

Springwell Solar Farm

Environmental Statement

Volume 1
Chapter 13: Population

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Springwell Energyfarm Ltd

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13. Population

13.1. Introduction

- 13.1.1. This chapter presents an assessment of likely effects arising from the construction, operation (including maintenance) and decommissioning of the Proposed Development upon Population. The full description of the Proposed Development is provided within **Environmental Statement (ES) Volume 1, Chapter 3: Proposed Development Description [EN010149/APP/6.1]**.
- 13.1.2. Population in this chapter relates to impacts to the population primarily in relation to the socio-economic effects which may occur as a result of all phases of the Proposed Development.
- 13.1.3. This chapter is supported by the following figures presented in **ES Volume 2 [EN010149/APP/6.2]**:
- **Figure 2.1: Environmental Considerations;**
 - **Figure 2.2: Existing Public Rights of Way;**
 - **Figure 13.1: Population Study Area;**
 - **Figure 13.2: Population Occupancy Study Area;**
 - **Figure 13.3: Construction Labour Market Areas;**
 - **Figure 13.4: English Indices of Multiple Deprivation (2019); and**
 - **Figure 13.5: English Indices of Multiple Deprivation (2019) - Education, Skills and Training Domain.**
- 13.1.4. This chapter should be read in conjunction with the following documents submitted as part of the Development Consent Order (DCO) Application:
- **ES Volume 1, Chapter 10: Landscape and Visual [EN010149/APP/6.1]** with specific reference to the assessment of the effects of the Proposed Development on Public Rights of Way (PRoW);
 - **Outline Public Rights of Way and Permissive Path Management Plan (oPRoWPPMP) [EN010149/APP/7.12];**
 - **Outline Employment, Skills and Supply Chain Plan [EN010149/APP/7.20]; and**
 - **Equality Impact Assessment [EN010118/APP/7.18].**

13.2. Legislative framework, planning policy and guidance

- 13.2.1. There is no specific legislation relevant to assessing impacts to population. However, this assessment has been undertaken with regard to the following planning policy and guidance.
- 13.2.2. This chapter does not assess the compliance of the Proposed Development against relevant planning policy. This is presented in the **Planning Statement [EN010149/APP/7.2]**.

National planning policy

- 13.2.3. Overarching National Policy Statement for Energy (NPS EN-1) (2023) **[Ref. 13-1]** - Section 3.3 outlines the need to secure a sufficient energy supply that meets the demands of the population and the targets of businesses and consumers alike. Section 4.3 specifically relates to the consideration of health; however, many of the considerations are appropriate when considering population. Section 5.13 also outlines the principles and guidelines for assessing the socio-economic impacts of Nationally Significant Infrastructure Projects. NPS EN-1 requires the applicant to present the socio-economic baseline, engage with relevant local authorities and consider socio-economic impacts.
- 13.2.4. NPS EN-1 **[Ref. 13-1]** presents all factors that need to be considered in the assessment of any likely socio-economic impacts from energy projects at both the local and regional levels. NPS EN-1 requires developers to demonstrate that local suppliers have been considered in any supply chain (paragraph 5.13.6).
- 13.2.5. NPS EN-1 **[Ref. 13-1]** also suggests that the construction, operation and decommissioning of energy infrastructure may have socio-economic impacts at the local and regional levels, including job creation and the provision of local services.
- 13.2.6. NPS EN-1 **[Ref. 13-1]** also states that the applicant's assessment should consider all relevant socio-economic impacts which include (paragraph 5.13.4):
- a) *The creation of jobs and training opportunities, with applicants encouraged to provide information on the sustainability of jobs created and where they will help develop the skills for the UK's transition to Net Zero;*
 - b) *The contribution to the development of low-carbon industries at the local, regional and national levels;*
 - c) *The provision of additional local services and improvements to local infrastructure (including the provision of educational and visitor facilities);*

- d) *Any indirect beneficial impacts for the region hosting the infrastructure, with a particular focus on the use of local support services and supply chains;*
- e) *Effects on tourism and other users of the area impacted;*
- f) *The impact of changing influx of workers during the different construction, operational and decommissioning phases of the energy infrastructure; and*
- g) *Cumulative effects in order to assess the short-term negative effects (e.g. potential shortage of construction workers to meet the needs of other industries and major projects within the region).*

13.2.7. National Policy Statement for Renewable Energy Infrastructure (NPS EN-3) (2023) **[Ref. 13-2]** - describes the need for an increasing amount of new renewable electricity generation capacity. Section 2.10 discusses the Government's commitment to Solar Photovoltaic energy generation generally and notes that solar energy will be an important low-cost decarbonisation strategy and important for ensuring energy security. Section 2.10.36 discusses how the site requirements for energy generation of this type are typically required to be large, in a rural setting and may have access difficulties.

13.2.8. NPS EN-3 **[Ref. 13-2]** sets out specific requirements that are of direct relevance to renewable energy scheme, which includes a requirement for applicants to draft a decommissioning strategy at the end of operational life of a generating station, in addition to reviewing the socio-economic benefits that may arise within this phase of development. NPS EN-3 highlights policy on the transmission of infrastructure for renewable energy installations, in addition to other interrelated themes considered in the socio-economic assessment which includes transport and traffic.

13.2.9. National Planning Policy Statement for Electricity Networks Infrastructure (NPS EN-5) (2023) **[Ref. 13-3]** - Section 1.1.8 states that whilst decarbonisation of the energy sector is a priority for the Government, the development of this new infrastructure must minimise costs to consumers and limit community and environmental impacts where possible.

13.2.10. NPS EN-5 **[Ref. 13-3]** provides the primary policy for decisions taken by the Secretary of State on applications it receives for electricity networks infrastructure, including policy on providing suitable and robust electricity networks.

13.2.11. The National Planning Policy Framework (NPPF) **[Ref. 13-4]** Paragraph 11 outlines that planning decisions should apply a presumption in favour of sustainable development. Section 8, 'Promoting health and safe communities', contributes towards social sustainability by ensuring positive

social interactions, ensuring safe and accessible communities and supporting healthy lifestyles. Section 6, 'Building a strong, competitive economy' contributes towards economic sustainability by supporting economic growth. These objectives underpin local and regional planning policy and are therefore relevant to this assessment.

- 13.2.12. The NPPF [Ref. 13-4] sets out the principles of sustainable development and the national economic, social and environmental objectives. It requires planning authorities to collaborate effectively with applicants to secure developments that will have a beneficial impact on social, economic and environmental conditions and that would support economic growth and productivity.
- 13.2.13. In relation to the rural economy, paragraph 84(b) of the NPPF [Ref. 13-4] states that planning policies and decisions should enable “*the development and diversification of agricultural and other land-based rural businesses*”.
- 13.2.14. Consultation on the proposed reform to the NPPF [Ref. 13-4] ended on the 24 September 2024. The **Planning Statement [EN010149/APP/7.2]** considers both the current and consulted NPPF.

Local Planning Policy

- 13.2.15. The Greater Lincolnshire LEP Local Industrial Strategy [Ref. 13-5] identifies priorities to deliver greater productivity and earning powers through increasing sectoral innovation and improving human capital. A key priority is to increase innovation in sector clusters.
- 13.2.16. Energy is one of these sector clusters, where the goal is for Greater Lincolnshire to pioneer industrial decarbonisation, creating a template for other areas. Greater Lincolnshire would achieve this by:
- Supporting opportunities in decarbonisation and the expansion of new fuel sectors in Lincolnshire, as well as focusing on local and rural energy production and distribution;
 - Ensuring the regional aspirations for industrial decarbonisation and clean energy align with the government’s vision – primarily net zero.
 - Promoting investment into new energy and fuel projects;
 - Working in partnership with energy intensive industries, the transport sector and other potential large scale users to develop the demand required to support future hydrogen production and distribution;
 - Building on existing strengths in manufacturing and engineering to promote growth and sustainability within the sector;

- Utilising government initiatives around training to support the needs of the manufacturing and engineering sector and build on the strong technical skills base in the area; and
 - Working with the manufacturing and engineering supply chains to benefit local businesses and ensure Greater Lincolnshire is recognised as a first choice for manufacturing, processing and engineering.
- 13.2.17. Another relevant priority is improving human capital and better diffusion of existing technologies. To achieve this Greater Lincolnshire will work to address barriers in sector related skills and employment provisions, to improve access to jobs and lift residents' earning potential.
- 13.2.18. The Plan sets out themes to support businesses and residents, including enabling all residents to reach their potential in the local labour market and participate in a flourishing and inclusive economy through increasing levels of innovation in Greater Lincolnshire to raise investment and enabling all people to reach their potential in the local labour market and participate in a flourishing economy through local programmes to address skill gaps
- 13.2.19. The Greater Lincolnshire Strategic Economic Plan **[Ref. 13-6]** outlines the strategies and goals for growth in Greater Lincolnshire. Targets set relating to employment are to create 13,000 jobs and support 22,000 businesses by 2030 to increase the value of the Greater Lincolnshire economy by £3.2 billion.
- 13.2.20. The Plan also sets out priorities to grow of the area's strongest sectors including "power engineering" – to identify Greater Lincolnshire at the national forefront of the sector, using the new engineering school at the University of Lincoln; and to grow Lincolnshire's emerging sectors including low carbon. The aim is to increase employment in higher-skilled jobs in the renewable energy sector.
- 13.2.21. "Growing Greater Lincolnshire businesses" is also cited as a goal, to be achieved through tailored activities in skills, innovation, advanced telecommunications, a place to invest, small businesses and foreign owned businesses.
- 13.2.22. The Greater Lincolnshire Local Skills Report (2022) **[Ref. 13-7]** sets out the skills strategy and priorities for Greater Lincolnshire including:
- Maximising the impact of national employment and skills initiatives across Greater Lincolnshire;
 - Supporting people with literacy and numeracy skills to improve their daily lives and the productivity of businesses;

- Informing people about the career opportunities available locally to combat the misconception, and subsequent poor retention, of the key sectors not offering enough opportunities for career growth;
- Upskilling and retraining people for jobs now and in the future including apprenticeships to make sure the labour market can meet future job demands for higher-skilled employment;
- Growing digital skills at all levels so residents can reach their economic potential in the local labour market;
- Supporting businesses to prioritise workforce development and succession planning; and
- Supporting important sectors to maximise the future opportunities for local people.

- 13.2.23. The Lincolnshire County Council Corporate Plan **[Ref. 13-8]** identifies an aspiration for people having the skills and attributes for good quality careers in the county's economy, as well as highly-skilled young people and adults being attracted to and retained in Lincolnshire.
- 13.2.24. To realise this goal the Plan notes that the Council must enhance skills of the communities to meet the needs of businesses and the economy and promote Greater Lincolnshire on the national stage.
- 13.2.25. Central Lincolnshire Local Plan (2018-2040) adopted 13 April 2023 **[Ref. 13-9]** outlines overarching policies to encourage growth over a 20-year period. Policy S14 supports the transition to net zero, with specific reference to solar developments. Policy S43 emphasises the importance of the rural tourism economy and that development should not detract from features that make a region appealing to tourists. Policy S48 highlights the importance of maintaining and enhancing active travel and walking/cycling networks due to the benefits they provide for the local and tourist population.
- 13.2.26. The Central Lincolnshire Local Plan is a joint local plan for the districts of the City of Lincoln, North Kesteven and West Lindsey to deliver the shared vision of Central Lincolnshire being a place of positive growth but not at the expense of the environment, and renewable energy will be generated to heat and power homes, moving Central Lincolnshire towards net zero.
- 13.2.27. The Plan states that the economy will be diverse and resilient and provide real opportunities for people to live, work, invest and visit.
- 13.2.28. A relevant objective cited in the Plan is employment and creating and improving access to high quality employment, training and learning opportunities for everyone in Central Lincolnshire. Some policies to deliver this objective include Policy S2: "Growth Levels and Distribution" which

states the economic vision and strategy of the plan is to seek to facilitate the creation of 24,000 new jobs between 2018 and 2040.

13.2.29. The North Kesteven Community Strategy 2030 **[Ref. 13-10]** outlines priorities to realise the long-held vision of ‘a district of flourishing communities’ – including economic growth and change. The Strategy aims to take the economy to the next level, benefiting for the new skills and technology. By 2030 aspirations are for:

- Everyone to have the job they want;
- North Kesteven to have a vibrant economy, regenerating by design; generating high quality jobs, with wage levels in the district well above national median; and
- North Kesteven to be a creative hub, recognised for its strength in the knowledge and the green economy sectors.

13.2.30. The Strategy states several 2030 outcome measures including:

- Sectoral employment change to higher-skilled jobs
- Increase in income deciles for residents and North Kesteven based jobs
- Employment rates increase
- Inward investment levels increase
- GVA per capita growth; and
- Increased retention of younger people, alongside increase in apprenticeships.

13.2.31. The North Kesteven Plan (2023-2026) **[Ref. 13-11]** outlines the next steps in pursuance of the aims and aspirations set out in the Community Strategy. Relating to the economy priority this Plan sets out the key ambition as acknowledging the challenging economic situation; supporting business where possible, alongside the protection of existing jobs and the creation of new jobs. Some supporting ambitions for the delivery are:

- To attract investment to improve physical infrastructure, support regeneration and enhance digital connectivity
- To promote the economic opportunities from tackling climate change

13.2.32. The Council plan to achieve these ambitions by:

- Supporting businesses through latest economic challenges, ensuring they are able to grow and adapt to current market conditions;
- Exploring the potential for nurturing an increased presence of knowledge-economy businesses;

- Working up opportunities to develop the Green Economy, through university links and agricultural advancements; and
- Promoting the districts advantages to inward investors and support smaller businesses in Sleaford to develop a sense of the town's distinctive nature in particular.

13.2.33. The City of Lincoln Vision 2025 **[Ref. 13-12]** outlines strategic priorities that underpin the vision of Lincoln to deliver an ambitious future. A relevant priority is to drive inclusive economic growth and reduce all kinds of inequality. To achieve this the council aspire to help people succeed through increasing opportunities to access training and employment, as well as upskilling the community.

Guidance

13.2.34. Design Manual for Roads and Bridges (DMRB) 'LA 112 Population and Human Health' **[Ref. 13-13]**. It is recognised that DMRB LA 112 is primarily for use when assessing transport-related developments. However, DMRB LA 112 gives direction for assessing the impacts of a development on population and health and, in the absence of other applicable guidance on assessing the significance of effects to population, DMRB LA 112 provides a recognised method of assessing the significance of population effects.

13.2.35. According to DMRB LA 112, the following receptors should be considered within an assessment of the potential for population impacts: private property and housing, community land and assets, development land and businesses, agricultural land holdings and walker, cyclists and horse riders.

13.2.36. Further guidance has been used to support the approach to assessment of socio-economic effects:

- Homes and Communities Agency ('HCA') Additionality Guide **[Ref. 13-14]**;
- HM Treasury's Green Book Central Government Guidance on Appraisal and Evaluation **[Ref. 13-15]**;
- Loudhouse for Visa Europe, identifying average spend per day per employee **[Ref. 13-16]**; and
- Construction Industry Training Board ('CITB') **[Ref. 13-17]** and Construction Skills Network ('CSN') reports **[Ref. 13-18]** and surveys.

13.3. Stakeholder engagement

13.3.1. In terms of the population assessment, no separate stakeholder engagement activities have been undertaken, over and above those from

the Environmental Impact Assessment (EIA) scoping, non-statutory consultation, statutory consultation and targeted consultation process.

