



Fosse Green Energy

Preliminary Environmental Information Report

VOLUME

1

**Chapter 12: Socio-Economics and
Land Use**

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Prepared for:

Fosse Green Energy Limited

Prepared by:

AECOM Limited

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12. Socio-Economics and Land Use

12.1 Introduction

- 12.1.1 This chapter of the Preliminary Environmental Information Report (PEI Report) provides a baseline report and presents the findings of an assessment of the likely significant effects from Socio-Economics and Land Use as a result of the Proposed Development. For more details about the Proposed Development, refer to **PEI Report Volume 1, Chapter 3: The Proposed Development**.
- 12.1.2 This chapter identifies and proposes measures to address the potential impacts and likely significant effects of the Proposed Development on Socio-Economics and Land Use during the construction, operation, and decommissioning phases of the Proposed Development.
- 12.1.3 This chapter is supported by the following figures in **PEI Report Volume 2**:
- a. **Figure 12-1: 60-Minute Drive Time from the Site Boundary;**
 - b. **Figure 12-2: 30-Minute Drive Time from the Site Boundary;**
 - c. **Figure 12-3: Study Area 500m; and**
 - d. **Figure 12-4: Study Area 2000m.**
- 12.1.4 This chapter is supported by the following appendices in **PEI Report Volume 3**:
- a. **Appendix 12-A: Socio-Economics Policy and Legislation;**
 - b. **Appendix 12-B: Agricultural Land Classification Report; and**
 - c. **Appendix 12-C: Minerals Assessment Report.**

12.2 Legislation and Planning Policy

- 12.2.1 There is no applicable legislation specific to the assessment of Socio-Economics and Land Use. Planning policy and guidance relating to Socio-Economics and Land Use, and pertinent to the Proposed Development is presented below.

National Planning Policy

- 12.2.2 The National Policy Statement (NPS) EN-1 (Ref 12-4) designated in January 2024, includes a number of requirements relating to socio-economics with particular reference to paragraphs:
- a. 4.1.5, 4.1.6 and 4.1.7 in relation to adverse effects and benefits;
 - b. 5.13 in relation to socio-economics; and
 - c. 5.11.12 in relation to impacts on Best and Most Versatile (BMV) land.

- 12.2.3 NPS EN-3 (Ref 12-5) includes additional consideration of socio-economic impacts associated specifically with solar photovoltaic generation, in paragraphs 2.48.13 to 2.48.15 regarding agricultural land classification.
- 12.2.4 National Planning Policy Framework (Ref 12-7), last updated in December 2023, contains several relevant sections, with particular reference to Section 6: Building a strong, competitive economy (paragraphs 85-89), Section 12: Achieving well designed places (paragraphs 131-141) and Section 15: Conserving and enhancing the natural environment (paragraph 180, in relation to impacts on best and most versatile agricultural land) and Section 17 (Facilitating the sustainable use of minerals).
- 12.2.5 National Economic Development Policy (Ref 12-8) refers to the Government's Industrial Strategy White Paper ambitions to increase productivity and drive growth. Clean Growth is highlighted as providing an opportunity lead the world in the development, manufacture and use of low carbon technologies.
- 12.2.6 Planning Practice Guidance (PPG) (Ref 12-9) refers to guidance on planning and the economy and the potential future needs of the population in terms of economic development, jobs and employment opportunities.

Regional Guidance

- 12.2.7 Greater Lincolnshire Local Enterprise Partnership Local Industrial Strategy (Ref 12-10) refers to aspirations to pioneer the industrial decarbonisation sector, building upon local industrial specialisms. Reference is also made to employment and skills ambitions. The Proposed Development will help contribute to the aims of the Local Industrial Strategy.

Local Planning Policy

- 12.2.8 Central Lincolnshire Local Plan (2023) (Ref 12-11) includes Policy S2 (Growth Levels and Distribution), Policy S14 (Renewable Energy), S5 (Development in the Countryside), Policy S48 (Walking and Cycling Infrastructure), Policy S0 (Community Facilities), and Policy S67 Best and Most Versatile Agricultural Land. The Central Lincolnshire Local Plan has informed the assessment methodology for the socio-economics and land use assessment. The Proposed Development will also contribute to the aims of the Central Lincolnshire Local Plan.

12.3 Consultation

- 12.3.1 A request for an EIA Scoping Opinion was sought from the Secretary of State through the Planning Inspectorate in June 2023 as part of the EIA Scoping Process. A Scoping Opinion was received from the Planning Inspectorate on 25 July 2023 (**PEI Report Volume 3: Appendix 1-B: Scoping Opinion**).

- 12.3.2 Responses to comments received in the EIA Scoping Opinion in relation to socio-economics and land use are presented in **PEI Report Volume 3, Appendix 1-C: Scoping Opinion Responses**.

12.4 Assessment Methodology

- 12.4.1 This section sets out the scope and methodology for the preliminary assessment of the Socio-Economics and Land Use impacts of the Proposed Development.

Study Area

- 12.4.2 The impacts of the Proposed Development with respect to Socio-Economics and Land Use are considered at varying spatial levels according to the likely extent of the effect under consideration. This approach is consistent with the Homes and Communities Agency (HCA), now known as Homes England, guidance entitled 'Additionality Guide, A Standard Approach to Assessing the Additional Impact of Projects, 4th Edition' (Ref 12-12).
- 12.4.3 The Site, including the maximum areas of the Cable Corridor, is located within the area administered by North Kesteven District Council in the county of Lincolnshire. It should be noted, this represents the current maximum extent of land being considered and will be further refined as the Environmental Impact Assessment (EIA) progresses. **PEI Report Volume 1, Chapter 2: The Site and Surroundings** and **Chapter 3: The Proposed Development** provides a description of the Site and its surroundings, which mainly consists of agricultural fields.

Local Economy and Employment

- 12.4.4 The potential economic impacts arising from the Proposed Development are considered relative to a 60-minute drive time from the Site (as can be seen in **PEI Report Volume 2, Figure 12-1**), as this represents the principal labour market catchment area for the Proposed Development (Travel to Work Area).
- 12.4.5 The potential impacts on the local accommodation sector as a result of the Proposed Development are considered relative to both a 30-minute and 60-minute drive time. The 30-minute drive time (as can be seen in **PEI Report Volume 2, Figure 12-2**) has been added to consider a worst-case scenario in which all of the construction workers require accommodation within a 30-minute radius of the Site.

Public Rights of Way

- 12.4.6 The assessment of effects on Public Rights of Way (PRoW) users considers resources which could be affected by closures and diversions of routes. The Study Area therefore comprises all PRoW and existing permissive paths located within the Site (including along the Cable Corridor) or those that are likely to be impacted by the work within the Site Boundary (within 500m of the Site, as seen in **PEI Report Volume 2, Figure 12-3**).

Local Land Use

- 12.4.7 The Study Area for land use impacts on residential properties, local businesses, open space, visitor attractions and community facilities considers receptors that could be directly or indirectly affected by the Proposed Development. The receptors that could be impacted are likely to be those within 500m of the Site Boundary (as seen in **PEI Report Volume 2, Figure 12-3**), and within 2km of the Site Boundary (as can be seen in **PEI Report Volume 2, Figure 12-4**) for community facilities.
- 12.4.8 Effects on development Land (including consideration of Mineral Safeguarding Areas (MSAs)) within and up to 500m radius (as can be seen in **PEI Report Volume 2, Figure 12-3**) from the Site will be assessed in this PEI Report. Development land refers to sites on which there are planning applications, planning permissions and local plan allocations. Effects on development land have considered direct (land-take) and indirect (access) impacts on any of the delivery of development proposals or allocations both within and adjacent to the Site Boundary.

Agricultural Land and Soils and Agricultural Land Uses

- 12.4.9 Impacts on agricultural land and soils, and consideration of impacts on agricultural land use consider land that falls within the Site Boundary. This land would be directly impacted by the Proposed Development during its construction and operational phases.

Study Area Summary

- 12.4.10 **Table 12-1** presents the different components of the socio-economics and land use effects assessment for this PEI Report, the geographical scale at which each component is assessed, and the rationale behind these geographical scales.

Table 12-1: Study Area

Impact	Geographical Area of Impact	Rationale for Impact
Employment generation during construction phase, operational phase, and decommissioning phase (direct, indirect and induced impacts)	60-minute travel area	Research by Chartered Institute of Personnel and Development (CIPD) found that 90% of national employees commuted for 60 minutes or less each way. This was reported by CIPD in the 2018 Employee outlook 'Employee views on working life'.
Gross Value Added (GVA) ¹ during construction phase		
Accommodation Services	30- and 60-minute travel area (drive	Professional judgement and experience from other similar proposals in England.

¹ Gross Value Added (GVA) is the measure of the value of goods and services produced in an area, industry or sector of an economy.

Impact	Geographical Area of Impact	Rationale for Impact
	time estimated using GIS data, based on the Site and indicative Site access points).	
PRoW	Within, and up to 500m radius from the Site and beyond this where routes extend outside this radius.	Professional judgement and experience from other similar proposals in England.
Agriculture and soils	The Site	Professional judgement and experience from other similar proposals in England.
Local amenities-Residential Properties	500m radius from the Site.	Professional judgement and location of sensitive receptors for impacts arising from the Proposed Development as informed by other assessments from similar developments.
Local amenities-Business Premises	500m radius from the Site.	Professional judgement and location of sensitive receptors for impacts arising from the Proposed Development as informed by other assessments from similar developments.
Local amenities-Community Facilities	2km radius from the Site.	Professional judgement and location of sensitive receptors for impacts arising from the Proposed Development as informed by other assessments from similar developments. Community facilities are likely to be accessed by residents from a wider catchment, especially in rural areas, owing to a tendency for provision to be sparse. A wider radius of 2km has been considered for this receptor in order to fully appreciate the effect of potential severance on access to these facilities.
Local amenities-Visitor Attractions	500m radius from the Site.	Professional judgement and location of sensitive receptors for impacts arising from the Proposed Development as informed by other assessments from similar proposals.
Development land	500m radius from the Site.	Professional judgement and experience from other similar proposals in England.

Sources of Information

- 12.4.11 The following sources of information have been used to inform the baseline and preliminary assessment presented within this chapter.
- 12.4.12 Relevant policy has been considered at the local, regional and national levels to identify the key socio-economic and land use issues of relevance to the Proposed Development as detailed in **Section 12.2**. This included Local Plans, and any relevant NPS and NPPF requirements.
- 12.4.13 Baseline data illustrating the existing socio-economic conditions within and surrounding the Site, including employment and the economy, has been collected through a desk-based research exercise using publicly available sources, documents, and web-based applications. These sources are listed below.
- 12.4.14 Sources of information include:
- Ministry of Housing, Community and Local Government (2019) English Indices of Deprivation (2019) (Ref 12-13);
 - Lincolnshire County Council, Online PRow map (Ref 12-24);
 - Office for National Statistics (ONS) (2023) 2021 Census Data (Ref 12-14);
 - ONS (2023) Gross Value Added (Income Approach) (2017) (Ref 12-15);
 - ONS (2023) UK Business Register and Employment Survey (Ref 12-16);
 - ONS (2023) Annual Population Survey (January 2022 to December 2022) (Ref 12-17);
 - ONS (2023) Annual Population Survey (January 2021 to December 2021) (Ref 12-18);
 - CoStar (2024) (Ref 12-27); and
 - ONS (2023) Mid-Year Population Estimates 2021 (Ref 12-19).

Agricultural Land Classification (ALC) Survey

- 12.4.15 An ALC soil survey has been undertaken for the Proposed Development, as deemed necessary to determine the ALC quality of the land. The socio-economics and land use assessment in this PEI Report reflect where relevant the findings of the ALC survey in the assessment of agricultural land.

Scope of the Assessment

- 12.4.16 The following potential impacts have been considered as part of the PEI Report for the Proposed Development for which a preliminary assessment is provided Section 12.7 of this chapter:
- During the construction phase:
 - Temporary employment generation;

- ii. Gross Value Added (GVA) generation;
 - iii. Impacts on temporary accommodation from construction workforce;
 - iv. Public Rights of Way (PRoW) and permissive paths; and
 - v. Local amenities and land use (agricultural land use and soils; residential properties; business premises; community facilities; visitor attractions and development land).
- b. During operation (and maintenance):
- i. Permanent employment generation;
 - ii. PRoW and permissive paths; and
 - iii. Local amenities and land use (agricultural land use and soils; residential properties; business premises; community facilities; visitor attractions and development land).
- c. During decommissioning activities:
- i. Temporary employment generation and permanent job loss;
 - ii. Impacts on temporary accommodation from decommissioning workforce;
 - iii. PRoW and permissive paths; and
 - iv. Local amenities and land use (agricultural land use and soils; residential properties; business premises; community facilities; visitor attractions and development land).

Impact Assessment Methodology

12.4.17 There is currently no statutory guidance on the methodology for undertaking assessments of socio-economic and land use effects. The assessment follows best practice methodology and professional judgement from other assessments undertaken on comparable energy infrastructure projects.

12.4.18 This section sets out the scope and methodology for the socio-economics and land use assessment of the Proposed Development.

12.4.19 The Proposed Development has the potential to have a range of temporary and permanent socio-economic and land use effects. For the purposes of this PEI Report chapter, based on professional judgement and experience, as well as national planning policy, due consideration is given to the Proposed Development in terms of effects on the following:

- a. Employment generation (temporary and long-term) related to agricultural industries as well as induced employment created through increased spending across the Study Area;
- b. GVA;
- c. Impact on local accommodation facilities from influx of temporary workers;

- d. Agricultural land and soils including assessment of the potential temporary and permanent loss, including reference to the results of the ALC survey (presented in **PEI Report Volume 3, Appendix 12-B**) and
- e. Local amenities and land use (including impacts on residential properties, business properties, visitor attractions, recreational facilities and open space, including PRoW and permissive paths, community facilities and development land (including summary of assessment of MSAs).

