applicant's process for the selection of the proposed site. In summary, the following factors were considered (paras. 3.3.2 - 3.3.5):

- Broad location of the site – the physical characteristics of the east of England in providing a combination of high levels of irradiation and large flat open areas of land.
- Existing transmission infrastructure – the presence of existing transmission infrastructure reducing the likelihood of new infrastructure being required to connect the Scheme to the transmission system.
- Availability of grid connection – capacity and availability for the proposed electricity generated or a local energy user with a consistent demand for electricity that exceeds the maximum generation capacity.
- Land availability – if possible to have landowner(s) agreeable to their land being used for the development. To deliver a viable NSIP solar electricity generating station, a single contiguous land parcel (or sites in close proximity to one another) exceeding 300has was sought by the applicant.
- Topography – the requirement for good site topography and an area that would not generate unacceptable environmental and social impacts.

6.14. The applicant adopted a four-stage site selection process, summarised as follows:

Stage 1

6.15. Identification of a 8km area of search based upon operational criteria linked to the fixed point of connection. The point of connection was identified as the existing National Grid substation at Cottam, which offers sufficient grid connection capacity due to the cessation of generation of the Cottam coal fired power station in September 2019.

6.16. The further a solar farm is from the point of connection, the less efficient transmission to the grid becomes and the connection becomes significantly more costly. Locating a site closer to the

substation would likely decrease environmental and social impacts associated with the connection and the scheme would become more commercially viable. The 8km study area was identified as the maximum viable distance for a new solar farm from the Cottam substation.

6.17. Constraints were mapped to 15km to capture potential constraints close to the area of search.

Stage 2

6.18. Within the Stage 1, planning and environmental criteria were applied to discount land within the area of search unsuitable to locate the solar scheme.

6.19. Criteria used in the Stage 3 assessment to identify areas of 300ha of potential developable land comprised:

- Landscape designations and Green Belt;
- Ecological designation;
- Heritage designations;
- Local allocations and designations;
- Agricultural Land Classifications;
- Proximity to dwellings; and
- Areas of high flood risk.

Stage 3

6.20. Land remaining in the search area after Stage 2, operational criteria were applied. This included site size, land assembly, site topography, access requirements and availability of brownfield land. The output of Stage 3 was the identification land suitable for solar development.

6.21. The area identified in Stage 2 was then subject to further refinement through the application of the following criteria:

- Topography – flat or with gently south facing slopes. All land remaining after Stage 2 with 3% or less gradient was considered suitable.
- Site size and pattern – a suitable size of site to enable economic viability and fields of a larger and regular shape. Large areas of land/open fields without vegetation boundaries to minimise vegetation removal. Land assembly of fewer fields also reduced the buffering around field edges for tree root protection and can avoid shading impacts.
- Access – ease of access for constriction and decommissioning phases. The construction of NSIP-scale solar development requires appropriate access for large vehicles to be available. Whilst construction access via a single track can be achieved using traffic management, two-way access roads are preferred. Sites within proximity to two access roads were included at this stage.
- Brownfield land – there was a preference for the site to be situation on brownfield land, however no such sites were identified.
- Landowner – preference for a small number of willing landowners to form a contiguous site.

Stage 4

6.22. Stage 4 included a desktop assessment and evaluation by environmental and planning specialists to consider the identified locations. This process identified the most suitable land opportunities that were potentially available for the siting of a solar scheme should the land be available, based upon further assessment against the Stages 1-3 criteria. The criteria and assessment conclusion are as follows:

- Grid connection – the Gate Burton site is located in close proximity to the grid connection at the NETS Cottam substation, which ensure the impacts on the environment and community are minimised.
- Landscape designations – the order limits are not within or in close proximity to any nationally designated landscapes. Part of the Scheme is located within the locally designated Area of Great Landscape Value.

- Ecological designations – No ecological designation were within the Solar and Energy Storage Park. The Grid Connection Corridor crosses the Cow Pasture Lane Drains LWS.
- Heritage designations – No heritage designations are located within the site and a heritage buffer was introduced to reduce impact on the setting of assets.
- Local allocations and designations – majority of the Solar and Energy Storage Park to the west of the railway line is within the Area of Great Landscape Value. Attention was given to the design and layout in this area to reduce the impacts.
- Agricultural land – Soil sampling was undertaken to confirm the category of agricultural land. Following decommissioning the land can be returned to agricultural use and could be improved due to the land not being farmed. No agricultural land would be permanently lost and no alternative sites with lower impacts were identified.

6.23. The applicant has taken opportunities to reduce impacts on biodiversity and maximise benefits in line with national and local planning policy have been taken throughout the design of the Scheme, this is set out in Chapter 8 of the ES.

6.24. On flood risk, the Scheme is classified as 'Essential Infrastructure' and the majority of the Solar and Energy Storage Park is situated within an area of low risk of flooding from any source. A sequential approach has been applied to the layout and design of the Solar and Energy Storage Park to avoid permanent development in the small areas of higher flood risk around watercourses on site. The Battery and Energy Storage System (BESS) and the substation are located in areas with the lowest risk of flooding. Where required, embedded mitigation has been included within the design. Further information is available in the in Appendix 9-D: Flood Risk Assessment of the ES [EN010131/APP/3.3].

6.25. The Scheme is not located within or in close proximity to any nationally designated landscapes, therefore there is no need to consider alternatives under NPS EN-1 section 5.9. However, at all stages the development of the project has been informed by the iterative EIA process, including carefully designing the scheme to take account of, and reduce, potential landscape and visual impacts.

6.26. Although it is noted that the Scheme does not impact on any nationally designated landscapes; however, it does impact two Areas of Great Landscape Value (AGLV).

Impacts and issues

Positive

6.27. The clarity provided around the viability of a solar electricity generating station being within a distance of 8km from the connection point with the National Grid substation.

6.28. The design principle of seeking to design a ‘contiguous’ project through the seeking of large open fields adjacent to one another.

6.29. Minimising the grid connection length to reduce environmental impacts and impacts upon local communities.

6.30. Prioritising and identifying construction access point via two-way highways to minimise ecological and traffic impacts.

Neutral

6.31. None.

Negative

6.32. Chapter 3 of the ES provides and overview and commentary on the site selection process, however, it does not provide the assessments carried out at each of the 4 stages. The methodology applied is not explained and cannot be assessed. The comparative outcomes of each options against the criteria is not reported clearly.

6.33. Despite the design objectives to identify a ‘contiguous’ site, the inclusion of ‘outlier’ land to the north and to the north-west of the site is contrary to this approach. These sites create an ad-hoc, scattered and unplanned approach to the site land assembly.

6.34. The project has failed to avoid Class 3a agricultural land. Loss of Grade 3a agricultural land. Lifespan of the project is such that the impact will have the effect of being permanent. No evidence or basis upon which to proclaim that the land would be improved, or able to be used for agriculture post-decommissioning.

6.35. The assessment considers national landscape designations but does not appear to carry out a detailed assessment of the impact of local landscape character, including the impact on the desigated Area Of Great Landscape Value (AGLV), and visual effects.

6.36. The use of construction access points from single lane minor roads despite also proposing two from two-way highways. The justification for the inclusion of these access points is not provided.

6.37. Lack of detailed consideration of cumulative transport impacts during the construction phase within the grid corridor. A commitment to work collaboratively is expressed, however it appears that limited consideration was given to the potential impact (5-7 years in sequence or 2-3 years concurrently) at the site selection stage.

7. Agricultural Land

Summary

7.1. The points below outlines the main points arising from the Environmental Statement for the Gate Burton Solar Project for agricultural land:

- [AG1] The agricultural components of the ES do not follow any published and established methodology.
- [AG2] A sensitivity/resilience assessment should be provided in the ES, given the preponderance of heavy, wet soils.
- [AG3] A survey density of one bore per hectare should be agreed with Natural England's Soil Specialist.
- [AG4] The level of soil detail is insufficient for an ALC assessment and production of a Soil Handling and Management Plan.
- [AG5] The Agricultural Circumstances Report does not reflect the potential socio-economic impact and land use impacts on the affected farms.
- [AG6] PINS require all affected agricultural land should have an ALC survey. However, only desk top assessments were undertaken for 13.3 ha of land within the solar farm itself and for the whole of the grid connection corridor, so this is a non-compliance with PINS.
- [AG7] There is no assessment of impact on individual farms and displacement of tenants
- [AG8] The lack of an established methodology in the ES underestimates the effect of loss of agricultural land to the Scheme, compared with if the methodologies of IEMA or DMRB were applied. Lack of assessment of the effects of the Scheme on agricultural holdings is a significant shortcoming in the ES.
- [AG9] Mitigation proposals are satisfactory but would benefit from a soil sensitivity/resilience assessment to inform the Soil Handling and Management Plan.
- [AG10] Best and Most Versatile land (BMV) in Volume 3, Appendix 12-C: Agricultural Land Classification Report (Doc. Ref. EN010131/APP/3.3) is separated out from grade 3a land. As set out below, national and local policy sets out that grade 3a land is BMV land. This means 6.8 hectares of land is classed as BMV rather than grade 80.4 hectares for the solar array element of the scheme.
- [AG11] Whilst there are benefits associated with the proposal, there is a harm through allowing the development, through the loss of BMV over the lifetime of the development; particularly when considering the impact of the other proposed solar developments in WLDC.
- [AG12] Natural England's Technical Information Note TIN049, as shown at Appendix B of this LIR, states that the ALC gives a high grading to land which allows more flexibility in the range of crops that can be grown (its 'versatility') and which requires lower inputs, but also takes into account ability to produce consistently high yields of a narrower range of crops.

Policy Context

National Policy

7.2. Paragraph 5.10.8 of the NPS (EN-1) outlines that applicants should '*seek to minimise impacts on the best and most versatile agricultural land (defined as land in grades 1, 2 and 3a of the Agricultural Land Classification) and preferably use land in areas of poorer quality (grades 3b, 4 and 5) except where this would be inconsistent with other sustainability considerations*'.

7.3. Under Paragraph 5.10.15 of the NPS (EN-1), the IPC (now ExA) should ensure that '*applicants do not site their scheme on the best and most versatile agricultural land without justification. It should give little weight to the loss of poorer quality agricultural land (in grades 3b, 4 and 5), except in areas (such as uplands) where particular agricultural practices may themselves contribute to the quality and character of the environment or the local economy*'.

7.4. The draft Overarching National Policy Statement for Energy (EN-1) states similar advice to applicants and the SoS that they should seek to minimise impacts on BMV (see paragraphs 5.11.12 and 5.11.34). Where it is sited on BMV, it should duly justify as to why other land cannot be used. The SoS should also '*take into account the economic and other benefits of that land*'.

7.5. Paragraph 3.10.136 of draft National Policy Statement for Renewable Energy Infrastructure (EN-3) reiterates that the SoS should take into account '*the economic and other benefits of the best and most versatile agricultural land. The Secretary of State should ensure that the applicant has put forward appropriate mitigation measures to minimise impacts on soils or soil resources*'.

7.6. The NPPF also states that BMV is land in grades 1, 2 and 3a of the Agricultural Land Classification.

7.7. In view of the above, it is expected that the loss of both BMV and poorer quality land should be taken into account. This is particularly true given the agriculture lands contribution to the quality and character of the environment or the local economy.

Local Policy

7.8. The Central Lincolnshire Local Plan policies which are relevant to the scheme are set out below.

7.9. Policy S67: Best and Most Versatile Agricultural Land states that significant development resulting in the loss of the best and most versatile agricultural land will only be supported if:

- The need is clearly established;
- The benefits outweigh the need to protect such land, when taking into account the economic and other benefits of the best and most versatile agricultural land;
- The impacts of the proposal upon ongoing agricultural operations have been minimised through the use of appropriate design solutions; and
- Once the development has ceased its useful life then the land should be returned to its former use.

7.10. The council expects all these tests to be met, particularly in relation to the economic value of the land to WLDC and its inhabitants which is in line with national policy. Moreover, it is expected that the land would be restored to its former use. This is particularly important as the agricultural land is an important contributor to the local economy and culture of the region.

Key Impacts

7.11. The following section identifies the impacts on agriculture during construction, operation and decommissioning. It set out the positive, neutral and negative impacts for each stage.

Construction

Positive

7.12. No positive impacts on agricultural land during construction have been predicted in the ES, and would not be expected, as construction works are generally disruptive in nature.

Neutral

7.13. There are no neutral impacts identified during construction.

Negative

7.14. The scheme will result in the loss of 155.2 ha of BMV land when grouping the solar arrays and cable routes (p. 9 and p. 23 and Agricultural Land Classification Report (Doc. Ref. EN010131/APP/3.3)). Attention should also be given to the loss of poorer quality land that contributes to the quality and character of the environment or the local economy.

7.15. The ES states that the area of land within the Order Limits which would be required on a temporary basis i.e. during construction only and can be returned to farming use (e.g. sheep farming, but not arable farming) after construction comprises approximately 147ha (excluding the 2ha area for the substation/permanent planting, and 6.2 ha which is within a solar exclusion zone and therefore unaffected) of grade 3a BMV or estimated BMV land.

Operational

Positive

7.16. No positive effects on agricultural land across the study have been predicted, and the proposals are not predicted to result in any positive effects on the agricultural land.

Neutral

7.17. There are no neutral impacts identified during construction.

Negative

7.18. Of the 80.4 ha BMV required during operation, up to an assumed maximum of 2ha is lost permanently due to not being returned to farm use following decommissioning, and 6.2 ha is within a solar exclusion zone and therefore could remain in agricultural use throughout operation. The remaining 73 ha would be used for ecological mitigation (species rich grassland) or under solar panels, and therefore, could remain in agricultural use throughout operation. Whilst it is claimed that there will be areas underneath the solar arrays for sheep farming could be undertaken, it must be noted that this will impact the versatility of the BMV land. Versatility is a key element of BMV and therefore if the versatility of the land is lost, it is questioned whether the land can be considered BMV.

Decommissioning

Positive

7.19. It is noted that there is an intention to return the land to agricultural land.

Negative

7.20. There are doubts whether the land will ever be able to be returned agricultural use, particularly if current tenant farmers lose their livelihoods. The ExA is reminded that the 60 year lifetime of the project will likely result in a loss of agricultural knowledge in the area and therefore should question the likelihood of whether the land will ever be returned.

Requirements and Outline Management Plans

Requirement 12 – Construction environmental management plan

7.21. Prior to commencement of works a Soil Management Plan (SMP) will be prepared in accordance with the Outline Soil Management Plan (OSMP) in the Appendix to the Framework Construction Environmental Management Plan (CEMP) [EN010131/APP/7.3]. The SMP will detail the management of soil on areas such as temporary working compounds, temporary and permanent tracks and sites of temporary and permanent buildings. The SMP will include details of topsoil and subsoil stripping depths, how and where soils will be stored, conditions under which soil stripping and reinstatement will be carried out and how the reinstatement will be carried out.

Requirement 13 – Operational environmental management plan

7.22. A SMP will be produced in accordance with the OSMP detailing how the risk of causing surface compaction can be minimised and how to remove compaction if it has occurred.

Requirement 19 – Decommissioning and restoration

7.23. An SMP will be prepared in accordance with the OSMP setting out measures to manage the reinstatement of any stored soils and minimise soil disturbance and compaction when extracting supports for the solar PV panels.

Outline Soil Management Plan (OSMP)

7.24. The OSMP sets out the parameters from which a Soil Management Plan will be produced as part of the development of the Construction Environmental Management Plan (CEMP). The OSMP sets

out both the management of soils during construction and decommissioning. The document covers the following topics:

- Specific soil management practices;
- Soil Handling;
- Soil Restoration;
- Topsoil strip;
- Use of stripped soil (max time stored; backfilling);
- Earthworks;
- Surface water management during construction;
- Accidental spillage within the Order limits;
- Management of flood risk; and
- Security of sites.

Outline Skills, Supply Chain and Employment Plan

7.25. The Outline Skills, Supply Chain and Employment Plan (OSSCEP) reflects the findings of the ES and states that it is estimated that there are 1.5 existing jobs in the DCO site related to agricultural activities which would be lost. Therefore, the 'existing employment' has been assessed as up to 2 t jobs lost.