13.3.2. **ES Volume 3, Appendix 5.3: Scoping Opinion Response Matrix [EN010149/APP/6.3]** presents the responses received via the Scoping Opinion and the Applicant's response to each matter raised.

13.3.3. Appendix A-4, J-1, J-2 and K-3 of the **Consultation Report [EN010149/APP/5.1]**, which is submitted in support of the DCO Application, sets out the feedback received during non-statutory, statutory and targeted consultation and how regard has been afforded by the Applicant to each matter raised.

13.4. Approach to the assessment

Study areas

13.4.1. The potential impacts of the Proposed Development have been assessed at varying spatial scales to reflect the nature of the potential effects considered and the potential geographical reach of any potential impacts.

Study area from DMRB LA 112

13.4.2. In line with DMRB LA 112, the assessment of potential effects on walkers, cyclists and horse riders via impacts to PRoW and agricultural land holdings is based on the location where users are likely to experience any disruption in terms of travel time and/or routing. The study area is therefore confined to the Order Limits plus a 500m radius in all directions from the edge of the Order Limits. **ES Volume 2, Figure 2.2: Existing Public Rights of Way [EN010149/APP/6.2]** presents the existing PRoW plan and **ES Volume 2, Figure 13.1: Population Study Area [EN010149/APP/6.2]** presents the study area used for the assessment of these receptors.

Functional Economic Market Areas

13.4.3. In general, socio-economic assessments are considered in terms of the effect of an intervention on an appropriate spatial scale of economy. When planning for economic growth, the Government's Planning Practice Guidance (PPG) states that economic needs should be assessed in relation to Functional Economic Market Areas (FEMAs).

13.4.4. There is no standard practice to defining a FEMA, however Planning Policy Guidance considers that it is possible to define them taking account of factors including commuting patterns, the extent of any (former) LEP, the flow of goods, services or information within a local economy and administrative areas.

Construction Employment

- 13.4.5. Construction employment is highly mobile, and travel-to-work patterns are far wider than average (i.e. for all sectors) with CITB surveys showing workers travelling up to 50 miles/90-minutes daily on a regular basis.
- 13.4.6. In the East Midlands, 24% of construction workers live outside of the region that they work in. The average journey for a construction worker from home to site is 18 miles. Overall, in the East Midlands in the 12 months prior to May 2024:
- 36% worked within 10 miles distance from their home;
 - 61% worked within 10-49 miles distance from their home;
 - 3% worked further than 50 miles from their home.
- 13.4.7. As such, it is anticipated that the Proposed Development would draw construction labour from a substantial Construction Labour Market Area (CLMA) within 50 miles that includes (as a ‘best fit’ comparison to administrative geography) all Local Authorities in Greater Lincolnshire, Nottinghamshire and Leicestershire along with most of Derbyshire, some areas of Norfolk, Cambridgeshire, South Yorkshire, Kingston Upon Hull and East Riding of Yorkshire. This is the primary construction labour market from a travel-to-work perspective, and also covers the primary administrative geographies with a statutory interest in skills, employment and education (i.e. County and Unitary Authority scale).
- 13.4.8. It is noted that workers are not spread evenly over this study area, with a greater propensity for workers to live closer to work within the CLMA. This is important to focus the activity of the Skills and Employment Plan to advance the potential for local employment and skills development. As such, a CLMA Focus Area within the CLMA may appropriately consider the potential labour market and its characteristics within approx. 10 miles (to cover an estimated 36% of the workforce using CITB estimates).
- 13.4.9. The 10-mile area includes North Kesteven and Lincoln District areas and has been used as the ‘local’ study area for assessment purposes as it accords with administrative geographies with a statutory interest in economic development. The Construction Labour Market Area is detailed in **ES Volume 2, Figure 13.3: Construction Labour Market Area [EN010149/APP/6.2]**.

Tourism

- 13.4.10. The assessment of effects on tourism are also considered across North Kesteven with a focus on effects to tourism receptors within a 3km radius of the Order Limits. As stated in **ES Volume 1, Chapter 10: Landscape and Visual [EN010149/APP/6.1]** there is extremely limited theoretical visibility of the Proposed Development beyond 3km. Therefore, the study

area has been chosen as intervisibility between tourism and recreation assets and the Proposed Development is likely to be the main influence on visitor experiences of the area.

Occupancy rates as a result of an influx of workforce staff to the area

- 13.4.11. The assessment of effects to occupancy rates as a result of an influx of workforce staff to the area is based on a 20km radius from the approximate centre point of the Order Limits. **ES Volume 2, Figure 13.2: Population Occupancy Study Area [EN010149/APP/6.2]** shows the occupancy study area. Given the generally rural location of the Proposed Development and the limited number of accommodation facilities in the immediate vicinity, the study area has been chosen to encompass the distance to the nearest major settlement of Lincoln. Therefore a 20km radius from the Order Limits encompasses a wide range of accommodation options within an approximate 30 minute drive to the Proposed Development site.

Effects on Agricultural Economy and Landholdings

- 13.4.12. The effect on the agricultural economy is considered at the scale of the county of Lincolnshire as an appropriate FEMA.
- 13.4.13. The assessment of the cumulative loss of agricultural land focuses on the county of Lincolnshire. The study area encompasses solar farms and energy parks that are deemed as Nationally Significant Infrastructure Projects in order to consider the potential for cumulative loss of agricultural land and jobs. This assessment is detailed in **ES Volume 1, Chapter 16: Cumulative Effects [EN010149/APP/6.1]** and a figure presenting the study area for the assessment is provided in **ES Volume 2, Figure 16.8: BMV Assessment with Cumulative Solar Developments [EN010149/APP/6.2]**.

Scope of the assessment

- 13.4.14. The scope of this assessment has been established throughout the EIA process and design of the Proposed Development. Further information can be found in **ES Volume 1, Chapter 5: Approach to the EIA [EN010149/APP/6.1]**.
- 13.4.15. This section provides an update to the scope of the assessment from that presented in the EIA Scoping Report which is located in **ES Volume 3, Appendix 5.1: Scoping Report [EN010149/APP/6.3]** and re-iterates/updates the evidence base for scoping matters in or out following further iterative assessment.

Receptors/matters scoped into the assessment

13.4.16. **Table 13.1** presents the receptors/matters that are scoped into the assessment reported within this ES, together with appropriate justification.

Table 13.1 Receptors/matters scoped into the assessment

Receptor/matter	Phase	Justification
Employment and gross value added (GVA)	Construction, operation (including maintenance) and decommissioning	<p>This matter has been scoped into the assessment as requested within the Scoping Opinion presented in ES Volume 3, Appendix 5.2: Scoping Opinion [EN010149/APP/6.3] and following feedback received from statutory consultees during statutory consultation.</p> <p>There is potential for likely significant beneficial effects to employment and GVA associated with construction phase employment as well as adverse effects associated resulting from the temporary loss of agricultural land.</p>
Agricultural land holdings and agricultural economy	Construction, operation (including maintenance) and decommissioning	<p>This matter has been scoped into the assessment as requested within the Scoping Opinion presented in ES Volume 3, Appendix 5.2: Scoping Opinion [EN010149/APP/6.3] and following feedback received from statutory consultees during statutory consultation.</p> <p>There is potential for likely significant effects on employment capacity and the agricultural industry as a result of the Proposed Development associated with temporary loss of land used for agricultural purposes.</p> <p>Cumulative impacts associated with the loss of agricultural employment capacity has also</p>

Receptor/matter	Phase	Justification
		<p>been scoped into the assessment as requested in the Scoping Opinion presented in ES Volume 3, Appendix 5.2: Scoping Opinion [EN010149/APP/6.3].</p> <p>There is potential for likely significant effects resulting from the cumulative loss of agricultural operations within the region.</p>
<p>Occupancy rates as a result of an influx of workforce staff to the area</p>	<p>Construction and decommissioning</p>	<p>This matter has been scoped into the assessment, as requested within the Scoping Opinion presented in ES Volume 3, Appendix 5.2: Scoping Opinion [EN010149/APP/6.3] and following feedback received from statutory consultees during statutory consultation.</p> <p>There is potential for likely significant effects on accommodation capacity due to a temporary influx of workforce staff to the area as a result of the Proposed Development. The suitability of accommodation capacity has been assessed.</p>
<p>Tourism</p>	<p>Construction, operation (including maintenance) and decommissioning</p>	<p>This matter has been scoped into the assessment as requested within the Scoping Opinion presented in ES Volume 3, Appendix 5.2: Scoping Opinion [EN010149/APP/6.3] and following feedback received from statutory consultees during statutory consultation.</p> <p>There is the potential for likely significant effects relating to tourism resulting from amenity impacts such as visual impacts and impacts to PRow during all phases of the Proposed Development.</p>

Receptor/matter	Phase	Justification
Walkers, cyclists and horse riders	Construction, operation (including maintenance) and decommissioning	<p>This matter has been scoped into the assessment as requested within the Scoping Opinion presented in ES Volume 3, Appendix 5.2: Scoping Opinion [EN010149/APP/6.3] and following feedback received from statutory consultees during statutory consultation.</p> <p>There is the potential for likely significant effects on walkers, cyclists and horse riders as a result of the requirement for temporary closures or diversions and impacts to the amenity of PRoW associated with the Proposed Development.</p>
Education, skills and supply chain	Construction, operation (including maintenance) and decommissioning	<p>This matter has been scoped into the assessment as requested within the Scoping Opinion presented in ES Volume 3, Appendix 5.2: Scoping Opinion [EN010149/APP/6.3] and following feedback received from statutory consultees during statutory consultation.</p> <p>There is the potential for beneficial effects on education and skills associated with the Applicant's intention to recruit and where possible, upskill staff from the local area.</p>

Receptors/matters scoped out of the assessment.

13.4.17. **Table 13.2** presents the receptors/matters that are scoped out of the assessment that are therefore not considered as part of this ES, together with appropriate justification.

Table 13.2 Receptors/matters scoped out of the assessment

Receptor/matter	Phase	Justification
Private property and housing	Construction, operation (including maintenance) and decommissioning	<p>There are no properties or houses at risk of demolition as a result of the Proposed Development, nor is any of the land within the Order Limits allocated as residential land in a development plan.</p> <p>This matter is scoped out of the assessment, as confirmed within the Scoping Opinion, ID 2.3.8, presented in ES Volume 3, Appendix 5.2: Scoping Opinion [EN010149/APP/6.3].</p>
Community land and assets	Construction, operation (including maintenance) and decommissioning	<p>There is no community land or assets within the Order Limits.</p> <p>This matter is scoped out of the assessment, as confirmed within the Scoping Opinion, ID 2.3.8, presented in ES Volume 3, Appendix 5.2: Scoping Opinion [EN010149/APP/6.3].</p>
Development land and businesses	Construction, operation (including maintenance) and decommissioning	<p>The Site is mainly agricultural and there are no other businesses or land allocated for employment use (within a development plan) within the Order Limits.</p> <p>This matter is scoped out of the assessment, as confirmed within the Scoping Opinion, ID 2.3.8, presented in ES Volume 3, Appendix 5.2: Scoping Opinion [EN010149/APP/6.3].</p>
Occupancy rates as a result of an influx of operational staff to the area	Operation (including maintenance)	<p>During operation (including maintenance), it is anticipated the Proposed Development will generate approximately 24 jobs. As these are permanent positions, it is expected that these roles will be filled by people living within a commutable distance of the Proposed</p>

Receptor/matter	Phase	Justification
		Development or by people that will move from their current area into a distance that allows them to commute to the Site for work. As such, it is considered that there is unlikely to be impacts to local occupancy rates.

Establishing baseline conditions

Data sources to inform the EIA baseline characterisation

13.4.18. The following data sources have been used to understand the existing population baseline conditions:

- Office for National Statistics (2021). Census 2021 **[Ref. 13-19]**;
- Office for National Statistics (2024). Labour Market Profile - North Kesteven **[Ref. 13-20]**;
- Office for National Statistics (2023). Business Register and Employment Survey **[Ref. 13-21]**;
- Office for National Statistics (2023). Annual Population Survey **[Ref. 13-22]**;
- Office for National Statistics (2023). UK Business Counts **[Ref. 13-23]**;
- Office for National Statistics (2019). English Indices of Deprivation **[Ref. 13-24]**;
- Office for National Statistics (2022). Estimates for Regional Gross Value Added **[Ref. 13-25]**;
- Department for Education (2023). Apprenticeships and Traineeships in-year Data **[Ref. 13-26]**;
- Department for Work and Pensions (2024). Claimant Count/Jobseekers Allowance **[Ref. 13-27]**;
- Department for Food and Rural Affairs (2022). Agriculture in the UK Dashboard **[Ref. 13-28]**;
- North Kesteven District Council (2024). North Kesteven District Council’s Annual Report 2022-23 **[Ref. 13-29]**; and
- Heart of Lincs (2024) North Kesteven: Leisure Guide Webpage **[Ref. 13-30]**.

Site visits/surveys

- 13.4.19. Beyond general site and area familiarisation, as well as engagement with landowners to corroborate the employment baseline, there has been no additional population specific site visits or primary surveys undertaken to inform the existing established baseline conditions.

Approach to design flexibility

- 13.4.20. The Project Parameters, as outlined in **ES Volume 1, Chapter 3: Proposed Development Description [EN010149/APP/6.1]**, **ES Volume 3, Appendix 3.1: Project Parameters [EN010149/APP/6.3]** and the parameter plans presented in **ES Volume 2, Figures 3.1 – 3.4 [EN010149/APP/6.2]**, set out the reasonable ‘worst-case’ parameters for the Proposed Development.
- 13.4.21. **ES Volume 1, Chapter 5: Approach to the EIA [EN010149/APP/6.1]** sets out those elements of the Proposed Development for which optionality is present within the design.

Assessment assumptions

Construction Employment (Direct)

Construction Jobs, Skills and Occupations

- 13.4.22. The number of direct construction jobs anticipated to be created during the construction phase was estimated by the Applicant and was based on professional judgement and experience of the delivery of solar projects throughout the UK.
- 13.4.23. The total number of workforce staff required is currently uncertain however it has been estimated that during the construction phase, a (gross) peak of approximately 650 workers may be on site at any one time, or an average of 400 over the four year construction period.
- 13.4.24. The direct jobs created would be required for land preparation, installation and grid connection and therefore will provide employment opportunities for a range of occupations and skill levels. The International Renewable Energy Agency **[Ref. 13-31]** (‘IRENA’) suggests that the occupational distribution of jobs to install and connect solar PV is as follows:
- 90% construction workers and technical personnel;
 - 6% engineers and construction forepersons;
 - 2% health and safety experts;
 - 1% environmental experts; and
 - 1% quality control.

- 13.4.25. In general, it is anticipated that the construction phase would require a mix of occupational skills within various construction industry sub-sectors, but predominantly civil engineering/civils construction roles including earth moving, ground preparation, cable laying and plant operative roles, skilled mechanical and engineering trades and vehicle operation and electrical installation. These would be supported by non-construction and relatively unskilled construction roles including security, maintenance, banksmen, traffic management, administration and site management and operation roles.

Construction Industry Characteristics

- 13.4.26. The nature of construction is that employees move from project-to-project and site-to-site but remain with a single employer who would be sub-contracted to work on a specific project. Survey data from CITB suggests that in the East Midlands, only 13% expect to work on the same site for more than one year.
- 13.4.27. Construction employment is highly mobile. For construction, and especially for specialist construction, travel-to-work patterns are far wider than average with CITB surveys [Ref. 13-32] showing workers travelling up to 50 miles/90-minutes daily on a regular basis.

