

**Tillbridge Solar Project
EN010142**

**Volume 6
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14. Socio-Economics and Land Use

14.1 Introduction

14.1.1 This chapter presents the findings of an assessment of the significant effects of the Scheme on socio-economics and land use. For more details about the Scheme, refer to **Chapter 3: Scheme Description** of this Environmental Statement (ES) [EN010142/APP/6.1].

14.1.2 This chapter identifies the potential impacts of the Scheme and proposes mitigation measures to address the significant effects on socio-economics and land use during the construction, operation (including maintenance), and decommissioning phases. This includes consideration of the potential for impacts arising with regard to:

- a. Local economy and employment;
- b. Local community severance;
- c. Public Rights of Way (PRoW);
- d. Agricultural production; and
- e. Local land use and amenity (residential properties, local businesses, accommodation facilities, open space, community facilities, visitor attractions and development land).

14.1.3 This chapter is supported by the following appendices in the ES [EN010142/APP/6.2]:

- a. **Appendix 14-1: Socio-economics and Land Use Legislation, Policy and Guidance.**

14.1.4 The assessment of effects on farming circumstances, which was considered in the Socio-Economics and Land Use chapter in the Preliminary Environmental Information (PEI) Report, is now provided in **Chapter 15: Soils and Agriculture** of this ES [EN010141/APP/6.1].

14.1.5 This chapter is supported by the following ES figures [EN010142/APP/6.3]:

- a. **Figure 14-1: 60-Minute Drive Time Analysis Study Area;** and
- b. **Figure 14-2: Study Area for Socio-economic and Land Use Effects.**

14.2 Legislation and Planning Policy

14.2.1 **Appendix 14-1** of this ES [EN01042.APP/6.2] identifies the legislation, policy and guidance of relevance to the assessment of likely significant socio-economic and land use effects of the Scheme.

14.3 Assessment Assumptions and Limitations

14.3.1 There is currently no statutory guidance on the methodology for undertaking assessments of socio-economic and land use effects. The assessment

follows professional judgement and best practice methodology from other assessments undertaken on comparable energy infrastructure schemes.

- 14.3.2 The assessment of the significance of effects has been carried out against a benchmark of current socio-economic baseline conditions prevailing around the Scheme, as far as is possible within the limitations of such a dataset. The most recently available data sources have been used in this assessment, 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.
- 14.3.3 Effects on PRow during the construction, operation and decommissioning phases of the Scheme are assessed in this chapter. No permanent PRow closures or diversions are expected; however, temporary PRow diversions are assessed as a worst-case assumption.
- 14.3.4 Effects on local amenities and land use during the construction, operation and decommissioning phases take into consideration the results from the relevant assessments of environmental impacts that can act in-combination to cause effects on local amenities and land use. These comprise **Chapter 16: Transport and Access, Chapter 13: Noise and Vibration, Chapter 12: Landscape and Visual Amenity, and Chapter 6: Air Quality** of this ES [EN010142/APP/6.1].
- 14.3.5 Effects on agricultural production arising from impacts to agricultural land are assessed in this chapter. Effects on Agricultural land quality, Soil resource and Farming circumstances, which includes effects on businesses as users of agricultural land, are assessed in **Chapter 15: Soils and Agriculture** of this ES [EN010141/APP/6.1].
- 14.3.6 The effect of the generation of operational employment is assessed in this chapter. This is a net effect which factors in the displacement of existing jobs on-site. Existing employment is currently estimated at 10 jobs engaged in agricultural activities, which has been adopted as the assumption for the assessment.
- 14.3.7 As noted in **Chapter 3: Scheme Description** of this ES [EN010142/APP/6.1], the construction period is assumed to be 24 months. This is expected to be a realistic worst-case assumption for the 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, etc). If the construction period were to last longer than 24 months, worker numbers onsite would be lower as the intensity of activity will be lessened and impacts from traffic, noise, etc would be no worse than for the minimum build time. As the overall amount of construction activity would be unchanged irrespective of the duration of construction, employment and spending benefits would also not vary were this to be different.

14.4 Assessment Methodology

Study Area

- 14.4.1 The impacts of the Scheme with respect to socio-economics and land use are considered at varying spatial levels according to the spatial 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 Impacts of Projects, 4th Edition' (Ref. 14-1).
- 14.4.2 **Table 14-1** presents the different components of the socio-economics and land use effects assessment for the ES, the geographical scale at which each component is assessed and the rationale behind these geographical scales.

Local Economy and Employment

- 14.4.3 Impacts on the economy and employment have been considered within a 60 minute travel area, as well as the local authorities of West Lindsey District and Bassetlaw District, which are the Local Planning Authorities that the Scheme falls within, and the wider East Midlands region. Research by the 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 2017 Employee outlook 'Employee views on working life' (Ref. 14-2) The addition of the local authorities provides an understanding of the Gross Value Added (GVA) effects as the data is published at a local authority level. In addition, the local authority boundaries provide insight into the labour market effects throughout the authorities within which the Scheme is located, as well as the wider regional effect.
- 14.4.4 Due to the scale of the Scheme and its associated employment, relative to the national economy, it is unlikely that there would be any considerable national impacts and therefore the local economy and employment impacts have only been considered relative to the local and regional area.

Local community severance

- 14.4.5 The Study Area for local communities that could be affected by community severance has considered communities that may potentially be directly and indirectly affected by the Scheme. These include communities directly connected by recreational routes and PRoW. The communities that could be impacted are within 1 km of the Order limits. This radius takes account of the location of sensitive receptors for impacts arising from the Scheme. It is also based on professional judgement and experience from study areas used for previous studies for land use and amenity impacts at solar farms in England.

PRoW

- 14.4.6 The Study Area for impacts on users of recreational routes and PRoW considers the impacts on routes and PRoW that will be affected by alterations in their use during the construction, operation and decommissioning phases of the Scheme. This includes all PRoW located within 500m of the Order limits. This Study Area is based professional judgement and experience from study areas used for previous assessments

of impacts on routes and PROW for similar schemes in England. The Study Area also considers any other routes outside of this that may be impacted by the Scheme.

Agricultural Production

- 14.4.7 Impacts on agricultural production have been considered within Nottinghamshire and Lincolnshire counties, the wider East Midlands region and England. This Study Area is based on professional judgement and experience from study areas used for previous assessments of impacts on agricultural production for similar schemes in England.

Local Land Use and Amenity (residential properties, local businesses, open space, community facilities, visitor attractions and development land)

- 14.4.8 The Study Area for land use and amenity impacts on residential properties, local businesses, open space, community facilities, visitor attractions and development land considers receptors that could be directly or indirectly affected by the Scheme. The receptors that could be impacted are within 500m of the Order limits. This radius takes account of the location of sensitive receptors for impacts arising from the Scheme, both from direct land-take, access and environmental amenity effects as informed by other assessments. It is also based on professional judgement and experience from study areas used for previous studies for land use and amenity impacts at solar farms in England.
- 14.4.9 **Table 14-1** presents a summary of the different components of the socio-economics and land use assessment and the geographical scale at which each component is assessed.

Table 14-1: Summary of Socio-Economics and Land Use impacts by geographical scale

Impact	Geographical Area of Impact	Rationale for Impact Area
Employment generation during construction phase, operational phase and decommissioning phase (direct, indirect and induced impacts)	60-minute drive time Study Area (shown on Figure 14-1 of this ES [EN010142/APP/6.3]), Local Authority area (West Lindsey and Bassetlaw), and regional impact (East Midlands).	Professional judgment and experience from other schemes in England. Research by the 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 2017 Employee outlook 'Employee views on working life' (Ref. 14-2)
Gross Value Added (GVA) during construction phase		

Impact	Geographical Area of Impact	Rationale for Impact Area
		GVA data is published at a local authority level, but not for the drive time Study Area, hence the requirement for its conclusion.
Local community severance	Within 1 km of the Order limits and connected by PRow.	Professional judgement and location of sensitive receptors for impacts arising from the Scheme, as informed by other assessments.
PRow	Within 500m of the Order limits.	Professional judgment and experience from other schemes in England, considering routes impacted by the Scheme.
Agricultural production	County Council areas (Nottinghamshire and Lincolnshire), Regional impact (East Midlands) and National impact areas.	Professional judgement and experience from other schemes in England.
Local land use and amenity impacts – Residential Properties, Local Businesses, Open Space, Community Facilities, Visitor Attractions, Development Land	Within 500m of the Order limits, and with consideration to the spatial scale of impacts identified by related assessments (Chapter 6: Air Quality, Chapter 12: Landscape and Visual Amenity, Chapter 13: Noise and Vibration and Chapter 16: Transport and Access) of this ES [EN010142/APP/6.1].	Professional judgement and location of sensitive receptors for impacts arising from the Scheme as informed by other assessments.

Sources of Information

14.4.10 The assessment seeks to establish the potential social, economic, and land use effects of the Scheme and assesses these against the current baseline conditions within the Order limits and in the surrounding area.

Desktop Survey

14.4.11 Baseline data illustrating the existing conditions surrounding the Order limits has been collected through a desk-based research exercise using publicly

available sources, documents, and web-based applications. These sources are listed below.

14.4.12 Sources of information include:

- a. English Indices of Deprivation (2019) (Ref. 14-3);
- b. Office for National Statistics (ONS) (2011) Census 2011 (Ref. 14-4);
- c. ONS (2022) Census 2021 (Ref. 14-5);
- d. ONS (2021) Region by Industry Labour Productivity (Ref. 14-6);
- e. ONS (2022) UK Business Register and Employment Survey 2021 (Ref. 14-7);
- f. ONS (2021) Population Projections 2021 and 2043 (Ref. 14-8)
- g. Annual Population Survey Jan – Dec 2021 (Ref. 14-9);
- h. Annual Population Survey Jan – Dec 2022 (Ref. 14-10);
- i. Annual Population Survey April to March 2023 (Ref. 14-11);
- j. Claimant Count (July 2023) (Ref. 14-12);
- k. Lincolnshire Non-Definitive PRow map (Ref. 14-13);
- l. Nottinghamshire Definitive map (Ref. 14-14);
- m. Lincolnshire County Council Definitive map (Ref. 14-15);
- n. Nottinghamshire County Council Non-definitive PRow Map (Ref. 14-16);
- o. Central Lincolnshire Local Plan Adopted and Proposed Policies Map (Ref. 14-17); and
- p. Bassetlaw Local Plan Adopted and Proposed Policies Map (Ref. 14-18).

Impact Assessment Methodology

Assessment Criteria

14.4.13 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 schemes.

14.4.14 Where possible, socio-economic impacts have been appraised against relevant national standards. Where relevant standards do not exist, professional experience and expert judgement have been used to assess the scale, permanence and significance of the effects of the Scheme on baseline socio-economic and land-use receptors. The potential cumulative socio-economic and land-use impacts of the Scheme in interaction with other planned projects within the surrounding area has been assessed in **Chapter 18: Cumulative Effects and Interactions** of this ES [EN010142/APP/6.1].

14.4.15 Where possible, the assessment aims to quantify effects. However, some effects (by their nature) can only be evaluated on a qualitative basis. Effects are considered one of the following:

- a. **Beneficial** effect classifications indicate an advantageous or beneficial effect on an area, which may be minor, moderate or major in effect;

- b. **Adverse** classifications indicate a disadvantageous or adverse effect on an area, which may be minor, moderate or major in effect;
- i. **Negligible** classifications indicate imperceptible effects on an area; and
- ii. **No effect** classifications indicate that there are no effects on an area.

14.4.16 Duration of effect is also considered, with more weight given to longer-term or permanent changes than to shorter-term or temporary effects.

14.4.17 As set out in **Chapter 5: EIA Methodology** of this ES [EN010142/APP/6.1], timescales associated with enduring effects are as follows:

- a. **Short term** – endures for up to 12 months;
- b. **Medium term** – endures for 1-5 years;
- c. **Long term** – endures for more than 5 years;
- d. **Reversible long-term effects** – long-term effects which endure throughout the lifetime of the Scheme, but which cease once the Scheme has been decommissioned; and
- e. **Permanent effects** – effect which cannot be reversed following decommissioning.

