West Burton Solar Project

Local Impact Report

EN-010132

West Lindsey District Council – 20037171

December 2023

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1. Executive Summary

1.1. Island Green Power Limited (IGP) has applied for a Development Consent Order (DCO) for the West Burton Solar Project.

1.2. 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.

1.3. 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.

1.4. 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.

1.5. The proposed West Burton Solar Park will exert a range of environmental, social and amenity impacts.

1.6. 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 the West Burton Solar Project application by the Examining Authority (ExA) on behalf of the SoS.

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

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

1.8. 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.

1.9. 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) for the West Burton Solar Project (hereafter referred to as the 'Scheme') that has been submitted by West Burton Solar Project Limited ('the Applicant'). The Applicant is part of Island Green Power Limited (IGP). IGP is also progressing the Cottam Solar Project (EN010133), which is within the same locality as the Scheme. The Cottam Solar Project was accepted for Examination by the Secretary of State on the 9th of February 2023 and held a preliminary meeting on the 5th of September 2023

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 does not describe the proposed development any further, relying on the Applicant's description as set out in Chapter 4: Scheme Description of the Environmental Statement (ES) (Doc. Ref. EN010132/ APP/WB6.2.1). The extract below is taken from section 4.2 of the of the aforementioned document and provides an overview of the Scheme:

> *"4.2.1 The Scheme comprises a number of land parcels (the 'Site' or 'Sites') described as West Burton 1, 2 and 3 (see DCO Location Plan **[EN010132/APP/WB2.1]**, Figure 1.1 of the ES) which accommodate ground mounted solar photovoltaic (PV) generating stations (incorporating the solar arrays); grid connection infrastructure and energy storage; and the Cable Route Corridors. The Scheme will comprise the construction, operation and maintenance, and decommissioning of a generating station (incorporating solar arrays) with a total capacity exceeding 50 megawatts (MW). The Scheme is defined as a NSIP under Sections 14(1)(a) and 15(2) of the Planning Act 2008 (Ref 4.1), as it is an onshore generating station in England with a capacity of more than 50 MW.*
>
> *4.2.2 The solar array Sites and associated substations and energy storage are to be connected to the National Grid at a substation at West Burton Power Station. The Scheme will connect to the National Grid substation via a new 400kV substation constructed as part of the Scheme to provide the connections to the various solar Sites. The substations, cable connections and energy storage will be required for the duration of the Scheme. The substations and energy storage will be decommissioned and removed at the end of the lifetime of the Scheme but the underground cables are anticipated to be decommissioned in situ to minimise environmental impacts.*
>
> *4.2.3 The operational life of the Scheme is anticipated to be 40 years. Once the Scheme ceases to operate, it will be decommissioned. A 40-year period for the operational phase of the Scheme has been assessed in the EIA and reported in this ES."*

2.4. Section 4.5 of Chapter 4 of the ES also sets out the key components of the Scheme. These components are set out below and groups them according to the works number that they are associated to.

The Ground Mounted Solar Photovoltaic Generating Stations (Work No.1)

2.5. The following components would be associated with the solar photovoltaic (PV) generating stations.

- Solar PV Panels.
- Mounting Structures:
  - Whilst it is likely that the Scheme will utilise tracker solar panels, optionality is included within the application to be able to utilise fixed panels. Tracker panels have a maximum height parameter of 4.5m, whereas fixed panels are up to 3.5m.
- Conversion Units (inverters, transformers, switchgear, and monitoring and control systems):

- Design Parameters of 15m in length by 5m in width and a maximum height of up to 3.5m in height (unless sited within a higher risk flood zone, in which case it could be up to 4.5 m in height).

- DC electrical ('combiner') boxes:
  - The Maximum width of the boxes is 0.55m, maximum length 0.65m and maximum height 0.26m.
- Inter Solar Panel Electrical Cabling.

Energy Storage Facility (Work No. 2)

2.6. The Applicant has proposed two alternative layouts for energy storage. These are Work No. 2 and Work No. 3. The ES has considered both options.

2.7. It is assumed that the form of energy storage will be battery storage and as such, the Energy Storage Facility as it is termed in the draft DCO Schedule 1, is often referred to as a 'BESS' (Battery Energy Storage System).

- The Energy Storage Facility will utilise a lithium ion energy storage system. The batteries, inverters, transformers and switchgears ('conversion units' as explained below) will be mounted on a concrete foundation in a single compound. A piling solution may be required, depending on the results of geotechnical surveys. If piling is required, it would involve piling up to 12m in depth.
- The maximum dimensions of individual modular battery storage container and interconnector container within a BESS compound is 2.0m width by 3.0m length and up to 3.5m in height. The maximum dimensions of modular battery storage and interconnector container strings within a BESS compound is 24.0m by 3.0m footprint and up to 3.5m in height.

Substations (Work No.3)

2.8. Substations will be required at each Solar Farm Site. Maximum parameters for the onsite substations, including control building or container, welfare facilities, hardstanding areas and hardstanding parking areas therein, but excluding the full extent of the cabling are outlined below:

- Site Area Parameter:
  - Work 3A "West Burton 1" – 0.71 ha
  - Work 3B "West Burton 2" – 0.71 ha
  - Work 3C "West Burton 3" – 2.85 ha
- Height Parameter:
  - Work 3A "West Burton 1" – 6.5m
  - Work 3B "West Burton 2" – 6.5m
  - Work 3C "West Burton 3" – 13.2m

2.9. The maximum height of the substation at West Burton 3 will be 13.2m to the top of the busbars. The maximum height of the substations at West Burton 1 and 2 will be 6.5m to the top of the busbars. Palisade fencing 2.6m high will be provided around the substation compound.

Grid Connection Works at West Burton Power Station (Work No. 4)

2.10. Works at the existing National Grid West Burton 400KV substation Site to facilitate connection to the Scheme will include re-equipping an existing (but currently unused) generator bay with a 400KV circuit breaker, current transformers, metering current transformer/voltage transformer (CT/VT) units and line disconnector for the 400KV connection to the West Burton 3 Solar Site.

Works to lay electrical cables - the Cable Route Corridor (Work No. 5A) and Shared Cable Route Corridor (Work No.5B)

2.11. The electricity generated by the Scheme will be exported to the National Grid substation at West Burton Power Station via a number of underground cable circuits sited within the cable route corridor.

2.12. The West Burton Cable Corridor (Work No.5A) consists of the following:

- A 400kV cable circuit (consisting of up to 3 No. cables) cables will export the power generated by the Scheme and power stored at the BESS from the substation at West Burton 3, to the National Grid substation at West Burton Power Station. The length of this cable is approximately 9.93 km.
- A 132kV cable circuit (consisting of up to 3 No. cables) will export power from the substation at West Burton 1 to the substation at West Burton 3. The length of this cable is approximately 11.35 km.
- A 132kV cable circuit (consisting of up to 3 No. cables) will export power from the substation at West Burton 2 to the substation at West Burton 3. The length of this cable is approximately 5.60km.

2.13. Each of these cable circuits are also required to facilitate the import of electricity to be stored within the BESS at West Burton 3. The Cable Route Corridor (Work No. 5A) broadly extends to 50m in width (there may be slightly wider areas where the Route deviates).

2.14. Part of the Cottam Solar Project and the Gate Burton Energy Park cable route cable route are proposed to be located within the cable route corridor for the Scheme's cable circuits (the Shared Cable Route Corridor). This is identified as Work No.5B on the Works Plans.

2.15. It is expected that this will be constructed in one of two cumulative scenarios:

1) Simultaneous construction of ducts and cables for three projects over 18 months. Ducts installed together, cables pulled separately, considering haul roads, compounds, and bridges. Cable pulling involves joint bays and chambers.
2) Consecutive installation of project ducts and cables over 5 years, assuming infrastructure remains. Represents a worst-case assessment scenario.

Various Works Within the Solar Farm Sites (Work No.6)

2.16. Work No. 6 includes for a range of works within the Solar Farm Sites, these include:

- Fencing, Security and Lighting;
- Landscaping;
- Internal Access Tracks;
- Surface Water Drainage; and
- Secondary Construction Laydown Areas.

Purpose and Structure of the LIR

2.17. 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.

2.18. The proposed West Burton Solar Park does not commit to a maximum stored capacity. However, within the Planning Statement (Doc. Ref. EN010132/APP/WB7.5) it states that the Scheme will have a total generating capacity of up to 480MW of renewable solar energy for 40 years for distribution by the National Grid. However, it should be noted that as part of the Issue Specific Hearing 1, held on the 9 November 2023, the Applicant is seeking to extend the lifetime of the project to a minimum 60 years. Within Chapter 4: Scheme Description of the ES, the Applicant has stated that they have not confirmed a maximum stored capacity because there are a range of PV technologies are developing rapidly and may be available at the time of construction.

2.19. This 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 West Burton 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 and former Royal Air Force (RAF) bases at Scampton, Waddington, Cranwell and Digby make a significant contribution to the area's historic, 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.

3.18. The visitor economy is a significant and growing sector within West Lindsey. The area is an attractive, peaceful rural area which combines an outstanding natural environment with historic villages in close proximity to the City of Lincoln. Lincolnshire's visitor economy is worth £2.4bn (STEAM data Lincolnshire County Council), with the sector supporting 30,000 jobs and a far reaching supply chain across the county. Food and drink spending alone generates £44m into the local economy, with recreation adding £18m and retail contributing £59m. The visitor economy is a significant sector for people's livelihoods.

3.19. The impact of Covid lockdowns has been severe. Lincolnshire has experienced a 52% reduction in all tourism spending (STEAM data 2020), with full time jobs being reduced by half from 2,500 jobs to just over 1,200. There has been a 52% reduction in visitor numbers and a 50% reduction on the number of visitor days. Food and drink spend feel from £44m to £21m (reduction of £13m) and retail spend fell from £59m to £29m 9a reduction of £20m). Recreational spend reduced by £10m to £8m. Overall, local tourism businesses have experienced a reduction of over £100m from their revenue.

3.20. Reflective of the defining agricultural character and culture of West Lindsey, one of the key tourist events is the Lincolnshire Show, held annually at the Lincolnshire Showground. The show is a flagship event for the area, with over 60,000 visitors and 500 exhibitors each year. The success of the Lincolnshire Show strongly relies upon the local tourism sector accommodating the visitor demand it creates.

3.21. Forecasts have predicted that it will take a timescale of up to 2025/26 for businesses in the sector to recover to pre-Covid levels, based on the assumption that no material externalities will compromise this recovery.

Hydrology

3.22. 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.

3.23. 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

3.24. The three Sites identified for built development, namely, solar panels, substations and energy storage for the Scheme are located within a 15km radius of the grid connection at the former West Burton Power Station. Combined they total 769.08ha including means of access but excluding Cable Route Corridors. The three Sites are as follows:

West Burton 1

Site

3.25. West Burton 1 totals 91.32ha in area and is located to the east of Broxholme with the village of Bransby to the northwest. It lies within the parish of Broxholme. The developable area containing solar panels, substation and associated infrastructure totals 73.51ha. The remaining area is set aside for landscape and ecological mitigation.

3.26. The Site at West Burton 1 consists almost entirely of agricultural fields used for arable crops. The topography is relatively flat and is predominantly well screened from its immediate surroundings by tall hedges around the boundaries. The fields are generally large and typically have dividing hedgerows. There are only isolated trees outside of field margins. There are a number of existing farm access tracks and field accesses within the Site. Part of the Site adjoins the bank of a watercourse that drains into the River Till. There is a single 132kV overhead line (OHL) that crosses the southern section of the Site in a northwest to southeast orientation. The site is traversed by Main Street, a public highway linking Broxholme village and A1500 Tillbridge Lane. A section of public footpath Brox/196/1 runs though the west of the Site.

Surroundings

3.27. The surrounding area is predominantly arable farmland, interspersed with a significant number of woodland blocks. Immediately to the east of the Site is North Carlton Covert, a small block of woodland immediately adjacent to the Site's eastern boundary. The settlements at Broxholme and Bransby lie closest to the Site. To the west lie the hamlets of Bransby and Ingleby and to the east lies the village of North Carlton. With the exception of the villages/hamlets mentioned above, the area is relatively sparsely populated with isolated residential properties and farmsteads dotted throughout the surrounding countryside.

West Burton 2

Site

3.28. West Burton 2 sits to the west of West Burton 1 and is located to the north of the village of Saxilby. It lies within the parish of Saxilby with Ingleby and covers an area of 306.98ha. The developable

area containing solar panels, substation, and associated infrastructure totals 149.62ha. The remaining area is set aside for landscape and ecological mitigation.

3.29. The Site at West Burton 2 consists almost entirely of agricultural fields used for arable crops. The topography is relatively flat and is predominantly well screened from its immediate surroundings by tall hedges around the boundaries. The fields are generally large and typically have dividing hedgerows. There are only isolated trees outside of field margins. There are a number of existing farm access tracks and field accesses within the Site. Part of the Site adjoins the bank of the River Till. Overhead lines cross part of the landholding. The B1241 Saxilby Road/Sturton Road runs north/south through West Burton 2. In the south-eastern corner of the holding, Broxholme Lane cuts across the land in an east/west direction.

Surroundings

3.30. The surrounding area is predominantly arable farmland, interspersed with farms and villages, alongside the larger settlements of Saxilby and Sturton by Stow. The landform is relatively flat with a gentle slope to the east towards the River Till. The nearest settlement is the small village of Broxholme located immediately to the southwest of the Scheme. Around 2.5km to the northwest of the Site lies the settlement of Sturton by Stow and the larger village of Saxilby is located approximately 2.5km to the southwest of the Site. To the west lie the hamlets of Bransby and Ingleby and to the east lies the village of North Carlton. With the exception of these villages/hamlets, the area is relatively sparsely populated with isolated residential properties and farmsteads dotted throughout the surrounding countryside. The landform within the surrounding area is relatively flat with a gentle slope to the east towards the River Till.

West Burton 3

Site

3.31. West Burton 3 sits to the north west of West Burton 2 and is located between the villages of Brampton and Marton within the parishes of Marton, Brampton and Stow. It covers an area of 370.78ha. The developable area containing solar panels, substation and associated infrastructure totals 284.31ha. The remaining area is set aside for landscape and ecological mitigation.

3.32. The Site at West Burton 3 consists almost entirely of agricultural fields used for arable crops. The topography is relatively flat and is predominantly well screened from its immediate surroundings by tall hedges around the boundaries. The fields are generally large and typically have dividing hedgerows. There are only isolated trees outside of field margins. There are a number of existing farm access tracks and field accesses within the Site and a redundant farmhouse which will remain and is not proposed to be redeveloped. The A1500 Stow Park Road/Till Bridge Lane runs along the northern boundary of West Burton 3. Cowdale Lane runs along the southern boundary. The trainline between Lincoln and Sheffield runs north-south between land parcels comprising the West Burton 3 Site.

Surroundings

3.33. The surrounding area is predominantly arable farmland. The Lincoln Golf Club is located to the southwest of the Site, surrounding the small hamlet of Brampton. A small number of residential properties on the eastern edge of the settlement are located adjacent to the southwestern corner of the Site. Located within the middle of the Site and straddling the railway line are Stow Park Farm and Marton Moor Farm, two large farmsteads with associated outbuildings and sheds that occupy the arable farmland to the south of the A1500.

3.34. To the immediate northwest of the Site is the settlement of Marton which occupies the hillside leading down from the arable plateau to the lower lying landform alongside the River Trent. A small number of residential properties on Adams Way and Spafford Close are located alongside the north-western corner of the Site. To the west of the Site, the landform quickly drops away to the A156 and the River Trent. Embankments alongside the Trent help elevate the Trent above the surrounding lowland arable farmland. The eastern extents of the Site occupy the flatter arable plateau that is made up of gently rolling arable fields. With the exception of the villages/hamlets mentioned above, the area is relatively sparsely populated with isolated residential properties and farmsteads dotted throughout the surrounding countryside.

Cable Route Corridor

3.35. The Sites are to be connected to each other and to the grid connection point by some 21.3km of high voltage cable circuits. The cables run from West Burton 1 and 2 into West Burton 3 where the 400kV substation will be located. From there a 400kV cable runs to the Point of Connection (POC) at West Burton Power Station.

3.36. The Cable Route Corridor crosses predominantly agricultural land whilst also adopting a route of least resistance in order to avoid unnecessary disruption or severance of land or ecological features. The cable will need to cross a number of obstacles via the use of horizontal directional drilling. The main drilling sites will be located where the cable needs to cross the River Till and the River Trent. Smaller drilling sections may be required for crossing other features such as roads and ditches. The cable route avoids villages such as Sturton Le Steeple and Marton.

Additional Areas of the Order Limits

3.37. The Order Limits contain the full land area required to develop, operate, maintain and decommission the Scheme. As such, these also include all access points and visibility splays, as well as any additional land required for the transportation of 'abnormal indivisible loads'.

Key challenges

3.38. 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. Following the adoption of the amended NPSs for energy infrastructure on 22 November 2023, it is noted that solar energy is now included within the NPS EN-1 and EN-3. Nevertheless, it should be noted that NPS EN-1 (2023) provides an explanation of the transitional provisions following the NPS review. Section 1.6 of the NPS states:

> *"1.6.1 The suite of energy NPSs was first designated in 2011. In the 2020 Energy White Paper a review of the NPSs, pursuant to section 6 of the Planning Act 2008, was announced. That review resulted in a number of amendments to the NPSs.*
>
> *1.6.2 The Secretary of State has decided that for any application accepted for examination before designation of the 2023 amendments, the 2011 suite of NPSs should have effect in accordance with the terms of those NPS.*
>
> *1.6.3 The 2023 amendments will therefore have effect only in relation to those applications for development consent accepted for examination, after the designation of those amendments. However, any emerging draft NPSs (or those designated but not yet having effect) are potentially capable of being important and relevant considerations in the decision-making process. The extent to which they are relevant is a matter for the relevant Secretary of State to consider within the framework of the Planning Act 2008 and with regard to the specific circumstances of each Development Consent Order application."*

4.5. In line with the transitional provisions following the review, as set out in NPS EN-1 (2023) above, WLDC believe that the application remains to be determined under Section 105 of the PA2008. WLDC consider the November 2023 versions of the NPS' to be important and relevant matters to which significant weight will be afforded.

4.6. As the application was accepted for examination before designation of the 2023 amendments, the 2011 editions of the NPS also remain important and relevant matters to be considered in the determination of the application.

4.7. 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.

4.8. NPS EN-1 also recognises that importance of that energy storage has to play in achieving net zero and providing flexibility to the energy system, so that high volumes of low carbon power can be integrated. Despite this recognition, for the purposes of this application, the 2011 suite of NPSs should have effect.

4.9. The Central Lincolnshire Local Plan (Local Plan) forms the adopted development plan for the West Lindsey district. The Local Plan was adopted in 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)

4.10. The 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 in April 2023 and therefore represents an 'up to date' statutory development plan to which significant weight should be afforded in decision making under section 104(of the PA 2008. The full plan is included at Appendix A of this LIR.

4.11. 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 National Planning Policy Framework (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 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)

4.12. 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

4.13. 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.

4.14. 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.
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

4.15. 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.

4.16. The following Neighbourhood Plans are adopted within:

- Corringham;
- Gainsborough;
- Hemswell and Harpswell;

- Lea;
- Morton;
- Saxilby with Ingleby;
- Sturton by Stow; and
- Willoughton.

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

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

4.18. The Saxilby with Ingleby Neighbourhood Plan (adopted 8 May 2017) and the Sturton by Stow and Stow Neighbourhood Plan (adopted 4 July 2022) have both been engaged. This is because the West Burton Solar Project is within the boundaries of both of the adopted neighbourhood plans.

4.19. The key policies of the Saxilby with Ingleby Neighbourhood Plan that are relevant to this application are listed below and can be found in full at Appendix D:

- Policy 2: Design of New Developments;
- Policy 5: Protecting the Historic Environment;
- Policy 11: Minimising the Impact of Development on the Natural Environment;
- Policy 12: Green Infrastructure;
- Policy 14: Open Spaces, Sports Facilities and Recreation Facilities;
- Policy 16: Existing and New Non-Vehicular Routes; and
- Policy 17: Traffic and Movement around the Village.

4.20. The relevant policies of the Sturton by Stow and Stow Neighbourhood Plan are listed below and can be found in full at Appendix E:

- Policy 1: Sustainable Development;
- Policy 5: Delivering Good Design;
- Policy 6: Historic Environment;
- Policy 8: Community Facilities (impacted by access and Order Limits);
- Policy 11: Green Infrastructure;
- Policy 12: Environmental Protection;
- Policy 13: Flood Risk; and
- Policy 15: Walking and Cycling.

National Policy

4.21. As set out above in this section, the amended NPS for energy infrastructure

4.22. 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.

4.23. 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.

4.24. A review of the energy NPSs has resulted in the publication of EN-1(2023) and EN-3, which are not. It is WLDC's view that these NPSs are to be matters the Secretary of State will consider relevant and important.

4.25. 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."*

4.26. 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.

NPS EN-1 – Overarching Policy Statement for Energy

4.27. NPS EN-1 (July 2011) sets out the government's commitment to increasing renewable generation capacity, with a recognition that much of the short-term delivery will derive from onshore and offshore wind.

4.28. The generation of energy from other sources, including solar, is not included in the scope of NPS EN-1 (2011). However, WLDC acknowledge that solar energy is now included within the amended NPS which were adopted in November 2023. The revised NPS EN-1 is therefore an important and relevant matter in the decision making process.

NPS EN-3 – National Policy Statement for Renewable Energy Infrastructure

4.29. NPS EN-1 (July 2011) provides further policy specific to renewable electricity generating technologies. As with EN-1, it expressly only relates to energy from biomass, onshore wind and offshore wind.

4.30. Similar to NPS EN-1, WLDC acknowledge that solar energy is now included within the amended NPS is therefore an important and relevant matter in the decision making process.

NPS EN-5 – National Policy Statement for Networks

4.31. Whilst providing policy for long-distance transmission systems (400kv and 275kv lines), NPS EN-5 also covers associated infrastructure such as substations and converter stations.

4.32. Due to the scope of the proposed development, WLDC consider NPS EN-5 to be an important and relevant matter with regard to the relevant associated development of the proposed application.

The National Planning Policy Framework

4.33. The National Planning Policy Framework (NPPF) sets out the governments planning policies for England. The NPPF does not include policies specific to NSIPs.

4.34. The NPPF nonetheless provides guidance on the requirement for good design, promoting healthier communities, conserving the historic environment, conserving the natural environment, sustainable transport and meeting the challenges of climate change. With due regard to the scope of the policy at a national level, WLDC consider the NPPF to be an important and relevant matter for the determination of the application under section 105 of the PA2008.

4.35. An updated version of the NPPF was published on 5th September 2023. The key updates to the NPPF relate to the implementation of paragraph 155, which states that to help increase the use and supply of renewable and low carbon energy, (development) plans should:

- *"provide a positive strategy for energy from these sources, that maximises the potential for suitable development, while ensuring that adverse impacts are addressed satisfactorily (including cumulative landscape and visual impacts)";*

- *"consider identifying suitable areas for renewable and low carbon energy sources, and supporting infrastructure, where this would help secure their development";* and
- *"identify opportunities for development to draw its energy supply from decentralised, renewable or low carbon energy supply systems and for co-locating potential heat customers and suppliers."*

4.36. New paragraph 222 in the NPPF (Annex 1: Implementation) states that for the purpose of paragraph 155, such policies only apply to plans that have not reached Regulation 19 of the Town and Country Planning (Local Planning) (England) Regulations 2012 (pre-submission) stage, or that reach this stage within three months, of the publication of this version of the NPPF.

Other Relevant Policy

4.37. In addition to the above, WLDC consider the following policy to also be relevant and important for the determination of the application under section 105 of the PA2008:

- Powering up Britain (March 2023);
- The British Energy Security Strategy (2022);
- The National Infrastructure Strategy (2020);
- The Energy White Paper: Powering our Net Zero Future (2020); and
- A Green Future: Our 25-year Plan to Improve the Environment (2018).

Summary

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

4.39. 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.

5.2. Where the National Policy Statements refer to the Infrastructure Planning Commission (IPC), this is now the Secretary of State (SoS).

6. Alternatives and Design Evolution

Summary

6.1. The list below outlines the main points arising from the review of Chapter 5: Alternatives and Design Evolution (Doc. Ref. EN010132/ APP/WB6.2.5) of the ES for the West Burton Solar Project:

- [ADE1] The Applicant has stated that 'it would be highly unlikely that a single site of this size would be available within sufficient proximity to the West Burton Point of Connection (POC)'. However, the Gate Burton scheme, which will utilise the Cottam POC, has demonstrated that a largely contiguous scheme is achievable. Similarly the proposed Tillbridge application has also shown that a large contiguous scheme is achievable.
- [ADE2] The Scheme's study area of 15km is almost double the size of the Gate Burton study area (8km).
- [ADE3] There is a lack of focus on the cumulative transport impacts during the construction phase within the grid corridor.
- [ADE4] With regards to the Scheme's land use, the total Order Limits for the West Burton scheme is 886.42 hectares (ha) including cable connection; however, it is 769.08ha including means of access but excluding Cable Route Corridors. This is broken down per site below:
    - West Burton 1 area: 91.32ha, of which the developable area is 73.51ha.
    - West Burton 2 area: 306.98ha, of which the developable area is 149.62ha.
    - West Burton 3 area: 370.78ha, of which the developable area is 284.31ha.
    - The combined developable area (containing solar panels, substation, the energy storage, and associated infrastructure) is 507.44ha.
- [ADE4 continued] The combined area (which contains solar panels, substation, the energy storage, and associated infrastructure above)does not include the non-developable area for each site within the scheme which is assumed to include ecological and landscape mitigation. It should be noted that the Gate Burton solar scheme does include this mitigation area in their overall figures. WLDC believe that the inclusion of the mitigation area is vital for the scheme in order for it to be deemed acceptable and permissible, without the mitigation the impacts of the scheme would be wholly unacceptable.
- [ADE4 continued] The Gate Burton solar scheme has an agreed installed capacity of 531MW with National Grid at the Cottam Point of Connection (PoC) and its Solar and Energy Storage Park covers an area of 652 ha. This means the Gate Burton solar scheme has a ratio of approximately 1.3ha/MW (approx. 0.81MW/ha) when not including the Grid Connection corridor. If the ratio for Cottam includes the entire "network of sites" then the ratio would be 1.6ha/MW (approx. 0.62MW/ha). This would mean the West Burton Solar Scheme would be ~76% the efficiency of Gate Burton in terms of land use. These ratios are based on the schemes without the inclusion of the cable connection. If the cable connection was included, as it set out in paragraph 3.10.6, the dNPS EN-3, this would mean that the schemes would have a more ineffecient use of land. The ratios when including the cable connection are set out below:
    - Gate Burton: 531MW/824ha = 0.64MW/ha
    - West Burton: 480MW/886.42 = 0.54MW/ha
- [ADE6] The Applicant consistently uses phrases such as 'network of sites' and does not follow a contiguous design approach. The division of the Scheme into three distinct units, i.e. West Burton 1, 2 and 3, demonstrates the lack of good design. This is particularly in relation to Gate Burton and the forthcoming Tillbridge schemes within West Lindsey where a contiguous scheme has been designed.

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 or requirement to provide consideration for alternative sites. However, there is a requirement to provide information for reasonable alternatives as 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*'.

6.8. Paragraph 3.10.8 of the draft NPS (EN-3) states that "along with associated infrastructure, a solar farm requires between 2 to 4 acres for each MW of output. A typical 50MW solar farm will consist of around 100,000 to 150,000 panels and cover between 125 to 200 acres". This is the equivalent to 50 to 80 hectares for a 50MW solar site.

6.9. The dNPS goes on to say that "this will vary significantly depending on the site, with some being larger and some being smaller. This is also expected to change over time as the technology continues to evolve to become more efficient. Nevertheless, this scale of development will inevitably have impacts, particularly if sited in rural areas". In addition, paragraph 3.10.6 of the dNPS EN-3 states that "Solar farm proposals are currently likely to consist of solar panel arrays, mounting structures, piles, inverters, transformers and cables", which defines a 'solar farm' for the purpose of paragraph 3.10.8.

6.10. WLDC believe that, in line with the draft NPS, the inclusion of cables and the grid connection must be included in the calculation for determining efficient land use. Paragraph 3.10.7 should also be read in conjunction with the aforementioned paragraphs.

Legislation

6.11. 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*'.

6.12. There is also a requirement under the Habitats Directive, as transposed into UK law by the Conservation of Habitats and Species Regulations 2017.

Applicant's Approach to Assessment

Approach to site selection and design

6.13. The applicant has submitted an 'Concept Design Parameters and Principles' as a submitted application document (Doc. Ref. EN010132/APP/WB7.13). The document sets out the design parameters and principles by which the Scheme has been designed and the Environmental Impact Assessment has been undertaken. It will be secured by Requirement 5 in Schedule 2 to the draft DCO (dDCO) (Doc. Ref. EN010132/APP/WB3.1) in order to prescribe the guiding design principles and parameters to inform the detailed design of the Scheme post DCO consent.

6.14. This Concept Design Parameters and Principles document defines the key design parameters which reflect the worst-case scenario adopted in the Environmental Impact Assessment that has been undertaken for the Scheme. As the detailed design of the Scheme will be in accordance with these assessed parameters, the conclusions of the ES will be upheld.

6.15. The Concept Design Parameters and Principles have been set out in accordance with the description of the Works Numbers as set out in Schedule 1 to the Draft DCO. Where required, the document refers to other submitted DCO application documentation that will be secured by a Requirement in the Draft DCO (such as the Outline Construction Environmental Management Plan (Doc. Ref. EN010132/APP/WB7.1) or Outline Landscape and Ecological Mitigation Plan (Doc. Ref. EN010132/APP/WB7.3). The outline management plans will set out further details of the design, parameters and mitigation measures that will be complied with as part of the construction, operation, maintenance and decommissioning of the Scheme.

6.16. For each component of the Scheme, the parameter has been defined by the following:

- Location – the location of the Scheme component within the Scheme as assessed within the ES;
- Scale – either a minimum or maximum parameter which has been assessed in the ES; and
- Design – relevant design parameter or principle which has been assessed in the ES.

Environmental Impact Assessment

6.17. Chapter 5: Alternatives and Design Evolution of the ES (Doc. Ref. EN010132/APP/WB6.2.5) 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.

6.18. Section 5.5 of the Chapter 5 sets out the Applicant's approach to the selection of the Scheme's proposed location. This process and confirmation of its suitability when considered against potential alternative sites is summarised in the following sections and set out in detail in Appendix 5.1: Site Selection Assessment of this ES (Doc. Ref. EN010132/APP/WB6.3.5.1].

6.19. Section 4 of the Appendix 5.1: Site Selection Assessment concludes the Applicant's assessment of the site selection.

6.20. The applicant adopted a five-stage site selection process, summarised as follows:

- Stage 1 – Identification of the Area of Search;
- Stage 2 – Exclusion of Planning, Environmental and Spatial Constraints;
- Stage 3 – Identifying Potential Solar Development Areas;
- Stage 4 – Evaluation of Potential Solar Development Areas (PDAs); and
- Stage 5 – Widening the Search to consider Grade 3 agricultural land.

Stage 1 – Identification of the Area of Search

6.21. The Applicant considered the key factors as important in choosing a site for solar development, these are set out in further detail below:

- Location of the site – irradiation (sunlight) levels and the topography of the land are key considerations in determining the location of solar development. As the whole of England is suitable for solar gains and therefore it was not considered that there are any restrictions on where developments should be.

- Viable grid connection – it is important and practical for a scheme to have access to an existing grid connection.
- Site Availability – it was considered that, for a grid connection of 480MW, a site size of approximately 960 ha (excluding cable route) was needed.

6.22. It is noted that the Applicant undertook discussions with National Grid in which they were notified of grid capacity at West Burton, Cottam, and High Marnham Power Stations. The available capacity at these sites came about due to the closure of the coal fired power stations at these sites.