Additionality

- 13.4.28. Guidance from the Homes and Communities Agency ('HCA') Additionality Guide and the more recently published HM Treasury's Green Book for Economic Appraisal and Evaluation ('the HM Treasury's Green Book') establishes that direct jobs created by developments may be subject to a degree of 'displacement' (the level of existing employment likely to be lost, moved or adversely affected by the employment created as a result of the Proposed Development) and 'leakage' (referring to the number of jobs likely to be taken up by people who live (permanently) outside of the CLMA).
- 13.4.29. For the purposes of this assessment, displacement was assumed to be zero (all the employment supported would be additional, i.e. without the Proposed Development the work would not be generated). This is influenced by the relatively short construction period of the Proposed Development, and specialist nature of the development in terms of its sector and consideration of equivalents in the region. As set out above, it is normal practice for construction workers to move from site-to-site and project-to-project without resulting in displacement.
- 13.4.30. Leakage within the CLMA would be limited given the area is effectively determined by its self-containment, though it is noted from CITB survey information that:

- 3% of the construction workforce in the East Midlands travels further than 50 miles; and
- 6% of the construction workforce at any given time in the East Midlands is living in temporary accommodation during their employment at a construction site.

- 13.4.31. At a regional scale, CITB survey information sets out that 24% of construction workers in the East Midlands region live in a different region to their place of work.
- 13.4.32. As such, the leakage factor applied to the CLMA is a range of 9% to 24% to account for economic activity supported by the Proposed Development that accrues outside of the CLMA. At more local scales, leakage would be greater – up to 64% for the CLMA Focus Area.
- 13.4.33. It is noted that this is used for assessment case purposes, and that the **Outline Employment, Skills and Supply Chain Plan [EN010149/APP/7.20]** would seek to promote local employment and supply chain activities such that leakage may be reduced, promoting more local and targeted opportunities for employment.

Construction Employment (Wider Economic Effects)

Supply Chain & Indirect Employment

- 13.4.34. Production of materials, and their installation at the Proposed Development, along with goods and labour associated with the construction activity, will result in indirect economic effects. These effects would largely be determined by where the contracts for materials are procured. As the direct effects of employment and indirect effects of GVA related to construction worker output and spending are addressed above, the remaining element is expenditure on supply chain activities.
- 13.4.35. Multiplier effects (the net additional economic benefit that will be created as a direct result of the income earned and spent and output produced by the employment supported, and as an indirect result of spend on materials in the supply chain) would effectively be considered under the benefits accrued by a combination of assessment of effects of construction workforce spending, contribution to construction output, and construction supply chain effects. It is noted that there is some overlap in how these elements are measured and so it is not appropriate to sum them to an overall gross total.
- 13.4.36. The reasonable ‘worst-case’ scenario was derived from application of the HM Green Book ‘low’ employment multiplier for this sector (applying 0.1 to establish indirect jobs supported by the Proposed Development). Those multipliers result in the lowest level of ‘spin-off’ employment in the supply

chain and in turn, results in the lowest representation of indirect job creation in order to be conservative.

- 13.4.37. It is noted that this is used for assessment case purposes, and that the Employment and Skills Plan would seek to promote local supply chain activities such that multipliers may be enhanced, promoting more local and targeted opportunities for contracts and increasing and retaining more economic benefit.

Workforce Spending

- 13.4.38. The level of workforce expenditure was estimated based on survey information carried out by research agency Loudhouse for Visa Europe [Ref. 13-16], identifying an average spend per day of £11 per employee. Adjusting for inflation this was revised to £13.10 per employee.

Gross Value Added (GVA)

- 13.4.39. GVA resulting from direct jobs (construction phase) was calculated by applying the average GVA per worker (specific to the construction sector) in the East Midlands Region to the number of direct construction jobs supported by the Proposed Development.

Operational Employment (Direct)

Operational Jobs, Skills and Occupations

- 13.4.40. It is estimated that the operational (including maintenance) phase would support around 24 FTE jobs, with some periods requiring short-term, temporary iterative increases in on-site personnel for example for non-routine maintenance of the panels and connectors, site management and environmental management.
- 13.4.41. The employment supported would include electrical engineering roles likely to require higher level skills and qualifications, as well as site management, administrative and process/elementary occupations including security and maintenance.

Additionality

- 13.4.42. For the purposes of this assessment, displacement within Lincolnshire was assumed to be zero (all the operational employment supported would be additional, i.e. without the Proposed Development the work would not be generated). This is influenced by the specialist nature of the development in terms of its sector and consideration of equivalents in the region, and prevailing employment in the sector. Some employment will likely result in displacement at wider scales as people are attracted to the Proposed Development to work.

- 13.4.43. Leakage outside of Lincolnshire is considered to be relatively minimal for permanent, full-time positions on the Proposed Development. Data on travel-to-work patterns for employment in the energy sector (2011 Census) **[Ref. 13-33]** suggests that 83% of those who travel to work travel less than 30km (c. 18 miles) which would suggest the majority of operational staff would live in Lincolnshire. As such a leakage rate of 17% has been applied to operational employment at the Lincolnshire County scale.
- 13.4.44. Some leakage may also occur outside of Lincolnshire in terms of temporary, short-term employment for iterative maintenance activity which may draw upon national-scale peripatetic, specialist workforce.

Operational Employment (Wider Economic Effects)

Supply Chain & Indirect Employment

- 13.4.45. Multiplier effects (the net additional economic benefit that will be created as a direct result of the income earned and spent and output produced by the employment supported, and as an indirect result of spend on materials in the supply chain) would effectively be considered under the benefits accrued by a combination of assessment of effects of construction workforce spending, contribution to construction output, and construction supply chain effects. It is noted that there is some overlap in how these elements are measured and so it is not appropriate to sum them to an overall gross total.
- 13.4.46. The reasonable 'worst-case' scenario was derived from application of the HM Green Book 'low' employment multiplier for this sector **[Ref. 13.-15]** (applying 0.1 to establish indirect jobs supported by the Proposed Development). Those multipliers result in the lowest level of 'spin-off' employment in the supply chain and in turn, results in the lowest representation of indirect job creation in order to be conservative.
- 13.4.47. It is noted that this is used for assessment case purposes, and that the Employment and Skills Plan would seek to promote local supply chain activities such that multipliers may be enhanced, promoting more local and targeted opportunities for contracts and increasing and retaining more economic benefit.

Workforce Spending

- 13.4.48. The level of workforce expenditure was estimated based on survey information carried out by research agency Loudhouse for Visa Europe, identifying an average spend per day of £11 per employee. Adjusting for inflation this was revised to £13.10 per employee **[Ref. 13-16]**.

Gross Value Added (GVA)

- 13.4.49. GVA resulting from direct jobs (operational (including maintenance) phase) was calculated by applying the average GVA per worker (specific to the construction sector) in the East Midlands Region to the number of direct construction jobs supported by the Proposed Development.

Agricultural Economy

- 13.4.50. Effects on the agricultural economy were determined by the extent to which the Proposed Development changes the level of agricultural employment, production and land availability in the economy at county, regional and national scales, and the effect of the Proposed Development on the viability of individual farm/agricultural businesses.
- 13.4.51. At a local scale, baseline information gained through engagement with landowners and tenants of commercial agricultural land within the Site Boundary was used to consider construction and operational effects from the Proposed Development related to the agricultural economy.
- 13.4.52. At a wider scale, the baseline was informed by the Agriculture in the UK Evidence Pack/Dashboard (2023) [Ref. 13-34] published by Defra provides an overview of UK's agricultural economy by region including data relating to land use, yields and employment.
- 13.4.53. The assessment considers the potential for the effect of temporary land and employment reduction at the site in agricultural uses relative to the scale of the regional agricultural economy.
- 13.4.54. Where the design includes some flexibility as described above, this assessment has taken into account the option that is expected to have the greatest level of impact on population in order to assess the reasonable worst-case scenario. Should another option then be taken forward, the assessment conclusion will still be applicable.
- 13.4.55. Professional judgement and expertise have been used to assess impacts where quantitative or appropriate guidance is not available.

Assessment methodology and criteria

- 13.4.56. In accordance with DMRB LA 112 [Ref. 13-13], this assessment has considered the likelihood of significant effects to land use and accessibility relating to the following three receptor groups:
- Agricultural land holdings; and
 - Walkers, cyclists and horse riders.
- 13.4.57. In the absence of other guidance, professional experience and judgement has been used to inform the assessment of effects on receptors included

within this chapter but not listed under DMRB LA 112 [Ref. 13-13]. These receptors are:

- Employment and GVA;
- Occupancy rates as a result of an influx of workforce staff to the area;
- Tourism; and
- Education, skills and supply chain.

13.4.58. To give continuity to the assessment, the same terminology and significance table has been used through all discussion of significance.

13.4.59. Consideration has been given to the presence and number of receptors identified within the respective study areas through the creation of a baseline socio-economic profile. Where receptors are absent from the study area, no further consideration has been given to the potential for significant effects.

13.4.60. For each receptor that is present, professional judgement has been used to consider the likely effects that the Proposed Development would have and to determine if the effect is likely to be beneficial, neutral or adverse in accordance with DMRB LA 112 criteria [Ref.13-13]. The effect is then quantified with regard to the nature of the impact, the probability of the impact and the duration, frequency and reversibility of the impact.

13.4.61. For any level of adverse impact identified through this process, consideration is given to the implementation of additional mitigation measures in order to remove, reduce or minimise the level of effect. For any positive impacts identified, consideration is given to the measures that could be implemented in order to enhance the level of effect.

13.4.62. The residual effects are then assessed taking into account any additional mitigation measures proposed.

Value (sensitivity) of the receptor

13.4.63. The receptor value (sensitivity) detailed in DMRB LA 112 [Ref. 13-13] has been used to determine the value (sensitivity) of each receptor to change, as presented in the table below.

13.4.64. DMRB LA 112 [Ref. 13-13] does not include value (sensitivity) criteria for effects relating to construction and operational employment, skills and labour market; Spending, GVA and supply chain; or the agricultural economy. Professional judgement has been used to ascertain value (sensitivity) for those elements of the assessment. For consistency, the terminology/value (sensitivity) used within DMRB LA 112 [Ref. 13-13] has been applied to those elements.

13.4.65. In general, the value (sensitivity) of the socio-economic receptors takes account of the importance attached to each receptor in policy terms and the characteristic of the baseline environment and ability of the receptor to absorb or respond to change, and where practicable draws on measurable indicators such as the scale of these receptors identified in the baseline, to gauge the receptor’s value (sensitivity).

Table 13.3 Receptor value (sensitivity), as outlined in DMRB LA 112

Receptor value (sensitivity)	Description
Very High	<p>Agricultural land holdings:</p> <p>areas of land in which the enterprise is wholly reliant on the spatial relationship of land to key agricultural infrastructure; and</p> <p>access between land and key agricultural infrastructure is required on a frequent basis (daily).</p> <p>Walkers, cyclists and horse riders:</p> <p>national trails and routes likely to be used for both commuting and recreation that record frequent (daily) use. Such routes connect communities with employment land uses and other services with a direct and convenient walker, cyclist and horse rider route. Little/no potential for substitution.</p> <p>routes regularly used by vulnerable travellers such as the elderly, school children and people with disabilities, who could be disproportionately affected by small changes in the baseline due to potentially different needs.</p> <p>rights of way for walkers, cyclists and horse riders crossing roads at grade with >16,000 vehicles per day.</p> <p>Employment, skills and labour market/Spending, GVA and Supply chain/Agricultural Economy:</p> <p>The socio-economic receptor has no capacity to absorb or respond to change without noticeable socio-economic loss or gain.</p>
High	<p>Agricultural land holdings:</p> <p>areas of land in which the enterprise is dependent on the spatial relationship of land to key agricultural infrastructure; and</p> <p>access between land and key agricultural infrastructure is required on a frequent basis (weekly).</p> <p>Walkers, cyclists and horse riders:</p>

Receptor value (sensitivity)	Description
	<p>regional trails and routes (e.g. promoted circular walks) likely to be used for recreation and to a lesser extent commuting, that record frequent (daily) use. Limited potential for substitution; and/or</p> <p>rights of way for walkers, cyclists and horse riders crossing roads at grade with >8,000 - 16,000 vehicles per day.</p> <p>Employment, skills and labour market/Spending, GVA and Supply chain/Agricultural Economy:</p> <p>The socio-economic receptor has limited capacity to absorb or respond to change without noticeable socio-economic loss or gain</p>
Medium	<p>Agricultural land holdings:</p> <p>areas of land in which the enterprise is partially dependent on the spatial relationship of land to key agricultural infrastructure; and</p> <p>access between land and key agricultural infrastructure is required on a reasonably frequent basis (monthly).</p> <p>Walkers, cyclists and horse riders:</p> <p>public rights of way and other routes close to communities which are used for recreational purposes (e.g. dog walking), but for which alternative routes can be taken. These routes are likely to link to a wider network of routes to provide options for longer, recreational journeys, and/or</p> <p>rights of way for walkers, cyclists and horse riders crossing roads at grade with >4000 – 8000 vehicles per day.</p> <p>Employment, skills and labour market/Spending, GVA and Supply chain/Agricultural Economy:</p> <p>The socio-economic receptor has some capacity to absorb or respond to change and may result in some perceptible socio-economic loss or gain.</p>
Low	<p>Agricultural land holdings:</p> <p>areas of land which the enterprise is not dependent on the spatial relationship of land to key agricultural infrastructure; and</p> <p>access between land and key agricultural infrastructure is required on an infrequent basis (monthly or less frequent).</p> <p>Walkers, cyclists and horse riders:</p>

Receptor value (sensitivity)	Description
	<p>routes which have fallen into disuse through past severance, or which are scarcely used because they do not currently offer a meaningful route for either utility or recreational purposes, and/or rights of way for walkers, cyclists and horse riders crossing roads at grade with <4000 vehicles per day.</p> <p>Employment, skills and labour market/Spending, GVA and Supply chain/Agricultural Economy</p> <p>The socio-economic receptor has the capacity to absorb or respond to change with hardly perceptible socio-economic loss or gain.</p>
Negligible	<p>Agricultural land holdings:</p> <p>areas of land which are infrequently used on a non-commercial basis.</p> <p>Walkers, cyclists and horse riders:</p> <p>N/A.</p> <p>Employment, skills and labour market/Spending, GVA and Supply chain/Agricultural Economy</p> <p>The socio-economic receptor has the capacity to absorb or respond to change with no socio-economic loss or gain.</p>

Magnitude of impact (change)

- 13.4.66. The magnitude of impact (change) as detailed in DMRB LA 112 [Ref. 13-13] has been used to identify the magnitude of impact (change) for each receptor as detailed in **Table 13.4** below.
- 13.4.67. DMRB LA 112 [Ref. 13-13] does not include magnitude criteria for effects relating to construction and operational employment, skills and labour market; Spending, GVA and supply chain; or the agricultural economy. Professional judgement has been used to ascertain magnitude scale for those elements of the assessment. For consistency, the terminology used within DMRB LA 112 [Ref. 13-13] has been applied to those elements.
- 13.4.68. The magnitude of impact (change) upon each socio-economic receptor has been determined by considering the change experienced from the baseline conditions, subject to the consideration of embedded mitigation.