14.4.18 For socio-economics and land use, there is no accepted definition of what constitutes a significant (or not significant) effect. It is, however, recognised that effects are categorised based upon the relationship between the scale (or magnitude) of effect and the sensitivity (or value) of the affected 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 impact on socio-economic and land-use receptors in the context of the area within which effects will be experienced; and
- c. **Scope for adjustment:** the socio-economic and land-use 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 Scheme to be accommodated by market adjustment will therefore be a criterion in assessing effect significance.

14.4.19 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: local economy, employment and accommodation impacts, local community severance and PRow impacts, agricultural production impacts, and local land use and amenity impacts. The significance of effect matrix is set out following the receptor sensitivity and impact magnitude criteria.

Sensitivity of Receptor

Local Economy and Employment Impacts

14.4.20 **Table 14-2** identifies the sensitivity criteria that have been used to inform the assessment of local economy and employment impacts and impacts on local accommodation facilities.

Table 14-2: Receptor sensitivity criteria – local economy, employment and local accommodation facilities impact

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 a moderate or average capacity to experience the impact without incurring a change to their economic well-being.
Low	Businesses, workers or residents that generally have adequate capacity to experience impacts without incurring a change to their economic well-being.
Very Low	Businesses, workers or residents that are unlikely to experience impacts on their economic well-being.

Local Community Severance and PRow

14.4.21 **Table 14-3** identifies the sensitivity criteria that have been used to inform the assessment of impacts on local community severance and PRow users. The sensitivity criteria focus on the impact of severance of existing routes and the resulting changes in journey lengths and times and local travel patterns. This is used to assess both existing routes and new permissive pathways.

Table 14-3: Receptor sensitivity criteria – PRow

Sensitivity	Description
High	PRow of high importance such as designated National Trails or National Cycle Routes with no potential to substitute with other route options of equivalent distance to access with the wider network or community infrastructure.
Medium	PRow of medium importance such as named recreational walking or cycling routes with limited potential to substitute with other route options of similar distance to access with the wider network or community infrastructure.
Low	PRow of low importance with moderate potential to substitute with alternative route options of equivalent distance to access the wider network or community infrastructure.
Very Low	PRow of very low importance with high potential to substitute with alternative route options of equivalent distance to access the wider network or community infrastructure.

Agricultural production

14.4.22 **Table 14-4** identifies the sensitivity criteria that have been used to inform the assessment of agricultural production effects.

Table 14-4: Receptor sensitivity criteria – Agricultural production

Sensitivity	Description
Very 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.
High	Businesses, workers or residents that have a moderate or average capacity to experience the impact without incurring a change to their economic well-being.
Medium	Businesses, workers or residents that generally have adequate capacity to experience impacts without incurring a change to their economic well-being.
Low	Businesses, workers or residents that are unlikely to experience impacts on their economic well-being.

Local Land Use and Amenity – Residential Properties, Local Businesses, Open Space, Community Facilities, Visitor Attractions and Development Land

14.4.23 **Table 14-5** identifies the sensitivity criteria that have been used to inform the assessment of effects relating to local land uses.

Table 14-5: Receptor sensitivity criteria – local land use and amenity

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

Magnitude of Impact

Local Economy, Employment and Local Accommodation Facilities Impacts

14.4.24 **Table 14-6** identifies the magnitude of impact criteria that have been used to assess the socio-economic receptors relating to employment, GVA and the accommodation sector.

Table 14-6: Local economy, employment and accommodation sector magnitude impact 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 and will lead to a medium or large change to the Study Area’s baseline socio-economic conditions.
Medium	An impact that will typically have a noticeable effect of 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.

Local Community Severance and PRoW

14.4.25 **Table 14-7** identifies the magnitude of impact criteria which have been used to assess the impacts on local community severance and PRoW.

Table 14-7: Local community severance and prow magnitude impact 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	No increase or 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 production

14.4.26 **Table 14-8** identifies the magnitude of impact criteria that have been used to assess the impacts on agricultural production.

Table 14-8: Agricultural production magnitude impact criteria

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

Local Land Use and Amenity

14.4.27 The magnitude of change on local land use and amenity (residential properties, local businesses, open space, community facilities and visitor attractions) is assessed by appraising the level of impact on the receptor and the permanence of change arising from the Scheme. **Table 14-9** identifies the magnitude of impact criteria which have been used to assess the impacts on local land use and amenity.

Table 14-9: Local land use and amenity (residential properties, business premises, open space, community facilities and visitor attractions) magnitude impact criteria

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

14.4.28 For development land, defined as either land allocated for development or safeguarding in a given Local Plan, or extant planning permissions, an assessment has been undertaken of the effects on development land within the Study Area as identified from a review of Local Plans and Annual Monitoring Reports. **Table 14-10** identifies the magnitude of impact criteria which have been used to assess the impacts on development land.

Table 14-10: Local land use and amenity (development land) magnitude impact 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.
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

14.4.29 Socio-economic and land-use effects reflect the relationship between the sensitivity of the affected receptor, and the magnitude of the impact. **Table 14-11** below shows how the assessment of the significance of effects is determined.

Table 14-11: Impact assessment and significance

Magnitude of impact	Sensitivity of Receptor			
	High	Medium	Low	Very Low
High	Major	Major	Moderate	Minor
Medium	Major	Moderate	Minor	Negligible
Low	Moderate	Minor	Negligible	Negligible
Very Low	Minor	Negligible	Negligible	Negligible

14.4.30 In accordance with the methodology set out within **Chapter 5: EIA Methodology** of the ES [EN010142/APP/6.1], the following criteria is applied:

- a. 'Moderate' or 'Major' effects are classed '**significant**';
- b. 'Minor' effects are classed as '**not significant**', although they may be a matter of local concern; and
- c. 'Negligible' effects are classed as '**not significant**', although they may be a matter of local concern.

14.5 Stakeholder Engagement

- 14.5.1 A request for an EIA Scoping Opinion, **Appendix 1-2: EIA Scoping Opinion [EN010142/APP/6.2]**, was sought from the Secretary of State through the Planning Inspectorate in 2022 as part of the EIA Scoping Process. A summary of consultation responses relating to socio-economics and land-use to date are presented in **Table 14-12**. A response to comments with regards to agricultural land and soils assessment is provided within **Chapter 15: Soils and Agriculture** of this ES **[EN010141/APP/6.1]**.

Table 14-12: Scoping opinion responses (Socio-economics and Land Use)

Consultee	Summary of main matter raised	How has the matter been addressed?	Location of response in the chapter
Planning Inspectorate	The ES should include clear justification as to how Study Areas for socio-economic and land-use effects have been chosen, and Study Areas should be depicted on a corresponding figure.	Definitions of socio-economic and land-use Study Areas, and justification for how they were chosen are set out in this chapter. The Study Area is shown in Figure 14-2 of this ES [EN010142/APP/6.3].	Section 14.4.
Planning Inspectorate	The ES should set out the specific guidance material used to inform the assessment.	There is currently no statutory guidance on the methodology for undertaking assessments of socio-economic and land use effects. This assessment follows best practice methodology and professional experience applied in other energy infrastructure schemes. The methodology is set out in Section 14.4.	Section 14.4.
Fillingham Parish Council	The ES should address how the Scheme aligns with or impacts local planning policies that seek to address local employment and labour market challenges.	This chapter has considered relevant legislation, policy and guidance, including local planning policy, in Appendix 14-1: Socio-economics and Land Use Legislation, Policy and Guidance [EN010142/APP/6.2]. The assessment of the economic and employment impacts of the Scheme set out in this chapter is made with reference to local economic and labour market policies.	Section 14.8.
Glentworth Parish Council	The ES should address how the land use proposed is efficient in the wider picture, compared to other energy generating technologies.	The case for solar energy is made within the Government's National Policy Statement for Energy (Ref. 14-19), and the ES does not seek to address this issue. Further information on site selection and optimising land use can be	N/A.

Consultee	Summary of main matter raised	How has the matter been addressed?	Location of response in the chapter
West Lindsey District Council	<p>Study Areas for impacts on local land uses require justification. The use of a 500m buffer for PRow network requires explanation. The ES should capture the effects of the loss of around 1,400ha of arable land (4,000Ha with the three other solar project Nationally Significant Infrastructure Projects (NSIPs)) upon the local population, economy and West Lindsey as a tourist destination.</p>	<p>found in Chapter 4: Alternatives and Design Evolution of this ES [EN010142/APP/6.1]. Further information on the need for solar energy can be found in Statement of Need submitted alongside the DCO Application [EN010142/APP/7.1].</p> <p>A justification for the chosen socio-economic and land-use Study Areas is set out in this Chapter, including the 500m PRow Study Area. The cumulative effect of this Scheme in combination with other solar projects is assessed in Chapter 18: Cumulative Effects and Interactions of this ES [EN010142/APP/6.1].</p> <p>The effects of the Scheme on the local population and economy are set out in this chapter. The effect of the Scheme on landscape and visual amenity (which may be important with regard to tourism) are assessed in Chapter 12: Landscape and Visual Amenity of this ES [EN010142/APP/6.1]. Mitigation measures to minimise potential negative impacts are detailed in the Framework Construction Environmental Management Plan (CEMP) [EN010142/APP/7.8], the Framework OEMP [EN010142/APP/7.9] and the Framework DEMP [EN010142/APP/7.10] submitted alongside the DCO application.</p>	Section 14.4 and Section 14.8.

14.5.2 Further consultation in response to formal pre-application engagement was undertaken through the PEI Report **Table 14-13** outlines the statutory consultation responses relating to socio-economics and land use and how these have been addressed through the ES. Responses have been grouped thematically where relevant, but all relevant consultees are listed. No additional comments were received during the subsequent round of targeted consultation.

Table 14-13: Main matters relevant to socio-economics and land use impacts raised through the Statutory Consultation

Consultee	Summary of main matter raised	How has the matter been addressed?	Location of response in the ES
Brampton Parish Meeting	Worries over the potential negative impact of property value and demand in Brampton.	The Scheme has, where possible, aimed to be set back from residential dwellings and incorporate landscape mitigation and layout design measures to reduce the impact on residential dwellings.	Refer to Chapter 12: Landscape and Visual Amenity of the ES [EN010142/APP/6.1] for information on landscape mitigation.
Fillingham Parish Council, Willingham by Stow Parish Council, West Lindsey District Council, Ingham Parish Council, Glentworth Parish Council	Comments raised around employment, including direct and indirect employment effects and the economic benefit to local communities.	The employment effects associated with the Scheme (including existing employment) are considered in this chapter. More details regarding the job opportunities and apprenticeships have been provided in the Framework Skills, Supply Chain and Employment Plan (FSSCEP) submitted alongside the DCO application [EN010142/APP/7.18].	Further information on the assessment of employment demand in the construction, operation, and decommissioning phases are provided in Section 14.8 of this chapter.
Sturton by Stow Parish Council	Question whether the land will ever be brought back into agricultural use.	The land use can be returned to farming after the Scheme is complete following the end of the decommissioning phase, as stated in the Framework DEMP [EN010142/APP/7.10].	Further information regarding agricultural land use can be found in Chapter 15: Soils and Agriculture of this ES [EN010141/APP/6.1].

