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# FENWICK SOLAR FARM

**Preliminary Environmental Information Report**

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

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Fenwick Solar Project Limited

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## 12. Socio-Economics and Land Use

### 12.1 Introduction

- 12.1.1 This chapter of the Preliminary Environmental Information Report (PEIR) presents a preliminary assessment of the likely significant effects of the Fenwick Solar Farm (hereafter referred to as the 'Scheme') with respect to socio-economics and land use. The preliminary assessment follows the methodology outlined in the Scoping Report (**PEIR Volume III Appendix 1-1: EIA Scoping Report**) and is based on information obtained to date and the current Scheme design (**PEIR Volume II Figure 2-3: Indicative Site Layout Plan**).
- 12.1.2 This chapter should be read in conjunction with the Scheme description provided in **PEIR Volume I Chapter 2: The Scheme**. Additionally, socio-economics and land use interfaces with **PEIR Volume I Chapter 13: Transport and Access** of this PEIR and, as such, should be considered alongside **PEIR Volume I Chapter 13: Transport and Access**.
- 12.1.3 This chapter is supported by the following figures (**PEIR Volume II**) and technical appendices (**PEIR Volume III**):
- Figure 12-1: Study Area and Socio-Economic Receptors;**
  - Figure 12-2: Sixty Minute Drive Time from the Site Boundary;**
  - Figure 12-3: Thirty Minute Drive Time from the Site Boundary;**
  - Figure 12-4: Predicted Agricultural Land Classification;**
  - Figure 12-5: Agricultural Land Classification for the Solar PV Site;**
  - Figure 2-2: Public Rights of Way;**
  - Appendix 12-1: Legislation, Policy and Guidance (Socio-Economics and Land Use);**
  - Appendix 12-2: Minerals Safeguarding Report;** and
  - Appendix 12-3: Agricultural Land Classification Survey Report.**

### 12.2 Legislation, Policy and Guidance

- 12.2.1 Legislation, planning policy, and guidance relating to socio-economics and land use and pertinent to the Scheme comprises of the documents listed below. More detailed information regarding these policies can be found in **PEIR Volume III Appendix 12-1: Legislation, Policy and Guidance (Socio-Economics and Land Use)**.

#### Legislation

- 12.2.2 There is no applicable legislation specific to the assessment of socio-economics and land use.

#### National Policy

- 12.2.3 Relevant national planning policy to be considered includes:

- a. Overarching National Policy Statement (NPS) for Energy (EN-1) (November 2023) (Ref. 12-1);
- b. NPS for Renewable Energy Infrastructure (EN-3) (November 2023) (Ref. 12-2);
- c. NPS for Electricity Networks Infrastructure (EN-5) (November 2023) (Ref. 12-3);
- d. National Planning Policy Framework (NPPF) (December 2023) (Ref. 12-4); and
- e. Build Back Better: Our Plan for Growth (2021) (Ref. 12-5).

### Regional and Local Policy

12.2.4 Regional and local planning policy to be considered includes:

- a. Adopted Doncaster Local Plan 2015-2035 (2021) (Ref. 12-6);
- b. Adopted Selby District Core Strategy (2013) (Ref. 12-7); and
- c. Selby District Publication Consultation Local Plan (2022) (Ref. 12-8).

### National Guidance

12.2.5 National guidance to be considered includes:

- a. National Planning Practice Guidance (PPG) (2023) (Ref. 12-9).

### Local and Regional Guidance

12.2.6 Local and regional guidance to be considered includes:

- a. Yorkshire and the Humber Climate Action Plan (2021) (Ref. 12-10);
- b. South Yorkshire Mayoral Combined Authority Strategic Economic Plan 2021-2041 (2021) (Ref. 12-11); and
- c. Selby District Economic Development Framework: 2017–2022 and beyond (2017) (Ref. 12-12).

## 12.3 Scoping Opinion and Additional Consultation

- 12.3.1 A scoping exercise was undertaken in spring 2023 to establish the content of the assessment and the approach and methods to be followed. The scoping exercise outcomes were presented in the Scoping Report (**PEIR Volume III Appendix 1-1: EIA Scoping Report**) which was submitted to the Planning Inspectorate on 1 June 2023. The Scoping Report records the findings of the scoping exercise and details the technical guidance, standards, good practice and criteria to be applied in the assessment to identify and evaluate the likely significant effects of the Scheme on socio-economics and land use.
- 12.3.2 A Scoping Opinion was received from the Planning Inspectorate on 11 July 2023 (**PEIR Volume III Appendix 1-2: EIA Scoping Opinion**).
- 12.3.3 A full review of all comments raised in the Scoping Opinion is provided in **PEIR Volume III Appendix 1-3: EIA Scoping Opinion Responses**. This also outlines how and where the Scoping Opinion comments have been addressed within this PEIR or will be addressed within the ES.

## Additional Consultation

- 12.3.4 A meeting with City of Doncaster Council's PRow lead was held on 29 August 2023 to discuss the Scheme's approach to PRow during construction, operation and decommissioning, including the potential permanent diversion of PRow Sykehouse 29 footpath. The Council did not anticipate that the proposed diversion would have an adverse impact on the users. It was noted that AECOM had received feedback from local residents at non-statutory consultation that most users do not currently follow the route shown on the definitive map, but instead follow the route of the proposed permanent diversion.
- 12.3.5 The Council also provided baseline context on the existing PRow network within the Solar PV Site, indicating that the network is mostly used by local residents for recreational purposes such as dog walking and guided walks by equestrians, and that the usage tended to be low compared to paths in the town centre or urban fringe.
- 12.3.6 Further engagement with the City of Doncaster Council's PRow lead was undertaken via email on the 12 October 2023 regarding the baseline context for the existing PRow network surrounding the Grid Connection Corridor (which includes the Existing National Grid Thorpe Marsh Substation). It was confirmed that the current user levels and usage for the PRow intersecting the Grid Connection Corridor Study Area were likely to be similar to those within the Solar PV Site. It was noted that the Trans Pennine Trail runs through the Grid Connection Corridor by Thorpe in Balne. However, it was recognised that the trail runs along the road network (Thorpe Lane, Marsh Road, Moss Lane and Willow Bridge Lane).
- 12.3.7 Given the nature of the likely impacts on the existing PRow and the information provided on the current usage (recreational purposes and low usage), it was agreed with the City of Doncaster Council's PRow lead that PRow surveys do not need to be undertaken.
- 12.3.8 Additional consultation was also undertaken with City of Doncaster Council's agricultural land and soils team via email on the 5 October 2023 which discussed the approach to the Best and Most Versatile (BMV) agricultural land and soils survey and assessment. The Council agreed with the approach to complete an ALC survey, in accordance with Ministry of Agriculture, Fisheries and Food (MAFF) guidelines, for the Solar PV Site. An ALC survey was not proposed for the Grid Connection Corridor because the Applicant confirmed that there would be no above ground infrastructure in the Grid Connection Corridor and therefore any impacts would be temporary during construction. The Council agreed with this approach but recommended that a planning condition/legal agreement with respective land owners should be considered to ensure that the soils are not degraded during the construction process and farming activities can re-commence following completion. While the Applicant is not proposing an s106 agreement, prior to start of construction, a Soil Management Plan (SMP) will be published which will follow industry standard good practice measures, as outlined in the Framework Construction Environment Management Plan (CEMP) submitted as **PEIR Volume III Appendix 2-1: Framework Construction Environmental Management Plan** and secured in the

drafting of the DCO, to ensure soils are not degraded and farming activities can re-commence following completion of the Scheme.