Table 13.4 Magnitude of impact (change) thresholds, as detailed in DMRB LA 112

Magnitude of impact (change)	Typical description
Major	<p>Agricultural land holdings:</p> <p>loss of resource and/or quality and integrity of resource; severe damage to key characteristics, features or elements. e.g. direct acquisition and demolition of buildings and direct development of land to accommodate highway assets; and/or</p> <p>introduction (adverse) or removal (beneficial) of complete severance with no/full accessibility provision.</p> <p>Walkers, cyclists and horse riders:</p> <p>>500m increase (adverse)/decrease (beneficial) in walker, cyclist and horse rider journey length.</p> <p>Employment, skills and labour market/Spending, GVA and Supply chain/Agricultural Economy</p> <p>Substantial change to the socio-economic receptor in terms of employment levels, output or productivity</p>
Moderate	<p>Agricultural land holdings:</p> <p>partial loss of/damage to key characteristics, features or elements, e.g. partial removal or substantial amendment to access or acquisition of land compromising viability of property, businesses, community assets or agricultural holdings; and/or</p> <p>introduction (adverse) or removal (beneficial) of severe severance with limited/moderate accessibility provision.</p> <p>Walkers, cyclists and horse riders:</p> <p>>250m - 500m increase (adverse) or decrease (beneficial) in walker, cyclist and horse rider journey length.</p> <p>Employment, skills and labour market/Spending, GVA and Supply chain/Agricultural Economy</p> <p>Notable change to the socio-economic receptor in terms of employment levels, output or productivity</p>
Minor	<p>Agricultural land holdings:</p> <p>a discernible change in attributes, quality or vulnerability; minor loss of, or alteration to, one (maybe more) key characteristics, features or elements, e.g. amendment to access or acquisition of land resulting in changes to operating conditions that do not compromise overall viability of property, businesses, community assets or agricultural holdings; and/or</p>

Magnitude of impact (change)	Typical description
	<p>introduction (adverse) or removal (beneficial) of severance with adequate accessibility provision.</p> <p>Walkers, cyclists and horse riders:</p> <p>>50m - 250m increase (adverse) or decrease (beneficial) in walker, cyclist and horse rider journey length.</p> <p>Employment, skills and labour market/Spending, GVA and Supply chain/Agricultural Economy</p> <p>Slight/hardly perceptible change to the socio-economic receptor in terms of employment levels, output or productivity</p>
Negligible	<p>Agricultural land holdings:</p> <p>very minor loss or detrimental alteration to one or more characteristics, features or elements. e.g. acquisition of non-operational land or buildings not directly affecting the viability of property, businesses, community assets or agricultural holdings; and/or</p> <p>very minor introduction (adverse) or removal (beneficial) of severance with ample accessibility provision.</p> <p>Walkers, cyclists and horse riders:</p> <p><50m increase (adverse) or decrease (beneficial) in walker, cyclist and horse rider journey length.</p> <p>Employment, skills and labour market/Spending, GVA and Supply chain/Agricultural Economy</p> <p>No perceptible change to the socio-economic receptor in terms of employment levels, output or productivity</p>
No change	<p>Agricultural land holdings/Walkers, cyclists and horse riders:</p> <p>No loss or alteration of characteristics, features, elements or accessibility; no observable impact in either direction.</p> <p>Employment, skills and labour market/Spending, GVA and Supply chain/Agricultural Economy</p> <p>No change to the socio-economic receptor in terms of employment levels, output or productivity</p>

Significance of effect

- 13.4.69. Socio-economic effects are determined by combining the value (sensitivity) of the affected receptor and the magnitude of the impact (change). **Table 13.5** below shows how the significance of effects has been determined, the criteria for which has been adopted from DMRB LA 112 [Ref. 13-13].
- 13.4.70. DMRB LA 112 [Ref. 13-13] does not include significance of effect criteria for effects relating to construction and operational employment, skills and labour market; Spending, GVA and supply chain; or the agricultural economy. Professional judgement has been used to ascertain magnitude scale for those elements of the assessment. For consistency, the terminology used within DMRB LA 112 [Ref. 13-13] has been applied to those elements.

Table 13.5 Significance criteria

		Magnitude of impact (change)				
		No change	Negligible	Minor	Moderate	Major
Receptor value (sensitivity)	Very High	Neutral	Slight	Moderate or large	Large or very large	Very large
	High	Neutral	Slight	Slight or moderate	Moderate or large	Large or very large
	Medium	Neutral	Neutral or slight	Slight	Moderate	Moderate or large
	Low	Neutral	Neutral or slight	Neutral or slight	Slight	Slight or moderate
	Negligible	Neutral	Neutral	Neutral or slight	Neutral or slight	Slight

- 13.4.71. As per DMRB LA 112 guidelines [Ref. 13-13], residual effects that are within the moderate, large or very large categories are **significant**, whilst residual effects that are neutral or slight are **not significant**.

13.5. Environmental baseline

Existing population baseline

Current land use within the Order Limits

- 13.5.1. The Order Limits is currently used for agriculture and consists of agricultural fields, interspersed with hedgerows, small woodland blocks and farm access tracks.

- 13.5.2. The land within the Order Limits is currently used by two farming operations, one of the operations occupies a small number of fields at the south of Springwell West.
- 13.5.3. A more detailed description of the current land use can be found in **ES Volume 1, Chapter 2: Location of the Proposed Development [EN010149/APP/6.1]**.

Basis of population profile

- 13.5.4. The Proposed Development is located within the North Kesteven local planning authority and therefore, the baseline characteristics of this assessment has been informed by North Kesteven population data.

Population

- 13.5.5. There were an estimated 118,000 residents in the Local Authority area of North Kesteven in 2021. Between 2011 and 2021, the total population of North Kesteven increased by 9.5%, this is higher than England's average population increase of 6.6% **[Ref. 13-35]**.
- 13.5.6. The population profile of North Kesteven is older than England's average, with a larger percentage of people aged over 50 and a lower percentage of 0 to 49 year olds **[Ref. 13-35. Table 13.6** below, presents a population age profile of North Kesteven and England.

Table 13.6 North Kesteven and England's Population Age Profile

Age	North Kesteven (%)	England (%)
Ages 4 years and under	4.7	5.4
Aged 5-9	5.6	5.9
Aged 10-15	6.7	7.2
Aged 16-19	3.9	4.6
Aged 20-24	4.7	6
Aged 25-34	11.6	13.6

Age	North Kesteven (%)	England (%)
Aged 35-49	17.7	19.4
Aged 50-64	21.7	19.4
Aged 65- 74	12.1	9.8
Aged 74-84	8.4	6.1
Ages 85 and over	2.9	2.4

Economic Activity, Employment and Unemployment

- 13.5.7. Economic activity rates are lower than the national average across the CLMA, CLMA Focus Area and Lincolnshire.
- 13.5.8. Retirement is the primary reason for economic inactivity in the CLMA Focus Area, with retired people accounting for over half (55%) of the economically inactive population.
- 13.5.9. The unemployment rate within the within the CLMA Focus Area is 5.4%, which is greater than rates within CLMA Area (5.3%), Lincolnshire (4.9%) and East Midlands (5.1%), but lower than the rate at the national level (5.7%).
- 13.5.10. Data from the Annual Population Survey (APS) (April 2023 to March 2024) **[Ref. 13-36]** suggests that 11.4% of Lincolnshire’s economically inactive population want a job.
- 13.5.11. Claimant count data provides the most recent information on the number of people claiming unemployment-related benefits in a particular spatial area, which includes Jobseekers’ Allowance and Universal Credit. The count is calculated for all working age residents aged between 16 and 64 years. This dataset is unable to capture all unemployed individuals as some local residents may not claim these benefits or may be ineligible. This dataset is not considered to be a national statistic.
- 13.5.12. Claimant count data from August 2024 reveals the claimant rate (as a proportion of all working age residents aged 16 to 64) of 3.2% in the CLMA Focus Area, which is lower than rates within Lincolnshire (3.3%), CLMA (4.1%), East Midlands (4.6%) and England (4.4%).

13.5.13. Data from the ONS on Jobseeker's allowance by occupation in August 2024 [Ref. 13-37] suggests that just over a third (37%) of jobseekers in the CLMA Focus Area sought to work within construction-related occupations. This rate was recorded to be lower than proportions in Lincolnshire (47%), CLMA (44%), East Midlands (46%) and England (43%).

Table 13.7 Economic Activity, Claimant Count and JSA Baseline

	CLMA Focus Area	Lincolnshire	CLMA	East Midlands	England
Economic Activity, Census 2021					
Economic Activity Rate (%)	59%	57%	59%	60%	61%
Economic Inactivity (%)	41%	43%	41%	40%	39%
Unemployment Rate (%)	5.4%	4.9%	5.3%	5.1%	5.7%
Reason for Economic Inactivity (as proportion of economically inactive population) %					
Retired	55%	64%	57%	58%	55%
Student	19%	10%	13%	14%	14%
Looking after home or family	9%	10%	11%	11%	12%
Long-term sick or disabled	10%	10%	11%	10%	10%
Other	6%	6%	7%	7%	8%
ILO Unemployment, Annual Population Survey (April 2023 to March 2024)					
% of economically inactive individuals who want a job	-	11.4%	-	14.1%	17.5%
Claimant Count, August 2024					
Claimant Count	4,525	15,070	199,300	116,565	1,565,940
Claimant Rate	3.2%	3.3%	4.1%	3.8%	4.4%
Jobseeker's Allowance by Occupation, August 2024					
Total JSA by Occupation	310	1,025	11,390	7,120	80,315
Total Construction Jobseekers	115	480	5,000	3,275	34,870

% of Construction Jobseekers	37%	47%	44%	46%	43%
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Employment

13.5.14. The latest employment estimates for the CLMA Focus Area are for 2022, published in 2023 (ONS, 2023, Business Register and Employment Survey) [Ref. 13-38]. At that time, there were an estimated 102,060 total jobs in the CLMA Focus Area.

Construction Employment

13.5.15. There were around 7,670 jobs within the construction sector¹ within CLMA Focus Area, 21,985 construction jobs in Lincolnshire, 236,300 in the CLMA, 147,200 in East Midlands and 1,587,000 in England. These estimates include self-employed jobs.

13.5.16. It is important to distinguish between data which includes self-employment and that which does not because self-employment is very important in the construction sector due to contractors and sub-contractors not employing people directly.

Table 13.8 Employment by Industry in the Construction Sector

	CLMA Focus Area	Lincolnshire	CLMA	East Midlands	England
Construction – 3 Digit SIC Code Industries					
Manufacture of general purpose machinery	1,425	1,500	12,430	6,000	48,000
Manufacture of other general-purpose machinery	90	800	8,575	5,500	65,000
Manufacture of metal forming machinery and machine tools	-	50	8,575	750	8,000
Manufacture of other special-purpose machinery	425	750	1,385	4,250	30,500

¹ Employment jobs within the following SOC Codes: SIC 281, SIC 282, SIC 284, SIC 289, SIC 411, SIC 412, SIC 422, SIC 429, SIC 431, SIC 432, SIC 433, SIC 439 and SIC 712.

	CLMA Focus Area	Lincolnshire	CLMA	East Midlands	England
Development of building projects	400	1,375	6,990	10,000	104,500
Construction of residential and non-residential buildings	1,400	3,750	11,820	23,500	350,500
Construction of roads and railways	290	1,000	38,215	6,500	54,000
Construction of utility projects	10	35	11,190	700	11,500
Construction of other civil engineering projects	215	1,250	1,425	8,500	98,000
Demolition and site preparation	25	140	11,905	1,000	20,500
Electrical, plumbing and other construction installation activities	1,650	6,000	2,305	42,500	416,500
Building completion and finishing	1,250	3,750	67,535	23,000	213,500
Other specialised construction activities n.e.c.	435	1,375	36,730	10,500	112,000
Technical testing and analysis	55	210	17,220	4,500	54,500
Total	7,670	21,985	236,300	147,200	1,587,000
Construction Jobs as a proportion of Total Jobs (%)	8%	7%	7%	7%	6%

13.5.17. When analysing the 3-digit SIC code data from 2022 BRES for the CLMA Focus Area against the national average, the construction sector was recorded to have a location quotient of 1.32, which suggests that the concentration of jobs within the within the construction sector in the CLMA Focus Area is higher than the concentration nationally.

13.5.18. The manufacture of metal forming machinery and machine tools (SIC code 824) and the construction of utility projects (SIC code 422) are recorded to

have the highest location quotients for the CLMA when compared to other construction sub sectors, at 8.43 and 7.65 respectively.

Table 13.9 Location Quotients for 3 Digit SIC Sectors within the Construction Sector Compared to the National Average

	CLMA Focus Area	Lincolnshire	CLMA	East Midlands
Construction – 3 Digit SIC Code Industries				
Manufacture of general purpose machinery	8.13	2.04	2.74	1.56
Manufacture of other general-purpose machinery	0.38	1.04	1.08	1.06
Manufacture of metal forming machinery and machine tools	0.00	8.43	0.55	1.17
Manufacture of other special-purpose machinery	3.82	0.36	2.16	1.74
Development of building projects	1.05	0.53	1.15	1.19
Construction of residential and non-residential buildings	1.09	0.27	0.94	0.84
Construction of roads and railways	1.47	5.57	1.62	1.50
Construction of utility projects	0.24	7.65	0.27	0.76
Construction of other civil engineering projects	0.60	0.11	1.12	1.08
Demolition and site preparation	0.33	4.57	0.60	0.61
Electrical, plumbing and other construction installation activities	1.08	0.04	1.26	1.27
Building completion and finishing	1.60	2.49	1.54	1.34
Other specialised construction activities n.e.c.	1.06	2.58	1.08	1.17
Technical testing and analysis	0.28	2.49	0.34	1.03
Combined Construction LQ	1.32	1.17	1.21	1.16

Energy Employment

13.5.19. Data from the 2022 Business Register and Employment Survey [Ref. 13-39] suggests that there are currently 740 energy jobs in the Lincolnshire, and 12,750 energy jobs in East Midlands.

Table 13.10 Employment by Industry and Location Quotients for 3 Digit SIC Sectors within the Energy Sector

	Lincolnshire	East Midlands	England
Manufacture of electric motors, generators, transformers and electricity distribution and control apparatus	240	2,750	21,000
Electric power generation, transmission and distribution	500	10,00	70,500
Combined Total	740	12,750	91,500

Employment by Sector (Residential Population)

- 13.5.20. According to the 2021 Census [Ref. 13-19], the total resident workforce is equal to c.103,610 in the CLMA Focus Area and c.3,611,000 in the CLMA.
- 13.5.21. When assessing industries of particular relevance to the Proposed Development, construction is recorded to account for 8.5%, which is lower than proportions in Lincolnshire and the East Midlands (both at 8.8%), CLMA (9.0%) and England (8.7%). The construction sector in the CLMA is also recorded to have a location quotient of 1.04, which suggests that the concentration of construction jobs in the CLMA is slightly higher than the concentration nationally.
- 13.5.22. The proportion of the resident workforce in the CLMA Focus Area and the CLMA that were recorded to work in the electricity, gas, steam and air conditioning supply industry is at 0.7% across both areas, which is greater than proportions in both Lincolnshire and England (both at 0.6%), but marginally lower than the proportion within East Midlands (0.8%).