Consultee	Summary of main matter raised	How has the matter been addressed?	Location of response in the ES
West Lindsey District Council	<p>There is a very limited reference to tourism in this section – How will the development, alone and in combination with other projects, affect visitor perceptions of rural Lincolnshire? Will it affect the desirability of West Lindsey as a place to visit? How will it affect visitor numbers?</p>	<p>The Applicant’s EIA Scoping Report submitted to PINS contained no specific reference to an assessment of effects on tourism as no specific receptors, such as visitor attractions, had been identified within the defined Study Areas to justify such an assessment being needed. The Scoping Opinion response received from PINS also did not request such an assessment. However, Chapter 12: Landscape and Visual Amenity of the ES [EN010142/APP/6.1] does assess the impact on visitor views in the vicinity of the Scheme and the loss of long-distance views as relevant. This includes views from PRowS which provide the main opportunity for recreation in this otherwise predominantly agricultural area. Accordingly, this chapter also assesses impacts on PRow users which could include visitors to the area. On this basis, potential effects on tourists were assessed in the ES</p>	<p>Information on the impact of visitor views in the vicinity of the Scheme can be found in Chapter 12: Landscape and Visual Amenity of the ES [EN010142/APP/6.1]. and the impacts on PRow users, including visitors, is assessed in Section 14.8 of this chapter.</p>

Consultee	Summary of main matter raised	How has the matter been addressed?	Location of response in the ES
Ingham Parish Council, Glentworth Parish Council	There is no benefit to local communities.	<p>in so far as the effects on views and use of PRowS were considered, which comprise the main matters of potential impact. The assessment concluded that there would be no significant effects on these matters.</p> <p>In Section 14.8 of this chapter, it is assessed that no significant residual socio-economic effects are anticipated to occur during construction, operation or decommissioning of the Scheme. However, there will be beneficial effects on employment and GVA generation in the construction phase, albeit this is not considered a significant effect.</p> <p>In addition, a Framework Skills, Supply Chain and Employment Plan submitted alongside the DCO application [EN010142/APP/7.18] has been prepared to maximise the economic benefits of the Scheme employment for the local community.</p>	Further information can be found in Section 14.8 of this chapter and Chapter 11: Human Health of the ES [EN010142/APP/6.1] .

Consultee	Summary of main matter raised	How has the matter been addressed?	Location of response in the ES
		<p>The impact on local communities is also assessed in Chapter 11: Human Health of the ES [EN010142/APP/6.1].</p> <p>Additionally a Framework CEMP has been prepared as part of the DCO application [EN010142/APP/7.8]. The Framework CEMP sets out measures to reduce amenity impacts on sensitive receptors during the construction phase (such as noise, air quality, transport and landscape), which in turn will mitigate the effects on the local community and existing facilities from a socio-economics and land use perspective.</p>	
UK Health Security Agency	<p>The cumulative effects assessment should consider the peak numbers of construction workers and non-home-based workers and a proportionate assessment undertaken on the impacts for housing availability and affordability and impacts on any local services.</p>	<p>The cumulative employment and accommodation effects of the Scheme are considered in Chapter 18: Cumulative Effects and Interactions of the ES [EN010142/APP/6.1]. Cumulative effects have been assessed using the data on construction workers numbers available for the Scheme and the other nearby</p>	<p>Further information can be found in Chapter 18: Cumulative Effects and Interactions of the ES [EN010142/APP/6.1].</p>

Consultee	Summary of main matter raised	How has the matter been addressed?	Location of response in the ES
	The assessment should also include potential impacts on tourist accommodation within the socio-economic assessment.	cumulative schemes. The assessment found there to be a neutral effect on housing, tourist accommodation or on local services arising from the Scheme.	
Respondents	Concerns over the destruction of food producing land through the construction works of the scheme.	The effect of the Scheme on agricultural land, including for this route has been considered in Section 14.8 of this chapter. There are no significant effects on agricultural land across the construction and operational phases.	Further information can be found in Section 14.8 of this chapter.
Respondents	Concerns over the loss of agricultural land which is used by businesses and employees.	The effect of the Scheme on agricultural production and employment has been considered in Section 14.8 of this chapter. There will be no significant effects on these across the construction and operational phases. The effect of the Scheme on agricultural land and agricultural businesses are assessed on Chapter 15: Soils and	Further information can be found in Section 14.8 of this chapter.

Consultee	Summary of main matter raised	How has the matter been addressed?	Location of response in the ES
		<p>Agriculture of this ES [EN010141/APP/6.1].</p>	
<p>Respondents</p>	<p>Inclusion of the PRow between Glentworth and Harpswell in the assessment of effects of the Scheme.</p>	<p>The effect of the Scheme on PRow, including for this route, has been considered in Section 14.8 of this chapter. This specific PRow will not require a diversion, and will be managed during the construction works to ensure it remains open. Therefore, there will be some disruption, but this is not considered a significant effect.</p>	<p>Further information can be found in Section 14.8 of this chapter.</p>

14.6 Baseline Conditions

14.6.1 **Chapter 2: Scheme Location** of this ES [EN010142/APP/6.1] contains a detailed description of existing conditions within and surrounding the Order limits. This section describes the baseline environmental characteristics of relevance to socio-economics and land-use.

Existing Baseline

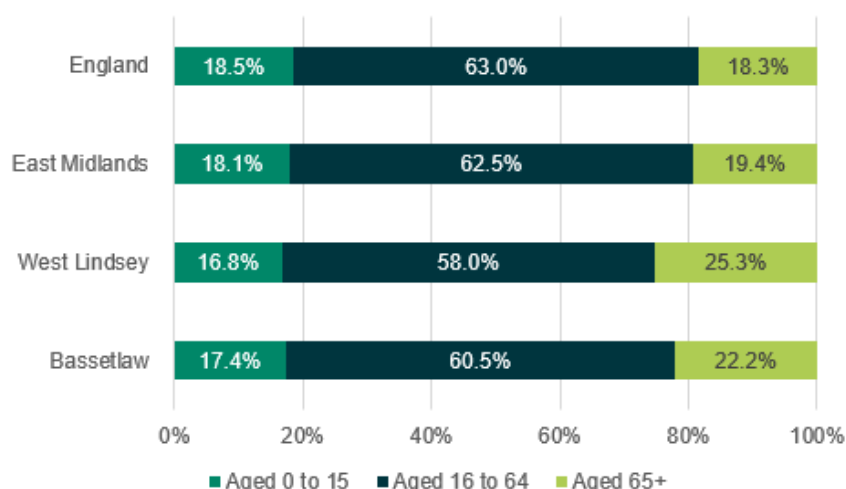
Order limits – Population, Local Economy and Employment

14.6.2 The existing population, local economy and employment baseline is common to the Principal Site and the Cable Route Corridor since the Study Area covers the local district administrative areas of Bassetlaw and West Lindsey, which the Principal Site and Cable Route Corridor fall within. Most of the Order limits fall within West Lindsey, with a small area of the Cable Route Corridor falling within Bassetlaw to the west.

14.6.3 According to 2021 Census (Ref. 14-5) data, the residential population in West Lindsey in 2021 was 95,156, representing a 6.6% increase from 89,250 in 2011. Bassetlaw had a population of 117,804 in 2021, representing a 4.4% increase from 112,863 in 2011. This is compared to a growth rate of 7.7% across the same period in the East Midlands, and 6.6% in England as a whole.

14.6.4 As shown in **Plate 14-1**, in 2021, 55,131 (58.0%) residents in West Lindsey were of working age (defined by ONS as men and women aged 16 to 64) (Ref. 14-5). In Bassetlaw, 71,286 residents (60.5%) were of working age. These rates are slightly lower than the rates recorded for the East Midlands (62.5%) and England as a whole (63.0%). Higher proportions of the populations of West Lindsey (25.3%) and Bassetlaw (22.2%) are aged 65+, compared to averages across the East Midlands (19.4%) and England (18.3%).

Plate 14-1: Age Breakdown of Population



Please note that totals may not equal 100 due to rounding. Source: ONS Census 2021 (2022)

- 14.6.5 Annual Population Survey (January to December 2021) data (Ref. 14-9) shows the proportions of working-age residents with a degree-level qualification or higher (National Vocational Qualification (NVQ) Level 4+) is lower in West Lindsey (34.0%) and Bassetlaw (31.2%), compared to the averages across the East Midlands (35.7%) and England (43.2%). The proportion of residents holding no formal qualifications is higher in West Lindsey (9.4%) and lower in Bassetlaw (4.9%) than averages across the East Midlands (7.5%) and England (6.4%).
- 14.6.6 Indices of Multiple Deprivation (IMD) data (2019) (Ref. 14-3) shows West Lindsey is ranked 146th most deprived out of England's 317 Local Planning Authority areas. In West Lindsey, 8% of Lower Layer Super Output Areas (LSOAs) are within the 10% most deprived LSOAs in England, 13% are within the 20% most deprived LSOAs and 23% are within the 30% most deprived LSOAs in England. Bassetlaw is the 108th most deprived of England's 317 Local Planning Authority areas, with 7% of its LSOAs within the 10% most deprived LSOAs in England, 21% of its LSOAs within the 20% most deprived and 37% of its LSOAs within the 30% most deprived.
- 14.6.7 With respect to the sub-domains of deprivation, West Lindsey is the 96th most deprived local authority with respect to employment deprivation, and Bassetlaw is the 72nd most deprived out of England's 317 Local Planning Authority Areas.
- 14.6.8 In 2023, as reported in the Annual Population Survey April 2022 to March 2023 (Ref. 14-11), the economic activity rate among working-age residents (16-64 year-olds) was 83.0% in West Lindsey and 80.0% in Bassetlaw. These rates are higher than the averages of 77.7% in the East Midlands and 78.6% in England.
- 14.6.9 According to the Annual Population Survey January to December 2022 (the most recently available data) (Ref. 14-10), the unemployment rate for working-age residents was 1.3% in West Lindsey and 3.8% in Bassetlaw, compared to the average rates across the East Midlands (2.9%) and England (3.7%).
- 14.6.10 Claimant count data shows the proportion of residents aged 16-64 claiming Jobseeker's Allowance and the number of Universal Credit claimants placed in the 'Searching for Work' conditionality group. The most recent data recorded in July 2023 (Ref. 14-12), showed that the claimant count was 2.9% in West Lindsey and 3.1% in Bassetlaw, lower than the rates across the East Midlands (3.8%) and England (3.4%). Across all areas, the latest Claimant Count data is higher than the rates reported in January 2020, prior to the Covid-19 pandemic. These were 3.0% in West Lindsey, 2.8% in Bassetlaw, 2.6% across the East Midlands and 2.9% across England (Ref. 14-12).
- 14.6.11 The most recent recorded GVA per head data (income approach) (Ref. 14-6) indicates a lower GVA per head in Lincolnshire (£18,959) and North Nottinghamshire (£18,816) compared to the averages across the East Midlands (£21,845) and England (£27,949). Data is not available at local authority level.

14.6.12 **Table 14-14** presents a breakdown of employment by broad industrial group across West Lindsey and Bassetlaw and East Midlands and England comparators, based on the most recently available data (2022) from ONS Business Register and Employment Survey (Ref. 14-7). The largest employment sectors in West Lindsey are the Health (12.9%) and Manufacturing (11.3%) sectors. These two sectors are also the largest in Bassetlaw, where Manufacturing makes up 19.2% of employment, followed by Health, 13.5%, and Retail, 11.5%. This is also echoed in the East Midlands as a whole where Health comprises 13.3% of employment and Manufacturing 11.6%. Across England, the Health sector comprises 13.1% of employment, however the Manufacturing sector is smaller at 7.3%.

14.6.13 The Mining, Quarrying and Utilities broad industrial group (which includes employment from the generation of energy) comprises 1.1% of employment in West Lindsey and 0.9% in Bassetlaw. This is lower than the proportion across the East Midlands (1.5%), and broadly in line with the proportion across England (1.1%).

14.6.14 Employment in the construction industry comprises 7.3% of all employment in West Lindsey, 4.8% in Bassetlaw, and 4.9% across both the East Midlands and England as a whole.