Additionality Assumptions

- 12.4.20 As mentioned in **Table 12-1**, the economic impact of the Proposed Development is considered relative to a 60-minute travel time (car or road-based public transport) to or from the Proposed Development in any direction. In accordance with research, this is considered a reasonable timeframe to use as a baseline within which workers would commute to the Proposed Development.
- 12.4.21 Additionality² has been calculated by considering the overall job gains to the area, then factoring in the level of leakage, number of displaced jobs and multiplier effects, such as supply chains and worker spending related jobs. These assumptions have been informed by the HCA Additionality Guide (Ref 12-12).
- 12.4.22 The values that have been allocated within the construction, operational and decommissioning phases' additionality formula, are outlined in **Table 12-2**, enabling the tailored calculation of the net additional employment and economic impacts. Justification for the values have been given and are summarised in the right-hand column of **Table 12-2**.

Table 12-2: Construction, Operational and Decommissioning Phases Economic Additionality Assumptions Scale

Additionality Factor	Value	Justification
Leakage (% of jobs that benefit those residents outside of the Study Area area).	55%	This is the proportion of jobs taken by people who live outside of the Study Area, defined as a 60-minute travel area. Based on professional judgment and other similar proposals, given the specialised nature of the construction, operation and maintenance roles, this has been estimated to be 55%.
Displacement (% of jobs that account for a reduction in related jobs in the Study Area).	25%	For the purpose of this assessment, a low level of displacement of 25% of the gross employment opportunities created has been assumed, in line with the HCA Additionality Guide (Ref 12-12). This level of displacement reflects that there are expected to be some displacement effects, although these are only to a limited extent. This

² Additionality is defined as the extent to which something happens as a result of an intervention that would not have occurred in the absence of the intervention.

Additionality Factor	Value	Justification
		displacement level is assessed as appropriate for a construction project, as used in other comparable solar proposals.
Multiplier (further economic activity associated with the additional local income, supplier purchase and longer-term development effects).	1.5	The multiplier is a composite figure which takes into account both the indirect jobs created across the Study Area (60-minute drive time travel area) based on supply chain activity but also the induced employment created through increased spending across the Study Area. The HCA Additionality Guide (Ref 12-12) provides a 'ready reckoner' of composite multipliers. The Study Area is likely to have 'average' supply linkages and induced effects based on the scale of its economy. Therefore, a 'medium' multiplier of 1.5 is determined from the HCA guidance to be the most appropriate measure.

Significance Criteria

- 12.4.23 The assessment of potential socio-economic effects uses the effect significance terms and definitions described within **PEI Report Volume 1, Chapter 5: EIA Methodology and Consultation**. Where practicable, socio-economic impacts have been appraised against relevant national standards, such as those provided by the Department for Energy Security and Net Zero and HCA. Where relevant standards do not exist, professional experience and expert judgement have been used to assess the scale and nature of the effects of the Proposed Development against baseline conditions.
- 12.4.24 The assessment aims to be objective and quantifies effects as far as practicable. However, some effects can only be evaluated on a qualitative basis. Effects are defined as follows:
- Beneficial** classifications of significance indicate an advantageous or beneficial effect on an area, which may be minor, moderate, or major in effect;
 - Negligible** classifications of significance indicate imperceptible effects on an area;
 - Adverse** classifications of significance indicate a disadvantageous or adverse effect on an area, which may be minor, moderate, or major in effect; and
 - No effect** classifications of significance indicate that there are no effects on an area, resource or receptor.
- 12.4.25 The geographical scales considered to assess significance are described in **Table 12-1**.
- 12.4.26 Duration of effect is also considered, with more weight given to long-term and permanent changes than to temporary ones. Permanent effects are those which are unable to be reversed following decommissioning.

Reversible long-term effects endure throughout the Proposed Development but cease once decommissioned. Temporary effects are those associated with the construction or decommissioning works only. For the purposes of this assessment, short-term effects are of one year or less, medium-term effects are of one to five years, and long-term effects are for over five years.

12.4.27 For socio-economics there is no accepted definition of what constitutes a significant (or not significant) socio-economic effect. It is however recognised that 'significance' reflects the relationship between the scale of effect (magnitude) and the sensitivity (or value) of the affected area, resource or receptor. As such the significance criteria of socio-economic effects has been assessed based on expert judgment and professional experience of the author, and relies on the following considerations:

- a. **Sensitivity of resources/receptors:** specific values in terms of sensitivity are not attributed to socio-economic resources / receptors due to their diverse nature and scale; however, the assessment takes account of the qualitative (rather than quantitative) 'sensitivity' of each receptor and, in particular, their ability to respond to change based on recent rates of change and turnover (if appropriate);
- b. **Magnitude of impact:** this entails consideration of the size of the effect on people or business in the context of the area in which effects will be experienced; and
- c. **Scope for adjustment:** the socio-economic assessment is concerned in part with economies. These adjust themselves continually to changes in supply and demand, and the scope for the changes brought about by the Proposed Development to be accommodated by market adjustment will therefore be a criterion in assessing significance.

12.4.28 Criteria for receptor sensitivity and impact magnitude have been set out below (although specific sensitivity values are not attributed to socio-economics receptors as explained above), which have been grouped as follows: economic impacts, local amenities, land use impacts, PRoW, and agricultural land. The significance of effect matrix has been provided in **Table 12-11**, following the receptor sensitivity and impact magnitude criteria.

Economic Impacts

12.4.29 The following criteria have been set to assess the effects on socio-economic receptors in relation to employment, GVA and temporary accommodation which have been grouped together as economic impacts.

12.4.30 **Table 12-3** identifies the sensitivity criteria that have been used to inform the assessment on socio-economic receptors relating to employment, GVA and temporary accommodation, in conjunction with the magnitude criteria set out above to establish the significance of the identified effects.

Table 12-3: Economic Impact Sensitivity Criteria

Sensitivity	Description
High	Businesses, workers or residents who have little or no capacity to experience the impact without incurring an economic loss or have capacity to experience an economic gain.
Medium	Businesses, workers or residents that have some capacity to experience the impact without incurring a change on their economic well-being.
Low	Businesses, workers or residents that generally have good capacity to experience impacts without incurring a change on their economic well-being.
Very low	Businesses, workers or residents that are resilient to impacts on their economic well-being.

12.4.31 **Table 12-4** identifies the magnitude of impact criteria which have been used to assess the socio-economic receptors relating to employment, GVA and temporary accommodation.

Table 12-4: Economic Impact Magnitude Criteria

Magnitude	Description
High	An impact that is expected to have considerable adverse or beneficial socio-economics effects. Such impacts will typically affect large numbers of businesses, workers or residents.
Medium	An impact that will typically have a noticeable effect on a moderate number of businesses, workers or residents, and will lead to a small change to the Study Area's baseline socio-economic conditions.
Low	An impact that is expected to affect a small number of businesses, workers or residents or an impact that may affect a larger number of receptors but does not materially alter the Study Area's baseline socio-economic conditions.
Very low	An impact which has very little change from baseline conditions where the change is barely distinguishable, approximating to a "no change" situation.

Public Rights of Way

12.4.32 The following criteria have been set to assess the effects on users of PRoW focusing on the impact of disruption to existing routes and the resulting changes in journey lengths and times and local travel patterns.

12.4.33 **Table 12-4** identifies the sensitivity criteria that have been used to inform the assessment on PRoW, in conjunction with the magnitude criteria set out above to establish the significance of the identified effects.

Table 12-5: Public Rights of Way Impact Sensitivity Criteria

Sensitivity	Description
High	PRoW is of high importance with limited potential to substitute with other route options to access with the wider network or community infrastructure.
Medium	PRoW is of medium importance with good potential to substitute with other route options to access with the wider network or community infrastructure; or PRoW is of high importance with alternative routes available; or PRoW is of low importance with limited potential to substitute with other route options to access with the wider network or community infrastructure.
Low	PRoW is of minor importance and with alternative routes available; or PRoW is of very low importance with moderate potential to substitute with other route options to access with the wider network or community infrastructure.
Very low	PRoW is of negligible importance and/or with alternative routes easily available.

12.4.34 **Table 12-6** identifies the magnitude of impact criteria which have been used to assess the impacts on PRoW.

Table 12-6: Public Rights of Way Magnitude Criteria

Magnitude	Description
High	Substantial increase/decrease in journey length and/or travel patterns and increased/decreased opportunities for users to access the wider network and/or community infrastructure.
Medium	Noticeable increase/decrease in journey length and/or travel patterns and increased/decreased opportunities for users to access the wider network and/or community infrastructure.
Low	Slight increase/decrease in journey length and/or travel patterns and increased/decreased opportunities for users to access the wider network and/or community infrastructure
Very low	A negligible increase, no change, or a decrease in journey length and/or travel patterns and no increase or decrease in opportunities for users to access the wider network and/or community infrastructure.

Agricultural Land

12.4.35 This section outlines the criteria that have been set to assess the effects on agricultural land and soils receptors.

12.4.36 Best and Most Versatile (BMV) agricultural land is a strategic, finite, and irreplaceable national resource with longstanding policy protection to prevent the unnecessary loss of such land to non-agricultural development. As set out in Natural England Technical Information Note TIN049 (TIN049) (Ref 12-20), land in ALC Grades 1, 2 and 3a are considered to be the nation's best and most versatile land. Paragraph 2.10.29 of the NPS for Renewable

Energy Infrastructure (EN-3) (Ref 12-6) states that ‘poorer quality land should be preferred to higher quality land avoiding the use of “Best and Most Versatile” agricultural land where possible. Paragraph 174 of the NPPF (Ref 12-7) directs that planning should consider the economic and other benefits of the BMV agricultural land. TIN049, NPS EN-3 and the NPPF do not seek to enforce continuity of agricultural production or any specific agricultural management.

12.4.37 For all practical intents and purposes, agricultural land cannot be created or translocated, nor can a compensatory area of land have its ALC grade enhanced. There is therefore no viable potential for beneficial effect or mitigation with regard to agricultural land quality.

12.4.38 For the agricultural land resource, the presence of BMV land and the grade of that land determine sensitivity, with Grades 1 and 2 land being of higher sensitivity than land in Grade 3a. The magnitude of change criteria is based on the extent of BMV land lost, with the area of 20 hectares (ha) referred to below being derived from the threshold the former Ministry of Agriculture, Food and Fisheries (MAFF) guidance (Ref 12-21) used for intervening in planning decisions, and maintained by Natural England when informing their consultation on projects.

12.4.39 The sensitivity of agricultural land is assessed according to its grade within the ALC, as set out in **Table 12-7**. The criteria takes into account the above guidance in respect of the economic and other benefits of the BMV and gives little weight to the loss of land in Grades 3b, 4 and 5.

Table 12-7: Receptor Sensitivity Criteria - Agricultural Land

Sensitivity Agricultural Land

High	Agricultural land predominantly in Grades 1 and 2
Medium	Agricultural land predominantly in Grade 3a or containing some Grade 1 and 2
Low	Agricultural land containing some Grade 3a
Very low	Agricultural land all Grade 3b or lower

12.4.40 The thresholds for the magnitude of impact adopted in this assessment set out below are based on a threshold of the permanent change of 20ha of BMV agricultural land, taken from Article 18(1), paragraph (y) of the Table to the Town and Country Planning (Development Management Procedure) Order 2015 (S.I. No 2015/595) (Ref 12-22). These documents do not state that this threshold should be used to determine change significance for the purpose of impact assessment; however, as this is the area of BMV change that triggers a requirement to consult with Natural England, it implies that this is also the point at which the change is no longer considered to be ‘not significant’. Therefore, for the purposes of this assessment:

- a. A total permanent loss of BMV land which exceeds 20ha is considered significant;

- b. A loss of BMV which is either temporary and reversible after construction, or which falls below the 20ha threshold, is considered as being not significant; and
- c. A loss of non-BMV land is considered as being not significant.

Local Amenities and Development Land

12.4.41 The following criteria have been set to assess the effects on local amenities which for this Proposed Development comprise residential properties, business premises, visitor attractions and community facilities and development land.

12.4.42 **Table 12-8** identifies the sensitivity criteria that have been used to inform the assessment of effects relating to local amenities, which in conjunction with the magnitude criteria set out in **Table 12-8** has been used to establish the significance of the identified effects.

Table 12-8: Local Amenities Impact Sensitivity Criteria

Sensitivity	Description
High	Amenity or land use is of high importance and rarity with limited potential for substitution or access to alternatives.
Medium	Amenity or land use is of medium importance and rarity with moderate potential for substitution or access to alternatives.
Low	Amenity or land use is of low importance and rarity with alternatives available.
Very low	Amenity or land use is of very low importance and rarity with alternatives available.

12.4.43 The magnitude of change on local amenities (residential properties, business premises, visitor attractions and community facilities) is assessed by appraising the level of impact on the receptor and the permanency of change arising from the Proposed Development based on the residual effects assessment findings of environmental topics, namely, noise and vibration, visual, air quality and transport. This considers whether or not when two or more adverse effects occur at the same time on the same receptor or group of receptors as concluded by separate topics there is the potential for an in-combination significant effect on the receptor's amenity or enjoyment. **Table 12-9** identifies the magnitude of impact criteria which have been used to assess the impacts on local amenities and land use.