Table 13.11 Residential Workforce by Sector

	CLMA Focus Area		Lincolnshire		CLMA		East Midlands		England	
	No.	%	No.	%	No.	%	No.	%	No.	%
Agriculture, Forestry and fishing	1,885	1.8%	11,689	3.4%	41,357	1.1%	25,692	1.1%	211,867	0.8%
Mining and quarrying	203	0.2%	606	0.2%	5,984	0.2%	3,743	0.2%	40,130	0.2%
Manufacturing	8,727	8.4%	35,690	10.2%	400,719	10.6%	241,279	10.6%	1,921,401	7.3%
Electricity, gas, steam and air conditioning supply	742	0.7%	1,994	0.6%	27,024	0.7%	17,386	0.8%	152,142	0.6%
Water supply; Sewerage, Waste management and Remediation activities	1,471	1.4%	3,762	1.1%	29,925	0.8%	17,275	0.8%	190,302	0.7%
Construction	8,839	8.5%	30,528	8.8%	341,663	9.0%	200,927	8.8%	2,288,550	8.7%
Wholesale and retail trade; repair of motor vehicles and motorcycles	16,509	15.9%	59,691	17.1%	666,211	17.6%	400,228	17.6%	3,958,259	15.0%
Transport and storage	4,085	3.9%	16,005	4.6%	218,966	5.8%	132,107	5.8%	1,328,773	5.0%
Accommodation and food service activities	5,240	5.1%	17,438	5.0%	167,204	4.4%	100,686	4.4%	1,291,556	4.9%
Information and communication	3,120	3.0%	8,449	2.4%	113,850	3.0%	70,015	3.1%	1,246,568	4.7%
Financial and insurance activities	1,203	1.2%	5,262	1.5%	82,848	2.2%	49,524	2.2%	1,007,530	3.8%
Real estate activities	1,051	1.0%	4,137	1.2%	42,984	1.1%	26,399	1.2%	412,648	1.6%
Professional, scientific and technical activities	1,885	3.9%	11,689	4.1%	41,357	4.6%	25,692	4.8%	211,867	6.7%

	CLMA Focus Area		Lincolnshire		CLMA		East Midlands		England	
Administrative and support service activities	203	4.7%	606	5.3%	5,984	4.9%	3,743	4.8%	40,130	5.3%
Public administration and defence; compulsory social security	8,727	10.8%	35,690	7.1%	400,719	5.6%	241,279	5.5%	1,921,401	5.8%
Education	742	9.9%	1,994	9.2%	27,024	9.5%	17,386	9.8%	152,142	9.9%
Human health and social work activities	1,471	15.5%	3,762	14.2%	29,925	14.8%	17,275	14.5%	190,302	14.6%
Other	8,839	4.0%	30,528	4.1%	341,663	3.9%		4.0%	2,288,550	4.6%

Businesses/Supply Chain & GVA

- 13.5.23. According to UK Business Counts, there were approximately 7,510 and 279,355 active businesses within the CLMA Focus Area and the CLMA in 2023, respectively. This figure includes both VAT-registered and PAYE-based enterprises.
- 13.5.24. The proportion of construction businesses within the CLMA Focus Area is equal to 18%, which is greater than the proportion of construction businesses within the CLMA (15%), Lincolnshire (14%) and the East Midlands and England (both at 13%).
- 13.5.25. The number of energy transmission/production businesses within the CLMA Focus Area and the CLMA was recorded to be much lower in 2023, at 5 and 495, respectively. The proportion of energy businesses was recorded to be 0.1%, which is lower than proportions across the CLMA, Lincolnshire, East Midlands and England (all at 0.2%).
- 13.5.26. GVA is a measure of economic productivity that quantifies the contribution of an entity (company, industry or area) to an economy, producer or sector.
- 13.5.27. The following table sets out the estimated GVA (current price) and sectoral GVA in 2022 within the a construction sectors in the CLMA Focus Area, the CLMA, Lincolnshire, East Midlands and England. The most recent annual GVA produced by the Electricity, gas, steam and air conditioning supply sector is estimated at £111m.

Table 13.12 Estimated GVA

	CLMA Focus Area	Lincolnshire	CLMA	East Midlands	England
Construction	£411m	£1,225m	£16,640m	£9,473m	£120,684m
Total GVA (All Sectors)	£6,214m	£18,130m	£230,963m	£128,795m	£1,940,267m

Socio-economic Deprivation

- 13.5.28. **ES Volume 2, Figure 13.5: English Indices of Multiple Deprivation (2019)- Education, Skills and Training Domain and Figure 13.4: English Indices of Multiple Deprivation (2019) [EN010149/APP/6.2]** identify areas within the top 10%, 20% and 30% of deprivation indicators as reported by the English Indices of Deprivation (2019) across Lincolnshire for all domains, and specifically for the Education, Skills and Training domain. This identifies prevailing coastal deprivation, and urban deprivation in Lincoln, Boston and also close to the site within North Kesteven around Sleaford and Ruskington:

Qualifications and Apprenticeships

- 13.5.29. Approximately 28% of residents above the age of 16 within the CLMA Focus Area have higher or further education qualifications, which was equal to the proportion within the CLMA, higher than the proportion in Lincolnshire, and lower than proportions at the regional (29%) and national (34%) levels.
- 13.5.30. The proportion of the CLMA Focus Area's residents with no qualifications was 17%, lower than proportions recorded within the CLMA (21%), Lincolnshire (21%), East Midlands (19%) and England (18%) as detailed below in **Table 13.13**.

Table 13.13 Highest Level of Qualification

	CLMA Focus Area		Lincolnshire		CLMA		East Midlands		England	
	No.	%	No.	%	No.	%	No.	%	No.	%
No Qualifications	31,022	17%	131,263	21%	1,381,566	21%	778,906	19%	8,317,789	18%
GCSE/A-Level	85,836	46%	282,671	44%	2,849,256	42%	1,702,501	43%	18,367,305	40%
Higher/Further Education Qualifications	52,221	28%	163,928	26%	1,871,582	28%	1,163,784	29%	15,606,458	34%
Apprenticeship Level	11,189	6%	42,640	7%	412,562	6%	239,223	6%	2,446,935	5%
Other	4,814	3%	19,707	3%	191,493	3%	113,631	3%	1,268,468	3%

- 13.5.31. According to education statistics collected by the English government [Ref. 13-40], North Kesteven currently outperforms the national average of apprenticeship starts per 16-24, with this particularly being the case for advanced-level apprenticeships, while North Kesteven also outperform apprenticeship starts for intermediate-level apprenticeships.
- 13.5.32. In comparison, Lincoln is currently underperforming with regards to apprenticeship starts, as well as apprenticeship achievements.

Occupational Skills

- 13.5.33. 2021 Census data [Ref. 13-19] suggests that 41% of employed residents within the CLMA Focus Area are recorded to have higher skilled occupations (managerial, professional and associate professional occupations) which is greater than the proportion at the county level (39%), equal to proportions at the CLMA and East Midlands levels, but lower than the proportion at the national level (46%).
- 13.5.34. Despite this, the proportion of residents working in skilled trade occupations in the CLMA Focus Area and the CLMA (both at 11%) is recorded to be marginally greater than the proportion at the national level (10%).
- 13.5.35. When analysing the proportion of low-skilled occupations (sales and customer service, process, plant and machine operatives and elementary occupations) within both the CLMA Focus Area and the CLMA against the national average, both areas are recorded to have location quotients above 1 (at 1.14 and 1.17, respectively). This suggests that the concentration of low-skilled occupations in both the within the within the CLMA Focus Area and the CLMA is higher than the concentration nationally. Intuitively, the location quotients for the proportion of high-skilled occupations in both the CLMA Focus Area and the CLMA are recorded to be lower than one.

Table 13.14 Residential Workforce by Occupational Skill

	CLMA Focus Area		Lincolnshire		CLMA		East Midlands		England	
Occupations (%), Census 2021										
	No.	%	No.	%	No.	%	No.	%	No.	%
Managers, directors and senior officials	11,410	11%	42,437	12%	447,709	12%	272,040	12%	3,403,916	13%
Professional occupations	17,171	17%	51,791	15%	684,319	18%	397,272	17%	3,499,749	20%
Associate professional and technical occupations	13,752	13%	40,048	11%	456,879	12%	271,177	12%	3,499,749	13%
High Skilled Occupations	42,333	41%	134,186	39%	1,588,907	41%	940,489	41%	12,260,314	46%
Administrative and secretarial occupations	9,674	9%	31,322	9%	348,603	9%	206,288	9%	2,446,565	9%
Skilled trades occupations	11,205	11%	42,062	12%	423,000	11%	246,106	11%	2,683,139	10%
Caring, leisure and other service occupations	10,884	11%	35,695	10%	371,293	10%	215,486	9%	2,447,148	9%
Mid Skilled Occupations	31,853	31%	109,079	31%	1,142,896	30%	667,880	29%	7,576,852	29%
Sales and customer service occupations	8,675	8%	27,341	8%	305,279	8%	174,907	8%	1,972,553	7%
Process, plant and machine operatives	8,808	9%	35,293	10%	339,755	9%	201,645	9%	1,832,666	7%
Elementary occupations	11,941	12%	42,483	12%	479,364	12%	287,403	13%	2,762,829	10%
Low Skilled Occupations	29,424	28%	105,117	30%	1,124,398	29%	663,955	29%	6,568,048	30%
Occupations (Location Quotients), Census 2021										
High Skilled Occupations		0.88		0.83		0.89		0.89		-

	CLMA Focus Area	Lincolnshire	CLMA	East Midlands	England
Mid Skilled Occupations	1.07	1.09	1.03	1.02	-
Low Skilled Occupations	1.14	1.21	1.17	1.17	-

Agricultural Land and Employment

13.5.36. The Defra (2023) Agriculture in the UK Dashboard **[Ref. 13-34]** identifies that the East Midlands accounts for 26% of England’s agricultural land for arable crops. Lincolnshire accounts for around 383,000ha of arable agricultural land. Agriculture in the East Midlands supports employment for 36,116 people of which 13,026 are in Lincolnshire.

Table 13.15 Agricultural Land and Employment (FTE)

	Lincolnshire	East Midlands	England
Agricultural Land (Ha)	488,915	1,177,690	8,975,549
Full Time Employment (People)	6,852	16,883	147,553
Part Time Employment (People)	3,603	11,939	110,965
FTE Employment (FTE Jobs)	8,653	22,852	203,035
Casual Employment (People)	2,571	3,950	38,900
Average FTE Jobs per Ha	0.018	0.019	0.023

13.5.37. The amount of agricultural land and employment supported by agricultural land holdings in the East Midlands and Lincolnshire fluctuates annually but has remained relatively stable over time with variations of 5% around the mean since 2010 based on Defra statistics.

13.5.38. A review of BRES data on employment **[Ref. 13-39]** suggests that agriculture has accounted for an average of around 3.2% of employment in Lincolnshire over the last 7 years of published data (2015-2022) but that employment has fluctuated between 8,000 and 11,000 jobs during that time, largely independent of wider absolute change in total jobs in the economy.

Occupancy rates as a result of an influx of workforce staff to the area

13.5.39. Due to the peripatetic nature of construction work, the likelihood that non-local workforce staff would return home between shift patterns, the short tenures and minimum length of time requires for a legal Assured Shorthold Tenancy and the specialist nature of the work required by non-local workforce staff, it is not anticipated that workers would use private rented accommodation. Therefore, impacts on private rented accommodation has not been assessed.

13.5.40. It is therefore anticipated that non-local workforce staff would occupy temporary accommodation facilities such as hotels and bed and breakfast type facilities whilst working on site.

13.5.41. A desktop study undertaken in August 2024 to inform this assessment considered the number of private accommodation providers including

hotels and bed and breakfast type facilities located within 20km radius of the Order Limits. A search on 'booking.com' [Ref. 13-41], an online accommodation booking website, identified 112 accommodation providers within that area. Of the 112 accommodation providers, three were large scale, chain hotel providers including the Holiday Inn Lincoln, Holiday Inn Express and Best Western. All other accommodation providers within the study area are believed to be privately owned and not part of a larger hotel chain or brand.

- 13.5.42. Due to the peripatetic nature of construction work, the likelihood that non-local workers would return home between shift patterns, relatively short tenures and specialist nature of non-local workforce, and the minimum length of tenure required for a legal Assured Shorthold Tenancy, it is not anticipated that workers would use private rented accommodation.

Tourism

- 13.5.43. The Leisure Guide 2023- Heart of Lincolnshire [Ref. 13-42] describes that North Kesteven appeals to visitors due to the extensive provision of countryside and heritage assets, particularly aviation heritage. The area is attractive to those seeking to participate in countryside activities such as walking, cycling and horse riding. The Stepping Out network of footpaths comprises 28 walks, covering a 130-mile network across North Kesteven, and are used to encourage active lifestyles and tourism. There are also various indoor and sporting attractions in the region.
- 13.5.44. During 2020, North Kesteven received an estimated 1.5 million tourist visits. Tourist visits, and tourism business spend generated approximately £8.5 million of expenditure within the local economy supporting approximately 1000 Full Time Equivalent jobs [Ref. 13-43].
- 13.5.45. The North Kesteven District Council Annual Report 2022/23 estimated that around 220,687 visitors used the countryside Stepping Out Network activities and events between 2022 and 2023 [Ref. 13-29]. The area also welcomed approximately 860,433 visitors to indoor leisure facilities and sports outreach services.
- 13.5.46. Given the rural location of the Proposed Development, the closest tourism receptors are the various Stepping Out Network routes that either traverse or run adjacent to the Order Limits. The location of the routes are as follows:
- Stepping Out Blankney Circuit - crosses Springwell East and traverses the Order Limits in a north/south alignment in two areas;
 - Stepping Out Scopwick Loop - runs through Springwell East and runs in an east/ west alignment, crossing through the Site within the Order Limits;
 - Stepping Out Kirkby Green Loop - runs adjacent to Springwell East within the Order Limits;

- The Spires and Steeples Trail - runs through Springwell East in a north/south alignment; and
- Stepping Out Navenby and the Viking Way - located adjacent to the Springwell West outside of the Order Limits.

13.5.47. Further detail of the above routes is outlined in **ES Volume 2, Figure 2.2: Existing Public Rights of Way [EN010149/APP/6.2]**.

13.5.48. The Stepping Out network has been designed to link various routes across North Kesteven to improve accessibility and useability. Therefore, the Temple Bruer & Knights Templar route and Bloxham Circular Route are located beyond the study area, however are linked with the routes outlined in **paragraph 13.5.46** above.

13.5.49. The Leisure Guide 2023-Heart of Lincolnshire **[Ref. 13-42]** outlines the most popular tourist attractions. The tourism attractions and proximity to the Proposed Development are outlined below. These are all outside of the 3km study area but have been identified here for context:

- Temple Bruer Knights Templar Preceptory Tower (located approximately 3km west of the Order Limits);
- Cranwell Aviation Heritage Museum (located approximately 6km south of the Order Limits);
- Mrs Smith's Cottage (located approximately 6.5km north of the Order Limits);
- Congglesford Watermill (located approximately 7km south-east of the Order Limits);
- The Navigation House (located approximately 7km south-east of the Order Limits);
- Sleaford Town Centre (located approximately 8km south of the Order Limits);
- Heckington Windmill (located approximately 13km south-east of the Order Limits); and
- Whisby Nature Park (located approximately 18km north-west of the Order Limits).

13.5.50. RAF Digby is also located to the north of Springwell Central adjacent to the Order Limits and is a tourist destination due to its association with North Kesteven's aviation history with the RAF Digby Lima Sector Operations Room advertised as a tourist attraction via the Visit Lincolnshire website **[Ref.13-44]**.