Table 14-14: Employment by sector

Industry	West Lindsey (%)	Bassetlaw (%)	East Midlands (%)	England (%)
Agriculture, Forestry & Fishing	8.1	2.4	1.7	1.3
Mining, Quarrying & Utilities	1.1	0.9	1.5	1.1
Manufacturing	11.3	19.2	11.6	7.3
Construction	7.3	4.8	4.9	4.9
Motor Trades	2.6	2.4	2.5	1.7
Wholesale	3.2	2.9	4.3	3.6
Retail	8.1	11.5	9.4	9.0
Transport & Storage (inc. postal)	4.0	6.7	6.4	5.2
Accommodation & Food Services	5.6	5.8	6.6	7.4
Information & Communication	1.5	2.4	2.9	4.5
Financial & Insurance	0.6	1.2	1.8	3.6
Property	3.2	0.9	1.5	2.0

Industry	West Lindsey (%)	Bassetlaw (%)	East Midlands (%)	England (%)
Professional, Scientific & Technical	5.6	5.8	7.0	9.3
Business Administration & Support Services	6.5	4.3	7.9	8.9
Public Administration & Defence	4.0	3.8	3.9	4.1
Education	8.1	6.7	8.5	8.5
Health	12.9	13.5	13.3	13.1
Arts, Entertainment, Recreation & Other	4.8	3.8	4.4	4.3

Source: BRES (2022). Note that figures may not equal 100 due to rounding.

Order limits – Local Accommodation

14.6.15 According to the 2021 Census (Ref. 14-5), there are 93,803 households in West Lindsey and Bassetlaw, of which 15,921 are privately rented (accounting for 17.0% of the tenure mix). This compares to 64,873 owner occupied properties (69.2%) and 12,302 (13.1%) socially rented houses. According to the latest English Housing Survey (Ref. 14-20), in 2022, approximately 3.3% of the dwellings in West Lindsey and Bassetlaw were vacant, which relates to a total of 3,106 dwellings. Incoming workers could potentially occupy this empty housing stock. If the same tenure mix were assumed for the vacant units (i.e. 17.0% being privately rented), approximately 527 privately rented dwellings in West Lindsey and Bassetlaw are currently unoccupied.

14.6.16 In addition to the private rented homes that are likely to be available to construction workers, data on room occupancy in hotel, bed and breakfast and inns accommodation within the 60-minute Study Area has been sourced from CoStar, a property resource website (Ref. 14-21). As of 2023, there are approximately 12,399 rooms in local hotel, bed and breakfast and inns accommodation within a 60-minute drive of the Scheme. This number has been adjusted in **Table 14-15** below to reflect typical availability based on seasonal occupancy rates from 2022, as reported by CoStar.

Table 14-15: Local accommodation capacity

Month	Inventory Rooms*	Rooms* typically available after existing demand
Jan	12,399	8,803
Feb	12,399	8,183
March	12,399	7,811
April	12,399	7,687

Month	Inventory Rooms*	Rooms* typically available after existing demand
May	12,399	6,695
June	12,399	4,836
July	12,399	3,720
August	12,399	2,852
Sept	12,399	2,852
Oct	12,399	2,852
Nov	12,399	3,472
Dec	12,399	5,208

Source: CoStar (2022), ONS Census 2021 (2023)

*Rooms includes hotel, bed and breakfast and inns accommodation.

Principal Site – Local Community Severance and PRow

14.6.17 The location of community facilities and PRow have been detailed separately for the Principal Site and the Cable Route Corridor. This is due to the difference in temporal scope between effects at the Principal Site, which are longer term and the Cable Corridor, which are temporary, influencing the extent of baseline conditions information needed to inform the assessment of effects in the respective areas.

14.6.18 A number of communities lie close to the Principal Site. These include: Hemswell approximately 700m to the north; Harpswell adjacent to the north; Hemswell Cliff approximately 700m to the east; Glentworth adjacent to the east; Heapham approximately 700m to the west; and Springthorpe approximately 800 m to the west.

14.6.19 There is one PRow located within the Principal Site (shown in **Figure 12-7** of this ES [EN010142/APP/6.3]): an approximately 515m stretch of Gltw/85/1, which is the prolongation of Fill/85/1, Fill/85/2 and Fill/767/1. Together, these PRow connect Willingham Road to Kexby Road. There is also a claimed bridleway (Claimed Glentworth and Harpswell Public Bridleway 1209) which runs through the eastern extent of the Principal Site, running in a north westerly direction for approximately 535m from Northlands Road in Glentworth to Hermitage Farm in Harpswell.

14.6.20 There are also a number of PRow located within 500m of the Principal Site, including:

- a. Approximately 400m of Harp/92/1 (footpath) – north of the Principal Site, connecting Common Lane to Harpswell Lane;
- b. An approximately 1km stretch of footpath DMMO 680 that runs south of Glentworth Road;
- a. A 1.5 km stretch of footpath DMO 591 that runs south of Marton Road towards Stow Park Road;

- b. Approximately 250m stretches of Hems/19/1 and Hems/19/2 (footpaths) – north of the Principal Site, connecting Harpswell Lane to Weldon Road; and
- c. Approximately 200m stretches of Hems/788/1, Hems/787/1 and Hems/787/2 (footpaths) – north of the Principal Site, connecting Harpswell Lane with the B1398.

Principal Site – Agricultural production

- 14.6.21 As noted in **Chapter 15: Soils and Agriculture** of this ES **[EN010141/APP/6.1]**, a soils and agriculture assessment work pre-application would be deficient for informing works in the Cable Route Corridor. As the works are brief with no loss or degradation of soils or agricultural land, this is not assessed in **Chapter 15: Soils and Agriculture [EN010141/APP/6.1]**. Therefore, only the Principal Site has been detailed in the existing socio-economic baseline and assessed for socio-economic and land use effects.
- 14.6.22 At a regional scale, the Department of Food and Rural Affairs (DEFRA) published “Agricultural land use in England” (Ref. 14-22) on 29 September 2022, which gives estimates of land use, crop areas and land ownership for England from the Survey of Agriculture and Horticulture run by the DEFRA in June 2023. This sets out that the utilised agricultural area for England (UAA) is 8.8 million hectares in 2022 and accounts for 68% of the total area of England. The DEFRA “Structure of the agricultural industry in England and the UK at June” (last updated in February 2024; (Ref. 14-23) sets out that there are 1,176,757 hectares of agricultural land in the East Midlands and that the total amount of agricultural land in each local authority area in England. This shows that the total amount of agricultural land in Nottinghamshire is 137,401 hectares and Lincolnshire is 488,915 hectares.
- 14.6.23 The Principal Site comprises predominantly agricultural land with some small woodland areas. The total area of the Principal Site is 1,350.1ha of which 1,212.3ha is in agricultural use, and the remainder is non-agricultural land.

Principal Site – Local Land Use and Amenity

- 14.6.24 As noted in the existing baseline for community facilities and PRoW, local land use and amenity receptors have been detailed separately for the Principal Site and the Cable Route Corridor. This is because of the difference in temporal scope between effects at the Principal Site, which are longer term and the Cable Corridor, which are temporary, influencing the extent of baseline conditions information needed to inform the assessment of effects in the respective areas.

Residential Properties

- 14.6.25 There are no residential properties within the Order limits, however, there are properties that would be surrounded by the Order limits within the Principal Site, if development consent is granted.
- 14.6.26 Larger groups of residential properties are located within the 500m Study Area in the settlements of Harpswell and Glentworth. There are also some isolated residential and farm properties within 500m of the Principal Site.

Local Businesses

14.6.27 There are no non-agricultural businesses located within the Principal Site.

14.6.28 There are a number of businesses within 500m of the Principal Site, including within the settlements of Harpswell and Glentworth, and a number of isolated businesses. These businesses include visitor accommodation, a café, florists, dog grooming and breeding businesses.

Open Space

14.6.29 There is no designated open space within the Principal Site.

14.6.30 There are four designated Local Green Spaces within 500m of the Principal Site in Glentworth.

Community Facilities

14.6.31 There are no community facilities within the Principal Site.

14.6.32 Glentworth Village Hall is within 500m of the Principal Site. There are no other community facilities within 500m of the Principal Site.

14.6.33 The next closest facilities are further afield in Hemswell, Heapham, Springthorpe and Corringham.

Visitor Attractions

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

Development Land

14.6.35 There are two developments within the 500m Study Area.

- a. ID 76 - Land to the west of Northlands Road, Glentworth (Ref. 14-24). To construct a hydrocarbon wellsite, with the drilling of one vertical appraisal well and up to seven horizontal development wells and ancillary development. This is application reference PL/0135/22 for Lincolnshire County Council.
- b. ID 129 - Land between School Lane and A631, Springthorpe. Request for a screening opinion for proposed solar farm and associated development. This is application reference 137464 for West Lindsey District Council.

Cable Route Corridor – Local Community Severance and PRow

14.6.36 The Cable Route Corridor comprises predominantly agricultural land. However, a number of communities lie within 1 km. These include: Cottam (adjacent to the Cable Route Corridor); Rampton (adjacent to the west of the Cable Route Corridor); Stow (approximately 500m to the south); Marton (adjacent to the north); and Willingham by Stow (approximately 200 m to the west).

14.6.37 There are 12 PRowS and three claimed PRowS (refer to **Figure 12-7** of this ES [EN010142/APP/6.3]) that are within or run across the Cable Route Corridor:

- a. Claimed PRoW Kexby and Willingham DMMO 680 – a restricted byway which runs within the northern extent of the Cable Route Corridor (within Lincolnshire), running in a north-south direction for approximately 1km between Glentworth Road in the north and Fillingham Lane in the south, to the east of Willingham-by-Stow.
- b. Claimed PRoW DMMO 591 – a byway open to all traffic which runs through the central extent of the Cable Route Corridor (within Lincolnshire), running in a north-south direction for approximately 1.5km between Marton Road in the north and Stow Park Road in the south along a field track. The PRoW runs along the same route as PRoW Stow/70/1, although for a longer distance and is intersected by claimed PRoW DMMO 683 which runs in a northwest-southeast direction to the west of Stow.
- c. Claimed PRoW DMMO 683 – a footpath which runs within the central extent of the Cable Route Corridor (within Lincolnshire), running in a northwest-southeast direction for approximately 2.5km between Marton Road in the northwest and Church Road in the southeast where it branches off into two routes, west of Stow. The footpath is intersected by claimed PRoW DMMO 591 which runs in a north-south direction to the west of Stow.
- d. PRoW Mton/68/1 – a footpath which runs through the western extents of the Cable Route Corridor (within Lincolnshire), running in an east-west direction for approximately 800m between A156 High Street in the west and A1500 Stow Park Road in the east, east of Marton.
- e. PRoW Mton/66/4 – a footpath which runs through the western extents of the Cable Route Corridor (within Lincolnshire), running in a north-south direction for approximately 550m to the east of the River Trent and linking with PRoW Bram/66/1 in the south and PRoW Mton/823/1 in the north.
- f. PRoW Bram/66/1 – a footpath which runs through the western extent of the Cable Route Corridor (within Lincolnshire), running in a north-south direction for approximately 200m and in an east-west direction for approximately 400 m to the east of the River Trent and linking with PRoW Mton/66/4 in the north.
- g. PRoW Cottam FP1 – a footpath which runs through the western extent of the Cable Route Corridor (within Nottinghamshire), running in a north-south direction for approximately 900m along the western bank of the River Trent and linking with PRoW Cottam FP3 in the north and PRoW Treswell FP7 in the south.
- h. PRoW Cottam FP3 – a footpath which runs in the vicinity of the western extent of the Cable Route Corridor (within Nottinghamshire), running in an east-west direction for approximately 1 km between Headstead Bank and the River Trent and linking with PRoW Cottam FP1 in the east.
- i. PRoW Cottam RB4 – a restricted byway which runs through the western extent of the Cable Route Corridor (within Nottinghamshire), running in a north-south direction for approximately 1.1km between Broad Lane in the north and Cottam Road in the south, linking with PRoW Cottam RB6 in the middle.