## 12.4 Assessment Methodology

12.4.1 This section sets out the scope and methodology for the preliminary assessment of the impacts of the Scheme on socio-economics and land use.

### Study Area

12.4.2 The impacts of the Scheme with respect to socio-economics and land use are considered at varying spatial levels according to the likely 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 Impact of Projects, 4<sup>th</sup> Edition' (Ref. 12-13).

12.4.3 The Site (comprising the Solar PV Site, the Grid Connection Corridor and the Existing National Grid Thorpe Marsh Substation, as shown in **PEIR Volume II Figure 1-2: Site Boundary Plan**) is located within the area administered by City of Doncaster Council and, on the boundary with the North Yorkshire Council to the north of the Site. It should be noted that prior to 1 April 2023, the part of the Site now administered by North Yorkshire Council was administered by Selby District Council. On 1 April 2023 North Yorkshire County Council and its six constituent District Councils, including Selby District Council, were merged to form the new Unitary Authority of North Yorkshire Council. Given the recent nature of this change, Selby District is still referred to at points within this chapter, in particular when presenting baseline data. **PEIR Volume I Chapter 2: The Scheme** provides a description of the Site and its surroundings, which mainly consists of agricultural fields under arable production. References to the Grid Connection Corridor in this chapter encompass the Existing National Grid Thorpe Marsh Substation.

12.4.4 Where minor junction works associated with the Scheme are located beyond the 500 m and 2 km Study Areas, professional judgement has been used to identify appropriate assets and receptors based on the nature and scale of the potential effects.

### Local Economy and Employment

12.4.5 The potential economic impacts arising from the Scheme are considered relative to a 60-minute drive time from the Site Boundary (as can be seen in **PEIR Volume II Figure 12-2: Sixty Minute Drive Time from the Site Boundary**), as this represents the principal labour market catchment area for the Scheme (Travel to Work Area). The economic Study Area baseline profile is comprised of the 2011 Lower Layer Super Output Areas (LSOA) geographical boundaries within a 60-minute drive time from the Site Boundary.

12.4.6 The potential impacts on local hotel, bed and breakfast and inns accommodation sector as a result of the Scheme are considered relative to both a 30-minute and 60-minute drive time. The 30-minute drive time has been added to consider a worst-case scenario in which all of the construction workers require accommodation within a 30-minute radius of



the Site Boundary. The 30-minute drive time area is presented in **PEIR Volume II Figure 12-3: Thirty Minute Drive Time from the Site Boundary.**

**PRoW**

12.4.7 The assessment of effects on ProW users considers resources which could be affected by closures and diversions of routes due to the Scheme. The Study Area therefore comprises all ProW located within the Site (including along the Grid Connection Corridor) or within 500 m of the Site Boundary.

**Private and Community Assets (residential properties, local businesses, open space, community facilities, visitor attractions, agricultural land holdings and development land)**

12.4.8 The Study Area for land use impacts on residential properties, local businesses, open space, community facilities and visitor attractions considers receptors that could be directly or indirectly affected by the Scheme. The receptors that could be impacted are those within the Site and within 500 m of the Site Boundary, though receptors within 2 km of the Site Boundary are considered for community facilities.

12.4.9 Effects on development land within and up to 500 m radius from the Site Boundary is assessed. Development land refers to sites on which there are planning applications, planning permissions and local plan allocations. The assessment considers the potential for the Scheme to conflict with, hinder or otherwise adversely affect development land within or nearby to the Site Boundary.

**BMV Agricultural Land and Soils**

12.4.10 Impacts on BMV agricultural land and soils, and consideration of impacts on agricultural land use considers land that falls within the Site Boundary. This land would be directly impacted by the Scheme during its construction and operation and maintenance phases.

**Study Area Summary**

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

**Table 12-1: Socio-Economic and Land Use Impacts by Geographical Scale**

<b>Receptor/Impact</b>	<b>Geographical Area of Impact</b>	<b>Rationale for Impact Area</b>
Employment generation during construction, operation and decommissioning (direct, indirect and induced impacts)	60-minute travel area (drive time estimated using geographic information system (GIS) data, based on the Site Boundary and indicative Site access points).	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

Receptor/Impact	Geographical Area of Impact	Rationale for Impact Area
		views on working life' (Ref. 12-14).
Local Accommodation Services	30- and 60-minute travel area (drive time estimated using GIS data, based on the Site Boundary and indicative site access points).	Professional judgement and experience from other development schemes in England.
Gross Value Added (GVA) during construction phase	60-minute travel area.	GVA generation relates directly to employment generation.
Public Rights of Way	Within, and up to 500 m radius. From the Site Boundary.	Professional judgement and experience from other development schemes in England.
Residential Properties, Local Businesses, Open Space, Visitor Attractions, Agricultural Land Holdings and Development Land	500 m radius from the Site Boundary.	Professional judgement and location of sensitive receptors for impacts arising from the Scheme, as informed by other assessments.
Community Facilities	2 km radius from the Site Boundary.	Professional judgement and location of sensitive receptors for impacts arising from the Scheme, as informed by other assessments. Community facilities are likely to be accessed by residents from a wider catchment, especially in rural areas, as provision tends to be sparse. A 2 km radius has been considered for this receptor in order to fully consider the effect of severance on access to these facilities.
BMV agricultural land and soils	The Site Boundary	Impacts on BMV agricultural land and soils will only occur within the Site Boundary as this is the only area where there is a spatial overlap. Other

Receptor/Impact	Geographical Area of Impact	Rationale for Impact Area
		development schemes in England have used the same approach.

## Sources of Information

- 12.4.12 The following assessment seeks to establish the potential social, economic, and land use effects of the Scheme and assesses these against current baseline conditions within the Solar PV Site, surrounding area and Grid Connection Corridor.
- 12.4.13 Relevant policy has been reviewed at the local, regional and national levels to identify the key socio-economic and land use issues of relevance to the Scheme.
- 12.4.14 Baseline data illustrating the existing socio-economic conditions within and surrounding the Site Boundary has been collected through a desk-based research exercise using publicly available sources, documents, and web-based applications.
- 12.4.15 Sources of information include:
- Office for National Statistics (ONS) (2021) 2021 Census Data (Ref. 12-15);
  - Ministry of Housing, Community and Local Government (2019) English Indices of Deprivation (2019) (Ref. 12-16);
  - ONS (2018) Gross Value Added (Income Approach) (2017) (Ref. 12-17);
  - ONS (2023) Claimant Count (Ref. 12-18);
  - ONS (2022) UK Business Register and Employment Survey (Ref. 12-19);
  - ONS (2022) Annual Population Survey (January 2021 to December 2021) (Ref. 12-20); and
  - ONS Mid-Year Population Estimates 2021 (2022) (Ref. 12-21).