Table 12-9: Local Amenities Impact (Residential properties, business premises, and community facilities) Magnitude Criteria

Magnitude	Description
High	An impact that permanently or long term affects the integrity and value of a facility or land use; or that considerably enhances the value and quality of a facility or land use. Generally, this will equate to where three or more moderate or major significance residual effects are identified with at least

Magnitude Description

	two or more effects being of major significance on a receptor from across the following environmental topics findings; noise, air quality, transport, or visual.
Medium	An impact that causes a noticeable negative effect on the value of a facility or land use, but where its recovery is possible with no permanent or long-term impacts; or an impact that leads to some noticeable improvement in key characteristics and features of the facility or land use. Generally, this will equate to where two or more moderate or major significance residual effects are identified with at least one effect being of major significance on a receptor from across the following environmental topics findings; noise, air quality, transport, or visual.
Low	An impact that has some negative effect on the value of a facility or land use, but a recovery is expected in the short-term with no change to its integrity; or an impact that has some beneficial impact on the attributes of the facility or land use. Generally, this will equate to where two residual effects which are not worse than moderate in significance are identified on a receptor from across the following environmental topics findings; noise, air quality, transport, or landscape and visual.
Very low	An impact which is a very small loss or benefit from baseline conditions where the change is barely distinguishable, approximating to a “no change” situation. Generally, this will equate to either where only one moderate or major significance residual effect is identified on a receptor from across the following environmental topics findings; noise, air quality, transport, or visual, or where all of these findings are minor adverse or negligible. An impact which is a very minor loss or benefit from baseline conditions where the change is barely distinguishable, approximating to a “no change” situation.

12.4.44 For development land, an assessment has been undertaken of the effects on development land within the Study Area as identified from a review of planning applications which have received planning permission, or which are under consideration and allocated sites including MSAs, Mineral Consultation Areas, Waste Consultation Areas and Transport Safeguarded Areas. This is considering temporary and permanent land take of development land which affects its viability. **Table 12-10** identifies the magnitude of impact criteria which have been used to assess the impacts on development land.

Table 12-10: Local Amenities Impact (Development Land) Magnitude Criteria

Magnitude	Description
High	An impact that permanently affects the integrity and value of a development land resource; or an impact that considerably enhances the value and quality of such a resource.
Medium	An impact that negatively affects the value of a development land resource, but a recovery is possible with no permanent impacts; or an impact that improves key characteristics and features of such a resource

Magnitude Description

Low	An impact that negatively affects the value of a development land resource, but a recovery is expected in the short-term with no change to its integrity; or an impact that has some beneficial impact on the attributes of such a resource
Very low	An impact which is a very minor loss or benefit from baseline conditions where the change is barely distinguishable, approximating to a “no change” situation.

Significance of Effects

12.4.45 Socio-economic effects reflect the relationship between the sensitivity of the affected receptor and the magnitude of the impact. **Table 12-11** shows how the assessment of the significance of effects is reached.

Table 12-11: Impact Assessment and Significance

Sensitivity or Value of Resource / Receptor	Magnitude of Change				
	High	Medium	Low	Very Low	No change
Very High	Major	Major	Major	Minor	Neutral
High	Major	Major	Moderate	Minor	Neutral
Medium	Major	Moderate	Minor	Negligible	Neutral
Low	Moderate	Minor	Negligible	Negligible	Neutral
Very Low	Minor	Negligible	Negligible	Neutral	Neutral

12.4.46 In accordance with the methodology set out within **PEI Report Volume 1, Chapter 5: EIA Methodology and Consultation**, the following criteria is applied:

- ‘Moderate’ or ‘major’ impacts are classed as ‘**significant**’;
- ‘Minor’ impacts are classed as ‘**not significant**’, although they may be a matter of local concern; and
- ‘Negligible’ effects are classed as ‘**not significant**’.

Assessment Assumptions and Limitations

12.4.47 The assessment presented in this PEI Report chapter is based on the available baseline and design information. Following statutory consultation, and further evolution of the design and development of baseline data, a full assessment will be undertaken as part of the EIA, and this will be reported in the ES that will be submitted with the DCO application.

12.4.48 The assessment of the significance of effects has been carried out against a benchmark of current socio-economic baseline conditions prevailing around the Site, as far as is practicable within the limitations of such a dataset. The most recently available data sources have been used in this PEI Report,

although it should be noted that baseline data can be subject to a time lag between collection and publication. As with any dataset, these conditions may be subject to change over time which may influence the findings of the assessment.

- 12.4.49 There will be some job losses amongst the existing agricultural workforce as a result of the use of the Site for the Proposed Development. The precise number of jobs lost will be dependent on the final landtake for the Proposed Development and areas of landscaping and ecological mitigation or enhancement to be submitted with the DCO application. Provisionally it is expected that the number of job losses onsite will roughly equate to the number of full time equivalent jobs directly created by the Proposed Development This will be further investigated in the ES.
- 12.4.50 Effects on local assets and land use during the construction, operation and decommissioning phases are based on preliminary assessments, taking into consideration the results from the relevant environmental studies that can act in combination to cause effects to occur. These studies comprise the transport and access, noise and vibration, landscape and visual amenity, and air quality assessments. These will be further investigated in the ES. Where any two or more of these topics each record a significant effect on a receptor or group of receptors, it will be assumed as a worst-case that the effect could occur at the same time. Again, these will be further investigated in the ES.
- 12.4.51 As noted in **PEI Report Volume 1, Chapter 3: The Proposed Development**, the construction period is expected to take 24 months or be phased over 30 months, and, subject to being granted consent, construction is anticipated to start in 2031. The construction period could be longer in duration; however, a 24-month programme is expected to be a realistic worst-case assumption for the consideration of amenity and accessibility effects within this socio-economic and land use assessment, as it represents the expected minimum build time and therefore the most intense activity onsite (and therefore greatest impacts associated with traffic, noise, dust, visual amenity, etc.). This approach may mean the maximum number of jobs during peak construction has been overestimated; however, the overall amount of construction activity over the construction period and therefore the associated employment and spending benefits of the Proposed Development overall would remain unchanged.

12.5 Baseline Conditions

Existing Baseline

- 12.5.1 This section describes the baseline environmental characteristics for the Site and surrounding areas with specific reference to socio-economics and land use.
- 12.5.2 Potential effects arising from the Proposed Development are assessed relative to the baseline impact areas of the Study Area, North Kesteven, the East Midlands and England and Wales, benchmarked against local, regional

and national standards where appropriate. This section will therefore establish the baseline conditions relative to this area in comparison to the wider East Midlands region, and England and Wales.

12.5.3 Key indicators and measures of the Study Area have been established for:

- a. Existing site and land use;
- b. Agricultural land and soils;
- c. Population and labour force;
- d. Local economy; and
- e. Local receptors.

Existing Site and Land Use

12.5.4 The Site (**PEI Report Volume 2, Figure 1-2**) lies within the county of Lincolnshire, within the district of North Kesteven. The Site comprises the maximum extent of land that is expected to be included within the DCO Application, including the maximum extent of the Cable Corridor. It should be noted, this represents the current maximum extent of land being considered and will be further refined as the EIA progresses.

12.5.5 **PEI Report Volume 1, Chapter 2: The Site and Surroundings** contains a detailed description of existing conditions within and surrounding the Site.

12.5.6 The Principal Site is currently mostly used for agricultural purposes, being characterised by large scale regular-shaped arable fields across a number of land-holdings. The landscape is interspersed with individual trees, woodlands, hedgerows, linear tree belts, farm access tracks, and local transport roads.

12.5.7 The Cable Corridor passes through largely agricultural land, to the north of Boothby Graffoe and to the east of Navenby.

12.5.8 The A46 intersects the Site within the northern section of the Principal Site, and the A607 intersects the Cable Corridor. Local minor roads including Moor Lane, Bassingham Road, Clay Lane, Thurlby Road, Stone Lane, Fen Lane, The Avenue and Fosse Lane are located within or adjacent to the Principal Site. In addition to the A607, the Cable Corridor crosses Broughton Lane, Heath Lane and Green Man Lane. The Cable Corridor is crossed by the River Witham, which also passes through the Principal Site, and the River Brant. There is no operational railway infrastructure within the Site Boundary.

12.5.9 With respect to recreational routes, there is a network of numerous PRoW and existing permissive paths which traverse the Principal Site and provide pedestrian connectivity between adjacent settlements. There are also several PRoW which could be impacted by the Cable Corridor temporarily during construction. PRoW network around the Site is shown on **PEI Report Volume 2, Figure 2-2**. More information on this impact is provided in **PEI Report Volume 1, Chapter 13: Traffic and Transport**.

Agricultural Land and Soils

- 12.5.10 There is a need to minimise the use of BMV agricultural land, which is classification Grades 1, 2, and 3a, however development is not prohibited from being located on BMV agricultural land. Under the ALC system, Subgrade 3a land would form BMV whereas Subgrade 3b would not³.
- 12.5.11 With regards to agricultural land and soils, mapping of soils has been prepared based on surveys of the Principal Site and presented in **PEI Report Volume 3 Appendix 12-B: Agricultural Land Classification Report**. The land is predominantly Grade 3b (moderate quality agricultural land) with some BMV land present, limited to areas of Grade 3a (good quality agricultural land). No areas of Grade 1 or 2 have been identified.
- 12.5.12 The agricultural land quality survey has been undertaken of 1,065.4ha of land in the Basingham and Navenby areas within the Principal Site, between April and October 2023, and August 2024. At the time of the survey the majority of land was in agricultural rotation for crop, with some land in grass for silage and/or sheep grazing.
- 12.5.13 Overall, 17ha (1.7%) of the surveyed land was identified as Urban, Woodland or Made Ground areas. 303.0ha (28.35%) of the surveyed land is indicated as ALC Grade 3a and 740.5ha (69.3%) as ALC Grade 3b. Limitations relate to either Droughtiness, Wetness or Soil Depth limitations. .
- 12.5.14 The distribution of ALC grades within the surveyed area is shown in **Table 12-12** below.

Table 12-12: Agricultural Land Classification within the Principal Site

Agricultural Land Class	Total Area (Ha)	Percentage of the Principal Site (%)
Grade 1	0	0
Grade 2	0	0
Subgrade 3a	303.0	28.35
Subgrade 3b	740.5	69.30
Grade 4	0	0
Grade 5	0	0
Non-agricultural land	18.2	1.70
Total BMV agriculture land	303.0	28.35
Total Non-BMV agriculture land	740.5	69.30

³ The Agricultural Land Classification (ALC) system, provides a framework for classifying land according to the extent to which its physical or chemical characteristics impose long-term limitations on agricultural use. The ALC system divides agricultural land into five grades (Grade 1 'excellent' to Grade 5 'very poor'), with Grade 3 subdivided into Subgrade 3a 'Good' and Subgrade 3b 'Moderate'. ALC is based upon an assessment of limiting factors, including soils, climate and other physical limitations and the way in which these factors interact.

Agricultural Land Class	Total Area (Ha)	Percentage of the Principal Site (%)
Not surveyed/inaccessible	6.7	0.63
Total	1068.6	100

Note: The total Principal Site boundary contains 1065.4ha of surveyed land. Due to small amounts of overlap in the surveys, the surveyed land comes to 1068.6ha. For example, a small section of made ground in the north west of the site overlaps with grade 3b land.

Population and Labour Force

Population

12.5.15 According to the Office for National Statistics (ONS) Mid-Year Population Estimates, in 2021, the residential population of the Study Area increased from 4,329,675 in 2011 to 4,543,821 in 2021 (Ref 12-19). This represents an increase of 4.9% which is a lower growth rate when compared to the population increases exhibited in the East Midlands and England and Wales during the same time period (7.6% and 6.2% respectively). Of residents within the 60-minute travel Study Area, 61.3% were of working age (defined by ONS as men and women aged 16 to 64). This is lower than that recorded for the East Midlands (62.3%) and England and Wales as a whole (62.9%) (Ref 12-18). The Study Area has a higher proportion of residents aged 65+ (20%) in comparison to the regional (19.6%) and the national (18.7%) average.

Economic Activity

12.5.16 According to the Annual Population Survey (Ref 12-17), in 2022 the unemployment rate among working age residents in the Study Area was 3.3%, higher than the rate recorded for the East Midlands (2.9%) but lower than the rate recorded for England and Wales (3.7%).

12.5.17 Residents of working age residing in the Study Area had an economic activity rate of 76.6%, lower than rates recorded for East Midlands (77.4%) and for England and Wales (78.6%). This is shown in **Table 12-13**.

Table 12-13: Economic Activity and Unemployment

Economic Indicator	Study Area	East midlands	England and Wales
Economic activity rate for residents aged 16-64)	76.6%	77.4%	78.6%
Unemployment rate (for residents aged 16-64)	3.3%	2.9%	3.7%

Source: Annual Population Survey (Jan-Dec 2022)

Qualifications

12.5.18 According to 2021 Annual Population Survey, the latest available data on educational attainment, 34.4% of working age residents within the Study Area had a degree level qualification or higher (National Vocational Qualification [NVQ] Level 4+) (Ref 12-18). This is lower than the rates recorded for the East Midlands (35.7%) and England and Wales (43%). The proportion of residents in the Study Area with no qualifications was 8.5%, which is higher than rates recorded for East Midlands (7.5%) and England and Wales (6.5%) (Ref 12-18).

Deprivation

12.5.19 Based on the 2019 Indices of Multiple Deprivation (IMD) (Ref 12-23), which is measured at local authority level, North Kesteven is in the top 15% of the least deprived local authority areas in England, ranked 268th out of 317 (where 1 is most deprived). None of the Lower Super Output Areas (LSOAs) in North Kesteven are ranked amongst the 20% most deprived LSOAs nationally. Accordingly, 61% of LSOAs in North Kesteven are ranked amongst the 30% least deprived nationally.

Local Economy

Industry

12.5.20 **Table 12-14** presents a detailed breakdown of employment by broad industry group in the Study Area, the East Midlands, and England and Wales. Based on the most recently available Business Register and Employment Survey data published in 2021 (Ref 12-16) on employment by group, the highest levels of employment in the Study Area (60-minute drive time radius) are recorded in health (13.5% of employment), manufacturing (12.6%) and retail (9.5%) sectors.