7.26. The OSSCEP presumes that when the Scheme being decommissioned and all infrastructure is removed, the employment required to carry out maintenance activities (14 jobs) will no longer be generated at this point. As the Scheme is assumed to revert back to agricultural land after decommissioning, it is likely that the existing 2 jobs related to agricultural activities would be generated again.

7.27. It is questionable that after 60 years whether it can be assumed the previous agricultural jobs will be generated.

8. Ecology and Nature Conservation

Summary

8.1.1. The list below outlines the main points arising from the Environmental Statement for the Gate Burton Solar Project for biodiversity and ecology:

- [EC1] The report on surveys for bats, records potential for bat roosting within trees (including 38 with moderate or high suitability and buildings (including one with high suitability) but no surveys were undertaken to determine roost status or usage by bats.
- [EC2] The biodiversity net gain conclusion is welcome; however, this is reliant on the LEMP which will need to be adequately secured in combination with the proposed topic specific draft DCO requirement (requirement 8).
- [EC3] Disagree with the conclusion of 'Local' biodiversity value for habitats which include veteran trees. Also ancient woodlands adjacent to the order limits (as listed in par 8.7.6) are a potential receptor and should be valued and impacts considered
- [EC4] It is not clear from the description in Table 8-8 if any Bat roots or potential root features were recorded on site.
- [EC5] Both Burton Wood and Long Nursey will be completely encircled by the development, Table 8-12 seems irrational to completely dismiss any potential for effects
- [EC6] Chapter 8 Table 8-12 black redstart. The construction assessment states that this 'a species that can be sensitive to disturbance' and that 'there will be increased noise levels during construction works, e.g. site clearance, which may cause some disturbance' how can this support a conclusion that there is no potential for an effect to occur?
- [EC7] Chapter 8 Table 8-12 Bats. The broad-leaved woodland rows above indicate some possible tree removal 'Where individual trees are removed (e.g. for access)...' it is not clear whether removal of trees and potential roosts has been considered.
- [EC8] Chapter 8 Table 8-13. This table provides assessment of negative impacts of the scheme but only two receptors (IEFs) are brought into this table: hedgerows, which are concluded to be minor adverse and non-significant and Skylark which are considered to be moderate adverse and significant. However, based on comments and observations above in relation to Table 8-12, it is possible that additional receptors should be considered.
- [EC9] Chapter 8 Table 8-13. This table provides assessment of enhancements, of which significant beneficial effects are concluded in relation to broad-leaved woodland, hedgerows, and breeding birds (general). These conclusions are reliant on delivery of planting and management as delivered by the LEMP and would be reliant on this document being adequately detailed and secured by the DCO. However it is worth noting that these enhancements seem to be considered in isolation from any negative impacts to the scheme, many of which have been discounted at Table 8-12.
- [EC10] Chapter 8 General The assessment does not seem to take any account of emissions from on-site plant and transportation, if this has been scoped out on basis of scale it would be helpful state so.

Policy Context

National Policy

8.2. Section 5.3 of NPS (EN-1) states that '*development should aim to avoid significant harm to biodiversity and geological conservation interests, including through mitigation and consideration of reasonable alternatives (…); where significant harm cannot be avoided, then appropriate compensation measures should be sought*'.

8.3. NPS (EN-1) notes (see paragraph 5.3.13) that due consideration should also be given to regional and local biodiversity and geological designations this is because these sites have a fundamental

role to play in meeting overall national biodiversity targets; contributing to the quality of life and the well-being of the community; and in supporting research and education

8.4. The draft NPS (EN-3) also highlight that solar farms have the potential to increase the biodiversity value of a site, especially if the land was previously intensively managed. In some instances, this can result in significant benefits and enhancements beyond Biodiversity Net Gain, which result in wider environmental gains which is encouraged.

Local Policy

8.5. The Central Lincolnshire Local Plan policies which are relevant to the scheme are set out below.

8.6. Policy S60: Protecting Biodiversity and Geodiversity requires development proposals will be considered in the context of the relevant Local Authority's duty to promote the protection and recovery of priority species and habitats. If the proposals do cause adverse impacts, then the benefit of the scheme will need to provide benefits the clearly outweigh the harms. Development will only be supported where the proposed measures for mitigation and/or compensation along with details of net gain are acceptable. All development will also need to meet the following tests:

- Protect, manage, enhance and extend the ecological network of habitats, species and sites of international, national and local importance.
- Minimise impacts on biodiversity and features of geodiversity value.
- Deliver measurable and proportionate net gains in biodiversity.
- Protect and enhance the aquatic environment within or adjoining the site, including water quality and habitat.

8.7. If the above tests cannot be met, development will be refused.

8.8. Policy S61: Biodiversity Opportunity and Delivering Measurable Net Gains requires development to deliver at least a 10% measurable biodiversity net gain attributable to the development. The net gain for biodiversity should be calculated using Natural England's Biodiversity Metric.

8.9. Policy S66: Trees, Woodland and Hedgerows requires proposals to provide evidence that they have been subject to adequate consideration of the impact of the development on any existing trees and woodland. New developments will also be to retain existing hedgerows where appropriate and integrate them fully into the design having regard to their management requirements.

Key Impacts

8.10. The following impacts assessed in Chapter 8: Ecology and Nature Conservation.

Construction

Positive

8.11. Indirect beneficial impacts through a possible reduction of agricultural chemical inputs to watercourses / reduction in pesticide use on crops within the local area resulting in an increase in invertebrate abundance and diversity.

Negative

8.12. Habitat loss – direct impacts associated with changes in land use resulting from the Scheme, for example temporary works associated with site clearance, and permanent land-take (mainly arable land) associated with the installation of the Scheme.

8.13. Fragmentation of populations or habitats – indirect impacts due to the Scheme dividing a habitat, group of related habitats, site or ecological network, or the creation of partial or complete barriers to the movement of species, with a consequent impairment of ecological function.

8.14. Disturbance – indirect impacts resulting from a change in normal conditions (light, noise, vibration, human activity) that result in individuals or populations of species changing behaviour or range.

8.15. Habitat degradation – direct or indirect impacts resulting in the reduction in the condition of a habitat and its suitability for some or all of the species it supports, for example changes in chemical water quality or changes in surface flow or groundwater.

8.16. Species mortality – direct impacts on species populations associated with mortalities due to construction activities, for example site clearance; and

8.17. Introduction of invasive species – the movement of personnel, equipment and plant machinery, potentially facilitates the introduction of invasive species.

Operational

Positive

8.18. Increases in permanent habitat of greater floristic diversity than arable farmland, increasing invertebrate assemblages and abundance;

8.19. Increased connectivity through enhanced planting of woodland and hedgerows;

8.20. Wide undeveloped field margins and areas of natural regeneration providing enhanced nesting and foraging habitats for farmland birds, small mammals, amphibians and reptiles;

8.21. Shift of drainage regime to a more natural water-table;

8.22. Potential attraction and increases in species foraging around and within the Order limits, such as bats and birds, from increases in prey items (e.g. flying insects);

8.23. Potential increases in abundance and distribution of species, due to lack of human disturbance and changes in habitat (such as agricultural practices) within the Order limits; and

8.24. Indirect beneficial impacts through a possible reduction of agricultural chemical inputs to watercourses / reduction in pesticide use on crops within the local area resulting in an increase in invertebrate abundance and diversity.

Negative

8.25. Potential attraction of aquatic invertebrates to solar panels, causing displacement and mortality;

8.26. Potential avoidance of species using the Order limits, such as bats and birds, due to indirect impacts through operational lighting;

8.27. Potential noise attraction or disturbance from BESS and operational compounds;

8.28. Disturbance of sensitive species during operational maintenance activities; and

8.29. Fragmentation of habitats causing a barrier effect, e.g. due to fencing.

Decommissioning

8.30. It is expected that the impacts on decommissioning of the Scheme would be the same as construction.

Cumulative Impacts

8.31. The ES considers that the West Burton Solar Project and the Cottam Solar Project have the potential to result in cumulative effects with the Scheme, where the overall loss of arable farmland has the potential to reduce nesting and foraging habitat for Skylark. Both projects identify ground nesting birds, in particular Skylark, as requiring mitigation for the loss of arable farmland for breeding, acknowledging that the West Burton Solar Project and Cottam Solar Project, alongside the Scheme have the potential to act in combination. Whilst the mitigation proposals are not fully described in the PEI Reports for either project, it is acknowledged that this will be resolved and included within the ES for these projects. Therefore, it is assumed that neither project will result in residual adverse effects and that there will be no significant cumulative effect arising from the three projects on Skylark populations from loss of arable farmland.

8.32. The Grid Connection Corridor has the potential to be shared with the Cottam and West Burton solar projects. This could see two scenarios,

- Scenario 1: the cables will be installed at the same time over a period of approximately 36 months.
- Scenario 2: sequential installation of all three projects' ducts and cables over a maximum 5-year period. As a worse case, all projects assume the construction, and subsequent removal of the haul road, and compounds.

8.33. In both scenarios, three individual sets of ducts and cables, each requiring a maximum construction working width of between 25 m and 30 m, will be installed within a 100 m corridor. Given, that each project will require its own working corridor with associated trench, it is assumed that regardless of which scenario is taken forward, that disturbance to, or loss of habitats will be temporary, e.g., species poor hedgerows and dry agricultural drainage ditches, with habitats re-instated once construction is complete. As each project's ducts and cable run will be separate, then any habitat re-instated or planted shouldn't be subsequently disturbed regardless of scenario.

8.34. Scenario 2 is likely to result in the potential fragmentation of linear habitats, e.g., hedgerows and drainage, for a greater period of time (up to five years), with the potential for various sections of these features to be lost or disturbed throughout that period. In turn, this has the potential to reduce connectivity for a wide range of wildlife.

Requirements and Management Plans

Requirement 7 – Landscape and Ecological Management Plan

8.35. The Landscape and Ecological Management Plan (LEMP) will be produced using the Outline Landscape and Ecology Management Plan (OLEMP). The OLEMP sets out that the Scheme has been designed to avoid the temporary or permanent loss of notable habitats, as far as practicable. However, as set out in the impacts section above, the scheme will have several negative impacts on ecology.

8.36. It should be noted that the OLEMP does not take into consideration the cumulative impacts of the Scheme with the proposed Cottam, Tillbridge and West Burton solar farms that are located within WLDC.

Requirement 8 – Biodiversity net gain

8.37. The Biodiversity Net Gain (BNG) strategy must be substantially in accordance with the OLEMP.

8.38. The BNG report [EN010131/APP/7.9] states that based on current knowledge of the Order limits and Scheme design, including the commitments made in the OLEMP [EN010131/APP/7.10], the Scheme is predicted to result in a net gain of 70.95% for area-based habitats, 37.24% for hedgerows and a net gain of 14.22% for rivers.

Requirement 12 – Construction environmental management plan

8.39. The Framework Construction Environmental Management Plan (FCEMP) [EN010131/APP/7.3] states that OLEMP outlines the landscape, biodiversity and heritage impact avoidance measures, as well as the habitat restoration, enhancement, management, and monitoring measures to be implemented once the Scheme is operational. Whilst there is a crossover between the OLEMP and FCEMP, the FCEMP aims at capturing all construction related mitigation.

8.40. Mitigation by design and Scheme evolution is secured in the Outline Design Principles (ODP)[EN010131/APP/2.3] and the OLEMP.

Requirement 13 – Operational environmental management plan

8.41. Before the date of final commissioning of the authorised development, an operational environmental management plan (OEMP) must be submitted to and approved by the relevant planning authority in consultation with the relevant highway authority and the Environment Agency.

8.42. As set out above, the LEMP will be prepared in accordance with the OLEMP and will be submitted to and approved by the relevant local planning authority prior to construction, as secured through a requirement in the DCO. This will include provisions in respect of on-going maintenance and management of ecology.

Requirement 19 – Decommissioning and restoration

8.43. This requirement provides that within 12 months (or such longer period as agreed with the relevant planning authority) of the date the undertaker decides to decommission any part of the authorised development, the undertaker must submit to the relevant planning authority for its approval a decommissioning environmental management plan (DEMP) for that part which substantially accords with the decommissioning statement.

8.44. Upon decommissioning, the physical infrastructure to plough depth at the Solar and Energy Storage Park will be removed and the land 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. Post-decommissioning, the landowner may return the Solar and Energy Storage Park to its original use. It is anticipated that some areas of habitat and biodiversity mitigation and enhancement may be left in-situ for species protection. Any required species licences would be obtained for reinstatement works if necessary.

Outline Landscape and Ecology Management Plan

8.45. The OLEMP sets out the ecology strategy for the scheme which have been implemented as part of the ecology strategy and explains how they have been applied to the design of the Scheme. The OLEMP sets out eight key principles:

- Impact Avoidance;
- Updated Surveys;
- Protected Species Licences;
- Ecological Clerk of Works;
- Tree Works;
- Hedgerow Works;
- Precautionary Working Method; and
- Animal Welfare Requirements.

9. Landscape and Visual

Summary

9.1.1. The list below outlines the main points arising from the Environmental Statement for the Gate Burton Solar Project for landscape and visual:

- [LV1] Sensitivity of residential receptors are considered to be rated too low – generally all residential receptors are considered to be of high sensitivity but here some are reported as moderate. Possibly because of combination at viewpoints with less sensitive receptors like users of roads.
- [LV2] Future baseline seems slightly lacking in detail – information on proposals in local plans for housing (if any) should be reported.
- [LV3] Effect on workers in indoor locations not reported.
- [LV4] Cumulative effects section in chapter is lacking in detail.
- [LV5] Relationship to Glint and Glare chapter lacking detail.
- [LV6] It is noted that the Landscape and Visual Amenity chapter of the ES (Doc. Ref. EN010131/APP/3.1) considers the cumulative effects of the other Cottam, Tillbridge and West Burton schemes. Whilst this is welcomed, the scale of the schemes will have a lasting impact on the landscape of character and setting for central Lincolnshire.

Policy Context

National Policy

Overarching National Policy Statement for Energy (EN-1)

9.2. National Policy Statement (NPS) EN-1 states that the ExA needs to consider the design of a scheme carefully. They should have regard to siting, operational and other relevant constraints the aim should be to minimise harm to the landscape, providing reasonable mitigation where possible and appropriate.

9.3. For development in other areas, paragraph 5.9.15 of NPS EN-1 states that the ExA should '*judge whether any adverse impact on the landscape would be so damaging that it is not offset by the benefits (including need) of the project*'.

9.4. Para 5.9.16 sets out that the ExA should '*consider whether any adverse impact is temporary, such as during construction, and/or whether any adverse impact on the landscape will be capable of being reversed in a timescale that the IPC considers reasonable*'.

Local Policy

Central Lincolnshire Local Plan (2023)

9.5. The Central Lincolnshire Local Plan policies which are relevant to the scheme are set out below.

9.6. Policy S53 states all development must achieve high quality sustainable design which contributes positively to the local character and landscape. Development should

- Be based on a sound understanding of the context, integrating into the surroundings and responding to local history, culture and heritage.
- Relate well to the site.
- Protect any important local views into, out of or through the site.
- Reflect the identity of area and contribute to the sense of place.

9.7. Policy S62 (applies to western part of the Scheme) requires proposals within, or within the setting of, AGLV to:

- Conserve and enhance the qualities, character and distinctiveness of locally important landscapes.
- Protect, and where possible enhance, specific landscape, wildlife and historic features which contribute to local character and landscape quality.
- Maintain landscape quality and minimise adverse visual impacts through high quality building and landscape design.
- Demonstrate how proposals have responded positively to the landscape character in relation to siting, design, scale and massing and where appropriate have retained or enhanced important views, and natural, historic and cultural features of the landscape.
- Where appropriate, restore positive landscape character and quality.

Key Impacts

Construction

Positive

9.8. No positive impacts on landscape or visual receptors during construction have been predicted in the ES, and would not be expected, as construction works are generally disruptive in nature.