## ALC Survey

- 12.4.16 Natural England 'Technical Information Note 049 – Agricultural Land: protecting the best and most versatile agricultural land (TIN049)' provides guidance on agricultural land quality assessment for development planning (Ref. 12-22). A provisional ALC is available from the Department for Environment, Food and Rural Affairs (Defra) mapping service found at: [magic.defra.gov.uk](http://magic.defra.gov.uk). This plan shows land grades across the whole of England. However, TIN049 advises that it is of limited value for assessing land quality of large sites, particularly because it does not differentiate Grade 3 land between Subgrades 3a and 3b.
- 12.4.17 An ALC soil survey has therefore been undertaken for the land within the Solar PV Site, as deemed necessary to determine the ALC quality of the land, and is appended at **PEIR Volume III Appendix 12-3: Agricultural Land Classification Survey Report**. The ALC soil survey was based on

observations of soil samples at intersects of a 100 m grid, giving a density of one sample observation per ha. No ALC soil survey has been undertaken in the Grid Connection Corridor. This is because there will be no above ground infrastructure in the Grid Connection Corridor, and disruption to soil functioning from trenching to contain the Grid Connection Cables would be temporary during construction. During operation, the Grid Connection Cables would be buried at sufficient depth to allow typical farming operations to continue (including ploughing) and so the Scheme would not affect the agricultural use of the land during operation. Any potential impacts on BMV land (defined as Grades 1, 2 and Subgrade 3a) from the Grid Connection Cables would therefore be temporary, and would be mitigated through industry standard measures – these will be outlined in the ES and are included in the Framework CEMP submitted as **PEIR Volume III Appendix 2-1: Framework Construction Environmental Management Plan**. Prior to start of construction, a SMP will be published which will follow industry standard good practice measures, as outlined in the Framework CEMP submitted as **PEIR Volume III Appendix 2-1: Framework Construction Environmental Management Plan**.

### Agricultural Land Holdings

- 12.4.18 The Applicant has reached voluntary land agreements with the majority of landowners in the Solar PV Site and is finalising negotiations with the rest.
- 12.4.19 The Applicant is currently identifying and engaging with landowners in the Grid Connection Corridor in order to gain access for surveys, and to consider potential arrangements for construction, maintenance and decommissioning should the Scheme need to utilise the Grid Connection Corridor for cabling as opposed to an overhead line drop.
- 12.4.20 This PEIR reflects information currently available on land ownership and farming activities in the Solar PV Site and Grid Connection Corridor. The assessment will be updated for the ES.
- 12.4.21 An agricultural holdings and land use survey is not currently proposed, given that the Applicant and Scheme team are engaging directly with affected landowners and given the nature of likely effects (as noted above, in the Grid Connection Corridor any impacts would comprise permanent below ground works, with land returned to its original use following installation).

### Assessment Methodology

- 12.4.22 There is currently no statutory guidance on the methodology for undertaking assessments of socio-economic and land use effects. The assessment follows good practice methodology and professional judgement from other assessments undertaken on comparable energy infrastructure schemes.
- 12.4.23 This section sets out the scope and methodology for the socio-economics and land use assessment of the Scheme.
- 12.4.24 The Scheme has the potential to have a range of temporary and permanent effects. For the purposes of this chapter, based on professional judgement and experience, as well as national planning policy, due consideration is given to the Scheme in terms of effects on the following:

- a. Employment generation (temporary and long-term), including multiplier effects (i.e. indirect benefits for the local area and the region resulting from supply chain activity including contribution to the Scheme of low carbon industries as well as induced employment created through increased spending across the Study Area), potential training benefits and apprenticeship opportunities;
- b. Impacts on local services and facilities, comprising local accommodation facilities (the Scheme would not provide educational or visitor facilities, though potential impacts on existing education and visitor facilities are covered under bullet I below);
- c. GVA, including multiplier effects (i.e. indirect benefits for the region);
- d. PRoW;
- e. Other private and community assets (including residential properties, business premises, community facilities including GP surgeries, visitor attractions, agricultural land holdings and development land), in terms of any change of land use within the Site and any changes to accessibility for receptors beyond the Site Boundary; and
- f. BMV agricultural land and soils.

## Impact Assessment Methodology

### Additionality Assumptions

- 12.4.25 As mentioned in Table 12-1, the economic impact of the Scheme is considered relative to a 60-minute travel time (car or road-based public transport) to or from the Scheme in any direction. In accordance with CIPD research and previous similar projects (as set out in Table 12-1), this is considered a reasonable timeframe to use as a baseline within which workers would commute to the Scheme.
- 12.4.26 Additionality has been calculated by considering the overall job gains to the area, then factoring in the level of leakage, number of displaced jobs and multiplier effects, such as supply chains and worker spending related jobs. These assumptions have been informed by the HCA Additionality Guide (Ref. 12-13).
- 12.4.27 Table 12-2 outlines the values that have been allocated within the construction, operational and decommissioning phases' additionality formula, enabling the tailored calculation of the net additional employment and economic impacts. Justifications for the values have been considered and are summarised in the right-hand column of the table.

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

<b>Additionality Factor</b>	<b>Value</b>	<b>Justification</b>
Leakage (% of jobs that benefit those residents outside of the Study Area area)	55%	This is the proportion of jobs taken by people who live outside of the Study Area, defined as a 60-minute travel area. Based on professional judgment and other similar schemes,

Additionality Factor	Value	Justification
		given the specialised nature of the construction, operation and maintenance roles, this has been estimated to be 55%.
Displacement (% of jobs that account for a reduction in related jobs in the Study Area)	25%	For the purpose of this assessment, a low level of displacement (25%) has been assumed, in line with the HCA Additionality Guide (Ref. 12-13). 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 assessed as appropriate for a construction project, as used in other comparable solar schemes.
Multiplier (further economic activity associated with the additional local income, supplier purchase and longer-term development effects)	1.5	The multiplier is a composite figure which takes into account both the indirect jobs created across the Study Area based on supply chain activity, but also the induced employment created through increased spending across the Study Area. The HCA Additionality Guide (Ref. 12-13) provides a 'ready reckoner' of composite multipliers. The Study Area is likely to have 'average' supply linkages and induced effects based on the scale of its economy. Therefore, a 'medium' multiplier of 1.5 is determined from the HCA guidance to be the most appropriate measure.

## Significance Criteria

12.4.28 The assessment of potential socio-economic and land use effects uses the effect significance terms and definitions described within **PEIR Volume I Chapter 5: Environmental Impact Assessment Methodology**. Where possible, socio-economic and land use impacts have been appraised against relevant national standards, such as those issued by Department for Energy Security and Net Zero including NPS EN-1 (Ref. 12-1), NPS EN-3 (Ref. 12-2) and NPS EN-5 (Ref. 12-3) and HCA Additionality Guide (Ref. 12-13) (now renamed Homes England). Where relevant standards do not exist, professional experience and expert judgement have been used to assess the scale and nature of the effects of the Scheme against baseline conditions.

- 12.4.29 The assessment aims to be objective and quantifies effects as far as possible. However, some effects can only be evaluated on a qualitative basis. Effects are defined as follows:
- a. **Beneficial** classifications of significance indicate an advantageous effect on an area, which may be minor, moderate or major in effect;
  - b. **Adverse** classifications of significance indicate a disadvantageous effect on an area, which may be minor, moderate or major in effect;
  - c. **Negligible** classifications of significance indicate imperceptible effects on an area; and
  - d. **No effect** classifications of significance indicate that there are no effects on an area.
- 12.4.30 The geographical scales considered to assess effect significance are described in Table 12-1.
- 12.4.31 Duration of effect is also considered, with more weight given to permanent changes than to temporary ones. As defined in **PEIR Volume I Chapter 5: Environmental Impact Assessment Methodology**, permanent effects are those effects which cannot be reversed following decommissioning.
- 12.4.32 Construction phase effects are assessed against the present-day baseline, while the operational and decommissioning effects are assessed against the future baseline.
- 12.4.33 For socio-economics and land use, there is no accepted definition of what constitutes a significant (or not significant) socio-economic effect. It is however recognised that 'significance' reflects the relationship between the scale of impact (magnitude) and the sensitivity (or value) of the affected resource or receptor. As such the significance criteria of socio-economic and land use 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 people or business in the context of the area in which impacts would be experienced; and
  - c. **Scope for adjustment:** the socio-economic assessment is concerned in part with economies. These adjust themselves continually to changes in supply and demand, and the scope for the changes brought about by the Scheme to be accommodated by market adjustment will therefore be a criterion in assessing significance.
- 12.4.34 Criteria for receptor sensitivity and impact magnitude have been set out below (although specific sensitivity values are not attributed to socio-economics receptors as explained above), which have been grouped as follows: economic impacts (covering employment effects and GVA effects, as

described in Paragraph 12.4.24); PRow; private and community assets (including impacts on local accommodation services as described in Paragraph 12.4.24) and BMV agricultural land and soils. The significance of effect matrix has been provided following the receptor sensitivity and impact magnitude criteria.