12.5.21 Specific to this assessment, the construction sector contributes 5.5% of employment within the Study Area, which is slightly higher than the proportions recorded regionally and nationally (both 4.9%). There are around 112,000 people employed in construction within the Study Area.

12.5.22 The mining, quarrying and utilities broad industrial group (which includes employment from the generation of energy) is less prominent in the Study Area (1.5%), however, employment is in line with regional proportions (1.5%) and higher than that nationally (1.2%).

Table 12-14: Employee Jobs by Broad Industrial Group in 2021

Sector	Study Area (%)	East Midlands (%)	England and Wales (%)
Agriculture, Forestry and Fishing	0.2	1.7	1.4
Mining, Quarrying and Utilities	1.5	1.5	1.2
Manufacturing	12.6	11.6	7.5

Sector	Study Area (%)	East Midlands (%)	England and Wales (%)
Construction	5.5	4.9	4.9
Motor Trades	2.6	2.5	1.7
Wholesale	4.1	4.3	3.5
Retail	9.5	9.4	9.1
Transport and Storage	7.6	6.4	5.1
Accommodation and Food Services	6.3	6.6	7.5
Information and Communication	2.9	2.9	4.4
Financial and insurance	1.6	1.8	3.5
Property	1.3	1.5	1.9
Professional, Scientific and Technical	6.4	7.0	9.1
Business Administration and Support	8.0	7.9	8.8
Public Administration and Defence	3.7	3.9	4.3
Education	8.7	8.5	8.5
Health	13.5	13.3	13.2
Arts, Entertainment, Recreation and Other	4.1	4.4	4.3

Source: ONS (2023), Business Register and Employment Survey 2021

GVA Output

12.5.23 GVA is a measure of the value of goods and services produced in an area of the economy. Latest data shows that in 2017, Lincolnshire generated around £14.2 billion (£bn) GVA at current basic prices within its economy (Ref 12-15).

12.5.24 In Lincolnshire, GVA per head is £18,958 compared to the East Midlands average of £21,983 and the England and Wales average of £27,949 (Ref 12-15). The Public Administration, Education and Health sector, Distribution sector, and Manufacturing sector account for the greatest proportions of GVA to the Lincolnshire economy.

12.5.25 In North Kesteven, the average GVA per worker in the construction sector was £81,000 in 2021, calculated by dividing the GVA in the North Kesteven construction industry by the number of construction workers stated in the Business Register and Employment Survey (Ref 12-16).

Local Receptors

Temporary Accommodation

12.5.26 Analysis of the hotel, bed and breakfast and inns accommodation sector has been undertaken to assess the likely capacity against the demand from the potential peak construction workforce. This assessment considers the potential for adverse impacts due to demand for accommodation exceeding supply during the construction phase. Data on the number of rooms available within a 30 and 60-minute drive area in the hotel, bed and breakfast and inns accommodation sector has been sourced from CoStar, a property resource website (Ref 12-27). As of 2024, there are approximately 2,003 rooms in local hotel, bed and breakfast and inns accommodation within a 30-minute drive of the Indicative Site Boundary Site (**PEI Report Volume 3, Figure 12-2**), and 23,011 rooms within a 60-minute drive of the Indicative Site Boundary (**PEI Report Volume 3, Figure 12-1**). As shown in **Table 12-15** and **Table 12-16** below, this number has been adjusted to reflect typical availability based on seasonal occupancy rates from 2022, as reported by VisitEngland (Ref 12-28) below.

Table 12-15: Accommodation Capacity within a 30-Minute Drive Time Radius

Month	Typical Room Occupancy (%)	Inventory Rooms	Rooms Available After Existing Demand
January	56%	2,003	881
February	69%	2,003	621
March	72%	2,003	561
April	74%	2,003	521
May	75%	2,003	501
June	77%	2,003	461
July	80%	2,003	401
August	77%	2,003	461
September	77%	2,003	461
October	78%	2,003	441
November	77%	2,003	461
December	65%	2,003	701

Source: CoStar (2024). VisitEngland (2022).

Table 12-16: Accommodation Capacity within a 60-Minute Drive Time Radius

Month	Typical Room Occupancy (%)	Inventory Rooms	Rooms Available After Existing Demand
January	56%	23,011	10,125

Month	Typical Room Occupancy (%)	Inventory Rooms	Rooms Available After Existing Demand
February	69%	23,011	7,133
March	72%	23,011	6,443
April	74%	23,011	5,983
May	75%	23,011	5,753
June	77%	23,011	5,293
July	80%	23,011	4,602
August	77%	23,011	5,293
September	77%	23,011	5,293
October	78%	23,011	5,062
November	77%	23,011	5,293
December	65%	23,011	8,054

Source: CoStar (2024), VisitEngland (2022)

PRoW

12.5.27 With reference to Lincolnshire County Council's online PRoW map (Ref 12-24) there is an extensive network of routes across the Study Area, with a notable concentration extending from Thorpe on the Hill and a concentration of paths connecting settlements through the centre of the Study Area. These PRoW are shown in **PEI Report Volume 2, Figure 2-2**. There is relatively sparse public access across the easternmost part of Study Area and across land east of the River Brent.

12.5.28 PRoW located within the Principal Site, namely include:

- LL|TOTH|6/1** – A footpath which runs through the field to the west of Fosse Lane from Main Street, Thorpe-on-the-Hill in the north, through the fields and within the Principal Site. The footway is approximately 955m in length, running in a north – south-west direction, joining with LL|TOTH|6A/1 and LL|TOTH|6/2 within the northern extent of the Principal Site.
- LL|TOTH|7/2#1** - A footpath routing through the field to the west of Station Road/ Lincoln Lane, Thorpe-on-the-Hill, within the Principal Site. The footway is approximately 1,470m in length, running in a west-east direction, joining with PRoW LL|TOTH|7/1 and LL|TOTH|5/1 in the east and PRoW LL|TOTH|21/1, LL|TOTH|7/3 and LL|TOTH|15/1 to the east of Tunman Woods, within the northern extent of the Principal Site.
- LL|TOTH|15/1** - A footpath which links through the field to the west of Station Road / Lincoln Lane, Thorpe-on-the-Hill, within the Principal Site. The footway is approximately 1,080m in length, running in a west-east direction, joining with PRoW LL|TOTH|21/1, LL|TOTH|7/3 and

LL|TOTH|7/2#1 to the east of Tunman Woods, within the northern extent of the Principal Site.

- d. **LL|TOTH|7/3** - A footpath which runs through the field to the west of Station Road / Lincoln Lane, Thorpe-on-the-Hill, within the Principal Site. The footway is approximately 422m in length, running in a west-east direction, joining with PRoW LL|TOTH|21/1, LL|TOTH|15/1 and LL|TOTH|7/2#1, to the east of Tunman Woods, within the northern extent of the Principal Site and with PRoW LL|TOTH|13/2 and LL|TOTH|13/1 to the west of Tunman Woods along the Principal Site boundary.
- e. **LL|TOTH|21/1** – A footpath routing through the field to the east of Tunman Woods, within the Principal Site. The footway is approximately 170m in length, running in a north-south direction, in the north joining with PRoW LL|TOTH|7/3, LL|TOTH|7/2#1 and LL|TOTH|15/1 and in the south joining with LL|TOTH|6/2, within the northern extent of the Principal Site.
- f. **LL|TOTH|6/2** - A footpath which runs through the field to the west of Fosse Lane within the Principal Site. The footway is approximately 455m in length, running in a west-east direction, joining with PRoW LL|TOTH|6/1 and LL|TOTH|6A/1 in the east and PRoW LL|TOTH|21/1 and LL|TOTH|6/3#1 in the west, within the northern extent of the Principal Site.
- g. **LL|TOTH|6/3#1** - A footpath linking through the field to the east of Tunman Woods, within the Principal Site. The footway is approximately 220m in length, running in a north-south direction, in the north joining with PRoW LL|TOTH|21/1 and LL|TOTH|6/2, within the northern extent of the Principal Site.
- h. **LL|TOTH|13/1** – A footpath which runs through the field to the south of Eagle Lane, to the east of Tunman Woods. The footway is approximately 830m in length, running in a north-south direction, in the north joining with PRoW LL|Eag|11/1 and LL|TOTH|16/1 and in the south, along the Site boundary joining with LL|TOTH|7/3 and LL|TOTH|13/1, within the northern extent of the Principal Site.
- i. **LL|TOTH|6A/1** – A footpath running through the field to the west of Fosse Lane within the Principal Site. The footway is approximately 665m in length, running in a north- south-west direction, joining with LL|TOTH|6/1 and LL|TOTH|6/2 within the northern extent of the Principal Site.
- j. **LL|TOTH|11/1** – A footway which routes through the field to the east of Marton Lane within the Principal Site. The footway is approximately 560m in length, running in a west-east direction, in the west joining with LL|TOTH|11/2, within the northern extent of the Principal Site.
- k. **LL|TOTH|12/3** – A bridleway which runs to the north of Marton Lane, Marton. The bridleway is approximately 1,125m in length, running in a north-south direction, within the Principal Site, in the north joining with PRoW LL|Eag|1058 and in the south joining with PRoW LL|TOTH|12/2

and LL|Swdb|4/1 (joining just outside of the Site boundary), within the northern extent of the Principal Site.

- l. **LL|Aubo|12/2** – A footpath which runs between the Site in the west and Haddington Lane in the east. The footway is approximately 950m in length, running in a west-east direction, in the west joining with PRoW LL|ThuN|4/1 along the border of the Principal Site, within the central extent of the Principal Site.
- m. **LL|Aubo|11/2** - A footpath routing from Haddington Lane towards River Witham in the east through the fields. The footway is approximately 655m in length, running in a west-north-east direction, in the north-east joining with PRoW LL|Aubo|13/2, LL|Aubo|12/1, LL|Aubo|11/1 and LL|Aubo|13/1 just outside of the Principal Site, within the central extent of the Principal Site.
- n. **LL|Aubo|13/1** – A restricted byway which links across River Witham. The byway is approximately 635m in length, running in a west-east direction, in the west joining with PRoW LL|Aubo|11/2, LL|Aubo|12/1, LL|Aubo|11/1 and LL|Aubo|13/2 and in the east joining with LL|Aubo|9/1 to the west of Bassingham Road along the Principal Site, within the central extent of the Principal Site.
- o. **LL|Aubo|10/1** - A footpath which runs through the field to the west of Bassingham Road. The footway is approximately 780m in length, running in a north-south direction, in the south joining with PRoW LL|Bass|4/2 along the eastern extent of the Principal Site.
- p. **LL|Aubo|8/1** - A restricted byway routing through the field to the east of Bassingham Road. The byway is approximately 415m in length, running in a north-south direction, within the Principal Site, in the south joining with PRoW LL|Bass|21/3 along the eastern extent of the Principal Site.
- q. **LL|Aubo|3/1** - A footpath which runs along Moor Lane to the south of Harmston Road. The footway is approximately 2km in length, running in a north-south direction, along the southern extent of the Principal Site.
- r. **LL|Bass|23/1** - A footpath which routing via the field to the east of Fen Lane. The footway is approximately 890m in length, running in an east-west direction, within the southern extent of the Principal Site and Cable Corridor, between Fen Road in the west and the River Brant in the east, along the southern extent of the Site.
- s. **LL|ThuN|2/1** - A footpath running through the field to the south of Moor Lane. The footway is approximately 920m in length, running in a north-west-south-east alignment within the southern extents of the Principal Site between Moor Lane in the north and Bassingham Road to the east, south of Thurlby.
- t. **LL|ThuN|1/1** - A footpath running through the field to the east and north of Bassingham Road. The footway is approximately 375m in length, running in a north-south alignment within the southern extents of the Principal Site to the west of River Witham, northwest of Bassingham.

- u. **LL|ThuN|5/1** – A footpath running through the field to the east of Clay Lane. The footway is approximately 380m in length, running in a north-south alignment within the southern extents of the Site to the west of River Witham, west of Bassingham, in the south joining with PRow LL|NoDi|4/1.
 - v. **LL|NoDi|4/1** – A footpath running through the field to the east of Clay Lane. The footway is approximately 310m in length, running in a north-south alignment within the southern extents of the Site to the west of River Witham, west of Bassingham. In the north the PRow joins with PRow LL|ThuN|5/1 and in the south with PRow LL|NoDi|1/1 and LL|NoDi|1/2, along the southern extent of the Site.
- 12.5.29 PRow which run alongside the boundary or within close proximity to the Site are LL|TOTH|18/3, LL|TOTH|18/2, LL|TOTH|18/1, LL|TOTH|7/1, LL|TOTH|5/1, LL|TOTH|13/2, LL|TOTH|12/2, LL|TOTH|12/1, LL|TOTH|11/2, LL|Swdb|5/1, LL|Swdb|4/1, LL|ThuN|4/1, LL|Aubo|13/2, LL|Aubo|12/1, LL|Aubo|11/1, LL|Aubo|9/1, LL|Bass|4/2, LL|Bass|21/3, LL|Bass|20/1, LL|Bass|21/2, LL|Bass|22/1, LL|Bass|21/1, LL|ThuN|3/1, LL|NoDi|1/1, LL|NoDi|1/2.
- 12.5.30 There are a number of PRow which could be temporarily impacted by the Cable Corridor. The current Cable Corridor is shown in **PEI Report Volume 2, Figure 1-2**. The considered PRow are LL|Bass|23/1, LL|Cole|4/1, LL|Cole|3/1, LL|Cole|1/2 and LL|BooG|2/2.
- 12.5.31 There are also seven existing permissive paths within the Site boundary: 15BCDE, 15BCD1, 17E42A, 15BCD0, 15BCCF, 15BC81 and 15BCC0.
- 12.5.32 There are no on or off-road dedicated / marked cycling facilities within the immediate vicinity of the Site. However, the surrounding rural local roads may be attractive to some cyclists as they are understood to be relatively lightly trafficked. The Site could potentially be accessed by cyclists from local settlements within a 2.5km cycle distance, including Thorpe-on-the-Hill, Haddington, Aubourn, Witham-St-Hughs, Norton Disney and Bassingham.
- 12.5.33 The nearest National Cycle Network (NCN) route to the Site is NCN Route 64 (between Harby and Lincoln) which is located approximately 3km to the north of the Site. An existing NCN link route also runs in the vicinity of the southern extents of the Site, which runs between Bassingham and Carlton-le-Moorland.