Negative

9.9. The construction of the scheme will have several major adverse impacts on the area of West Lindsey. It will have temporary **major** significant visual effects on three Local Landscape Character Areas (LLCA) which includes LLCA 02 – Ancient Woodland Ridge and LLCA 06 – Clay Farmlands, both of which are located within WLDC. These will be affected despite mitigation being implemented.

9.10. There will be several visual receptors which will suffer from **major** significant effects with noticeable changes in the composition of the views.

9.11. Localised excavations and topsoil stripping/temporary storage.

9.12. The introduction of temporary compounds, lighting, stockpiles, machinery, haul rods, associated fencing and signage which will temporarily increase the extent of built development.

9.13. General construction activity, traffic and operations and the movement of plant and machinery which will increase the level of activity across the Order limits.

9.14. Whilst the effects during construction are considered temporary, these could last up to 36 months.

Operational

Positive

9.15. No positive effects on landscape character across the study have been predicted, and the proposals are not predicted to result in any positive effects on the visual environment.

Negative

9.16. During the operational phase of the solar park, it will have several major adverse impacts on the area of West Lindsey. It will have **major** significant visual effects on three LLCA which includes LLCA 02 – Ancient Woodland Ridge and LLCA 06 – Clay Farmlands, both of which are located within WLDC. These will be affected in both This demonstrates the mitigation does not minimise the impacts of the schemes and will have a long-term impact on the area.

9.17. There will be several visual receptors which will have a **moderate** significant effect in both the short and long term (1 and 15 year assessments).

9.18. West Burton Solar Project, Cottam Solar Project, Tillbridge Solar Farm and the Scheme has as a combined cumulative impact on landscape of **moderate** adverse, which is considered significant.

Decommissioning

Positive

9.19. No positive impacts on landscape or visual receptors during decommissioning have been predicted in the ES, and would not be expected, as decommissioning works are generally disruptive in nature.

Negative

9.20. There will be **major** significant effects on LLCA 02 – Ancient Woodland Ridge within WLDC.

9.21. There will also be **major** significant effects on visual receptors across the Scheme.

9.22. Whilst the effects during decommissioning are considered temporary, these could last up to 48 months.

Cumulative Impacts

9.23. The Landscape and Visual Amenity chapter states that it has identified '*at worst Minor adverse effects on landscape during construction for the following projects: West Burton Solar Project, Cottam Solar Project, Cottam Power Station demolition, and Stow Park Road Residential Development*'.

9.24. Furthermore, during the operational phase, it has been assessed that the cumulative effects from the Scheme and Cottam Solar Project or Tillbridge Solar Farm are considered Minor adverse. Cumulative effects with West Burton Solar Project are **moderate adverse** which is considered significant.

9.25. West Burton Solar Project, Cottam Solar Project, Tillbridge Solar Farm and the Scheme has as a combined cumulative impact on landscape of **moderate adverse**, which is considered significant. Given the proximity of the Scheme with these other solar projects, and the combined scale, the Applicant has worked in partnership to identify areas where projects can collaborate to manage environmental effects.

Requirements

Requirement 5 – Detailed design approval

9.26. This requirement stipulates the details that must be submitted to and approved by the Relevant Planning Authority before the authorised development may commence. The details submitted must be in accordance with the Outline Design Principles (ODP) [EN010131/APP/2.3]. The authorised development must be carried out in accordance with the approved details.

Requirement 7 – Landscape and ecological management plan

9.27. The LEMP will be substantially in accordance with the OLEMP. The OLEMP states that in developing the landscape design strategy, particular consideration was given to:

- The recommendations contained within relevant landscape guidelines, including Natural England Statements of Environmental Opportunity (SEO) outlined in the profiles for National Character Areas (NCA) 48 and 45.
- Guidance contained within the Landscape Institute's Infrastructure Technical Guidance Note 04/20.

9.28. The overall objective of the landscape design is to integrate the Scheme into its landscape setting and avoid or minimise adverse landscape and visual effects as far as practicable. Despite this claim, the Landscape and Visual chapter of the ES states the scheme would result in major and moderate impacts on the landscape.

Requirement 9 – Fencing and other means of enclosure

9.29. The undertaker is required to obtain the written approval from the relevant planning authority for any proposed temporary or permanent fences, walls or other means of enclosure, for each part in question. The written details of permanent fencing must be substantially in accordance with the relevant ODP.

Requirement 12 – Construction environmental management plan

9.30. The CEMP will be produced substantially in accordance with FCEMP. The OCEMP provides numerous mitigation methods; however, despite the mitigation methods identified, the ES still comes to the conclusion that the scheme would result in major impacts on the landscape during the construction phase of the Scheme.

9.31. Monitoring of screening is detailed in the Outline LEMP [EN010131/APP/7.10].

Requirement 13 – Operational environmental management plan

9.32. The OEMP will be produced substantially in accordance with FOEMP. The FEOMP details the vegetation planting that is proposed through the OLEMP to mitigate the impacts of the scheme. Similar to the construction phase, despite the vegetation planting, the ES still comes to the conclusion that the scheme would result in moderate impacts on the landscape during the operation of the Scheme.

Requirement 19 – Decommissioning and restoration

9.33. The site will be restored in accordance with the OLEMP despite the mitigation methods identified, the ES still comes to the conclusion that the scheme would result in major impacts on the landscape during construction.

Outline Design Principles

9.34. The ODP provides the guiding principles for the detailed design of the Scheme and is secured by a requirement in the draft DCO. When the detailed design for the Scheme is submitted for approval to the relevant planning authorities, those details must be in accordance with the design principles set out in this ODP

Outline Landscape and Ecology Management Plan

9.35. The OLEMP sets out the landscape design principles which have been implemented as part of the landscape design strategy and explains how they have been applied to the design of the Scheme. The OLEMP sets out three key landscape design principles:

- Careful siting in the landscape;
- Conserving existing vegetation patterns; and
- Creating new green infrastructure.

10. Socio-Economics and Land-Use

Summary

10.1. The list below outlines the main points arising from the Environmental Statement for the Gate Burton Solar Project for Socio-Economic and Land-Use:

- [SELU1] The EIA should consider the socio-economic impacts of displacement of tenant farmers and agricultural workers, and the impact on land-take on the viability of affected farms. This requires full farm impact assessments based on meetings with land-owners and long-term tenants. IEMA does not provide a methodology for assessing these impacts, but there is an established one in the DMRB LA 112 Population and Human Health, and HS2's Scope and Methodology Report.
- [SELU2] Displacement of tenant farmers and agricultural workers is a socio-economic impact and should be covered in the chapter of the ES which deals with such impacts, such as Population and Human Health. Moreover, where there is a cluster of large solar farms there may be a cumulative socio-economic impact on the local agricultural supply industry such as seed, fertiliser and feed merchants and agricultural contractors.
- [SELU3] Loss of food production during the lifetime of a solar farm is not a planning issue as farmers cannot be compelled to produce certain types of crops (except during national emergencies). Based on DMRB guidance, the agricultural holdings assessment should consider the:
    - Type, location and number of agricultural holdings from which land will be required or for which access will affected by a project;
    - Land-take in relation to the size of the holding;
    - The level of existing severance/accessibility restrictions to agricultural land holdings within the study area; and
    - The frequency of use of the agricultural holdings/assets within the study area.
- [SELU4] Both the DMRB and HS2 methodologies provide guidance on assessment of value/sensitivity and magnitude of impact, leading to the assessment of effect.
- [SELU5] Where landowners are bought out by compulsory purchase (as is permissible for Nationally Significant Infrastructure Projects) the financial compensation is not an environmental mitigation and so cannot influence the residual effect of loss of part or all of a farm business. However, where the landowner is a willing participant in the solar scheme, then their share of the income from electricity generation (normally the rental value) can be considered as mitigation, as the solar farm is a form of diversification of the farm business.
- [SELU6] It should be noted that loss of food or other biomass production during the lifetime of a solar farm is not a planning issue.
- [SELU7] Employment figures for the scheme result the creation of 14 full-time equivalent (FTE) positions. It is assessed one job will be lost so the net gain would be 13. Have these figures taken into account the loss of tenant farmers?
- [SELU8] As set out in the agricultural section of this LIR, the Socio-Economic and Land Use chapter of the ES surmises that the scheme contains 73.6ha of BMV and 6.8ha of estimated BMV land, of which approximately 2 ha will be permanently lost due to construction of the substation and permanent planting on site. Confirmation is required as to how this has been calculated as within the Agricultural Land Classification Report, BMV is separated out from grade 3a land for the solar arrays. National and local policy sets out that grade 3a land is BMV land. This means 6.8 hectares of land is classed as BMV rather than grade 80.4 hectares for the solar array element of the scheme.
- [SELU9] Paragraph 12.10.19 of the Socio-Economic chapter in the ES states the operational impacts of the works it is claimed that 73 hectares of BMV will be used for '*ecological mitigation (species rich grassland) or under solar panels, and therefore, could remain in agricultural use throughout operation*'. However, within the decommissioning

element of the scheme, paragraph 12.10.33 states: '*Prior to the commencement of decommissioning, an assessment will be made of the land and soil, and a programme of remedial action will be agreed and during decommissioning undertaken to return land to arable agricultural use.*' This suggests that the land will not be used for agriculture during the proposed 60 year life cycle of the scheme.

- [SELU11] In relation to the point above, it is not clear whether the BMV will offer any versatility during the lifetime of the Scheme.
- [SELU12] It has been assessed that the accommodation within the area will be almost 80% full during the construction of the scheme when the peak workforce will be approximately 400. Whilst this suggests that the accommodation can cater for the Gate Burton Scheme, it must be taken into account whether there will be enough accommodation for workers for the proposed Cottam, Tillbridge and West Burton solar schemes in the area.

Policy Context

National Policy

10.2. Paragraph 5.12.6 of the NPS [EN-1] states that the ExA '*should have regard to the potential socio-economic impacts of new energy infrastructure identified by the applicant and from any other sources that the IPC considers to be both relevant and important to its decision*'.

10.3. The NPS goes on to say the ExA '*should consider whether mitigation measures are necessary to mitigate any adverse socio-economic impacts of the development'*.

Local Policy

10.4. The Central Lincolnshire Local Plan policies which are relevant to the scheme are set out below.

10.5. Policy S10: Supporting a Circular Economy recognises the high energy and material use consumed on a daily basis, and, consequently, is fully supportive of the principles of a circular economy. As such, proposals will be supported, in principle, which demonstrate their compatibility with, or the furthering of, a strong circular economy in the local area.

10.6. Policy S20: Resilient and Adaptable Design requires design proposals to be adaptable to future social, economic, technological and environmental requirements in order to make buildings both fit for purpose in the long term and to minimise future resource consumption. The relevant tests to this Scheme must be met for proposals to be deemed acceptable:

- Allow for future adaptation.
- Be resilient to flood risk, from all forms of flooding.

10.7. Policy S28: Spatial Strategy for Employment requires employment related proposals to be consistent with meeting the following overall spatial strategy for employment. The strategy is to strengthen the Central Lincolnshire economy offering a wide range of employment opportunities focused mainly in and around the Lincoln urban area and the towns of Gainsborough and Sleaford, with proportionate employment provision further down the Settlement Hierarchy (see Policy S1).

10.8. Policy S45: Strategic Infrastructure Requirements states that development proposals will only be granted if it can be demonstrated that there is, or will be, sufficient infrastructure capacity to support and meet all the necessary requirements arising from the proposed development.

10.9. Policy S54 notifies applicants that the potential for achieving positive mental and physical health outcomes will be taken into account for all schemes. Where any potential adverse health impacts are identified, the applicant will be expected to demonstrate how these will be addressed and mitigated.

Key Impacts

Construction

Positive

10.10. It is estimated that the Scheme will require an average of 323 gross direct full-time employment (FTE) jobs on-site per day during the construction period, equivalent to 323 FTE jobs per annum.

10.11. It is estimated that 57% of construction staff could be sourced from the Study Area. 43% of staff would be likely to reside outside of this Study Area (mainly in Lincoln, North Lincolnshire, and Doncaster). On this basis it is estimated that the Scheme will create 184 FTE jobs per annum for residents within the study area during the construction period.

Neutral

10.12. Paragraph 12.10.13 of the Socio-Economics and Land Use chapter states that analysis of the hotel, bed and breakfast and inns accommodation sector has been undertaken to assess the likely capacity against the demand from the potential peak construction workforce (400), and indicates, considering existing seasonal demand and typical occupancy, that capacity is sufficient, and that the workforce can be accommodated within existing provision within a 30-minute drive time radius of the Site. Further analysis to identify accommodation within a 60-minute drive time radius indicates that there would typically be 1,934 remaining rooms at a minimum available after taking into account the construction workforce and typical seasonal occupancy levels.

10.13. The analysis above demonstrates that at peak workforce employment and peak occupancy levels, 100% of the Scheme's peak construction workers could be accommodated within both a 30-minute and 60-minute drive time of the Site. Given this, there would be no effect on the hotel, bed and breakfast, and inns accommodation sector arising from the Scheme.

Negative

10.14. Analysis of the hotel, bed and breakfast and inns accommodation sector has been undertaken to assess the likely capacity against the demand from the potential peak construction workforce (400), and indicates, considering existing seasonal demand and typical occupancy, that capacity is sufficient, and that the workforce can be accommodated within existing provision within a 30-minute drive time radius of the Site. Gate Burton will occupy up to 77% of the accommodation within a 60-minute drive time of the Site. This must be considered in relation with the Cottam, Tillbridge and West Burton scheme. It is likely that there will not be

10.15. Loss of land and any buildings or infrastructure required to construct the Scheme, both temporarily and permanently. The Scheme would require land take from agricultural land, including BMV, and potentially result in severance within holdings or access restrictions to agricultural infrastructure.

10.16. There are a number of PRoW in and around the Order limits and whilst these are to be retained and ongoing access maintained, albeit with some temporary diversion, there would nonetheless be a negative impact to the users of the recreational value of various public rights of way as a result of the development with a change of experience from that of woodland and open fields to a more industrial landscape when travelling through the solar park with its associated infrastructure creating a feeling of enclosure rather than the current open landscape views.

10.17. The Site intersects a small section of a PRoW at Knaith Park. Although the intersection is slight, construction vehicles will cross the PRoW to access a field within the north western portion of the Site. The PRoW will be managed throughout the construction phase to ensure that routes can continue to be used as safely as possible.

10.18. There is potential for noise, air quality, visual and traffic effects arising from construction of the Scheme to impact on the amenity of residents, businesses and users of community facilities.

Operational

Positive

10.19. The Applicant has estimated there will be a gross number of 14 FTE jobs generated by the Scheme once operational.

Neutral

10.20. No impacts identified.

Negative

10.21. The Site consists of agricultural land, with an estimation of equivalent to 1.5 existing jobs at the Site related to agricultural activities. Therefore, there is expected to be some employment loss as a result of the Scheme. 'Existing employment' refers to the employment outcomes which would have occurred without intervention. For example, if the Scheme were to result in a disruption to any existing economic activity currently occurring in relation to the Site.

10.22. There is potential for noise, air quality, and visual effects arising from the operation of the Scheme which would impact on the amenity of residents, businesses and users of community facilities. There are around 200 properties located within 500m of the Site. In addition, there are two businesses within 500m of the Site and nine community facilities within 2km of the Site.

Decommissioning

Positive

10.23. The Scheme will support, on average, 363 total net jobs per annum during the decommissioning period. Of these, 207 jobs per annum will be expected to be taken-up by residents within the Study Area, whilst 156 jobs will likely be taken-up by workers living outside the area.

Negative

10.24. The estimated duration of the decommissioning period is expected to take between 24 and 48 months, similar to that of the construction period of 36 months.

10.25. Prior to the commencement of decommissioning, an assessment will be made of the land and soil, and a programme of remedial action will be agreed and during decommissioning undertaken to return land to arable agricultural use.