Public Rights of Way

- 13.5.51. The recreational resources within the study area comprise a variety of public footpaths, byways, bridleways and various routes as part of the 'Stepping Out' network referenced above.
- 13.5.52. In Springwell East, there are four promoted walks which form part of the Stepping Out network developed by North Kesteven District Council, which are detailed below:
- Spires and Steeples Trail;
 - Scopwick Loop;
 - Kirkby Green Loop; and
 - Blankney Circuit.
- 13.5.53. Adjacent to Springwell West, there is one promoted walk which forms part of the Stepping Out Network developed by North Kesteven District Council, which is detailed below:
- Navenby & the Viking Loop.
- 13.5.54. Multiple Public Rights of Way and Bridleways are also located within the study area including:
- PRow Scop/737/1 traverses the Order Limits of Springwell East in a north/south alignment;
 - PRow Scop/7/3 traverses the Order Limits of Springwell East in a north/south alignment;
 - PRow Bridleway Scop/1135/3 crosses the Order Limits of Springwell East in an east/west alignment;
 - Restricted Byway Scop 10/2 runs along the Order Limits of Springwell East in an east/west alignment;
 - PRow Scop/3/1 runs in an east west alignment approximately 220m south of the Springwell East Order Limits;
 - PRow Restricted Byway Scop 11/3 runs in a north/south alignment along the Springwell East Order Limits;
 - PRow Scop 739/1 runs in a north/south alignment before moving west outside of the Order Limits of Springwell East
 - PRow Mtin/7/1 runs in an east west alignment adjacent to the Order Limits of Springwell East;
 - PRow Blan/4/3 runs in a north south direction adjacent to the Order Limits of Springwell East;

- PRow Blan/4/2 enters the Order Limits in an east/west direction before turning north and exiting the of Springwell East;
- PRow Blan/4/1 located approximately 150m north-west of Springwell East Order Limits;
- PRow Blan/3/1 located approximately 360m north-west of Springwell East Order Limits;
- PRow Scop/5/1 located approximately 200m south of the Springwell East Order Limits;
- PRow Scop/12/1 and Scop 13/1 cross the Order Limits at the centre in an east/west alignment;
- PRow Rows/5/1 runs adjacent to the Order Limits in an east/west alignment at the centre;
- PRow AshL/3/1 Located approximately 262m east of Springwell West Order Limits;
- PRow AshL/11/1 follows the alignment of the south of Springwell West Order Limits in an east west direction;
- PRow Brau/8/1 runs in a north-west direction adjacent to the Springwell West Order Limits; and
- PRow Wlgr/2/4 runs in a south-west/north-east direction and crosses the Order Limits of Springwell West.

Summary of baseline conditions relating to receptors scoped into assessment

- 13.5.55. The land use within the Order Limits comprises mostly land that is used for agricultural purposes. The farming operations are expected to remain operational through all stages of the Proposed Development. The agricultural land farmed within the Order Limits currently yields crops including; dried grass, lucerne, maize, spring barley, sugar beet, winter barley, vining peas and winter wheat.
- 13.5.56. There are also various PRow and routes of the Stepping Out network that traverse the Order Limits or run adjacent to the Order Limits. Many of these networks are used for tourist recreational activities and increase access to rural environments. The Stepping Out network appears to be of particular significance to the tourist economy and is heavily endorsed by the North Kesteven tourism office.
- 13.5.57. The majority of tourist receptors referenced within the North Kesteven Heart of Lincs Leisure Guide **[Ref. 13-42]** are beyond the study area and therefore impacts to amenity from these receptors during operation (including maintenance) and construction is likely to be minimal. The RAF Digby site is located adjacent to the Order Limits, which is a popular tourist attraction associated with the aviation heritage of North Kesteven.

- 13.5.58. Due to the rural location of the Proposed Development, there are a number of small, privately run accommodation providers within the 20km radius study area. Accommodation providers with a large number of beds are located in the nearest major settlement of Lincoln, approximately 14 miles from the Order Limits.
- 13.5.59. There are 12 solar farms and energy parks in the pre-application or decision phase located within Lincolnshire. 11 of the 12 solar farms are proposed to be built on land classified as BMV land.

Future baseline in the absence of the Proposed Development

- 13.5.60. Should the Proposed Development not proceed, the land would likely continue to be managed for agricultural purposes and yield a variety of crops with no impacts to the current informal farming operation.
- 13.5.61. It is possible that the level of tourism in the area, the level of local hospitality use, level of employment and subsequent GVA added and the level of educational attainment might increase or decrease in future without the Proposed Development.
- 13.5.62. In terms of the future baseline for labour market indicators, the East of England Forecasting Model (EEFM)² projects the following relevant key indicators:
- GVA for the construction sector (the contribution generated by labour and goods/materials to the economy);
 - Total jobs in construction (estimated based on projecting forward previous trends, taking into account the concentration of jobs in the sector compared to the concentration nationally); and
 - International Labour Organisation (ILO) unemployment – this is the government’s preferred measure of unemployment and includes those unemployed and actively seeking work (and are ready to work) and those not seeking work, but who would like to work and are ready to.
- 13.5.63. This sets out that in the East Midlands, during the Proposed Development’s construction phase the construction economy is anticipated to grow by 7,700 jobs or 4.7%. Total GVA in the region is anticipated to remain steady during that period.

² Designed to facilitate the setting of consistent housing and jobs targets, the EEFM provided a set of baseline forecasts prepared by a leading independent forecasting house (Cambridge Econometrics) for the East of England region and sub-regions (counties, unitaries and district authorities), the East Midlands and South East regions, and the Greater Cambridge Greater Peterborough, Hertfordshire, New Anglia, South East and South East Midlands LEP areas.

- 13.5.64. In addition to EEFM labour market indicators, the CITB and Construction Skills Network (CSN) generate research into the future for construction skills, employment and their drivers on a 4-year basis – the CSN Industry Outlook. This includes assumptions about infrastructure based on the Government’s National Infrastructure and Construction Pipeline (NCIP).
- 13.5.65. The latest report considers the period from 2024 to 2028 [Ref. 13-45] and sets out that:
- 17,500 extra construction workers are needed in the East Midlands by 2028 (3,500 annual recruitment requirement);
 - 1.9% output annual growth rate is anticipated;
 - The biggest gains in output would come from repair and maintenance, public non-housing and infrastructure sectors; and
 - The occupations with the strongest additional recruitment requirement levels are non-construction professional and technical office-based staff Labourers Painters and decorators – though this is unlikely to be the case for infrastructure works – employment in civil engineering is forecast to decrease.

13.6. Mitigation embedded into the design

- 13.6.1. This assessment has been based on the principle that measures have been ‘embedded’ into the design of the Proposed Development to remove potential significant effects as far as practicable, for example by the considered placement of infrastructure. **ES Volume 1, Chapter 3: Proposed Development Description [EN010149/APP/6.1]** and **ES Volume 3, Appendix 3.1: Project Parameters [EN010149/APP/6.3]** and the Design Commitments which form part of the **Design Approach Document [EN010149/APP/7.3]** identify measures that has been embedded into the design of the Proposed Development.
- 13.6.2. Embedded mitigation measures relevant to the population assessment are detailed in **Table 13.16**.

Table 13.16 Embedded mitigation relevant to population

Embedded mitigation measures relevant to population	Function	Securing mechanism
The existing PRoWs that cross the Site will be retained. Subject to the construction phasing and methodology, there may be a requirement to temporarily divert a PRoW during the construction phase, the detail of which will be	Embedded mitigation measure has been established to limit disruption and ensure the PRoW network can continue to be used throughout the	oPRoWPPMP [EN010149/APP/7.12]

Embedded mitigation measures relevant to population	Function	Securing mechanism
sought to be agreed with relevant key stakeholders, with an appropriate temporary alternative provided.	construction and operation (including maintenance) phases of the Proposed Development with minimal impacts to PRow users.	
<p>Perimeter fencing surrounding the Solar PV development will be offset at least 15m from either side of existing and proposed permanent statutory PRow .</p> <p>Independent Outdoor Equipment (transformer, switchgear and central inverters) and ITS will be offset at least 50m from all existing and proposed statutory PRow.</p>	Embedded mitigation measure has been established to minimise the level of visual change for users of the PRow network and ensure that PRow users can continue to be used the same as pre-development of the Site.	Design Commitments [EN010149/APP/7.4]

13.7. Assessment of likely effects (without additional mitigation)

Construction

Employment, Skills and Labour Market

- 13.7.1. The Proposed Development will support construction employment over the anticipated four-year construction programme. The Applicant estimates that a peak of 650 construction jobs will be supported for a short time, whilst the average number of workforce staff likely to be present on site across the construction phase is approximately 400 FTEs for four years.
- 13.7.2. Applying additionality assumptions (displacement, leakage) to this figure results in an estimated net additional employment average of:
 - approximately 300 to 360 FTEs per year in the CLMA; or
 - approximately 140 FTEs per year in the CLMA Focus Area.
- 13.7.3. The CLMA and CLMA Focus Area currently support 324,990 and 8,807 residents in construction employment respectively. As such, the net additional construction employment supported by the Proposed Development each year of the construction phase is equivalent to 0.09% to 0.11% in the CLMA and 1.6% in the CLMA Focus Area respectively.

- 13.7.4. The employment supported will be in a range of different positions and skillsets across civil construction sectors, electrical and mechanical skills including specialised solar installation professionals and some non-construction and supporting roles such as security, process and administrative and transportation roles. Employment supported will also be in a range of tenures depending on the work package/contract and contractor at each phase of construction.

Workforce Spending, GVA and Supply Chain Benefits

- 13.7.5. It is expected that the workforce will spend in the local economy and services, helping to sustain jobs across a range of sectors.
- 13.7.6. The gross effect based on average daily workforce expenditure on subsistence would be equivalent to approximately £1.2m on average per year during the construction phase.
- 13.7.7. However, as the number of workforce staff on-Site would fluctuate over the course of the construction programme, and there may be on-Site welfare and food/drink facilities, it is not possible to accurately quantify the level of this spending that would be captured locally.
- 13.7.8. Based on the average GVA per construction worker of £67,823, it can be estimated that the gross GVA supported by the activity required to construct the Proposed Development (an average of 400 Full Time Equivalent roles) would be £27.1m per year of construction.
- 13.7.9. Net equivalent figures (applying leakage and displacement) would be £20.6m to £24.7m in the CLMA or £9.7m in the CLMA Focus Area per year of construction respectively. This is equivalent to between 0.12% and 0.15% of existing construction GVA in the CLMA and 2.4% of construction GVA in the CLMA Focus Area respectively.
- 13.7.10. Investment in certain sectors results in indirect effects on others in an interconnected economy. This can lead to changes in production, sourcing, and distribution practices, influencing the entire supply chain ecosystem. As such it can be anticipated that investment will be retained locally and regionally, both within the construction and energy sectors but also outside it.
- 13.7.11. In addition to those jobs supported as a direct effect of the construction of the Proposed Development, further indirect employment will be supported as a result of spin-off and multiplier effects in the supply-chain, for example, in the manufacturing and supply of the solar PV panels and associated infrastructure.
- 13.7.12. Assuming that supply chain effects are retained at the CLMA scale, the supply chain benefits would support approx. 40 FTE jobs per year of construction.

13.7.13. The level of retention of supply chain benefit varies depending on the project and will be a commercial decision of the contractor who would seek to source materials and employ some local and some regional or even national sub-contractors. As such, the spatial context of supply chain effects could range from local to national depending on the supply and sourcing of construction materials and other supplies.

Agricultural Land Holdings

13.7.14. There are two agricultural operations within the study area. During the construction phase, it is expected that both operations will lose access to a portion of the land normally available. As the construction phase progresses this land loss is expected to increase. As a result, it is likely that the output of the farming operation will reduce year on year across the approximate four year construction period.

Agricultural Economy

13.7.15. The short-term, temporary land-take at the Site during the 4 year construction phase would result in 0.3% of agricultural land in Lincolnshire being taken out of agricultural use. Indicatively, based on County-wide average employment per ha this would result in the reduction of the indicative capacity for around 30 FTE jobs (total agricultural employment in Lincolnshire is estimated at approximately 8,653 FTE jobs).

13.7.16. Engagement with the agricultural operators has confirmed that during the construction (and operational period) the employment supported by the agricultural activities within the Site would continue and be redistributed on the operator's other sites nearby. The temporary reduction of agricultural land would not result in the net loss of employment.

Tourism

13.7.17. The construction phase may have effects on the tourist economy as a result of impacts to visitor experience and behaviours, and linked impacts to tourism business receptor performance, resulting from visual and noise construction effects.

13.7.18. Adverse impacts to tourism will mostly be temporary and experienced by users of PRoW and the Stepping Out network within and closest to the Order Limits.

13.7.19. The baseline conditions also identified RAF Digby as a tourist receptor located within the study area.

Visual changes

- 13.7.20. **ES Volume 1, Chapter 10: Landscape and Visual Impacts [EN010149/APP/6.1]** has assessed the visual effects of the Proposed Development on receptors within and outside the Order Limits.
- 13.7.21. The assessment concludes that beyond 3km there would be a low level of theoretical visibility of the Proposed Development and therefore there would be limited effects to tourist receptors beyond this area.
- 13.7.22. The Landscape and Visual assessment concludes that there would be no significant impacts to RAF Digby as the nearest above ground infrastructure would be located approximately 1km to the south-west of the receptor. Therefore, glimpses of the Proposed Development would be distant and viewed through the security fencing which surrounds RAF Digby. As there are no likely visual effects, it can be concluded that there will be no significant impacts to visitor experiences at RAF Digby and therefore no significant effects at this receptor.
- 13.7.23. The Landscape and Visual assessment concludes that there would be major significant visual effects at three receptors including:
- PRowS between Blankney, Scopwick and Kirkby Green extending to the Blankney Walks Lane and the railway located to the east of the Site within Springwell East (including several 'Stepping Out' walks);
 - PRowS between Bloxham, Ashby de la Launde and Health Road; and
 - PRowS and lanes north-west between A15 and Wellingore Heath including New England Land and Gorse Hill Lane.
- 13.7.24. The Landscape and Visual assessment concluded that there would be moderate significant effects at:
- PRow between RAF Digby and B1188 (Footpath R5/1);
 - Bloxholm Woods Local Nature Reserve Footpath; and
 - Spires and Steeples Trail.
- 13.7.25. During construction, significant visual effects are associated with large or medium scale visual change due to construction compounds, highways work and management and construction of the Proposed Development.
- 13.7.26. Significant visual effects from PRow and the Stepping Out Network may adversely impact the number of visitors to the area. The Stepping Out Network is heavily utilised by visitors in the area, encourages active lifestyles and the use of the countryside for tourist purposes. Visual impacts may detract from the visitor experience of the countryside and thus reduce the number of tourists to the study area. However, the Stepping Out Network has been designed to link various routes across

North Kesteven and therefore, the networks surrounding the Order Limits may experience a reduction in visitor numbers but the Stepping Out Network more widely may not be impacted. As other routes of the network may continue to be used, the residual impacts associated with loss of tourism such as the potential loss of business are not likely to be impacted.

Noise impacts

- 13.7.27. **ES Volume 1, Chapter 12: Noise and Vibration [EN010149/APP/6.1]** outlines that there are no significant effects associated with construction noise or construction traffic. Therefore, there will be no significant effects to tourism associated with construction noise.