Residential Properties

- 12.5.34 The land use within the Site is primarily agricultural. The surrounding land use also comprises arable farming, woodland, residential areas and quarries. There are individual and clusters of residential properties located adjacent to the Principal Site, in the following villages/landscape features:
- a. Thorpe on the Hill approximately 200m to the north;
 - b. Morton approximately 300m to the west;
 - c. Witham St Hughs approximately 150m to the west;

- d. Thurlby 200m to the east;
- e. Haddington 400m to the south east
- f. Aubourn 750m to the north east;
- g. Bassingham 150m to the east; and
- h. Norton Disney 550m to the west.

12.5.35 There are also individual, and clusters of residential properties located adjacent to the Cable Corridor in the following villages/landscape features:

- a. Boothby Graffoe situated approximately 100m south; and
- b. Coleby approximately 900m north.

Business Premises

12.5.36 There are multiple businesses within 500m radius of the Site situated in the rural villages surrounding the Site.

12.5.37 There are also multiple farms within the Site and in proximity to the Site. Within the Site, these include:

- a. Principal Site:
 - i. Tonge's Farm;
 - ii. River Farm;
 - iii. Church Farm; and
 - iv. Greengate Farm.
- b. Within 500m of the Site:
 - i. Thorpe Grange Farm;
 - ii. Sky Barn Farm;
 - iii. Ansons Farm;
 - iv. Greengate Farm;
 - v. Larker's Farm;
 - vi. Manor Farm;
 - vii. Highfield House Farm;
 - viii. Green Man Farm;
 - ix. Low Field Farm;
 - x. Witham Farm; and
 - xi. South Farm.

Visitor Attractions

12.5.38 There are no visitor attractions within the Site or the 500m Study Area.

Community Facilities

12.5.39 **Table 12-17** illustrates the community and recreational facilities within 2km of the Principal Site.

Table 12-17: Community and Recreational Facilities

Recreational Receptor	Description	Approximate Distance from the Site
Principal Site		
The John Hunt Memorial Wesleyan Church	Church in Thorpe on the Hill	230m
Read Faith Church	Church in North Hykeham	1.2km
Saint Germain Church	Church in Bassingham	50m
St Peter's Church	Church in Aubourn	1.2km
Saint Michael and All Angels' Church	Church in Bassingham	300m
Wesleyan Chapel	Religious Institution in Bassingham	260m
St Peter's Church	Church in Norton Disney	500m
St Marys Church	Church in Carlton-le-Moorland.	1.8km
Game Keeper	Pub in South Hykeham	850m
The Royal Oak	Pub in Aubourn	950m
South Hykeham Village Hall	Village Hall in South Hykeham	1.2km
Hammond Hall and Sports Centre	Community Sports Club in Bassingham	400m
Norton Disney Village Hall	Village Hall in Norton Disney	560m
Witham St Hughs Village Hall	Village Hall in Witham St Hughs	850m
Carlton Le Moorland Village Hall	Village Hall in Carlton Le Moorland	1.9km
Bassingham Surgery	Health Care Centre in Bassingham	500m
St Michael's C of E Primary School	Primary School in Thorpe on the Hill	450m
Swinderby All Saints C of E Primary School & Pre School	Primary School in Swinderby	1.5km
Bassingham Primary School	Primary School in Bassingham	300m
Whisby Nature Reserve	Nature Reserve	800m

Recreational Receptor	Description	Approximate Distance from the Site
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Cable Corridor

Tempest Arms	Pub in Coleby	1km
Coleby Village Hall	Village Hall in Coleby	1.3km
Coleby C Of E Primary School	Primary School in Coleby	1.2km

Future Baseline

12.5.40 The future baseline scenarios are set out in **PEI Report Volume 1, Chapter 5: EIA Methodology and Consultation**.

12.5.41 The future baseline is anticipated to be largely the same as the existing baseline for socio-economics and land use. However, it would be reasonable to expect that population will increase. According to ONS population projections (Ref 12-25), the population of North Kesteven is expected to increase from 118,600 in 2021 to 133,700 in 2043, which represents an increase of 12.7%. In the East Midlands and England as a whole, there are expected to be increases of 12.5% and 3.5% respectively.

12.5.42 In terms of the local economy, it would be reasonable to expect that employment and GVA would increase, associated with the expected increase in population. It is expected that PRow's will continue to be used. Businesses and community facilities may open and close however it is not expected that there will be any perceptible changes to the local economic baseline assessment and the Proposed Development should be assessed against current baseline conditions and policies. These changes are not considered to constitute significant changes to baseline.

12.6 Embedded Mitigation Measures

12.6.1 Primary mitigation measures are embedded within the Proposed Development, as set out in the respective chapters, to reduce other construction and operational effects (such as noise, air quality, transport, and landscape and visual) which in turn will mitigate the effects on the local community and existing facilities from a socio-economic and land use perspective.

12.6.2 The following embedded mitigation measures have been incorporated into the Proposed Development design, with more detailed proposals to be submitted with the DCO application.

Measures Embedded into the Design of the Proposed Development

12.6.3 Mitigation measures embedded into the design of the Proposed Development comprise the following:

- a. Positioning the permanent infrastructure to avoid BMV land as much as practicable;
- b. Locating noise-emitting equipment away from residential receptors;
- c. Providing additional planting to sympathetically integrate the Proposed Development into the local area;
- d. Avoiding closure of PRoW and existing permissive paths and keeping any PRoW diversions as localised as reasonably practicable. Additional permissive paths are proposed to further enhance the local connectivity; and
- e. Developing an optimal access strategy for construction, operation and decommissioning to mitigate effects relating to transport, which in turn will mitigate the effects on the local community and existing facilities from a socio-economic and land use perspective.

Construction

12.6.4 Measures to minimise construction impacts will be contained within the following documents:

- a. **A Framework Construction Environmental Management (CEMP) (PEI Report Volume 3, Appendix 3-A)** will detail and formalise the measures that will mitigate construction-related effects.
- b. A Framework Construction Traffic Management Plan (CTMP) will be developed as part of the DCO application and will contain mitigation to avoid and/or reduce impacts relating to construction traffic including the delivery of materials and transport of staff during the construction phase.
- c. A Framework Soil Management Plan will be provided as part of the DCO application and will contain industry standard good practice mitigation measures to reduce impacts on soil.
- d. A Framework PRoW Management Plan will be provided as part of the DCO Application which will detail mitigation to reduce impacts on PRoW.

Operation (and Maintenance)

12.6.5 A Framework Landscape and Ecological Management Plan (LEMP) will be prepared to accompany the DCO application. This document will set out the

principles for how the land will be managed throughout the operational phase, following the completion of construction.

Decommissioning

- 12.6.6 A Framework Decommissioning Environmental Management Plan (DEMP) will detail and formalise the measures that will mitigate effects related to decommissioning of the Proposed Development.

12.7 Preliminary Assessment of Effects

- 12.7.1 Taking into account the embedded mitigation measures as detailed in **Section 12.6** above, the potential impacts and effects of the Proposed Development were assessed using the methodology as detailed in **Section 12.4** of this Chapter.

Construction Effects

Employment during Enabling Works, Construction and Commissioning

- 12.7.2 The estimated construction period is expected to last 24 months. Therefore, the likely effects will be of a medium-term temporary nature. Although these jobs are temporary, they represent a positive economic effect for a substantial period that can be estimated from the function of the scale of the type of construction.
- 12.7.3 The Applicant estimates that the Proposed Development will require a maximum of up to 600 gross direct full-time employment (FTE) construction jobs on-site per day during this construction period and an average of 350 gross direct FTE jobs on-site per day during the construction period. This is based on activities required and will fluctuate during the period therefore being both higher and lower than average at some times.

Leakage

- 12.7.4 Leakage effects are the benefits to those outside the effect area, defined as a 60-minute travel area as shown in **Table 12-2**. It is estimated that 45% of construction staff could be sourced from within a 60-minute travel area (Study Area). This will be subject to labour availability and take-up at the time of construction however it is considered to be a reasonable assumption on which to base this assessment, based on professional experience and benchmarking against other comparable renewable energy projects. As such, 55% of staff would be likely to reside outside of this Study Area. This indicates that although a reasonably high proportion of employment opportunities will be retained in the effect area, a noticeable number of jobs will be taken up by people living outside of the Study Area. Whilst it is not a specific consideration of the assessment, it is noted that a larger proportion of the jobs taken up by people living outside the area will likely be in more specialised solar PV professions owing to the scarcity of such resources within localised areas compared with less skilled professions.

- 12.7.5 An adjustment of 55% has therefore been applied to the estimated 350 average gross direct construction jobs on-site on average during the construction period to estimate the jobs created within the target area. On this basis it is estimated that the Proposed Development will create 158 jobs for residents within the Study Area during construction.

Displacement

- 12.7.6 Displacement measures the extent to which the benefits of a development are offset by reductions in output or employment elsewhere. Any additional demand for labour cannot simply be treated as a net benefit since it has the potential to displace workers from other positions and the net benefit is reduced to the extent that this occurs.
- 12.7.7 Construction workers typically move between construction projects when delays occur or to help the workforce meet construction deadlines. Due to the flexibility of the labour market, construction labour force displacement has been assumed to be low.
- 12.7.8 The HCA Additionality Guide (Ref 12-12) provides standards (or 'ready reckoners') for displacement. Within the context of a construction project in the Study Area, a low displacement factor for 25% is considered appropriate according to the HCA. This factor is a best practice approach in the absence of special local information that might provide a defensible justification for a different level of displacement being used. Applying this level of displacement to the total gross direct employment figure results in a total net direct employment figure of 263 jobs per year during the construction period.

Multiplier Effect

- 12.7.9 In addition to the direct employment generated by the construction of the Proposed Development, there will be an increase in local employment arising from indirect and induced effects of the construction activity. Employment growth will arise locally through manufacturing services and suppliers to the construction process (indirect or supply linkage multipliers). Additionally, it is assumed part of the income of the construction workers and suppliers will be spent in the study area, generating further employment (in terms of induced or income multipliers).
- 12.7.10 The effect of the multiplier depends on the size of the geographical area that is being considered, the local supply linkages and income leakage from the area. The HCA Additionality Guide (Ref 12-12) provides a 'ready reckoner' of composite multipliers – the combined effect of indirect and induced multipliers. This is a best practice approach in the absence of specific information that might provide a defensible justification for another multiplier effect level being used, appropriate to the sectors concerned. The Study Area is likely to have 'average' supply linkages and induced effects, based on the scale of its economy compared to other locations. Therefore, a medium multiplier effect of 1.5 (which the HCA Guidance indicates will be appropriate for the majority of interventions) has been considered appropriate. Applying the 1.5 multiplier to the total net direct employment

figure of 263 workers results in net indirect and induced employment of 131 jobs per annum during the construction period.

Net Construction Employment

12.7.11 **Table 12-18** presents the temporary employment generated by the Proposed Development identified above, accounting for leakage, displacement and multiplier effects. The Proposed Development will support, on average, 394 total net jobs per annum during the construction period. Of these, 177 jobs per annum will be expected to be taken-up by residents within the Study Area.

Table 12-18: Net Additional Construction Employment per annum from the Proposed Development

	Study Area (60-minute travel area)	Outside Study Area	Total
Gross Direct Employment	158	193	350
Displacement	-39	-48	-88
Net Direct Employment	118	144	263
Indirect & Induced Employment	59	72	131
Total Net Employment⁴	177	217	394

Source: AECOM Calculation (2024)

12.7.12 The sensitivity of the local workforce to employment changes has been assessed as low, due to the low claimant count in the area (claimants are those who are unemployed and claiming job seekers allowance or other unemployment related benefits). In North Kesteven, 1.9% of residents aged 16–64 in August 2023 were claimants, a lower proportion than the 3.7% in England and Wales in the same period (Ref 12-26). The direct, indirect and induced employment, expenditure and upskilling created from the construction of the Proposed Development must be judged in the context of the labour pool of construction workers in the Study Area (approximately 100,000 workers) (Ref 12-16). Taking this into account, the impact of construction employment generation in the Study Area has been assessed as temporary low beneficial, which results in a medium-term temporary **minor beneficial** effect. This is considered **not significant**.

Gross Value Added (GVA)

12.7.13 Applying the average gross direct value added per construction worker in the area to the total number of construction workers generated from the Proposed Development gives the total GVA arising from the construction period. Note that this has been calculated based on the compound average GVA per worker in the construction sector in North Kesteven as the

⁴ Sum of Net Direct Employment and Indirect & Induced Employment. Totals may not add up due to rounding.

appropriate benchmark as data is published at this level rather than the more granular, LSOA-derived, Study Area.

12.7.14 In North Kesteven, the average GVA per worker in the construction sector was £81,000 in 2021, calculated by dividing the GVA in the North Kesteven construction industry by the number of construction workers stated in the Business Register and Employment Survey (Ref 12-16). By applying this figure to the net direct employment (excluding multiplier)⁵ generated by the Proposed Development (263, it is estimated that construction activity will contribute approximately £21.3 (£m) to the national economy, of which approximately £9.6 (£m) would likely be within the Study Area, as shown in **Table 12-19**.