10.26. The likelihood of land being returned to viable commercial agricultural use is uncertain and is an assumption that cannot be relied upon. The presence of existing agricultural businesses is clearly unknown and the land condition in 60 years following the commencement of the operational phase of the project cannot be assumed to be able to revert to its previous use.

Requirements

Requirement 4 - Community liaison group

10.27. This requirement requires the undertaker to establish a community liaison group prior to commencement of the authorised development, in order to facilitate liaison between representatives of people living in the vicinity of the Order limits, and other relevant organisations in relation to the construction of the authorised development.

10.28. This would be welcomed by WLDC in order to maintain communication with representatives of local people living within the locality of the Scheme.

Requirement 18 – Skills, supply chain and employment

10.29. A Skills, Supply Chain and Employment (SSCE) plan must be produced to identify opportunities for individuals and businesses to access employment and supply chain opportunities associated with the construction, operation and maintenance of the authorised development, and the means for publicising such opportunities. The which must be substantially in accordance with the outline skills, supply chain and employment plan (OSSCE).

10.30. The OSSCE describes the initial work which has been undertaken by the Applicant to identify the potential workers, skills, equipment, and services required to deliver the Scheme, and to engage with relevant stakeholders.

10.31. The OSSCE identifies the potential types of jobs and skills likely to be required during the construction and operation phases of the Scheme. It also recognises the likely equipment and material requirements for each element of the Scheme.

11. Transport and Access

Summary

11.1. The list below outlines the main points arising from the Environmental Statement for the Gate Burton Solar Project for Traffic and Transport:

- [TT1] A threshold of less than 30 additional vehicles per hour has been classified as having a very low magnitude of impact. Given that most of the additional traffic generated by the proposed development during construction will be heavy goods vehicles (HGVs), this threshold could be considered too high regarding potential adverse effects on amenity, fear and intimidation for non-motorised users, as well as on the amenity of people living or working alongside construction lorry routes, especially for construction lorry routes along relatively lightly traffic country lanes
- [TT2] No surveys of existing usage of public rights of way affected by the solar farm appear to have been undertaken. Therefore, the assessment has not been based on quantification of level of use of the public rights of way, albeit it is likely that usage of these public rights of way will be relatively low due to the rural nature of the location. But without survey data this cannot be confirmed.
- [TT3] The TA does not appear to include any vehicle swept path analysis to demonstrate whether any highway works are required to accommodate large construction vehicles and abnormal loads along the proposed construction lorry routes and at access points for construction work sites. Some of the roads that will provide vehicles access for construction of the cable route corridor are single track lanes with passing places, where enlarged or additional passing places may be required to safely accommodate additional construction traffic. The TA does not seem to provide any analysis to determine if this is the case.
- [TT4] An assessment of the potential environmental effects due to any temporary highway works necessary to accommodate access by large construction vehicles and abnormal loads, that may require the removal of hedgerows for example, are not, therefore, covered by the ES
- [TT5] The potential adverse traffic and transport effects during construction are proposed to be minimised through measures identified in Framework CTMP and an outline Construction Workforce Travel Plan. For these to be effective and achieve the claimed benefits, it will be necessary for the commitments contained in them to be secured under the DCO.
- [TT6] As set out in the Transport and Access chapter of the ES (Doc. Ref. EN010131/APP/3.1), consideration should be given to the coordinated mitigation between all the proposed solar schemes, through planning obligations. The joint approach to the cable corridor should be made a priority in order to limit the impact on
- [TT6] If the Cottam, Tillbridge and West Burton solar farm proposals were to commence at similar times, a worst case scenario would result in approximately 160 HGV vehicles using the local road network per day if peak construction was to coincide with all four schemes. It is not clear whether this would cover the total HGV movements, in which case the number of movements could be over 320.
- [TT6] Appendix 13-Ea: Framework Construction Traffic Management Plan [EN010131/APP/3.3] states that there will be '*it is expected that there will be a number of Abnormal Indivisible Loads (AILs)/ abnormal vehicles required by the Scheme*'. However, exact movements do not appear to be confirmed.
- Appendix C shows the extent of combined construction traffic routes of the other solar projects. Whilst the Cottam and West Burton scheme have separated out the solar array construction routes and a separate route for cable construction. It would be useful if Gate Burton could provide a similar breakdown.

Policy Context

National Policy

11.2. Para 5.13.6 of the NPS (EN-1) sets out the that the SoS should consider the substantial impacts of traffic and therefore should ensure '*that the applicant has sought to mitigate these impacts, including during the construction phase of the development. Where the proposed mitigation measures are insufficient to reduce the impact on the transport infrastructure to acceptable levels, the IPC should consider requirements to mitigate adverse impacts on transport networks arising from the development*'. Moreover, applicants may be willing to enter planning obligations to for funding infrastructure and otherwise mitigating adverse impacts.

11.3. With regards to mitigation, the NPS [EN-1] states that the SoS may attach requirements to a consent where there is likely to be substantial HGV traffic that:

- Control numbers of HGV movements to and from the site in a specified period during its construction and possibly on the routing of such movements.
- Make sufficient provision for HGV parking, either on the site or at dedicated facilities elsewhere, to avoid 'overspill' parking on public roads, prolonged queuing on approach roads and uncontrolled on-street HGV parking in normal operating conditions.
- Ensure satisfactory arrangements for reasonably foreseeable abnormal disruption, in consultation with network providers and the responsible police force.

11.4. Furthermore, if the applicant believes the cost of meeting obligations would be economically unviable, it is not in itself justification for the relaxation of any obligations or requirements needed to secure the mitigation.

Local Policy

11.5. The Central Lincolnshire Local Plan policies which are relevant to the scheme are set out below.

11.6. Policy S45: Strategic Infrastructure Requirements states that development proposals will only be granted if it can be demonstrated that there is, or will be, sufficient infrastructure capacity to support and meet all the necessary requirements arising from the proposed development.

11.7. Policy S47: Accessibility and Transport requires development to contribute towards an efficient and safe transport network. Proposals should demonstrate, where appropriate, that they have had regard to the following criteria:

- Minimise additional travel demand through the use of measures such as travel planning, safe and convenient public transport, car clubs, walking and cycling links and integration with existing infrastructure.

11.8. Policy S59: Green and Blue Infrastructure Network states that proposals that cause loss or harm to the green and blue infrastructure network will not be supported unless the need for and benefits of the development demonstrably outweigh any adverse impacts. Where adverse impacts on green infrastructure are unavoidable, development will only be supported if suitable mitigation measures for the network are provided.

Key Impacts

Construction and Decommissioning

Positive

11.9. There are no positive impacts

Negative

11.10. There will be no PRoW closures as a result of the Scheme; however, all PRoW receptors within the Order limits will be physically separated from construction routes and works.

11.11. The following parts of the network are expected to experience increases of at least 30 additional vehicle trips during the development peak hours. This represents at least a 10% increase compared to baseline flows during the development peak hours or across the day:

- A156 Gainsborough Road (south of Kexby Lane and north of the A1500)
- A1500 Stow Park Road (east of A156) and A1500 Tillbridge Road (east of Saxilby Road)
- A156 Gainsborough Road (south of A1500)
- Marton Road (south of B1241 Gainsborough Road)
- B1241 Kexby Lane (east of Upton Road)
- Headstead Bank (north of Cottam Road)
- A156 High Street/ A1500 Stow Park Road

11.12. It is anticipated that as a worst case during the peak construction period, there would be up to 60 HGVs per day to/ from the Solar and Energy Storage Park representing 120 movements.

11.13. There would also be 30 LGVs per day to/ from the Solar and Energy Storage Park representing 60 movements.

11.14. In addition, there will be up to 138 cars and 16 shuttle services per day associated with staff for the Solar and Energy Storage Park, representing 308 movements.

11.15. Furthermore, for the Grid Connection Corridor, there would be up to 16 HGVs, 12 LGVs and one minibus service for construction workers per day, representing 58 movements.

11.16. The Scheme is expected to result in a medium magnitude of change with respect to fear and intimidation on Kexby Lane and a low magnitude of change with respect to fear and intimidation on Headstead Bank during the construction phase.

Cumulative Impacts

11.17. West Burton Solar Project

- West Burton Solar Project parcels WB1, WB2 and WB3 are all located to the south of the A1500 Till Bridge Lane, towards Sturton-by-Stow, whereas WB4 is located to the south of the A631, to the east of Clayworth. It is not anticipated that any construction trips relating to parcel WB4 would pass through the study area for the Scheme and the cumulative assessment therefore focusses on the other three parcels.
- West Burton is expected to be constructed over a two-year period (starting in 2024 at the earliest), with a planned grid connection date of 2029. Therefore, whilst West Burton Solar Project may be complete prior to the peak construction phase of the Scheme (2026). The average daily average HGV movements for the scheme would be 24, the average daily LGV movements would be 200.
- There is likely to be some temporal and geographical overlap between West Burton Solar Project and the Scheme, therefore discussions have been held with the developers to review how both projects could potentially work together to minimise any cumulative effects where viable. It is considered that a joint CTMP could be prepared between the Scheme and West Burton Solar Project post-consent to manage and mitigate cumulative effects if necessary.

11.18. Cottam Solar Project

- Cottam Solar Project parcels C1, C2 and C3 are all located to the west of the A15 between Lincoln and Scunthorpe. It is not anticipated that any construction trips relating to parcels C2 (located to the north of A631) and C3 (to the east of A159) would pass through the study area for the Scheme and the cumulative assessment therefore focusses on the trips relating to parcel C1 (to the east of B1241).
- There would be approximately 30 HGV It is unclear whether there would be any overlap between the construction phases of each of the three parcels at this stage, however the below figures have been based on a 78-week construction phase.

11.19. Tillbridge Solar

- Tillbridge Solar is located to the south of the A631, west of the A15 between Lincoln and Scunthorpe. It is anticipated that all three proposed access points into the site will be located off the A631.

- At this stage, it is anticipated that the scheme could generate up to 66 HGV deliveries per day (during the construction peak) and on average around 47- 49 HGV deliveries per day. Construction worker numbers are anticipated to peak at 1,125 staff per day with an average of 500 staff per day.

11.20. If all of these proposals were to commence at similar times a worst case scenario would result in approximately **160 HGV vehicles** using the local road network per day. It is not clear whether this would be total movements.

11.21. Shared Grid Connection Corridor

- For the purposes of transport and access, it is considered that a shared Grid Connection Corridor would reduce potential cumulative effects associated with the Scheme and the Cottam and West Burton solar projects as previously set out above. In terms of Scenario 1, this would allow the same pits, trenches, access points, haul routes and compounds to be used, thereby consolidating and reducing trips across the network compared to a situation where separate Grid Connection Corridors were taken forward.
- In terms of Scenario 2, the sequential installation of ducts and cables would reduce any temporal overlap between the Scheme and the Cottam and West Burton solar projects, thereby reducing the peak level of cumulative activity and associated vehicle movements. Whilst this would elongate the overall programme covered by the three projects, this would minimise any cumulative impacts.

Operational

Neutral

11.22. The Scheme Solar Project is expected to attract a low level of vehicle trips during the operational phase i.e. up to 15 vehicle arrivals and 15 vehicle departures daily, representing up to 30 movements a day.

Requirements

Requirement 14 – Construction traffic management plan

11.23. A construction traffic management plan (CTMP) has been submitted to and approved by the relevant planning authority, in consultation with the relevant highway authority. The CTMP must substantially accord with the outline construction traffic management plan.

11.24. The Framework CTMP (FCTMP) provides adequate mitigation for the Green Burton scheme; however, it does not make any reference to the combined CTMP which has been proposed to cover the Cottam and West Burton solar schemes.

Requirement 16 – Public rights of way diversions

11.25. A public rights of way management (PRoW) plan (substantially in accordance with the outline public rights of way management plan) for any sections of public rights of way shown to be temporarily closed on the streets, access and rights of way plans have been submitted to and approved by the relevant planning authority in consultation with the relevant highway authority.

11.26. The Outline PRoW plan outlines the current PRoWs which pass through or run adjacent to the Order limits and demonstrates how safe access will be maintained along and across these PRoW during the construction, operation, and decommissioning of the Scheme, in accordance with Paragraph 2.49.6 of the Draft NPS EN-3. However, it does not make any reference to cumulative effects from the Cottam and West Burton scheme.

12. Climate Change

Summary

12.1. The list below outlines the main points arising from the Environmental Statement for the Gate Burton Solar Project for Climate Change:

- [CC1] ES states beneficial is significant given the reduction in Green House Gas (GHG) Emissions.
- [CC2] The ES states no residual effects during construction, but the ES does demonstrate that there is a significant amount of embodied carbon in all phases of the scheme, i.e. construction, operation and decommissioning.
- [CC3] draft NPS (EN-3) highlights that solar panel efficiency deteriorates over time and applicants may elect to replace panels during the lifetime of the site.

Policy Context

National Policy

12.2. Section 4.8 of NPS EN-1 addresses climate change adaptation in energy infrastructure development. It notes that the IPC (now ExA) should take the effects of climate change into account when developing and consenting infrastructure, referring also to the potential long-term impact of climate change.

12.3. New energy infrastructure will typically be a long-term investment and will need to remain operational over many decades, in the face of a changing climate. Consequently, applicants must consider the impacts of climate change when planning the location, design, build, operation and, where appropriate, decommissioning of new energy infrastructure (paragraph 4.8.5). The IPC (now ExA) should be satisfied that applicants for new energy infrastructure have considered the potential impacts of climate change using the latest UK Climate Projections available at the time the ES was prepared to ensure they have identified appropriate mitigation or adaptation measures. This should cover the estimated lifetime of the new infrastructure (paragraph 4.8.6).

12.4. EN-1 notes the energy NPSs should speed up the transition to a low carbon economy and thus help to realise UK climate change commitments sooner than continuation under the current planning system.

12.5. Paragraph 2.2.5 notes the UK economy is reliant on fossil fuels, and they are likely to play a significant role for some time to come. Most of our power stations are fuelled by coal and gas. The majority of homes have gas central heating, and on our roads, in the air and on the sea, our transport is almost wholly dependent on oil. Paragraph 2.2.6 identifies that the UK needs to wean itself off such a high carbon energy mix: to reduce greenhouse gas emissions, and to improve the security, availability, and affordability of energy through diversification.

12.6. EN-1 also notes that storage has a key role to play in achieving net zero and providing flexibility to the energy system.

12.7. Section 4.9 of the draft NPS (EN-1) focuses on climate change adaptation and reiterates the need to minimise the most dangerous impacts of climate change.

12.8. Draft NPS (EN-3) requires the applicant to consider the design life of solar panel efficiency over time when determining the period for which consent is required. An upper limit of 40 years is typical, although applicants may seek consent without a time-period or for differing time-periods of operation

Local Policy

12.9. The Central Lincolnshire Local Plan policies which are relevant to the scheme are set out below.

12.10. Policy S11: Embodied Carbon requires development to s to reduce the development's embodied carbon content, through the careful choice, use and sourcing of materials. Moreover, all major development proposals should explicitly set out what opportunities.

12.11. The SoS is reminded that from the 1 January 2025, there will be a requirement for a development proposal to demonstrate how the design and building materials to be used have been informed by a consideration of embodied carbon, and that reasonable opportunities to minimise embodied carbon have been taken.

12.12. Policy S14: Renewable sets out the position that renewable energy schemes will be supported where the direct, indirect, individual and cumulative impacts on the following considerations are, or will be made, acceptable. To determine whether it is acceptable, the following tests will have to be met:

- The impacts are acceptable having considered the scale, siting and design, and the consequent impacts on landscape character; visual amenity; biodiversity; geodiversity; flood risk; townscape; heritage assets, their settings and the historic landscape; and highway safety and rail safety.
- The impacts are acceptable on aviation and defence navigation system/communications.
- The impacts are acceptable on the amenity of sensitive neighbouring uses (including local residents) by virtue of matters such as noise, dust, odour, shadow flicker, air quality and traffic.

12.13. Policy S16: Wider Energy Infrastructure states that WLDC will proposals which are necessary for, or form part of, the transition to a net zero carbon. However, proposals should take all reasonable opportunities to mitigate any harm arising from such proposals.