### Economic Impacts

12.4.35 The following criteria have been set to assess effects relating to employment and GVA (grouped together as economic impacts).

12.4.36 Table 12-3 identifies the sensitivity criteria that have been used to inform the assessment on socio-economic receptors relating to employment and GVA.

**Table 12-3: Economic Impact Sensitivity Criteria**

<b>Sensitivity</b>	<b>Description</b>
High	Businesses, workers or residents who have little or no capacity to experience the impact without incurring a change on their economic well-being.
Medium	Businesses, workers or residents that have a moderate or average capacity to experience the impact without incurring a change on their economic well-being.
Low	Businesses, workers or residents that generally have adequate capacity to experience impacts without incurring a change on their economic well-being.
Very Low	Businesses, workers or residents that are unlikely to experience impacts on their economic well-being.

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

**Table 12-4: Economic Impact Magnitude Criteria**

<b>Magnitude</b>	<b>Description</b>
High	An impact that is expected to have considerable adverse or beneficial socio-economic effects. Such impacts will typically affect large numbers of businesses, workers or residents.
Medium	An impact that will typically have a noticeable effect on a moderate number of businesses, workers or residents, and will lead to a small change to the Study Area's baseline socio-economic conditions.
Low	An impact that is expected to affect a small number of businesses, workers or residents or an impact that may affect a larger number of receptors but does not



<b>Magnitude</b>	<b>Description</b>
	materially alter the Study Area’s baseline socio-economic conditions.
Negligible	An impact which represents very little change from baseline conditions where the change is barely distinguishable, approximating to a “no change” situation.

**PRoW**

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

12.4.39 Table 12-5 identifies the sensitivity criteria that have been used to inform the assessment on PRoW.

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

<b>Sensitivity</b>	<b>Description</b>
High	PRoW is of high importance with limited potential to be substituted with other route options to access the wider network or community infrastructure.
Medium	PRoW is of medium importance with moderate potential to be substituted with other route options to access the wider network or community infrastructure. Or PRoW is of high importance with alternative routes available. Or PRoW is of low importance with limited potential for substitution with other route options to access the wider network or community infrastructure.
Low	PRoW is of low importance with alternative routes available. Or PRoW is of very low importance with moderate potential for substitution with other route options to access the wider network or community infrastructure.
Very Low	PRoW is of very low importance with alternative routes available.

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

**Table 12-6: Public Rights of Way Impact Magnitude Criteria**

<b>Magnitude</b>	<b>Description</b>
High	Substantial increase/decrease in journey length and/or change in travel patterns and increased/decreased opportunities for users to access the wider network and/or community infrastructure.

<b>Magnitude</b>	<b>Description</b>
Medium	Noticeable increase/decrease in journey length and/or change in 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.

### Other Private and Community Assets

- 12.4.41 The following criteria has been set to assess the effects on other private and community assets which comprise residential properties, business premises, community facilities, visitor attractions, agricultural land holdings, local accommodation services and development land. Development land is defined as planning applications or Development Consents Order (DCO) Applications which have received consent, been submitted for determination, or are at pre-application stage (including EIA scoping), and allocated sites (including Mineral Safeguarding Areas, Mineral Consultation Areas, Waste Consultation Areas and Transport Safeguarded Areas).
- 12.4.42 Table 12-7 identifies the sensitivity criteria that have been used to inform the assessment on private and community assets.

**Table 12-7: Private and Community Assets Sensitivity Criteria**

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

- 12.4.43 The magnitude of change to local assets (residential properties, business premises, community facilities, visitor attractions, agricultural land use, accommodation services and development land) is assessed by appraising the level of impact on the receptor and the permanency of change arising from the Scheme. Table 12-8 identifies the magnitude of impact criteria

which have been used to assess the impacts on private and community assets (excluding development land, which is covered in Table 12-9 below).

**Table 12-8: Private and Community Assets Magnitude Criteria**

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

12.4.44 The assessment of effects on development land considers any temporary and permanent land take of development land which affects its viability, and any other ways in which the Scheme conflicts with, hinders or otherwise adversely affects development land within or nearby to the Site Boundary. Table 12-9 identifies the magnitude of impact criteria used to assess the impacts on development land.

**Table 12-9: Development Land Magnitude Criteria**

<b>Magnitude</b>	<b>Description</b>
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.

Magnitude	Description
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.

### BMV Agricultural Land and Soils

- 12.4.45 The sensitivity of agricultural land is assessed according to its ALC grade, as set out in Table 12-10.
- 12.4.46 BMV agricultural land is a strategic national resource with longstanding policy to prevent the unnecessary loss of such land to non-agricultural development. As set out in TIN049 (Ref. 12-22), land in ALC Grades 1, 2 and 3a are considered to be the nation’s BMV. Paragraph 180 of the NPPF directs that planning should consider the economic and other benefits of BMV agricultural land. TIN049 and national planning policy do not seek to enforce continuity of agricultural production or any specific agricultural management.
- 12.4.47 For the agricultural land resource, the presence of BMV land and the grade of that land determine sensitivity, with Grades 1 and 2 land (excellent and very good quality land respectively) having fewer limitations to agricultural use than land in Subgrade 3a (good quality agricultural land).
- 12.4.48 This criteria set out in Table 12-10 takes into account the above guidance in respect of the economic and other benefits of the BMV and give limited weight to the loss, from agricultural production of land in Subgrades 3b, and Grades 4 and 5.

**Table 12-10: BMV Agricultural Land Sensitivity Criteria**

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

- 12.4.49 The thresholds for the magnitude of impact adopted in this assessment are based on a threshold of the permanent change of 20 hectares (ha) of BMV agricultural land, taken from Article 18(1), Paragraph (y) of the Table in Schedule 4 to the Town and Country Planning (Development Management Procedure) Order 2015 (S.I. No 2015/595) (Ref. 12-23). The magnitude of change criteria is therefore based on the extent of BMV land lost, with the area of 20 ha referred to below being derived from the threshold contained within the former MAFF guidance (Ref. 12-24) and maintained by Natural England when informing their consultation on projects. As this is the area of BMV change that triggers a requirement to consult with Natural England, it implies that this is also the point at which the change is no longer considered to be ‘not significant’. Therefore, for the purposes of this assessment:

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

### Significance of Effects

12.4.50 Socio-economic and land use effects reflect the relationship between the sensitivity of the affected receptor (Table 12-3, Table 12-5, Table 12-7, Table 12-10) and the magnitude of the impact. Table 12-11 shows how the assessment of the significance of effects is arrived upon.

**Table 12-11: Impact Assessment and Effect 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

12.4.51 In accordance with the methodology set out within **PEIR Volume I Chapter 5: Environmental Impact Assessment Methodology**, the following criteria is applied:

- a. **‘Moderate’** or **‘Major’** are classed **‘significant’**;
- b. **‘Minor’** 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.