6.23. Due to the immediate availability of these Points of Connection (POCs), the Applicant did not consider any further alternative grid connection points. Through further discussion with National Grid on the West Burton POC, National Grid advised at that stage that a connection at West Burton would be preferred over connection at High Marnham because fewer upgrade works to National Grid's transmissions assets would be required at the POC and it would therefore be more straightforward, quicker to deliver and more economical. The Applicant therefore made a grid connection application to National Grid for connection at West Burton Power Station and an offer was made for 480MW.

6.24. The Applicant also made an application for a grid connection at West Burton Power Station for 480MW, this is the subject of a separate DCO application.

6.25. As set out above, there is an assumption that to generate 480MW the site would need to be the size of approximately 960 ha (excluding cable route) was needed. This is based on a calculation that a land area of approximately 75ha of solar panels (100ha including landscaping and ecology mitigation land) is required to provide an NSIP solar scheme with a generating capacity of 50MW.

6.26. The Applicant generally seeks to find a site which is around 10% larger than is needed for the grid connection offer (up to 1,100 ha). This larger site size allows flexibility for the accommodation of additional mitigation measures and other constraints that may become known through the design development process. It was considered that it would be highly unlikely that a single site of this size would be available.

6.27. In addition to the broad considerations set out above, an initial search area was identified at a 5km radius from the POC, however this was later expanded with the clear preference of identifying land as close to the POC as possible, the search area was enlarged incrementally until suitable options were found within a 15km radius which is considered by the Applicant to be a viable cable connection distance for a solar project of this scale.

Stage 2 – Exclusion of Planning, Environmental and Spatial Constraints

6.28. Stage 2 included the mapping of planning, environmental and spatial constraints which have been identified through a review of relevant national planning policies. The constrained areas have been excluded from the area of search identified at Stage 1 and are therefore not considered as suitable locations for the Scheme. The following spatial constraints have been mapped and excluded from further consideration:

- Agricultural Land Classification and Land type;
- Designated international and national ecological and geological sites;
- Nationally designated landscapes; and
- Proximity to sensitive human receptors.

6.29. Following the initial assessment of the 5km search area using the above constraints, it became clear that sites outside of this area would need to be assessed as insufficient land was available. The study area was therefore increased to a 15km radius.

6.30. During the site selection process, the sources that were relied upon were data from the Natural England Agricultural Land Classification (ALC). The Natural England maps do not differentiate between grades 3a and 3b. Therefore, at Stage 2 all land in Grades 1, 2 and 3 was excluded and the focus was on trying to identify suitable sites within areas of Grade 4, 5 or unclassified land outside of other identified planning and environmental constraints.

Stage 3 – Identifying Potential Solar Development Areas

6.31. Stage 3 of the assessment then applied key operational criteria for large scale solar development – site size and land assembly; and site topography to further refine the unconstrained areas identified at Stage 2.

Site Size and Land Assembly

6.32. The Applicant's analysis regarding the minimum area for large scale solar to be economically viable identified a threshold of at least 40ha of contiguous land for an individual site. This is the minimum site size threshold considered by the Applicant to be viable to form part of a network of sites, making up an NSIP scale scheme, in close proximity covering an area of approximately 1,100ha when factoring in the 10% additional land that the Applicant usually seeks.

6.33. Individual site size and development area thresholds were identified by the Applicant following economic analysis of the MW output per hectare, taking into consideration infrastructure costs and the need for land to provide appropriate environmental mitigation. This resulted in a site threshold of 40 ha being applied. A smaller development area results in higher unit costs and an assessment was made as to the maximum cost and therefore minimum site area threshold that would be viable for the Scheme to hit the target financial metrics.

6.34. Areas of unconstrained land of at least 40ha were therefore taken forward to the Stage 4 assessment. Where there were areas of unconstrained land that met the threshold of 40ha but were isolated and so not viable to join other areas to form an approximate 1100 ha area required, these were not taken forward to the Stage 4 assessment.

Previously Developed Land (PDL)

6.35. Opportunities for solar arrays on previously developed land (PDL)/brownfield land, commercial rooftops, and lower grade agricultural land were explored.

6.36. An assessment of PDL/brownfield land within the search area which includes parts of West Lindsey, Bassetlaw and Newark and Sherwood Districts identified no land of an adequate area to facilitate a large-scale solar project either individually or in combination with other sites. In 2017, it became a requirement for each Local Planning Authority to keep a register of PDL suitable for residential development. The latest data for the Councils in the search area is from 2021and 2022 is contained within the relevant brownfield registers. The Applicant identified 11 brownfield sites within the search area that are 1ha and above in size. Sites smaller than 1ha and were immediately discounted due to their inability to provide a viable land parcel of 40ha in combination with other land due to inefficiencies in both layout and required connection between sites.

6.37. Of the 11 sites over 1 ha in size, none are large enough to provide a viable land parcel of at least 40ha if it could be developed as part of a network of sites in close proximity to provide a total of approximately 1100ha to accommodate the Scheme. No sites were found over 3.98ha and therefore no individual brownfield site from the register provides an adequate area to facilitate the Scheme.

6.38. A number of sites have planning permission for residential development and/or are allocated for residential/mixed use development. Within settlements like Gainsborough where there are a number of PDL sites, it is not viable to link these small sites together because they do not meet the minimum 40ha threshold. Even if this were feasible, they would still be insufficient to provide the minimum site size for a 50MW project or in combination, provide an alternative approximate 1100ha site for the Scheme.

6.39. An assessment of commercial rooftops within the search area identified no rooftops or combined premises of an adequate area to facilitate a large-scale solar project or provide a viable network of sites in close proximity covering an area of approximately 1100ha.

Topography

6.40. Topographical constraints were also identified and mapped with all land with a 3% or less gradient, which is considered to be very flat and optimal for solar generation, being considered as potential solar development areas.

6.41. 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.

6.42. The use of previously developed (brownfield) land, commercial rooftops and alternative locations proposed by consultees through the statutory consultation stage (as discussed above) were also considered. No brownfield land or commercial rooftops that meet the minimum individual site size threshold or the area of approximately 1,100ha required for a network of sites in close proximity for the whole Scheme were identified within the 15km search area.

Stage 4 – Evaluation of Potential Solar Development Areas (PDAs)

6.43. Stage 4 then assesses the potential solar development areas which have been identified in Stage 3. These potential development areas (PDA's) have been subjected to a desktop assessment to further understand the development constraints of these particular areas. The evaluation has involved the assessment of the areas against a range of planning, environmental and operational considerations which were developed having regard to relevant national and local planning policy and the optimal functionality of a large scale solar development.

6.44. Information sources which include GIS data, online mapping and planning policy documents (have been used to inform the assessment. The evidence has then been considered by planning professionals who have awarded a category of red, amber or green against each assessment indicator based on professional judgement. A statement setting out the justification for each categorisation has also been provided.

6.45. Areas have then been evaluated on their overall performance against the planning, environmental and operational considerations. Their performance is shown relative to the West Burton original draft site area location.

6.46. Following the evaluation stage, PDA 1 on Grade 4 and 5 agricultural land and unclassified land proved unsuitable for development due to significant constraints being identified. These constraints include land use, ecological and landscape factors.

6.47. The assessment then proceeded to consider potential areas of Grade 3 Agricultural land. This is set out in Stage 5 below.

Stage 5 – Widening the Search to Consider Grade 3 Agricultural Land

6.48. Following the discounting of PDA 1 on Grade 4 and 5 agricultural land and unclassified land, the site search focused on the areas of Grade 3 agricultural land within the search area. Residual Grade 3 areas were identified following the exclusion of the same high level constraints previously considered for the Grade 4,5 and unclassified land at stages 2 and 3 above.

6.49. Other proposed solar NSIP projects located on Grade 3 land within the 15km search area were discounted from further assessment because they were not available to accommodate the Scheme. These include Cottam Solar Project; Gate Burton Energy Park; and Tillbridge Solar. IGP is the developer progressing Cottam; Gate Burton and Tillbridge are separate developers. At the time of site selection not all the proposed solar NSIPs were in the public domain, however, they were already subject to early work, discussions and agreement with landowners and therefore the land areas were not all identified as potentially available land through enquiries with land agents.

6.50. Land agents were contacted regarding potentially willing landowners within the area. The availability of willing landowners is an important consideration because it is typical for the land to be leased rather than permanently acquired due to solar farms consisting of temporary structures. It is desirable to compile a site in as few land ownerships as possible to minimise project complexities (including engineering, design and mitigation measures), legal complexities and project costs. For this reason and due to the land take required for the Scheme, land agents used their professional knowledge to provide details of potentially willing landowners with large scale landholdings within the 15km search area.

6.51. These were assessed against the same detailed range of planning, environmental and operational considerations used to assess the Stage 4 PDA. Other areas of Grade 3 land within the 15km search area either did not have willing land owners (sometimes due to early progression of other NSIP projects), were in smaller land ownerships which would add to project complexity (including engineering, design and mitigation measures) and cost, or were shown to be subject to a range of constraints when the planning and environmental considerations were mapped over the land agent enquiry areas. They were not, therefore, investigated any further.

Results of Assessment

Stages 1 and 2: Identification of the Area of Search and Unconstrained Land

6.52. The Applicant sets out the results of the search area for the Scheme showing the 5km, 10 km and 15km concentric circles from the proposed POC at West Burton Power Station which represent how the search area was incrementally expanded from the initial 5km search area in order to find a suitable site.

6.53. The results of Stage 2 are also mapped with the various high level national planning and environmental constraints identified within the 15km area of search. The Applicant also shows the output from this sift mapping, identifying areas of unconstrained land which have not been excluded from the Stage 1 and 2 sifting exercise.

Stages 3 and 4: Identifying Potential Development Areas and Further Evaluation

6.54. The Applicant shows the output of criteria applied during Stage 3 through several drawings. Brownfield land over 1 ha was identified using the brownfield register for the local planning authorities within the 15km area of search. These sites were considered too small as they do not meet the minimum individual site size threshold of 40ha or an area of approximately 1100ha sought for a network of sites in close proximity.

6.55. It has also been illustrated where the unconstrained Grade 4, 5 or unclassified land identified from the mapping at Stage 2 with a slope gradient of 3% or less.

6.56. A drawing has also been produced to show the areas of land which were identified through the Stage 2 sift but do not meet the Stage 3 criteria and so have been discounted. The reasons for this are that some areas are not within close proximity to other potential solar development areas and would therefore not be able to be part of a network of sites with an area of approximately 1100ha. Some areas are discounted due to inefficient site shape and/or because they do not meet the minimum site size threshold of 40ha.

Alternative Areas Proposed Through Consultation

6.57. As part of the pre application process for the DCO application, the Applicant undertook non-statutory and statutory consultations. These consultations highlighted alternative locations for the Scheme which included RAF Scampton and other non-specified brownfield sites.

6.58. The Applicant notes that West Lindsey District Council has submitted an expression of interest in acquiring RAF Scampton for redevelopment and the site was allocated as an “opportunity area” in the Draft Local Plan. The Applicant therefore considered that this site would not be available for solar development.

6.59. The Applicant has also demonstrated the constraints around brownfield land in the 15km proximity of the POC at West Burton.

Suitability of Potential Solar Development Areas (PDA’s) Identified on Grade 4, 5 agricultural land and unclassified land

6.60. The Applicant undertook a desktop assessment of the PDAs on Grade 4, 5 agricultural land and unclassified land against planning, environmental and operational criteria.

6.61. Going into the stage 4 assessment, this area was the best potential location for a large-scale solar scheme considered against the high level constraints assessed up to this stage because it was located on Grade 4, 5 agricultural land or unclassified land.

Stage 5 – Widening the Search to consider Grade 3 agricultural land

6.62. One potential site within this area was initially identified but was later discounted following further detailed assessment of constraints. Only then, did the assessment consider potential areas of Grade 3 agricultural land. The location of the original draft site area including the Scheme was ultimately chosen following a RAG assessment of a further three sites within the Grade 3 land.

6.63. The finalised Scheme maximises the utilisation of low grade, non-best and most versatile (BMV) agricultural land with 73.76% of the land being classified as non BMV land. In terms of the specific areas of the BMV land that are included within the Scheme, these are justified by particular factors related to their location and context within the Scheme, the wider landholding, and in relation to adjacent and surrounding land. The Applicant sets out the changes made to the original draft site area to refine the Scheme following detailed ALC assessment and provides the detailed justification

for retaining small areas of BMV land and an explanation as to why others were removed. The reasons why small areas are retained is generally because they form small parts of larger fields of lower grade land and it would not be practical to remove these from the Scheme from a Site layout perspective, or to continue to farm them as small, isolated land parcels surrounded by the Scheme. Where BMV land formed the whole or majority of fields that could continue to be viably farmed, they were removed.

6.64. The land for the Scheme has been demonstrated to perform better than 3 of the assessed PDAs and equal to the remaining one following the site selection process. There are no more suitable locations for the Scheme within the Search Area.

6.65. The Applicant summarised that Lincolnshire is an optimal region within the UK to locate a large-scale solar farm. This is due to good irradiation levels and suitable topography, which is predominantly made up of and characterised by large flat open land. In addition, the decommissioning of large coal fired power stations within the region has led to the availability of significant grid capacity at available and accessible connection points. Key factors that influenced the siting of the Scheme are set out below:

- Maximises the use of low-grade agricultural land that is not considered BMV.
- The Scheme is not within internationally and nationally designated biodiversity sites.
- The Scheme is not within an AONB.
- Limited impacts on heritage assets.
- Located primarily in the Flood Zone 1.
- Preferrable transport access for construction and operational maintenance, with good links to the strategic road network (the A15, A46, M180) via the A1500, A156, and A57.
- Suitable land available and good topography.
- There is available capacity for the Scheme to connect to the National Electricity Transmission System (NETS) at West Burton Power Station.
- Only requires cooperation with four land owners thereby minimising project complexity, legal complexity and cost.
- The land has limited land use conflicts with respect to local development plan allocations and displacement of existing businesses.

6.66. The Applicant does not believe there are any other suitable locations.

Alternative Technologies

6.67. Alternative types of low-carbon forms of electricity generation for utilising the existing West Burton Power Station POC capacity were not considered by the Applicant, who is a solar PV and energy storage developer. However, it was considered that the Order Limits would not be suitable for other forms of renewable generation at the same scale as the Scheme.

6.68. Specifically, tidal power, offshore wind and hydroelectric storage are not possible due to the location of the POC which is located approximately 70km from the coast and within an area of low, flat topography. The Lincolnshire Wolds AONB lies between the POC and the Lincolnshire coast making overhead lines prohibitive through this sensitive area and underground cabling costly over the required distance.

Alternative Layouts for Solar Panel Areas

6.69. The layout of the solar panels was informed by implementing blanket parameters across the development site to ensure consistency of approach. Parameters such as offset distances were informed by the technical consultant team based on their professional judgement and previous experiences. Once applied, the remaining site area was designated the “developable area” for the solar array, inverters, substation, and access roads.

Alternative Substation Locations

6.70. The positioning of a substation within each of the Sites, and a main substation near to the point of connection, are requirements of the Scheme driven by electrical design. The main considerations were implemented as blanket parameters across the development site to ensure consistency of

approach, however site-specific requirements – led by the substation size – were also included. Parameters such as offset distances were informed by the technical consultant team based on their professional judgement and previous experiences. Once applied, a RAG assessment was undertaken at each of the sites to determine the most suitable areas within the developable area for the positioning of the substations.

Alternative Cable Routes

6.71. The proposed Cable Route Corridor has been refined and reduced from that set out at earlier stages of the project.

6.72. Options for open trenching, moling, micro tunnelling and horizontal directional drilling (HDD) were explored for the watercourse crossings, with a technical preference for open trenching where possible, but HDD was eventually chosen as the best approach to minimise disturbance to habitat following further ecological survey work.

Summary

6.73. The Applicant has asserted that the Order Limits would not be suitable for other forms of renewable energy at a similar scale. Tidal, offshore wind and hydroelectric storage would not be suitable given the distance from the coast which is approximately 70km and would therefore reduce the efficacy of the electricity generation. Nuclear power was also considered to be both expensive and involves long lead in times, which the applicant claims is circa 20 years.

6.74. Alternative layouts for the solar panel areas, alternative substation locations and alternative cable routes have all been considered from the early scoping stages of the project through to submission of the DCO application. Matters raised by stakeholders in relation to alternatives at the EIA Scoping and Statutory Consultation Stages have helped to shape the development of the Scheme.

Impacts and Issues

Positive

6.75. The Scheme sought to exclude BMV land from the Scheme so far as is practicable.

Neutral

6.76. None.

Negative

6.77. The design of the Scheme does not seek to create a contiguous site and treats the ‘individual sites’ as ‘part of a network’. This suggests that the Scheme is a considered a series of separate solar farms that connect together in order to connect to the West Burton POC.

6.78. A search area of 15km is considered significant. This is particularly large when considering the Gate Burton search area was only 8km and was considered the maximum viable distance for a new solar farm. This is because 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.

6.79. The assessment does not consider construction access point via two-way highways to minimise ecological and traffic impacts.

6.80. The project has failed to avoid all BMV agricultural land. The lifespan of the project (40 years) 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.

6.81. 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.

6.82. 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. Landscape and Visual Impact Assessment

Summary

7.1.1. The list below outlines the main points arising from the review of Chapter 8: Landscape and Visual Impact Assessment of the ES (Doc. Ref. EN010132/APP/WB6.2.8) for the West Burton Solar Project:

- [LV1] The ZTV models use DTM supplemented with separately derived site data rather than DSM so there is potential for error.
- [LV2] The cumulative developments section only deals with other solar farms and not other developments in the area. The text should clarify why this is, either there are no other developments or the assessment has decided not to consider them which would be inappropriate.
- [LV3] The consideration of the separate parts of the West Burton scheme in the cumulative assessment is inappropriate – the elements should be considered as one scheme and therefore the individual assessment of each site should be given less weight in the planning balance.
- [LV4] It appears that residential receptors are only assessed within the 1km study area but the figures show a 2km study area and this should be clarified.
- [LV5] In paragraph 8.7.47 the Applicant considers there would be *'limited, temporary and short-term adverse impacts'* on the Regional Landscape Character Type 4a 'Unwooded Vales' which appears to ignore the likely significant adverse impact on character that would be experienced during construction and during the first 15 years of operation (which are defined by the Applicant as '*Long-term*' in Table 8.50. Splitting the assessment down to the different parts of the project understates the wider impact of the project on this Regional Landscape Character Area. West Burton 2 and 3 are also within this landscape character area and would also have an adverse impact on Regional Landscape Character Area 4a 'Unwooded Vales'. The existing character of this area is that of an open agricultural landscape which affords long-distance views. The presence of solar panels and associated infrastructure will change this character and introduce industrial elements into what is currently a rural agricultural landscape. When combined with the other solar schemes proposed (Cottam and Tillbridge in particular) the cumulative impact on Regional Landscape Character Area 4a Unwooded Vales will be even more significant.
- It should be noted that the proposed mitigation of linear woodland and screen planting will take a significant time to establish and would have an adverse impact on landscape character by changing the existing open nature of the landscape and shortening views. The Applicant claims there is a Significant Moderate Beneficial impact on this Regional Landscape Character Area from Year 15 when the proposed mitigation planting becomes established. Although planting may largely screen views, there would still be an adverse impact on the 4a Unwooded Vale Regional Landscape Character Area, as character will have changed from an open, agricultural landscape to a closed, wooded character area with significant industrial elements.
- The Applicant assesses that there will be a beneficial cumulative impact on landscape character. This assessment is based on West Burton being constructed and in operation alongside the mitigation provided for the Cottam, Gate Burton and Tillbridge solar schemes during operation. However, at paragraph 18.7.116 of the Socio-economic chapter of the ES (Doc. Ref. EN010133/APP/WB6.2.18) states that the Scheme will *"have a long-term impact on the landscape character of some tourism and recreation receptors that are reliant on the landscape context for their value, such as viewpoints, landmarks, and cultural heritage assets"*. This contradicts the findings in the LVIA.
    - In addition to the above, the Gate Burton scheme has assessed a cumulative moderate adverse impact based on the same schemes. It is unclear how the Applicant has reached their conclusion, particularly as the landscape receptors are

subdivided and an overall impact on the landscape does not appear to be forthcoming.

  - The Joint Report on Interrelationships between Nationally Significant Infrastructure Projects (Doc. Ref. EN010131/8.26 (Gate Burton) states that the Tillbridge scheme will result in significant cumulative effects on landscape character at a local level or potentially at a wider (National Character Area) level during construction and operation.
  - It is not understood how an argument can be made that the construction of an extensive solar farm will lead to an 'improvement' in local or regional landscape character, when this involves the introduction of significant industrial elements (panels, substations and related infrastructure – security fencing/lighting etc). The assessment does not address the negative impact to landscape character that would occur from the introduction of these industrial elements ('detractors' when considering regional and local landscape character).

- [LV6] Para 8.9.55 of the Landscape and Visual Impact Assessment Chapter states that the Combined Effects of three Site Areas that there *'are no likely significant in-combination landscape effects at the construction, operation (year 1 and year 15) and decommissioning stages'*. It is questioned how during the construction stage of the combined sites or during the 15-year establishment phase (which is not short-term) there no likely significant effects. The Applicant has identified that there will be significant adverse effects on viewpoints, transport receptors and PRoW receptors during construction. Planting trees to screen the proposed scheme will not prevent a significant adverse change in landscape character.
- [LV7] Having regard to the criteria that forms Policy S53, WLDC concludes that the West Burton Solar Project does not represent an effective and efficient use of land to realise its benefits and as a consequence fails to assimilate itself into the landscape. The Scheme will materially harm the landscape character and results in greater direct impacts on ecological and landscape fabric than could be achieve through a well-designed, contiguous scheme.

Policy Context

National Policy

7.2. 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.

7.3. 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*'.

7.4. 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)

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

7.6. 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.

7.7. 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

7.8. The Applicant has presented their findings on a site-by-site basis taking each of these individual contributors at the broad scale in turn, which are regional landscape character types (RLCTs) set out within the East Midlands Regional Landscape Character Assessment which are:

- RLCT 3a Floodplain Valleys;
- RLCT 4a Unwooded Vales;
- RLCT 4b Wooded Vales;
- RLCT 6a Limestone Scarps and Dipslopes;
- WLLCA LCA 2 Trent Valley;
- WLLCA LCA 3 The Till Vale;
- WLLCA LCA 4 The Cliff • BLCA LCT Mid-Nottinghamshire Farmlands (and its individual Policy Zones) • BLCA LCT Trent Washlands (and its individual Policy Zones)

7.9. The assessment has also provided a summary of the landscape effects of the individual contributors to the landscape baseline at a fine-grained scale and draws upon published information, desktop studies and fieldwork to identify the individual contributors to landscape character. These are assessed under the following headings:

- Land Use;
- Topography and Watercourses;
- Communications and Infrastructure;
- Settlements, Industry, Commerce and Leisure;
- Public Rights of Way and Access;
- Nationally and Locally Designated Landscape;
- Scheduled Monuments, Listed Buildings, Conservation Areas and Registered Parks and Gardens; and
- Ancient Woodlands and Natural Designations.

7.10. This LIR will focus on the in-combination landscape and visual effects resulting from the combination of individual effects at Sites and the Cable Route Corridor and the combined effects of the Cumulative Sites.

Construction and Decommissioning

Positive

7.11. None identified.

Neutral

7.12. National Landscape Character Areas:

- These are not considered further within the LVIA Chapter as the assessment relies on the regional and local landscape character assessment as the baseline and to form judgements.
- .

7.13. Topography and Watercourses:

- There would not be the removal of, or changes in individual topography or watercourse elements or features of the landscape as a result of the combined effects of the four Site areas. However, the topography and watercourse features within these areas are influenced by the intensive farming that has diminished the 'sense of place' in parts including the drainage of flood plains and impact on the riparian vegetation and other habitats. Where watercourses survive, their associated vegetation helps to curtail visibility in this area. Public access is also limited to these features. This aesthetic would not be changed. The difference in effect shows there are very minor patches of in-combination change but that would yield no discernible improvement or deterioration to the existing landscape character of the topography and watercourses.

7.14. Nationally and Locally Designated Landscapes:

- The baseline of the AGLVs would not be affected but its wider setting would be improved with the landscape mitigation to yield beneficial effects. The In-combination effects of the Cumulative Sites is Negligible Adverse (Not Significant) at the construction, operation (year 1 and year 15) and decommissioning stages.

7.15. Combined Effects of the Generating Substations [Landscape]

- Effects associated with the Substations are included within the assessment of each individual Site. There are no likely significant in-combination landscape effects at the construction, operation (year 1 and year 15) and decommissioning stages.

Negative

7.16. Landscape Character

- Significant adverse (negative) impacts on landscape character and visual impacts will occur during construction.
- There are also likely to be significant in-combination adverse effects on a regional landscape character (cumulatively) during construction.

7.17. Land Use

- The in-combination effects of the Cumulative Sites are Minor Adverse during construction.

7.18. Significant in-combination visual effects are expected during construction at the following viewpoints:

- Viewpoint LCC-C - Broxholme Lane / Main Street;
- Viewpoint VP9 – Brox/196/1; and
- Viewpoint VP10 – Brox/196/1

7.19. Significant in-combination visual effects are expected during construction at the following transport receptors:

- Transport Receptor – T001 / Main Street, Broxholme Lane - Road that runs through WB1; and
- Transport Receptor – T015 / Cowdale Lane - western section near Torksey.

7.20. Significant in-combination visual effects are expected during construction at the following PRoW receptors:

- Public Rights of Way Receptor – PR008 (Brox/196/1).

Operational

Positive

7.21. There are no significant positive impacts.

Neutral

7.22. Topography and Watercourses

- The In-combination effects of the Cumulative Sites is Negligible Neutral at operation (year 1 and year 15) stages.

7.23. Communications and Infrastructure:

- The In-combination effects of the Cumulative Sites is Negligible Neutral at operation (year 1 and year 15) stages.

7.24. Public Rights of Way and Access

- The In-combination effects of the Cumulative Sites is Negligible Neutral at operation (year 1 and year 15) stages.

7.25. Ancient Woodland and Natural Designations

- The In-combination effects of the Cumulative Sites is Negligible Neutral at operation (year 1 and year 15) stages.

Negative

7.26. Nationally and Locally Designated Landscape

- The baseline of the AGLVs would not be affected but its wider setting would be improved with the landscape mitigation to yield beneficial effects. The In-combination effects of the Cumulative Sites is Negligible Adverse at operation (year 1 and year 15) stage.

7.27. Landscape Character

- There would be significant adverse impacts on Regional Landscape Character Area 4a Unwooded Vales from the start of operation (Year 1) and beyond. Landscape planting proposed will help to screen and integrate the proposed scheme, but this will take at least 15 years to mature and will not prevent the fundamental change in landscape character caused by the presence of solar arrays and associated infrastructure (which will change the existing open, rural, agricultural landscape to a semi-industrial landscape with urban elements).

7.28. Significant In-Combination visual effects are expected during operation (Year 1) at the following viewpoints:

- Viewpoint LCC-C - Broxholme Lane / Main Street;
- Viewpoint VP9 – Brox/196/1; and
- Viewpoint VP10 – Brox/196/1

7.29. Significant In-Combination visual effects are expected during operation (Year 1) at the following transport receptors:

- Transport Receptor – T001 / Main Street, Broxholme Lane - Road that runs through WB1; and
- Transport Receptor – T015 / Cowdale Lane - western section near Torksey.

7.30. Significant In-Combination visual effects are expected during operation (Year 1) at the following PRoW receptors:

- Public Rights of Way Receptor – PR008 (Brox/196/1).

Cumulative impacts

7.31. The Applicant has assessed the cumulative effects of the proposed solar farms within the vicinity of the Scheme, this includes Gate Burton, Tillbridge and Cottam.

Positive

7.32. There are not considered to be overall positive landscape character or visual effects as a consequence of the cumulative impacts of the projects.

Neutral

7.33. It has been assessed that there would be neutral impact on the following landscape receptors:

- Topography;
- Communications and Infrastructure;
- Settlements, Industry, Commerce and Leisure;
- Public Rights of Way and Access;
- Scheduled Monuments, Listed Buildings, Conservation Areas and Registered Parks and Gardens;

Negative

7.34. Adverse impacts on landscape character and visual effects will occur as a consequence of the project though construction, operation and decommissioning phases.

7.35. The cumulative impact with other projects will cause unacceptable significant harm on the landscape character and visual effects over a very long period of time.

Requirements

Requirement 5 – Detailed design approval

7.36. 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 concept design parameters and principles (CDPP).

Requirement 7 – Landscape and ecological management plan

7.37. The LEMP will be substantially in accordance with the OLEMP.

7.38. 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 Impact Assessment chapter of the ES states the scheme would result in major and moderate adverse impacts on the landscape.

7.39. The structure, scope and current detail within the CEMP is considered to be sufficient for decision making purposes and for securing through the proposed DCO Requirement. WLDC does however maintain concerns around the cumulative approach and impacts upon the successful implementation of the OLEMP (e.g. within the cable corridor). More detail around how projects will be phased and mitigation delivered is required to avoid abortive implementation of measures, which could elongate the time period for when mitigation is delivered.

Requirement 10 – Fencing and other means of enclosure

7.40. 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 CDPP.

Requirement 13 – Construction environmental management plan

7.41. Under this requirement, no part of the authorised development may commence until a construction environmental management plan (which must substantially accord with the outline construction environmental management plan) has been submitted to and approved by the relevant planning authority. All construction works associated with the authorised development must be carried out in accordance with the approved construction environmental management plan.

7.42. The Outline Landscape and Ecological Management Plan (OLEMP) (Doc. Ref. EN010132/APP/WB7.3) accompanies the Application and sets out the measures proposed to mitigate the potential impacts and effects on landscape (and ecological) features, and to enhance the landscape and biodiversity value of the Sites (i.e. the Green Infrastructure). The Landscape and Ecological Management Plan (LEMP), which takes into account and is prepared in accordance with the principles of the OLEMP, will be submitted to and approved by the relevant planning authority or authorities pursuant to a Requirement under the DCO.

Requirement 14 – Operational environmental management plan

7.43. Requirement 14 – Operational environmental management plan: Before the date of final commissioning of the authorised development, an operational environmental management plan (which must substantially accord with the outline operational environmental management plan) must be submitted to and approved by the relevant planning authority. The operational environmental management plan must be implemented as approved.

7.44. The OLEMP sets out the measures proposed to mitigate the potential impacts and effects on landscape (and biodiversity) features, and to enhance the landscape and biodiversity value of the Order limits (i.e. the Green Infrastructure). A detailed LEMP will be prepared in accordance with the principles of the OLEMP and will be submitted to and approved by the relevant planning authority or authorities. This will include measures to ensure landscape mitigation and enhancements are established and maintained into and throughout the operational phase. No visible lighting will be utilised at the Order limits perimeter.

Requirement 21 – Decommissioning and restoration

7.45. 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 for that part which substantially accords with the decommissioning statement. No decommissioning works must be carried out until the relevant planning authority has approved the plan submitted in relation to such works. The plan submitted must be implemented as approved. This requirement is without prejudice to any other consents or permissions which may be required to decommission any part of the authorised development.

8. Ecology and Biodiversity

Summary

8.1.1. The list below outlines the main points arising from the review of Chapter 9: Ecology and Biodiversity of the ES (Doc. Ref. EN010132/APP/WB6.2.9) for the West Burton Solar Project.