12.14. Policy S20: Resilient and Adaptable Design requires design proposals to be adaptable to future social, economic, technological and environmental requirements in order to make buildings both fit for purpose in the long term and to minimise future resource consumption. The relevant tests to this Scheme must be met for proposals to be deemed acceptable:

- Allow for future adaptation.
- Be resilient to flood risk, from all forms of flooding.

Key Impacts

12.15. The following section identifies the impacts on agriculture during construction, operation and decommissioning. It set out the positive, neutral and negative impacts for each stage.

Construction

Positive

12.16. The ES does not identify any significant residual effects on climate change are predicted during the construction of the Scheme; however, the SoS is reminded to factor the impacts of embodied carbon and GHG emissions during the construction of the scheme.

Neutral

12.17. There are no neutral affects identified.

Negative

12.18. As set out in Volume 1, Chapter 6: Climate Change (Doc. Ref. EN010131/APP/3.1), the greatest GHG impacts occur during the construction phase as a result of the manufacture of the materials and components required. The manufacture of the PV Panels is estimated to account for 257,849 tCO_2e, with the manufacture of BESS leading to a further 77,500 tCO_2e.

Operational

Positive

12.19. The ES concludes that there will be a significant benefit to GHG emissions over the lifetime of the scheme.

Neutral

12.20. There are no neutral affects identified.

Negative

12.21. It must be noted that the 435,753 tCO_2e will be emitted during the lifetime of the scheme from the supply of replacement components. This contributes to 50% of the entire embodied carbon of the scheme, this is less than the emissions calculated for the construction of the proposed development.

12.22. GHG emissions sources within the scope of the operational emissions include operational energy use (i.e. for auxiliary services and standby power), fuel used for the transportation of workers to the Order limits, and maintenance activities (including embodied carbon in replacement parts, plant and machinery requirements, fuel and water use during maintenance activities, transportation of materials and waste to and from the Order limits, and waste management activities).

Decommissioning

Positive

12.23. The ES summarises that there would be no significant residual effects on climate change predicted during the decommissioning of the Scheme.

Neutral

12.24. There are no neutral affects identified.

Negative

12.25. Despite the ES concluding no significant residual effects on climate change, the ES also admits a '*very high degree of uncertainty*' for GHG emissions. The SoS is therefore minded to keep this in mind during their assessment of the scheme. Whilst a calculation of 11,324 tCO_2e has been provided there is a possibility that the emissions could be much higher.

Requirements

12.26. There are no specific requirements related to climate change.

13. Human Health and Wellbeing

Summary

13.1. The list below outlines the main points arising from the Environmental Statement for the Gate Burton Solar Project for Human Health and Wellbeing:

- [HH1] The ES states that there will be a negative impact on human health and wellbeing.
- [HH2] The Scheme will result in patients to GP exceed the numbers recommended by the Royal College of General Practitioners.

Policy Context

National Policy

13.2. Section 4.13 of the NPS states that energy projects have the potential to have an impact on human health. The aspects of schemes which are most likely to have an impact on human health are subject to separate regulation (for example for air pollution) which will constitute effective mitigation of them, so that it is unlikely that health concerns will either constitute a reason to refused consents or require specific mitigation under the Planning Act 2008. However, the IPC will want to take account of health concerns when setting requirements relating to a range of impacts such as noise.

13.3. Moreover, Section 10 of the NPS [EN-1] sets out the importance of open scape that help to underpin people's quality of life and have a vital role to play in promoting healthy living. Although in the case of much energy infrastructure there may be little that can be done to mitigate the direct effects of an energy project on the existing use of the proposed site. The SoS should nevertheless seek to ensure that the applicant minimises these effects and the effects on existing or planned uses near the site by the application of good design principles, including the layout of the project.

Local Policy

13.4. Policy S54 notifies applicants that the potential for achieving positive mental and physical health outcomes will be taken into account for all schemes. Where any potential adverse health impacts are identified, the applicant will be expected to demonstrate how these will be addressed and mitigated.

Key Impacts

Construction & Decommissioning

Positive

13.5. The Applicant will be encouraged to consider a provision of an apprenticeship programme, training placements and develop a school/ college engagement programme to promote science, technology, engineering and mathematics (STEM) education and careers. The Applicant will also investigate measures to promote take up of jobs locally, through engagement with Local Authorities and Job Centre Plus.

Neutral

13.6. There are currently 1.5 existing jobs within the Site, all relating to agricultural activities. There is expected to be some employment loss as a result of the Scheme. The Applicant has estimated that 13 jobs will be directly generated by the Scheme when operational, which will potentially provide some local employment opportunities in permanent jobs.

13.7. It is unlikely that there will be any severance between local residents and the healthcare facilities or other social infrastructure which they use during the construction, operation or decommissioning phase.

Negative

13.8. The ES states that during construction, the impact on Human Health and Wellbeing is assessed as negative.

13.9. During decommissioning, the impact on Human Health and Wellbeing is assessed as negative.

13.10. As a result of the construction of the scheme, nine PRoW routes may be temporarily diverted, however, this is not anticipated to result in severance of communities. The impact on the existing community will also sought be limited as far as possible through provision of a minibus service to transfer construction workers to and from Site and development of a local communications strategy to address any issues and relay information.

13.11. Assuming a worst-case whereby all of the 156 construction workers who do not live locally require places at surgeries within the wider PCN areas (in IMP PCN and Trent Care PCN) where there is more accommodation available, this would increase the patients per GP provision across both geographies from 1,887 patients per GP to 1,889 patients per GP, which although slightly exceeds the recommended ratio set by the Royal College of General Practitioners, does not worsen the current situation to a large extent.

13.12. The implementation of mitigation is expected to prevent the occurrence of significant impacts arising from dust generation during the construction phase, however, there are assessed to be negative impacts on some residents during the construction phase as a result of traffic noise in some locations (Marton Road, B1241 High Street and Headstead Bank).

13.13. Noise and Vibration levels may also exceed LOAEL levels in some locations during the construction and decommissioning phase. During the operational phase, due to the low levels of employment and selection of and location of plant, there is anticipated to be minimal implications on air quality, noise and neighbourhood amenity.

Cumulative

13.14. The construction of Cottam, Gate Burton and West Burton could create a peak of 1,886 workers, which could have implications on access to healthcare services. As explained in the Section 14.7, currently, the GP to Patient ratio is 1:1,880, which is also the recommended ratio set by the Royal College of General Practitioners (1:1,800). However, it is assumed that West Burton 2 and 3 together will have a peak construction workforce of 654 FTE and Cottam 1 will have a peak construction workforce of 832 FTE, in addition to the 363 FTE from Gate Burton. Taking into account these other developments, this could as a worst case scenario, potentially increase this ratio to 1:1905 which greatly exceeds the recommended ratio as set by the Royal College of General Practitioners.

13.15. It is expected the overall cumulative effect on PRoW during construction and decommissioning has the potential to have a greater effect, due to the cumulative scheme of West Burton Solar Park adjacent to the Scheme. If constructed, West Burton 3 could intersect LL|Mton|68/1 (footpath-c.700m), south of the Site, on the north border of the Grid Connection Corridor, connecting the High Street to Stow Park Road. No other PRoW affected by West Burton or Cottam Solar Projects intersect the Order limits of the Scheme.

Operational

Positive

13.16. There are no positive impacts identified.

Neutral

13.17. During operation, the impact on Human Health and Wellbeing is assessed as neutral.

13.18. During the operational phase, there are expected to be 14 full time staff working within the Site per day. Therefore, the Scheme will generate very low levels of traffic and it will not impact local residents' ability to access healthcare facilities.

Negative

13.19. There are no negative impacts identified.

Requirements

Requirement 6 – Battery safety management

13.20. This requirement stipulates that Work No. 2 must not commence until a battery safety management plan has been approved by the relevant planning authority. The relevant planning authority must consult with the Health and Safety Executive, Lincolnshire Fire and Rescue Service, Nottinghamshire Fire and Rescue Service and the Environment Agency before approving the battery safety management plan. The battery safety management plan must be implemented as approved.

14. Noise and Vibration

Summary

14.1.1. The list below outlines the main points arising from the review of the Environmental Statement for the Gate Burton Solar Project's Noise and Vibration chapter:

- [NV1] The monitoring locations and selected sensitive receptors around the solar farm are reasonable although it would have been useful to include Pembroke House (north of ML2) as a sensitive receptor.
- [NV2] Although the ES chapter states that consultation with the Local Authority has taken place to discuss the assessment methodology, it is unclear if the Local Authority has agreed to the proposed approach or the operation phase mitigation measures. It is therefore not possible to confirm that the ES chapter is fully compliant with items 3.6.4 and 3.6.5 from the Scoping Opinion.
- [NV3] The construction phase assessments are considered to be acceptable, however, clarifications listed in Section 7.4 of this report are required.
- [NV4] Table 11-17 shows that the rating level is more than 10 dB above the background sound level at several sensitive receptors (R2, R3, R4, R10, R11, R12, R15, R18 and R19), which cannot be ignored. In a rural area, changes of this magnitude are likely to be perceptible to local residents, who may perceive that the character of the local area is changing. Further information on contextual factors is required to confirm the significance, which may include reference to daytime impacts.
- [NV5] The main approach to mitigation is the use of best practicable means, daytime working hours, stakeholder liaison, and implementation of a construction traffic management plan and construction noise monitoring. These are reasonable general measures for controlling construction activity noise and vibration and construction traffic. However, as temporary construction noise barriers are not included with the list of best practicable means and several sensitive receptors were predicted LOAEL exceedances from NGA3, it is recommended that further consideration is given to the use of temporary noise barriers as a noise control measure.
- [NV6] Paragraph 13.13.35 of the Transport and Access chapter of the ES states that the sequential installation of all three projects' ducts and cables over a maximum 5-year period. However, the Noise and Vibration chapter states that Grid Connection cable works on the three projects will be built sequentially over a six-year period (paragraph 11.13.5).

Policy Context

National Policy

14.2. National Policy Statement (NPS) EN-1 states that should demonstrate good design through selection of the quietest cost-effective plant available; optimisation of plant layout to minimise noise emissions; and, where possible, the use of landscaping, bunds or noise barriers to reduce noise transmission.

14.3. The NPS also states that the SoS should not grant development consent unless it is satisfied that the proposals will meet the following aims:

- Avoid significant adverse impacts on health and quality of life from noise.
- Mitigate and minimise other adverse impacts on health and quality of life from noise.
- Where possible, contribute to improvements to health and quality of life through the effective management and control of noise.

14.4. Moreover the SoS should consider if mitigation methods needed for construction and operational noise over and above any which may form part of the project application. The mitigation methods may include:

- Engineering: reduction of noise at point of generation and containment of noise generated.
- Lay-out: adequate distance between source and noise-sensitive receptors; incorporating good design to minimise noise transmission through screening by natural barriers, or other buildings.
- Administrative: restricting activities allowed on the site; specifying acceptable noise limits; and taking into account seasonality of wildlife in nearby designated sites

Local Policy

14.5. The Central Lincolnshire Local Plan policies which are relevant to the scheme are set out below.

14.6. There is no specific local policy that relates to noise; however, Policy S47: Accessibility and Transport requires development should not result in adverse noise and vibration taking into account surrounding uses of the application site.

Key Impacts

14.7. For the purposes of assessing noise and vibration, the construction programme has been summarised into four scenarios that represent high Noise Generating Activities (NGA). These activities are most likely to generate likely significant effects and are as follows:

- NGA1 – Construction of the BESS and on-site Substation;
- NGA2 – Construction of Inverters and Transformers;
- NGA3 – Construction of Ground mounted solar PV panel arrays;
- NGA4 – Cable installation (general works); and
- NGA5 – Cable installation (HDD activities).

Construction & Decommissioning

Positive

14.8. There are no positive impacts identified.

Neutral

14.9. Piling is proposed to be used for construction of PV Modules. The minimum distance between any piling works for the construction of PV modules and the nearest receptor is approximately 200 m and, therefore, ground borne vibration is unlikely to be an issue during piling works.

Negative

14.10. For NGA4, noise predictions indicate that receptors within approximately 45 m of the Grid Connection Corridor may experience noise levels exceeding the Lowest Observed Adverse Effect Level (LOAEL) and receptors within 15 m may experience noise levels exceeding the Significant Observed Adverse Effect Level (SOAEL). There is potential for significant noise effects due to cable laying activities if they occur within 15 m of a sensitive receptor where exceedances of the SOAEL may occur. The only receptor identified as potentially experiencing significant noise effects is 66 High Street, Marton. NGA4 will take place during core daytime working hours.

14.11. The highest levels of vibration that would be generated by cable laying activities would be the use of vibratory roller during reinstatement.

14.12. Noise calculations indicate that construction traffic will result in a Negligible noise effect on all road links with the exception of Marton Road, B1241 High Street and Headstead Bank. At Headstead Bank, changes in traffic noise are equivalent to a Moderate Adverse effect.

14.13. There is the possibility that either all three projects' ducts and cables are installed within the same construction programme of 24 to 36 months or works on the three projects will be built sequentially over a six-year period.

Operational

Positive

14.14. There are no positive impacts identified.

Neutral

14.15. There are no neutral impacts identified.

Negative

14.16. During operation the plant will operate continuously and there is not expected that there will be any noticeable impulsive or intermittent characteristics from plant noise emissions. The noise modelling has indicated that at all receptors the LOAEL is exceeded but the SOAEL is not.

Requirements

Requirement 12 – Construction environmental management plan

14.17. The OCEMP which will inform the CEMP sets out mitigation for any noise impacts which could result from the construction and decommissioning elements of the Scheme.

14.18. A construction noise monitoring scheme will be developed in the CEMP(s). The Environmental Manager will regularly record compliance in a logbook.

14.19. The OCEMP states all works that are undertaken outside of core work periods, a Section 61 consent will need to be obtained by the principal contractor. This will be agreed with the local planning authority and contain details on the methodology, mitigation, communication strategy and monitoring. See section 3 for all mitigation measures related to noise.

Requirement 15 – Operational noise

14.20. This requirement stipulate that Work Nos. 1, 2 and 3 may not commence until an operational noise assessment (containing details of how the design has incorporated mitigation set out in the Environmental Statement [EN010131/APP/3.1] in respect of operational noise rating levels has been complied with) has been submitted to and approved by the relevant planning authority. The design in the operational noise assessment must be implemented as approved.

15. Glint and Glare

Summary

15.1. The list below outlines the main points arising from the Environmental Statement for the Gate Burton Solar Project for glint and glare:

- [GG1] The assessment should also include first floor windows in residential buildings which in this instance not considered.
- [GG2] Figure 3 - There needs to be an investigation as to whether there is any railway signal(s) between point 1 and 25.
- [GG3] For the ground-based receptor mitigation proposal indicated is chapter 7, it is not clear if the hedgerows proposed to be implemented are instant, matured, and ready made at 3m height?
- [GG4] There appears to be no mitigation for residential receptor 69 which is in the middle of the arrays.

Policy Context

National Policy

15.2. Paragraph 3.10.93 of the draft NPS (EN-3) states that '*solar panels may reflect the sun's rays at certain angles, causing glint and glare. Glint is defined as a momentary flash of light that may be produced as a direct reflection of the sun in the solar panel. Glare is a continuous source of excessive brightness experienced by a stationary observer located in the path of reflected sunlight from the face of the panel. The effect occurs when the solar panel is stationed between or at an angle of the sun and the receptor*'.

15.3. Moreover, when a glint and glare assessment is undertaken, the potential for solar PV panels, frames and supports to have a combined reflective quality may need to be assessed, although the glint and glare of the frames and supports is likely to be significantly less than the panels.