- j. PRow South Leverton BOAT16 – a byway open to all traffic which runs through the western extent of the Cable Route Corridor (within Nottinghamshire), running in a north-south direction for approximately 1.1km along Cow Pasture Lane to the north-west of Cottam Power Station, between Broad Lane in the north and Cottam Road in the south.
- k. PRow Rampton FP5 – a footpath which runs through the southwestern extent of the Cable Route Corridor (within Nottinghamshire), running in a north-south direction for approximately 800m to the west of Cottam Power Station, through the fields to the north of Torksey Ferry Road and linking with PRow Treswell FP4 to the south of Rampton Thorns.
- l. PRow Rampton FP6 – a footpath which runs through the southwestern extent of the Cable Route Corridor (within Nottinghamshire), running in a north-south direction for approximately 500m, north of Torksey Ferry Road to the west of Cottam Power Station and linking with PRow Treswell FP5 in the north and PRow Rampton BOAT13 in the south.
- m. PRow Rampton BOAT13 – a byway open to all traffic which runs through the southern extent of the Cable Route Corridor (within Nottinghamshire), running in an east-west direction for approximately 2.6km along the southern border of Cottam Power Station along Torksey Ferry Road and linking with PRow Rampton BW8 and FP7 in the east and PRow Rampton BOAT12, FP20 and FP6 in the west. This is used by fishers including Rampton Fishing Club to access an area of the River Trent which it holds exclusive rights for fishing.
- n. PRow Rampton FP20 – a footpath which runs within the vicinity of the southern extent of the Cable Route Corridor (within Nottinghamshire), running in a north-south direction for approximately 380m along Nightleys Road and linking with PRow Rampton BOAT13 in the north along Torksey Ferry Road and PRow Rampton FP9 in the south.
- o. PRow Rampton BOAT12 – a byway open to all traffic which runs within the vicinity of the southern extent of the Cable Route Corridor (within Nottinghamshire), running in a north-south direction for approximately 600 m along Shortleys Road and linking with PRow Rampton BOAT13 along Torksey Ferry Road in the north and PRow Rampton FP9 in the south.

14.6.38 There are also a number of PRowWs within 500m of the Cable Route Corridor:

- a. An approximately 250m stretch of Mton/66/3 which runs along the east of the River Trent;
- b. An approximately 450m stretch of Mton/69/1 that connects Stow Park Road and Willingham Road;
- c. An approximately 500m stretch of Stow/70/2 which runs east to Sturton Road;
- d. An approximately 450m stretch of Stow/70/1 that runs north to Marton Road;
- e. An approximately 300m stretch of footpath 6274 that runs south from Willingham High Street;

- f. An approximately 300m stretch of footpath 6267 that runs north from Willingham High Street;
- g. An approximately 250m stretch of footpath Wlgm/59/3 that runs north from Willingham High Street;
- h. An approximately 500m stretch of footpath 5310 that runs south from Marton Road;
- i. An approximately 800m stretch of footpath 7930 that runs south from Cottam Road;
- j. An approximately 2km stretch of footpath 7933 that runs along the west side of the River Trent by Torksey Lock;
- k. An approximately 500m stretch of footpath 7920 that runs along Carr Drain;
- l. An approximately 400m stretch of footpath 7919 that runs along the west side of the River Trent towards Cottam; and
- m. An approximately 500m stretch of footpath 7923 that runs from Broad Lane to Outgang Lane.

14.6.39 There are several claimed PRow that lie within 500m of the Cable Route Corridor:

- a. An approximately 1km stretch of footpath DMMO 370 that runs south-east from Dog Kennel Road, surrounding Glentworth House Cottages;
- b. An approximately 700m stretch of footpath DMMO 680 that runs north of Ingham Road;
- c. A 2.3km stretch of footpath DMO 683 that runs south-east of Marton Road;
- d. A 250m stretch of footpath SK78657958 that runs east of Green Lane;
- e. A 350m stretch of footpath SK79037956 that runs east of Green Lane and Cottam Road;
- f. A 300m stretch of footpath SK77337998 running north of Forewood Lane; and
- g. A 180m stretch of footpath SK77157964 also running north of Forewood Lane.

Cable Route Corridor – Local Land Use and Amenity

Residential Properties

14.6.40 There are no residential properties within the Order limits.

14.6.41 A number of residential properties are located within 500m of the Cable Route Corridor in the settlements of Cottam, Rampton, Stow, Marton, and Willingham by Stow, as well as a number of isolated residential and farm properties.

Local Businesses

14.6.42 There are no businesses within the Order limits.

14.6.43 There are a large number of businesses within 500m of the Cable Route Corridor, including within the settlements of Cottam, Rampton, Stow, Marton, and Willingham by Stow, as well as a number of isolated business properties. These include pubs and retail premises.

Open Space

14.6.44 There are no designated open spaces within the Cable Route Corridor.

14.6.45 There are a number of Central Lincolnshire Local Plan designated open spaces within 500m of the Cable Route Corridor, including an Important Open Space in Willingham by Stow, two Important Open Spaces in Stow, two Important Open Spaces in Marton, and Bassetlaw Local Plan designated Locally Important Open Spaces in Cottam and Rampton.

Community Facilities

14.6.46 There are no community facilities within the Cable Route Corridor.

14.6.47 There following community facilities are within 500m of the Cable Route Corridor:

- a. The Ingleby Arms Pub, Marton;
- b. Willingham Village Hall, Willingham by Stow;
- c. Fox and Hounds Pub, Willingham by Stow;
- d. The Cross Keys Stow Gastro Pub, Stow;
- e. Ingleby Arms Pub, Marton;
- f. Marton and Gate Burton Village Hall, Marton; and
- g. Eyre Arms Pub; Rampton.

Visitor Attractions

14.6.48 There are no visitor attractions within the Cable Route Corridor or the 500m Study Area.

Development Land

14.6.49 A planning application for two agricultural barns was submitted to West Lindsey District Council in November 2022 (application ref. 145882), which has now been granted planning permission, and is located within the Order limits of the Scheme. It is anticipated that a solution can be found for the barns to be constructed in a way and in a location such that it would not affect the Scheme and vice versa.

14.6.50 The Cottam Power Station site is identified as being a Priority Regeneration Area within the Bassetlaw Local Plan, however, the site is not currently allocated for any particular uses.

14.6.51 In addition, there are three unconsented planning applications which intersect the Cable Route Corridor of the Scheme.

- a. Gate Burton Energy Park [EN010131];
- b. West Burton Solar Project [EN010132]; and
- c. Cottam Solar Project [EN010133].

14.6.52 The exact route of the cable route for the Scheme has been developed so as not to impact these and where possible take advantage of opportunities for co-location to minimise disruption to land use.

14.6.53 The following allocated sites are within 500m of the Cable Route Corridor:

- a. L144540 – Proposed barn conversions to form 4 new dwellings in Normanby by Stow;
- b. L144010 – Proposed housing allocation (2 dwellings) in Stow; and
- c. L245517 – Proposed structure housing electrical substation in Marton.

14.6.54 The Cottam Power Station site is identified as being a Priority Regeneration Area within the emerging Bassetlaw Local Plan (Ref. 14-18), however, the site is not currently allocated for any alternative uses. Bassetlaw District Council has recognised the significant regeneration that will need to be undertaken at this site in the long term, which could include some form of zero carbon energy generation, but no specific plans have yet been confirmed.

Future Baseline

14.6.55 The future baseline scenarios are set out in **Chapter 5: EIA Methodology** of this ES [EN010142/APP/6.1].

14.6.56 According to the ONS population projections (Ref. 14-8), the population of West Lindsey is expected to increase from 95,570 in 2021 to 102,939 in 2043 (the furthest date that data is available from the ONS population projections), which represents an increase of 7.7%. The population of Bassetlaw is projected to increase from 118,351 in 2021 to 132,705 in 2043, which represents a larger increase of 12.1%. In the East Midlands and England as a whole, there are expected to be population increases of 12.5% and 9.2%, respectively.

14.6.57 **Table 14-16** sets out population projections data broken down by age group. It shows that by 2040, both the 0-15-year-old and the 16-64-year-old population will make up a lower proportion of the total population across all Study Area geographies. There is projected to be an increase in the proportion of residents aged 65 and over across all Study Area geographies.

Table 14-16: Population projections by age breakdown

Area	Age	2020	2043
West Lindsey	Aged 0 to 15 (%)	16.8	15.2
	Aged 16 to 64 (%)	58.0	53.1
	Aged 65+ (%)	25.3	31.7
Bassetlaw	Aged 0 to 15 (%)	17.3	16.9
	Aged 16 to 64 (%)	60.5	55.2
	Aged 65+ (%)	22.2	28.0
East Midlands	Aged 0 to 15 (%)	18.1	17.0

Area	Age	2020	2043
	Aged 16 to 64 (%)	62.3	58.3
	Aged 65+ (%)	19.6	24.7
England	Aged 0 to 15 (%)	18.5	17.2
	Aged 16 to 64 (%)	63.0	58.9
	Aged 65+ (%)	18.5	23.9

Source: ONS Population Projections 2021 and 2043 (2022). Note that totals may not sum to 100 due to rounding.

14.6.58 In terms of the local economy and employment, the East of England Forecasting Model (Ref. 14-25) provides an estimate of employment and GVA per capital across the East Midlands region, and the UK (data is not available for West Lindsey and Bassetlaw district areas). This shows that total employment in the East Midlands is expected to increase from 2,353,400 to 2,521,500 between 2020-2040 in the East Midlands, representing a 7.1% increase. GVA per capita is expected to increase from £22,000 (2016 prices) to £26,100 (2016 prices), over the same time period, which represents a 18.6% increase.

14.6.59 There is a high level of uncertainty with respect to the future baseline of existing local land uses, other than where future planned uses are known (such as future developments, where planning applications, permissions and local plan allocations have been considered). This includes two new permissive pathways which are proposed that lie within the Principal Site. Both routes are proposed along Common Lane to the west of Glentworth. Further detail on these permissive paths are shown within the **Framework Landscape and Ecology Management Plan (LEMP) [EN010142/APP/7.17]** submitted alongside the DCO application.

14.6.60 For the purposes of this assessment, unless specified, the future baseline with respect to local land uses (including agricultural land, residential properties, local businesses, open space, community facilities, visitor attractions and development land) is expected to be in line with the existing baseline conditions as set out above.

14.7 Embedded Design Mitigation

14.7.1 This section sets out the mitigation measures relevant to this chapter that are already incorporated into the Scheme design (refer also to **Chapter 3: Scheme Description** of this ES [EN010142/APP/6.1]), to reduce construction, operational and decommissioning phase impacts on sensitive receptors. Further details of specific measures are set out in relevant chapters of the ES [EN010142/APP/6.1], including the following of relevance to amenity effects: **Chapter 6: Air Quality**, **Chapter 12: Landscape and Visual Amenity**, **Chapter 13: Noise and Vibration**, and **Chapter 16: Transport and Access**.

14.7.2 The Scheme has also been designed to take into account sensitive receptors, including by positioning infrastructure to avoid receptors such as Best and Most Versatile (BMV) land and PRoWs, as far as possible (as set

out in **Chapter 4: Alternatives and Design Evolution** of this ES [EN010142/APP/6.1]).

Framework Construction Environmental Management Plan (CEMP)

14.7.3 A **Framework CEMP** has been prepared submitted alongside the Application [EN010142/APP/7.8]. The **Framework CEMP** sets out measures to reduce amenity impacts on sensitive receptors during the construction phase (such as noise, air quality, transport and landscape), which in turn will mitigate the effects on the local community and existing facilities from a socio-economics and land use perspective. This includes, but is not limited to, the following:

- a. Develop and implement a stakeholder communications plan that includes community engagement before work commences on-site;
- b. Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken;
- c. Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible;
- d. Ensuring that all appropriate processes, procedures and measures are in place to minimise noise before works begin and throughout the construction programme;
- e. Use of modern plant, complying with applicable UK noise emission requirements;
- f. Use of screening locally around significant noise producing plant and activities; and
- g. Reinstatement and/or improvement of field boundaries, particularly in the more open parts of the site such as west of Harpswell, to limit visibility of the Scheme and increase landscape condition and habitat connectivity.