Occupancy rates as a result of an influx of workforce staff to the area

- 13.7.28. During construction, staff may travel to the Site and choose to stay away from their home thus staying in local hospitality. This may in turn lead to adverse impacts to the tourism economy as there are less beds available within local hospitality businesses for tourists.
- 13.7.29. An analysis of the visitor accommodation available in the study area has been undertaken to assess the likely available capacity in terms of number of bedrooms, against potential demand from the construction workforce.
- 13.7.30. The peak number of employees anticipated to be on site at any one time during the construction phase is 650 workforce staff. A report published by CITB in 2023 stated that, approximately 6% of construction workers are reported to stay in temporary accommodation whilst working at their site **[Ref. 13-46]**.
- 13.7.31. An analysis of average temporary accommodation occupancy rates has been undertaken to assess the likely impact of the ingress of workforce staff requiring temporary accommodation. The analysis has been informed by desk-based research on national and regional occupancy rates published on the Visit England website **[Ref. 13-47]**. In the absence of more localised occupancy rate data, the average occupancy rate by bedroom nationally and in the east midlands is presented in **Table 13.17** below. The Proposed Development is located within the North Kesteven local authority area, which is within the East Midlands region.
- 13.7.32. To assess the likely impact of an influx of workforce staff to the area on occupancy rates, a 6% increase has been added to the average regional occupancy rates per month, to reflect the 5% of workforce staff that are likely to stay in temporary accommodation during the construction phase. 6% of the peak number of workforce staff for the Proposed Development is 39 people. A 6% uplift on the east midlands average occupancy rate is likely to encompass far more people than 33 people, however, as the

actual number within that average occupancy rate is unknown, a total uplift of 6% is deemed to consider the 'worst case scenario' relating to the potential increase in demand for accommodation.

Table 13.17 Average national and regional accommodation occupancy rates

Month	National average occupancy rate (%)	East midland's average occupancy rate (%)	East midlands average occupancy rate plus 6% (%)
January	65	64	70
February	73	73	79
March	75	75	81
April	77	74	80
May	78	75	81
June	83	78	84
July	84	79	85
August	80	75	81
September	83	80	86
October	80	77	83
November	78	76	82
December	73	65	71

- 13.7.33. **Table 13.17** shows that including the percentage of workforce staff likely to require temporary accommodation, accommodation rates within the region will not reach maximum capacity during any months of the year. This demonstrates that temporary accommodation providers are able to cater for the tourist population as well as any temporary workforce staff whilst leaving spare capacity for additional people should it be needed.
- 13.7.34. There are 112 accommodation providers available within the 20km study area. Given the rural location of the Proposed Development, the accommodation providers closest to the Order Limits are generally small scale, bed and breakfast type facilities. Three of the accommodation providers located within the 20km study area are located in the larger urban centre of Lincoln and can be categorised as large, chain budget hotels.
- 13.7.35. It is assumed that workers that are not local to the area will stay in the larger urban centres. This is due to a greater provision of larger scale, budget accommodation providers that are focused in urban areas as opposed to the rural area that hosts the Proposed Development. The largest urban centre within the study area is Lincoln, located approximately 14 miles from the Order Limits. Three of the accommodation providers identified in the baseline can be classified as larger, chain budget hotels that could cater for any surplus workforce staff. Data derived from a UK budget hotel website of a similar scale to those identified within the study area, shows that there are an average of 76 rooms per chain budget hotel within the UK, with each room having approximately two beds. Therefore the average chain budget hotel has approximately 156 beds [Ref. 13-48]. There are three similar scale hotel providers within the study area and therefore it has been estimated that there are approximately 468 beds available at the chain budget hotels located within the study area.
- 13.7.36. The increased level of occupancy that may result from an influx of workforce staff to the area will likely mean that accommodation providers see an increase in revenue compared to previous years i.e. without such an increase in people wanting to stay in the area. Workforce staff would likely want to stay overnight throughout all times of year and therefore may provide more income during months that would normally see less occupants wanting to stay. Thus, increases in the level of occupancy can be a beneficial effect for businesses.
- 13.7.37. The construction period is of a short to medium term and is temporary, and therefore any such impacts to accommodation availability for tourists would also be short to medium term and temporary. It is anticipated that workforce staff will require accommodation throughout the week but not at weekends. The weekend period is when tourists can most likely be expected to require accommodation and therefore effects to tourism as a result of impacts to occupancy rates associated with an influx of workforce

staff to the area are not likely to coincide as they will be using the accommodation during different periods of the week. Therefore, the amount of temporary accommodation available for tourists is unlikely to be impacted.

- 13.7.38. In addition, it is likely that some accommodation providers would benefit from the influx in workforce staff to the area, particularly during the winter period, when uptake of temporary accommodation for tourist uses are generally lower. Again, such benefits would be short term and temporary in nature.

Walkers, cyclists and horse riders

- 13.7.39. Existing PRow may be stopped-up for a duration of up to six months during the construction phase. The Applicant seeks to limit interference of the Proposed Development with existing PRow through appropriate management and diversions during construction, whilst proposing mitigation measures where required or enhancements to the existing network.
- 13.7.40. Diversions or local management during construction is anticipated to be required for the PRow within the Order Limits. The Applicant will provide the diversion/alternative routing as appropriate prior to construction to ensure that users can continue to enjoy the local area during the construction phase of the Proposed Development. Any required temporary closure and diversion will be agreed with Lincolnshire County Council PRow officers, likely to be for periods of 6-months at a time.
- 13.7.41. Detailed management measures will be subject to agreement with relevant officers within the relevant planning authorities which will be detailed in a PRow and Permissive Path Management Plan (PRowPPMP) prior to the commencement of construction works, which is secured in the **Draft DCO [EN010149/APP/3.1]**.
- 13.7.42. The Spires and Steeples Trail is part of the Stepping Out network and traverses Springwell East in a north/south alignment. Any works near to this trail and all other PRow within the Order Limits will be undertaken in line with the **oPRowPPMP [EN010149/APP/7.12]**.

Operation (including maintenance)

Employment, Skills and Labour Market

- 13.7.43. The Proposed Development will support operational employment over the anticipated long-term, temporary operational (including maintenance) phase. The Applicant estimates that the operational (including maintenance) phase would support around 24 FTE jobs, with some periods requiring short-term, temporary iterative increases in onsite

personnel for example for non-routine maintenance of the panels and connectors, site management and environmental management.

- 13.7.44. Applying additionality assumptions (displacement, leakage) to this figure results in an estimated net additional employment average of approx. 20 FTEs in Lincolnshire.
- 13.7.45. Lincolnshire currently supports 600 residents in energy sector employment. As such, the net additional operational employment supported by the Proposed Development is equivalent to 4% of energy sector employment in Lincolnshire.
- 13.7.46. The employment supported would include electrical engineering roles likely to require higher level skills and qualifications, as well as site management, administrative and process/elementary occupations including security and maintenance.

Workforce Spending, GVA and Supply Chain Benefits

- 13.7.47. It is expected that the workforce will spend in the local economy and services, helping to sustain jobs across a range of sectors.
- 13.7.48. The gross effect based on average daily workforce expenditure on subsistence would be equivalent to approximately £74,000 on average per year during the operational (including maintenance) phase.
- 13.7.49. Based on the average GVA per energy sector worker of £185,000, it can be estimated that the gross GVA supported by the activity required to operate the Proposed Development (an average of 24 Full Time Equivalent roles) would be £4.4m per year of operation.
- 13.7.50. Net equivalent figures (applying leakage and displacement) would be £3.7m in Lincolnshire. This is equivalent to around 3.3% of energy sector GVA in Lincolnshire.
- 13.7.51. Investment in certain sectors results in indirect effects on others in an interconnected economy. This can lead to changes in production, sourcing, and distribution practices, influencing the entire supply chain ecosystem. As such it can be anticipated that investment will be retained locally and regionally, both within the energy sector but also outside it.
- 13.7.52. Assuming that supply chain effects are retained at the Lincolnshire scale, the supply chain benefits would support approx. 2 FTE jobs per year of operation.

Agricultural Land Holdings & Agricultural Economy

- 13.7.53. The temporary land-take at the Site during the operational (including maintenance) phase would result in 0.3% of agricultural land in

Lincolnshire being taken out of agricultural use. Indicatively, based on County-wide average employment per ha this would result in the reduction of the indicative capacity for around 30 FTE jobs (total agricultural employment in Lincolnshire is estimated at approximately 8,653 FTE jobs).

- 13.7.54. Engagement with the agricultural operators has confirmed that during the operational period the employment supported by the agricultural activities within the Site would continue and be redistributed on the operator's other sites nearby. The temporary reduction of agricultural land would not result in the net loss of employment.
- 13.7.55. The land within the Order Limits that will be temporarily used during the construction phase to install the cabling will continue to be used for farming operations during the operational (including maintenance) phase.

Tourism

- 13.7.56. The operational (including maintenance) phase may have an impact on the tourist economy with regard to influencing visitor experience and behaviours, and linked impact on tourism business receptor performance, resulting from visual and noise effects associated with the Proposed Development infrastructure.
- 13.7.57. Adverse impacts to tourism will be experienced by users of PRow and the Stepping Out network within and closest to the Order Limits.
- 13.7.58. The baseline conditions also identified RAF Digby as a tourist receptor located within the study area.

Visual change

- 13.7.59. **ES Volume 1, Chapter 10: Landscape and Visual Impacts [EN010149/APP/6.1]** has assessed the visual effects of the Proposed Development on receptors within and outside of the Order Limits. The assessment concluded that beyond 3km there would be a low level of theoretical visibility of the Proposed Development.
- 13.7.60. The Landscape and Visual assessment concludes that there would be no significant impacts to RAF Digby as the nearest above ground infrastructure would be located approximately 1km to the south-west of the receptor. Therefore, glimpses of the Proposed Development would be distant and viewed through the security fencing which surrounds RAF Digby. As there are no visual effects, it can be concluded that there will be no effects to tourism as a result of impacts to visual amenity at RAF Digby.
- 13.7.61. Potential effects to visual amenity during the operational (including maintenance) phase were assessed during year one and year 10 of operation.

- 13.7.62. The Landscape and Visual chapter concluded that there would be major/moderate significant effects to the following receptors:
- PRowWs between Blankney, Scopwick and Kirkby Green extending up to Blankney Walks Land and the railway on the east of the Site (including several 'Stepping Out' walks);
 - PRow between RAF Digby and B1188 (Footpath R5/1);
 - PRowWs and lanes north-west between A15 and Wellingore Heath including New England Land and Gorse Hill Lane; and
 - Spires and Steeples Trail.
- 13.7.63. Significant visual effects from PRow and the Stepping Out Network may adversely impact the number of visitors to the area. The Stepping Out Network is heavily utilised by visitors in the area, encourages active lifestyles and the use of the countryside for tourist purposes. Visual impacts may detract from the visitor experience of the countryside and thus reduce the number of tourists to the study area. However, the Stepping Out Network has been designed to link various routes across North Kesteven and therefore, the networks surrounding the Order Limits may experience a reduction in visitor numbers, but the Stepping Out Network more widely will not be impacted. As other routes of the network may continue to be used, the residual impacts associated with loss of visitors such as the potential loss of business will not likely be impacted.

Noise impacts

- 13.7.64. **ES Volume 1, Chapter 12: Noise and Vibration [EN010149/APP/6.1]**, outlines that there are no significant effects associated with construction noise or construction traffic. Therefore, there will be no significant effects on tourism associated with construction noise.

Walkers, cyclists and horse riders

- 13.7.65. During the operational (including maintenance) phase, changes to visual amenity are likely to have the largest impact on PRow. Impacts to visual amenity from PRow are addressed further in **ES Volume 1, Chapter 10: Landscape and Visual [EN010149/APP/6.1]**.
- 13.7.66. Details and specifications including maintenance agreements for the new permissive links and signage will be agreed between the Applicant and the relevant planning authorities as part of the PRowWPPMP, prior to implementation and secured by Requirement in the **Draft DCO [EN010149/APP/3.1]**.
- 13.7.67. The Proposed Development includes several proposed PRow and permissive paths which will be available during the operational (including maintenance) phase.

13.7.68. These proposed PRoW and permissive paths have been designed to retain and enhance recreational connectivity across the Site. Details of these new routes can be found in **ES Volume 2, Figure 3.3: Green Infrastructure Parameters [EN010149/APP/6.2]** and will be secured within the **Outline Landscape and Ecology Management Plan (oLEMP) [EN010149/APP/7.9]**. The proposed PRoW and permissive paths are as follows:

- Proposed new PRoW linking RAF Digby to Scopwick;
- Proposed new permissive path from Heath Road to link to the existing PRoW between RAF Digby and Rowston and to enable a circular walking route;
- Proposed new PRoW to provide a connection between the existing PRoW west of the A15 (near Navenby Lane) to New England Lane;
- Proposed new permissive path along the western edge of the Proposed Development linking New England Lane to Temple Road, north of Brauncewell;
- Proposed new PRoW from Temple Road (north of Brauncewell) to the Bloxham Woods Car Park to provide a connection across the A15;
- Proposed new permissive path linking Bloxholm Wood to Brauncewell Village;
- Proposed new permissive paths creating a circular walk at Bloxholm Wood;
- Improvements to the Bloxham Wood access on Heath Road; and
- Proposed enhancement to the existing PRoW between Scopwick and Blankey.

13.7.69. The Applicant is proposing to enhance approximately 2km of existing PRoW and to provide approximately 3.5km of additional PRoW and 8.6km of permissive footpaths.

13.7.70. By increasing and enhancing the PRoW and permissive paths network, local residents and tourists from outside the area are more likely to utilise these links as they are more accessible.

Decommissioning

13.7.71. The likely level of potential effect during decommissioning is expected to be similar to or less than that experienced during construction and therefore the potential effects during construction (described above) are expected to represent the potential effects during decommissioning.

13.8. Additional mitigation

- 13.8.1. An **oPRoWPPMP [EN010149/APP/7.12]** forms part of the DCO Application. This includes a schedule of PRoW within the Site and outlines the proposed measures to manage any requirements to manage or temporarily close PRoW within the study area during construction. This will be developed into a PRoWPPMP by the Principal contractor and will help to ensure that any diversions are as safe and easy to access as possible for any users.
- 13.8.2. No further additional mitigation measures over and above those stated in the other technical chapters are required to avoid or minimise the population effects identified in this chapter.

13.9. Assessment of residual effects (with additional mitigation)

Construction

Employment, Skills and Labour Market

- 13.9.1. Net additional construction employment supported by the Proposed Development is estimated at around 300 to 360 FTE jobs in the CLMA per year of construction, and 140 within the CLMA Focus Area.
- 13.9.2. The labour markets at each scale are large in scale, with high concentrations of civils sector employment and a range of skills. As such the effect is considered to be summarised as:
- A **minor** magnitude of impact (change) on a **low** value (sensitivity) receptor at the CLMA level resulting in a **direct, temporary, and neutral/slight beneficial (not significant)** effect.
 - A **low** magnitude of impact (change) on a **medium** value (sensitivity) receptor at the CLMA level resulting in a **direct, temporary, and slight beneficial (not significant)** effect.

Workforce Spending, GVA and Supply Chain Benefits

- 13.9.3. Construction GVA is substantial at an estimated at £16.6bn in the CLMA and £411m in the CLMA Focus Area each year. The value (sensitivity) of the receptor is therefore considered to be **low** at both scales. The magnitude of impact (change) in terms of spending, GVA and multiplier effects in the supply chain is considered to be **minor** at the both scales.
- 13.9.1. Therefore, there is likely to be an **indirect, temporary, neutral/slight beneficial (not significant)** effect on the contribution to construction output the at the CLMA and CLMA Focus Area scale during the construction phase.