Table 12-19: Gross Direct Value Added per annum from the Proposed Development during the Construction Phase

	Study Area (60-minute travel area)	Outside Study Area	Total
GVA during the construction phase (£m)	9.6	11.7	21.3

Source: AECOM Calculation (2024)

12.7.15 The impact of direct GVA generation from the construction phase on the Study Area economy has been assessed as medium-term temporary low beneficial, which results in a temporary **minor beneficial** effect. This is considered **not significant**.

12.7.16 The impact on the national economy as represented by the total GVA generated has been assessed as medium-term temporary low beneficial, which results in a temporary **minor beneficial** effect. This is considered **not significant**.

Temporary Worker Accommodation

12.7.17 Analysis of the hotel, bed and breakfast and inns accommodation sector has been undertaken to assess the likely capacity against the demand from the potential peak construction workforce. This assessment considers the potential for adverse impacts due to demand for accommodation exceeding supply during the construction phase. Only workers outside of the 60-minute drive time are considered, as workers within it will likely be home-based and will not require temporary accommodation.

12.7.18 This analysis indicates that, considering existing seasonal demand and typical occupancy (2022 levels) (Ref 12-28) the peak workforce outside of the 60-minute drive time (55% of the total peak workforce) of 330 workers could be accommodated within existing provision within a 60-minute drive time radius of the Site. This is shown in **Table 12-21**. Analysis indicates that

⁵ Indirect and induced employment are not considered as these jobs are in non-construction industries with much lower GVAs e.g. retail.

during peak seasonal occupancy (July), there would be 4,272 rooms (19% of total rooms) available after accounting for the peak construction workforce outside of the 60-minute drive time of 330.

12.7.19 Further analysis to identify accommodation within a 30-minute drive time radius (as shown in **Table 12-20**) indicates that at peak seasonal occupancy in July, there would be 4% spare capacity and 71 rooms remaining after considering the peak construction workforce outside of the 60-minute drive time (330).

12.7.20 In summary, this analysis demonstrates that at peak workforce employment and typical seasonal occupancy levels, 100% of the Proposed Development's construction workers could be accommodated within a 60-minute drive time of the Site and a 30-minute drive time.

12.7.21 Given this, there would be **no effect** on the hotel, bed and breakfast, and inns accommodation sector arising from the Proposed Development. It is anticipated that accommodation providers would be able to accommodate employees working at the Proposed Development without any adverse effects on the sector.

12.7.22 It can also be noted that this analysis only takes into consideration the hotel, bed and breakfast and inns accommodation sector. There are also alternative accommodations (such as Airbnb, serviced apartments, etc.) that could also cater for a portion of any demand generated and therefore mitigate further any impact on accommodation provision.

Table 12-20: Temporary Accommodation Capacity in a 30-Minute Drive Time Radius of the Site

Month	Typical Room Occupancy (%)	Inventory Rooms	Rooms Available After Existing Demand	Construction Workers (peak)	Remaining Rooms Available	Remaining Rooms available (%)
January	56%	2,003	881	330	551	28%
February	69%	2,003	621	330	291	15%
March	72%	2,003	561	330	231	12%
April	74%	2,003	521	330	191	10%
May	75%	2,003	501	330	171	9%
June	77%	2,003	461	330	131	7%
July	80%	2,003	401	330	71	4%
August	77%	2,003	461	330	131	7%
September	77%	2,003	461	330	131	7%
October	78%	2,003	441	330	111	6%
November	77%	2,003	461	330	131	7%

Month	Typical Room Occupancy (%)	Inventory Rooms	Rooms Available After Existing Demand	Construction Workers (peak)	Remaining Rooms Available	Remaining Rooms available (%)
December	65%	2,003	701	330	371	19%

Source: CoStar (2024), VisitEngland (2022), AECOM calculations (2024).

Table 12-21: Temporary Accommodation Capacity in a 60-Minute Drive Time Radius of the Site

Month	Typical Room Occupancy (%)	Inventory Rooms	Rooms Available After Existing Demand	Construction Workers (peak)	Remaining Rooms Available	Remaining Rooms available (%)
January	56%	23,011	10,125	330	9,795	43%
February	69%	23,011	7,133	330	6,803	30%
March	72%	23,011	6,443	330	6,113	27%
April	74%	23,011	5,983	330	5,653	25%
May	75%	23,011	5,753	330	5,423	24%
June	77%	23,011	5,293	330	4,963	22%
July	80%	23,011	4,602	330	4,272	19%
August	77%	23,011	5,293	330	4,963	22%
September	77%	23,011	5,293	330	4,963	22%
October	78%	23,011	5,062	330	4,732	21%
November	77%	23,011	5,293	330	4,963	22%
December	65%	23,011	8,054	330	7,724	34%

Source: CoStar (2024), VisitEngland (2022), AECOM calculations (2024).

Public Rights of Way

12.7.23 Changes to journey times, local travel patterns, and certainty of routes for users would arise from the temporary closures and diversions of PRoWs. Effects during construction on relevant routes are set out in the following paragraphs for the Site. As stated in **Section 12.5**, there is an extensive network of PRoW routes and existing permissive paths across the Study Area, with a notable concentration extending from Thorpe on the Hill and a concentration of paths connecting settlements through the centre of the Study Area. There are 22 PRoW and seven permissive paths located within the Principal Site, as well as 23 PRoW which run alongside the boundary or are within close proximity to the Principal Site. Furthermore, there are a

number of PRow which could be impacted by the Cable Corridor (noting that the width of the Cable Corridor may be narrowed at the ES stage).

- 12.7.24 There are no on or off-road dedicated / marked cycling facilities within the immediate vicinity of the Principal Site.
- 12.7.25 The Proposed Development would require the permanent diversion of the LL/Aubo/10/1 PRow. The PRow runs north to south, connecting the PRow LL/Bass/4/2 to the LL/Aubo/13/1 path, with a length of approximately 760m. The additional length to journeys for users would be approximately 100m. Given the large network of PRows, roads and existing permissive paths in the area that could be used as substitutes, the sensitivity of the LL/Aubo/10/1 PRow is assessed to be low. Given the short increase in journey length for users, magnitude would also be low. This would result in a **negligible** effect, which is considered **not significant**.
- 12.7.26 The Proposed Development would require the permanent diversion of the LL/Aubo/12/2 PRow. The PRow has a length of approximately 260m. The additional length to journeys for users would be approximately 60m. Given the large network of PRows, roads and existing permissive paths in the area that could be used as substitutes, the sensitivity of the LL/Aubo/12/2 PRow is assessed to be low. Given the short increase in journey length for users, magnitude would also be low. This would result in a **negligible** effect, which is considered **not significant**.
- 12.7.27 The Proposed Development would require the permanent diversion of the LL/TOTH/13/1 PRow. The PRow has a length of approximately 170m. The additional length to journeys for users would be under 10m. Given the large network of PRows, roads and existing permissive paths in the area that could be used as substitutes, the sensitivity of the LL/TOTH/13/1 PRow is assessed to be low. Given the short increase in journey length for users, magnitude would also be low. This would result in a **negligible** effect, which is considered **not significant**.
- 12.7.28 All other PRow are expected to experience minimal to no impacts during construction and will stay open. Given that there is a large network of PRows and existing permissive paths within the Study Area that could be used as substitutes in the case of PRow closure, these PRow are assessed to have low sensitivity. Due to the limited scale of impacts, the impacts upon PRows are assessed to be very low adverse, which results in a **negligible** effect. This is considered **not significant**.
- 12.7.29 A Framework PRow Management Plan will be produced at ES stage which will detail mitigation measures to reduce the impacts of the Proposed Development on PRow.

Local Amenities and Land Use

Agricultural Land

12.7.30 From the construction phase, temporary and permanent use of agricultural land will occur. The Proposed Development has been designed to take into account the quality of agricultural land, such as positioning the permanent infrastructure, to avoid BMV land as far as practicable.

Temporary Use

12.7.31 The total area of agricultural land temporarily required for the construction is defined as the area of agricultural land required from construction and throughout operation of the Proposed Development, which would be returned to use for farming either upon decommissioning (Principal Site including the BESS Compound and the Onsite Substation) or upon completion of construction (Cable Corridor outside of the Principal Site).

12.7.32 The agricultural land within the Cable Corridor is only temporarily required during construction and will be restored to enable agriculture use in the area during operation.

12.7.33 Within the Principal Site the area of BMV land comprises approximately 303ha, all Grade 3a (see **Table 12-12**). As the loss of the entire area of BMV agricultural land is reversible (after operation and upon completion of decommissioning, and with the exception of limited areas of planting as discussed below), the temporary effect of the Proposed Development on the use of BMV agricultural land is assessed to be **not significant**.

12.7.34 According to the Department for Environment, Food and Rural Affairs (Defra), the East Midlands has 1.2 million ha of farmland (England as a whole has 9.2 million ha of farmland). The 1,049.7ha of agricultural land required temporarily for construction and operation constitutes 0.09% of the total farmland in the East Midlands.

12.7.35 These figures are all 1% or less and are therefore considered to support the conclusions of the assessment that the temporary effect on BMV land is **not significant**.

12.7.36 In terms of BMV, the East Midlands contains 618,789 ha of BMV (based on the Post 1988 dataset in England) (Ref 12-30). The Proposed Development will utilise approximately 303ha of BMV temporarily during construction and operation. This BMV being used by the Proposed Development represents 0.05% of the regional BMV.

Permanent Loss

12.7.37 Land permanently used is defined as the area of agricultural land disturbed during construction which is permanently taken out of agricultural use due to the Proposed Development. Given that the land within the Cable Corridor outside of the Principal Site will be returned to previous land use upon completion of construction, and all infrastructure within the Principal Site will be removed upon decommissioning, the only areas of agricultural land considered to be permanently lost due to the Proposed Development are

areas of planting and habitat creation introduced as part of the Proposed Development. The extent of these areas amount to a total use of 4.6ha of agricultural land of which 1.5ha is BMV land (Grade A). As this amounts to a loss of BMV which falls below the 20ha threshold, the permanent effect of the Proposed Development on the use of BMV land is assessed to be **not significant**.

Residential Properties, Business Premises, Visitor Attractions and Community Facilities

- 12.7.38 There are no residential properties, business premises, visitor attractions or community facilities within the Site Boundary which would need to be demolished or which would be displaced in whole or in part by the Proposed Development.
- 12.7.39 The sensitivity of these receptors is assessed to be low, due to their low rarity and potential for substitution.
- 12.7.40 There is potential for noise, air quality, visual and traffic elements arising from construction of the Proposed Development to impact on the amenity of residents, businesses, visitor attractions and users of community facilities. Taking into account the results of the noise, traffic, visual and air quality preliminary assessments, there are two receptors that experience more than one significant adverse impact during construction. Grange Cottage experiences a moderate adverse residual visual effect as stated in **Chapter 10: Landscape and Visual Amenity**, as well as a significant vibration effect as noted in **Chapter 11: Noise and Vibration**. Housham Grange is reported to have a significant noise and a significant vibration effect as noted in **PEI Report Volume 1, Chapter 11: Noise and Vibration**. 19 Park Crescent in Morton is noted in **Chapter 11: Noise and Vibration** to have a Significant construction vibration impact; furthermore, **Chapter 10: Landscape and Visual Amenity** assesses Morton as a whole to have a moderate adverse significant visual impact during construction. Given the methodology outlined in Table 12-9, the magnitude of impact on the amenity of receptors during construction is assessed to be medium. This represents a **Minor Adverse** impact on receptor amenity, which is **Not Significant**.

Development Land

- 12.7.41 There are no planning applications, permissions or allocations affected by land required for the construction of the Proposed Development and thus no effects are expected to arise. There is a battery storage development adjacent to the Site Boundary, however the Proposed Development will not impact the use of or access to this site and **no effect** will occur.
- 12.7.42 A Minerals Assessment Report, presented in **PEI Report Volume 3, Appendix 12-C** has been prepared to address the comments made by Lincolnshire County Council in the Scoping Opinion (**PEI Report Volume 3, Appendix 1-B**), and a commitment has been made to undertake an assessment of Mineral Safeguarding Areas as part of the Socio-economic and Land Use assessment at the ES stage, which will be submitted with the DCO application.

Operational Effects

Employment

- 12.7.43 The Proposed Development will generate long-term jobs once it is complete and operational. In estimating operational employment generation, it is important to consider not just the gross effects of the Proposed Development, but also net effects considering leakage, displacement, and multiplier effects, as set out in **Table 12-22**.
- 12.7.44 The Applicant has estimated that to operate and maintain the Proposed Development there will be a gross number of four permanent jobs generated by the Proposed Development. It is noted that there is expected to be two visiting workers per week and additional staff occasionally when the solar infrastructure needs replacing or cleaning, totalling up to 20 staff per day. These are excluded from the assessment to present a worst-case scenario; only the four permanent workers are considered.
- 12.7.45 There will be some job losses amongst the existing agricultural workforce, with the precise number dependent on the final landtake for the Proposed Development and areas of landscaping and ecological mitigation or enhancement to be submitted with the DCO application. At this stage it is expected that the number of job losses onsite will roughly equate to the number of full time equivalent jobs directly created by the Proposed Development of four permanent jobs. It is assumed that these jobs will not be supported due to the operational activities of the Proposed Development.