14.7.4 Use of existing farm tracks and field openings as the preferred routes for construction access, minimising loss of hedgerows which provide screening. Any temporary diversions of PRowS during the construction phase put in place will be monitored to ensure that they are suitable and well-maintained for use. Each diversion will be clearly marked out, along with appropriate signage at either end of the diversion. The diversion routes will be agreed with the relevant local authority prior to the construction phase and the commencement of any works. Existing PRow will be reinstated once construction access is no longer required. Further detail on the plan for PRowS can be found within the **Framework PRow Management Plan** submitted alongside the DCO application [EN010142/APP/7.16].

Framework Operational Environmental Management Plan (OEMP) and Framework Decommissioning Environmental Management Plan (DEMP)

14.7.5 The **Framework OEMP** [EN010142/APP/7.9] and **Framework DEMP** [EN010142/APP/7.10], which have been prepared for the Application, set

out measures to reduce amenity impacts on sensitive receptors during the operational and decommissioning phases, respectively. In the Framework OEMP, Primary mitigation measures are embedded within the Scheme, as set out in the respective chapters, to reduce 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. These include, but are not limited to, the following actions:

- a. The specification of plant machinery with low noise emission and properly attenuated supply and extract terminations will help to minimise noise emissions during the operational phase. The use of enclosures, local screening, mufflers, and silencers will also be used as appropriate.. Plant such as the substation and batteries will be designed to have minimal tonal, impulsive or intermittent features. Plant that will be used in the Scheme has not yet been finalised, although the Scheme design and operational plant levels have been developed to mitigate and reduce effects to a minimum.
- b. Reusing suitable solar infrastructure and resources where possible to minimise the use of natural resources and unnecessary materials;
- c. Operating the Scheme in such a way as to minimise the creation of waste and maximise the use of alternative materials with lower embodied carbon, such as locally sourced products and materials with a higher recycled content where feasible;
- d. Ensure equipment is readily available on-site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods;
- e. Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period where operations are within 100 m of receptors;
- f. Implementing a Travel Plan in the **Framework Construction Traffic Management Plan** (CTMP) submitted alongside this DCO **[EN010142/APP/7.11]**;
- g. Liaising with operational personnel for potential to implement staff minibuses and car sharing options;
- h. Additional hedge planting to replace lost hedge boundaries within the Order limits which will increase screening, habitat connectivity, biodiversity value and landscape condition;
- i. Further woodland blocks and shelter belts, particularly where more detailed design and liaison with residents identifies the need for further screening; and
- j. Isolated and/or specimen tree planting to mitigate potential future losses of screening.

14.7.6 The **Framework DEMP** also includes measures that will ensure the restoration of agricultural land and soils to its existing use, following decommissioning. Additionally, similar measures from the CEMP will also be considered for the DEMP, including temporary diversions of PRoWs to be put

in place during the decommissioning phase. These will be monitored to ensure that they are suitable and well-maintained for use beyond this phase. Each diversion will be clearly marked out, along with appropriate signage at either end of the diversion. Primary mitigation measures are embedded within the Scheme, as set out in the respective chapters, to reduce decommissioning effects (such as noise, air quality, transport, and landscape and visual). In addition to this, the DEMP includes, but is not limited to, the following measures:

- a. Develop and implement a Dust Management Plan (DMP) (which will be produced post consent), which may include measures to control other emissions, approved by the Local Authority. The DMP may include monitoring of dust deposition, real-time PM10 continuous monitoring and/or visual inspections.
- b. Ensuring that all appropriate processes, procedures and measures are in place to minimise noise before works begin and throughout the decommissioning programme.
- c. Where reasonably practicable, noise and vibration are controlled at source (e.g. the selection of inherently quiet plant and low vibration equipment), review of the decommissioning programme and methodology to consider quieter methods, consideration of the location of equipment on-site and control of working hours.
- d. Use of modern plant, complying with applicable UK noise emission requirements.
- e. Ensuring that all appropriate processes, procedures and measures are in place to minimise noise before works begin and throughout the decommissioning programme.
- f. A Decommissioning Traffic Management Plan (DTMP) will be developed by the Principal Contractor prior to decommissioning in consultation with the LPAs. This will include a Decommissioning Worker Travel Plan (DWTP) to utilise sustainable modes of transport for journeys to and from the site.
- g. The **Framework Landscape and Ecology Management Plan (LEMP)** submitted alongside the DCO [EN010142/APP/7.17] sets out the measures proposed to mitigate the potential impacts and effects on landscape (and biodiversity) features, and to enhance the landscape and biodiversity value of the Order limits (i.e. the green infrastructure).

Permissive Paths

14.7.7 As a result of the Scheme, two new permissive pathways are proposed within the Principal Site. Both routes are proposed along Common Lane to the west of Glentworth:

- a. A 1.5km stretch, joining Northlands Road to the south-west of the Principal Site; and
- b. A 2km stretch passing through to Kexby Road to the south.

14.7.8 The permissive paths are shown within the Framework Landscape and Ecological Management Plan (LEMP) [EN010142/APP/7.17] submitted alongside the DCO application.

14.8 Assessment of Impacts and Effects

14.8.1 The Scheme, as outlined in **Chapter 3: Scheme Description** of this ES [EN010142/APP/6.1], has been considered in assessing the socio-economic and land use impacts and effects of the Scheme, whilst considering the embedded mitigation described in the previous section.

14.8.2 The socio-economic and land use effects (both beneficial and adverse) associated with the construction, operation and decommissioning of the Scheme are outlined in this section. The nature of effects differs by location for the following receptors, and as such, the assessment of effects have been split into effects on the Principal Site and the Cable Route Corridor:

- a. Local community severance and PRow;
- b. Agricultural production; and
- c. Local land use and Amenity.

Construction (estimated 2025 to 2027)

Order limits – Employment and Local Economic Impacts

Net Construction Employment

14.8.3 The construction period is expected to take approximately 24 months, which includes the construction of the Principal Site and Cable Route Corridor.

14.8.4 Based on previous experience of assessing the employment impacts of solar schemes, and benchmarking against other submitted existing solar schemes, the Applicant estimates that the Scheme will require a peak of 1,395 full-time equivalent¹ (FTE) jobs, and an average of 812 gross direct FTE jobs on-site over the 24-month construction period, although in practice the number will vary across the period.

Leakage

14.8.5 Leakage with respect to construction employment, is the employment impact expected outside of the Study Area, defined as a 60-minute drive time radius (shown on **Figure 14-1** of this ES [EN010142/APP/6.3]) from the Scheme.

14.8.6 Based on professional experience and other comparable solar schemes, it is estimated that 15% of construction staff could be sourced from within the 60-minute drive time 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. As such, 85% of staff would be likely to reside outside the Study Area. This indicates that while some employment opportunities will be retained in the Study Area, a noticeable number of jobs will be taken up by people living outside of the

¹ A full time equivalent is equivalent to a standard 40-hour work week and is used as a way to compare full time and part time employees. An FTE of 1 is equivalent to a full-time employee, whilst an FTE of 0.5 would signify a part time employee.

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 other professions.

- 14.8.7 An adjustment of 85% has therefore been applied to the estimated 812 gross direct construction jobs on-site on average during the construction period to estimate the jobs created within the Study Area.

Displacement

- 14.8.8 Displacement measures the extent to which the benefits of a development are offset by reductions in output or employment elsewhere. In the local context, this is important given other projects in the area and is considered in **Chapter 18: Cumulative Effects and Interactions** of the ES [EN010142/APP/6.1]. 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.

- 14.8.9 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.

- 14.8.10 The HCA Additionality Guide (Ref. 14-1) provides standards (or 'ready reckoners') for displacement. Within the context of a construction project in the Study Area, a low displacement factor of 25% is considered appropriate according to the HCA Additionality Guide. This level of displacement reflects that there are expected to be some displacement effects, although these are only to a limited extent. This displacement level is considered accurate based on professional judgement and other solar schemes. This factor is a best practice approach in the absence of specific local information that might provide a defensible justification for a different level of displacement being used.

Multiplier Effect

- 14.8.11 In addition to the direct employment generated by the construction of the Scheme, there will be an increase in local employment arising from indirect and induced effects of the construction activity. Employment growth will be likely to arise locally through manufacturing services and suppliers to the construction process (indirect or supply linkage multipliers). Additionally, it is assumed that 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).
- 14.8.12 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 provides 'ready reckoner' composite multipliers (the combined effect of indirect and induced multipliers) to account for this. 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 economic market area for the West Lindsey and Bassetlaw Study Area is likely to have

‘average’ supply linkages and induced effects, based on the scale of its economy, and therefore, a medium multiplier effect of 1.5 has been considered appropriate, as has been applied to other solar NSIP schemes in the consenting process.

Net Construction Employment

14.8.13 Based on the above factors, **Table 14-17** presents the temporary annual employment generated by the Scheme, accounting for leakage, displacement, and multiplier effects. The Scheme will support, on average, 914 net additional jobs during the construction period. Of these, 138 jobs per annum will be expected to be taken-up by residents within the 60-minute drive time Study Area, and 776 by people residing outside this Study Area.

Table 14-17: Average net additional construction employment

Employment	60-minute drive time Study Area	Outside of Study Area	Total
Gross Direct Employment	122	690	812
Displacement	30	173	203
Net Direct Employment	92	517	609
Indirect & Induced Employment	46	259	305
Average Net Additional Employment ²	138	776	914

Source: AECOM Calculations 2024. Please note figures may not sum due to rounding.

14.8.14 Given the slightly higher levels of unemployment in West Lindsey and Bassetlaw districts, and the higher Claimant Count at all geographies compared to before the Covid-19 pandemic, the local labour force in West Lindsey and Bassetlaw is assessed to be of medium sensitivity due to its capacity to benefit from additional employment opportunities. The labour force at the East Midlands level is assessed to be low sensitivity.

14.8.15 The magnitude of the impact of the direct, indirect, and induced employment, generated by the construction phase of Scheme is assessed in the context of the labour pool of construction workers in the Study Areas. West Lindsey and Bassetlaw currently have around 5,125 jobs in the construction sector, and the East Midlands, 107,000 jobs. Some of the jobs required for the construction phase of the Scheme are likely to be taken by residents in the West Lindsey and Bassetlaw Study Area. However, the employment will be temporary in nature. Overall, the likely impact is assessed to be of low magnitude in the West Lindsey and Bassetlaw Study Area, and very low at the East Midlands level.

² Sum of Net Direct Employment and Indirect & Induced Employment

14.8.16 Given the medium sensitivity of receptor and low to very low magnitude of impact as set out above, the temporary impact of construction employment generation is assessed as **minor beneficial (not significant)** effect at the local scale, and a **negligible (not significant)** effect at the regional scale.

Local Accommodation Facilities

14.8.17 Analysis of the local hotel, bed and breakfast and inns and private rented accommodation sectors has been undertaken to assess the likely capacity against the demand from the potential construction workforce.

14.8.18 As set out previously in **Table 14-17**, it is estimated that there would be approximately 690 direct workers involved in the construction phase of the Scheme who will be from outside the 60-minute drive-time Study Area. These workers may require accommodation on a temporary basis (although it is acknowledged that some may not require this).

14.8.19 Based on a worst-case scenario whereby all 690 workers need accommodation, the workforce would require 690 homes or bedspaces. As set out in the baseline section of this ES and **Table 14-18**, by modelling demand over a calendar year, there are 12,399 rooms in hotel, bed and breakfast and inns accommodation within a 60-minute drive time from the Scheme. At peak occupancy (during August, September and October), after accounting for the demand from workers outside of the Study Area, there is a minimum surplus of 2,689 rooms available.

14.8.20 As set out in the baseline section of this chapter, according to the 2021 Census (Ref. 14-5), there are approximately 17.0% of households in West Lindsey and Bassetlaw that are privately rented. This equates to 527 privately rented dwellings in West Lindsey and Bassetlaw that are assumed to be currently unoccupied.