- [EC1] The assessment does not appear to include any consideration of combustion emissions from on-site plant or transport to the site. If this has been scoped out, it would be helpful to state this explicitly.
- [EC2] Scoping Opinion, item ID 2.2.1 indicates that the applicant should include decommissioning of West Burton A in the ES cumulative assessment, but this does not seem to be included in Chapter 9 Section 9.9.
- [EC3] Chapter 9 paragraph 9.7.5-9.7.20: Neutral conclusion noted but consider whether there is a risk of significant impacts on the LWS designations adjacent to the site boundary.
- [EC4] Chapter 9 para 9.9.19: *'However, there is the potential for increased temporary, but medium/long-term fragmentation or disturbance effects on species like bats, badgers, hedgehogs, reptiles, amphibians and harvest mice which utilise field margins especially.'* This sentence is unclear, more description is required as to whether a cumulative significant effect could result.
- [EC5] Pins Advice Note 10: Habitats Regulations Assessment relevant to nationally significant infrastructure projects contains a list of information that Applicants should provide. There are elements missing from the Habitats Regulations Report submitted as part of this Scheme.
- [EC6] ISHRA para 3.4.2 - In the Planning Inspectorate Scoping Opinion for this project, item ID 2.2.1 indicates that the applicant should include decommissioning of West Burton A in the ES cumulative assessment. It should also be included in the HRA in-combination assessment and considered in Section 5.
- [EC7] ISHRA para 4.1.1 Is misleading in respect to Ramsar sites. There is the potential for the Ramsar Sites to have been overlooked by this assessment.
- [EC8] The Applicant recognises that *'Much of the biodiversity value which it is anticipated will develop in the preceding (approximately) forty years would be lost along with habitat for a variety of other species'.* This suggests that the return to agricultural land is a negative impact and therefore it is questioned whether the agricultural land will be reinstated.

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 S14: Renewable Energy states that proposals for ground based photovoltaics should be accompanied by evidence demonstrating how opportunities for delivering biodiversity net gain will be maximised in the scheme taking account of soil, natural features, existing habitats, and planting proposals accompanying the scheme to create new habitats linking into the nature recovery strategy.

8.7. Policy S59: Green and Blue Infrastructure Network sets out where new green infrastructure is proposed, the design and layout should take opportunities to deliver biodiversity net gain and support ecosystem services.

8.8. 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.

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

8.10. 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.

8.11. 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 expected to retain existing hedgerows where appropriate and integrate them fully into the design having regard to their management requirements.

Key Impacts

Construction

Positive

8.12. There are no positive impacts identified.

Neutral

8.13. Construction activities could lead to a small amount of noise and possibly light disturbance to the species within the woodland. However, this would be temporary and would only affect the margins of the woodland. It should be noted that a certain amount of noise disturbance, dust deposition and run off would be anticipated as a result of routine agricultural activities, and as such impacts are likely to be similar to the current baseline conditions.

Negative

8.14. These six LWSs are located either partially within the CRSA, the Order Limits, or within 100m of them.

8.15. Fields N6, N8 (West Burton 2) and Q11 (West Burton 3) each contain individual mature in-field trees which could be at risk of fragmentation and degradation impacts from being surrounded by the array structures for the life of the Scheme, reducing their wildlife value.

8.16. In the case of the cable route's construction, however, the loss of 60-142m of largely species-poor hedgerow network due to temporary cabling operations is likely to constitute an adverse residual effect significant at a Site level in the medium term given that it would take approximately 3-5 years for the full re-establishment of re-planted hedgerows.

8.17. Accidental damage or pollution events during construction could degrade the hedgerow and watercourse network and woodland edges leading to localised, temporary adverse reductions in habitat quality for foraging bats.

8.18. Due to the physical separation of all Local Wildlife Sites (LWS) from the Order Limits or the development zone, potential for direct damage to these habitats is considered to be low. However, their proximity means they are potentially the most susceptible of all the listed designated sites to short to medium-term degradation impacts arising from possible discharge/deposition of sediments, dust and contaminants. It is considered that, of these sites, three two grassland (meadow) sites are the least sensitive to these impacts as the others are predominantly wetland habitats and therefore waterborne contaminants could spread further afield or persist for longer.

8.19. In one location at West Burton 2, underground cabling and the route of a construction and maintenance access track is proposed to cross the woodland known as the Codder Lane Belt by utilising an existing agricultural access gap. The gap presently measures approximately 6m, while only up to 3m is required for the track. While no fragmentation effects are anticipated, it is possible that accidental damage to the woodland during the laying of this track and trenching could occur from movement of plant or vehicle over-run.

8.20. Without the creation of the protective buffer zones, arable field margins would stand to be lost to some, potentially significant, degree during the clearance of the Sites and construction of the arrays. Arable field margins, along with the hedgerow and ditch network, constitute the majority of the wildlife value within the Scheme so their loss would be significant.

8.21. Barriers to movement in the form of severed or blocked/culverted watercourses and linear natural features may cause population fragmentation. The small number of new permanent access gaps at ditches (nine – which constitutes less than 0.1% of the overall ditch/watercourse network) required to facilitate construction, operational access and maintenance would potentially cause a minor, long-term adverse effect on otter and water vole dispersal should newly crossed ditches be rendered inaccessible at these locations.

8.22. Without the implementation of protective buffer zones, there is a risk that the existing habitat may be damaged or degraded through direct construction damage or indirect impacts such as the release of sediments or dust which could flow into connected watercourses off site. Accidental pollution events are considered unlikely, but if they were to occur, they would potentially have a detrimental effect on the quality of habitats on Site and downstream beyond the Site in the short to medium term depending on severity.

8.23. Accidental damage or pollution events during construction could degrade the hedgerow and watercourse network and woodland edges leading to localised, temporary adverse reductions in habitat quality for foraging bats.

8.24. Otters and water voles may be impacted through direct harm (to animals or their burrows) or disturbance during any construction activity affecting boundary habitats (ditches, watercourses and associated adjacent scrub, hedgerows or woodland). This is considered more likely where carried out in relation to rivers or significant watercourses and ditches, rather than smaller ditches, in line with the survey results.

8.25. Cable installation works will also require the incursion into approximately 20 ditches which has the potential to cause direct harm to water voles and otters, including their burrows and resting places, should they be present. The impacts on their habitats would be reversible and short-term, as habitat will be remediated to a functional state once trenching is complete.

8.26. Similarly, riparian habitat quality (particularly rivers, streams and larger ditches) is at risk of degradation through pollution resulting from run-off, sediment/dust deposition and contamination are possible during the construction phase.

8.27. Harvest mice stand to be adversely affected by the loss of arable crop within which to make nests and forage. While the presence of harvest mice is known in the county, accurate data on populations and distribution in Lincolnshire is sparse as this species is hard to detect. Intensive arable is considered suitable, although modern farming practices, including spraying and a lack of winter stubbles and uncultivated overgrown headlands, have reduced this suitability. The population on Site is therefore assumed to be widespread but at a low to moderate density. The impact of habitat loss would be felt for the life of the Scheme and potentially be of moderate to high severity.

8.28. Nesting birds are considered likely to be displaced to a significant, if not complete, degree owing to the imposition of tall structures and other hardware into the arable fields. Yellow wagtail may stand

to be displaced the least as they are believed to be able to nest in taller habitats and tolerate shorter sightlines. Displacement can be expected to last for the duration of the Scheme and would likely lead to local population fragmentation and increased intra-specific pressures on surrounding arable and grassland habitat which may be at, or approaching, carrying capacity. Although the population of lapwing, skylark and yellow wagtail are relatively high in Lincolnshire, their population dynamics at a Local, and potentially at District, level can be expected to be moderately adversely affected (but not likely affected at a County level), in the absence of mitigation.

8.29. The potential for, and severity of, impacts on overwintering birds depends on the timing of construction activities. It is assumed that, with a c.24-month build programme, working over the winter months will be unavoidable. Consequently, there remains the risk that flocks of wading birds such as golden plover and lapwing will be dissuaded from areas of the Sites or Cable Route Corridor they might ordinarily use on an occasional basis for foraging and shelter. However, given the considerable extent of similar open habitat in the vicinity, and the fact that the habitats on Site were not seen to be of elevated importance compared to their surroundings, or functionally linked to important sites designated for bird conservation, this impact is not considered to be more than a minor one. This is especially the case since no permanent construction activities will take place within the fields occupying the eastern third of West Burton 2, which were where the majority of the flocking wader and waterfowl species were recorded. However, the risk of disturbance and displacement remains in this location should cabling works be undertaken during the winter months.

8.30. Aquatic invertebrates associated with rivers such as the Till and Trent may be further impacted through sediment mobilisation during horizontal directional drilling activities

8.31. Badgers may be adversely impacted by the proposed development through loss of habitat in which to build setts, accidental direct harm during construction, disturbance by vehicles and personnel or the compaction of soil around setts. 10m, 20m and 30m development free buffer zones around all known setts according to their status have been designed into the Scheme.

Operational

Positive

8.32. Water quality within field boundary ditches can be expected to significantly increase post-development due to the anticipated reversion to permanent grassland under the array (reduced sediment run-off) and cessation of application of fertilisers and pesticides. As with ditches and other watercourses, the cessation of agricultural practices is likely to lead to an improvement in the water quality within retained ponds.

8.33. Further beneficial effects are considered likely to arise from the increased capacity of the newly-sown and managed grasslands and other herb-rich habitats to support flying invertebrates compared to arable. These habitats will be present across the majority of the Sites, under panels and within buffers and easements. This would have the effect of improving the abundance, diversity and productivity of foraging resources.

8.34. The cessation of intensive arable farming practices (particularly insecticide spraying) and reversion of the land to permanent (for at least the duration of the array) grassland can be expected to result in increased diversity and abundance of invertebrates at the operational Site. This includes a number of pollinating butterfly and bee species which have been shown to have increased diversity and abundance in solar arrays compared to control plots. Given the large extent of habitat that will likely increase in quality, the operational impacts of the development will have beneficial effects on a range of invertebrates.

8.35. For lapwing in the operational phase, the mitigation proposed is considered to be sufficient to reduce adverse effects to neutral levels, with a reasonably high potential to bring about at least a beneficial effect which could be significant at a Local level, or higher, considering the area of habitat proposed to receive this management.

8.36. The realisation of the above positive aspects is wholly dependent upon the securing of robust management plans, and a commitment towards collaborative implementation of projects on a cumulative basis in the event more than one project is consented

Neutral

8.37. Operational impacts are expected to be minimal as vehicle movements will be infrequent and limited, with no need to enter watercourses or ditches considered likely in relation to the array operation. This will significantly limit the risk of disturbance, pollution and damage impacts.

8.38. Impacts on polecat, hedgehog and harvest mouse during the operation of the Scheme are likely to be minimal, considering the adoption of ecological buffer zones and the restriction of development and vehicle movement to outside of these, save for habitat management operations.

8.39. Impacts on reptiles and amphibians during the operation of the Scheme are likely to be minimal, considering the adoption of ecological buffer zones and the restriction of development and vehicle movement to outside of these, save for habitat management operations.

8.40. As the nature of the proposals are relatively passive, with movement of vehicles and personnel close to ditches and watercourses being restricted, the opportunity for impacts from pollution or run-off is highly limited.

8.41. The predominance of large, open intensive arable fields, managed boundary features, and general absence of woodland and open water is very much reflected in the surrounding landscape, with large wetland or woodland sites being many kilometres away. Taken together, these characteristics of the Sites substantially reduce the risk that any as-yet unknown adverse impacts upon bats from a large scale solar development would cause a significant conservation impact on the conservation status of populations of bats at a Local scale or above.

Negative

8.42. While arable field margin habitat within the retained buffer zones and patches of semi-improved grassland would benefit from cessation of agricultural inputs and sprays, they would be at risk of long-term degradation through eventual succession to scrub without periodic management.

8.43. There is a risk that ponds may become damaged should sheep be utilized for grazing post-construction. Sheep may poach pond habitats causing damage to the adjacent vegetation and increased suspended sediment content of the water.

8.44. While individual foraging curlew were recorded on occasion, no breeding could be confirmed, or was considered likely. In the event that a territory is indeed present on Site, it would likely be displaced in the same manner.

8.45. In the absence of more recent or major studies into the effects of solar installation on bat behaviour or populations, it is prudent to assess the potential impacts of solar developments on bats in the context of the Sites' habitats, landscape setting and survey results. The Sites' generally low suitability to bats and low habitat diversity is borne out by the dominance of common and widespread species within the survey and desk study data. The rarer species of barbastelle bat and Nathusius' pipistrelle appear within the data at extremely low rates (less than 0.23% of calls and less than 0.05% of calls respectively), reflecting both the wide-ranging, migratory behaviour of Nathusius' pipistrelle and the relatively high survey effort (1,254 recording nights at 16 deployment locations) which increases detection probability for a given species. The predominance of large, open intensive arable fields, managed boundary features, and general absence of woodland and open water is very much reflected in the surrounding landscape, with large wetland or woodland sites being many kilometres away. Taken together, these characteristics of the Sites substantially reduce the risk that any as-yet unknown adverse impacts upon bats from a large-scale solar development would cause a significant conservation impact on the conservation status of populations of bats at a Local scale or above.

8.46. The operation of the arrays would mean that the majority of the Sites are effectively removed as an option for foraging and shelter for flocks of most species of waders during the winter. As a proportion of this habitat in the local area, it is relatively small, especially given the lack of functional linkage with sites designated for overwintering bird conservation.

8.47. For grey partridge in the operational phase, it is predicted that nesting will continue to occur within the Site for the most part and that the enhanced boundary habitats (with a greater abundance of weedy, seed-bearing vegetation), together with the presence of permanent short grassland within the mosaic of habitat management under the array will reduce displacement of these birds to adverse levels, significant at a Local scale.

Decommissioning

8.48. Activities relating to the removal of solar panel frames, underground cabling, substations and concrete footings, access and energy storage would be expected to have similar (or no worse) direct effects as those described in the construction phase impacts for each receptor Comparable levels of disturbance from movement of vehicles and personnel would be expected.

Positive

8.49. The ES concludes that the restoration of the land back to open arable farmland would likely be beneficial for some species of farmland bird which require open sightlines, as well as for plant species associated with arable margins. There is no certainty at this stage that this positive benefit would be realised however, and would depend on a robust decommissioning strategy that is not yet known.

Neutral

8.50. Depending on the ecological value of the habitats that develop over the lifespan of the scheme, it is realistic that certain areas of the site may be retained due to their value for wildlife on decommissioning.

Negative

8.51. Much of the biodiversity value which it is anticipated will develop in the preceding (approximately) forty years would be lost along with habitat for a variety of other species. In order to revert back to arable food production, it may be necessary to enhance the nutrient content of the soil if it has been depleted, which would likely be achieved through treatment with fertilisers, although it is believed that this is highly unlikely and an increase in soil fertility is likely to arise.

8.52. An increase in the use of pesticides and herbicides would also be expected. The decision on the farming type to be used will be made by the landowner prior to decommissioning.

8.53. Based upon current (2022) legislative protection, protected species which could be directly impacted by decommissioning activities would include badgers, water vole, otter, great crested newts, reptiles (grass snake) and breeding birds. Further surveys to identify the use of the site by these receptors would therefore also be expected as a minimum.

Cumulative impacts

8.54. Cumulative effects arising from the combined impacts of similar or large-scale development in proximity to the Scheme, this included: the Shared Cable Corridor; Gate Burton Energy Park; Tillbridge Solar; and the Cottam Solar Project

Positive

The management of land beneath panels may give rise to positive habitat creation. Neutral

8.55. As the designated sites which were at risk of significant impacts from the Scheme were located substantially distant from the other three solar proposals, no cumulative impacts were considered likely to occur.

8.56. While proposals are emerging in the case of Tillbridge Solar, the nature of solar schemes is to occupy field centres, and the pervasive land use in this area is arable/cereal farming. It is presumed that buffer zones protecting marginal habitats will be instigated in all cases. Furthermore, as residual effects from the Scheme on valued habitats are neutral, it is considered unlikely that an elevation to an adverse effect would occur in combination with these projects.

8.57. Given the predicted neutral to minor beneficial effects of the Scheme, as well as Cottam Solar Project, on polecat, hedgehog and brown hare species, and the likelihood that hedgerow habitats will be preserved within all projects, no cumulative adverse effects are anticipated.

Negative

8.58. Effects from the Scheme on bats are likely to be neutral to moderately beneficial, as is the case for the Cottam Solar Project. Because of this, cumulative effects of these three projects with the Scheme are unlikely, although each project might cause its own adverse effects individually from potentially damaging activities such as tree, building or hedgerow removal, or night-time lighting (unclear at this stage from review of available documents).

8.59. As the three projects are highly likely to replace the arable habitats with grassland, there is the potential for a cumulative impact on harvest mice which typically rely on tall, tussocky grassland as well as arable crops. Depending on the degree of marginal habitat retention and tussocky grassland creation, a minor cumulative adverse effect operating at a Local or District scale may be caused by the combination of all three projects with the Scheme.

8.60. Ground nesting birds are likely to be affected through displacement by each of the proposed projects given the incompatibility of solar hardware with the necessary long, unbroken sightlines required by these species for predator avoidance when nesting. The degree of adverse impact depends on the level of mitigation each Scheme is able to provide. At this point, it is not known what mitigation will be provided for ground nesting birds at the other two projects. Consequently, assuming that a similar or lesser degree of appropriate mitigation is adopted, it is possible that a moderate cumulative adverse effect on skylark at potentially a local to even District level may occur. Similar effects on yellow wagtail, grey partridge and quail may also occur since these birds are also ground nesting birds likely to be displaced by such development to varying extents during the nesting season.

8.61. As the three projects are highly likely to replace the arable habitats with grassland, there is the potential for a cumulative impact on harvest mice which typically rely on tall, tussocky grassland as well as arable crops. Depending on the degree of marginal habitat retention and tussocky grassland creation, a minor cumulative adverse effect operating at a Local or District scale may be caused by the combination of all three projects with the Scheme.

8.62. As flocks of many overwintering bird species rely on open habitats when foraging, it is unlikely that impacts on these species will be neutral or beneficial at the three projects, in the event that these species occur at them. Consequently, given their proximity to the Scheme, a cumulative adverse effect at Local scale is possible resulting from the loss of the combined developed area from the local foraging and sheltering habitat resource. The provision of over 170ha of land between the West Burton and Cottam Solar Projects to be managed specifically for birds which use open habitats (both during the winter and the breeding season), this impact is thought to restrict the potential for the cumulative effect to be felt at a greater geographic scale, although this is dependent on the provision of similar mitigation at the other schemes.

8.63. Cumulative adverse effects during construction are also possible for hedgerows, trees, ditches and watercourses within the shared cable route (depending on final designs, methods, routing and duration/sequence).

8.64. A sequential programme over five years would be expected to give rise to a cumulative adverse effect, due to the need for the compounds, jointing bays, haul routes etc to remain in place for five years. It is noted, however, that the trenching works could be completed and remediated as a priority given that cable pulling could be carried out at any time once the subterranean ducts are installed. This would minimise the number and/or width of hedgerow incursions which would need to remain in place for this length of time, limiting them to haul route gaps only, potentially being temporarily reinstated using natural or artificial hedgerow replacement in the interim. In any case, the sequential programme would have greatest impact on hedgerow habitat, followed by grasslands including semi-improved grassland and lowland floodplain grassland.

Requirements

Requirement 7 - Landscape and Ecological Management Plan

8.65. This requirement stipulates that no part of the authorised development may commence until a written landscape and ecological mitigation plan (substantially in accordance with the outline landscape and ecological mitigation plan) has been submitted to and approved by the relevant planning authority. The landscape and ecological mitigation plan must be implemented as approved.

Requirement 8 – Ecological protection and mitigation strategy

8.66. This requirement stipulates that no part of the authorised development may commence until a written ecological protection and mitigation strategy (substantially in accordance with the outline ecological protection and mitigation strategy) has been submitted to and approved by the relevant planning authority. The ecological protection and mitigation strategy must be implemented as approved.

Requirement 9 – Biodiversity Net Gain

8.67. This requirement stipulates that no part of the authorised development may commence until a biodiversity net gain strategy has been submitted to and approved by the relevant planning authority, in consultation with the relevant statutory nature conservation body.

Requirement 13 – Construction environmental management plan

8.68. Under this requirement, no part of the authorised development may commence until a construction environmental management plan (which must substantially accord with the outline construction environmental management plan) has been submitted to and approved by the relevant planning authority. All construction works associated with the authorised development must be carried out in accordance with the approved construction environmental management plan.

8.69. A pre-construction site walkover will be undertaken in advance of mobilisation/any potential advance works to reconfirm the ecological baseline conditions and to identify any new ecological risks.

8.70. Updated species surveys would be completed as appropriate to reconfirm the status of protected species identified, to inform mitigation requirements and support protected species licence applications, if required by the council(s) and EcoCoW.

Requirement 14 – Operational environmental management plan

8.71. Requirement 14 – Operational environmental management plan: Before the date of final commissioning of the authorised development, an operational environmental management plan (which must substantially accord with the outline operational environmental management plan) must be submitted to and approved by the relevant planning authority. The operational environmental management plan must be implemented as approved.

Requirement 21 – Decommissioning and restoration

8.72. 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 for that part which substantially accords with the decommissioning statement. No decommissioning works must be carried out until the relevant planning authority has approved the plan submitted in relation to such works. The plan submitted must be implemented as approved. This requirement is without prejudice to any other consents or permissions which may be required to decommission any part of the authorised development.

9. Socio Economics, Tourism and Recreation

Summary

9.1. The list below outlines the main points arising from the review of Chapter 18: Socio Economics, Tourism and Recreation of the ES (Doc. Ref. EN010132/APP/WB6.2.18) for the West Burton Solar Project:

- [SETR1] It is recognised that there are some financial benefits as a result of the Scheme. When considering that there are potentially four solar schemes located within West Lindsey it is questioned how the Scheme will identify the required workforce given the level of resource needed to deliver all the schemes at the same time.
- [SETR2] The Applicant recognises that there will be a long-term impact on tourism as a result of the Scheme during the construction phase. There is a potential for the Scheme to reduce the desirability of the Local Impact Area for tourism, and as such, an estimated worst-case scenario of a 1% drop in visitor spending per annum is assessed herein. It is therefore questioned that once the operation period has started and noting the applicants recognition that there will be a that the impact on a long-term impact on the landscape character, whether it has been assessed about the loss in long-term loss for the tourism economy. Impacts to the tourism economy have implications for compliance with Policy S42: Sustainable Rural Tourism in the Central Lincolnshire Local Plan.
- [SETR3] The Applicant recognises that during the operational the Scheme will have a long-term impact on the landscape character of some tourism and recreation receptors that are reliant on the landscape context for their value, such as viewpoints, landmarks, and cultural heritage assets. Thus, the maximum long-term moderate-minor adverse effect on the desirability of local tourist attractions and recreation centres in the Local Impact Area could lead to a proportional maximum long-term moderate-minor adverse effect on the local tourism industry and economy. Should the other solar schemes in the area be consented, it is considered that this impact will be amplified as large areas of West Lindsey will be characterised by solar farms.
- [SETR4] The Scheme will result in the loss of approximately 13 agricultural sector jobs in the Local Impact Area. It is claimed that these jobs will return following the decommissioning of the Scheme; however, following a minimum 40 year gap in employment it is difficult to determine whether these jobs will realistically return.
- [SETR5] It is assumed that the 13 agricultural sector jobs that have been identified by the Applicant are linked to the four farm businesses within the Order Limits referred to in Chapter 19: Soils and Agriculture (Doc. Ref. EN010132/APP/WB6.2.19) however, the Applicant does not appear to provide a breakdown of the agricultural sector jobs that will be lost. This differs from the Cottam application which shows a clear breakdown of the workers for each business. Moreover, there is no reference to any contractor related services to the farm. Therefore the breakdown of the jobs lost as a result of the scheme is not clear.
- [SETR6] In considering the above, it is questioned whether the impacts on long-term indirect agricultural job losses have been considered accurately. With a minimum of 40 years, potentially increasing to 60 years, of diminished agricultural activity in West Lindsey it is likely that these skills could be lost forever from the local area which is agricultural and rural in nature at present.
- [SETR7] There is the potential for ‘a fire could occur at any location within the development during the site construction, operational and decommissioning phases’. It is noted that the Outline Battery Storage Safety Management Plan (Doc. Ref. EN010132/APP/WB7.9) outlines the key fire safety provisions for the BESS. However, there is a concern that the BESS within West Burton 3 could cause fire hazards to the local populace both directly from fires and also the impact on air quality for the local populace.
- [SETR8] The Applicant recognises that there will be an estimated *“1% drop in visitor spending per annum”*. However, it does not appear that there is any explanation for this.

- [SETR9] There are also discrepancies between the assessment of cumulative effects identified in Chapter 18 of the West Burton ES, and the effects identified in the Socioeconomic chapters for the other cumulative schemes. Several significant (beneficial and adverse) cumulative effects are identified in the West Burton (Doc. Ref. EN010132/APP/WB6.2.18) and Cottam (Doc. Ref. EN010133/APP/C6.2.18) ES chapters. This is inconsistent with the findings from the cumulative assessment in Chapter 16 of the Gate Burton ES (Doc Ref. EN010131/APP/3.1) and the Joint Report on Interrelationships between Nationally Significant Infrastructure Projects (Doc. Ref. EN010131/8.26 (Gate Burton), which claim there will be no significant cumulative effects relating to Socioeconomics, Tourism and Recreation. The same is also true for the assessment of effects to Human Health.
- [SETR10] The Applicant states that the *"analysis of accommodation units shows that accommodating the anticipated temporary employee requirement could be achieved within the usual unfilled capacity across the entirety of the anticipated 25-month construction period. As such, it is not anticipated that usual visitors or users of temporary accommodation would be displaced"*. This differs from the assessment in the Cottam Scheme where there is considered to be a level of oversubscription. As the two schemes differ, it is not understood whether a cumulative assessment has been undertaken to consider all of the solar schemes being constructed at the same time.

Policy Context

National Policy

9.2. 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*'.

9.3. 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

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

9.5. 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.

9.6. 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.

9.7. 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).

9.8. 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.

9.9. 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

9.10. WLDC hold significant concerns about the short and long-term harm that the Scheme will have on the tourism sector.

Construction

Positive

9.11. The temporary employment generated by the Scheme's construction is equivalent to approximately 615 FTE jobs per annum. Of these, 395 are anticipated to be taken up by the workforce within the Local Impact Area (LIA), a total of 513 are anticipated within the Regional Impact Area (inclusive of the LIA), and the other 101 jobs are expected to be taken up by workers from elsewhere in the UK. In the context of the approximately 4,750 worker strong construction labour market within the Local Impact Area, it can be assessed that the net uplift of 142 workers, representing an increase of 3.0% in construction employment. This will therefore have a temporary medium positive impact.

9.12. The anticipated inbound number of construction workers (average 79 FTE employees, with a peak month of 154 FTE employees, based on the modelled construction programme used for the purpose of this socio-economic assessment) has the potential to increase accommodation occupancy rates by 10.7% over the 25- month construction period. A 10.7% increase in the 525-strong accommodation employment sector to meet this increased need would equate to an additional 56 FTE employees per annum over the construction period. This would amount to a high positive impact in the Local Impact Area, which is of a medium sensitivity to change due to its small size, thus resulting in a medium-term temporary major-moderate beneficial effect. This is therefore a significant effect. This level of uplift in the Regional Impact Area is low (a 0.2% increase to the 24,000- worker accommodation services employment sector), to a sector of low sensitivity, and thus is a medium-term temporary minor beneficial effect.

9.13. Should the uplift in workforce be required to find permanent accommodation, this would likely equate to approximately 79 FTE employees per annum based on average requirement across the construction period. As the baseline level of available new housing stock is approximately 2,660 units per annum, some 64.4% above the maximum assessed need of 1,618 dwellings per annum, the sensitivity of the housing market is low as it can easily accommodate additional need. Should all 79 FTE employees require individual housing units, this would take up 7.6% of the 1,042 dwelling per annum excess capacity. As this can be accommodated, and constitutes a medium-term medium magnitude impact, the resultant effect is moderate-minor beneficial to the local housing market as this will help to fill the local supply of housing.

Neutral

9.14. The anticipated requirement for accommodation units for inbound construction workers is estimated to be accommodated entirely within the usual unfilled capacity of the total serviced and non-serviced accommodation stock of 1,419 units in the Local Impact Area. As such, it is not anticipated that construction workers will displace any usual visitors. As a result, the effect on the accommodation industry with regard to visitor accommodation availability is neutral.

9.15. In the Regional Impact Area, the uplift of 550 workers to the 2,204,000 working population represents a negligible (0.02%) positive impact to a low sensitivity receptor, thus having an overall long-term negligible beneficial effect on the labour force in the Regional Impact Area.

9.16. The anticipated uplift in population is anticipated to be negligible in magnitude, at both level of the Local and Regional Impact Areas. Any changes to the demographic profile of either the Local or Regional Impact Area are expected to be extremely low and unlikely to have either a predominantly positive or negative bias. Therefore there is anticipated to be a neutral effect overall with regard to resident age demographics.

Negative

9.17. The projected uplift of 0.04% to the residential population in the Local Impact Area represents a medium-term temporary negligible magnitude impact with regard to the number of people requiring access to local services including primary health services.

9.18. Whilst the Scheme's construction is anticipated to generate a notable amount of commuting traffic and construction works traffic, the additional traffic loads on the local highway network have been

assessed in Chapter 14: Transport and Access (Doc. Ref. EN010132/APP/WB6.2.14) as having a negligible impact. However, working commuting patterns in the Local Impact Area are of a medium sensitivity to change. Resultantly, at worst, the impact on existing commuters is a medium-term minor adverse effect. Impacts at the regional level are not assessed due to the localised nature of transport impacts from the Scheme.

9.19. The movement of construction works traffic along roads within the near vicinity of the Scheme have been assessed as having an up to minor negative impact with respect to accessibility and delay for pedestrian and cycle traffic once embedded mitigation measures are implemented. This could therefore have a minor, localised delay on local movements (for work, school, accessing localised services). Furthermore, the presence of construction traffic on local routes may cause a moderate, localised fear and intimidation impact which may negatively impact the desirability of walking, running and cycling along local routes, thus having a negative impact on commuting methods and on health and wellbeing. This is assessed to only effect “Main Street” connecting the A1500 to West Burton 1 and Broxholme village. Pedestrian and cycling accessibility is of a medium sensitivity in the Local Impact Area due to its secondary impact on health and wellbeing. These impacts are therefore likely to have a medium-term moderate-minor adverse effect on population health and wellbeing as a result of reduction in accessibility for pedestrian and cycle traffic and increased fear and intimidation from HGV traffic.

9.20. The landscape receptors assessed in Chapter 8: Landscape and Visual Impact (Doc. Ref. EN010132/APP/WB6.2.8) identify a substantial number of viewpoints. It is identified that as a result of the Scheme’s construction some of these receptors have up to a high negative magnitude impact on their visual setting. This therefore is likely to have up to a peak moderate adverse effect on the tourism value of these locations, some of which are public rights of way. These peak effects are therefore significant.

9.21. Without additional mitigation, the greatest effect from construction of the Scheme on cultural heritage assets is a moderate adverse on one designated asset (the mediaeval bishop's palace and deer park, Stow Park Scheduled Monument), and up to major adverse on two non-designated assets. This therefore can be attributed as having a medium magnitude impact on these assets for tourism and visitors. Although some of the identified effects are significant, the number of identified landscape and heritage tourism receptors that are likely to be adversely affected by the Scheme’s construction are likely to have a low overall impact on the desirability of the Local Impact Area for tourists and visitors. Resultantly, the effect on local tourism attractions in the Local Impact Area is minor adverse.

9.22. The greatest effects on the use, accessibility, and desirability of Public Rights of Way are moderate-minor adverse effects. The greatest level of effects on high sensitivity long-distance recreational routes are moderate adverse effects. These are therefore significant. These embedded mitigation measures include the use of traffic management to ensure conflicts between the use of recreational routes and the routing of construction traffic are minimised, and the need for diversion or closure of public rights of way is limited.

9.23. Additionally, there are up to moderate-minor adverse effects on pedestrian and cycling traffic as a result of fear and intimidation from construction vehicle movements. Whilst all of these routes are highways, they are important as links connecting the PRoW network to nearby settlements and are therefore important to be considered as part of the assessment of effects on recreational routes.