Table 12-22: Total Net Employment during Operation of the Proposed Development

	Study Area (60-minute travel area)	Outside Study Area	Total
Existing Employment			
Gross Direct Employment	2	2	4
Displacement	0	-1	-1
Net Direct Employment	2	1	3
Indirect & Induced Employment	1	1	2
Total Existing Employment	3	2	5
New Employment			
Gross Direct Employment	2	2	4
Displacement	0	-1	-1
Net Direct Employment	2	1	3

	Study Area (60-minute travel area)	Outside Study Area	Total
Indirect & Induced Employment	1	1	2
Total New Employment	3	2	5
Total Net Employment (Total New Employment – Total Existing Employment)	0	0	0

Source: AECOM Calculations (2024)

12.7.46 The sensitivity of the local workforce to employment changes has been assessed as low, due to the low claimant count in the area (claimants are those who are unemployed and claiming job seekers allowance or other unemployment related benefits). The direct, indirect and induced employment, expenditure and upskilling created from the operation of the Proposed Development must be judged in the context of the labour pool of workers in the Study Area. Within a 60-minute drive, there are approximately 3,920,600 people, of which approximately 2,217,802 are economically active (Ref 12-14). Taking this into account, the impact of operational employment generation in the Study Area has been assessed as permanent no change, which results in a **Neutral** effect. This is considered **not significant**.

Public Rights of Way

12.7.47 Effects during operation on relevant PRoW are set out in the following paragraphs for the Site. As stated in **Section 12.5**, there is an extensive network of routes across the Study Area, with a notable concentration extending from Thorpe on the Hill and a concentration of paths connecting settlements through the centre of the Study Area. There are 22 PRoW and seven existing permissive paths located within the Principal Site, as well as 23 PRoW which run alongside the boundary or are within close proximity to the Site.

12.7.48 There are no on or off-road dedicated / marked cycling facilities within the immediate vicinity of the Principal Site.

12.7.49 A Framework PRoW Management Plan will be produced at ES stage which will detail mitigation measures to reduce the impacts of the Proposed Development on PRoW.

12.7.50 The permanent diversions of PRoW LL/Aubo/10/1, LL/Aubo/12/2 and LL/TOTH/13/1 would remain during the operation and maintenance phase. As outlined during the construction phase, the permanent diversion of these PRoWs would result in **negligible** effects. These are considered **not significant**.

12.7.51 There would be no additional effects on the rest of the PRoW outside of those identified in construction and therefore there would be **no effect** on

existing PRoWs and permissive paths during operation outside of the impact to PRoWs LL/Aubo/10/1, LL/Aubo/12/2 and LL/TOTH/13/1.

12.7.52 The Proposed Development will also create a number of new permissive paths across the Principal Site. Although these are not formal right of ways with indefinite protection, the landowner having the ability to remove the permissive path following the decommissioning phase, during operation they will provide safe routes for the use of local residents in the area and connections between existing PRoW resulting in some reduction to local journey lengths. Taking this into account, the impact on users of PRoW from the provision has been assessed as permanent low beneficial which results in a **minor beneficial** effect. This is considered **not significant**.

Local Amenities and Land Use

Agricultural Land

12.7.53 Effects on BMV agricultural land would occur as long-term effects arising from the construction of the Proposed Development and hence have been assessed in the construction phase.

12.7.54 While the Proposed Development is operational, the soil resource within the Principal Site will remain under a perennial grass cover, with the exception of areas related to the standalone BESS (in the case of the AC-coupled BESS option), solar station compounds and on-site substation which will comprise hardstanding during operation but will be returned to the previous land use following decommissioning. Benefits to the soil resource during the operational period of green cover with no ploughing will include:

- a. No bare soil surfaces vulnerable to wind and water erosion;
- b. Improved infiltration of rainwater reducing erosive surface water runoff;
- c. Greater exploitation of subsoil by perennial plant roots, improving drainage and loosening compacted subsoils; and
- d. Recovery of topsoil organic matter to a higher equilibrium, improving aggregate stability, water holding capacity and plant nutrient availability.

12.7.55 By facilitating a recovery in topsoil organic matter, this enforced fallow period will enhance the functional capacity of the soil resource for future arable production. Additional benefits from the recovery of soil organic matter include carbon sequestration and hydrological function but this assessment centres on the soil's functional capacity for agricultural production.

12.7.56 Although the elevated soil organic matter content can be sustained on return to arable production, it should be noted that standard cultivation practice will result in a rapid decline back toward the current baseline.

12.7.57 The land use can be returned to farming following the construction of the Proposed Development and the land required for construction of the Cable Corridor would be restored to enable agricultural use in this area during operation.

Residential Properties, Business Premises, Visitor Attractions and Community Facilities

- 12.7.58 There is potential for noise, air quality, visual and traffic effects arising from the operation of the Proposed Development to impact on the amenity of residents, businesses, visitor attractions and users of community facilities.
- 12.7.59 The sensitivity of these receptors is assessed to be low, due to their low rarity and potential for substitution.
- 12.7.60 Taking into account the results of the noise, traffic, visual and air quality preliminary assessments, there is one receptor that will experience more than one significant adverse impact during operation. Grange Cottage experiences a moderate adverse residual visual effect as stated in **Chapter 10: Landscape and Visual Amenity**, as well as a significant noise effect as noted in **Chapter 11: Noise and Vibration**. Given the methodology outlined in **Table 12-9**, the magnitude of impact on the amenity of receptors during operation is assessed to be low. This represents a **Negligible** impact on receptor amenity, which is **Not Significant**.

Development Land

- 12.7.61 There are no planning applications, permissions or allocations affected by land required for the operation of the Proposed Development and thus no effects have been assessed. There is a battery storage development adjacent to the Site, however the Proposed Development will not impact the use of or access to this site and **no effect** will occur.
- 12.7.62 An assessment of mineral safeguarding areas will be undertaken at the ES stage, see **PEI Report Volume 3, Appendix 12-C: Minerals Assessment Report**.

Decommissioning Effects

Employment During Decommissioning (temporary medium-term)

- 12.7.63 The estimated duration of the decommissioning period is expected to be less than or similar to that of the construction period, being up to 24 months, and could be undertaken in phases. Therefore, the likely effects will be of a short-term temporary nature (for the duration of decommissioning operations only). Although these jobs are temporary, they represent a positive economic effect that can be estimated as the function of the scale and type of activities required to decommission the Proposed Development.
- 12.7.64 It is assumed based on the activities taking place that the same number of jobs required for constructing the Proposed Development will be needed to carry out the activities required to remove the infrastructure from the Site. Therefore, an average of 350 gross FTE jobs will be on-site per day during this decommissioning period.
- 12.7.65 **Table 12-23** presents the temporary decommissioning employment generated by the Proposed Development, accounting for leakage, displacement and multiplier effects, as identified in the above section on the

construction period. The Proposed Development will support, on average, 394 total net jobs per annum during the decommissioning period. Of these, 177 jobs per annum will be expected to be taken-up by residents within the Study Area, whilst 217 jobs will likely be taken-up by workers living outside the area.

Table 12-23: Net Additional Decommissioning Employment per annum from the Proposed Development

	Study Area (60-minute travel area)	Outside Study Area	Total
Gross Direct Employment	158	193	350
Displacement	-39	-48	-88
Net Direct Employment	118	144	263
Indirect & Induced Employment	59	72	131
Total Net Employment⁶	177	217	394

Source: AECOM Calculations (2024)

Employment Loss Following Decommissioning (Permanent Long-Term)

12.7.66 It can be expected when the Proposed Development is decommissioned, the employment required to operate the solar farm (four jobs) and the employment from the additional staff for cleaning and replacing the solar equipment will no longer be generated. However, after decommissioning, the vast majority of the land will be returned to its prior use. In the worst-case scenario where the land is not utilised after decommissioning, there would be a loss of four jobs. The sensitivity of the local workforce to employment changes has been assessed as low, due to the low claimant count in the area (claimants are those who are unemployed and claiming job seekers allowance or other unemployment related benefits). The employment lost after the decommissioning of the Proposed Development must be judged in the context of the labour pool in the Study Area. Within a 60-minute drive, there are approximately 3,920,600 people, of which approximately 2,217,802 are economically active (Ref 12-14). Taking this into account, the impact magnitude has been assessed as very low, which results in a **negligible** effect. This is considered **not significant**.

Public Rights of Way

12.7.67 Changes to journey times, local travel patterns, and certainty of routes for users would arise from the temporary diversions of PRoW. Effects during decommissioning on relevant routes are set out in the following paragraphs. There are 22 PRoW and seven existing permissive paths located within the Principal Site, as well as 23 PRoW which run alongside the boundary or are

⁶ Sum of Net Direct Employment and Indirect & Induced Employment. Totals may not add up due to rounding.

within close proximity to the Site. There are not expected to be any closures of PRow during decommissioning as it is expected that decommissioning activities will be organised similar to construction. Reversing the PRow diversions of LL/Aubo/10/1, LL/Aubo/12/2 and LL/TOTH/13/1 will be discussed with the Local Planning Authority prior to decommissioning.

12.7.68 A Framework PRow Management Plan will be produced at ES stage which will detail mitigation measures to reduce the impacts of the Proposed Development on PRow.

12.7.69 PRow have been assessed to have low sensitivity, due to the large network of substitute PRow in and around the Site. Due to the limited scale of impacts upon PRow, these impacts are assessed to be very low adverse, which results in a **negligible** effect. This is considered **not significant**.

Local Amenities and Land Use

Agricultural Land

12.7.70 An increase in soil organic matter content may occur during the lifetime of the Principal Site. The land will therefore be in the same or better condition than it currently is, as a result of the expected natural enhancement through being set aside for a long period of time. However, this is likely to be temporary and subject to good agricultural land management practices being adopted after decommissioning.

12.7.71 The land used for the Proposed Development will be returned to its former use after decommissioning. Ground physical infrastructure (including the standalone BESS compound, solar station compounds and on-site substation) will be removed, and the Principal Site returned to landowners in the condition as at the end of operation.

12.7.72 The Principal Site will not be available for farming during decommissioning activities, while works are taking place on site. However, as long as it is safe to do so, soil will be returned to grassland for arable farming where decommissioning activities have finished and are commencing in other areas.

12.7.73 Overall, given the short time frame of any disruption to farming activities during decommissioning activities and the return of the Site to solely farming practices following completion of the decommissioning, the magnitude of change during the decommissioning phase is considered to be low and the significance of effect is negligible, and therefore **not significant**.

Residential Properties, Business Premises, Visitor Attractions and Community Facilities

12.7.74 There is potential for noise, air quality, visual and traffic effects arising from the decommissioning of the Proposed Development to impact on the amenity of residents, businesses, visitor attractions and users of community facilities.

12.7.75 The sensitivity of these receptors is assessed to be low, due to their low rarity and potential for substitution.

12.7.76 Taking into account the results of the noise, traffic, visual and air quality preliminary assessments, there is one receptor that will experience more than one significant adverse impact during decommissioning. Grange Cottage experiences a moderate adverse residual visual effect as stated in **Chapter 10: Landscape and Visual Amenity**, as well as a significant vibration effect as noted in **PEI Report Volume 1, Chapter 11: Noise and Vibration**. Given the methodology outlined in Table 12-9, the magnitude of impact on the amenity of receptors during decommissioning is assessed to be low. This represents a **Negligible** impact on receptor amenity, which is **Not Significant**.

Development Land

12.7.77 There are currently no planning applications, permissions or allocations affected by land required for the decommissioning of the Proposed Development and thus no effects have been assessed. This position will be re-considered at the time of decommissioning. There is a battery storage development adjacent to the Site, however the Proposed Development will not impact the use of this site and **no effect** will occur.

12.7.78 A Minerals Assessment Report is presented in **PEI Report Volume 3, Appendix 12-C**. the Report concluded that given the temporary nature of the Proposed Development, there will be no sterilisation of the mineral resource, and the ability of future generations to extract the resource over the long term will not be compromised. The Proposed Development will therefore ultimately have a **negligible** impact on sterilising the mineral resource, therefore impacts on mineral safeguarding areas during decommissioning are not anticipated. A full assessment of mineral safeguarding areas will be undertaken at the ES stage.

12.8 Additional Mitigation and Enhancement

12.8.1 No additional mitigation or enhancement measures are required, due to no significant adverse effects associated with socio-economics and land use being identified.

12.9 Residual Effects and Conclusions

12.9.1 Given no further mitigation or enhancement measures have been proposed, the potential effects identified previously remain valid.

12.9.2 The residual effects therefore remain the same as stated in the preliminary assessment, with no significant effects identified on socio-economics and land use.

12.10 Cumulative Assessment

- 12.10.1 This section presents a preliminary assessment of the potential for cumulative effects to arise between the Proposed Development and other proposed and committed plans and projects including other developments (referred to as 'Cumulative Schemes') within the surrounding area.
- 12.10.2 This preliminary assessment has been made with reference to the methodology and guidance set out in **PEI Report Volume 1, Chapter 5: EIA Methodology and Consultation** and **Chapter 15: Cumulative Effects and Interactions** and shortlist of cumulative schemes identified also identified in **Chapter 15: Cumulative Effects and Interactions**.
- 12.10.3 Of the shortlisted developments listed in **Chapter 15: Cumulative Effects and Interactions**, and shown on **PEI Report Volume 2, Figure 15-2**, seventeen developments are considered to have the potential for cumulative effects when considered alongside the Proposed Development due to being located within the 2km Zone of Influence for Socio-Economics. For the cumulative effects assessment of Land Use, the ZOI is the County of Lincolnshire.
- 12.10.4 This preliminary cumulative effect assessment identified for each receptor those areas where the predicted effects of the Proposed Development could interact with effects arising from other plans and, or projects on the same receptor based on a spatial and, or temporal basis.