### Rochdale Envelope

12.4.52 In order to ensure a robust assessment of the likely significance of the environmental effects of the Scheme, the assessment is being undertaken adopting the principles of the ‘Rochdale Envelope’ approach where appropriate in line with Planning Inspectorate guidance (Planning Inspectorate, 2018, Ref. 12-25). This involves assessing the maximum (or where relevant, minimum) worst case parameters for the elements where flexibility needs to be retained (facility dimensions or operational modes for example).

12.4.53 The following assumptions have been made with regard to the Scheme as applicable to this preliminary socio-economics and land use assessment:

- a. As noted in **PEIR Volume I Chapter 2: The Scheme**, the construction phase is expected to last an estimated 24 months, noting that the Grid Connection Cables would require approximately 12 months, and the

construction of the Solar PV Site would require an estimated 24 months. Construction of the Solar PV Site and Grid Connection Cables is anticipated to start in tandem. This is expected to be a realistic worst-case assumption for the consideration of accessibility effects within this socio-economics 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). This approach may mean the maximum number of jobs during peak construction has been overestimated; however, the overall amount of construction activity over the construction phase and therefore the associated employment and spending benefits of the Scheme overall would remain unchanged.

- b. Effects on the hotel, bed and breakfast and inns accommodation sector during the construction phase reflect a worst-case scenario and assess the likely capacity against the demand from the potential peak construction workforce arising with 30 minutes and 60 minute drive time of the Site. The assessment of severance effects on land use receptors during the construction, operation and decommissioning phases is informed by **PEIR Volume I Chapter 13: Transport and Access** which also uses the potential peak construction workforce to assess a worst-case scenario.
- c. Effects on PRow during the construction, operation and decommissioning phases are assessed in this PEIR. At PEIR stage, it is not possible to confirm with certainty the length of time any PRow would be closed or diverted during the construction or decommissioning phases. At this stage, as a worst case assumption it is assumed that temporary diversions would be for the duration of the construction and decommissioning phase (24 months each).

12.4.54 Effects on BMV agricultural land use have taken into consideration the ALC of the areas of the Scheme which are known at this time. Mapping of agricultural land and soils within the Solar PV Site has been based on site surveys of the Solar PV Site undertaken between February and May 2023. Following completion of the survey, the Solar PV Site was expanded by the addition of 105.2 ha of land in the south west and a single field in the east of the Site. It is anticipated for the PEIR that the majority of the additional land will be of Subgrade 3b quality based on geomorphological continuity. The additional land in the Solar PV Site will be surveyed for the ES. Site surveys are not planned for the Grid Connection Corridor and therefore the ALC within the Grid Connection Corridor is based on data from the Defra Natural England mapping service (see **PEIR Volume II Figure 12-4: Predicted Agricultural Land Classification**).

### Assumptions, Limitations and Uncertainties

12.4.55 The assessment presented in this chapter is based on the currently available baseline and design information. Following statutory consultation, and further evolution of the design and development of baseline data, a full assessment will be undertaken and reported in the ES that will be submitted with the DCO Application.

- 12.4.56 The preliminary assessment of the significance of effects has been carried out against a benchmark of current socio-economic baseline conditions prevailing around the Scheme. The most recently available data sources have been used in this PEIR, although it should be noted that baseline data can be subject to a time lag between collection and publication. Conditions may be subject to change over time which may influence the findings of the assessment.
- 12.4.57 For the economic Study Area (60 minute drive time), the 2011 LSOA geographical boundaries were used to compile the baseline profile as the datasets did not have 2021 Census LSOA geographical boundaries available.
- 12.4.58 Surveys of the quality of the agricultural land and soils located within the Solar PV Site were undertaken between February and May 2023. Following completion of the survey, the Solar PV Site was expanded by the addition of 105.2 ha of land in the south west and a single field in the east of the Site. It is assumed that the majority of the additional land has similar land quality to the rest of the site (giving land of Subgrade 3b quality). Surveys of the additional land will be undertaken and reported in the ES.
- 12.4.59 Based on the designs for the minor junction works associated with the Scheme, it is assumed that the minor works will not adversely impact any nearby receptors or that any adverse impacts could be mitigated through temporary traffic management measures. Therefore, no adverse effects are anticipated.

## 12.5 Baseline Conditions

- 12.5.1 This section describes the existing and anticipated future baseline conditions for the socio-economics and land use assessment. The socio-economic receptors located within the Socio-Economic and Land Use Study Area are presented in **PEIR Volume II Figure 12-1: Study Area and Socio-Economic Receptors**.
- 12.5.2 The potential impacts arising from the Scheme are assessed relative to baseline conditions and benchmarked against regional and national standards where appropriate. Key indicators and measures of the Study Areas have been established for:
- a. Population and deprivation;
  - b. Employment;
  - c. Visitor accommodation;
  - d. Local economy and labour market;
  - e. PRow;
  - f. Socio-economic and land use receptors (comprising residential properties, community facilities, business premises, visitor attractions, agricultural land holdings and development land), first local to the Solar PV Site and second local to the Grid Connection Corridor;
  - g. Mineral Safeguarding Areas; and
  - h. BMV agricultural land and soils.

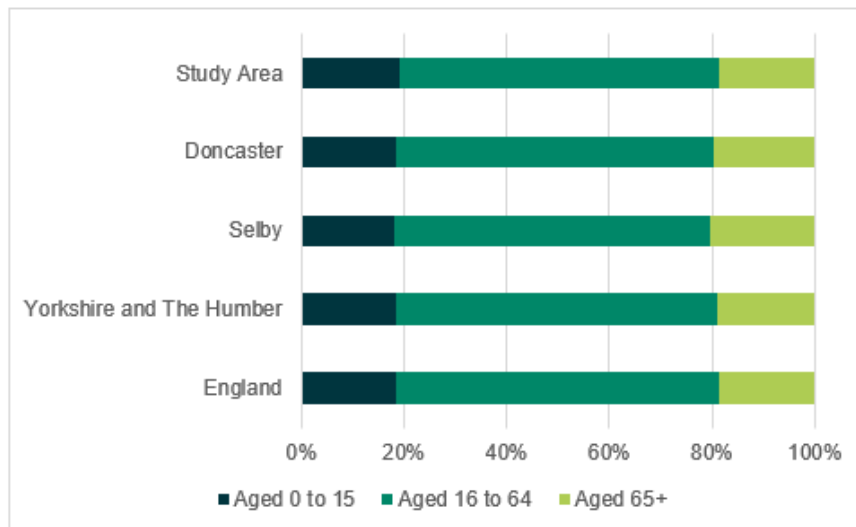
## Existing Baseline – Solar PV Site

- 12.5.3 **PEIR Volume I Chapter 2: The Scheme** contains a detailed description of existing conditions within and surrounding the Site Boundary.
- 12.5.4 Within the Site and the immediate adjacent area, the area is mostly used for agricultural purposes, characterised by large-scale regular arable fields across several land-holdings.
- 12.5.5 Other existing energy infrastructure includes overhead powerlines carried by pylons and the Existing National Grid Thorpe Marsh Substation.
- 12.5.6 The Site is located within the area administered by the City of Doncaster Council. The boundary of the North Yorkshire Council administrative area is also located within the Site Study Area, to the north of the Site. Therefore, this section considers the baseline conditions within both local authorities (as well as within other geographical areas as appropriate, as described in Table 12-1). It should be noted that until 1<sup>st</sup> April 2023 Selby District Council was the Local Authority to the north of the Site. While Selby District has now been incorporated into North Yorkshire, many of the most recent statistical sources reflect the pre-existing administrative boundaries and therefore data for Selby District is presented below.