9.24. Fishing locations on the River Till at Saxilby are likely to experience mid-range views of construction works at West Burton 1 and 2, thus there may be up to a low magnitude impact on the use of this location. As a result of its local level of importance, and thus a low sensitivity, this will therefore have a medium-term temporary minor adverse effect.

9.25. At worst, it can be anticipated that construction traffic has an up to low-level impact on the accessibility of some of the local recreation areas, particularly where users may have to use routes allocated for construction traffic. As a result, this could generate up to a moderate-minor adverse effect on the accessibility of recreational facilities for children and youth groups.

9.26. As a result of the identified direct impacts on tourism and recreation receptors in the Local Impact Area, there are likely to be secondary impacts on local businesses that are reliant on tourism. Thus, the predominantly moderate-minor adverse effect on the desirability of local tourist attractions and recreation centres in the Local Impact Area could lead to a proportional moderate-minor adverse effect on the local tourism industry and economy during the Scheme’s construction.

Operational

Positive

9.27. The employment generated by the Scheme's operation and maintenance is equivalent to approximately 25 FTE jobs per annum. Of these, 16 are anticipated to be taken up by the workforce within the Local Impact Area, a total of 21 are anticipated within the Regional Impact Area (inclusive of the LIA), and the other 4 jobs are expected to be taken up by workers from elsewhere in the UK.

9.28. Much of the operation and maintenance employment will sit within the energy sector. As such, the net direct employment uplift of 6 workers in the context of approximately 320 sector workers in the Local Impact Area represents a 1.9% increase from 2021 levels (Ref.66). This therefore represents a long-term medium positive impact to an industry that has a low sensitivity in the Local Impact Area, thus resulting in a long-term moderate-minor beneficial effect for the duration of the Scheme. At the regional level, where the sensitivity is also low, the magnitude of impact (a total of 8 workers in a pool of approximately 12,000) is negligible (0.07%), and as such is a long-term negligible beneficial effect.

Negative

9.29. The Scheme is projected to impact on up to 769 hectares of agricultural land for the operational lifetime of the Scheme, this will therefore cause approximately 13 FTE agricultural sector jobs to be lost. This impacts approximately 0.3% of the agricultural sector employment, and as such is a low magnitude impact. Due to its low sensitivity this results in a long-term minor adverse effect to the Local Impact Area. In the Regional Impact Area, this is a 0.03% reduction in agricultural employment, representing a negligible change to a receptor of low sensitivity. Therefore, the effect is long-term negligible adverse.

9.30. As the Scheme is estimated to displace approximately 13 agricultural sector jobs in the Local Impact Area, this is estimated to have an economic impact of £600,000, based on a GVA per worker of £49,074. This impact will reduce the value of the local agricultural economy (£265 million) by approximately 0.2%, and as such is a low magnitude impact to a low sensitivity receptor, resulting in a long-term minor adverse effect. A £600,000 reduction to the agricultural economy in the Regional Impact Area (£5.6 billion) is negligible, resulting in a long-term negligible adverse effect.

9.31. Whilst the operation of the Scheme is not anticipated to have a direct impact on the serviced accommodation in contrast to the construction phase, there is a potential for the Scheme to reduce the desirability of the Local Impact Area for tourism, and as such, an estimated worst-case scenario of a 1% drop in visitor spending per annum is assessed herein. This 1% fall in visitor spending per annum is approximately £240,000 (equivalent to the loss of 5 workers). Most of this economic loss will be felt in the local arts, entertainment, and recreation (RSTU) grouped economic sector. As such, a £240,000 loss to this economic sector (worth £76 million) represents a loss of 0.3%, which therefore constitutes a low magnitude impact, resulting in a long-term minor adverse effect. At the regional level, the loss to the arts, entertainment, and recreation sector is equivalent to 0.008% of the regional economic sector value. Therefore, the effect the Regional Impact Area is a long-term negligible adverse effect.

9.32. The development of the Scheme will have a long-term impact on the landscape character of some tourism and recreation receptors that are reliant on the landscape context for their value, such as viewpoints, landmarks, and cultural heritage assets. This could therefore have a secondary impact on local business that are reliant on tourism. Thus, the maximum long-term moderate-minor adverse effect on the desirability of local tourist attractions and recreation centres in the Local Impact Area could lead to a proportional maximum long-term moderate-minor adverse effect on the local tourism industry and economy during the Scheme's operational lifetime.

Decommissioning

Positive

9.33. The net direct employment from the Scheme decommissioning is likely to most benefit the construction employment sector. The net uplift of 114 workers is a 2.4% increase to construction employment in the Local Impact Area. This is a medium magnitude impact to a low sensitivity receptor, resulting in a medium-term temporary moderate-minor beneficial effect. The total net

direct uplift of 148 workers is a 0.1% increase to construction employment in the Regional Impact Area. This is a low magnitude impact to a low sensitivity receptor, resulting in a medium term temporary minor beneficial effect.

9.34. The loss of energy sector employment will be negated by the reinstatement of up to 13 FTE agricultural sector jobs as a result of the land being returned to agricultural use at the conclusion of the decommissioning phase, thus benefitting agricultural sector employment opportunities. The level of effect in the Local Impact Area will be a permanent minor beneficial effect. At the regional level, this will be a permanent negligible beneficial effect.

9.35. The decommissioning of the Scheme is likely to require temporary workers to be accommodated in the Local Impact Area. This will bring a temporary uplift in accommodation demand, anticipated to be average 63 FTE employees, with a peak of 123 employees. This would increase occupancy rates by approximately 9.1%. A proportional rise in accommodation sector workers to meet this would equate to 48 FTE staff. This would amount to a medium magnitude impact to a medium sensitivity receptor; thus the Local Impact Area would experience a medium-term temporary moderate beneficial effect. This is therefore a significant effect. This level of uplift in the Regional Impact Area is low (a 0.2% increase to the 28,000-worker accommodation services employment sector), to a sector of low sensitivity, and thus is a medium-term temporary minor beneficial effect.

Neutral

9.36. Following completion of the decommissioning phase, employment will return to near baseline levels. This will therefore represent a permanent minor beneficial effect to the Local Impact Area, and a permanent negligible adverse effect to the Regional Impact Area.

Negative

9.37. The energy sector will experience a permanent decline in employment as a result of the decommissioning of the Scheme. The loss to the Local Impact Area of 8 FTE employees is a 2.4% reduction. This therefore represents a permanent medium negative impact to an industry that has a low sensitivity, resulting in a permeant moderate-minor adverse effect. At the regional level, where the sensitivity is also low, the magnitude of impact (a total loss of 10 workers from a pool of approximately 12,000) is negligible (0.08%), and as such is a permanent negligible adverse effect.

9.38. The network of regionally important tourism destinations in the Scheme's immediate surroundings are likely to experience no more than a medium-term negligible negative impact from the decommissioning of the Scheme. Given their medium sensitivity, the expected effect will be medium-term minor adverse effect during the Scheme's decommissioning.

Cumulative impacts

9.39. The Scheme is located in an area where several Nationally Significant Infrastructure Projects (NSIP) are proposed, that may be developed in a similar timeframe. Thus there is the potential for cumulative effects on the local and regional socio-economic, tourism and recreation environment both during the development of these identified NSIPs, and their operational lifetimes. There are also a smaller number of other planning applications which have been considered for the same reasons, due to their scale and proximity to the Scheme.

9.40. The key NSIPs include the three solar schemes: Cottam, Gate Burton and Tillbridge schemes. The assessment has also included the West Burton C gas-fired power station decommissioning and several larger planning applications.

Construction

9.41. For assessment purposes, the anticipated impacts of decommissioning are expected to be similar to those for construction.

Positive

9.42. Accounting for "leakage" of commuters from outside the Local Impact Area, and existing employment displacement, the peak net uplift in construction employment in the Local Impact Area is 1,160 FTE employees in 2026. This represents an increase of 24.4% (from 4,750) in construction employment which is of high magnitude. This is therefore a peak cumulative medium-term temporary moderate beneficial effect on construction sector employment and is therefore a

significant effect. In the Regional Impact Area, the magnitude of impact (1,509 workers in a pool of approximately 107,000) is medium (+1.4%), and as such is a peak cumulative medium-term temporary moderate-minor beneficial effect.

9.43. The peak cumulative net uplift in construction employment in the Local Impact Area is likely to generate a peak GVA in 2026 of £63.0 million. This represents an increase of 24.4% to the local construction economy, which is of high magnitude. This is therefore a peak cumulative medium-term moderate beneficial effect and is therefore a significant effect. The £87.4 million increase to the construction economy in the Regional Impact Area represents a 1.3% uplift, which is of a medium magnitude, and thus represents a peak cumulative medium-term moderate-minor beneficial effect.

9.44. The total peak cumulative economic impact of the assessed projects in the year 2026 is a GVA uplift of £161.4 million, representing a 4.5% increase to the £3.6 billion economy of the Local Impact Area. This medium magnitude uplift therefore represents a peak cumulative medium-term temporary moderate-minor beneficial effect. therefore falls within the same level of significance of effect as the Scheme assessed in isolation. The peak cumulative GVA uplift of £217.3 million to the Regional Impact Area is an uplift of 0.2%. As such, this is therefore a peak cumulative medium-term temporary minor beneficial effect.

Neutral

9.45. The peak level of accommodation needed for temporary construction workers is likely to exceed accommodation surplus, thus displacing up to a peak of 38.0% of the usual number of visitors using accommodation in the Local impact Area. This however is not likely to have a direct impact on employment in the accommodation sector. As such, these impacts are likely to remain neutral in both the Local and Regional Impact Areas.

Negative

9.46. The anticipated cumulative effect of the cumulative projects on the agricultural economy is a peak loss of approximately 38 FTE workers by 2026. This is a 1.0% loss to the level of agriculture employment in the Local Impact Are, and therefore represents a medium magnitude impact. This results in a cumulative long-term moderate-minor adverse effect. The loss in agriculture employment in the Regional Impact Area is not anticipated to be of an increased level of significance of effect.

9.47. The displacement of visitors is likely to lead to a loss of visitor spending as a result of displacement from accommodation, and the secondary impacts of the cumulative projects on local desirability for tourism and recreation, are likely to result in a reduction of 246 FTE employees in the grouped tourism and recreation (RSTU) employment sector. This represents a 7.0% loss of employment in the Local Impact Area, which is a medium magnitude impact, thus signifying a peak cumulative medium-term temporary moderate-minor adverse effect. In the Regional Impact Area, the magnitude of change is low (0.3%), and thus represents a peak cumulative medium-term temporary minor adverse effect.

9.48. The projected 0.3% uplift to the residential population in the Local Impact Area is likely to induce a peak cumulative medium-term temporary minor adverse effect in the number of people requiring access to primary health services. This could therefore have a secondary peak cumulative medium-term temporary moderate minor adverse effect on general population health and wellbeing, and a peak cumulative medium-term temporary minor adverse effect on disability and long term health in the local population as a result of reduced accessibility to local healthcare services. The level of significance to any of these receptors in the Regional Impact Area is not anticipated to change.

9.49. The greatest level of economic impact to tourism and recreation, most likely to be felt in the arts, entertainment, and recreation grouped sector, is estimated to be a loss of £11.0 million. This is likely to be as a result of visitor spending reduction as a result of displacement from accommodation. This loss amounts to a high magnitude 14.5% reduction in the economic sector in the Local Impact Area, thus constituting a peak cumulative medium-term temporary moderate adverse effect. This is therefore a significant effect. The loss to the economic sector in the Regional Impact Area is low at 0.4%, and thus the level of significance of effect is a peak cumulative medium-term temporary minor adverse effect.

9.50. Of the Public Rights of Way and long-distance recreation routes assessed, the Trent Valley Way and National Byways Cycle Route are likely to see the greatest level of cumulative impact. These

cumulative impacts are as a result of direct impacts from cable routes crossings and visual impacts from the multiple projects nearby or adjacent to the variant routes of both these long-distance recreation routes. In a worst-case scenario, construction of the cable routes of the identified projects may run sequentially over a five-year period, requiring the Trent Valley Way to be closed three times during this. Similarly, the National Byways route from Sturton le Steeple to Bole may need to be closed for an extended time to facilitate the cable connection from Bumble Bee Farm to its connection point. As such, these routes could experience a peak cumulative short to medium-term temporary moderate adverse effect. This is a significant effect albeit of the same level as anticipated for the Scheme in isolation.

Operation

Positive

9.51. The cumulative annual economic impact of the assessed projects during the combined operational phase is a GVA uplift of £6.3 million per annum, representing a 0.2% increase to the Local Impact Area's economy. This therefore represents an overall cumulative long-term minor beneficial effect. The cumulative net GVA uplift in the Regional Impact Area is estimated at £7.2 million per annum, indicating a 0.007% increase to the regional economy. This does not however change the level of significance of effect in the Regional Impact Area.

9.52. The total peak cumulative 0.2% increase in the GVA of the local economy will amount to a maximum uplift of £77 GVA per worker per annum in the Local Impact Area from the 2020 baseline. This rise would signify a cumulative long-term moderate minor beneficial effect to economic prosperity, and to resident and workplace population salaries in the Local Impact Area.

Negative

9.53. The cumulative operation phase of the projects is anticipated to generate a net loss of 66 FTE jobs per annum in the energy sector, accounting for leakage and displacement factors and the 125 energy sector jobs lost as a result of the closure of West Burton A. This represents a decrease of 20.5% in energy employment in the Local Impact Area from the 320-worker baseline. Resultantly, this is a cumulative long-term moderate adverse effect. This therefore is a significant effect. At the regional level, the magnitude of impact (a loss of 66 FTE employees per annum in a pool of approximately 12,000) is low (0.5%), and as such is a cumulative long-term minor adverse effect.

9.54. The anticipated cumulative effect of the cumulative projects on the agricultural economy is a continual loss of approximately 38 FTE workers until the year 2063, at which point decommissioning of the first solar projects will return land to agricultural use. This is a 1.0% loss to the level of agriculture employment in the Local Impact Are, and therefore represents a medium magnitude impact. This results in a cumulative long-term moderate-minor adverse effect. The loss in agriculture employment in the Regional Impact Area is not anticipated to be of an increased level of significance of effect.

9.55. The indicative cumulative net employment loss of 63 FTE worker per annum in the Local Impact Area represents a negligible negative impact on access to employment as a measured index of deprivation. As mitigation measures from other projects are not known, it is estimated that there will be an overall cumulative long-term moderate-minor adverse effect on access to employment in Local Impact Area.

9.56. The net decrease in energy employment is likely to generate a cumulative GVA loss of £3.2 million per annum. This represents a loss of 1.2% to the agriculture, mining, electricity, gas, water and waste (ABDE) grouped sector economy, which is of a medium magnitude. This is therefore a cumulative long-term moderate-minor adverse effect in the Local Impact Area. In the Regional Impact Area, this loss of GVA to the ABDE grouped sector economy is equivalent to 0.06%, and therefore represents a cumulative long-term negligible adverse effect.

9.57. The anticipated cumulative level of economic impact to tourism and recreation, as a result of reduced desirability of the Local Impact Area for tourism, is most likely to be felt in the arts, entertainment, and recreation grouped sector. The estimated worst-case cumulative economic effect is a loss of £1.1 million GVA per annum. This loss is of a medium magnitude (1.4%) in the Local Impact Area, and as such is a cumulative long-term moderate-minor adverse effect. This loss does not change the level of significance of effect for the Regional Impact Area.

9.58. The cumulative construction phase impacts from the assessed projects are very likely to have a somewhat increased level of effect on tourism and recreation in the immediate locality and Local Impact Area. These include the impacts to the economy already explored, as well as the further economic impacts as a result of cumulative landscape and traffic impacts. The resultant changes are therefore likely to affect the desirability and accessibility of tourism and recreation routes, attractions, and facilities.

Requirements

Requirement 4 – Community liaison group

9.59. This requirement provides that the undertaker must 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.

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

Requirement 20 – Skills, supply chain and employment

9.61. The requirement stipulates that no part of the authorised development may commence until a skills, supply chain and employment plan (which must be substantially in accordance with the outline skills, supply chain and employment plan) in relation to that part has been submitted to and approved by the relevant planning authority. The skills and employment plan must 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 skills and employment plan must be implemented as approved.

9.62. The Outline Skills, Supply Chain and Employment Plan (OSSCEP) does not take into account the impact on the loss of agricultural income for local farms and farmers who have been producing for multiple generations. It is likely a 40-60 year hiatus will end this practice and lead to a loss of employment in farming in West Lindsey. WLDC is concerned as to who will be available in the year 2068/88, when the scheme is eventually decommissioned, to simply pick up and begin farming the land once again. The impact on agricultural land tenant farmers should also be considered in the wider context of the four proposed solar NSIPs.

10. Transport and Access

Summary

10.1. The list below outlines the main points arising from the review of Chapter 14: Transport and Access of the ES (Doc. Ref. EN010132/APP/WB6.2.14) for the West Burton Solar Project.

- [TT1] No surveys of PROW seem to have been undertaken. It is assumed that this is because it is anticipated that no PROW will need to be temporarily closed or diverted during construction. Nonetheless, the enjoyment of PROW by recreational users will likely be affected by solar arrays during operation, due to visual intrusion, so PROW surveys should be undertaking to establish how many people will be impacted to inform assessments of other ES topics such as landscape, visual and population and human health.
- [TT2] It is unclear if the potential environmental effects due to any temporary highway works necessary to accommodate access by large construction vehicles and abnormal loads, which may require the removal of hedgerows for example, have been covered by the ES.
- [TT3] The traffic survey data used to derive the baseline is from 2017 and 2019, which is before the Covid-19 pandemic restrictions. Nonetheless, this traffic data is now quite historic, with some of the data being more than five years old. Therefore, more recent traffic surveys should be considered to verify that the derived baseline traffic flows are representative of current day conditions.
- [TT4] It is noted that deliveries will avoid peak hours where possible; however, no reasons are provided as to why this might not be possible.
- [TT5] There are 8 separate construction traffic access points for the solar farm elements of the Scheme. Moreover, there are 19 access points of the cable route access. Collectively the Scheme is proposing 27 access points. This would mean that there would be construction traffic along the route and using the local road network. It is questioned by so many accesses are needed, particularly as it is suggested an access is needed every kilometre. It is questioned whether more internal accesses could not be utilised.
- [TT6] It is noted that there will be 'a small number of abnormal load movements to transport large transformers'; however, exact numbers are not provided. This would be helpful when assessing the cumulative impact of Abnormal Indivisible Loads (AIL) for the other solar schemes.
- [TT7] The Scheme states that the shared Grid Connection Route utilises different routes from the other solar schemes. This suggests the cumulative impact of the roads will be felt more widely.
- [TT8] With regards to the Outline Construction Traffic Management Plan (Doc. Ref. EN010132/APP/WB6.3.14.2), WLDC wishes the applicant to provide, within the Outline Construction Traffic Management Plan, the measures to be adopted in event two or more projects are being constructed simultaneously. The approach should then be replicated in the control document for each cumulative project to enable communities to understand the traffic related activities in the area and how developers have sought to minimise impacts during the construction phase.

Policy Context

National Policy

10.2. 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.

10.3. 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.

10.4. 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

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

10.6. 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.

10.7. 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.

10.8. 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

10.9. An overview of the local highway network is provided below:

- A15 – The A15 is a single carriageway two-way road subject to the national speed limit which connects the M180 to the north with the A46 to the south. The road has a predominantly straight alignment throughout.
- A1500 Till Bridge Lane / Stow Park Road – The A1500 is a single carriageway two-way road, subject to the national speed limit. It connects the A15 to the east to the village of Marton to the west and generally has a straight alignment.
- Unclassified Road south of A1500 (West Burton 1 Access Road) – The Unclassified Rural Road south of the A1500, is a single lane road that has no central markings and is subject to the national speed limit.
- A57 Lincoln Road – The A57, is a single carriageway road that runs from Liverpool to Lincoln. Within the vicinity of the Site it is a wide single carriageway road that is subject to a 60mph speed limit.
- B1241 Mill Lane – The B1241 is a single carriageway road that runs in a north-south orientation from the A57, through the village of Saxilby. The road has footways present on both sides of the road and is subject to a 30mph speed limit.
- B1241 Sturton Road – To the north of Saxilby, Mill Lane becomes Sturton Road is a single carriageway and is subject to a 30mph speed limit as it leaves the village of Saxilby to the south. After approximately 170m from Saxilby, the national speed limit applies as the road travels north towards Ingleby.

10.10. There will be a total of eight access points across West Burton 1, 2, 3. All will be used for both the construction and operational phases:

- West Burton 1
  - Unclassified Road, 880m south of A1500 junction; and
  - Unclassified Road, 1,200m south of A1500 junction.
- West Burton 2
  - B1241 (Sturton Road), south of Levertons Caravan Storage;
  - B1241 (Sturton Road), north of Levertons Caravan Storage;
  - B1241 (Sturton Road), adjacent to Ingleby Hall Livery; and
  - Sykes Lane.
- West Burton 3
  - A1500, east of the train line; and
  - A1500, west of the train line.

10.11. For the construction of the Grid Connection Route, 19 temporary accesses are required, approximately one every kilometre. The locations of these accesses are on the following roads:

- Access 101 – Gainsborough Road;
- Access 102 – Common Lane;
- Access 103 – Littleborough Road;
- Access 104 – Three Leys Lane/Fenton Lane;
- Access 105 – Northfield Road (north);
- Access 106 – Northfield Road (south);
- Access 107 – Coates Road;
- Access 108 – Headstead Bank/Coates Road;
- Access 109 – A156;
- Access 110 – A156;
- Access 111 – A156;
- Access 112 – A1500 Stow Park Road;
- Access 113 – A1500 Stow Park Road; Access 114 – Cowdale Lane (north);
- Access 115 – Cowdale Lane (south);
- Access 116 – Sturton Road;
- Access 117 – Sturton Road;
- Access 118 – Unclassified road south of the A1500; and
- Access 119 – Unclassified road south of the A1500.

10.12. Collectively, there will be 27 accesses used for the Scheme. 26 will be used construction access and there are also 8 operational accesses.

Construction

Positive

10.13. None identified.

Neutral

10.14. On an average day, there is expected to be 375 workers spread across the Sites. To account for peak periods at different Sites, 455 (including 440 for the solar array development and 15 at the BESS site) construction workers has been taken forward for assessment as a reasonable worst case. For assessment, construction workers have been spread across the Sites on a proportional basis.

10.15. Construction vehicles will avoid travel during the network peak hours where possible. Therefore, deliveries will be scheduled for between 09:30 and 16:30 where possible.

10.16. Generally, accidents appear to be spread throughout the study area. Whilst the addition of any amount of traffic can increase a risk of accidents, it is considered that low level of construction traffic associated with the Scheme is unlikely to materially affect safety on the links in the study area, irrespective of percentage changes in traffic flows. Therefore, the effects on accidents and safety will be negligible.

10.17. On a day-to-day basis, the largest vehicle that will be used to deliver equipment to the Site will be a 16.5m articulated vehicle, although a significant proportion of movements will be by smaller vehicles.

10.18. Where links within the study area connect to public rights of way, it could be argued that an increase in traffic as a result of the construction phase could make it more difficult to cross the road. Two public rights of way connect to the unclassified road to the south of the A1500, which provides the accesses to West Burton 1. A forecast of 58 two-way, daily vehicle movements (11 HGVs) are proposed during the construction phase. However, over the course of a 10-hour working day, this equates to approximately six vehicles an hour, which will not significantly impact the ability to cross this road to access these PROWs. Therefore, the effects on severance in these locations will be negligible.

10.19. Whilst many of the rural links in the network have high percentage changes in traffic flows during the construction phase, they start from a low baseline. On the unclassified road (south of the A1500) to access West Burton 1, there is a 30% increase in traffic flows during the construction phase. However, 2025 baseline flows are 193 two-way movements per day. This will increase to 251 two-way movements. In this instance, whilst the percentage change in traffic flows is high there, will not be any significant driver delay associated with 251(502) two-way movements per day and effects are considered to be negligible and temporary. Effects regarding driver delay are anticipated to be minor and temporary for the Grid Connection Corridor.

10.20. Two public rights of way connect to the unclassified road to the south of the A1500, which provides the accesses to West Burton 1. In this location and for the Grid Connection Route, the effects on pedestrian delay are considered to be minor and temporary. In the rest of the study area, the effects are considered to be negligible and temporary.

10.21. Where the West Burton 1 access road connects to Public Rights of Way, and for the Grid Connection Corridor, the effects to pedestrian amenity are considered to be minor and temporary. Elsewhere in the study area, the effects are considered to be negligible and temporary.

10.22. Some deliveries to the Site during the construction phase will be regarded as ‘hazardous loads’. These include the deliveries of lithium-ion batteries and transformer oil. All regulations for the movement of hazardous loads will be followed, and the appropriate documentation will be obtained. There will be some abnormal loads to transport the transformers for the 132kV and 400kV substations. These movements will be managed so that the potential effects are mitigated appropriately. Overall, it is considered that the likely effects of the construction traffic on hazardous loads will be negligible and temporary and therefore not significant.

Negative

10.23. Overall, the Scheme is not likely to result in any significant adverse Transport and Access effects during construction.

Operational

10.24. During the Scheme’s operational phase, there are anticipated to be around five visits to each Site per month for maintenance purposes. These would typically be made by light van or 4x4 type vehicles. Whilst each Site construction compound will have been removed at the end of the construction phase, space will remain within each Site on the access tracks for such a vehicle to turn around to ensure that reversing will not occur onto the highway.

10.25. During the operational phase, the residual effects on accidents and safety, severance, driver delay, pedestrian delay and amenity and hazardous loads will remain negligible. Therefore, there are not expected to be any significant residual effects in relation to Transport and Access as a result of the operation of the Scheme.

Decommissioning

10.26. The Scheme is anticipated to have a design life of approximately 40 years. At the end of the Scheme's operational life it will be decommissioned. The number of vehicles associated with the decommissioning phase are not anticipated to exceed the number set out for the construction phase. Therefore, there are not expected to be any significant residual effects in relation to Transport and Access as a result of the decommissioning of the Scheme.

Cumulative Impacts

10.27. Traffic flows associated with the cumulative schemes have the largest effect on Mill Lane and the A57. This is due to the introduction of two residential developments. As the number of traffic flows on these links associated with the construction phase of the Scheme are low, it is unlikely that the cumulative effects will be any different.

10.28. The cumulative effects on the local highway network surrounding the Grid Connection Route will also be low, as the cumulative Schemes will not use the same routes. It should be noted that sections of the Grid Connection Route for the Scheme will be shared with Gate Burton and Cottam Solar Project, although the residual effects will not change as a result of this.

10.29. There is an extant planning permission for Sturton le Steeple quarry, to be accessed via Access 101. The planning permission (ref 1/46/06/00014) restricts HGV movements to a maximum of 192 movements per day associated with the quarry (96 in and 96 out). The addition of eight arrivals and departures associated with cable route corridor, over a 90-day period, will not result in a significant cumulative impact at this location.

10.30. Overall, the Scheme is not likely to result in any significant cumulative Transport and Access effects during the construction, operational or decommissioning phases.

Requirements

Requirement 15 – Construction traffic management plan

10.31. Under this requirement, no part of the authorised development may commence until a construction traffic management plan (which must substantially accord with the outline construction traffic management plan) has been submitted to and approved by the relevant planning authority, in consultation with the relevant highways authority. All construction works associated with the authorised development must be carried out in accordance with the approved construction traffic management plan.

10.32. With regard to the structure, scope and current level of detail of the Outline Construction Traffic Management Plan insofar as it relates solely to the West Burton project, WLDC considers the document to be sufficient for decision making purposes and delivery through a DCO Requirement. With regard to the mechanisms used to control construction traffic cumulatively with other projects however, WLDC has significant concerns regarding the lack of detail on how such impacts will be controlled.

Requirement 16 – Operational noise

10.33. This requirement stipulate that Work Nos. 1, 2 or 3 may not commence until an operational noise assessment (containing details of how the design has incorporated the operational mitigation measures set out in Section 15.6 of Chapter 15: Noise and Vibration of the ES (Doc. Ref. EN010132/APP/WB6.2.15) 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.

Requirement 17 – Permissive paths

10.34. This requirement ensures that Work No. 11 must be provided and open to the public before the date of final commissioning of Work No. 1B. It further stipulates that the permissive path must be maintained and accessible by the public for 364 days a year, except where closure is required for maintenance or an emergency. This requirement remains in place until the commencement of decommissioning of the authorised development.

Requirement 18 – Public rights of way

10.35. This requirement stipulates that no part of the authorised development may commence until a public rights of way management plan (substantially in accordance with the outline public rights of way management plan) for any sections of public rights of way to be temporarily closed has been submitted to and approved by the relevant planning authority for that part. The public rights of way management plan must be implemented as approved.

11. Cultural Heritage

Summary

11.1. The list below outlines the main points arising from the review of Chapter 13: Cultural Heritage of the ES (Doc. Ref. EN010132/APP/WB6.2.13) for the West Burton Solar Project:

- [CH1] There will be several significant impacts on designated heritage assets including Scheduled Monuments and Grade I listed buildings which are detailed below. This will have a long-term impact on these local assets.
- [CH2] Although some of the impacts on heritage assets are considered not significant, there are multiple slight adverse impacts which, in accordance with section 66 of the Planning (Listed Buildings and Conservation Areas) Act 1990, and when considering the impact of a proposed development on the significance of a designated heritage asset, great weight should be given to the asset's conservation. This is irrespective of whether any potential harm amounts to substantial harm, total loss or less than substantial harm to its significance. Indeed, the NPPF states that when a development proposal will lead to less than substantial harm to the significance of a designated heritage asset, this harm should be weighed against the public benefits of the proposal.
- [CH3] The Scheme would not comply with Policy S57: The Historic Environment of the Central Lincolnshire Local Plan, as it would not protect or conserve the historic environment of Central Lincolnshire.

Policy Context

National Policy

11.2. Section 5.8 of the National Policy Statement for Energy (NPS) (EN-1) states that the decision maker 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.

11.3. Section 5.9 of the draft National Policy Statement for Energy (dNPS EN-1) states that when considering the impact of a proposed development on the significant of a designated heritage asset, the Secretary of State should give great weight to the asset's conservation. This is irrespective of whether any potential harm amounts to substantial harm, total loss, or less than substantial harm to its significance (para. 5.9.25). The substantial harm to assets of the highest significance, including Scheduled Monuments, should be wholly exceptional (para. 5.9.28). Where the proposed development will lead to substantial harm to a designated asset, the Secretary of State should refuse consent unless it can be demonstrated that the substantial harm is necessary to achieve substantial public benefits that outweigh the harm or loss (para. 5.9.29).

11.4. The National Planning Policy Framework (NPPF) states that substantial harm to Scheduled Monuments should be wholly exceptional (para. 200(b)). Where a proposed development will lead to substantial harm to a designated asset, local planning authorities should refuse consent, unless it can be demonstrated that the substantial harm is necessary to achieve substantial public benefits that outweigh that harm or loss (para.201).

Local Policy

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

11.6. Policy S57: The Historic Environment states that development should '*protect, conserve and seek opportunities to enhance the historic environment. In instances where a development proposal would affect the significance of a heritage asset (whether designated or non-designated), including any contribution made by its setting, the applicant will be required to undertake and provide the following, in a manner proportionate to the asset's significance:*

a) describe and assess the significance of the asset, including its setting, to determine its architectural, historical or archaeological interest; and

b) *identify the impact of the proposed works on the significance and special character of the asset, including its setting; and*

c) *provide a clear justification for the works, especially if these would harm the significance of the asset, including its setting, so that the harm can be weighed against public benefits.'*

Key Impacts

Construction

Positive

11.7. There are no positive effects during construction.

Neutral

11.8. There are no neutral effects during construction.

Negative

11.9. At the medieval bishop's palace and deer park, Stow Park, the proposed Cable Route Corridor passes to within 15m of the southern end of the eastern area of at the eastern park pale. It will run along the road which is thought to have been constructed along the course of the southern park pale before veering northwards along the eastern edge of the railway cutting, skirting the farm buildings and running along the edge of the field to the north before crossing this field and running beneath the underpass, and exiting the former deer park underneath the unscheduled section of park pale at the north-west by means of horizontal directional drilling. In addition, it is proposed that the southern part of the field immediately to the east of the eastern park pale would be used for a temporary cable laydown area during the construction phase. This construction activity in the vicinity of the eastern park pale will result in additional cumulative impacts to the setting of the Scheduled Monument on top of those that would be experienced as a result of the other construction activity that would be occurring in the vicinity of the western park pale and the site of the bishop's palace. These impacts would constitute 'Considerable changes to significance (or the ability to appreciate it) due to changes to setting' or impacts of a Moderate Adverse magnitude (see Table 13.1). For a Scheduled Monument of High value, this constitutes effects of either Moderate or Large Adverse significance. As these adverse effects are temporary, applying professional judgement it is considered that the lower Moderate Adverse score is appropriate.