Agricultural Economy

- 13.9.2. The agricultural economy in Lincolnshire is substantial and subject to annual and seasonal variations in employment supported which is far greater than the scale of the indicative loss in employment capacity (and actual known employment).
- 13.9.3. As such, based on the indicative likely change in employment and agricultural land during the construction phase, there is likely to be a **minor** magnitude of impact (change) on a **medium** value (sensitivity) receptor (the agricultural economy of Lincolnshire) resulting in a **slight adverse (not significant)** effect which would be temporary.

Agricultural Land Holdings

- 13.9.4. The value (sensitivity) of the agricultural land holdings as a receptor is **medium** and the magnitude of impact (change) expected at this operation is **minor**. Therefore, there is likely to be a temporary **slight adverse** residual effect on agricultural land holdings, which is considered to be **not significant**.

Tourism

- 13.9.5. The value (sensitivity) of tourism as a receptor is **medium** and the magnitude of impact (change) expected during construction is **minor**. Therefore, there is likely to be a temporary **slight adverse** residual effect on tourism, which is considered to be **not significant**.

Occupancy rates as a result of an influx of workforce staff to the area

- 13.9.6. The value (sensitivity) of occupancy rates within the study area is considered to be **medium**, based on the assumption that such rates have some capacity to absorb or respond to change and may result in some perceptible socio-economic loss or gain. The magnitude of impact (change) following additional mitigation, is **minor**, as the increased level of occupancy that may result from an influx of workforce staff to the area will likely mean that accommodation providers see an increase in revenue compared to previous years i.e. without such an increase in people wanting to stay in the area. Workforce staff would likely want to stay overnight throughout all times of year and therefore may provide more income during months that would normally see less occupants wanting to stay. Therefore, there is likely to be a temporary **slight beneficial** residual effect on occupancy rates as a result of an influx of workforce staff to the area, which is considered to be **not significant**.
- 13.9.7. Conversely, an influx of workforce staff to the area may result in impacts to accommodation availability for tourists. However, any such impact would be short to medium term and temporary. It is further anticipated that workforce staff will require accommodation throughout the week but not at

weekends. The weekend period is when tourists can most likely be expected to require accommodation and therefore effects to tourism as a result of impacts to occupancy rates associated with an influx of workforce staff to the area are not likely to coincide as they will be using the accommodation during different periods of the week. Therefore, the amount of temporary accommodation available for tourists is unlikely to be impacted. In addition, it is likely that some accommodation providers would benefit from the influx in workforce staff to the area, particularly during the winter period, when uptake of temporary accommodation for tourist uses are generally lower. Again, such benefits would be short term and temporary in nature. The magnitude of impact (change), following additional mitigation, is therefore considered to be **minor**, resulting in a temporary **slight adverse** residual effect, which is considered to be **not significant**.

Walkers, cyclists and horse riders

- 13.9.8. The value (sensitivity) of users of PRow and the Stepping Out Network (i.e. walkers, cyclists and horse riders) as receptors is **high** and the magnitude of impact (change), following additional mitigation, is **negligible**. Therefore, there is likely to be a temporary **slight adverse** residual effect on walkers, cyclists and horse riders, which is considered to be **not significant**.

Operation (including maintenance)

Employment, skills and labour market

- 13.9.9. Net additional operational employment supported by the Proposed Development is estimated at around 20 FTE jobs in Lincolnshire.
- 13.9.10. The labour market at this scale is relatively large in scale, and is considered a priority sector for employment growth by regional, local and national policy. As such there is considered to be a **minor** magnitude of impact (change) on a **medium** value (sensitivity) receptor resulting in a direct, temporary (but long-term), and **slight beneficial (not significant)** effect.

Workforce spending, GVA and supply chain benefits

- 13.9.11. Net additional operational GVA for the Proposed Development is estimated at £3.7m in Lincolnshire each year, within an energy economy currently producing £111m of GVA. The value (sensitivity) of the receptor is therefore considered to be **low**. The magnitude of impact (change) in terms of spending, GVA and multiplier effects in the supply chain is considered to be **minor**.

- 13.9.12. Therefore, there is likely to be an indirect, temporary (but long-term), **neutral not significant** effect on the contribution to energy sector output in Lincolnshire.

Agricultural Economy

- 13.9.13. The agricultural economy in Lincolnshire is substantial and subject to annual and seasonal variations in employment supported which is far greater than the scale of the indicative loss in employment capacity (and actual known employment).
- 13.9.14. As such, based on the indicative likely change in employment capacity and agricultural land during the operational (including maintenance) phase, there is likely to be a **minor** magnitude of impact (change) on a **medium** value (sensitivity) receptor (the agricultural economy of Lincolnshire) resulting in a **slight adverse (not significant)** effect which would be temporary.

Agricultural Land Holdings

- 13.9.15. The value (sensitivity) of the agricultural land holdings as a receptor is **medium** and the magnitude of impact (change) expected at this operation is **minor**. Therefore, there is likely to be a long term **slight adverse** residual effect on agricultural land holdings which is considered to be **not significant**.

Tourism

- 13.9.16. The value (sensitivity) of tourism as a receptor is **medium** and the magnitude of impact (change) expected to be **minor**. Therefore, there is likely to be a long term **slight adverse** residual effect on tourism which is considered to be **not significant**.

Walkers, cyclists and horse riders

- 13.9.17. The value (sensitivity) of users of PRow and the Stepping Out Network (i.e. walkers, cyclists and horse riders) as receptors is **high** and the magnitude of impact (change), following additional mitigation, is **negligible**. Therefore, there is likely to be a long term **slight beneficial** residual effect on users of PRow due to the creation of new PRow and permissive paths, which is considered to be **not significant**.

Decommissioning

- 13.9.18. The likely level of effect during decommissioning is expected to be similar to or less than that experienced during construction and therefore the significance of effect during construction is expected to represent the level of effect during decommissioning i.e. all effects considered within this assessment are deemed to be **not significant**.

13.9.19. It should be noted that the scale of direct and indirect socio-economic effects during decommissioning is not possible to assess quantitatively due to the uncertainty over the nature and costs of this activity.

13.10. Opportunities for enhancement

13.10.1. To help maximise the positive gain for the local economy from the beneficial effect arising from employment generation during the construction and operational (including maintenance) phase, an **Outline Employment, Skills and Supply Chain Plan [EN010149/APP/7.20]** supports the DCO Application.

13.10.2. This details commitments to work with partners and the local and regional construction supply chain to enhance the proportion of activities that can be accessed by local people (both in employment, unemployed and economically inactive or outside of the current labour market) and firms with relevant experience and competencies. The main objectives of the **Outline Employment, Skills and Supply Chain Plan [EN010149/APP/7.20]** are detailed below:

- Demonstrate the use of local labour from within the lead contractor's organisation;
- Where economically and practically feasible, procure goods and services from local contractors, sub-contractors and suppliers to support the employment of the local community;
- Demonstrate recruitment and training opportunities within the lead contractor's organisation and provide opportunities for upskilling local people;
- Provide opportunities for local residents to access employment opportunities created during the construction phase; and
- Support the development of skills within the local community.

13.10.3. Opportunities for how this can be achieved are being considered but may be delivered through the applicant, main construction organisation, third party organisation or financial contribution to a relevant existing organisation.

13.10.4. Through this enhancement strategy, existing workers and firms may be able to up/re-skill to the benefit of the Proposed Development but also supporting their own career development and strategic policy objectives to improve the skills base in green construction sectors that will aid future cumulative demand for similar skills across the Region's renewable energy sector.

13.10.5. Opportunities for environmental enhancement in relation to population are detailed further in the **Design Approach Document [EN010149/APP/7.3]** have not been considered within this assessment.

13.11. Monitoring requirements

13.11.1. Monitoring is required to ensure that the commitments made in the **Outline Employment, Skills and Supply Chain Plan [EN010149/APP/7.20]** are delivered throughout all phases of the Proposed Development.

13.11.2. There are no further monitoring requirements associated with any of the scoped in elements of this population assessment.

13.12. Difficulties and uncertainties

13.12.1. This chapter has used third party data and statistics, some of which are subject to regular update. However, the Applicant considers that the data and statistics used in this assessment present a robust reflection of the existing baseline conditions. Any changes that may have occurred between the time the data and statistics were collected and the submission of the DCO Application are not considered to have adversely affected the Applicant's ability to undertake the assessment, nor indeed its conclusions.

13.12.2. There are no standard technical significance criteria relating to the assessment of socio-economic effects. The assessment has been made against a benchmark of current socio-economic baseline conditions prevailing at, within, or around the appropriate spatial study area for each effect.

13.12.3. As with any dataset, baseline data will always change over time. The most recent published data sources have been used in this assessment; however, it should be noted that in some instances this data may be older than the true baseline. This is an unavoidable limitation that is not considered to adversely impact the validity of the assessment undertaken to identify the likely significant socio-economic effects.

13.13. Summary

13.13.1. A summary of this assessment is presented in **Table 13.18**. The sensitivity of each receptor is identified alongside any relevant embedded mitigation and the potential effects that could arise on those receptors. Any proposed additional mitigation measures are stated, and the magnitude of impact and residual effects then assessed. Finally, any monitoring requirements are stated where applicable.

Table 13.18 Assessment summary

Receptor/ matter	Value (sensitivity) of the receptor	Embedded mitigation	Potential effects (without additional mitigation)	Additional mitigation	Magnitude of impact (change)	Residual effect (with additional mitigation)	Monitoring requirement
Key: + = positive, - = negative, D = direct, I = indirect, ST = short-term, MT = medium-term, LT = long-term, P = Permanent, T = temporary							
Construction phase Employment Skills and Labour Market	Low (CLMA) Medium (CLMA Focus Area)	N/A	An increase in temporary construction related employment opportunities.	N/A	Minor	Neutral/slight beneficial (+) (D) (ST) (T) Not significant	N/A
Construction phase Workforce Spending, GVA and Supply Chain	Low	N/A	An increase in temporary construction GVA and economic activity.	N/A	Minor	Neutral/slight (+) (I) (ST) (T) Not significant	N/A
Construction phase	Medium	N/A	Potential loss of land used	N/A	Minor	Slight adverse (-) (D) (LT) (T)	N/A

Receptor/ matter	Value (sensitivity) of the receptor	Embedded mitigation	Potential effects (without additional mitigation)	Additional mitigation	Magnitude of impact (change)	Residual effect (with additional mitigation)	Monitoring requirement
<p>Key: + = positive, - = negative, D = direct, I = indirect, ST = short-term, MT = medium-term, LT = long-term, P = Permanent, T = temporary</p>							
Agricultural Land Holdings			for agricultural purposes.			Not significant	
Construction phase Agricultural Economy	Medium	N/A	Loss of indicative employment capacity/actual employment	N/A	Minor	Slight adverse (-) (D) (ST) (T) Not significant	N/A
Construction phase Tourism	Medium	N/A	Potential landscape and visual and noise impacts to nearby tourist receptors during the construction period.	N/A	Minor	Slight adverse (-) (I) (ST) (T) Not significant	N/A

Receptor/ matter	Value (sensitivity) of the receptor	Embedded mitigation	Potential effects (without additional mitigation)	Additional mitigation	Magnitude of impact (change)	Residual effect (with additional mitigation)	Monitoring requirement
Key: + = positive, - = negative, D = direct, I = indirect, ST = short-term, MT = medium-term, LT = long-term, P = Permanent, T = temporary							
Construction phase Occupancy rates as a result of an influx of workforce staff to the area	Medium	N/A	There will be a temporary increase in the uptake of temporary accommodation beds in the local area.	N/A	Minor	Slight beneficial (-) (I) (ST) (T) Not significant	N/A
Construction phase Availability of accommodation for tourists as a result of an influx of workforce staff to the area	Medium	N/A	There will be an temporary increase in the uptake of temporary accommodation beds which may reduce the availability for tourists.	N/A	Minor	Slight adverse (-) (I) (ST) (T) Not significant	N/A

Receptor/ matter	Value (sensitivity) of the receptor	Embedded mitigation	Potential effects (without additional mitigation)	Additional mitigation	Magnitude of impact (change)	Residual effect (with additional mitigation)	Monitoring requirement
<p>Key: + = positive, - = negative, D = direct, I = indirect, ST = short-term, MT = medium-term, LT = long-term, P = Permanent, T = temporary</p>							
Construction phase Walkers, cyclists and horse riders	High	Existing PRow that cross the site will be retained. However, there may be temporary diversions during the construction phase. Any diversions will be discussed with the related stakeholders.	Temporary diversions to PRow during the construction phase.	N/A	Negligible	Slight adverse (-) (D) (ST) (T) Not significant	N/A
Operational (including	Medium	N/A	An increase in temporary energy sector related	N/A	Minor	Slight beneficial (+) (D) (LT) (T)	N/A

Receptor/ matter	Value (sensitivity) of the receptor	Embedded mitigation	Potential effects (without additional mitigation)	Additional mitigation	Magnitude of impact (change)	Residual effect (with additional mitigation)	Monitoring requirement
<p>Key: + = positive, - = negative, D = direct, I = indirect, ST = short-term, MT = medium-term, LT = long-term, P = Permanent, T = temporary</p>							
maintenance) phase Employment Skills and Labour Market			employment opportunities.			Not significant	
Operational (including maintenance) phase Workforce Spending, GVA and Supply Chain	Low	N/A	An increase in temporary operational energy sector GVA and economic activity.	N/A	Minor	Neutral (+) (I) (LT) (T) Not significant	N/A
Operational (including maintenance) Phase	Medium	N/A	Loss of land used for agricultural purposes that provide	N/A	Minor	Slight adverse (-) (D) (LT) (T)	N/A

Receptor/ matter	Value (sensitivity) of the receptor	Embedded mitigation	Potential effects (without additional mitigation)	Additional mitigation	Magnitude of impact (change)	Residual effect (with additional mitigation)	Monitoring requirement
<p>Key: + = positive, - = negative, D = direct, I = indirect, ST = short-term, MT = medium-term, LT = long-term, P = Permanent, T = temporary</p>							
Agricultural Land Holdings			employment opportunities.			Not significant	
Operational (including maintenance) phase	Medium	N/A	Loss of indicative employment capacity/actual employment	N/A	Minor	Slight adverse (-) (D) (LT) (T)	N/A
Agricultural Economy						Not significant	
Operational (including maintenance) phase	Medium	Potential impact.	Potential for adverse impacts to tourism as a result of adverse visual impacts.	N/A	Minor	Slight adverse (-) (I) (LT) (T)	N/A
Tourism						Not significant	

Receptor/ matter	Value (sensitivity) of the receptor	Embedded mitigation	Potential effects (without additional mitigation)	Additional mitigation	Magnitude of impact (change)	Residual effect (with additional mitigation)	Monitoring requirement
Key: + = positive, - = negative, D = direct, I = indirect, ST = short-term, MT = medium-term, LT = long-term, P = Permanent, T = temporary							
Operational (including maintenance) phase Walkers, cyclists and horse riders	High	N/A	An increase in use and connectivity of PRoW and permissive paths in the study area .	N/A	Negligible	Slight beneficial (+) (D) (LT) (P) Not significant	N/A
Decommissioning All receptors/matters	See construction rows above	See construction rows above	See construction rows above	See construction rows above	See construction rows above	See construction rows above	See construction rows above

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