14.8.21 Therefore, when potential supply from both private rented homes and visitor accommodation is considered together, there is assessed to be sufficient local supply to facilitate all construction workers being housed in accommodation.

Table 14-18: Average net additional construction employment

Month	Inventory Rooms	Rooms typically available after existing demand	Rooms typically available after existing demand plus private rented accommodation	Total net workers from outside the Study Area	Rooms available after total net workers from outside the Study Area applied
Jan	12,399	8,803	9,330	690	8,640
Feb	12,399	8,183	8,710	690	8,020
March	12,399	7,811	8,338	690	7,648

Month	Inventory Rooms	Rooms typically available after existing demand	Rooms typically available after existing demand plus private rented accommodation	Total net workers from outside the Study Area	Rooms available after total net workers from outside the Study Area applied
April	12,399	7,687	8,214	690	7,524
May	12,399	6,695	7,222	690	6,532
June	12,399	4,836	5,363	690	4,673
July	12,399	3,720	4,247	690	3,557
Aug	12,399	2,852	3,379	690	2,689
Sept	12,399	2,852	3,379	690	2,689
Oct	12,399	2,852	3,379	690	2,689
Nov	12,399	3,472	3,999	690	3,309
Dec	12,399	5,208	5,735	690	5,045

14.8.22 The sensitivity of this receptor is considered to be low, given the available supply in the local area. The impact magnitude is considered to be low, as this will have a very limited impact on availability of rented properties in West Lindsey and Bassetlaw. Therefore, the influx of construction workers on local accommodation availability as a result of the Scheme is assessed to have a **negligible (not significant)** effect. Occupancy arising from the Scheme during quieter months could also provide a benefit to the hotels, bed and breakfast and inns sector.

Gross Value Added (GVA) of Net Construction Employment

14.8.23 ONS data shows that GVA per construction worker in the East Midlands was approximately £57,200 in 2019 (Ref. 14-6). Applying this GVA figure to employment generated from the construction phase, it is estimated that approximately £52.3 m will be generated from the Scheme per year, of which approximately £7.9 m will be within West Lindsey and Bassetlaw districts, and £44.4 m within the East Midlands as a whole, as shown in **Table 14-19**.

Table 14-19: Gross Direct Value Added per annum from the Scheme during the construction phase

	60-minute Study Area	Outside Study Area	Total
GVA (£)	£7.9m	£44.4m	£52.3m

Source: AECOM Calculations 2024. Please note that figures may not sum due to rounding.

- 14.8.24 Given its lower than regional and national average performance, the local economy in West Lindsey and Bassetlaw is assessed to be of medium sensitivity due to its capacity to benefit from beneficial economic effects. The wider regional economy is assessed to be of low sensitivity.
- 14.8.25 In the context of the size of the overall local economy, the magnitude of the impact of the construction phase of the Scheme on West Lindsey and Bassetlaw's overall GVA is assessed to be low. At the regional level, the magnitude of the impact is assessed to be very low.
- 14.8.26 Given the low sensitivity of receptor and very low magnitude of impact as set out above, the impact of the temporary construction phase GVA generation arising from the Scheme on the local economy in West Lindsey and Bassetlaw is therefore assessed to be a **minor beneficial (not significant)** effect. At the regional level, the impact would be **negligible (not significant)**.

Principal Site – Local Community Severance and PRow

- 14.8.27 As set out above, the communities of Hemswell, Harpswell, Hemswell Cliff, Glentworth, Heapham and Springthorpe are located within 1 km of the Principal Site. There are also a number of PRow close to the Principal Site, one PRow (an approximately 515m stretch of Gltw/85/1) and the claimed Glentworth and Harpswell Public Bridleway 1209 fall within the Principal Site.
- 14.8.28 No permanent closures to PRow are expected during the construction (or operation or decommissioning phases) of the Scheme. During the construction period, PRow will be managed with a banksman (or similar) as set out within the **Framework PRow Management Plan** submitted alongside the Application [EN010142/APP/7.16].
- 14.8.29 As all PRow would be kept open at all times such that journeys along these remain possible, the magnitude of impacts upon both users of PRow and local community severance is assessed to be very low. The sensitivity of the receptors is assessed to be medium, given that the PRow are of medium level importance, and there is some potential for local PRow to be substituted for other routes. Given this, the effect of the Scheme on PRow and local community severance is assessed to be **negligible (not significant)**.

Principal Site – Agricultural Production

- 14.8.30 The area of land currently used for agricultural production in the Principal Site beginning from construction is approximately 1,212ha. The components which will remain after decommissioning and therefore have the potential to be permanent are the onsite substations, and proposed woodland. The other infrastructure will be removed at the end of the Scheme lifetime.
- 14.8.31 All of this land is located within Lincolnshire County Council area. In all, this amount of land equates to approximately:
- 0.01% of agricultural land in England;

- b. 0.10% of agricultural land in the East Midlands;
- c. 0.25% of agricultural land in Lincolnshire.

14.8.32 Based on the above assessment, the reversible impacts on land used for agricultural production as a result of the Scheme represent a very small proportion of the land in Lincolnshire, East Midlands and England, which equates to a low magnitude of impact at local, regional and national level. Taking into account the medium sensitivity of residents to disruption, the effects on land used for agricultural production arising during construction at the Principal Site would be **minor adverse (not significant)**.

Principal Site – Local Land Use and Amenity

Residential Properties, Local Businesses, Open Space, Community Facilities, Visitor Attractions and Development Land

14.8.33 The assessment of amenity effects has considered effects from **Chapter 16: Transport and Access, Chapter 13: Noise and Vibration, Chapter 12: Landscape and Visual Amenity, and Chapter 6: Air Quality** of this ES [EN010142/APP/6.1]. There are no residential properties, local businesses (other than farming businesses), open spaces, community facilities, visitor attractions or development land within the Principal Site, and therefore no direct land use impacts are expected.

14.8.34 There is potential for noise, air quality, visual and traffic effects arising from construction of the Scheme to impact on the amenity of residents, businesses, and users of open spaces within 500m of the Principal Site.

14.8.35 Taking into account the residual effects assessment results of the air quality, noise and vibration, traffic and transport and visual assessments relating to the construction activities, there are no receptors that would experience a significant effect on their amenity during construction, and as such there would be **no effect**.

Cable Route Corridor – Local Community Severance and PRow

14.8.36 As set out above, there are a number of local communities within 1 km of the Cable Route Corridor, including Cottam, Rampton, Stow, Marton and Willingham by Stow.

14.8.37 A number of PRow and claimed PRow dissect the Cable Route Corridor or are located within 500m.

14.8.38 Rampton BOAT13 will remain open, except during pavement upgrading works when access would not be possible. Rampton Fishing Club has been identified as a user of the BOAT and therefore could experience restricted access to a section of the River Trent they use due to closure of this BOAT.

14.8.39 It is understood that Rampton Fishing club have exclusive rights to a 1.5 mile stretch of the River Trent for angling in this location, forming part of a longer stretch of the river which provide opportunities for angling which they would share with other anglers wherever there are no exclusivity rights. The sensitivity of the fishing club to severance is assessed to be medium.

- 14.8.40 The magnitude of impact is assessed to be low on the basis that whilst anglers' access to parts of the river could be prevented, this will be for a temporary period of approximately 4 weeks during which access by car will still be possible for part of the river, and access on foot will still be possible for the entire fishing area. Therefore, the effect on the Rampton Fishing Club accessing the River Trent via BOAT13 is considered to be **minor adverse (not significant)**.
- 14.8.41 No permanent closures of PRow are expected within the Cable Route Corridor during the construction (or operation or decommissioning phases) of the Scheme. During the construction period, other PRows will be managed with a banksman (or similar) as set out within the **Framework PRow Management Plan** submitted alongside the DCO application [EN010142/APP/7.16].
- 14.8.42 Due to their limited scale, the magnitude of impacts upon other PRows and local community severance generally are assessed to be very low. As stated in the assessment of community severance and PRow effects at the Principal Site, the sensitivity of the receptors is assessed to be medium, given that the PRow are of medium level importance, and there is some potential for local PRow to be substituted for other routes should there be disruption from the Scheme. The effect of the Scheme on PRows and local community severance in the Cable Route Corridor is therefore assessed to be **negligible (not significant)**.

Cable Route Corridor – Agricultural Production

- 14.8.43 As all agricultural land within the Cable Route Corridor would be returned for use after construction, any temporary impact on agricultural production from the use of this land will not be discernible and as such there would be **no effect**.

Cable Route Corridor – Local Land Use and Amenity

Residential Properties, Local Businesses, Community Facilities, Open Space, Visitor Attractions, and Development Land

- 14.8.44 The assessment of amenity effects has considered effects from **Chapter 16: Transport and Access, Chapter 13: Noise and Vibration, Chapter 12: Landscape and Visual Amenity, and Chapter 6: Air Quality** of this ES [EN010142/APP/6.1]. There are no residential properties, local businesses (other than farming businesses), open spaces, community facilities, visitor attractions or development land within the Cable Route Corridor, and therefore no direct land use impacts are expected.
- 14.8.45 There is potential for noise, air quality, visual and traffic effects arising from construction of the Scheme to impact on the amenity of residents, businesses, development sites, and users of open spaces and community facilities within 500m of the Cable Route Corridor.
- 14.8.46 Taking into account the residual effect assessment results of the air quality, noise/vibration, traffic and transport and visual assessments relating to the construction activities, there are no receptors that would experience a significant effect on their amenity during construction, and as such there would be **no effect**.

Summary of Effects

14.8.47 No significant effects on socio-economics or land use are considered to arise from construction of the Scheme.

Operation

Order Limits – Employment and Local Economic Impacts

14.8.48 The Scheme will generate an estimated minimum 10 FTE long-term jobs during the operational phase. In estimating operational employment generation, it is important to consider not just the gross effects of the Scheme, but also net effects considering leakage, displacement, and multiplier effects.

Existing Employment

14.8.49 The Principal Site consists of agricultural land, and the Applicant has estimated that there are around 10 existing jobs supported by agricultural activities on the Principal Site. It is assumed that these jobs will not be supported due to the operational activities of the Scheme.

Total Net Operational Employment

14.8.50 The Applicant has estimated that there will be a gross number of 10 jobs generated by the Scheme once operational.

14.8.51 Assuming a leakage of 85% outside the 60-minute drive time Study Area, displacement of 25% and a 1.5 multiplier, it is estimated that the Scheme will result in an estimated 11 gross jobs created, of which at least 2 are within the 60-minute drive time Study Area. Accounting for the existing employment effects outlined above, the total net employment of the Scheme would be zero jobs. This is presented in **Table 14-20**:

Table 14-20: Total Net Employment during operation of the Scheme

	60- minute drive time Study Area	East Midlands	Total
Existing Employment			
Gross Direct Employment	1	9	10
Displacement	0	3	3
Net Direct Employment	1	6	7
Indirect and Induced Employment	1	3	4
Total	2	9	11
New Employment			
Gross Direct Employment	1	9	10
Displacement	0	3	3

	60- minute drive time Study Area	East Midlands	Total
Net Direct Employment	1	6	7
Indirect and Induced Employment	1	3	4
Existing Employment	2	9	11
Total Net Employment (Existing Employment – New Employment)	0	0	0

Source: AECOM calculations 2024. Please note that figures have been rounded to the nearest whole number and totals may therefore not match.

14.8.52 As the total net employment of the Scheme would be zero jobs once existing employment is accounted for and employment levels in the economy would not change, the magnitude of impact of operational employment generation is assessed to be of very low magnitude in the West Lindsey and Bassetlaw Study Area, and very low at the East Midlands level.

14.8.53 Given the medium sensitivity of receptor and very low magnitude of impact as set out above, the temporary impact of operational employment generation is assessed as **negligible (not significant)** effect at the local scale, and a **negligible (not significant)** effect at the regional scale.

14.8.54 Given this, there will be **no effect** with regard to employment arising from the operational phase of the Scheme.