11.10. Medieval settlement and open field system immediately south east of Low Farm (NHLE 1017741) is located c.340m from the eastern edge of the grid connection works laydown area adjacent to West Burton Power Station. The setting of this Scheduled Monument is already dominated by the Power Station that abuts its northern and north-western edge, the nearest cooling tower being c.80m distant from the scheduled area. Consequently, it is considered that the temporary laydown area, should this be visible from the scheduled area would not constitute a significant change to what is already a highly industrialised setting. It is considered, therefore that this would constitute 'Very minor changes to elements, or to significance (or the ability to appreciate it) due to changes to setting' or impacts of a Negligible Adverse magnitude. For a Scheduled Monument of High value, this would constitute effects of Slight Adverse significance.

11.11. In conclusion, during the construction phase, there is the potential for there to be Slight Adverse effects at four Scheduled Monuments, and up to Moderate Adverse effects at one Scheduled Monument (the medieval bishop's palace and deer park, Stow Park – NHLE 1019229), as detailed in Appendix 13.8 (Doc. Ref. EN010132/APP/WB6.3.13.8) this latter impact would result in 'significant' effects in EIA terms, and although impacts resulting from the construction phase are medium term and reversable, the visual impacts of the constructed Scheme would continue into and throughout the operational phase.

11.12. There would be impacts to earthworks at North Ingleby due to the landscape planting proposals which would have an impact upon a raised causeway visible on LiDAR which represents the course of an old road or trackway. This earthwork is within the HER polygons for both North Ingleby DMV (AR13) and Manor House Park (AR14), though it is uncertain as to which of these receptors this is best assigned to, indeed if any. The road is depicted on late 18th and early 19th century maps and may represent a post-medieval trackway, though the possibility that it could have medieval origins and therefore be associated with the DMV cannot be discounted. If this were the case, then the

change would be considered of Minor Adverse magnitude to this receptor of High value, and therefore Moderate Adverse effects.

11.13. At AR25 a possible enclosure of unknown date would be largely destroyed by the cable route cutting through it. However, its value is uncertain, as it could for example represent agricultural features of negligible value or a prehistoric enclosure of Medium value. If the latter, then the expected impacts of Moderate Adverse magnitude would result in Moderate Adverse effects.

11.14. Similarly, at AR26 geophysical anomalies have been interpreted as a possible ring ditch and field system, though it has not been confirmed whether these are of prehistoric origin or natural features. If the former, then these would be considered to be of Medium value, and the likely impacts of Major Adverse magnitude caused by the cable route and/or laydown area at this location would result in Large Adverse effects.

11.15. At Stow Park DMV (AR44) most of the known extent of archaeological remains as identified from geophysical survey, air photo assessment, and evaluation trenching has been excluded from the Order Limits. However, a landscape mitigation requirement to provide screening for a property on Till Bridge Lane means that planting has been proposed across an area where air photographs and historic mapping has identified the course of the road which may represent the original medieval entrance into the forecourt to the bishop's palace. Archaeological evaluation has also produced evidence that tentatively suggests that there might have been an earlier Anglo-Saxon settlement in this vicinity that predates the bishop's palace. However, the evaluation also indicated that features identified from air photographs in this area may have been truncated by recent ploughing, therefore the magnitude of the impacts is uncertain. Should the proposed planting impact upon significant medieval remains in this area, then it is concluded that these could be of Medium or High value, and the predicted impacts that could range from Negligible to Minor Adverse magnitude would result in Slight or Moderate Adverse effects.

11.16. At AR64 there is a possible rectilinear enclosure of unknown date identified by geophysical survey that could be largely destroyed by the cable route cutting through it. However, its value is uncertain, as it could for example represent agricultural features of negligible value or a prehistoric enclosure of Medium value. If the latter, then the expected impacts of Major Adverse magnitude would result in Large Adverse effects.

11.17. The proposed Scheme is not anticipated to result in any direct, physical impacts to Listed Buildings during the construction phase. The assessment provided Table App.13.8-3 indicates that there it is predicted that there would be Negligible Adverse impacts at four Grade II Listed Buildings and Minor Adverse impacts at four Grade II Listed Buildings, in each case resulting in Slight Adverse effects. There is, however, the potential for impacts of a Minor Adverse magnitude at the Grade I Church of St Botolph, Saxilby with Ingleby (1359490) which are considered to be Slight Adverse effects due to these occurring along a limited stretch of one of the long views towards the church when travelling southwards from Ingleby to Saxilby.

11.18. For 11 non-designated buildings, construction phase effects would range from Neutral to Slight Adverse, and therefore 'not significant'.

11.19. The impact assessment table (Table App.13.8-5) illustrates that these temporary and reversible impacts to the non-designated historic landscape would, at worst, be of a Negligible Adverse magnitude and effects of up to Slight Adverse significance along much of the cable route. The Shared Cable Corridor would be slightly more impactful as two scenarios have required assessment, neither of which would be characterised by the relatively rapid excavation, laying of cable and backfilling envisaged for other areas along the cable route. The first scenario relates to the construction of the Scheme, Cottam Solar Project and Gate Burton Energy Park's ducts and cables at the same time, assuming an 18-month duration for this where haul roads, laydown areas, construction compounds and any fencing would remain in situ. The second scenario is for the three Schemes' ducts and cables to be installed sequentially over a five-year period, which would also require all of the haul roads, laydown areas, construction compounds and any fencing to remain in situ for this more extended period. These latter two scenarios for the Shared Cable Corridor would result in impacts of up to Minor Adverse magnitude, but the effects would still be at worst, of Slight Adverse significance, and so 'not significant' in EIA terms. In conclusion, the construction phase-specific impacts to the historic landscape would result in effects that are 'not significant' in EIA terms for 23 receptors.

Operational

Positive

11.20. The impacts to buried archaeological features during the operational phase would be of a largely beneficial nature, due to these remains being taken out of the agricultural cycle of regular ploughing which most of the field parcels within the Order Limits are currently subject to. Whilst the magnitude of this impact is difficult to define, it has been scored on the basis that this could range from Negligible Beneficial, for example in those instances where the upper fill of a deep ditch would be preserved by the Scheme when it would otherwise have been truncated by ploughing, to Major Beneficial, for example where shallowly buried features would be preserved in situ when they might otherwise be totally destroyed by ploughing over the 40 year operational phase of the Scheme. Taking into account uncertainties, the assessment has identified that 'significant' beneficial effects could potentially occur at 22 of the archaeological areas within the Order Limits (i.e., those scored as potentially having Neutral or Slight to Moderate Beneficial or Neutral or Slight to Large Beneficial effects).

Negative

11.21. At the Roman villa west of Scampton Cliff Farm (NHLE 1005041) Scheduled Monument, in the absence of mitigation, the construction and operational phases would result in effects of Slight Adverse significance. It is concluded that whilst the landscape proposals, once matured by Year 15, would reduce the visual impact from this designated heritage asset, the Scheme would still be likely to be visible from this elevated position and therefore this score would remain unchanged.

11.22. For the medieval bishop's palace and deer park, Stow Park (NHLE 1019229) it is considered that the landscape mitigation proposals would not mitigate the impacts to the setting of the Scheduled Monument due to the proposed layout of panels being in close proximity to the scheduled areas, and therefore the effects would be Large Adverse.

11.23. During the operational phase of the Scheme, there would be impacts of a Negligible Adverse magnitude at five of the Grade II Listed Buildings, two of which were scored as effects of Neutral significance, whilst three were scored as Slight Adverse. In addition to this, there would be impacts of Minor Adverse magnitude at four Grade II Listed Buildings and one Grade II* Listed Building, all of which would result in effects of Slight Adverse significance. Following mitigation, impacts to Listed Buildings will be reduced to slight adverse at most.

11.24. For most of the non-designated historic buildings assessed, the effects would be either Neutral or Slight Adverse effects, i.e., 'not significant', but at Greenfields Farm, Stow (HB11), and Poplar Farm, Marton (HB17) it is concluded that the Major Adverse impacts could result in 'significant' Moderate Adverse effects in the absence of additional mitigation. Following mitigation, impacts to non-designated historic buildings will be slight adverse at most.

11.25. In terms of impacts to the historic landscape, it is considered that the new planting and reinforcement of existing vegetation would have an overall beneficial effect by reinforcing the historic landscape character, but it is considered that the assessment scores for individual HLC units would remain unchanged. These vary from negligible to moderate adverse.

Decommissioning

11.26. Decommissioning is expected to take between 12 and 24 months and will be undertaken in phases, and for the purposes of the assessment is expected to occur no earlier than 40 years after the commencement of operation of the Scheme. The decommissioning phase would require plant movement and other activities similar to those employed during the construction phase, which could have an adverse impact upon the settings of nearby heritage assets. The ES assesses that the impact would be neutral as the impacts are no greater than during the operational phase, and would be temporary, short term and reversible in nature.

Cumulative impacts

11.27. For the settings of heritage assets, it is considered that the zone of influence (ZOI) is very much constrained for those assets located within the lowlands of the Trent valley, as confirmed by the ZTVs for these assets produced as part of the Heritage Statement. The only 'significant' effect

identified due to impacts to the setting of a designated heritage asset is at the Medieval bishop's Palace and Deer Park, Stow Park (NHLE 1019229).

11.28. Slight Adverse effects (i.e., effects that are 'not significant') have been identified at the following Scheduled Monuments for the Scheme:

- Deserted village of Dunstall (NHLE 1004996);
- Roman villa west of Scampton Cliff Farm (NHLE 1005041);
- Southorpe medieval settlement (NHLE 1016794);
- Gilby medieval settlement (NHLE 1016795); and
- Coates medieval settlement and moated site (NHLE 1016979).

11.29. Slight Adverse effects (i.e., effects that are 'not significant') have also been identified at the following Listed Buildings for the Scheme:

- Fillingham Castle (NHLE 1166045);
- Glentworth Hall (NHLE 1063348);
- Former stables at Glentworth Hall (NHLE 1166094);
- Thorpe in the Fallows Farmhouse (NHLE 1308921);
- Mount Pleasant Farmhouse east of Laughton (NHLE 1317186); and
- Corringham Windmill (NHLE 1359417).

11.30. Slight Adverse effects (i.e., effects that are 'not significant') have also been identified at the following Registered Park and Garden for the Scheme:

- Fillingham Castle (NHLE 1000977).

11.31. It is considered that there could only be cumulative effects at those heritage assets identified above (in Paragraph 13.9.2 where views from the Lincoln Cliff contribute to the significance of the asset:

- Roman villa west of Scampton Cliff Farm (NHLE 1005041 Fillingham Castle (NHLE 1166045/NHLE 1000977);
- Glentworth Hall (NHLE 1063348); and
- Former stables at Glentworth Hall (NHLE 1166094).

11.32. This is due to the fact that the other NSIPs in the vicinity of the Scheme would also be likely to be visible from these elevated viewpoints along the Lincoln Cliff, but not from those situated in the Trent Valley. Should all of the NSIPs identified in paragraph 13.10.1 above be permitted and constructed, then the Slight Adverse effects identified at those heritage assets located on the Lincoln Cliff with extensive views across the Trent valley would increase in magnitude as a result of the cumulative effects, and whilst it is possible that this could result in Moderate Adverse effects or above (i.e., 'significant' effects) at one or more of these assets, this would require the results of further detailed design and assessment of the other NSIPs to confirm.

Requirements

Requirement 12 – Archaeology

11.33. This requirement stipulates that the authorised development must be implemented in accordance with the written scheme of investigation.

Requirement 13 – Construction environmental management plan

11.34. Under this requirement, no part of the authorised development may commence until a construction environmental management plan (which must substantially accord with the outline construction environmental management plan) has been submitted to and approved by the relevant planning authority. All construction works associated with the authorised development must be carried out in accordance with the approved construction environmental management plan.

11.35. Provision for archaeological mitigation and monitoring is detailed in the Written Scheme of Investigation (WSI, see ES Appendix 13.7 (Doc. Ref. EN010133APP/WB6.3.13.7)). The WSI must

be adhered to during constructional phases. Areas where concrete feet are required will be laid out by a surveyor in line with the requirements of the WSI.

12. Soils and Agriculture

Summary

12.1. The list below outlines the main points arising from the review of Chapter 19: Soils and Agriculture of the ES (Doc. Ref. EN010132/APP/WB6.2.19) for the West Burton Solar Project:

- [AG1] Table 19.11 (Summary of Potential Effects and Residual Effects): The residual effect of loss of land to farm businesses being Minor (should be slight). Not Significant. These construction effects will last for 40 years, until decommissioning, and they appear to understate what would be a significant adverse effect on the operation of these farms for biomass production (combinable crops and grass).
- [AG2] IEMA Guidance has been utilised for assessing impact on agricultural holdings. However, the publication is principally concerned with soil functions and does not provide methodology for assessing impacts on agricultural holdings.
- [AG3] It is not clear if any tenants are displaced, if so, this would be an additional socio-economic adverse effect.
- [AG4] The cumulative assessment is based on the absence of site-specific assessments which are required to determine Agricultural Land Classification (ALC). It is accepted that during the authoring of this chapter the information for these sites were likely unavailable; however, given Gate Burton and Cottam are both now already in the examination process it is presumed the data for the other Schemes is now available.

Policy Context

National Policy

12.2. 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*'.

12.3. Under Paragraph 5.10.15 of the NPS (EN-1), the decision maker 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*'.

12.4. 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*'.

12.5. 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*'.

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

12.7. 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.

12.8. The Written Ministerial Statement 25 March 2015 states that the National Planning Policy Framework (NPPF) provides strong protections for the natural and historic environment. Local Planning Authorities should therefore take into account the socio-economic and environmental benefits of the best and most versatile (BMV) agricultural land when determining planning applications. With regard to solar energy development, the Minister's Statement affirms:

- Local communities have genuine concerns that when it comes to solar farms insufficient weight has been given to these protections and the benefits of high-quality agricultural land.
- Meeting energy goals should not be used to justify the wrong development in the wrong location and this includes the unnecessary use of high quality agricultural land.
- NPPF requires explanation that BMV land is necessary and hat poorer quality land is to be used in preference to land of a higher quality.
- Any proposal for a solar farm involving the best and most versatile agricultural land would need to be justified by the most compelling evidence.
- Every application needs to be considered on its individual merits.

Local Policy

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

12.10. 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.

12.11. 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

12.12. 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

12.13. 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

12.14. There are no neutral impacts identified during construction.

Negative

12.15. Construction work will start the temporary curtailment of arable production within the Site. The land does not cease to be agricultural land whilst cropping or grazing is suspended while construction work is taking place and there is no actual loss of agricultural land resource, therefore no mitigation is proposed. The residual effect of construction on the agricultural land resource is considered minor and not significant.

12.16. Solar panel construction work will involve trafficking the land in a similar manner to the current arable land use, where high axle vehicles are regularly used (e.g. combine harvesters). Heavy plant use during construction will include excavators for digging trenches and cranes for placing substation and storage modules. The Soil Management Plan (SMP) (outline SMP provided in EN010132/APP/WB6.3.19.2) is embedded mitigation that aims to conserve the soil resource through construction activity and therefore no additional mitigation is proposed. The resulting short term, reversable and local effect of construction disturbance on the soil resource across the Scheme is considered minor and not significant.

12.17. The temporary curtailment of farming practices for each of the four farming businesses will result in a reduction in cropped area for these enterprises. This is considered as a constraint however farming practices will not be entirely terminated for these businesses – only the land that is occupied by the Scheme. The resulting short term, reversable and local effect of construction disturbance on the farm businesses occupying land within the Sites will be a minor impact and not significant.

Operational

Positive

12.18. Whilst the Scheme is operational, the soil resource will remain under a perennial green cover, providing several benefits, including:

- There will be no bare soil surfaces that could be vulnerable to wind and water erosion;
- Improved infiltration of water, reducing erosive surface water runoff;
- Greater exploitation of subsoil by plant roots – improving drainage and loosening compacted soils; and
- Recovery of topsoil organic matter – improving stability, water holding capacity, plant nutrient availability and the ability to absorb carbon.

12.19. The recovery of soil organic matter under an extended fallow period will produce a medium term, reversable, local moderate beneficial impact, which is a significant beneficial effect.

12.20. During operation, grass below the solar panels will need to be managed, which can be achieved by the grazing of livestock (e.g. sheep). All four farm businesses impacted by the Scheme will receive some income from the Scheme's occupation of their land, providing a new diversified enterprise and a new income stream that is independent of variations in profitability of arable production. Therefore, no mitigation is proposed. The transfer of arable land to new a diversified enterprise will produce a moderate impact, which is a significant beneficial effect for the medium term.

Neutral

12.21. There are no neutral impacts identified during construction.

Negative

12.22. There will be no loss of agricultural land resource during operation. With no change there is no mitigation proposed and there will be a negligible impact, which is not considered significant.

Decommissioning

Positive

12.23. Decommissioning of the Scheme will allow a return to arable management of the land. The resulting short term, reversable and local effect of decommissioning on the return of agricultural land to the enterprises of the occupying farm businesses will be a minor impact, beneficial and not significant. No further mitigation is proposed.

Neutral

12.24. It is noted that there is an intention to return the land to agricultural land. No obstructions will be left in the soil that could interfere with cultivation (e.g. cables will be removed) and no changes to the physical characteristics of the soil will have taken place that could influence ALC grade. There will be a negligible impact, which is not considered to be significant. No mitigation is proposed.

Negative

12.25. Decommissioning will involve activities similar to that during construction, including trafficking the land in a similar manner to the current arable land use (e.g. combine harvesters). The measures from the SMP also extend to decommissioning and land restoration and it will limit impacts to the soil resource. The SMP covers the appropriate handling of stored soil, aftercare of the land and identification of remediation of any areas of compacted soils. The resulting residual impacts will be short term, reversable and localised, which is considered to be a minor impact that is not significant.

Cumulative impacts

12.26. During construction, residual effects regarding the loss of agricultural land resource, loss and degradation of the soil resource, and loss of land to farm business and disruption to agricultural occupants outside the site are all assessed as minor, not significant.

12.27. During operation, residual effects regarding the loss of agricultural land resource will be negligible, not significant. Effects regarding the recovery of soil health under extended fallow, and new diversified enterprises, will be moderate beneficial, significant.

12.28. During decommissioning, effects regarding the loss of agricultural land resource will be negligible, not significant. Effects regarding the loss and degradation of the soil resource will be minor, not significant. The effects of the return of land to farm businesses will be minor beneficial, not significant.

Requirements

Requirement 13 – Construction environmental management plan

12.29. Under this requirement, no part of the authorised development may commence until a construction environmental management plan (which must substantially accord with the outline construction environmental management plan) has been submitted to and approved by the relevant planning authority. All construction works associated with the authorised development must be carried out in accordance with the approved construction environmental management plan.

12.30. Site inspections by a suitably experienced soil scientist to ensure compliance with the Soil Management Plan and identify any emerging issues.

Requirement 14 – Operational environmental management plan

12.31. Requirement 14 – Operational environmental management plan: Before the date of final commissioning of the authorised development, an operational environmental management plan (which must substantially accord with the outline operational environmental management plan) must be submitted to and approved by the relevant planning authority. The operational environmental management plan must be implemented as approved.

12.32. A Soil Resource Management Plan (SRMP), in accordance with the Outline Soil Management Plan (Doc. Ref. EN010132/APP/WB7.16) will detail how the risk of causing surface compaction can be minimised and how to remove compaction if it has occurred. It will be particularly important to avoid causing soil compaction during the decommissioning phase. To reduce ground pressure, tracked plant and machinery should be equipped with low ground pressure tyres. In areas where soil may need to be reinstated (e.g., where buildings are demolished, or tracks taken up) with the guidance in Defra's Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (PB13298) or reference appropriate at the time may provide useful guidance.

Requirement 19 – Soils management

12.33. This requirement stipulates that no part of the authorised development may commence until a soils resource management plan (substantially in accordance with the outline soils resource management plan) for that part has been submitted to and approved by the relevant planning authority. The soils resource management plan must be implemented as approved.

Requirement 21 – Decommissioning and restoration

12.34. 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 for that part which substantially accords with the decommissioning statement. No decommissioning works must be carried out until the relevant planning authority has approved the plan submitted in relation to such works. The plan submitted must be implemented as approved. This requirement is without prejudice to any other consents or permissions which may be required to decommission any part of the authorised development.

13. Climate Change

Summary

13.1. The list below outlines the main points arising from the review of Chapter 7: Climate Change of the ES (Doc. Ref. EN010132/APP/WB6.2.7) for the West Burton Solar Project:

- [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. This must be given weight in the decision-making process.
- [CC3] It is not clear as to whether the loss of crops used for the production of renewable energy been taken into account.
- [CC4] The Scheme is not compliant with Policy S14: Renewable Energy of the Central Lincolnshire Local Plan as it does not meet all three tests set out in the policy. Specifically, the impacts are not acceptable when considering the scale, siting and design of the Scheme. Gate Burton demonstrates more efficient use of land, is more contained and follows a largely contiguous design. The ES states that the Scheme will result in beneficial impacts to landscape character. in line with the first test in Policy S14his cannot be considered acceptable as the Scheme will have significant impacts on the landscape and the wider community for at least 40 years. The scheme will result in clear and demonstrable significant harm arising from the design of the Scheme. WLDC strongly refutes the conclusions reached in the ES that the construction of this extensive solar farm project will lead to an 'improvement' in local or regional landscape character. This conclusion is considered erroneous, failing to reflect the conclusions reached in other ESs for similar projects and, logically, the introduction of significant industrial elements (panels, substations and related infrastructure, security fencing/lighting etc).

Policy Context

National Policy

13.2. Section 4.8 of NPS EN-1 addresses climate change adaptation in energy infrastructure development. It notes that the decision maker 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.

13.3. 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).

13.4. 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.

13.5. 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 (GHG) emissions, and to improve the security, availability, and affordability of energy through diversification.

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

13.7. 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.

13.8. 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

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

13.10. Policy S11: Embodied Carbon requires developments to reduce the development's embodied carbon content, through the careful choice, use and sourcing of materials.

13.11. 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.

13.12. Policy S14: Renewable Energy 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.

13.13. 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.

13.14. 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

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

Construction

Positive

13.16. The ES does not identify any significant residual positive effects on climate change during the construction of the Scheme.

Neutral

13.17. There are no neutral effects identified.

Negative

13.18. During the construction stage, the greatest impact of GHGs is the result of embodied carbon in the materials used for construction. Of these, the manufacture and supply of PV panels and batteries will be the largest source of GHG emissions; these are expected to be sourced from China or a country of similar distance.

13.19. The worst case total GHG emissions from the construction phase are estimated to equate to around 130,815 tCO_2e. When annualised, the total annual construction emissions equate to around 65,407 tCO_2e. GHG emissions from the construction of the Scheme are considered to have a minor adverse effect on the climate (a negligible significant effect is not possible where any GHG emissions are released to the atmosphere). The overall effect on GHGs from construction is considered not significant in EIA terms.

Operational

Positive

13.20. The ES concludes that overall, the Scheme will provide a major beneficial significant effect on the climate and a net reduction in GHG emissions over the lifetime of the Scheme. It is expected that the savings from the scheme would result in offsetting the construction emissions within 3 years of operation. Assuming baseline values for emissions from the Scheme, over the estimated 40 year lifespan there would be a reduction of 3,981,049 tCO2e from the Scheme compared to a scenario where the Scheme does not go ahead.

Neutral

13.21. There are no neutral effects identified.

Negative

13.22. GHG emissions will be generated as a result of operational activities such as the transportation of operational workers to and from the Site, water consumption and replacement of on-site materials. The production of replacement batteries at the midpoint of the project's lifespan is the greatest contribution to GHG emissions during the operational stage, estimated to equate to around 15,984 tCO_2e. This accounts for 42.76% of the total operational emissions. However, these emissions will be offset by the net reduction in emissions during operation (see above) and therefore no significant negative impacts are anticipated.

Decommissioning

Positive

13.23. The ES does not identify any significant residual positive effects on climate change predicted during the decommissioning of the Scheme.

Neutral

13.24. There are no neutral effects identified.

Negative

13.25. Despite the ES not identifying any significant residual effects on climate change during decommissioning, as the project lifespan of the Scheme is estimated to be 40 years, the ES admits *'it is unknown at this stage what the effects will be in the future'* during this stage. The SoS is therefore minded to keep this in mind during their assessment of the Scheme.

13.26. Whilst a calculation of 12,531 tCO_2e has been provided, there is a possibility that the emissions could be higher. It should be noted that the embodied carbon within the products would not require consideration within the decommissioning process as they would not need to be produced again or shipped as a result of decommissioning of the scheme. It is therefore likely that decommissioning effects would be lower than construction. The assumption is for a closed loop disposal within the UK.

13.27. The main source (98.29%) of emissions from the decommissioning stage will be from worker transportation, totalling 12,316 tCO_2e. It is expected that the magnitude of effect will be low and

therefore the decommissioning stage will result in only minor adverse effects which is not significant in terms of EIA.

Cumulative impacts

13.28. Cumulative GHG emissions are likely to arise from other solar projects (Cottam, Gate Burton, Tillbridge). Although the Scheme will provide major beneficial impacts; it is important to consider other developments as the GHG emissions produced in conjunction may exceed >1% of the applicable carbon budget.

Positive

13.29. The Scheme is being developed in tandem alongside the nearby Cottam Solar Project. It is considered that there would be positive cumulative effects should both developments construction periods overlap as this could allow for consolidation of vehicle trips which would lead to less GHG emissions than if the construction periods were staggered. The cumulative emissions from both projects is below 1% of the 4th UK carbon budget and so not expected to result in a significant effect.

13.30. The Gate Burton Energy Park has also been considered. The cumulative effect of the construction phases of this scheme is not likely to be >1% of the 4th Carbon Budget. While there may be some cumulative effects from combined GHG emissions during the construction phase, it is considered that, as with the Scheme, the offset from reduced emissions over the operational phase of the development would ultimately result in a beneficial cumulative effect with regards to Climate Change.

13.31. The GHG assessment has included for the cumulative effect of emissions. There are potential net savings of GHG emissions for joint working practices with the West Burton, Gate Burton and Tillbridge project ducts and cables if they are being constructed at the same time.

13.32. The overall increase in renewables offered by the increase in solar capacity as a result of each of these schemes would lead to further reduced Greenhouse Gas Emissions and would have a net cumulative positive effect.

13.33. In summary, there are not anticipated to be any significant cumulative effects as a result of all three developments with regards to Climate Change in either the construction or operational scenarios.

13.34. The cumulative effect of the solar developments will be major beneficial in terms of Climate Change Resilience given that the combined effect of the renewable energy will serve to counter the effects of Climate Change.

Requirements

13.35. There are no requirements specifically related to climate change in the draft Development Consent Order.

14. Noise and Vibration

Summary

14.1.1. The list below outlines the main points arising from the review of Chapter 15: Noise and Vibration of the ES (Doc. Ref. EN010132/APP/WB6.2.15) for the West Burton Solar Project:

- [NV1] Information has been taken from technical guidance documents to identify thresholds levels at which negligible, minor, moderate and major impacts occur. However, the mapping of these impact threshold levels for construction noise underestimates significance.
- [NV2] Further information is required explaining how this noise level was selected as no baseline noise surveys were undertaken along the cabling route.
- [NV3] Detailed information on the noise survey methodology and contextual information about the survey locations is not reported.
- [NV4] Graphs presenting statistical information on the measured background sound levels at the long-term monitoring sites are presented in the ES chapter (e.g. Figure 15.1). No information is provided on how the data have been interpreted to select appropriate background sound levels for the operation phase assessment.
- [NV5] It is noted that maps of the short-term and long-term monitoring locations are provided, however, it is unclear how the measured noise levels have been mapped to receptor locations for the impact assessment.
- [NV6] The Planning Inspectorate accepted that operation phase vibration can be scoped out provided that potential sources of vibration are described in the ES chapter with details of any measures to be used to control emissions. This comment does not appear to have been addressed. The Noise and Vibration ES chapter does not report any information on potential sources of operation phase vibration or include a statement confirming that there are no potential sources of vibration. Table 15.1 presents a summary of consultation comments and responses, and provides a response about construction vibration against the operation phase vibration comment from the Scoping Opinion. The construction vibration comment from the Scoping Opinion is omitted from this table.
- [NV7] The noise prediction methodology and outcomes reported in the ES Chapter and Appendix 15.3 (Doc. Ref. EN010132/APP/WB6.3.15.3) omit pertinent information.
- [NV8] Appendix 15.3 only presents results at the nearest vibration sensitive receptor. As a PPV level above 0.3 mm/s was predicted at West Burton 1, 2 and 3, further information is required to confirm how many additional properties located further away may also experience a similar impact.
- [NV9] The construction traffic assessment focusses on the noise impacts resulting from additional vehicles on the road network during the construction phase. Noise impacts linked to traffic diversions as a result of temporary road closures has not been included in the assessment.
- [NV10] The operation phase results tables shown in Appendix 15.3.5 consistently show that the rating levels (specific sound level plus acoustic penalty) are higher at night than during the daytime (i.e. Table 15.3.11, Table 15.3.16, and Table 15.3.21). It is not clear from the Noise and Vibration chapter why the proposed development would emit more noise at night. The tabulated noise levels seem to contradict paragraph 15.7.68, which states that “the night-time noise levels are likely to be substantially lower in practice”. Further clarification is required to confirm the level of impact.
- [NV11] The rationale behind the selection of the background sound levels used in Appendix 15.3.5 remains unclear in this section of the ES and can affect the stated outcomes of the assessment.
- [NV12] Paragraphs 15.7.74 and 15.7.78 in the ES chapter state that the rating levels are below 35dB for West Burton 2 and West Burton 3, whereas Appendix 15.3.5 shows rating levels above 35dB (Table 15.3.16, Table 15.3.21). Further clarification is required to confirm the level of impact.

- [NV13] Appropriate types of noise mitigation measures are proposed to control noise emissions from the project, however, the stated performance requirement for the acoustic louvres is ambiguous. Clarification is required to confirm whether the 10dB noise reduction refers to the overall performance of the product or specific frequencies.

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

Construction & Decommissioning

Positive

14.7. There are no positive impacts from noise and vibration identified during construction and decommissioning.

Neutral

14.8. There are no neutral impacts from noise and vibration identified during construction and decommissioning.

Negative

14.9. Construction noise levels at all receptors throughout the Scheme are predicted to be within the daytime construction noise criteria of 65 dB(A), except for three of the nearest receptors along the proposed cable route. Construction noise is temporary and it is assumed that all construction activities will be happening simultaneously across the Scheme (worst-case scenario). Construction activity on the Sites and cable corridor would likely be experienced by limited receptors at any given time as work progresses across the Scheme. Therefore, for construction noise, the magnitude of

change is negligible which results in a moderate/minor residual effect which is not significant for the purposes of EIA regulations.

14.10. Construction activities are temporary and it is considered that any periods of construction vibration experienced at each separate receptor would unlikely exceed one month. Construction activity on the Sites would likely be experienced by limited receptors at any given time as work progresses across the Scheme. Therefore, for construction vibration, the magnitude of change is negligible which results in a moderate/minor residual effect which is not significant for the purposes of the EIA regulations.