Key Impacts

Construction & Decommissioning

Positive

15.4. There are no positive impacts on from glint and glare during construction and decommissioning.

Neutral

15.5. The ES states that there are no significant residual effects on glint and glare are expected during the construction and decommissioning phases

Negative

15.6. There are no negative impacts on from glint and glare during construction and decommissioning.

Operational

Positive

15.7. There are no positive impacts on from glint and glare during operation.

Neutral

15.8. Solar reflections are possible at 22 of the 24 rail receptor points assessed within the 1km study area. Upon reviewing the actual visibility of the receptors, glint and glare impacts reduce to None for

all receptors and are therefore Not Significant. Mitigation is therefore not required for the rail receptor points.

Negative

15.9. Solar reflections are possible at 79 of the 107 residential receptors. The initial bald-earth scenario, with no consideration of local vegetation, other obstacles, and cloud cover, identified potential impacts as High at 18 receptors, Medium at 10 receptors, Low at 51 receptors, and None at the remaining 28 receptors. Upon reviewing the actual visibility of receptors, glint and glare impacts remain High for one receptor, Medium for one receptor, Low for four receptors, and reduced to None for all remaining receptors. Once mitigation was implemented, overall impacts remained Low for four receptors, but reduced to None for all remaining receptors.

15.10. Solar reflections are possible at 92 of the 95 road receptor points assessed in the 1km study area. Upon reviewing the actual visibility of the receptors, glint and glare impacts remain High for 16 receptor points and reduce to None for the remaining 79 receptors.

Requirements

Requirement 13 – Operational environmental management plan

15.11. Mitigation measures are required to be put in place due to the High and Medium impacts that found during the visibility analysis at two residential receptors and 16 road receptors.

15.12. These mitigation measures include hedgerows to be implemented along the boundaries highlighted in ES Volume 3, Appendix 10-D: Figure 5 [EN010131/APP/3.3]. These hedgerows will be infilled and maintained to a height of at least 3 metres and will screen all views of the Scheme where glint and glare is possible at the identified receptors. Further information is presented in Appendix 10-D of the ES [EN010131/APP/3.3]. These measures will be secured through the Outline LEMP [EN010131/APP/7.10].

16. Cultural Heritage

Summary

16.1. The list below outlines the main points arising from the review of the cultural heritage chapter:

- [CH1] There is the potential for 63 known heritage assets which could be impacted by the Scheme.

Policy Context

National Policy

16.2. Section 5.8 of the National Policy Statement for Energy (NPS) (EN-1) state that the IPC (now ExA) should consider the impact of a proposed development on any heritage assets. They should take into account the particular nature of the significance of the heritage assets and the value that they hold for this and future generations. This understanding should be used to avoid or minimise conflict between conservation of that significance and proposals for development.

Local Policy

16.3. The Central Lincolnshire Local Plan policies which are relevant to the scheme are set out below.

16.4. Policy S57: The Historic Environment states that development should '*protect, conserve and seek opportunities to enhance the historic environment*'.

Key Impacts

Construction & Decommissioning

Positive

16.5. There are no positive impacts on from Cultural Heritage during construction.

Neutral

16.6. There are 63 known heritage assets which have the potential to be subject to physical or impacts to the value of the assets through change to their setting as a result of the Proposed Development. The following assets have been considered to have a neutral impact:

- Fleet Plantation moated site (1008594), HER (MNT15343; MNT4640)
- Some of the assets within Gate Burton non-designated parkland (MLI98360)
- Stephenson's Hill House (MLI118133)
- Cottages south of the parkland at Gate Burton (AEC001)
- House north of Clay Lane (AEC002)
- Kennels (AEC003)
- Romano-British settlement site (AEC012)

Negative

16.7. There are in total 63 known heritage assets coupled with the historic landscape character which have the potential to be subject to physical or impacts to the value of assets through change to their setting as a result of the Proposed Development. The following assets have been considered to have a significant effect due to the Proposed Development:

- Cropmarks of undated rectangular enclosure
- Romano-British settlement site (AEC009)
- Iron Age / Romano-British enclosure (AEC010)
- Romano-British field system (AEC011)

- The Winter Camp of the Viking Great Army at Torksey (MLI125067)
- Cropmarks indicating Iron Age and Romano-British activity (MLI52472; AEC013)
- Cropmarks of probable Roman activity (MLI52489)
- Cropmarks at South Leverton (MNT4983)
- Iron Age / Roman settlement, Cottam (MNT15983)
- Romano-British settlement site (AEC014)

Operational

Positive

16.8. There are no positive impacts on from Cultural Heritage during Operation.

Neutral

16.9. The hedgerow along the A156 will be replanted post construction and will improve the visual appearance of the Scheme within the park's setting.

Negative

16.10. None.

Requirements

Requirement 11 – Archaeology

16.11. This requirement stipulates that the authorised development must be implemented in accordance with the archaeological mitigation strategy (AMS).

16.12. The AMS sets out the scope and guiding principles for the planning and implementation of archaeological mitigation works in relation to the Scheme. The AMS is presented in two parts: the first part of the document (Part 1; this part) sets out the archaeological mitigation works within the Solar and Energy Storage Park and the second part of the document (Part 2; provided in Appendix A) sets out the archaeological mitigation works within the Grid Connection Corridor.

16.13. The Scheme has been designed, as far as practicable, to avoid or reduce effects on cultural heritage assets through siting of the Scheme components, including panel free heritage buffer zones.

16.14. Whilst the AMS is considered a comprehensive document which aims to mitigate the impacts of the Scheme, part 2 of the document does not reference the proposed Cottam or West Burton solar schemes which will share the Grid Connection corridor.

17. Water Environment

Summary

17.1. The list below outlines the main points arising from the review of the water environment chapter:

- [WE1] There are several impacts identified in the ES on the water environment which are set out below.

Policy Context

National Policy

17.2. Section 5.15 of the National Policy Statement for Energy (NPS) (EN-1) focuses on water quality and resources. In the decision making process, the SoS should note that all activities that discharge to the water environment are subject to pollution control. Moreover, the SoS will '*generally need to give impacts on the water environment more weight where a project would have an adverse effect on the achievement of the environmental objectives established under the Water Framework Directive*'.

17.3. NPS [EN-1] also states that the SoS '*should consider whether appropriate requirements should be attached to any development consent and/or planning obligations entered into to mitigate adverse effects on the water environment*'.

Local Policy

17.4. The Central Lincolnshire Local Plan policies which are relevant to the scheme are set out below.

17.5. Policy S21: Flood Risk and Water Resources requires all proposals that are likely to impact on surface or ground water should consider the requirements of the Water Framework Directive. The development should demonstrate:

- That water is available to support the development proposed.
- The surface water hierarchy has been followed.
- No surface water connections are made to the foul system.
- The development contributes positively to the water environment and its ecology where possible and does not adversely affect surface and ground water quality in line with the requirements of the Water Framework Directive.
- Proposals with the potential to pose a risk to groundwater resources are not located in sensitive locations to meet the requirements of the Water Framework Directive.
- Relevant site investigations, risk assessments and necessary mitigation measures for source protection zones around boreholes, wells, springs and water courses have been agreed with the relevant bodies.

17.6. Policy S59: Green and Blue Infrastructure Network states that proposals that cause loss or harm to the green and blue infrastructure network will not be supported unless the need for and benefits of the development demonstrably outweigh any adverse impacts. Where adverse impacts on green infrastructure are unavoidable, development will only be supported if suitable mitigation measures for the network are provided.

Key Impacts

Construction & Decommissioning

Positive

17.7. There are no positive impacts reported.

Neutral

17.8. It is also reported that six crossings of unnamed agricultural ditches will be required for the Grid Connection Corridor to Cottam Substation. These ditches would be crossed utilising an open-cut technique, this would cause there to be an impact on water quality due to sediment disturbance and construction runoff and spillages entering the watercourses.

Negative

17.9. The cable corridor crosses the River Trent, Seymour Drain, Marton Drain and several unnamed watercourses. The ES states that Grid Connection Corridor will be constructed beneath the channels of the watercourses via HDD techniques. This therefore causes there to be a potential impact to the water quality of the watercourses.

17.10. The ES states that 17 watercourse crossings could be required in order to facilitate access track crossings, and it has been assumed as part of the ES that these will all be culverted. Work will be required in those watercourse crossing channels and therefore the hydrological and sediment regimes will be affected coupled with the increased risk of runoff entrained with sediment or accidental spillages. There will also be a direct loss of riparian, bank and bed habitats as these will be replaced by culverts. The structures could reduce the movement of mammals and interrupt continuity of the natural hydraulic and sediment regimes.

17.11. The six open cut water crossing required for the Grid Connection corridor would also cause an negative impact on the to the watercourse and riparian habitats surrounding the ditches and the hydrological and sediment regimes during construction.

17.12. There is also the potential that the watercourses and ponds surrounding the site could be impacted from site runoff and chemical spillages.

17.13. A proportion of the site and the majority of the cable corridor is situated in Flood Zone 2 and 3 therefore during the construction phase there is an increased risk to flood risk receptors due to the increased rate and volume of surface water runoff from an increase in impermeable areas.

Operational

Positive

17.14. There are no positive impacts reported.

Neutral

17.15. During the operational phase the impact to water quality has been assessed as neutral.

17.16. The flood risk during the operational phase has been assessed as neutral due to the design of the Solar Panels being raised a minimum of 800mm above ground level and the location of compounds and battery storage facilities. The grid connection corridor is below the ground and therefore once the ground is reinstated there would be no change to the baseline conditions.

Negative

17.17. The Scheme will require new culverts to be installed to facilitate access track crossings this will cause a section of the channel to be permanently lost.

Requirements

Requirement 10 – Surface and foul water drainage

17.18. This requirement stipulates that Work No. 1A may not be commenced until the details of the surface water drainage and (if any) foul water drainage system (substantially in accordance with the outline drainage strategy) has been submitted to and approved by the relevant planning authority. The approved scheme must be implemented and maintained throughout the construction and operation of the authorised development.

Requirement 12 – Construction environmental management plan

17.19. Temporary drainage will be monitored throughout construction. Specific details will be confirmed in detailed CEMP.

17.20. The Water Management Plan (WMP) will include details of pre, during and postconstruction water quality monitoring. This will be based on a combination of visual observations and reviews of the Environment Agency's automatic water quality monitoring network.

Requirement 13 – Operational environmental management plan

17.21. The OCEMP states that the Outline Drainage Strategy ES Volume 3: Appendix 9-C [EN010131/APP/3.3] outlines management of surface. The drainage design provides for the attenuation of surface water runoff from the operational Order limits, whilst minimising flood risk to the Scheme and surrounding areas. In accordance with planning policy guidance runoff from the Order limits requires attenuation to ensure no increase in surface water discharge rates and to provide water quality treatment of runoff water.

17.22. The Outline Drainage Strategy and Outline Battery Safety Management Plan [EN010131/APP/7.1] also outlines how firewater runoff will be managed. They also include detail on operation and management of the drainage infrastructure in order to ensure that they continue to function effectively throughout the lifetime of the Scheme. The Outline Drainage Strategy will be developed into a Detailed Drainage Strategy post consent.

18. Other Environmental Topics

18.1. Chapter 15: The Other Environmental Topics of the ES describes and assesses the potential effects of the Scheme on:

- Air Quality;
- Glint and Glare (covered in section 16 of this LIR);
- Ground Conditions;
- Major Accidents and Disasters;
- Telecommunications, Television Reception and Utilities; and
- Waste.

18.2. This section covers the topics outlined above with the exception of Glint and Glare which is covered in section 16 of this report.

Summary

18.3. The list below outlines the main points arising from the review of the ground conditions chapter:

- [OET1] – Within the Scoping Opinion the Inspectorate commented: *"For the avoidance of doubt, unit the results and recommendations of the PRA are known, there is insufficient evidence to support scoping out an assessment of ground conditions"*. However the Ground Conditions subsection of Chapter 15, does not include an impact assessment therefore West Lindsey cannot report the impacts due to the Proposed Development.

Policy Context

National Policy

Air Quality

18.4. NPS [EN-1] states that the SoS '*should generally give air quality considerations substantial weight where a project would lead to a deterioration in air quality in an area or leads to a new area where air quality breaches any national air quality limits*'.

18.5. In all cases the IPC must take account of any relevant statutory air quality limits.

18.6. The UK Air Quality Strategy (AQS) identifies nine ambient air pollutants that have the potential to cause harm to human health and two for the protection of vegetation and ecosystems. The AQS defines objectives for these pollutants that aim to reduce the impacts of these pollutants to negligible levels. The objectives are not mandatory but rather targets that local authorities should try to achieve.

Ground Conditions

18.7. The NPS [EN-1] states that the SoS should ensure that appropriate weight is attached to geological interests within the wider environment.

Major Accidents and Disasters

18.8. The EIA Regulations require consideration to be given to the risks of major accidents and disasters.

Waste

18.9. Section 5.14 of the NPS [EN-1] requires the SoS to take into account the extent to which the applicant has proposed an effective system for managing hazardous and non-hazardous waste arising from the construction, operation and decommissioning of the proposed development. The SoS should be satisfied that:

- Any such waste will be properly managed, both on-site and off-site.

- The waste from the proposed facility can be dealt with appropriately by the waste infrastructure which is, or is likely to be, available.
- Adequate steps have been taken to minimise the volume of waste arisings, and of the volume of waste arisings sent to disposal, except where that is the best overall environmental outcome.

18.10. Furthermore, the NPS [EN-1] should ensure that appropriate measures for waste management are applied through the use of obligations and requirements.

Local Policy

18.11. The Central Lincolnshire Local Plan policies which are relevant to the scheme are set out below.

Air Quality

18.12. Policy S14: Renewable Energy states that whilst renewable energy scheme will be supported, the impacts of the development are deemed acceptable on the amenity of sensitive neighbouring uses by virtue of matters such as air quality.

18.13. Policy S53: Design and Amenity requires that all development will not result in adverse noise and vibration taking into account surrounding uses nor result in adverse impacts upon air quality from odour, fumes, smoke, dust and other sources.

Key Impacts

18.14. The following sections set out the impacts in the Other Environmental Topics of the ES.

Construction

Positive

Air Quality

18.15. There are no positive impacts during construction of the scheme.

Ground Conditions

18.16. Impacts in relation to Ground Conditions are not reported within Chapter 15 of the Environmental Statement.

Major Accidents and Disasters

18.17. There are no positive impacts during construction of the scheme.

Waste

18.18. There are no positive impacts relating to waste reported within the Environmental Statement.

Neutral

Air Quality

18.19. Sensitivity of ecological sites bearing statutory designations within the study area to dust-related impacts is low due to their distance to the Site. For those Ancient Woodland sites situated within the Order limits and ZoI, a high risk of dust-related impacts has been conservatively determined. However, providing adequate and appropriate mitigation is implemented, such as the anticipated minimum 20m buffer during both construction and operation, the effects of dust generation during the construction and operation of the Scheme are expected to be negligible and therefore a low risk to ecology has been predicted.

Ground Conditions

18.20. Impacts in relation to Ground Conditions are not reported within Chapter 15 of the Environmental Statement.

Major Accidents and Disasters

18.21. There are no negative impacts identified.

Waste

18.22. There are no neutral impacts relating to waste reported within the Environmental Statement.

Negative

Air Quality

18.23. Dust generation during the construction phase is anticipated to occur for the duration of the works.

18.24. Due to the size of the Site, and the potential for having more than 10 heavy earth-moving vehicles active on-site at any one time, the potential dust emissions magnitude associated with earthworks is considered to be large.

18.25. The sensitivity of the area to dust soiling during the ground-enabling and earthworks phase is defined as high based on the IAQM category of between 10 to 100 sensitive receptors within 20m of the Site. The Site has consequently been determined to pose a high risk of dust soiling.

18.26. Sensitivity of ecological sites bearing statutory designations within the study area to dust-related impacts is low due to their distance to the Site. For those Ancient Woodland sites situated within the Order limits and Zone of Influence, a high risk of dust-related impacts has been conservatively determined.

18.27. There are anticipated to be a maximum of 66 HGV movements per day during the peak construction phase. Considering the size of the Site in conjunction with the anticipated HGV movements, the potential dust emissions magnitude for the trackout of materials is considered to be large.