### Population and Deprivation

- 12.5.7 According to ONS Mid-Year Population Estimates (Ref. 12-21), the residential population of Doncaster has increased from 302,468 in 2011 to 308,705 in 2021, representing a 2.1% increase over 10 years. This growth is lower than that in Yorkshire and the Humber (3.7%) and England (6.5%) over the same period. Population growth was much higher in Selby, where the population increased by 10.6% from 83,547 in 2011 to 92,401 in 2021.
- 12.5.8 According to the ONS Mid-Year Population Estimates (Ref. 12-21), the residential population of the economic Study Area (the 60-minute drive time radius) has increased from 5,993,357 in 2011 to 6,288,728 in 2020, representing a 4.9% increase over nine years.
- 12.5.9 In 2021, 191,299 (62.0%) of residents in Doncaster and 56,879 (61.6%) of residents in Selby were of working age (defined by ONS as men and women aged 16 to 64). These are similar to the rates recorded for Yorkshire and the Humber (62.3%) and England as a whole (63.0%). Higher proportions of the populations of Doncaster (19.5%) and Selby (20.4%) are aged over 65, compared to averages across Yorkshire and Humber (19.1%) and England (18.5%).
- 12.5.10 In 2021, there were 3,909,639 (62.2%) residents of working age within the Study Area. This is slightly higher than or in line with the percentages in Doncaster (62.0%), Selby (61.6%), Yorkshire and the Humber (62.3%) and England (63.0%). This comparison is shown in Plate 12-1.





Source: ONS, (2022), Mid-Year Population Estimates 2021

### Plate 12-1 Age Breakdown of Population

- 12.5.11 In 2021, the Annual Population Survey (Ref. 12-20) showed that 27.2% of working-age residents in Doncaster had a degree-level qualification or equivalent (National Vocational Qualification Level 4 or above), which is notably lower than the rate in Selby (44.5%), the Yorkshire and the Humber region (38.0%) and England (43.2%). The proportion of residents in Selby with no qualifications (10.0%) was higher than that in Doncaster (9.4%), Yorkshire and the Humber (7.8%) and England (6.4%). The survey does not produce findings at the LSOA level and so data for the economic Study Area (60 minute drive time) is not available.
- 12.5.12 Based on the 2019 Indices of Multiple Deprivation (IMD) (Ref. 12-16), which is measured at local authority level, Doncaster is the 41<sup>st</sup> most deprived local authority of 317 districts in England (where 1 is the most deprived). Within Doncaster, 23.7% of the LSOAs are within the top 10% most deprived LSOAs in England. When comparing performance in the seven different domains of deprivation, Doncaster performs worst for crime deprivation (for which it is the 12<sup>th</sup> most deprived local authority) and best for barriers to housing and services deprivation (for which it is the 262<sup>nd</sup> most deprived).
- 12.5.13 In terms of IMD, Selby is the 252<sup>nd</sup> most deprived local authority in England. Within the local authority, 2% of the LSOAs are within the top 10% most deprived in England. The worst performing domain in Selby is education deprivation, for which the local authority is the 172<sup>nd</sup> most deprived in England. The local authority performs best in terms of crime for which it is the 278<sup>th</sup> most deprived.

### Employment

- 12.5.14 According to Business Register and Employment Survey (BRES) data (Ref. 12-19), the number of employees (amongst 16- to 64-year-olds) in Doncaster reached 129,700 and 35,900 in Selby in 2021. The number of employees in the economic Study Area (60 minute drive time) in 2021 was 2,789,000.

- 12.5.15 According to the Annual Population Survey, in 2022 the economic activity rate (amongst 16- to 64-year-olds) was 76.6% in Doncaster, lower than the rates in Selby (80.9%), Yorkshire and the Humber (77.4%) and England (78.7%).
- 12.5.16 In 2021, the unemployment rate (Ref. 12-20) for working-age residents was 6.6% in Doncaster – higher than the average rates across the Yorkshire and The Humber (4.5%) and England (4.6%). Claimant count data (Ref. 12-18) 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, showed the claimant count was 4.7% in Doncaster, which is higher than the rates across the Yorkshire and the Humber (4.1%) and England (3.8%). The claimant count was 2.1% in Selby. Data is not available at the LSOA level.

### Local Accommodation Services

- 12.5.17 According to the 2021 Census (Ref. 12-15), there are 173,042 households in Doncaster and Selby, of which 31,251 are privately rented (accounting for 18.1% of the tenure mix). This compares to 112,798 owner occupied properties (65.2%) and 27,545 (15.9%) socially rented houses. According to the latest English Housing Survey (Ref. 12-26), in 2022, approximately 2.8% of the dwellings in Doncaster and Selby were vacant, which relates to a total of 4,835 dwellings. This empty housing stock could potentially be occupied by incoming workers. If the same tenure mix were assumed for the vacant units (i.e. 18.1% being privately rented), approximately 873 privately rented dwellings in Doncaster and Selby are currently unoccupied.
- 12.5.18 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 30-minute and 60-minute drive time Study Areas have been sourced from CoStar, a property resource website (Ref. 12-27). As of 2023, there are approximately 5,121 rooms in local hotel, bed and breakfast and inns accommodation within a 30-minute drive of site and 35,513 rooms within a 60-minute drive of site. This number has been adjusted in Table 12-12 and Table 12-25 below to reflect typical availability based on seasonal occupancy rates from 2022, as reported by CoStar.

**Table 12-12: Accommodation Capacity Within a 30-Minute Drive Time Radius of the Site**

Month	Room Occupancy (Yorkshire and the Humber %)	Rooms Typically Available after Existing Demand
January	53	2,407
February	72	1,434
March	74	1,331
April	77	1,178

<b>Month</b>	<b>Room Occupancy (Yorkshire and the Humber %)</b>	<b>Rooms Typically Available after Existing Demand</b>
May	78	1,127
June	79	1,075
July	84	819
August	79	1,075
September	81	973
October	81	973
November	80	1,024
December	71	1,485

*Source: CoStar (2023). Data reflects 2022 occupancy for Yorkshire and Humber.*

**Table 12-13: Accommodation Capacity Within a 60-Minute Drive Time Radius of the Site**

<b>Month</b>	<b>Room Occupancy (Yorkshire and the Humber %)</b>	<b>Rooms Typically Available after Existing Demand</b>
January	53	16,691
February	72	9,944
March	74	9,233
April	77	8,168
May	78	7,813
June	79	7,458
July	84	5,682
August	79	7,458
September	81	6,747
October	81	6,747
November	80	7,103
December	71	10,299