14.11. Noise and vibration effects during the decommissioning phase will be similar or less than the noise effects during the construction phase and therefore not deemed significant in terms of EIA.

Operational

Positive

14.12. There are no positive impacts from noise and vibration identified during operation.

Neutral

14.13. There are no neutral impacts from noise and vibration identified during operation.

Negative

14.14. Operational noise levels at the nearest receptors to the Scheme would exceed the existing background noise levels in many cases, and as such have been assessed as having moderate/major significance effects. Mitigation has been used to ensure noise levels during the operational phase do not result in significant impacts throughout the Scheme during the operational phase and consequently the magnitude of change is considered negligible, which results in a moderate/minor residual effect and therefore not considered significant for the purposes of the EIA Regulations.

Cumulative impacts

14.15. Part of the Cable Route Corridor for the Scheme will overlap with the cable routes of the Gate Burton and Cottam solar farm schemes. There is potential for all three schemes' cable routes to be constructed either simultaneously or sequentially, causing cumulative noise effects at nearby sensitive receptors.

14.16. The likely construction method would be to build all three projects' ducts at the same time, leaving the cables to be pulled through separately at the time of construction for each individual project.

14.17. Given that construction activities for the Cable Route Corridor are transient, it is considered unlikely that a major impact would be experienced for any prolonged duration due to the temporary nature of construction operations. In addition, best practicable means will be implemented and therefore, no significant cumulative effects are identified for the Cable Route Corridor.

Requirements

14.18. A construction noise monitoring scheme shall be developed and agreed with appropriate stakeholders following appointment of a contractor and prior to commencement of construction works. The CEMP would also set out a scheme for the provision of monthly reporting information to and from local residents to advise of potential noisy works that are due to take place and for monitoring of noise complaints and reporting to the Applicant for immediate investigation and action.

Requirement 13 – Construction environmental management plan

14.19. Under this requirement, no part of the authorised development may commence until a construction environmental management plan (which must substantially accord with the outline construction environmental management plan) has been submitted to and approved by the relevant planning authority. All construction works associated with the authorised development must be carried out in accordance with the approved construction environmental management plan.

14.20. It is expected that construction works will be undertaken in accordance with the best practicable means (as defined in Section 72 of the Control of Pollution Act 1974 (Ref 2-1)), to minimise noise

and vibration effects. Noise control measures will be consistent with the recommendations of the current version of BS 5228 'Code of Practice for Noise and Vibration Control on Construction and Open Sites' – 'Part 1: Noise' and 'Part 2: Vibration' (BS 5228-1:2009+A1:2014 and BS 5228-2:2009+A1:2014) (Ref 2-2 and Ref 2-3).

Requirement 14 – Operational environmental management plan

14.21. Requirement 14 – Operational environmental management plan: Before the date of final commissioning of the authorised development, an operational environmental management plan (which must substantially accord with the outline operational environmental management plan) must be submitted to and approved by the relevant planning authority. The operational environmental management plan must be implemented as approved.

14.22. The Environmental Manager will regularly record compliance in a logbook. The OEMP will detail the frequency. 3.0m high acoustic barriers will be constructed around sections of the BESS area.

Requirement 16 – Operational noise

14.23. This requirement stipulates that Work Nos. 1, 2, 3 or 4 may not commence until an operational noise assessment (containing details of how the design has incorporated the operational mitigation measures set out in Section 15.6 of Chapter 15 of the ES 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. Hydrology, Flood Risk and Drainage

Summary

15.1. The list below outlines the main points arising from the review of Chapter 10: Hydrology, Flood Risk and Drainage of the ES (Doc. Ref. EN010132/APP/WB6.2.10) for the West Burton Solar Project:

- [HFD1] There are several impacts on the water environment as a result of the Scheme. This includes increased flood risk, pollution from surface water runoff, increased water volume discharge and inappropriate wastewater disposal, among others.

Policy Context

National Policy

15.2. 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*'.

15.3. 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

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

15.5. 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.

15.6. 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

15.7. The potential likely significant effects of the Scheme during decommissioning are likely to be the same and no worse than (i.e. a worst case scenario basis) as those encountered during the construction phase. Therefore, those effects considered for construction below are similarly expected during the decommissioning phase.

Positive

15.8. There are no positive impacts identified.

Neutral

15.9. There are no neutral impacts identified.

Negative

15.10. There is the potential for mud and debris arising from the construction / decommissioning works to enter the existing surface water / land drainage system, causing blockages and restricting flow. This could result in localised flooding on site. The sensitivity of construction workers and equipment to mud and debris blockages is considered to be Medium. The potential for mud and debris to block drainage networks is considered to have an effect of Low Adverse magnitude on flooding to the Site itself and surrounding area which would result in flood risk to construction workers and equipment at the Site. The effect is therefore considered to be Moderate Adverse, which is significant in terms of EIA.

15.11. Temporary increase in impermeable area during construction / decommissioning has the potential to increase flooding both on and off site. The effects would be temporary and short term. The sensitivity of construction workers and equipment is considered to be Medium with the temporary effects considered to have an effect of Medium Adverse magnitude to people working within - and property at - the Site as it could occur at a time of high flood risk (e.g. during a large storm event). The significance of effect is Moderate Adverse, which is significant in terms of EIA.

15.12. Construction of access tracks and movement of construction / decommissioning traffic, in the absence of construction good practice, can lead to compaction of the soil. The effects would be temporary and short term. The sensitivity of construction workers and equipment is considered to be Medium with the temporary effects considered to have an effect of Medium Adverse magnitude to people working within - and property at - the Site as it could occur at a time of high flood risk (e.g. during a large storm event). The significance of effect is Moderate Adverse, which is significant in terms of EIA.

15.13. There are a number of activities which have the potential to negatively affect the local water environment. The sensitivity of surface water and groundwater bodies to silt contamination is considered to be Medium. Without mitigation, potential effects are considered of a Medium magnitude. The significance of the effect is Moderate Adverse on a temporary short-term basis. Following implementation of the proposed mitigation the residual effect is considered to be

15.14. Fuel, hydraulic fluids, solvents, grouts, paints and detergents and other potentially polluting substances will be stored and / or used on the Site. Leaks and spillages of these substances could pollute groundwater bodies through infiltration as well as the surface watercourses within the Site and those nearby if their use is not carefully controlled and spillages enter existing flow pathways. The sensitivity of surface water and groundwater bodies to spillages, leakages and pollutants is considered to be Medium. Without mitigation measures spillages of chemicals/fuel stored and/or used on the Site could cause short term, temporary effects of a Medium magnitude on the local watercourses. The significance of the effect is Moderate Adverse on a temporary short-term basis.

15.15. The sensitivity of surface water to inappropriate wastewater disposal from welfare facilities is considered to be Medium. Construction / Decommissioning foul water will not be discharged into a watercourse under any circumstances and therefore the magnitude of impact and significance of this effect is considered to be Negligible. Following implementation of the proposed mitigation the residual effect is considered to be Negligible.

15.16. Following implementation of the proposed mitigation the residual effect is considered to be Negligible for all negative impacts.

Operational

Positive

15.17. There are no positive impacts identified.

Neutral

15.18. There are no neutral impacts identified.

Negative

15.19. Given the nature of the Scheme, the increase in permanent impermeable area on the Site will be negligible, however equipment such as the proposed substations and energy storage areas will generate increased surface water runoff when compared to the current use of the Site. This could potentially increase localised pluvial flooding on the Site, as well as increase flood risk to people and property in the immediate surrounding area and downstream. The sensitivity of people and property is considered Medium. Whilst the effects would be temporary and short term, this is considered to have an effect of Medium Adverse magnitude to people and property as it could occur at time of high flood risk (e.g. during a large storm event). The significance of effect is Major Adverse, which is significant in terms of EIA.

15.20. An increase in the volume of water discharged to local watercourses has the potential to increase the flood risk to areas downstream of the Scheme. The sensitivity of people and property is considered Medium. Whilst the effects would be temporary and short term, this is considered to have an effect of Medium Adverse magnitude to people and property (considered to be up to very high importance) occurring at time of high flood risk (e.g. during a large storm event) due to the potential risks and hazard (loss of life) and the potential economic damages. Therefore, the significance of effect is Major Adverse, which is significant in terms of EIA.

15.21. The sensitivity of construction workers and equipment to mud and debris blockages is considered to be Medium. The potential for mud and debris to block drainage networks is considered to have an effect of Low Adverse magnitude on flooding to the Site itself and surrounding area which would result in flood risk to construction workers and equipment at the Site. The significance of effect is Moderate Adverse, which is significant in terms of EIA.

15.22. Urban runoff from the Site, along with the associated infrastructure, could contain diffuse urban pollutants such as hydrocarbons, heavy metals, and nutrients as well as debris and silt which could ultimately be discharged to the nearby watercourses via surface water runoff or infiltrate to ground. Without mitigation this could have a moderate adverse effect on water quality. The sensitivity of surface water and groundwater bodies are therefore considered Medium. This is considered to have an effect of Medium Adverse magnitude on downstream watercourses. The significance of effect is Moderate Adverse for the local watercourses – including those within the Site - which is considered permanent if left unmitigated and considered Significant in EIA terms.

15.23. Given the nature of the Scheme there is a potential risk of fire which may negatively affect the local water environment. Runoff from the Site, along with the associated infrastructure, following a fire could contain diffuse urban pollutants such as hydrocarbons, heavy metals, as well as debris and silt which could ultimately be discharged to the nearby watercourses via surface water runoff or infiltrate to ground. Without mitigation this could have a moderate adverse effect on water quality. The sensitivity of surface water and groundwater bodies are therefore considered Medium. This is considered to have an effect of Medium Adverse magnitude on downstream watercourses. The significance of effect is Moderate Adverse for the local watercourses – including those within the Site - which is considered permanent if left unmitigated and considered Significant in EIA terms.

15.24. Traffic on existing roads to and from the Site will increase albeit negligibly as a result of the Scheme. Any increase in traffic flows could lead to the introduction of new sources (or changed discharges) of highway runoff into receiving watercourses. Surface water runoff from roads can contain pollutants such as hydrocarbons, heavy metals and inert particulates which can cause chronic pollution of the water environment if allowed to enter watercourses without the appropriate treatment. Without mitigation this could have a Low Adverse effect on water quality, the sensitivity of surface water is therefore considered Medium. This is considered to have an effect of Low Adverse magnitude on downstream watercourses. The significance of effect is Minor Adverse for the local watercourses which is considered permanent if left unmitigated.

15.25. Spillages of pollutants (e.g. oil) on highways can be transported to watercourses via runoff, where they could impact upon ecological life, or infiltrate to ground. The receptors at risk are surface watercourses and groundwater bodies which are considered to be of Medium Sensitivity. Without mitigation the increase in highway spillage risk is considered to have an effect of a Low Adverse magnitude. The significance of effect is Minor Adverse.

15.26. Due to the nature of the Scheme there is no demand for water. This is not directly considered to be a surface water quality effect, as it is unlikely that any required water would be sourced from local surface waters, and it is presumed that the Scheme would not proceed unless potable water was available from elsewhere. Water consumption for any future Site users should be minimised through

water efficiency measures. The receptors at risk are surface water which are considered a Low sensitivity. The increased demand on water supply from the Scheme is considered to have an effect of Negligible magnitude (i.e., to locations where potable water supply is obtained from). The significance of effect is therefore Negligible.

15.27. Access to the solar PV array during construction and operation will be taken from grassed/permeable tracks and existing farm tracks accessed from the wider highway network, limiting the requirement for new hardstanding. The sensitivity on surface water is therefore considered Medium. This is considered to have an effect of Medium Adverse magnitude on downstream watercourses. The significance of effect is Moderate Adverse for the receiving watercourses which is considered permanent if left unmitigated and considered Significant in EIA terms. Currently there is no existing foul network on the Site or adjacent. Welfare facilities such as toilets and basic washing stations are limited to the substation located in West Burton 3. Wastewater associated with the welfare facilities at the substation will be contained in a septic tank which will be emptied as and when required by tanker. No direct connection to public sewers is proposed. Following implementation of the proposed mitigation the residual effect is considered to be Negligible.

15.28. Following implementation of the proposed mitigation the residual effect is considered to be Negligible for all negative impacts.

Cumulative impacts

15.29. There is potential for overlap between construction of adjacent schemes and construction of this Scheme. Thus, there is the potential for short term, temporary construction related pollutants generated from both the Scheme and adjacent developments to impact on watercourses in the study area. However, provided that standard and good practice mitigation is implemented on the construction sites through their respective CEMPs and as per the conditions of the relevant planning permission, environmental permits and licences, as is being proposed for this Scheme, the cumulative risk can be effectively managed and there would not be a significant increase in the risks to any waterbodies. As such, there would not be any significant cumulative effects anticipated during construction.

15.30. The Scheme will be designed to ensure there is no long-term deterioration in water quality or increase in flooding. Attenuation and treatment will be provided where necessary for runoff from the Scheme prior to discharge to waterbodies or ground. As such, provided that all the mitigation measures are implemented for all schemes, then the cumulative impacts from the Scheme and any cumulative schemes are not anticipated to produce any significant effects during operation.

Requirements

Requirement 11 – Surface and foul water drainage

15.31. This requirement stipulates that no part of the authorised development may commence until the details of the surface water drainage and (if any) foul water drainage system (substantially in accordance with the outline drainage strategy) for that part has been submitted to and approved by the relevant planning authority. The approved scheme must be implemented.

Requirement 13 – Construction environmental management plan

15.32. Under this requirement, no part of the authorised development may commence until a construction environmental management plan (which must substantially accord with the outline construction environmental management plan) has been submitted to and approved by the relevant planning authority. All construction works associated with the authorised development must be carried out in accordance with the approved construction environmental management plan.

15.33. Temporary drainage will be monitored throughout construction. Specific details will be confirmed in the CEMP. A Water Management Plan (which will form part of a detailed CEMP) will include details of pre, during and post-construction 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.

16. Ground Conditions and Contamination

Summary

16.1. The list below outlines the main points arising from the review of Chapter 11: Ground Conditions and Contamination of the ES (Doc. Ref. EN010132/APP/WB6.2.11) for the West Burton Solar Project:

- [GC1] The construction period could result in of potential contaminant linkages from contaminated soils to human receptors, controlled waters and to the built environment.

Policy Context

National Policy

16.2. Section 5.15.6 of the NPS EN-1 states that the SoS *'should satisfy itself that a proposal has regard to the River Basin Management Plans and meets the requirements of the Water Framework Directive (including Article 4.7) and its daughter directives, including those on priority substances and groundwater'*.

Local Policy

16.3. Policy S56: Development on Land Affected by Contamination states that where proposals are known to be or has the potential to be affected by contamination, a preliminary risk assessment should be undertaken by the developer and submitted to the relevant Central Lincolnshire Authority as the first stage in assessing the risk of contamination. Proposals will only be permitted if layout and drainage have taken adequate account of ground conditions, contamination and gas risks arising from previous uses and any proposed sustainable land remediation.

Key Impacts

Construction, Operation and Decommissioning

16.4. As set out in Chapter 11: Ground Conditions and Contamination (Doc. Ref. EN010132/APP/WB6.2.11), it is considered that the effects during construction and decommissioning are similar in both their sensitivity and magnitude. Furthermore, ground conditions are unlikely to be disturbed during the operational phase, with the exception of minor maintenance works. Maintenance works would utilise the same mitigation measures for that of the construction and decommissioning. As such, the impacts below relate to all three phases of the Scheme.

Positive

16.5. There are no positive impacts identified.

Neutral

16.6. There are no neutral impacts identified.

Negative

16.7. The ES identifies the risk of potential contaminant linkages from contaminated soils to human receptors (construction workers, adjacent site users or residents, and future site users), controlled waters (underlying aquifers and surface waters) and to the built environment. The ES identifies that there are a number of surface water features both on and adjacent to the Scheme, however, limited potential sources of contamination have been identified across the mainly agricultural land use.

16.8. Small areas of potentially infilled ponds/Made Ground have been identified across the Scheme, however, given the small scale of these features and the age of any infill material, the potential for gas generation is low. Furthermore, the potential for hazardous ground gases to accumulate within confined spaces is considered very low. In addition, no buildings are proposed in the vicinity of potentially infilled ponds/pits across the Sites, breaking the contaminant linkage to the built environment.

16.9. During construction, operation and decommissioning, standard industry best practice measures would be adopted to avoid and reduce the risk to ground conditions. The Construction Environmental Management Plan (CEMP) [EN010133/APP/C7.16] will clearly set out best practice to ensure any environmental impacts are as limited as possible. With embedded mitigation and the implementation of well-established good industry practices for managing contaminated land which will be incorporated into the CEMP, it is considered that the potential effects of contamination or risk of contamination will be reduced to moderate/minor and would not be significant.

Cumulative impacts

16.10. Given modern methods of construction and the low sensitivity end use, the cumulative effects to human health or controlled waters are considered to be negligible with the implementation of embedded mitigation measures such as the CEMP which would be appropriate for all development projects. There are currently two scenarios for the construction of the shared cable corridor between the proposed West Burton, Cottam and Gate Burton Energy Park solar farm schemes, however, the effect on ground conditions for both scenarios is considered a negligible alteration from the baseline given the proposed trenching construction methodology and no change in land use.

Requirements

Requirement 13 – Construction environmental management plan

16.11. Under this requirement, no part of the authorised development may commence until a construction environmental management plan (which must substantially accord with the outline construction environmental management plan) has been submitted to and approved by the relevant planning authority. All construction works associated with the authorised development must be carried out in accordance with the approved construction environmental management plan.

16.12. Ground investigation works will be undertaken prior to commencing construction works. Results would be reviewed by the appointed contractor.

Requirement 14 – Operational environmental management plan

16.13. Requirement 14 – Operational environmental management plan: Before the date of final commissioning of the authorised development, an operational environmental management plan (which must substantially accord with the outline operational environmental management plan) must be submitted to and approved by the relevant planning authority. The operational environmental management plan must be implemented as approved.

16.14. The design of the Scheme has included measures to avoid and minimise the risk of pollution to the ground and water during its operation.

Requirement 19 – Soils management

16.15. This requirement stipulates that no part of the authorised development may commence until a soils resource management plan (substantially in accordance with the outline soils resource management plan) for that part has been submitted to and approved by the relevant planning authority. The soils resource management plan must be implemented as approved.

Requirement 21 – Decommissioning and restoration

16.16. 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 for that part which substantially accords with the decommissioning statement. No decommissioning works must be carried out until the relevant planning authority has approved the plan submitted in relation to such works. The plan submitted must be implemented as approved. This requirement is without prejudice to any other consents or permissions which may be required to decommission any part of the authorised development.

17. Minerals

Summary

17.1. The list below outlines the main points arising from the review of Chapter 12: Minerals of the ES (Doc. Ref. EN010132/APP/WB6.2.12) for the West Burton Solar Project):

- [M1] The proposed Cable Route Corridor has the potential to result in operational issues for future mineral operations and might restrict the efficient exploitation of the resource.

Policy Context

National Policy

17.2. Section 5.10.9 states that '*Applicants should safeguard any mineral resources on the proposed site as far as possible, taking into account the long-term potential of the land use after any future decommissioning has taken place*'.

17.3. Furthermore, paragraph 5.10.22 requires the SoS to ensure that appropriate mitigation measures have been put in place to safeguard mineral resources for proposed developments which have an impact on a Mineral Safeguarding Area (MSA).

Local Policy

17.4. Similar to waste, West Lindsey do not have any specific policies relating exclusively to minerals planning. Lincolnshire County Council is responsible for minerals and waste planning in the County. The Lincolnshire Minerals and Waste Local Plan is formed of two parts: the Core Strategy and Development Management Policies and the Site Locations.

- The Core Strategy and Development Management Policies outlines the principles for the future winning and working of minerals and the form of waste management. It also provides the criteria under which we consider minerals and waste development applications.
- Site Locations includes specific proposals and policies for the provision of land for mineral and waste.

Key Impacts

17.5. The Scheme is partially within a Mineral Safeguarding Area (MSA) for sand and gravel in Lincolnshire and Nottinghamshire. The Scheme has three potential impacts for mineral resources and supply. Depending upon the level of disturbance the Scheme has the potential:

- To disturb a mineral deposit to the extent the deposit becomes unviable to exploit;
- That the presence of the Scheme imposes a constraint on mineral extraction in the local vicinity by physically preventing its exploitation; and
- That the Scheme would adversely affect the local mineral supply.

Construction, operation and decommissioning

Positive

17.6. None identified.

Neutral

17.7. In terms of potentially disturbing a mineral deposit to the extent it becomes unviable to exploit, in this case the only identified surface mineral the Scheme affects are sand and gravel deposits. On the basis that the Scheme does not require deep excavations and foundations are limited to galvanised steel poles driven into the ground, disturbance is limited to the surface layers rather than underlying deposits and the Scheme would not affect the long-term viability of working the identified sand and gravel resource.

17.8. There are no permitted or proposed mineral extraction sites within close proximity that might be affected by the Scheme. Current assessments report that there is no need for new sites to come forward during the plan period up to 2031. Furthermore, on the basis that the Scheme will be decommissioned at the end of its operational life, any minerals would not be permanently sterilised and would be available to exploit if required at a future date. Thus, there is not considered to be any conflict with the relevant mineral safeguarding policies and the Scheme would not constrain mineral extraction in the local vicinity.

17.1. The Scheme will be decommissioned at the end of its (approximately 40 year) operational life and all above ground structures will be removed and the land restored. Such measures will essentially restore the baseline condition for the identified mineral resources. Any minerals would not be permanently sterilised and would be available to exploit if required at a future date. Where infrastructure is left in the ground (such as cable ducts after decommissioning) these are not anticipated to present any significant constraint to future mineral extraction and would be removed as part of the removal of overburden or extraction of mineral with the same excavation equipment.

17.2. In view of the current policies of the Mineral Planning Authority, the current sand and gravel landbank and the extensive areas covered by the Area of Search, it seems highly unlikely that the sand and gravel reserve partially underlying the Scheme will need to be worked within the lifetime of the Scheme. Therefore the Scheme is not considered to have a significant impact on the potential sand and gravel supply in the County during the life of the Scheme.

17.3. In terms of petroleum exploration and development, it is not considered that the proposed Scheme would have any implications for existing or proposed exploration and eventual exploitation of oil and gas resources. Solar arrays and associated development are not considered to be sensitive adjoining land uses to an oil well. Whilst together the solar array Sites occupy a large area, they are not a single block of land and are dispersed across a large area thus there is still scope for exploratory drilling across the Petroleum Exploration and Development License area. The method of petrochemical extraction involves limited surface development that could be located outside the solar array Sites and still allow extraction of the mineral beneath those Sites.

Negative

17.4. The proposed Cable Route Corridor, particularly in the Trent Valley, however, does have the potential to result in operational issues for future mineral operations and might restrict the efficient exploitation of the resource. This impact has been mitigated wherever possible by cable routes following existing infrastructure corridors or edges of significant landscape features rather than directly crossing open fields. Such an approach avoids creating a further obstruction to the future exploitation of the mineral resource.

Cumulative impacts

17.5. Notable substantial projects in close proximity to the Scheme that have the potential to impact on mineral resources are:

- Gate Burton Energy Park;
- Cottam Solar Project; and
- Tillbridge Solar.

Positive

17.6. None identified.

Neutral

17.7. In terms of the direct impact on the mineral reserves affected by the Scheme, there are no other plans or proposals for other developments that directly affect these deposits.

17.8. The Applicant has worked with Cottam Solar Project and with Gate Burton Energy Park to establish a Shared Cable Route Corridor to minimise the overall impact. Without this mitigation multiple cable routes across this safeguarded reserve would further bisect it adding further constraints to any future mineral working and whilst not actually physically sterilising any mineral deposit might make areas uneconomic to work.

17.9. The potential cumulative impact is considered small as these proposals only affect a relatively small area of an extensive area of search for the lifetime of each of these proposals. The cumulative impact of this Scheme, in combination with the Cottam Solar Project and Gate Burton Energy Park is not considered to have a significant adverse impact on the supply of sand and gravel within Lincolnshire.

17.10. The Tillbridge Solar scheme does not appear to affect any safeguarded mineral deposits. The site does appear to fall within the mineral consultation zone for 2 oil wells near Glentworth; these are site specific considerations and there are no cumulative impacts arising from this development.

Negative

17.11. The Cable Route Corridors linking the solar array Sites to the former West Burton Power Station site overlap with proposed cable corridors for Gate Burton Energy Park, and for a short distance, also with the cable corridor for the proposed Cottam Solar Project. Much of the overlap is within an area of safeguarded sand and gravel reserves associated within the Trent Valley.

17.12. Any other proposals for development that sterilise safeguarded mineral resources, particularly those also identified as Area of Search for sand and gravel in the Lincolnshire Minerals and Waste Local Plan, could have an impact on the supply of sand and gravel within Lincolnshire.

17.13. The Cottam Solar Project consists of a number of parcels of land, which lie to the north and north east of the West Burton Scheme. One area within the Cottam Solar Project approximately 13.5 km north of the Scheme lies within the same Area of Search for sand and gravel as West Burton.

17.14. The Gate Burton Energy Park scheme extends west from Willingham by Stow to Gate Burton and Knaith in the west. The proposed extent of this development does mean that it also covers the same Area of Search for sand and gravel.

Requirements

17.15. There are no requirements related to minerals.

18. Glint and Glare

Summary

18.1. The list below outlines the main points arising from the review of Chapter 16: Glint and Glare of the ES (Doc. Ref. EN010132/APP/WB6.2.16) for the West Burton Solar Project:

- [GG1] It should be noted that the assessment method does not consider effects on visual receptors currently such as protected views and public rights of Way (PRoW).
- [GG2] Third party vegetation should be excluded as it is not owned or controlled by the applicant.
- [GG3] Residential receptors should be considered for both ground floor and 1st floor rooms.
- [GG4] Local roads should also be modelled as there are more road traffic accidents (RTAs)
- [GG5] Train driver height must be confirmed.
- [GG6] The strategy of additional vegetation screening mentioned and temporary screening does not define the species of the vegetation which we would expect to be dense and coniferous in nature.

Policy Context

National Policy

18.2. 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*'.

18.3. 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

18.4. There are no significant positive impacts from glint and glare identified during construction and decommissioning.

Neutral

18.5. There are no significant effects from glint and glare identified during the construction and decommissioning phases.

Negative

18.6. There are no significant negative impacts from glint and glare identified during construction and decommissioning.

Operational

Positive

18.7. There are no positive impacts from glint and glare identified during operation.

Neutral

18.8. A neutral effect is predicted towards train driver receptors along the 4km of identified railway track for a fixed mounting system and tracking mounting system.

Negative

18.9. A Moderate Adverse effect is predicted for one dwelling (if a fixed mounting system is implemented) or two dwellings (if a tracking mounting system is implemented). For the remaining dwelling receptors effects are predicted to be lower.

18.10. A Moderate Adverse effect is predicted for a section of 300m along Sturton Road (if a fixed or tracking mounting system is implemented). For the remaining road receptors effects are predicted to be lower.

18.11. Minor/Negligible Adverse effects are predicted in respect of aviation receptors. The assessment relating to all other receptors has concluded that the worst case scenario effects will likely be Minor/Negligible Adverse (for either the fixed or tracker options).

18.12. The Applicant has proposed embedded mitigation in the form of vegetation and, if required, additional interim mitigation in the form of opaque fencing, to significantly reduce the visibility of the reflective area from those receptors which are predicted to experience a Moderate Adverse impact. For tracker panels, backtracking the panels to redirect the glint and glare away from receptors is also a mitigation option.

18.13. Once this mitigation is in place and obstructs the reflecting panels from view, dwelling receptors would be subject to a maximum impact of Minor/Negligible Magnitude which would result in a Minor/Negligible Adverse Significance of Effect, which is Not Significant in EIA terms. Likewise, with mitigation in place, road receptors would be subject to a maximum impact of Minor/Negligible Magnitude which would result in a Minor/Negligible Adverse Significance of Effect, which is Not Significant in EIA terms.

Cumulative impacts

18.14. The cumulative glint and glare effect of the Cottam Solar Project and Gate Burton Energy Park together with the West Burton Solar Project have been considered. These proposed solar developments are sufficiently close to the Scheme to share some of the receptors identified and assessed in the Glint and Glare Study (Doc. Ref. EN010132/APP/WB6.3.16.1).

18.15. Gate Burton Energy Park and Cottam are sufficiently close (within 2km from the Scheme) to West Burton to share multiple receptors.

18.16. Shared receptors are unlikely to have visibility of multiple reflective areas (West Burton, Gate Burton Energy Park and Cottam), and no significant impact is predicted due to the presence of significant mitigating factors. Therefore, cumulative effects are possible however the impact is predicted to be Minor/Negligible Adverse.

18.17. West Burton 2 and West Burton 3 have shared receptors; the assessment has concluded that one dwelling can have some visibility of both Sites and the relevant reflective areas. However, the existing and the proposed screening is likely to significantly reduce the visibility of both sites and therefore overall Minor/Negligible Adverse impact is predicted.

Requirements

Requirement 14 – Operational environmental management plan

18.18. Before the date of final commissioning of the authorised development, an operational environmental management plan (which must substantially accord with the outline operational environmental management plan) must be submitted to and approved by the relevant planning authority. The operational environmental management plan must be implemented as approved.

18.19. Where Glint and Glare cannot be mitigated through panel backtracking tilt (tracking panels) and would require instant screening, a temporary 3m wooden solid hoarding may be required until adjacent planting has matured.

19. Air Quality

Summary

19.1. The list below outlines the main points arising from the review of Chapter 17: Air Quality of the ES (Doc. Ref. EN010132/APP/WB6.2.17) for the West Burton Solar Project:

- [AQ1] The main risk to air quality will arise during construction of the Scheme on its own. The impact will the multiplied on a cumulative level in the event the other solar schemes were granted development consent.

Policy Context

National Policy

19.2. 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*'.

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

19.4. 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.

Local Policy

19.5. 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.

19.6. 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

Construction and Decommissioning

Positive

19.7. There are no positive impacts from air quality identified during construction or decommissioning.

Neutral

19.8. There are no neutral impacts from air quality identified during construction or decommissioning.

Negative

19.9. Potential impacts during construction and decommissioning include dust and particulate matter emissions from site activities, such as demolitions, earthworks (particularly during dry months), construction, vehicle movements, or from construction materials.

19.10. The main potential effects of particulates/dust are:

- Visual – dust plume, reduced visibility, coating and soiling of surfaces leading to annoyance, loss of amenity, the need to clean surfaces;
- Physical and/or chemical contamination and corrosion of artefacts;
- Coating of vegetation and soil contamination; and,
- Health impacts due to inhalation, e.g. asthma or irritation of the eyes.

19.11. All dust effects are considered to be direct, temporary, short-term and reversible in nature. Following the implementation of site-specific mitigation measures, included within the Outline CEMP, the significance of the effects from dust and emissions is considered to be negligible and not significant in EIA terms.

Operational

Positive

19.12. There are no positive impacts from air quality identified during operation.

Neutral

19.13. There are no neutral impacts from air quality identified during operation.

Negative

19.14. There is a potential fire risk associated with certain types of batteries such as lithium ion, which could result in smoke being blown downwind to nearby human and ecological receptors. Whilst there is low risk of adverse effects at the closest receptors, in the case of a fire at the proposed development, good practice safety measures will be implemented. Following the implementation of these measures during an occurrence of fire incident, the effects are determined to be negligible which is not significant in EIA terms.

Cumulative impacts

19.15. Following the implementation of the site-appropriate mitigation measures identified during construction, operational and decommissioning phases and during an occurrence of fire incident, the residual effects on both human receptors and ecological receptors are determined to be negligible.

Requirements

Requirement 13 – Construction environmental management plan

19.16. Under this requirement, no part of the authorised development may commence until a construction environmental management plan (which must substantially accord with the outline construction environmental management plan) has been submitted to and approved by the relevant planning authority. All construction works associated with the authorised development must be carried out in accordance with the approved construction environmental management plan.