Ground Conditions

18.28. Impacts in relation to Ground Conditions are not reported within Chapter 15 of the Environmental Statement.

Major Accidents and Disasters

18.29. There is a potential fire risk associated with certain types of batteries such as lithium ion.

Waste

18.30. There is the possibility that there will be a surplus of excavated material which may not be reused on site, and therefore would be taken to landfill to be disposed of.

Operational

Neutral

Air Quality

18.31. There are no impacts identified.

Major Accidents and Disasters

18.32. On the rare possibility that a major accident and disaster does occur, the significance of the effect would correlate to the scale of the major accident and disaster event. The focus is on prevention of major accidents and disasters, and mitigation if an event does occur. Taking into account the good industry practice and additional mitigation measures discussed above, the risk of accidents and disasters is considered low.

Negative

Air Quality

18.33. The Scheme will be operated by a maximum of 14 full time equivalent (FTE) staff per day, predominantly undertaking maintenance tasks. In addition, a maximum of three to four visitors per week (equating to one visitor per day) are assessed for the purpose of deliveries, and replacement

of components. Staff vehicles and those used for maintenance will primarily be four wheeled drive vehicles and vans, with HGVs accessing the site during this phase on an occasional basis.

Ground Conditions

18.34. Impacts in relation to Ground Conditions are not reported within Chapter 15 of the Environmental Statement.

Waste

18.35. Throughout the 60 year operational phase, it is expected that there will be the requirement to replace some or all of the solar and storage energy park elements. It is anticipated that the recovery rate would be greater than 60% however the rest would be diverted to landfill.

Decommissioning

Positive

18.36. See construction impacts.

Neutral

18.37. See construction impacts.

Negative

Air Quality

18.38. See construction impacts.

Waste

18.39. The waste arising from the decommissioning phase is reported to follow the same approach as the recycling of key components as that of the operational phase. However, the impact during the decommissioning phase has not been reported.

Requirements

Requirement 12 – Construction environmental management plan

18.40. The mitigation measures to be incorporated into the Framework CEMP [EN010131/APP/7.3], for the Scheme are summarised in Table 15-3 and Table 15-4 based on any mitigation that is 'highly recommended' in the IAQM dust guidance.

18.41. Minimising the risk of major accidents during construction, operation and decommissioning will be addressed through appropriate risk assessments as required in the Framework CEMP [EN010131/APP/7.3], OEMP [EN010131/APP/7.4] and DEMP [EN010131/APP/7.5]. The implementation of those plans will be secured via a requirement to the DCO.

Requirement 13 – Operational environmental management plan

18.42. An Outline BSMP [EN010131/APP/7.1] has been produced for the Scheme and will be updated and maintained as a 'live document' throughout the operational phase of the Scheme. The implementation of the strategy will be secured via requirement to the DCO.

18.43. The risk of damage to utilities during construction would be minimised through protective measures within the DCO and embedded mitigation, which would involve those measures listed above, close liaison with utility providers and mapping infrastructure that crosses the Scheme and avoiding it through the design. The draft DCO also includes protective provisions for the protection of electronic communication networks and utilities, and engagement with relevant statutory undertakers in this respect is ongoing. No further mitigation would be required.

Requirement 19 – Decommissioning and restoration

18.44. At the end of the Scheme's operational life, it will be decommissioned. A Framework Decommissioning Environmental Management Plan (DEMP) [EN010131/APP/7.5] has been

prepared as part of the EIA, that will set out the general principles to be followed in the Detailed Decommissioning Plan that will be prepared prior to decommissioning occurring.

Outline Battery Fire Safety Management Plan

18.45. An Outline Battery Fire Safety Management Plan (BSMP) [EN010131/APP/7.1] has been prepared and is provided with the DCO application.

19. Cumulative Effects

Summary

19.1. [CE1] The key impact on cumulative effects would be from the proposed Cottam, Tillbridge and West Burton solar farms that are located within West Lindsey.

Policy Context

19.2. The current NPS EN-1 directs the IPC (now ExA) to consider 'how the accumulation of, and interrelationship between, effects might affect the environment, economy or community as a whole, even though they may be acceptable when considered on an individual basis with mitigation measures in place'.

19.3. Paragraph 5.12.3 of Section 5.12 (Socioeconomics) identifies the potential cumulative impact of development proposals. It notes that if development consent were to be granted to for a number of projects within a region and these were developed in a similar timeframe, there could be some short-term negative effects, for example a potential shortage of construction workers to meet the needs of other industries and major projects within the region.

19.4. Draft NPS EN-1 notes that when 'considering any proposed development, in particular when weighting its adverse impacts and its benefits, the Secretary of State should take into account: [..] its potential adverse impacts, including any long-term and cumulative adverse impacts, as well as any measures to avoid, reduce, mitigate or compensate for any adverse impacts. In this context, the Secretary of State should take into account environmental, social and economic benefits and adverse impacts, at national, regional and local levels'.

Key Impacts

19.5. WLDC has significant concerns regarding the potential cumulative impact of the Gate Burton project with the Cottam, West Burton and Tillbridge NSIPs.

19.6. Whilst Gate Burton will be assessed on its own merits, the status of Cottam and West Burton as DCO applications in their 'pre-examination' phase (at the date of this report)

19.7. Table 19-1 below provides a summary of the key cumulative impacts associated with Gate Burton and the other proposed solar schemes which are located with the boundary of WLDC.

Table 19-1 – Cumulative Impacts

Topic	Impact
Ecology and Nature Conservation	If the proposed Cottam and West Burton solar schemes were consented, there is the potential that three individual sets of ducts and cables will pass through the Gird Connection corridor near Marton. If all three schemes were constructed at the same time then each scheme would require a maximum construction working width of between 25 m and 30 m, will be installed within a 100 m corridor. Given, that each project will require its own working corridor with associated trench, it is assumed that regardless of which scenario is taken forward, that disturbance to, or loss of habitats will be temporary, e.g., species poor hedgerows and dry agricultural drainage ditches, with habitats re-instated once construction is complete. As each project's ducts and cable run will be separate, then any habitat re-instated or planted shouldn't be subsequently disturbed regardless of scenario.
	In the scenario where the cables would be constructed sequentially by each scheme, it is likely to result in the potential fragmentation of linear habitats, e.g., hedgerows and drainage, for a greater period of time (up to five years), with the potential for various sections of these features to be lost or disturbed throughout that period. In turn, this has the potential to reduce connectivity for a wide range of wildlife.
	It is considered that the West Burton Solar Project and the Cottam Solar Project have the potential to result in cumulative effects where the overall loss of arable farmland has the potential to reduce nesting and foraging habitat for Skylark. Both projects identify Skylark as requiring additional mitigation.

Landscape and Visual	The Landscape and Visual Amenity chapter states that it has identified 'at worst Minor adverse effects on landscape during construction for the following projects: West Burton Solar Project, Cottam Solar Project, Cottam Power Station demolition, and Stow Park Road Residential Development'.
	Furthermore, during the operational phase, it has been assessed that the cumulative effects from the Scheme and Cottam Solar Project or Tillbridge Solar Farm are considered Minor adverse. Cumulative effects with West Burton Solar Project are moderate adverse which is considered significant.
	West Burton Solar Project, Cottam Solar Project, Tillbridge Solar Farm and the Scheme has as a combined cumulative impact on landscape of moderate adverse, which is considered significant. Given the proximity of the Scheme with these other solar projects, and the combined scale, the Applicant has worked in partnership to identify areas where projects can collaborate to manage environmental effects.
Traffic and Transport	If the Cottam, Tillbridge and West Burton solar farm proposals were to commence at similar times, a worst case scenario would result in approximately 160 HGV vehicles using the local road network per day if peak construction was to coincide with all four schemes.
	Any overlaps between the construction vehicle trips associated with the Scheme and other schemes are likely to be primarily confined to wider strategic routes. Other schemes are not likely to contribute to the effects on transport and access receptors (including the A156, Kexby Lane, Willingham Road, Marton Road, and the A1500 in Lincolnshire and Cottam Road, Headstead Bank, Broad Lane, Cow Pasture Lane and Town Street in Nottinghamshire)
Socio-Economic and Land Use	The combined effect of the construction of the cumulative developments is likely to bring considerable additional employment to the local economy.
	If all the schemes are to be realised there will be considerable additional employment demand from some of the cumulative schemes. Most cumulative schemes, however, will not generate considerable operational employment due to their nature as infrastructure or utilities projects.
Cultural Heritage	The proposed Cottam Solar Project and West Burton Solar Project will contribute to the impact identified in this assessment on the Grade I listed Church of St Mary at Stow (1146624) through additional development within its wider landscape setting.
	The Stow Park Road Residential Development will contribute to the impact identified in this assessment on the non-designated heritage asset (MLI52472; AEC015) through additional physical impacts to the asset. The asset comprises a series of ditches and linear features which represent an Iron Age / Romano-British field system, which extend outside of the Scheme boundary towards the north-west, extending into the redline boundary of the other development.
Human Health and Wellbeing	The construction of Cottam, Gate Burton and West Burton could create a peak of 1,886 workers, which could have implications on access to healthcare services. As explained in the Section 14.7, currently, the GP to Patient ratio is 1:1,880, which is also the recommended ratio set by the Royal College of General Practitioners (1:1,800). However, it is assumed that West Burton 2 and 3 together will have a peak construction workforce of 654 FTE and Cottam 1 will have a peak construction workforce of 832 FTE, in addition to the 363 FTE from Gate Burton. Taking into account these other developments, this could as a worst case scenario, potentially increase this ratio to 1:1905 which greatly exceeds the recommended ratio as set by the Royal College of General Practitioners.

Shared Grid Connection Corridor

19.8. The Grid Connection Corridor has the potential to be shared with the Cottam and West Burton solar projects above. To better understand the effects associated with the Grid Connection Corridor for this Scheme, and cumulatively, the following Scenarios have been considered:

- Scenario 1: All three projects' ducts and cables are installed within the same construction programme of 24-36 months. As a worst case, it is assumed all the ducts will be installed at once and launch and reception pits and trenches will be backfilled so the area can then be

re-instated. Due to the uncertainty of each project, three lots of separate cable-pulling activities are assumed. The access points, haul routes and compounds will remain in place for a maximum of 36 months to enable future cable pull.

- Scenario 2: The sequential installation of all three projects' ducts and cables over a maximum 5-year period. As a worst case, all projects assume the construction, and subsequent removal of the haul road, and compounds.

19.9. The ES states that tor the purposes of transport and access, it is considered that a shared Grid Connection Corridor would reduce potential cumulative effects associated with the Scheme and the Cottam and West Burton solar projects as previously set out above. In terms of Scenario 1, this would allow the same pits, trenches, access points, haul routes and compounds to be used, thereby consolidating and reducing trips across the network compared to a situation where separate Grid Connection Corridors were taken forward. In terms of Scenario 2, the sequential installation of ducts and cables would reduce any temporal overlap between the Scheme and the Cottam and West Burton solar projects, thereby reducing the peak level of cumulative activity and associated vehicle movements. Whilst this would elongate the overall programme covered by the three projects, this would minimise any cumulative impacts.

Other Key Projects Under Development

19.10. There are a number of key developments that will have an interrelationship with the Gate Burton. The Applicant has identified some of the schemes in its ES

19.11. The projects that the Councils consider of substantive relevance to cumulative impacts of the Scheme in Table 19-2.

Table 19-2 – Solar and Other Energy Developments in Proximity to the Development Site

Name	Location	Capacity (MW)	Comment
Cottam Solar Project	West Lindsey and Bassetlaw	862.5	Application by Cottam Solar Project Limited (Island Green Power) Shares same Grid Connection Corridor with the Gate Burton and West Burton Scheme. Currently in pre-application phase.
West Burton Solar Project	West Lindsey and Bassetlaw	480	Application by Cottam West Burton Solar Project Limited (Island Green Power) Shares same Grid Connection Corridor with the Gate Burton and West Burton Scheme. Currently in pre-application phase.
Tillbridge Solar Project	West Lindsey and Bassetlaw	Approx. 500	Application by Tillbridge Solar Limited The application is expected to be submitted to the Planning Inspectorate Q4 2023. After receipt of the application, there will be 28 days for the Planning Inspectorate (PINS) to review the application and decide whether or not to accept it for examination. If the application is accepted, PINS will confirm the timescale within which people can register to become an Interested Party by making a Relevant Representation.

Major Energy Projects in the East of England

19.12. There are other major energy projects taking place around the region that would likely require some of the same skills and workforce needed for the construction of this project as set out in the table below. In its impact assessment of this project, the applicant has not considered the implications of these other projects, and the cumulative impact of the projects on the local and regional workforce availability for businesses in the area.

Table 19-3 – Energy NSIPs in the East of England listed by the Planning Inspectorate

Project	Developer	Stage
Oaklands Farm Solar Project	Oaklands Solar Farm Limited	Pre Application
Beacon Fen Energy Park	Beacon Fen Energy Park Limited	Pre Application
Springwell Energy Farm	Springwell Energy Farm Limited	Pre Application
Temple Oaks Renewable Energy Park	Ridge Clean Energy Limited	Pre Application
Outer Dowsing Offshore Wind (Generating Station)	Total Energies and Corio Generation	Pre Application
Triton Knoll Offshore Wind Farm	Triton Knoll Offshore Wind Farm Limited	Decided
Triton Knoll Electrical System	Triton Knoll Offshore Wind Farm Limited	Decided

20. Summary

20.1. The Gate Burton Energy Park will have several impacts on West Lindsey District Council. This report has identified the positive, neutral and negative impacts of the Scheme that have been identified in the Environmental Statement (ES).

20.2. Whilst it is noted that the Applicant has considered the cumulative effects of other proposed schemes in the West Lindsey area. The report has also sought to highlight the scale of these cumulative impacts of the Scheme when considered in association with the other proposed solar schemes in the West Lindsey district. This includes Cottam, Tillbridge and West Burton.

20.3. It is considered that there are negative impacts for the majority of the ES topics. Whilst there are clearly positive impacts of the Scheme, particularly from a climate change perspective, the Scheme will have a detrimental impact on West Lindsey.

20.4. Table 20-1 below provides a tabulated form of all the impacts by topic, including the cumulative impacts related with that topic.

Topic	Impact	Construction	Operation	Decommissioning	Cumulative Impacts
Agricultural Land	Positive	None	None	It is noted that there is an intention to return the land to agricultural land.	None
	Neutral	None	None	None	None
	Negative	The Scheme will result in the loss of 155.2 ha of BMV land when grouping the solar arrays and cable routes.	Of the 80.4 ha BMV required during operation, up to an assumed maximum of 2ha is lost permanently due to not being returned to farm use following decommissioning, and 6.2 ha is within a solar exclusion zone and therefore could remain in agricultural use throughout operation. .	There are doubts whether the land will ever be able to be returned agricultural use, particularly if current tenant farmers lose their livelihoods.	None
Ecology and Nature Conservation	Positive	There could be a possible reduction of agricultural chemical input which could result in an increase in invertebrate abundance and diversity.	Increases in permanent habitat of greater floristic diversity than arable farmland Increased connectivity through enhanced planting Wide undeveloped field margins and areas of natural regeneration will provide enhanced nesting and foraging habitats Shift of drainage to more natural water table. Potential attraction and increases in species foraging Potential increases in abundance and distribution of species, due to lack of human disturbance and changes in habitat	It is expected that the impacts on decommissioning of the Scheme would be the same as construction.	None

Topic	Impact	Construction	Operation	Decommissioning	Cumulative Impacts
			Indirect beneficial impacts through a possible reduction of agricultural chemical inputs to watercourses / reduction in pesticide use on crops		
	Neutral	None	None		As each project's ducts and cable run will be separate, then any habitat re-instated or planted shouldn't be subsequently disturbed regardless of scenario.
	Negative	Direct habitat loss associated with changes in the land use resulting from the Scheme. The Scheme will cause there to be regimentation of populations and or habitats. Direct and indirect impacts from the Scheme will result in a reduction in the condition of a habitat and its suitability for some or all of the species it supports. Direct impacts on species populations associated with mortalities due to construction activities The activities associated with construction potentially facilitates the introduction of invasive species.	Potential attraction of aquatic invertebrates to solar panels, causing displacement and mortality Potential avoidance of species using the Order limits, such as bats and birds, due to indirect impacts through operational lighting Potential noise attraction or disturbance from BESS and operational compounds Disturbance of sensitive species during operational maintenance activities; Fragmentation of habitats causing a barrier effect, e.g. due to fencing.		If the cables would be constructed sequentially by each scheme, it is likely to result in the potential fragmentation of linear habitats with the potential for various sections of these features to be lost or disturbed throughout that period. In turn, this has the potential to reduce connectivity for a wide range of wildlife. It is considered that the West Burton Solar Project and the Cottam Solar Project have the potential to result in cumulative effects where the overall loss of arable farmland has the potential to reduce nesting and foraging habitat for Skylark. Both projects identify Skylark as requiring additional mitigation.