Principal Site – Local Community Severance and PRow

14.8.55 Any PRowS located within the Order limits that are required to be temporarily managed will be open as normal during the operational phase. There will therefore be **no effect** on local community severance or users of PRow arising from the Scheme.

14.8.56 In the Order limits there will be two new permissive pathways connecting Common Lane with Kexby Road and Northlands Road, which are detailed in Section 14.7. This route will provide a safe and direct pathway within the Principal Site, which connects with the existing PRow network in the area resulting in reduction to local journey times. Taking into account the installation of additional temporary permissive pathways, the magnitude of impact on users of PRowS has been assessed as low. The sensitivity of the receptors is assessed as medium as the new pathways give rise to new travel routes for recreational users. Given this, the addition of the new permissive pathways results in a **minor beneficial (not significant)** effect.

Principal Site – Local Land Use and Amenity

Residential Properties, Local Businesses, Open Space, Community Facilities, Visitor Attractions and Development Land

14.8.57 The assessment of amenity effects has considered effects from **Chapter 16: Transport and Access, Chapter 13: Noise and Vibration, Chapter 12: Landscape and Visual Amenity, and Chapter 6: Air Quality** of this ES

[EN010142/APP/6.1]. There is potential for noise, air quality, and visual effects arising from the operation of the Scheme which could impact on the amenity of residents, businesses and users of open space within 500m of the Principal Site.

14.8.58 Taking into account the residual effect assessment results of the air quality, noise and vibration, traffic and transport and visual assessments relating to the operational activities, there are no receptors that would experience a significant effect on their amenity during operation, and as such there would be **no effect**.

Cable Route Corridor

14.8.59 No socio-economic or land use impacts are anticipated to be associated with the Cable Route Corridor Route during the operational phase. There may be occasional requirements for maintenance to cabling, however, no open excavation or disturbance is expected. As such, there would be **no effect**.

Summary of Effects

14.8.60 There are no significant effects on socio-economics or land use expected during the operational phase of the Scheme.

Decommissioning

Order limits - Employment and Local Economic Impacts

Employment

14.8.61 At the end of its operational life, the Scheme will be shut down and the infrastructure will be removed, but the cable within the Cable Route Corridor may remain in situ. It can be expected that employment will be generated to carry out the removal of the infrastructure from the Order limits.

14.8.62 Although jobs generated by the decommissioning phase are temporary, they represent a positive economic effect for a substantial period that can be estimated as the function of the scale and type of activities required to decommission the Order limits.

14.8.63 It is assumed based on the activities taking place that a similar number of jobs required for constructing the Scheme will be needed to carry out the activities required to remove the infrastructure from the Order limits.

14.8.64 The temporary impact of decommissioning employment generation is assessed as **minor beneficial** effect at the West Lindsey and Bassetlaw scale, and a **negligible** effect at the regional scale. The effects are **not significant**.

Principal Site and Cable Route Corridor – Local Community Severance and PRow

14.8.65 Changes to journey times, local travel patterns, and certainty of routes for users would arise from the temporary diversions of existing and claimed PRow; all of which could result in local community severance. Effects during decommissioning on relevant routes are set out in the following paragraphs for the Order limits. Most PRow within the Order limits will be unaffected

during the decommissioning phase and while there may be temporary diversions there will be no permanent closures.

- 14.8.66 The new permissive pathways will be in place for the lifetime of the Scheme and may be removed following decommissioning if requested by the relevant landowner(s). All other PRow will revert back to the original PRow network following decommissioning. Therefore, effects are only assessed for PRow that will experience temporary diversions.
- 14.8.67 It is not possible to confirm with certainty the length of time any impacted routes would be affected for, so as a worst-case scenario it is assumed the PRow are diverted for the entire length of the decommissioning period.
- 14.8.68 Temporary disruption to users making local journeys on these PRow would be experienced due to the temporary diversion of routes, which may increase journey times. However, the length of diversions would be negligible and would therefore be unlikely to have significant effects on users of PRow within the Order limits.
- 14.8.69 It is not anticipated that any PRow will be permanently closed as a result of the decommissioning phase, although some minor diversions are likely to be required to provide safe access across the Order limits whilst decommissioning activities are taking place. These diversions will be temporary and expected to be for a short duration. Detailed DEMP(s) in this phase will be produced which will confirm PRow that are affected and the management measures required in consultation with the LPA.
- 14.8.70 Owing to their limited scale, the magnitude of impacts upon PRow and local community severance are assessed to be very low. There would therefore be a very low impact on local community severance arising from potential severance, and very low impacts on users of PRow arising from the decommissioning of the Principal Site. For this effect, the sensitivity of the receptors is assessed to be medium, given that the PRow are of medium level importance, and there is some potential for local PRow to be substituted for other routes should there be disruption from the Scheme. Given this, the effect of the Scheme on PRow and local community severance is assessed to be **negligible (not significant)**.

Principal Site – Local Land Use and Amenity

Residential Properties, Local Businesses, Open Space, Community Facilities, Visitor Attractions and Development Land

- 14.8.71 The assessment of amenity effects has considered effects from **Chapter 16: Transport and Access, Chapter 13: Noise and Vibration, Chapter 12: Landscape and Visual Amenity, and Chapter 6: Air Quality** of this ES [EN010142/APP/6.1]. Taking into account the residual effect assessment results of the air quality, noise and vibration, traffic and transport and visual assessments relating to the decommissioning activities, there are no receptors that would experience a significant effect on their amenity during decommissioning activities either, and as such, there would be **no effect** during this phase.

Cable Route Corridor – Local Land Use and Amenity

14.8.72 There will be very limited disruption to the Cable Route Corridor during the decommissioning phase. In a worst-case scenario, the Cable Route Corridor Infrastructure may remain in situ following the end of the operational phase. No open excavation or ground disturbance is likely. Given this, and that the residual effect assessment results of the air quality, noise and vibration, traffic and transport and visual assessments relating to the decommissioning activities, there are no receptors along the Cable Route Corridor that would experience a significant effect on their amenity during decommissioning activities either. Because of this, there would be **no effect**.

Summary of Effects

14.8.73 There are no significant effects expected during the decommissioning phase of the Scheme.

14.9 Additional Mitigation and Enhancements

Additional Mitigation

14.9.1 No additional mitigation is required with respect to socio-economic and land use effects arising from the Scheme.

Enhancements

- 14.9.2 A **Framework Skills, Supply Chain and Employment Plan (SSCEP)** submitted alongside the application [EN010142/APP/7.18] has been prepared to maximise and pro-actively expand the economic benefits of the Scheme for the local community. There will be a requirement in the DCO for the Framework SSCEP to be developed into a detailed SSCEP once the DCO is granted. The detailed SSCEP will identify a range of potential opportunities or work areas, across the broad areas of skills, supply chain employment, that the Applicant could take forward. These include the following:
- a. The Applicant will consider requiring contractors to provide opportunities for the creation of apprenticeships and training places during construction and decommissioning as part of its procurement process;
 - b. The Applicant will investigate the potential for a programme of activities which promote science, technology, engineering, and mathematics (STEM) education and careers;
 - c. The Applicant will investigate measures to promote take up of jobs generated by the Scheme by local people, including requiring contractors to promote local employment during construction and decommissioning; and
 - d. The Applicant will work with local partners to communicate purchasing and contracting opportunities arising from the Scheme to local businesses.
- 14.9.3 The approval of the detailed SSCEP by the relevant planning authority, and its implementation, is secured by a Requirement of the DCO.

14.10 Residual Effects

14.10.1 This section summarises the residual effects of the Scheme on socio-economic and land use receptors following the implementation of embedded and additional mitigation.

14.10.2 **Table 14-21** outlines the likely residual construction effects after mitigation.

14.10.3 No significant residual effects are anticipated to occur during construction, operation or decommissioning of the Scheme.

Table 14-21 Summary of residual effects

Receptor	Description of Impact	Significance of Effect Without Additional Mitigation	Additional Mitigation/Enhancement Measure	Residual Effect After Mitigation
Construction				
Order limits – Net Construction Employment	Employment generated by construction activity from the Scheme.	Minor beneficial (not significant).	None.	Minor beneficial (not significant).
Order limits – Local Accommodation Facilities	Effect of net construction employment from the Scheme on local accommodation facilities.	Negligible (not significant).	None.	Negligible (not significant).
Order limits - Gross Value Added (GVA) of Net Construction Employment	Net additional GVA generated as a result of the net construction employment from the Scheme.	Minor beneficial (not significant).	None.	Minor beneficial (not significant).
Principal Site – Local Community Severance and PRow	Disruption or severance to communities and other PRow resulting from construction activity	Negligible (not significant).	None.	Negligible (not significant).
Principal Site – Agricultural production	Disruption and land take of agricultural production land resulting from construction activity on Principal Site.	Minor adverse (not significant)	None	Minor adverse (not significant)

Receptor	Description of Impact	Significance of Effect Without Additional Mitigation	Additional Mitigation/Enhancement Measure	Residual Effect After Mitigation
Principal Site – Local Land Use and Amenity	Land take, disruption or severance to local amenities businesses or development land.	No effect.	None.	No effect.
Cable Route Corridor – Local Community Severance and PRow	Severance to access to River Trent for fishers from temporary closure to BOAT13 resulting from construction activity.	Minor adverse (not significant).	None.	Minor adverse (not significant).
	Disruption or severance to communities and other PRow resulting from construction activity.	Negligible (not significant).	None.	Negligible (not significant).
Cable Route Corridor – Agricultural Production	Disruption and land take of agricultural production land resulting from construction activity.	No effect.	None	No effect.
Cable Route Corridor – Local Land Use and Amenity	Land take, disruption or severance to local amenities, businesses or development land.	No effect.	None.	No effect.

Operation

Receptor	Description of Impact	Significance of Effect Without Additional Mitigation	Additional Mitigation/Enhancement Measure	Residual Effect After Mitigation
Order limits – Net Operational Employment	Net employment generated by operational activity from the Scheme.	No effect.	None.	No effect.
Principal Site – Local Community Severance and PRow	Disruption or severance to communities and PRow resulting from operational activity.	No effect.	None.	No effect.
Principal Site – Additional permissive pathway PRow	Additional permissive pathways and PRow introduced as a result of the Scheme.	Minor beneficial (not significant).	None.	Minor beneficial (not significant).
Principal Site – Local Land Use and Amenity	Land take, disruption or severance to local amenities, businesses or development land.	No effect.	None.	No effect.
Cable Corridor	Disruption or severance to socio-economic receptors within the Cable Corridor.	No effect.	None.	No effect.
Decommissioning				
Net Decommissioning Employment	Net employment generated by decommissioning activity from the Scheme.	Local - Minor beneficial (not significant).	None.	Local - Minor beneficial (not significant).

Receptor	Description of Impact	Significance of Effect Without Additional Mitigation	Additional Mitigation/Enhancement Measure	Residual Effect After Mitigation
		Regional and national – Negligible (not significant).		Regional and National – Negligible (not significant).
Principal Site and Cable Route Corridor – Local Community Severance and PRoW	Disruption or severance to communities and PRoW resulting from decommissioning activity.	Negligible (not significant).	None.	Negligible (not significant).
Principal Site – Local Land Use and Amenity	Land take, disruption or severance to local amenities, businesses or development land.	No effect.	None.	No effect.
Cable Route Corridor – Local Land Use and Amenity	Land take, disruption or severance to local amenities, businesses or development land.	No effect.	None.	No effect.

14.11 Cumulative Effects

14.11.1 An assessment of cumulative effects is provided in **Chapter 18: Cumulative Effects and Interactions** of this ES [EN010142/APP/6.1].

14.12 References

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Ref. 14-14. Nottinghamshire County Council (2023), Nottinghamshire Definitive map. Available at: <https://www.nottinghamshire.gov.uk/planning-and-environment/walking-cycling-and-rights-of-way/rights-of-way/definitive-map-statement> (Accessed: 12 February 2024)

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