19.17. Measures in the CEMP will include the implementation of inspection procedures at the Order limits to periodically visually assess any dust and air pollution which may be generated; inspection of maintenance schedules for construction vehicles, plant and machinery; and inspection and recording procedures relating to the level of traffic movements, use and condition of haul routes.

Requirement 21 – Decommissioning and restoration

19.18. 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 for that part which substantially accords with the decommissioning statement. No decommissioning works must be carried out until the relevant planning authority has approved the plan submitted in relation to such works. The plan submitted must be implemented as approved. This requirement is without prejudice to any other consents or permissions which may be required to decommission any part of the authorised development.

19.19. A dust management plan may be required as part of the DEMP and would detail any dust monitoring required prior to and during decommissioning, including any relevant baseline dust monitoring to be undertaken before activities commence. Records will be kept of all dust and air quality complaints, cause(s) will be identified and appropriate measures to reduce emissions will be taken in a timely manner. A further record will be kept of the measures taken.

20. Waste

Summary

20.1. The list below outlines the main points arising from the review of Chapter 20: Waste of the ES (Doc. Ref. EN010132/APP/WB6.2.20) for the West Burton Solar Project:

- [W1] The Scheme will generate substantial quantities of both construction materials and wastewater. Employee activity will generate commercial, food and sewage waste.
- [W2] WLDC notes concerns over the Scheme complying with Policy S10: Supporting a Circular Economy of the Central Lincolnshire Local Plan, due to the replacement and disposal of solar panels and other associated infrastructure that will be required during the Scheme's operation.
- [W3] It is noted that there are inconsistencies between the methodologies used in the cumulative assessment of waste effects in the West Burton ES chapter and the Gate Burton ES chapter.

Policy Context

National Policy

20.2. 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.

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

Local Policy

20.4. West Lindsey do not have any specific policies relating exclusively to waste management. Lincolnshire County Council is responsible for minerals and waste planning in the County. The Lincolnshire Minerals and Waste Local Plan is formed of two parts: the Core Strategy and Development Management Policies and the Site Locations.

- The Core Strategy and Development Management Policies outlines the principles for the future winning and working of minerals and the form of waste management. It also provides the criteria under which we consider minerals and waste development applications.
- Site Locations includes specific proposals and policies for the provision of land for mineral and waste.

20.5. Notwithstanding the above, West Lindsey do have policies in the Central Lincolnshire Local Plan that relate to the minimisation and management of waste.

20.6. Policy S10: Supporting a Circular Economy states that a key principle of a circular economy is the design out of waste and pollution. The principle requires businesses and organisations to rethink their supply chain and identify ways that they can avoid creating waste and pollution through their operations The policy also aims to support proposals which incorporate sustainable waste management onsite.

20.7. Policy S11: Embodied Carbon states that assessing the embodied carbon of a project can contribute to other sustainability targets and priorities beside carbon. For example, use of recycled

content, recyclability of building materials, and reduced waste materials to landfill can all result from a focus on reducing embodied carbon and also contribute to waste reduction targets.

20.8. Policy S20: Resilient and Adaptable Design sets out that adaptable building design avoids, or at least minimises, waste, reduces the use of materials, and reduces overall emissions from the demolition and redevelopment of buildings that are no longer fit for purpose or incapable of being easily changed.

Key Impacts

Construction

Positive

20.9. There are no positive impacts identified during construction.

Neutral

20.10. There are no neutral impacts identified during construction.

Negative

20.11. Construction activities associated with the Scheme are anticipated to result in waste generation, including construction materials and wastewater. Employee activity will generate commercial, food and sewage waste. The total estimated construction, demolition and excavation (CD&E) waste is 50,000 tonnes over the 24-month construction period (25,000 tonnes per annum) which is considered a minor magnitude increase (1.2%) for the Local Impact Area.

20.12. The consequent environmental effects from a temporary, medium term, minor magnitude uplift in CD&E waste are:

- A neutral or slight adverse effect on recycling, reuse, and waste treatment handling (which is not considered significant in EIA terms).
- A slight adverse effect on landfill waste handling (which is not considered significant in EIA terms).

Operational

Positive

20.13. There are no positive impacts identified during operation.

Neutral

20.14. There are no neutral impacts identified during operation.

Negative

20.15. It is anticipated that waste arising during operation will be minimal and will predominantly be related to the removal of expired or broken equipment that cannot be repaired, and packing material required for replacement material. Waste electrical or electronic equipment (WEEE) arising from the operation and maintenance of the Scheme is anticipated to be limited to worn or broken photovoltaic panels of a negligible quantity. The total estimated CD&E waste to be generated from the Scheme per annum during operation is 150 tonnes. Assuming that waste is handled proportionally between Lincolnshire and Nottinghamshire, this constitutes a negligible magnitude increase (0.007%) in CD&E waste handling. The resulting impacts are:

- A neutral effect on recycling, reuse, and waste treatment handling (which is not considered significant in EIA terms).
- A neutral or slight adverse effect on landfill waste handling, as a result of its future very high sensitivity (which is not considered significant in EIA terms).

Decommissioning

Positive

20.16. There are no positive impacts identified during decommissioning.

Neutral

20.17. There are no neutral impacts identified during decommissioning.

Negative

20.18. The Scheme is anticipated to generate substantive WEEE through decommissioning, including photovoltaic panels, batteries, and substation equipment, as well as other smaller quantities of WEEE from supporting electrical infrastructure. The total WEEE generated from the Scheme's decommissioning is 77,000-85,000 tonnes, of which 7,000-14,000 tonnes is considered to be hazardous (batteries). This, over a worst-case 12-month decommissioning phase, equivalent to a 6.4-12.8% rise in annual hazardous waste handling for the Local Impact Area.

20.19. As such, this is a medium-term temporary moderate to major magnitude impact, which is likely to have the following effects:

- A slight or moderate adverse effect on recycling, reuse, and waste treatment handling (which is not considered significant in EIA terms).
- A slight adverse effect on landfill waste handling, as a result of its future very high sensitivity (which is not considered significant in EIA terms).

Cumulative impacts

20.20. For the purpose of assessing waste impacts, the Gate Burton, Cottam and Tillbridge solar projects have been identified. Cumulative waste streams have sought to identify anticipated waste generated across all identified generating stations and their associated cable connections to the National Grid.

Positive

20.21. There are no positive impacts.

Neutral

20.22. The total estimated cumulative construction, demolition and excavation (CD&E) waste to be generated from the Scheme construction is 260,000 tonnes over the combined construction period from 2024-2028. The waste generated per annum (65,000 tonnes) equates to an uplift in CD&E waste of 3.1% from the combined estimated CD&E waste for Lincolnshire and Nottinghamshire (2024 base year). This is approximately 2.6 times greater than the individual impact of the West Burton Solar Project. Assuming that waste is handled proportionally between Lincolnshire and Nottinghamshire, the cumulative impact is less than a 5% increase to baseline conditions and does not change the level of magnitude of the impacts (minor), and thus do not change the significance of the effects from the assessment of West Burton Solar Project in isolation.

20.23. The total estimated CD&E waste to be generated from the Scheme per annum during operation is 654 tonnes. Per annum, this equates to an uplift in CD&E waste of 0.03% from the combined estimated CD&E 2024 baseline for Lincolnshire and Nottinghamshire. This constitutes a negligible magnitude increase in CD&E waste handling and as such does not increase the level of significance of the effects compared to those assessed for the Scheme in isolation.

20.24. Waste electrical or electronic equipment (WEEE) arising from the operation and maintenance of the cumulatively assessed projects is anticipated to be limited to worn or broken photovoltaic panels. These are not likely more than negligible quantities of hazardous materials, and as such, it is anticipated that there will be a long-term cumulative negligible magnitude uplift to hazardous waste in the Local Impact Area will have the following effects. As such, this does not increase the level of significance of the effects compared to those assessed for the Scheme in isolation.

20.25. The cumulative total WEEE generated from the decommissioning of the cumulatively assessed projects is in the order of 260,000 tonnes, of which 19,500 tonnes is considered to be hazardous (batteries). This is likely to be spread over a number of years due to differing operational timescales

associated with the cumulatively assessed projects. As such, it is not anticipated that the peak hazardous waste generation in any year during the cumulative decommissioning phase is anticipated to be substantively more than for the worst-case scenario for the Scheme in isolation. As such, the cumulative effect on hazardous waste handling in the Local Impact Area is not of any greater level of significance.

Negative

20.26. The total estimated CDE waste from the decommissioning of the cumulative projects is 260,000 tonnes. This is likely to be spread over a number of years due to differing operational timescales. For this cumulative assessment, peak waste streams are assumed to be similar to those during the cumulative construction phase, and as such the waste generated per annum (65,000 tonnes) equates to an uplift in CD&E waste of 3.1% from the combined estimated CD&E waste for Lincolnshire and Nottinghamshire (2024 base year). Assuming that waste is handled proportionally between Lincolnshire and Nottinghamshire, the cumulative impacts do not change the level of magnitude of the impacts, and thus do not change the significance of the effects from the assessment of West Burton Solar Project in isolation. As such, a moderate or large adverse effect (which is significant in EIA terms) is identified on landfill waste handling in Nottinghamshire, due to the very high sensitivity of the receptor.

Requirements

Requirement 13 – Construction environmental management plan

20.27. Under this requirement, no part of the authorised development may commence until a construction environmental management plan (which must substantially accord with the outline construction environmental management plan) has been submitted to and approved by the relevant planning authority. All construction works associated with the authorised development must be carried out in accordance with the approved construction environmental management plan.

20.28. The types, quantities and final destination of waste generated during the construction phase would be identified, measured and recorded through the CRMP. A register of all waste loads leaving the Order limits would be maintained to provide a suitable audit trail for compliance purposes and to facilitate monitoring and reporting of waste types, quantities and management methods.

Requirement 14 – Operational environmental management plan

20.29. Requirement 14 – Operational environmental management plan: Before the date of final commissioning of the authorised development, an operational environmental management plan (which must substantially accord with the outline operational environmental management plan) must be submitted to and approved by the relevant planning authority. The operational environmental management plan must be implemented as approved.

20.30. A register of waste loads leaving the Order limits would be maintained to provide a suitable audit trail for compliance purposes and to facilitate monitoring and reporting of waste types, quantities, and management methods.

Requirement 21 – Decommissioning and restoration

20.31. 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 for that part which substantially accords with the decommissioning statement. No decommissioning works must be carried out until the relevant planning authority has approved the plan submitted in relation to such works. The plan submitted must be implemented as approved. This requirement is without prejudice to any other consents or permissions which may be required to decommission any part of the authorised development.

20.32. A Decommissioning Resource Management Plan (DRMP) setting out how measures to manage the disposal of waste from the Order Limits may be required in accordance with relevant legislative and policy requirements at the time of decommissioning. The separation of the main waste streams on-site, prior to transport to approved, licensed third party waste facilities, including Waste Electrical and Electronic Equipment (WEEE) reprocessors, for recycling or disposal will take place.

21. Other Environmental Matters

Summary

21.1. Chapter 21: Other Environmental Matters of the ES (Doc. Ref. EN010132/APP/WB6.2.21) describes and assesses the potential effects of the Scheme on:

- Electromagnetic Fields;
- Telecommunications, Utilities and Television;
- Light Pollution;
- Human Health; and
- Major Accidents and Disasters.

21.2. The list below outlines the main points arising from the review of Chapter 21: Other Environmental Matters:

- [OEM1] The Scheme is questionably not in accordance with Policy S54: Health and Wellbeing, as the Scheme does not take into account achieving positive mental and physical health outcomes.

Policy Context

National Policy

Electromagnetic Fields

21.3. Paragraph 2.10.5 of NPS EN-5 states that the *'National Radiological Protection Board (NRPB) (now part of HPA CRCE), published advice on limiting public exposure to electromagnetic fields. The advice recommended the adoption in the UK of the EMF exposure guidelines published by ICNIRP in 1998. These guidelines also form the basis of a 1999 EU Recommendation on public exposure and a Directive on occupational exposure. Resulting from these recommendations, Government policy is that exposure of the public should comply with the ICNIRP (1998) guidelines in terms of the EU Recommendation. The electricity industry has agreed to follow this policy'*.

Light Pollution

21.4. Paragraph 185(c) of the NPPF 2021 states that decisions should *'limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation'*.

Human Health

21.5. 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.

21.6. The NPPF supports the role of planning to create healthy, inclusive communities and recognises that the design and use of the built and natural environment are major determinants of health and wellbeing. The impact of development on human health and wellbeing is therefore a material consideration in the determination of planning applications.

21.7. The Central Lincolnshire Local Plan has produced a Supplementary Planning Document (SPD) to help guide developers and decision makers on the implementation of policy

S54 Health and Wellbeing in the Central Lincolnshire Local Plan. S54 sets out a requirement for developers to submit a HIA for non-residential development proposals, 5ha or more.

21.8. The adopted SPD defines Health as a *"state of complete physical, mental and social wellbeing. As well as access to good quality healthcare services and lifestyle choices, there are many factors that affect health and wellbeing. These include the physical and social conditions in which people live, culture, education, housing, transport, employment, crime, income, leisure, and other services. These all influence health in either a positive or negative way, both directly and indirectly. These factors are commonly known as the wider determinants of health."* (page 2).

Major Accidents and Disasters

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

Local Policy

21.10. The 4th Lincolnshire Local Transport Plan (LTP4) covers the period 2013/14-2022/23. At the time of writing, this is in the process of being replaced by the 5th Local Transport Plan (LTP5). Theme 4 'Supporting safety, security and a healthy lifestyle' states that there is a need to reduce the impacts of air quality, noise and light pollution.

21.11. Policy S54 of the Central Lincolnshire Local Plan 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, operation and decommissioning

Positive

21.12. No positive impacts identified.

Neutral

21.13. The vulnerability of the Scheme to flooding has been mitigated through embedded design measures to avoid building critical infrastructure in areas where there is a greater than 1 in 1,000 annual probability of flood risk. Elsewhere on the Sites, where works are able to be built compatibly with flooding of up to a depth of 1m, the vulnerability of construction workers and equipment is mitigated through embedded measures through the Outline Construction Environmental Management Plan [EN010132/APP/WB7.1]. These include the requirement for contractors to produce a Flood Risk Management Action Plan/Method Statement which will provide details of the response to an impending flood and include the following. These measured are to be secured through Requirement in the DCO. As such, the impacts from flooding on infrastructure and on human health of workers is anticipated to be not significant.

21.14. The review of climate change resilience set out in ES Chapter 7: Climate Change (Doc. Ref. EN010132/APP/WB6.2.7) identifies that the impacts of increased rainfall events, winter precipitation, and increased probability of extreme weather events on the Scheme's construction is anticipated to be medium to high magnitude. However, given the timescale of construction, it is not anticipated these events will be significantly more likely than the baseline, and as such, the anticipated impacts are not severe and are not significant. These impacts are likely to be of a greater (high) magnitude during operation and decommissioning as a result of future baseline conditions. That notwithstanding, the level of effect to the Scheme identified as not significant.

Negative

21.15. No negative impacts identified.

Cumulative

21.16. Cumulative effects have been assessed in relation to the interaction between the Scheme and three identified solar NSIPs in the vicinity. These are Cottam Solar Project, Gate Burton Energy Park, and Tillbridge Solar Park. Cumulative effects have been assessed in each of the supporting chapters to this human health assessment and are therefore summarised below.

Positive

21.17. The uplifts in employment and skills training and education opportunities are anticipated to have significant beneficial effects on human health and wellbeing as a result of improved measures of indices of multiple deprivation. The level of significance is not however anticipated to be increased by cumulative effects.

Neutral

21.18. The risk of fire from the BESS during construction and decommissioning is negligible due to the containerised construction of the storage units, thus reducing the risk of damage to battery cells which may cause fires. Furthermore, risks associated with damage to battery cells is likely to be isolated and so risk of larger fires is reduced.

Negative

21.19. Cumulative effects during construction on long distance recreation routes are anticipated to have a peak cumulative moderate adverse effect, specifically on the Trent Valley Way. This has a secondary impact on public health and wellbeing as a result of decreased desirability and use of a recreational walking route.

21.20. The residual cumulative effects on other human health receptors, such as access to primary healthcare, disability and long-term health, self-assessed health, and on access and use of outdoor recreation centres for adults and for youths are not anticipated to be significant.

Requirements

Requirement 13 – Construction environmental management plan

21.21. Under this requirement, no part of the authorised development may commence until a construction environmental management plan (which must substantially accord with the outline construction environmental management plan) has been submitted to and approved by the relevant planning authority. All construction works associated with the authorised development must be carried out in accordance with the approved construction environmental management plan.

21.22. The types, quantities and final destination of waste generated during the construction phase would be identified, measured and recorded through the CRMP. A register of all waste loads leaving the Order limits would be maintained to provide a suitable audit trail for compliance purposes and to facilitate monitoring and reporting of waste types, quantities and management methods.

Requirement 14 – Operational environmental management plan

21.23. Requirement 14 – Operational environmental management plan: Before the date of final commissioning of the authorised development, an operational environmental management plan (which must substantially accord with the outline operational environmental management plan) must be submitted to and approved by the relevant planning authority. The operational environmental management plan must be implemented as approved.

21.24. A register of waste loads leaving the Order limits would be maintained to provide a suitable audit trail for compliance purposes and to facilitate monitoring and reporting of waste types, quantities, and management methods.

Requirement 21 – Decommissioning and restoration

21.25. 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 for that part which substantially accords with the decommissioning statement. No decommissioning works must be carried out until the relevant planning authority has approved the plan submitted in relation to such works. The plan submitted must be implemented as approved. This requirement is without prejudice to any other consents or permissions which may be required to decommission any part of the authorised development.

21.26. A Decommissioning Resource Management Plan (DRMP) setting out how measures to manage the disposal of waste from the Order Limits may be required in accordance with relevant legislative and policy requirements at the time of decommissioning. The separation of the main waste streams on-site, prior to transport to approved, licensed third party waste facilities, including Waste Electrical and Electronic Equipment (WEEE) reprocessors, for recycling or disposal will take place.

22. Cumulative Effects

Summary

22.1. [CE1] Unlike the ES for the Gate Burton scheme, which includes a 'Cumulative Effects and Interactions' chapter (Chapter 16 of EN010131/APP/3.1), there is not an individual cumulative effects chapter of the West Burton ES. Whilst it is noted that the cumulative effects are considered in each chapter, the presentation of the cumulative effects could have been made clearer by including an individual chapter.

22.2. [CE2] The key impact on cumulative effects would be from the proposed Cottam, Tillbridge and Gate Burton solar farms that are located within West Lindsey.

22.3. [CE3] There are several discrepancies between the ES for West Burton and Gate Burton. This is particularly relevant to the cumulative effects assessments which state conflicting levels of impacts.

22.4. [CE4] The West Burton ES states that there will be beneficial or neutral cumulative landscape impacts during the operational phase of the developments. This is in conflict with Chapter 10: Landscape and Visual Amenity of the Gate Burton ES (Doc Ref. EN010131/APP/3.1) which assesses adverse cumulative effects:

> *'10.12.6 During operation, 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.*
>
> *10.12.7 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.'*

22.5. [CE5] The cumulative landscape impact assessed in the landscape and visual assessment is in contradiction of the findings in other chapters of the ES. This includes the socio-economic chapter which recognises the *'long-term impact on the landscape character of some tourism and recreation receptors that are reliant on the landscape context for their value, such as viewpoints, landmarks, and cultural heritage assets'*.

22.6. [CE6] The proposed Stow Park Solar Farm submitted an EIA Screening request in June 2023 and has subsequently been determined by WLDC as EIA development. The Stow Park development is situated within a parcel of land that is southeast of West Burton 3 to the east of the Sheffield to Lincoln railway line, and therefore construction traffic is likely to share the same haul routes. Therefore WLDC feel this should be included within the cumulative effects assessment.

Policy Context

22.7. The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA regs) (regulation. 21) require the decision maker, when deciding to make an order granting development consent, to reach a reasoned conclusion on the significant effects of the proposed development on the environment following an examination of the environmental information provided. The conclusion reached must be to up to date at the time that the decision is made. Schedule 4 of the EIA regs require a description of the likely significant effects of the proposed development on the environment, including cumulative effects. The policy requirements to consider cumulative impacts are set out in adopted National Policy Statement EN-1 (NPS EN-1). Paragraph 4.2.1 reiterates the requirements of the EIA regs set summarised above.

22.8. NPS EN-1 paragraph 4.2.5 states that: *'When considering cumulative effects, the ES should provide information on how the effects of the applicant's proposal would combine and interact with the effects of other development The current NPS EN-1 directs the decision maker 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'.*

22.9. 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.

22.10. 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

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

22.12. Whilst West Burton will be assessed on its own merits, the status of Cottam and Gate Burton as DCO applications in their 'examination' phase (at the date of this report) results in a need to thoroughly examine the impacts of these NSIPs with each other. The Tillbridge scheme must also be considered in the decision-making process.

22.13. Table 22-1 below provides a summary of the key cumulative impacts associated with West Burton and the other proposed solar schemes which are located with the boundary of WLDC.

Table 22-1 – Cumulative Impacts

Topic	Impact
Landscape and Visual	It has been assessed that there would be neutral impact on the following landscape receptors: Topography and watercourses; Communications and Infrastructure; Settlements, Industry, Commerce and Leisure; Public Rights of Way and Access; Scheduled Monuments, Listed Buildings, Conservation Areas and Registered Parks and Gardens; Ancient Woodlands and Natural Designations; and Nationally and Locally Designated Landscapes.
	The Landscape and Visual Amenity chapter states that it has identified at worst Minor adverse effects on landscape during construction with Gate Burton Energy Park, Cottam Solar Project and Tillbridge Solar.
	Furthermore, during the operational phase, it has been assessed that the cumulative effects from the Scheme and Cottam Solar Project, Gate Burton Energy Park and Tillbridge Solar Farm are considered Minor adverse.
	The cumulative landscape assessment in the Gate Burton ES shows that the West Burton Energy Park, Cottam Solar Project, Tillbridge Solar Farm and the Scheme have a combined moderate adverse cumulative impact on the landscape, 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.
Ecology and Nature Conservation	Several designated sites were located close to the Shared Cable Route Corridor, particularly Coates Wetland LWS, Trent Port Wetland LWS (which occur close to the proposed River Trent crossing point) and Cow Pasture Lane Drains LWS. It is proposed that these sites are protected through the use of Horizontal Directional Drilling. In which case, a simultaneous or sequential cable installation programme should not cause any cumulative impacts.
	An 18-month cable works programme for the simultaneous installation option would enable habitats removed/disturbed by the works to be reinstated in reasonable time. None of the habitats recorded within the field surveys were of such value as to mean they could not withstand some temporary loss from a working width, or that wider effects would be caused.
	A sequential programme over five years would be expected to give rise to a cumulative adverse effect, considering the need for the compounds, jointing bays, haul routes etc to remain in place for five years. Although, the trenching works could be completed and remediated as a priority given that cable pulling could be carried out at any time once the ducts are installed. This would minimise the number of hedgerow incursions which would need to remain in place, limiting them to haul route gaps only. Consequently, the sequential

	programme would have greatest impact on hedgerow habitat, followed by grasslands including semi-improved grassland and lowland floodplain grassland.
	If the proposed Cottam and Gate Burton solar schemes were also 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.
	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.
	Depending on habitat retention, creation and management prescriptions to be implemented within them, a moderate cumulative beneficial effect potentially significant at a District level could occur to reptiles and amphibians.
Cultural Heritage	Cumulatively, there is a substantial harm to the setting of a designated heritage asset at the medieval bishop's palace and deer park, Stow Park – NHLE 1019229.
	Cumulative effects could also occur at three heritage assets where views from the Lincoln Cliff contribute to the significance of the asset. This is because the other NSIPs in the vicinity are also likely to be visible from these elevated viewpoints along the Lincoln Cliff, but not from those within the Trent Valley. Should all of the NSIPs identified be permitted, moderate adverse (significant) effects are possible at one or more assets.
Transport and Access	Traffic flows associated with the cumulative schemes will only affect links in the study area that have a low sensitivity. These roads are less sensitive to change compared to the more local/rural roads within the network, which will not be affected by the cumulative schemes. The percentage change on these roads is low. It should also be noted that it is incredibly unlikely that a scenario will occur whereby all cumulative schemes are constructed at the same time.
	The cumulative effects on the local highway network surrounding the Grid Connection Route will also be low, as the cumulative Schemes will not use the same routes. It should be noted that sections of the Grid Connection Route for the Scheme will be shared with Gate Burton and Cottam, although the residual effects will not change as a result of this.
	Based on Gate Burton's ES, if the Cottam, Gate Burton, 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.
	In considering the significant workforce requirements for all the Schemes, particularly if all four proposed solar farms in West Lindsey were granted, there are concerns over whether there is a sufficient workforce nationally to meet demand. It can therefore be surmised that if

	the workforce and skills are divided between the projects, then the construction period for the schemes could go beyond the 24 months proposed in the ES.
	The Applicant considers that the Scheme will result in 13 FTE agricultural sector jobs. For Cottam the estimate is 17 and for Gate Burton the estimate is 2. This would see the loss of at least 32 FTE agricultural sector jobs in West Lindsey. However, these figures do not take into account contractor services related to the farm business in the area.
Human Health and Wellbeing	There will be cumulative effects during construction on long distance recreation routes that are anticipated to have a peak cumulative moderate adverse effect, specifically on the Trent Valley Way. This has a secondary impact on public health and wellbeing as a result of decreased desirability and use of a recreational walking route.
	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. It must be noted that this does not take into account the approximate 500 FTE workforce required for Tillbridge. This has not been considered in the cumulative effects chapter.
Waste	A moderate or large adverse effect on landfill waste handling is expected in Nottinghamshire during the decommissioning phase with West Burton, Cottam and Tillbridge.

Shared Grid Connection Corridor

22.17. Part of the Gate Burton Energy Park and Cottam Solar Project cable routes are proposed to be located within the cable route corridor for the Scheme's cable circuits (the Shared Cable Route Corridor). The cumulative environmental effects of the simultaneous or sequential construction of these cable circuits have been assessed in the Scheme's ES. This is in order to seek to minimise potential environmental effects and identify the benefits of combined construction activities. The shared Grid Connection will also include Tillbridge; however, this is not included in the assessments in the ES.

22.18. The DCO Application will seek development consent for the Scheme's cable circuits only. The proposed Cottam DCO Application will seek development consent for its cable, and the proposed Gate Burton DCO Application will seek development consent for its cable. Part of the cable route corridors for all three projects are proximate to each other, however, it has not yet been determined exactly where each cable circuit will be micro-sited or the exact crossing point(s). For this reason, the Shared Cable Corridor is wide enough to accommodate all three cable circuits.

22.19. The exact location of the Scheme's cable circuits within the Shared Cable Corridor will be determined at the detailed design stage post DCO consent in collaboration with the promoters of the Gate Burton Energy Park and the Cottam Solar Project.

22.20. Where appropriate and practicable to do so, the intention of the Applicant and the promoters of the Gate Burton Energy Park and the Cottam Solar Project is to coordinate the discharge of any pre-construction requirements relating to works in the Shared Cable Corridor. This is not secured under the DCO and therefore there is no obligation for the Applicant to coordinate the discharge of requirements if it does not suit them.

22.21. It is anticipated that there will be no significant cumulative operational effects, associated with the cables once they are constructed and the land re-instated, that need to be assessed in this ES. The construction and decommissioning phases have been assessed.

22.22. There are two cumulative scenarios which have been considered for each environmental aspect:

1. The construction of all three projects' ducts and cables at the same time, within the same construction programme. The ES assumes an 18-month duration for this. In this scenario, the likely construction method would be for all three projects' ducts to be installed at the same time, but the cables would all then subsequently be 'pulled through' separately, at the appropriate time during the construction programme for each individual project. An assessment of all ducts dug and installed together in the early period of the 18-month construction period, and three lots of separate cable-pulling activities over the 18-month construction period has been considered. For cable duct construction, assumed works for all three projects consist of haul road, compounds / laydown areas, bridge crossings (bailey bridges), horizontal drilling activities and associated laydown areas. For cable pulling the assessment has assumed the haul road, compounds / laydown areas have remained in

situ; and that the additional works associated with the cable pulling is the construction of the joint bays and communications chambers.

2. The installation of each projects' ducts and cables, sequentially over a 5-year period. Over this period, it is assumed that haul roads, laydown areas / compounds and bridges remain in situ for the 5-year period. This would represent a worst-case scenario from an assessment perspective given the potential for on-going construction activities over this period.

22.23. The 18-month period for the installation of the cables for all the schemes is six months less than the 24-36 months predicted under the Gate Burton ES. This suggests there is limited understanding of the construction phases between the three projects.

Other Key Projects Under Development

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

22.25. The projects that the Councils consider of substantive relevance to cumulative impacts of the Scheme are shown in in Table 22-2.

Table 22-2 – Solar and Other Energy Developments in Proximity to the Development Site

Name	Location	Capacity (MW)	Comment
Cottam Solar Park	West Lindsey and Bassetlaw	Approx 600	Application by Cottam Solar Project Limited (Island Green Power). Shares same Grid Connection Corridor with the Gate Burton, West Burton and Tillbridge Schemes. Currently in examination phase.
Gate Burton Solar Project	West Lindsey and Bassetlaw	Approx. 500	Application by Gate Burton Energy Park Limited (Low Carbon Group Limited). Shares same Grid Connection Corridor with the Cottam, Tillbridge and West Burton Schemes. Currently in examination 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 Q1 2024. 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

22.26. 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 22-3 – 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

23. Conclusion and Summary

Conclusion

23.1. The West Burton Solar Project will have multiple impacts on West Lindsey District Council (WLDC). This report has identified the positive, neutral and negative impacts of the Scheme that have been identified in the ES submitted by the Applicant.

23.2. WLDC accept that, based on the information available at the time of the drafting of the ES, the Applicant has considered the cumulative effects of other proposed schemes in the West Lindsey area. This report has 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 Gate Burton, Tillbridge and Cottam.

23.3. There are clearly positive impacts of the Scheme, particularly from a climate change perspective; however, it is considered that there are negative impacts for the majority of the ES topics and the Scheme will have a detrimental impact on West Lindsey.

23.4. Notwithstanding the above, this LIR has identified points of clarification which must be addressed, this includes inconsistencies between the assessments in chapters within the ES and also with other schemes in the area.

23.5. The key topics that are considered to be of particular concern area set in the subheadings below and provides a brief description of the key impacts which will affect West Lindsey. WLDC will reserve providing their position on the Scheme and will provide it as part of the Written Representation.

Landscape and Visual Impact Assessment

23.6. The Applicant has assessed the landscape impact on West Lindsey would be beneficial, including on a cumulative scale; however, within the Cultural Heritage chapter (Doc Ref. EN010132/APP/WB6.2.13) the Applicant recognises that the Scheme will have impacts on the landscape character of some tourism and recreation receptors that are reliant on the landscape context for their value.

23.7. Furthermore, the Gate Burton scheme has assessed a cumulative moderate adverse impact based on the same schemes. The design of the Scheme relies on a ‘network of sites’ which will blot the landscape for decades and does not follow a contiguous site area. This does not demonstrate the contiguous design which has been implemented on the Gate Burton scheme.

23.8. The conclusion provided on the impact of the Scheme being cumulative is therefore in conflict with the assessment undertaken by a similar scheme within West Lindsey.

Ecology and Biodiversity

23.9. During construction, the Scheme will result in the loss, degradation and fragmentation of habitats. It will also cause disturbance the flora and fauna of West Lindsey. There is also the potential that the Scheme would introduce invasive species.

23.10. Operational impacts of the Scheme could include light disturbance to bats and birds. There is also the potential that Battery and Energy Storage System (BESS) will generate noise attraction or disturbance.

23.11. Maintenance activities could also have an impact on ecological receptors.

Socio Economics, Tourism and Recreation

23.12. The Applicant recognises that there is a limited accommodation in the Local Impact Area. This will result in an oversubscription during the peak construction months meaning that there will not be enough temporary accommodation. This impact would be amplified if the cumulative schemes were to be constructed at the same time.