*Source: CoStar (2023). Data reflects 2022 occupancy for Yorkshire and Humber.*

### Local Economy and the Labour Market

- 12.5.19 GVA per head in North Yorkshire County Council (which includes Selby) is slightly higher (£22,915) than in Doncaster (£17,404) and the wider Yorkshire and the Humber region (£21,748) (Ref. 12-17). However, at £22,915 it is still below the GVA per head for England (£27,949). The Manufacturing, Distribution, Real Estate and Public Administration sectors contribute the most towards GVA in North Yorkshire. The sectors which contribute the most towards GVA in Doncaster are the Public Administration, Education and Health, Distribution and Manufacturing sectors.
- 12.5.20 Table 12-14 presents a detailed breakdown of employment by broad industrial group across the economic Study Area (60 minute drive time) and its comparators. Based on the most recently available data (2021) (Ref. 12-19), the highest levels of employment in the Study Area are recorded in Health (14.5%), Manufacturing (11.8%) and Education (9.4%). Health (14.4%), Manufacturing (11.5%) and Education (9.4%) also make up the three largest industries by employment in Yorkshire and the Humber.
- 12.5.21 The broad industrial groups that employ the most people in Doncaster are the Health sector (16.8% of total employment) and the Transport and Storage sector (12.2%). The Manufacturing sector is the predominant sector in Selby, contributing to 21.1% of total employment, followed by the Business Administration and Support Services and the Transport and Storage sectors (both 9.2%). The Transport and Storage sector in both local authorities represent a much larger proportion of employment than in either the Yorkshire and The Humber region (5.6%) or England (5.2%).
- 12.5.22 The proportion of employment in the Mining, Quarrying and Utilities broad industrial group (which includes employment from the generation of energy) is higher in Selby (3.3%) than in Yorkshire and The Humber (1.0%) and England (1.1%). The proportion of the Doncaster population employed in the Mining, Quarrying and Utilities broad industrial group is broadly in line with the regional and national average (1.0%). Employment in the Construction industry is 6.1% in Doncaster and 5.9% in Selby, higher than the regional (4.6%) and national averages (4.9%).
- 12.5.23 The Construction broad industrial group comprises 5.1% of employment within the Study Area, slightly higher to that in Yorkshire and the Humber (4.6%) and England (4.9%).

**Table 12-14: Employment by Broad Industrial Group**

Industry	Economic Study Area (%)	Doncaster (%)	Selby (%)	Yorkshire and the Humber (%)	England (%)
Agriculture, forestry and fishing	0.1	0.8	4.6	1.5	1.3

<b>Industry</b>	<b>Economic Study Area (%)</b>	<b>Doncaster (%)</b>	<b>Selby (%)</b>	<b>Yorkshire and the Humber (%)</b>	<b>England (%)</b>
Mining, quarrying and utilities	1.1	1.0	3.3	1.0	1.1
Manufacturing	11.8	8.4	21.1	11.5	7.3
Construction	5.1	6.1	5.9	4.6	4.9
Motor trades	2.1	2.7	1.6	1.8	1.7
Wholesale	3.8	3.1	2.6	3.5	3.6
Retail	8.5	8.4	5.3	8.2	9.0
Transport and storage (inc. postal)	6.2	12.2	9.2	5.6	5.2
Accommodation and food services	6.8	6.1	6.6	7.2	7.4
Information and communication	3.2	1.5	1.6	3.1	4.5
Financial and insurance	2.4	1.7	0.5	2.7	3.6
Property	1.6	1.0	1.1	1.6	2.0
Professional, scientific and technical	6.5	4.6	6.6	6.5	9.3
Business administration and support services	8.4	7.6	9.2	8.7	8.9
Public administration and defence	4.6	4.6	2.4	4.5	4.1
Education	9.4	8.4	7.9	9.4	8.5
Health	14.5	16.8	6.6	14.4	13.1
Arts, entertainment, recreation and other services	4.2	3.8	3.3	4.2	4.3

*Source: BRES (2021). (Ref. 12-19) Please note that totals may not equal 100 due to rounding.*

## ProW

12.5.24 In terms of recreational routes, there are 31 ProW located within 500 m of the Solar PV Site (see **PEIR Volume II Figure 2-2: Public Rights of Way**). Of these 31 PRow, 11 PRow are either located entirely within the Solar PV Site, or pass through the Solar PV Site and continue outside of it. These are shown below, with their total length indicated:

- a. Fenwick 10 Footpath (approximate length of the PRow 1.4 km);
- b. Fenwick 11 Footpath (approximate length of the PRow 1.1 km);
- c. Fenwick 12 Footpath (approximate length of the PRow 630 m);
- d. Fenwick 13 Footpath (approximate length of the PRow 765 m);
- e. Fenwick 14 Footpath (approximate length of the PRow 830 m);
- f. Fenwick 15 Footpath (approximate length of the PRow 670 m);
- g. Fenwick 16 Footpath (approximate length of the PRow 940 m);
- h. Moss 5 Footpath (approximate length of the PRow 240 m);
- i. Moss 6 Footpath (approximate length of the PRow 480 m);
- j. Moss 7 Footpath (approximate length of the PRow 490 m); and
- k. Sykehouse 29 Footpath (approximate length of the PRow 640 m).

12.5.25 The other 20 are either located along or abutting the Solar PV Site, but do not traverse it (the distances are the approximate length of the PRow):

- a. Fenwick 3 Footpath (approximate length of the PRow 730 m);
- b. Fenwick 4 Footpath (approximate length of the PRow 535 m);
- c. Fenwick 8 Footpath (approximate length of the PRow 290 m);
- d. Fenwick 17 Footpath (approximate length of the PRow 100 m);
- e. Moss 3 Footpath (approximate length of the PRow 280 m);
- f. Moss 4 Footpath (approximate length of the PRow 200 m);
- g. Moss 8 Footpath (approximate length of the PRow 780 m);
- h. Moss 9 Footpath (approximate length of the PRow 590 m);
- i. Moss 11 Footpath (approximate length of the PRow 190 m);
- j. Moss 12 Footpath (approximate length of the PRow 450 m);
- k. Moss 13 Footpath (approximate length of the PRow 280 m);
- l. Moss 14 Footpath (approximate length of the PRow 200 m);
- m. Moss 15 Footpath (approximate length of the PRow 830 m);
- n. Sel-Balne 35.3/15/1 Footpath (approximate length of the PRow 2.1 km);
- o. Sel-Balne 35.3/15/2 Footpath (approximate length of the PRow 1 km);
- p. Sel-Balne 35.3/17/1 Bridleway (approximate length of the PRow 1.5 km);

- q. Sel-Balne 35.3/8/1 Footpath (approximate length of the PRoW 750 m);
  - r. Sykehouse 1 Bridleway (approximate length of the PRoW 74 m);
  - s. Sykehouse 27 Footpath (approximate length of the PRoW 300 m); and
  - t. Sykehouse 35 Footpath (approximate length of the PRoW 200 m).
- 12.5.26 PRoW Sykehouse 1 Bridleway forms part of the Trans Pennine Trail, which runs from coast to coast across northern England and is used by walkers, cyclists and equestrian users.
- 12.5.27 There are no national trails or national cycle routes within the Solar PV Site. National Cycle Route 62 is the nearest national cycle route, approximately 1.6 km west of the Solar PV Site. The route connects Fleetwood on the Fylde region of Lancashire with Selby in North Yorkshire.
- 12.5.28 There are approximately 24 PRoW located within the Grid Connection Corridor Study Area. Of these, eight are either located entirely within the Grid Connection Corridor, or pass through it and continue outside of it, as listed below – the other sixteen are within 500 m of the draft Order Limits:
- a. Moss 6 Footpath (approximate length of the PRoW 480 m);
  - b. Moss 20 Footpath (approximate length of the PRoW 1.5 km);
  - c. Moss 21 Footpath (approximate length of the PRoW 170 m);
  - d. Thorpe in Balne 6 Footpath (approximate length of the PRoW 1.1 km);
  - e. Thorpe in Balne 7 Footpath (approximate length of the PRoW 600 m);
  - f. Thorpe in Balne 8 Footpath (approximate length of the PRoW 300 m);
  - g. Thorpe in Balne 11 Bridleway (approximate length of the PRoW 1.1 km); and
  - h. Thorpe in Balne 13 Footpath (approximate length of the PRoW 940 m);
- 12.5.29 The Trans Pennine Trail runs through the Grid Connection Corridor by Thorpe in Balne. The trail intersects the Grid Connection Corridor on Thorpe Lane and follows the road network north along Marsh Road and Moss Lane before heading east along Willow Bridge Lane towards the New Junction Canal.
- 12.5.30 The PRoW within, and within 500 m of, the Solar PV Site and Grid Connection Corridor do not connect rural areas to more urban areas or business parks, and are therefore unlikely to be used for commuting. Consultation with the PRoW Officer for the City of Doncaster Council revealed that these PRoW are mainly used by local residents for recreational use, and that some are also used by equestrians.