Topic	Impact	Construction	Operation	Decommissioning	Cumulative Impacts
Landscape and Visual	Positive	None.	None.	None.	None.
	Neutral	None.	None.	None.	None.
	Negative	The Scheme will have temporary major significant visual effects on two Local Landscape Character Areas (LLCA) within WLDC. There will be several visual receptors which will suffer from major significant effects with noticeable changes in the composition of the views.	The Scheme will have several major adverse impacts on the area of West Lindsey. It will have major significant visual effects on two LLCA within WLDC. There will be several visual receptors which will have a moderate significant effect in both the short and long term (1 and 15 year assessments).	There will be major significant effects on LLCA 02 – Ancient Woodland Ridge within WLDC. There will also be major significant effects on visual receptors across WLDC	There will be minor adverse effects on the landscape during construction with the other solar schemes. There will be a moderate adverse impact during the operation of the scheme. Overall the cumulative landscape impact will be moderate adverse.
Socio-Economics and Land-Use	Positive	It is estimated that the Scheme will require an average of 323 gross direct full-time employment (FTE) jobs on-site per day during the construction period.	The Applicant has estimated there will be a gross number of 14 FTE jobs generated by the Scheme once operational.	The Scheme will support, on average, 363 total net jobs per annum during the decommissioning period. Of these, 207 jobs per annum will be expected to be taken-up by residents within the Study Area, whilst 156 jobs will likely be taken-up by workers living outside the area.	The combined effect of the construction of the cumulative developments is likely to bring considerable additional employment to the local economy.
	Neutral	At peak workforce employment and peak occupancy levels, 100% of the Scheme's peak construction workers could be accommodated within both a 30-minute and 60-minute drive time of the Site. Given this, there would be no effect on the hotel, bed and breakfast, and inns accommodation sector arising from the Scheme.	None.	None.	If all the schemes are to be realised there will be considerable additional employment demand from some of the cumulative schemes. Most cumulative schemes, however, will not generate considerable operational employment due to their nature as infrastructure or utilities projects.

Topic	Impact	Construction	Operation	Decommissioning	Cumulative Impacts
	Negative	The Scheme would require land take from agricultural land, including BMV, and potentially result in severance within holdings or access restrictions to agricultural infrastructure.	There is potential for noise, air quality, and visual effects arising from the operation of the Scheme which would impact on the amenity of residents, businesses and users of community facilities. There are around 200 properties located within 500m of the Site. In addition, there are two businesses within 500m of the Site and nine community facilities within 2km of the Site.	Prior to the commencement of decommissioning, an assessment will be made of the land and soil, and a programme of remedial action will be agreed and during decommissioning undertaken to return land to arable agricultural use. The estimated duration of the decommissioning period is expected to take between 24 and 48 months, similar to that of the construction period of 36 months.	During construction Gate Burton will occupy up to 77% of the accommodation within a 60-minute drive time of the Site. It is therefore questioned whether there would be enough accommodation for workers if Cottam, Tillbridge and West Burton were to be constructed at the same time.
Transport and Access	Positive	None.	None.	See construction.	None.
	Neutral	None.	None.	See construction.	None.
	Negative	All PRoW receptors within the Order limits will be physically separated from construction routes and works. The local road network is expected to experience increases of at least 30 additional vehicle trips during the development peak hours. It is anticipated that as a worst case during the peak construction period, there would be up to 60 HGVs per day to/ from the Solar and Energy Storage Park representing 120 movements.	None.	See construction.	If the proposed Cottam, Tillbridge and West Burton solar projects were to commence at similar times a worst case scenario would result in approximately 160 HGV vehicles using the local road network per day. Any overlaps between the construction vehicle trips associated with the Scheme and other schemes are likely to be primarily confined to wider strategic routes. Other schemes are not likely to contribute to the effects on transport and access receptors (including the A156, Kexby

Topic	Impact	Construction	Operation	Decommissioning	Cumulative Impacts
		There will be up to 138 cars and 16 shuttle services per day associated with staff for the Solar and Energy Storage Park, representing 308 movements. For the Grid Connection Corridor, there would be up to 16 HGVs, 12 LGVs and one minibus service for construction workers per day, representing 58 movements. The Scheme is expected to result in a medium magnitude of change with respect to fear and intimidation on Kexby Lane and a low magnitude of change with respect to fear and intimidation on Headstead Bank during the construction phase.			Lane, Willingham Road, Marton Road, and the A1500 in Lincolnshire and Cottam Road, Headstead Bank, Broad Lane, Cow Pasture Lane and Town Street in Nottinghamshire)
Climate Change	Positive	The ES does not identify any significant residual effects on climate change are predicted during the construction of the Scheme; however, the SoS is reminded to factor the impacts of embodied carbon and GHG emissions during the construction of the scheme.	The ES concludes that there will be a significant benefit to GHG emissions over the lifetime of the scheme.	None	None
	Neutral	None	None	None	None
	Negative	The greatest GHG impacts occur during the construction phase. The manufacture of the PV Panels is estimated to	It must be noted that the 435,753 tCO2e will be emitted during the lifetime of the scheme from the supply of	Despite the ES concluding no significant residual effects on climate change, the ES also	None

Topic	Impact	Construction	Operation	Decommissioning	Cumulative Impacts
		account for 257,849 tCO2e, with the manufacture of BESS leading to a further 77,500 tCO2e.	replacement components. This contributes to 50% of the entire embodied carbon of the scheme, this is less than the emissions calculated for the construction of the proposed development.	admits a 'very high degree of uncertainty' for GHG emissions.	
Human Health and Wellbeing	Positive	The Applicant will be encouraged to consider a provision of an apprenticeship programme, training placements and develop a school/ college engagement programme to promote science, technology, engineering and mathematics (STEM) education and careers. The Applicant will also investigate measures to promote take up of jobs locally, through engagement with Local Authorities and Job Centre Plus.	None	None	None
	Neutral	It is unlikely that there will be any severance between local residents and the healthcare facilities or other social infrastructure which they use during the construction, operation or decommissioning phase.	There are currently 1.5 existing jobs within the Site, all relating to agricultural activities. There is expected to be some employment loss as a result of the Scheme. The Applicant has estimated that 13 jobs will be directly generated by the Scheme when operational, which will potentially provide some local employment	See construction.	None

Topic	Impact	Construction	Operation	Decommissioning	Cumulative Impacts
			opportunities in permanent jobs.		
	Negative	The ES states that during construction, the impact on Human Health and Wellbeing is assessed as negative. Assuming a worst-case whereby all of the 156 construction workers who do not live locally require places at surgeries within the wider PCN areas where there is more accommodation available, this would increase the patients per GP provision across both geographies from a ratio of 1:1,887 GP to patients to 1:1,889 patients per GP. The implementation of mitigation is expected to prevent the occurrence of significant impacts arising from dust generation during the construction phase, however, there are assessed to be negative impacts on some residents during the construction phase as a result of traffic noise in some locations (Marton Road, B1241 High Street and Headstead Bank). Noise and Vibration levels may also exceed LOAEL levels in	None	During decommissioning, the impact on Human Health and Wellbeing is assessed as negative.	The construction of Cottam, Gate Burton and West Burton could create a peak of 1,886 workers, which could have implications on access to healthcare services. Taking into account these other developments, this could as a worst case scenario, potentially increase this ratio to 1:1905 which greatly exceeds the recommended ratio as set by the Royal College of General Practitioners.

Topic	Impact	Construction	Operation	Decommissioning	Cumulative Impacts
		some locations during the construction and decommissioning phase. During the operational phase, due to the low levels of employment and selection of and location of plant, there is anticipated to be minimal implications on air quality, noise and neighbourhood amenity.			
Noise and Vibration	Positive	None	None	None	None
	Neutral	Piling is proposed to be used for construction of PV Modules. The minimum distance between any piling works for the construction of PV modules and the nearest receptor is approximately 200 m and, therefore, ground borne vibration is unlikely to be an issue during piling works.	None	None	None
	Negative	For NGA4, noise predictions indicate that receptors within approximately 45 m of the Grid Connection Corridor may experience noise levels exceeding the Lowest Observed Adverse Effect Level (LOAEL) and receptors within 15 m may experience noise levels exceeding the Significant Observed Adverse Effect Level (SOAEL). There is potential for significant noise effects due to	During operation the plant will operate continuously and there is not expected that there will be any noticeable impulsive or intermittent characteristics from plant noise emissions. The noise modelling has indicated that at all receptors the LOAEL is exceeded but the SOAEL is not.	None	None

Topic	Impact	Construction	Operation	Decommissioning	Cumulative Impacts
		cable laying activities if they occur within 15 m of a sensitive receptor where exceedances of the SOAEL may occur. The only receptor identified as potentially experiencing significant noise effects is 66 High Street, Marton. NGA4 will take place during core daytime working hours. The highest levels of vibration that would be generated by cable laying activities would be the use of vibratory roller during reinstatement. Noise calculations indicate that construction traffic will result in a Negligible noise effect on all road links with the exception of Marton Road, B1241 High Street and Headstead Bank. At Headstead Bank, changes in traffic noise are equivalent to a Moderate Adverse effect.			
Glint and Glare	Positive	None	None	None	
	Neutral	None	Solar reflections are possible at 22 of the 24 rail receptor points assessed within the 1km study area.	None	
	Negative	None	Solar reflections are possible at 79 of the 107 residential receptors.	None	

Topic	Impact	Construction	Operation	Decommissioning	Cumulative Impacts
			Solar reflections are possible at 92 of the 95 road receptor points assessed in the 1km study area.		
Cultural Heritage	Positive	None	None	See construction.	None
	Neutral	There are 63 known heritage assets which have the potential to be subject to physical or impacts to the value of the assets through change to their setting as a result of the Proposed Development. The seven identified that are considered to have a neutral impact.	The hedgerow along the A156 will be replanted post construction and will improve the visual appearance of the Scheme within the park's setting.	See construction.	The proposed Cottam Solar Project and West Burton Solar Project will contribute to the impact identified in this assessment on the Grade I listed Church of St Mary at Stow (1146624) through additional development within its wider landscape setting. The Stow Park Road Residential Development will contribute to the impact identified in this assessment on the non-designated heritage asset (MLI52472; AEC015) through additional physical impacts to the asset. The asset comprises a series of ditches and linear features which represent an Iron Age / Romano-British field system, which extend outside of the Scheme boundary towards the north-west, extending into the redline boundary of the other development.
	Negative	Of all known heritage assets, ten have been considered to	None.	See construction.	None

Topic	Impact	Construction	Operation	Decommissioning	Cumulative Impacts
		have a significant effect due to the Scheme.			
Water Environment	Positive	None	None	It is expected that the impacts on decommissioning of the Scheme would be the same as construction.	
	Neutral	Six crossings of unnamed agricultural ditches will be required for the Grid Connection Corridor to Cottam Substation. These ditches would be crossed utilising an open-cut technique, this would cause there to be an impact on water quality due to sediment disturbance and construction runoff and spillages entering the watercourses.	During the operational phase the impact to water quality has been assessed as neutral. The flood risk during the operational phase has been assessed as neutral due to the design of the Solar Panels being raised a minimum of 800mm above ground level and the location of compounds and battery storage facilities. The grid connection corridor is below the ground and therefore once the ground is reinstated there would be no change to the baseline conditions.		
	Negative	. Utilising HDD techniques to install the cable beneath watercourses causes there to be a potential impact to the water quality of the watercourses. It is assumed 17 watercourse crossings could be culverted in order to facilitate access track crossings. Work within the watercourse channels can impact hydrological and sediment regimes this will be affected coupled with the increased risk of runoff entrained with sediment or	The Scheme will require new culverts to be installed to facilitate access track crossings this will cause a section of the channel to be permanently lost.		

Topic	Impact	Construction	Operation	Decommissioning	Cumulative Impacts
		accidental spillages. There will also be a direct loss of riparian, bank and bed habitats as these will be replaced by culverts. The structures could reduce the movement of mammals and interrupt continuity of the natural hydraulic and sediment regimes. The six open cut water crossing required for the Grid Connection corridor would also cause an negative impact on the to the watercourse and riparian habitats surrounding the ditches and the hydrological and sediment regimes during construction. A proportion of the site and the majority of the cable corridor is situated in Flood Zone 2 and 3 therefore during the construction phase there is an increased risk to flood risk receptors due to the increased rate and volume of surface water runoff from an increase in impermeable areas.			
Air Quality	Positive	None		See construction	20.5.
	Neutral	Sensitivity of ecological sites bearing statutory designations within the study area to dust-related impacts is low due to their distance to the Site. For those Ancient Woodland sites		See construction	20.6.

Topic	Impact	Construction	Operation	Decommissioning	Cumulative Impacts
		situated within the Order limits and ZoI, a high risk of dust-related impacts has been conservatively determined. However, providing adequate and appropriate mitigation is implemented, such as the anticipated minimum 20m buffer during both construction and operation, the effects of dust generation during the construction and operation of the Scheme are expected to be negligible and therefore a low risk to ecology has been predicted.			
	Negative	Dust generation during the construction phase is anticipated to occur for the duration of the works. Due to the size of the Site, and the potential for having more than 10 heavy earth-moving vehicles active on-site at any one time, the potential dust emissions magnitude associated with earthworks is considered to be large. The Site has consequently been determined to pose a high risk of dust soiling.	The Scheme will be operated by a maximum of 14 full time equivalent (FTE) staff per day, predominantly undertaking maintenance tasks. In addition, a maximum of three to four visitors per week (equating to one visitor per day) are assessed for the purpose of deliveries, and replacement of components. Staff vehicles and those used for maintenance will primarily be four wheeled drive vehicles and vans, with HGVs accessing the site during this phase on an occasional basis.	See construction	20.7.
Ground Conditions	Positive Neutral Negative	Within the Scoping Opinion the Inspectorate commented: "For the avoidance of doubt, unit the results and recommendations of the PRA are known, there is insufficient evidence to support scoping out an assessment of ground conditions". However the Ground			

Topic	Impact	Construction	Operation	Decommissioning	Cumulative Impacts
		Conditions subsection of Chapter 15, does not include an impact assessment therefore West Lindsey cannot report the impacts due to the Proposed Development.			
Major Accidents and Disasters	Positive	None.	None	None	
	Neutral	None.	None	None	
	Negative	There is a potential fire risk associated with certain types of batteries such as lithium ion.	None	None	
Waste	Positive	None	None	None	
	Neutral	None	None	None	
	Negative	There is the possibility that there will be a surplus of excavated material which may not be reused on site, and therefore would be taken to landfill to be disposed of.	Throughout the 60 year operational phase, it is expected that there will be the requirement to replace some or all of the solar and storage energy park elements. It is anticipated that the recovery rate would be greater than 60% however the rest would be diverted to landfill.	The waste arising from the decommissioning phase is reported to follow the same approach as the recycling of key components as that of the operational phase. However, the impact during the decommissioning phase has not been reported.	

Appendix A. Central Lincolnshire Local Plan

Appendix B. Natural England Technical Information Note (TIN049)

Appendix C. Cumulative Construction Traffic Routes

Appendix D. Morton Neighbourhood Plan

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