23.13. As set out above, the Applicant recognises that during the operational the Scheme will have a long-term impact on the landscape character of some tourism and recreation receptors that are reliant on the landscape context for their value, such as viewpoints, landmarks, and cultural heritage assets.

This, along with construction impacts, will also mean reduced spending in the visitor and tourism economy.

23.14. The Applicant estimates that there are 13 FTE agricultural job losses, that are unlikely to return after nearly half a century; however, this does not take into account the contractor services that are employed by the affected farm businesses.

Transport and Access

23.15. Traffic during the construction of the Scheme is a key concern. Whilst this Scheme would likely be acceptable given the contained nature of the site, it is the cumulative effects that would impact West Lindsey if the Cottam, Tillbridge and Gate Burton schemes where all to be in their construction periods at the same time.

23.16. The cumulative construction traffic routes are shown clearly at Appendix B and demonstrate the impact on the West Lindsey with the majority of the district affected.

Cultural Heritage

23.17. The Scheme will have an impact on several designated and undesignated heritage assets.

23.18. Although some of the affects are considered not significant, there are multiple slight adverse impacts. When considering the impact of a proposed development on the significance of a designated heritage asset, great weight should be given to the asset's conservation. This is irrespective of whether any potential harm amounts to substantial harm, total loss or less than substantial harm to its significance.

Noise and Vibration

23.19. The Scheme will result in noise and vibration impacts from construction activities and construction traffic. The cumulative impacts from construction could be compounded if the other solar schemes of Gate Burton, Tillbridge and Cottam were being constructed at the same time as the Scheme.

Hydrology, Flood Risk and Drainage

23.20. There is a potential for several impacts from the Scheme where the cable corridor crosses the River Trent and several unnamed watercourses. Whilst it is noted that there is an intention to work collaboratively with Cottam and West Burton on the cable corridor, there is no guarantee that the schemes will be constructed at the same time, this would mean that the water courses could be impacted several times.

Summary

23.21. Table 0-1 below provides a tabulated form of all the impacts by topic, including the cumulative impacts related with that topic.

Table 0-1 – Impacts Summary Table

Topic	Impact	Construction	Operation	Decommissioning	Cumulative Impacts
Landscape and Visual Impact Assessment	Positive	None	None	None	None
	Neutral	There are no likely significant in-combination landscape effects regarding National and Regional Landscape Character Areas during the construction, operation and decommissioning stages. There will be no discernible improvement or deterioration to the existing landscape character in relation to topography and watercourses.	See Construction.	See Construction.	There would be a negligible neutral impact during operation resulting from the Cumulative Developments on the following landscape receptors: Topography and Watercourses; Communications and Infrastructure; Settlements, Industry, Commerce and Leisure; Public Rights of Way and Access; Scheduled Monuments, Listed Buildings, Conservation Areas and Registered Parks and Gardens; and Ancient Woodlands and Natural Designations.
	Negative	Significant adverse impacts on Regional Landscape Character Area 4a Unwooded Vales and visual effects on viewpoint receptors, transport receptors and PROW receptors are likely during the construction stage.	Significant adverse impacts on landscape character and adverse visual effects on viewpoint receptors, transport receptors and PROW receptors are likely at the start of operation. Visual impacts will reduce towards year 15 as proposed mitigation planting becomes established.	See Construction.	The cumulative impact of multiple schemes is likely to have a significant adverse impact on Regional Landscape Character Area 4a Unwooded Vales. The In-combination effects of the Cumulative Sites is Negligible Adverse (Not Significant) at the construction, operation (year 1 and year 15) and decommissioning stages for Nationally and Locally Designated Landscapes. The In-combination effects of the Cumulative Sites is Minor Adverse during construction for Land Use.
Ecology and Biodiversity	Positive	Habitat enhancement measures, in conjunction with the favourable management of buffer zones which are considerably larger than current field margins, could result in a beneficial effect for reptiles.	Water quality is expected to significantly increase due to the reversion to permanent grassland under the array (reduced sediment run-off and cessation of fertiliser and pesticides). Further beneficial effects are considered likely to arise from the increased capacity of the newly-sown and managed grasslands and other herb-rich habitats to support flying invertebrates compared to arable. This would have the effect of improving the abundance, diversity and productivity of foraging resources. For lapwing, the mitigation is considered to be sufficient to reduce adverse effects to neutral levels, with a reasonably high potential to bring about at least a beneficial effect which could be significant at a Local level, or higher.	The restoration of the land to arable farmland would likely be beneficial for some species of farmland bird which require open sightlines, as well as for plant species associated with arable margins.	Depending on the proposed management of land beneath the panels and decisions on buffer zone habitat creation and enhancement, a combined beneficial effect for foraging, dispersing and roosting bats may result from an improvement over the current situation of intensive cropland in terms of prey item abundance and connectivity of dispersal habitat. Depending on habitat retention, creation and management prescriptions to be implemented within them, a moderate cumulative beneficial effect potentially significant at a District level could occur to reptiles and amphibians. Given the retention and protection of watercourses and marginal habitat, no adverse cumulative impacts on invertebrates and freshwater fish are considered likely. There is the potential for a cumulative beneficial effect from the projects, should they also focus on the creation of a range of diverse grassland habitats within and outside of panelled areas.
	Neutral	Construction could lead to a small amount of noise and possibly light disturbance to the species within the woodland. This would be temporary and would only affect the woodland margins. It should be noted that a	Unlikely to be any impacts beyond the low possibility of contamination or sediment mobilization.	Decommissioning would be expected to have similar (or no worse) effects as construction. Depending on the ecological value of the habitats that develop over the lifespan of the	The designated sites which were at risk of significant impacts from the Scheme were located substantially distant from the other three solar

Topic	Impact	Construction	Operation	Decommissioning	Cumulative Impacts
		certain amount of noise disturbance, dust deposition and run off would be anticipated as a result of routine agricultural activities, and as such impacts are likely to be similar to the current baseline conditions.	Impacts on polecat, hedgehog, harvest mice, reptiles and amphibians are likely to be minimal, considering the adoption of ecological buffer zones and the restriction of development and vehicle movement to outside of these. The opportunity for impacts from pollution or run-off is highly limited as the nature of the proposals is relatively passive. The predominance of large, open intensive arable fields, managed boundary features, and general absence of woodland and open water is reflected in the landscape, with large wetland or woodland sites being many kilometres away. Taken together, these characteristics of the Sites substantially reduce the risk that any adverse impacts upon bats would cause a significant conservation impact on bats at a Local scale or above.	scheme, certain areas may be retained on decommissioning.	proposals; no cumulative impacts are likely to occur. Buffer zones protecting marginal habitats will be instigated in all cases. Furthermore, as residual effects from the Scheme on valued habitats are neutral, it is considered unlikely that an elevation to an adverse effect would occur in combination with these projects.
	Negative	In the absence of mitigation, there are potential impacts upon designated sites, woodland, hedgerows and trees, grassland, watercourses and ditches, ponds, bats, otters and water voles, polecat and hedgehogs, brown hare, reptiles and amphibians, birds, invertebrates, freshwater fish, badgers, and invasive non-native species. However, residual effects following mitigation reduce these effects to neutral, non-significant. Adverse residual effects on harvest mice in the construction phase are considered likely to be significant at Local level.	Arable field margin habitat within the retained buffer zones would be at risk of long-term degradation through eventual succession to scrub without periodic management. There is a risk that ponds may become damaged should sheep be utilized for grazing. Sheep may poach pond habitats causing damage. In the event that a Curlew territory is present on Site, it would likely be displaced. The operation of the arrays would mean that the majority of the Sites are effectively removed as an option for foraging and shelter for flocks of most species of waders during the winter. It is considered that there will be an adverse residual effect on skylark, significant at a Local scale. For grey partridge, nesting will be impacted but will continue to occur within the Site for the most part. The enhanced boundary habitats together with the presence of permanent short grassland within the mosaic of habitat management under the array will reduce displacement of these birds to adverse levels, significant at a Local scale.	Much of the biodiversity value which will develop during operation may be lost. In order to revert back to arable use, it may be necessary to enhance the nutrient content of the soil – likely achieved through fertilisers. An increase in the use of pesticides and herbicides are also expected. Protected species which could be directly impacted by decommissioning activities would include badgers, water vole, otter, great crested newts, reptiles (grass snake) and breeding birds.	It is possible that a moderate cumulative adverse effect on skylark, yellow wagtail, grey partridge, and qual at potentially a local to even District level may occur. As the three projects are highly likely to replace the arable habitats with grassland, there is the potential for a cumulative impact on harvest mice. Depending on the degree of marginal habitat retention and tussocky grassland creation, a minor cumulative adverse effect operating at a Local or District scale may be caused. As flocks of overwintering bird rely on open habitats, a cumulative adverse effect at Local scale is possible resulting from the loss of the combined developed area from the local foraging and sheltering habitat resource. Cumulative adverse effect during construction is possible for hedgerows, trees, ditches and watercourses within the shared cable route (depending on final designs, methods, routing and duration/sequence).
Socio Economics, Tourism and Recreation	Positive	Medium-term temporary major-moderate beneficial effect to accommodation sector employment in the Local Impact Area, due to increased demand for temporary accommodation units. Medium-term temporary major-moderate beneficial effect to accommodation stock (construction) in the Local Impact Area, due to increase in accommodation occupancy for temporary or short-term workers. Medium-term temporary moderate beneficial effect to access to employment in the Local Impact Area, due to	No significant effects identified. Numerous other non-significant effects are identified in Table 18.23 of the West Burton ES Chapter 18: Socio-Economics and Tourism and Recreation.	Medium-term temporary moderate beneficial effect to accommodation and services sector employment in the Local Impact Area, due to the increase in demand for temporary accommodation units. Numerous other non-significant effects are identified in Table 18.23 of the West Burton ES Chapter 18: Socio-Economics and Tourism and Recreation.	Peak cumulative medium-term temporary moderate beneficial effect, significant at Local level on construction sector employment during construction and decommissioning. Peak cumulative medium-term moderate beneficial effect, significant at Local level on accommodation stock (housing) during construction. Peak cumulative medium-term moderate beneficial effect, significant at Local level on

Topic	Impact	Construction	Operation	Decommissioning	Cumulative Impacts
		changes in overall employment opportunities generated from Scheme construction. Numerous other non-significant effects are identified in Table 18.23 of the West Burton ES Chapter 18: Socio-Economics and Tourism and Recreation (Doc. Ref. EN010132/APP/WB.6.2.18).			construction economy during construction and decommissioning. Peak cumulative medium-term temporary moderate beneficial effect, significant at Local level on accommodation economy during construction. Peak cumulative medium-term temporary major-moderate beneficial, significant at Local level on Access to employment (IMD) during construction. Peak cumulative moderate Beneficial, significant at Local level on Economic activity and Employment during construction and decommissioning. Peak cumulative moderate Beneficial, significant at Local level on economic prosperity during construction and decommissioning. Peak cumulative medium-term temporary moderate Beneficial, significant at Local level on resident and working population income during construction and decommissioning. Peak cumulative medium term temporary major-moderate beneficial effect, significant at Local level on accommodation sector employment during construction and decommissioning.
	Neutral	Numerous neutral effects are identified in Table 18.23 of the West Burton ES Chapter 18.	Numerous neutral effects are identified in Table 18.23 of the West Burton ES Chapter 18.	Numerous neutral effects are identified in Table 18.23 of the West Burton ES Chapter 18.	None stated
	Negative	Peak medium-term temporary moderate adverse effects to local tourist attractions due to impacts from construction noise, traffic and views on desirability and use. Short-to medium-term temporary moderate adverse effects to long distance recreation routes, due to impacts from construction noise, traffic, views, and diversions and closures of routes on route desirability and use. Numerous other non-significant effects are identified in Table 18.23 of the West Burton ES Chapter 18: Socio-Economics and Tourism and Recreation.	No significant effects identified. Numerous other non-significant effects are identified in Table 18.23 of the West Burton ES Chapter 18.	No significant effects identified. Numerous other non-significant effects are identified in Table 18.23 of the West Burton ES Chapter 18.	Peak cumulative medium-term temporary moderate adverse, significant at Local level on Tourism and visitor Economy during construction. Peak cumulative short to medium term temporary moderate adverse, significant at Local level on PRoWs and tourist attractions (landscape) during construction Long-term cumulative moderate adverse, significant at Local level on energy sector employment during operation and decommissioning.
Transport and Access	Positive	None	None	None	None stated
	Neutral	Effects regarding accidents, severance, driver delay, pedestrian delay, pedestrian amenity and hazardous loads are mostly negligible, with some minor effects at West Burton 1 and the Grid Connection Route.	There will be around five visits to each Site per month for maintenance, typically made by light van or 4x4. Whilst each construction compound will have been removed, space will remain on the access tracks for vehicles to turn around to ensure that reversing will not occur onto the highway. The residual effects on accidents and safety, severance, driver delay, pedestrian delay and amenity and hazardous loads will remain negligible. Therefore, there are not expected to be any significant residual effects.	The number of vehicles associated with the decommissioning phase are not anticipated to exceed the number set out for the construction phase. Therefore, there are not expected to be any significant residual effects in relation to Transport and Access as a result of the decommissioning of the Scheme.	Cumulative traffic flows have the largest effect on Mill Lane and the A57. As the number of traffic flows on these links associated with the construction phase of the Scheme are low, it is unlikely that the cumulative effects will be any different. The cumulative effects on the local highway network surrounding the Grid Connection Route will also be low, as the cumulative Schemes will not use the same routes. Sections of the Grid Connection Route for the Scheme will be shared with Gate Burton and Cottam, although the residual effects will not change as a result of this.

Topic	Impact	Construction	Operation	Decommissioning	Cumulative Impacts
					Therefore no significant cumulative effects are identified.
	Negative	The Scheme is not likely to result in any significant adverse Transport and Access effects during construction.	None	None	None stated
Cultural Heritage	Positive	None	Some beneficial impacts due to land being taken out of agricultural cycles.	None	None stated
	Neutral	None	None	None	None stated
	Negative	Slight Adverse effects are predicted at four Scheduled Monuments, and Moderate Adverse effects at one Scheduled Monument – which could result in significant effects. Impacts to archaeological remains are between Neutral and Large Adverse. Slight Adverse effects are predicted at seven Listed Buildings and 11 non-designated buildings. Slight Adverse effects are predicted at 23 historic landscape receptors.	Residual impacts to the Roman villa west of Scampton Cliff Farm (NHLE 1005041) Scheduled Monument would be slight adverse and impacts to For the medieval bishop's palace and deer park, Stow Park (NHLE 1019229) Scheduled Monument would be large adverse. Following mitigation, impacts to Listed Buildings will be reduced to slight adverse at most. Following mitigation, impacts to non-designated historic buildings will be slight adverse at most. Impacts to the historic landscape vary from negligible to moderate adverse, although new planting and reinforcement of existing vegetation would have an overall beneficial effect.	Decommissioning would require plant movement and other activities similar to during construction, which could have an adverse impact upon the settings of nearby heritage assets. Impacts would be neutral as the impacts are no greater than during operation, and would be temporary, short term and reversible.	The zone of influence (ZOI) is very much constrained for those assets located within the lowlands of the Trent valley. The only 'significant' effect identified due to impacts to the setting of a designated heritage asset is at the Medieval bishop's Palace and Deer Park, Stow Park (NHLE 1019229). Cumulative effects could occur at three heritage assets where views from the Lincoln Cliff contribute to the significance of the asset. This is because the other NSIPs in the vicinity are also likely to be visible from these elevated viewpoints along the Lincoln Cliff, but not from those within the Trent Valley. Should all of the NSIPs identified be permitted, moderate adverse (significant) effects are possible at one or more assets.
Soils and Agriculture	Positive	None	The soil resource will remain under a green cover during operation, providing several benefits to reduce erosion, drainage and plant nutrient availability. The recovery of soil organic matter under an extended fallow period will produce a medium term, reversable, local moderate beneficial impact, which is a significant beneficial effect. During operation, grass below the solar panels will need to be managed (e.g. sheep). The farm businesses impacted by the Scheme will receive some income from the Scheme's occupation, providing a new income stream which will produce a moderate impact, which is a significant beneficial effect for the medium term.	Decommissioning of the Scheme will attempt to allow a return to arable management of the land, although there is no certainty around the delivery of such benefits.	During operation, cumulative effects regarding the recovery of soil health under extended fallow, and new diversified enterprises, will be moderate beneficial, significant.
	Neutral	None	None	There is an intention to return the land to agricultural land. No obstructions will be left in the soil that could interfere with cultivation (e.g. cables will be removed) and no changes to the physical characteristics of the soil will have taken place that could influence ALC grade. There will be a negligible impact, that is not considered to be significant.	None stated.
	Negative	Construction work will start the temporary curtailment of arable production across the Scheme. The land does not cease to be agricultural land whilst agriculture is	There will be no loss of agricultural land resource during operation and there will be a	Decommissioning will involve activities similar to that during construction, including trafficking the land in a similar manner to the current	During construction, cumulative effects regarding the loss of agricultural land resource, loss and degradation of the soil resource, and loss of land

Topic	Impact	Construction	Operation	Decommissioning	Cumulative Impacts
		suspended and there is no actual loss of agricultural land resource. The residual effect is considered minor. Solar panel construction work will involve trafficking the land in a similar manner to the current arable land use. Heavy plant will include excavators and cranes. The Soil Management Plan (SMP) aims to conserve the soil resource and the resulting short term, reversable and local effect on the soil resource across the Scheme is considered minor. The temporary curtailment of farming practices will result in a reduction in cropped area for these enterprises. This is considered as a constraint however farming practices will not be entirely terminated – only the land that is occupied. The resulting short term, reversable and local effect of construction disturbance on the farm businesses will be minor.	negligible impact, which is not considered significant.	arable land use (e.g. combine harvesters). The measures from the SMP also extend to decommissioning and land restoration and it will limit impacts to the soil. The SMP covers the appropriate handling of stored soil, aftercare of the land and identification of remediation of any areas of compacted soils. The resulting residual impacts will be short term, reversable and localised, which is considered to be a minor impact.	to farm business and disruption to agricultural occupants outside the site are all assessed as minor, not significant. During operation, residual effects regarding the loss of agricultural land resource will be negligible, not significant. During decommissioning, effects regarding the loss of agricultural land resource will be negligible, not significant. Effects regarding the loss and degradation of the soil resource will be minor, not significant.
Climate Change	Positive	None	The Scheme will provide a major beneficial effect on the climate and a net reduction in GHG emissions over the lifetime of the Scheme.	None	The cumulative effect of other solar projects (Cottam, Gate Burton, Tillbridge) will be major beneficial in terms of climate change resilience given that the combined effect of the renewable energy will serve to counter the effects of climate change.
	Neutral	None	None	None	None stated
	Negative	The greatest impact of GHGs is the embodied carbon in the materials. Of these, the manufacture and supply of PV panels and batteries will be the largest source of GHG emissions. GHG emissions from construction are considered to have a minor adverse effect on the climate.	GHG emissions will be generated as a result of operational activities such as the transportation of operational workers, water consumption and replacement of materials. The production of replacement batteries at the midpoint of the project's lifespan is the greatest contribution to GHG emissions during the operational stage. However, these will be offset by the net reduction in emissions and therefore no significant negative impacts are anticipated.	It is expected that emissions of GHGs will be far lower than construction and that the main source will be from worker transportation. The ES admits a *''it is unknown at this stage what the effects will be in the future''* during decommissioning. The SoS is therefore minded to keep this in mind during their assessment of the Scheme. Whilst a calculation of 12,531 tCO_2e has been provided, there is a possibility that emissions could be higher. It is expected that the decommissioning stage will result in minor adverse effects.	None stated
Noise and Vibration	Positive	None	None	None	None stated
	Neutral	None	None	None	None stated
	Negative	Site activities will generate noise and vibration emissions. Construction noise levels at all receptors throughout the Scheme are predicted to be within the daytime construction noise criteria of 65 dB(A). Construction noise and vibration is temporary and would likely be experienced by limited receptors at any given time as work progresses across the Scheme. Therefore, a moderate/minor residual effect is predicted.	Noise levels at the nearest receptors would exceed the existing background noise levels in many cases. Mitigation has been used to ensure noise levels do not result in significant impacts throughout the Scheme during operation, resulting in a moderate/minor residual effect.	See Construction. Noise and vibration effects during the decommissioning phase will be similar or less than the noise effects during the construction phase.	There is potential for all three schemes' (West Burton, Cottam and Gate Burton) cable routes to be constructed either simultaneously or sequentially, causing cumulative noise effects at nearby sensitive receptors. Given that construction activities for the Cable Route Corridor are transient, it is considered unlikely that a major impact would be experienced for any prolonged duration due to the temporary nature of construction operations. In addition, best practicable means will be implemented and therefore, no significant

Topic	Impact	Construction	Operation	Decommissioning	Cumulative Impacts
					cumulative effects are identified for the Cable Route Corridor.
Hydrology, Flood Risk and Drainage	Positive	None	None	None	None stated
	Neutral	None	None	None	None stated
	Negative	There is the potential for mud and debris to block drainage networks which could result in flooding to construction workers and equipment – the effect is considered to be Moderate Adverse. The temporary increase in impermeable area also has the potential to increase flooding both on and off site – the effect is considered to be Moderate Adverse. Site activities can also lead to compaction of the soil, increasing flood risk – the effect is considered to be Moderate Adverse. Site activities also have the potential to result in silt contamination to surface water and groundwater bodies, which is considered a Moderate Adverse effect. There is also the risk of spillages of pollutants stored and / or used on site, causing pollution of groundwater bodies if not carefully controlled. The effects could be of a Medium magnitude on the local watercourses. Surface water may also be subject to inappropriate wastewater disposal from welfare facilities. Construction / Decommissioning foul water will not be discharged into a watercourse under any circumstances and therefore the magnitude of impact and significance is considered Negligible. With mitigation, the residual effect is considered to be negligible for all negative impacts.	Equipment such as substations and energy storage areas will generate increased surface water runoff. This could increase localised flooding and increase flood risk to people and property, resulting in Major Adverse effects. An increase in the volume of water discharged has the potential to increase the flood risk to areas downstream. Whilst the effects would be temporary, this is considered to have an effect of Medium Adverse magnitude to people and property due to the potential risks (loss of life) and the economic damages – therefore the effect is Major Adverse. There is the potential for mud and debris to block drainage networks which could result in flooding to construction workers and equipment – the effect is considered to be Moderate Adverse. Runoff could contain diffuse urban pollutants such as hydrocarbons, heavy metals, and nutrients as well as debris and silt which could be discharged to nearby watercourses, which could have a Moderate Adverse effect on water quality. The potential risk of fire may also negatively impact upon the local water environment. Runoff following a fire could contain diffuse urban pollutants, which could result in a Moderate Adverse effect on local watercourses. Traffic on existing roads to and from the Site will also increase, leading to the introduction of new sources of highway runoff into watercourses. The significant of effect is Minor Adverse for the local watercourses. Spillages of pollutants (e.g. oil) on highways can be transported to watercourses via runoff, where they could impact upon ecological life, or infiltrate to ground. The significance of effect is Minor Adverse. The increased demand on water supply from the Scheme is considered to have an effect of Negligible magnitude. Following implementation of the proposed mitigation the residual effect is considered to be Negligible for all negative impacts.	The potential effects of the Scheme during decommissioning are likely to be the same or no worse than (i.e. a worst case scenario basis) as those encountered during construction. Therefore, effects considered for construction are similarly expected during decommissioning.	None stated
	Positive	None	None	None	None stated

Topic	Impact	Construction	Operation	Decommissioning	Cumulative Impacts
	Neutral	None	None	None	The cumulative effects to human health or controlled waters are considered to be negligible with the implementation of embedded mitigation measures such as the CEMP. There are currently two scenarios for the construction of the shared cable corridor between the proposed West Burton, Cottam and Gate Burton Energy Park solar farm schemes, however, the effect on ground conditions for both scenarios is considered a negligible alteration from the baseline given the proposed trenching construction methodology and no change in land use.
Ground Conditions and Contamination	Negative	Risk of potential contaminant linkages from contaminated soils to human receptors, controlled waters and to the built environment. There are several surface water features on and adjacent to the Scheme, however, limited sources of contamination have been identified. Small areas of potentially infilled ponds/Made Ground have been identified, however, given the small scale and the age of any infill material, the potential for gas generation is low. The potential for hazardous ground gases to accumulate within confined spaces is considered very low. No buildings are proposed in the vicinity of potentially infilled ponds/pits, breaking the contaminant linkage to the built environment. Industry best practice measures would be adopted to avoid and reduce the risk to ground conditions. With embedded mitigation and the implementation good industry practices incorporated into the CEMP, the potential effects or risk of contamination will be reduced to moderate/minor.	See Construction.	See Construction.	None stated
Minerals	Positive	None	None	None	None stated
	Neutral	The Scheme is partially within a Mineral Safeguarding Area (MSA) for sand and gravel. The Scheme would not require deep excavations or foundations. Disturbance is limited to the surface layers rather than underlying deposits. Therefore, the Scheme will not disturb the mineral deposits to the extent that they become unviable to exploit. The presence of the Scheme would not impose a physical constraint on mineral extraction in the local vicinity. The Scheme would not adversely affect the local mineral supply as the it is unlikely that the reserve underlying the Scheme will need to be worked within the lifetime of the Scheme. Furthermore, the land will be restored upon decommissioning and any minerals will be available to exploit. There are not any implications for existing or proposed exploration and exploitation of oil and gas resources.	See Construction.	See Construction.	There are no other plans or proposals for other developments that directly affect the mineral deposits affected by the Scheme. The Shared Cable Route Corridor minimises the overall impact to mineral resources by reducing the cumulative bisecting of safeguarded reserves. The cumulative impact of the Scheme, in combination with the Cottam Solar Project and Gate Burton Energy Park, is not considered to have a significant adverse impact on the supply of sand and gravel within Lincolnshire.

Topic	Impact	Construction	Operation	Decommissioning	Cumulative Impacts
	Negative	The Cable Route Corridor, particularly in the Trent Valley, has the potential to result in operational issues for future mineral operations and might restrict efficient exploitation. This has been mitigated by routes following existing infrastructure corridors or edges of landscape features rather than directly crossing open fields. This avoids creating a further obstruction to the future exploitation of the mineral resource.	See Construction.	See Construction.	The Cable Route Corridors linking the solar array Sites to the former West Burton Power Station site overlap with proposed cable corridors for Gate Burton Energy Park, and for a short distance, also with the cable corridor for the proposed Cottam Solar Project. Much of the overlap is within an area of safeguarded sand and gravel reserves associated within the Trent Valley. Any other proposals for development that sterilise safeguarded mineral resources could have an impact on the supply of sand and gravel within Lincolnshire. One area within the Cottam Solar Project approximately 13.5 km north of the Scheme lies within the same Area of Search for sand and gravel as West Burton. The proposed extent of the Gate Burton Energy Park development means that it also covers the same Area of Search for sand and gravel.
Glint and Glare	Positive	None	None	None	None stated
	Neutral	None	A neutral effect is predicted towards train driver receptors along the 4km of identified railway track for a fixed mounting system and tracking mounting system.	None	None stated
	Negative	None	A moderate effect is predicted for one dwelling (if a fixed mounting system is implemented) or 2 dwellings (tracking system). A moderate effect is predicted for a 300m along Sturton Road (fixed or tracking system). Minor/Negligible Adverse effects are predicted in respect of aviation receptors. The assessment relating to all other receptors has concluded that the worst-case scenario effects will likely be Minor/Negligible Adverse (for either the fixed or tracker options). Once mitigation is implemented, overall impacts are expected to be minor/negligible for all receptors.	None	The cumulative glint and glare effect of Cottam Solar Project and Gate Burton Energy Park is not predicted to result in a significant impact due to mitigating factors. Cumulative effects are possible; however, the impact is predicted to be minor/negligible. West Burton 2 and West Burton 3 have shared receptors; the assessment has concluded that one dwelling can have some visibility of both Sites and the relevant reflective areas. However, the existing and the proposed screening is likely to significantly reduce the visibility of both sites and therefore overall Minor/Negligible Adverse impact is predicted.
Air Quality	Positive	None	None	None	None stated
	Neutral	None	None	None	Following the implementation of the site-appropriate mitigation measures identified during construction, operational and decommissioning phases and during an occurrence of fire incident, the residual effects on both human receptors and ecological receptors are determined to be negligible.
	Negative	Site activities are likely to produce dust emissions during construction and decommissioning.	Dust emissions – see Construction.	See Construction.	None stated

Topic	Impact	Construction	Operation	Decommissioning	Cumulative Impacts
		Following the implementation of mitigation measures included within the CEMP, the significance of the effects is considered to be negligible.	Fire risk associated with Lithium-Ion batteries means smoke could be blown to nearby receptors. Following the implementation of mitigation measures, the significance of the effects is considered to be negligible.		
Waste	Positive	None	None	None	None stated
	Neutral	None	None	None	The total cumulative CD&E waste is 260,000 tonnes over the combined construction period from 2024-2028. This is approximately 2.6 times greater than the individual impact of the West Burton Solar Project. Assuming that waste is handled proportionally, the cumulative impact is a <5% increase to the baseline and does not change the level of magnitude of the impacts (minor), and thus do not change the significance of the effects from the assessment of West Burton Solar Project in isolation. The CD&E waste to be generated from the Scheme per annum during operation is 654 tonnes. This constitutes a negligible magnitude increase in CD&E waste handling. WEE arising from the operation and maintenance of the cumulatively assessed projects is anticipated to result in a long-term cumulative negligible magnitude uplift to hazardous waste in the Local Impact Area. The cumulative total WEEE generated during decommissioning is 260,000 tonnes, of which 19,500 tonnes is considered to be hazardous (batteries). This is likely to be spread over a number of years. As such, it is not anticipated that the peak hazardous waste generation in any year during the cumulative decommissioning phase is anticipated to be substantively more than for the worst-case scenario for the Scheme in isolation.
	Negative	Construction is anticipated to result in waste generation, including construction materials and wastewater. Employee activity will generate commercial, food and sewage waste. The total estimated construction, demolition and excavation (CD&E) waste is 50,000 tonnes over the 24-month construction period (25,000 tonnes per annum), which is considered a minor magnitude increase for the Local Impact Area.	Waste arising during operation will be minimal and will predominantly be related to the removal of expired/broken equipment and packing material for replacements. The total estimated CD&E waste to be generated from the Scheme per annum during operation is 150 tonnes. Assuming that waste is handled proportionally between Lincolnshire and Nottinghamshire, this constitutes a negligible magnitude increase in CD&E waste handling.	Decommissioning is anticipated to generate substantive waste electrical or electronic equipment (WEEE) including photovoltaic panels, batteries, and substation equipment. The total WEEE generated from the Scheme's decommissioning is 77,000-85,000 tonnes, of which 7,000-14,000 tonnes is considered as hazardous (batteries). Waste handling facilities in Nottinghamshire are likely to see a significant adverse effect as a result of the lack of landfill capacity. Mitigation is expected to reduce the significance of impact to a slight or moderate effect.	The total estimated CDE waste from the decommissioning of the cumulative projects is 260,000 tonnes. This is likely to be spread over a number of years. The waste generated per annum (65,000 tonnes) equates to an uplift in CD&E waste of 3.1% from the combined estimated CD&E waste for Lincolnshire and Nottinghamshire (2024 base year). Assuming that waste is handled proportionally the cumulative impacts do not change the level of magnitude and thus do not change the significance of the effects from the assessment of West Burton Solar Project in isolation. As such, a moderate or large adverse effect (which is significant in EIA terms) is identified on landfill waste handling in Nottinghamshire.

Appendix A. Central Lincolnshire Local Plan

Appendix B. Cumulative Construction Traffic Routes

Appendix C. Morton Neighbourhood Plan

Appendix D. Saxilby with Ingleby Neighbourhood Development Plan

Appendix E. Sturton by Stow and Stow Neighbourhood Plan

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