Construction and Decommissioning

- 12.10.5 From the short list of developments, sixteen Cumulative Schemes were scoped in the assessment and were given consideration owing to their proximity to the Proposed Development or potential for impacts on the same receptors as the Proposed Development. Similar cumulative effects would be anticipated during decommissioning. These Cumulative Schemes are as follows, further details of the Cumulative Schemes can be found in **PEI Report Volume 1, Chapter 15: Cumulative Effects and Interactions**:
- a. ID 5 - 15/1347/OUT and associated applications: 24/0456/RESM / 22/0174/RESM / 21/0276/RESM;
 - b. ID8 - 18/0760/OUT / 21/1045/RESM;
 - c. ID 12 - 18/1346/EIASCR;
 - d. ID 13 - 18/1560/EIASCO;
 - e. ID33 - 20/1523/FUL;
 - f. ID34 - 20/1736/RESM;
 - g. ID37 - 21/1245/FUL;
 - h. ID49 - 22/0520/FUL;
 - i. ID54 - 22/1376/FUL;
 - j. ID58 - 22/1785/FUL;

- k. ID63 – EN010149;
- l. ID86 - 23/0584/EIASCRC / 23/0390/EIASCOC;
- m. ID89 - PL/0055/23;
- n. ID95 - PL/0087/23;
- o. ID98 - EIA/02/04; and
- p. ID 99 - EIA/03/24.

12.10.6 The remaining developments are scoped out of further assessment due to the Cumulative Developments existing outside of the 2km Zone of Influence for Socio-Economics, these were therefore deemed unlikely to have a cumulative impact.

Net Construction Employment

12.10.7 Should they go ahead, all the approved and submitted cumulative schemes listed above are anticipated to generate construction employment in the local economy and employment study area.

12.10.8 The scale of the construction employment generated cannot be readily quantified as this information is commercially sensitive and not publicly available. This will be assessed at ES stage as information relating to the other schemes will be available. In the instance where there is an overlap in construction activities between the Schemes, the combined effect of the Cumulative Schemes will lead to additional employment in the Study Area. It is likely that while there may be an increase in construction employment, the incremental change will be minor therefore the overall cumulative effect on the Study Area from the generation of workers during construction is anticipated to remain as a temporary **Minor Beneficial** effect which is considered **Not Significant**.

GVA

12.10.9 The combined effect from the generation of Gross Value Added (GVA) arising from the construction of the Cumulative Schemes and the Proposed Development is likely to remain a temporary **Minor Beneficial (Not Significant)** effect on the Study Area and national economy.

Temporary Worker Accommodation

12.10.10 If the construction phases of multiple Cumulative Schemes and the Proposed Development were to overlap, this would in turn increase demand in the accommodation sector from the increased workforce at the peak construction phase. However, within the assessment for the Proposed Development it was anticipated that there would be no effect (i.e. not even a negligible or a minor effect) on the hotel, bed and breakfast, and inns accommodation sector. In line with the methodology presented in **PEI Report Volume 1, Chapter 5: Environmental Impact Assessment Methodology and Consultation, Section 5.8**, effects to temporary accommodation are therefore not considered within the cumulative assessment as the Proposed Development would not make a meaningful

contribution to any cumulative effect which may occur from the other developments in the area.

PRoW

- 12.10.11 Potential effects on PRoW during construction have been assessed as negligible (not significant). Therefore, in line with the methodology presented in **PEI Report Volume 1, Chapter 5: Environmental Impact Assessment Methodology and Consultation, Section 5.8**, effects to PRoW during construction are not considered within the cumulative assessment as the Proposed Development would not make a meaningful contribution to any cumulative effect which may occur from other developments in the area.

Agricultural Land

- 12.10.12 Taking into consideration that the Proposed Developments and Cumulative Schemes would take up a very small proportion of the agricultural land in Lincolnshire, and England, and that some of the Cumulative Schemes are unlikely to take up agricultural land at all e.g. residential schemes. In addition, upon decommissioning, the majority of agricultural land will be returned to its previous use and would not be permanently lost for the Proposed Development, unlike other types of built development.
- 12.10.13 As soil can be considered as a national receptor, the Zol for assessing the potential for cumulative effects on land use for the purpose of this assessment is the County of Lincolnshire. Due to the number of proposed solar developments in Lincolnshire, there is potential for cumulative effects to arise on agricultural land due to the potential for BMV land to be lost.
- 12.10.14 This preliminary cumulative effects assessment therefore considers all solar NSIPs within the County of Lincolnshire, which are listed in Table 12-24 below, which presents the information on BMV land take (where available) for each solar NSIP. Where information on BMV land take is not available due to the solar NSIP being at the pre-application stage, a reasonable worst case assumption has been considered whereby it has been assumed for the purpose of this assessment, that the BMV land beneath the solar infrastructure comprises 50% BMV.
- 12.10.15 The County of Lincolnshire contains approximately 490,000ha of farmland (England as a whole has approximately 9.2 million ha of farmland). With regards to BMV, Lincolnshire contains approximately 366,900ha. Taking this into account, the solar NSIPs in Lincolnshire, together with the Proposed Development account for approximately 1.42% of the BMV land in the County. Whilst this number is not precise, it is illustrative that the solar NSIPs will not take significant amounts of BMV land in the County.
- 12.10.16 No significant effects on agricultural land were reported for any of the solar NSIPs identified in Table 12-24. All the developments will be reversible in nature and the loss of agricultural land resource is almost entirely returned to its current state at scheme end, aside from a small proportion of land such as woodland planting incorporated into these schemes.

12.10.17 Whilst it is not possible to quantify the use of BMV land for every planned solar development in the region, analysis of the Proposed NSIPs in Table 1 signify that the effect on agricultural land, including BMV, across the county is likely to remain minimal. Therefore, the cumulative effect on agricultural land associated with the Proposed Development remains not significant when considered at the County level. This is no greater than the effect of the Proposed Development in isolation. Further cumulative assessment of the effects of the Proposed Development on agricultural land and BMV will be considered in the ES.

Table 12-24: Approximate BMV land under solar infrastructure for solar NSIPs in Lincolnshire County

Solar NSIP	Approximate BMV land under solar infrastructure (ha)	Distance from the Proposed Development (km)
Little Crow Solar Park	36.6	43.41
Cottam Solar Project	48.1	14.88
Tillbridge Solar Project	60.3	14.99
Gate Burton Energy Park	73.6	14.99
Steeple Renewables	471.7*	18.39
One Earth Solar	750*	7.21
West Burton	199.5	10.54
Great North Road Solar Project	1450*	8.52
Springwell	851*	0
Beacon Fen Energy Park	518*	15.24
Heckington Fen Solar Park	257	20.9
Temple Oaks Renewable Energy Park	175*	25.96
Mallard Pass	14.4	43.14
Fosse Green Energy	303	-
Total	5208.2	

* Approximation of BMV land under solar infrastructure based on 50% worst case assumption due to limited project information available at the time of writing.

Residential Properties, Business Premises, Visitor Attractions and Community Facilities

12.10.18 During the construction phase of the Proposed Development, effects on the amenity of residential properties, business premises, visitor attractions and community facilities are assessed to be minor adverse (not significant). There is limited information available on how the Cumulative Schemes might affect such assets during the construction phase, however based on the assumption that each Scheme will be designed to minimise such impacts wherever possible, it is considered that the cumulative effect is likely to remain **Minor Adverse (Not Significant)**, as is the case for the Proposed Development in isolation. Any further information released on the impacts of the Schemes on residential properties, business premises, visitor attractions and community facilities available will be considered further in the ES Chapter.

Development Land

12.10.19 Potential effects on development land during construction have been assessed to have no effect. Therefore, in line with the methodology presented in **PEI Report Volume 1, Chapter 5: Environmental Impact Assessment Methodology and Consultation, Section 5.8**, effects to development land during construction are not considered within the cumulative assessment as the Proposed Development would not make a meaningful contribution to any cumulative effect which may occur from other developments in the area.

Operation and Maintenance

Operational Employment

12.10.20 Potential effects on employment during operation have been assessed as negligible (not significant). Therefore, in line with the methodology presented in **PEI Report Volume 1, Chapter 5: Environmental Impact Assessment Methodology and Consultation, Section 5.8**, effects to employment during operation are not considered within the cumulative assessment as the Proposed Development would not make a meaningful contribution to any cumulative effect which may occur from other developments in the area.

PRoW

12.10.21 During the operation phase of the Proposed Development, effects on PRoW are assessed to be minor adverse (not significant). There is limited information available on how the Cumulative Schemes might affect such PRoW during the operation phase, however based on the assumption that each Scheme will be designed to minimise adverse impacts wherever possible, it is considered that the cumulative effect is likely to remain **Minor Beneficial (Not Significant)**. Any further information released on the impacts of the Schemes on PRoW available will be considered further in the ES Chapter.

Agriculture Land

- 12.10.22 Effects on agricultural land would occur as long-term effects arising from the construction of the Proposed Development and hence have been assessed in the construction phase which were considered not significant. Further cumulative assessment of the effects of the Proposed Development on agricultural land and BMV will be considered in the ES. Taking into consideration that the Proposed Development and Cumulative Schemes (including all solar NSIPs in Lincolnshire) take up only a small proportion of the agricultural land in England, and an even smaller proportion of BMV land, as well as the fact that many of the Cumulative are unlikely to take up agricultural land e.g. residential schemes. Particularly for the solar NSIPs considered, upon decommissioning the majority of agricultural land will be returned and not permanently lost. The Proposed Development is assessed to have a not significant effect during operation, and therefore the cumulative effect during operation is also assessed to be **Not Significant**. Several cumulative schemes also recognise that the soils should recover and improve during the projects' lifetime, given the change to rest from intensive arable farming, which is identified as a beneficial effect for some schemes, albeit there has not been an attempt at this stage to aggregate this benefit.

Residential Properties, Business Premises, Visitor Attractions and Community Facilities

- 12.10.23 Potential effects on the amenity of residential properties, business premises, visitor attractions and community facilities during operation have been assessed as negligible (not significant). Therefore, in line with the methodology presented in **PEI Report Volume 1, Chapter 5: Environmental Impact Assessment Methodology and Consultation, Section 5.8**, effects during operation are not considered within the cumulative assessment as the Proposed Development would not make a meaningful contribution to any cumulative effect which may occur from other developments in the area.

Development Land

- 12.10.24 Potential effects on development land during operation of the Proposed Development have been assessed to have no effect. Therefore, in line with the methodology presented in **PEI Report Volume 1, Chapter 5: Environmental Impact Assessment Methodology and Consultation, Section 5.8**, effects to development land during operation are not considered within the cumulative assessment as the Proposed Development would not make a meaningful contribution to any cumulative effect which may occur from other developments in the area.

12.11 References

- Ref 12-1 Ministry of Agriculture, Food and Fisheries, (1988); Agricultural Land Classification of England and Wales- Revised criteria for grading the quality of agricultural land.
- Ref 12-2 Defra (2018). Code of Practice for the Sustainable Use of Soils on Construction Sites. <https://www.gov.uk/government/publications/code-of-practice-for-the-sustainable-use-of-soils-on-construction-sites>
- Ref 12-3 Department of Energy and Climate Change (DECC) (2011) National Policy Statement for Energy (EN-1). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47854/1938-overarching-nps-for-energy-en1.pdf.
- Ref 12-4 Department for Energy Security & Net Zero (2023) Overarching National Policy Statement for Energy (EN-1). Available at: [EN-1 Overarching National Policy Statement for Energy \(publishing.service.gov.uk\)](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/115441/EN-1-Overarching-National-Policy-Statement-for-Energy.pdf)
- Ref 12-5 Department of Energy and Climate Change (2011) National Policy Statement for Renewable Energy Infrastructure (EN3). Available at: [1940-nps-renewable-energy-en3.pdf \(publishing.service.gov.uk\)](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1940-nps-renewable-energy-en3.pdf)
- Ref 12-6 Department for Energy Security and Net Zero (2023). National Policy Statement for Renewable Energy Infrastructure EN-3. Available at: [National Policy Statement for renewable energy infrastructure \(EN-3\) \(publishing.service.gov.uk\)](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/115441/National-Policy-Statement-for-renewable-energy-infrastructure-EN-3.pdf)
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- Ref 12-9 MHCLG (2014) Planning Practice Guidance: Noise. Available at: <https://www.gov.uk/guidance/noise--2>.
- Ref 12-10 Greater Lincolnshire Local Enterprise Partnership, (2021); Local Industrial Strategy.
- Ref 12-11 Joint Strategic Planning Committee (2023). Central Lincolnshire Local Plan.
- Ref 12-12 Homes and Communities Agency, (2014); Additionality Guide Fourth Edition

- Ref 12-13 Ministry of Housing, Communities and Local Government, (2019); Indices of deprivation.
- Ref 12-14 Office for National Statistics (ONS), (2022); Census 2021
- Ref 12-15 ONS, (2018); Regional gross value added (income approach). Table 2: Gross Value Added (Income Approach) per head of population at current basic prices.
- Ref 12-16 ONS, (2022); Business Register and Employment Survey 2021
- Ref 12-17 ONS, (2022); Annual Population Survey (January 2022-December 2022)
- Ref 12-18 ONS, (2020); Annual Population Survey (January 2021-December 2021).
- Ref 12-19 ONS, (2019); Mid-Year Population Estimates 2021
- Ref 12-20 Natural England, (2012); Technical Information Note TIN049. Agricultural Land Classification: protecting the best and most versatile agricultural land.
- Ref 12-21 MAFF, (1988); 'Agricultural Land Classification of England and Wales: Revised guidelines and criteria for grading the quality of agricultural land' HMSO
- Ref 12-22 Town and Country Planning (General Development Procedure) Order 2015 (S.I. No 2015/595), Article 18(1), paragraph (y).
- Ref 12-23 DCLG, (2019); Indices of Multiple Deprivation
- Ref 12-24 LCC; Rights of Way Interactive Map.
- Ref 12-25 ONS, (2018); Population Projections
- Ref 12-26 ONS, (2023); Claimant Count
- Ref 12-27 CoStar (2024).
- Ref 12-28 VisitEngland (2022). England Hotel Occupancy: Archive. Available at: [UK Hotel Occupancy Rate Data Archive | VisitBritain.org](#)
- Ref 12-29 ONS, (2023); Regional gross value added (balanced) by industry.
- Ref 12-30 Natural England, (2023); Agricultural Land Classification (ALC) Grades - Post 1988 Survey