## Solar PV Site – Local Receptors

### Residential Properties

- 12.5.31 There are no residential properties located within the Solar PV Site. As described in **PEIR Volume I Chapter 2: The Scheme**, the area within the Solar PV Site is characterised by agricultural land use (mostly arable with some grazing), and around the Solar PV Site is mostly rural and relatively sparsely populated.

12.5.32 A number of small settlements containing residential properties and farm buildings lie within 500 m of the Solar PV Site and comprise of Fenwick approximately 100 m to the south west of the Solar PV Site, Topham approximately 455 m to the east and Sykehouse approximately 500 m to the east.

### Community Facilities

12.5.33 Table 12-15 illustrates the community and recreational facilities within 2 km of the Solar PV Site and their distances from the Solar PV Site. Moss and Fenwick Village Hall is located adjacent to the Solar PV Site. The hall acts as a setting for Special Educational Needs education provided by Phoenix. There are no General Practitioner (GP) services located within 2 km of the Solar PV Site. The nearest GP services are the Askern Medical Practice and the Lakeside Practice located approximately 2.5 km west of the Site within the White Wings Centre on Spa Pool Road. The nearest hospital (with an accident and emergency department) is the Doncaster Royal Infirmary, which is approximately 10 km to the south of the Solar PV Site.

12.5.34 There are no police or fire stations within 2 km of the Solar PV Site. The nearest are Thorne Police Station approximately 8 km south east of the Solar PV Site and Adwick Le Street Fire Station, approximately 9.2 km south west of the Solar PV Site. There are no open spaces or other community land assets located within 2 km of the Solar PV Site. The nearest open space receptor is Lakeside Park approximately 3.1 km to the south west of the Solar PV Site.

**Table 12-15: Community and Recreational Facilities Within 2 km of the Solar PV Site**

Receptor	Description	Approximate Distance from Solar PV Site
Moss and Fenwick Village Hall	Village hall - includes Pupil Referral Unit	0 m west of the Solar PV Site on Fenwick Common Lane
The Holy Trinity Church	Religious facility	1.1 km east of the Solar PV Site on Broad Lane
Sykehouse Cricket Club	Cricket Club	1.5 km east of the Solar PV Site on Broad Lane
Sykehouse Village Hall	Village hall	1.7 km east of the Solar PV Site on Broad Lane
The Church of St John the Baptist	Religious facility	1.6 km north of the Solar PV Site on Balne Moor Road
Pollington Balne Church of England Primary School	Education facility	1.6 km north of the Solar PV Site on Balne Moor Road
Pollington Preschool	Education facility	1.6 km north of the Solar PV Site on Balne Moor Road



Receptor	Description	Approximate Distance from Solar PV Site
Norbreck Road Communal Hall	Village hall	1.9 km south west of the Solar PV Site on Norbreck Road
Askern Moss Road Infant School	Education facility	1.7 km south west of the Solar PV Site on Moss Road

### Business Premises

12.5.35 There are no business premises within the Solar PV Site (noting that farms are covered separately under Agricultural Land Holdings below). The business premises within the 500 m Study Area of the Solar PV Site are presented in Table 12-16.

**Table 12-16: Business Premises Within 500 m of the Solar PV Site**

Receptor	Description	Approximate Distance from Solar PV Site
Roger Petch Transport Limited	Trucking company	30 m south of the Solar PV Site on West Lane
Iron Horse Equestrian Supplies Ltd	Equestrian shop	210 m south of the Solar PV Site on Moss Road
The Old Hayloft Tea Room	Café	210 m south of the Solar PV Site on Moss Road
Workshop Trading	PPE supplier	325 m south of the Solar PV Site on Moss Road
The Baxter Arms	Public House	420 m west of the Solar PV Site on Fenwick Lane
Sykehouse Arena	Equestrian centre	500 m east of the Solar PV Site on Ash Hill Road
Sunway Leisure	Car dealership	500 m east of the Solar PV Site on Moss Road

### Visitor Attractions

12.5.36 There are no visitor attractions located within 500 m of the Solar PV Site.

### Agricultural Land Holdings

12.5.37 There are multiple agricultural land holdings located within the Solar PV Site. The applicant has reached voluntary land agreements with the majority of landowners in the Solar PV Site and is finalising negotiations with the rest.

12.5.38 Farms with land holdings located within the Solar PV Site include:

- a. Riddings Farm;

- b. Manor Farm;
- c. Tweed Farm;
- d. Fenwick Hall Farm;
- e. Gate Farm; and
- f. Jet Hall Farm.

12.5.39 In addition, the following farms are located within 500 m of the Solar PV Site:

- g. Lawn Lane Farm located approximately 145 m away from the Solar PV Site on Lawn Lane;
- h. Bate Lane Farm located approximately 365 m east from the Solar PV Site on Bate Lane;
- i. East Farm located approximately 110 m east from the Solar PV Site on Topham Ferry Lane;
- j. Moss Farm located approximately 430 m south east from the Solar PV Site on Moss Road.

### Development Land

12.5.40 There are no allocated development sites, or sites subject to planning applications or permissions within the Solar PV Site. As of January 2024, one planning application (22/01537/LBC and 22/01536/FUL) has been identified within 500 m of the Solar PV Site, associated with the demolition of Grade II listed 'Lily Hall' and erection of one replacement residential farmworker's dwelling and associated works, as listed in **PEIR Volume I Chapter 15: Cumulative Effects and Interactions**. The assessment of effects in this chapter considers the potential for the Scheme to conflict with, hinder or otherwise adversely affect development land. Meanwhile, the cumulative effects section of this chapter (see Section 12.10) considers whether the Scheme and the identified proposed developments and allocations might together cause significant effects.

12.5.41 The demolition of Grade II listed 'Lily Hall' and erection of one replacement residential farmworker's dwelling and associated works (22/01537/LBC and 22/01536/FUL) is pending consideration and located approximately 140 m away from the Solar PV Site at Riddings Farm, accessed via Lawn Lane.

### Mineral Safeguarding Areas

12.5.42 There are no Minerals Safeguarding Areas located within 500 m of the Solar PV Site.

### BMV Agricultural Land

12.5.43 The mapping of agricultural land and soils within the Solar PV Site has been based on site surveys undertaken between February and May 2023 (see **PEIR Volume II Figure 12-5: Agricultural Land Classification (ALC) Survey for the Solar PV Site**). The survey covered 315.8 ha of land, and the results presented below relate to that area. Following completion of the survey, the Solar PV Site was expanded by the addition of 105.2 ha of land in the south west and a single field in the east of the Solar PV Site, totalling

421 ha for the entire Solar PV Site. This additional land will be surveyed for the ES.

- 12.5.44 The ALC soil survey of the Solar PV Site was carried out in accordance with the MAFF guidelines (Ref. 12-24). The survey showed that the Solar PV Site is predominantly located in ALC Grade 3b (moderate quality agricultural land) with some Grade 3a (good quality agricultural land). Under the ALC framework for classifying land, Subgrade 3a land is BMV land whereas Subgrade 3b is not.
- 12.5.45 Subgrade 3a land comprises 4% of the land surveyed to date, or approximately 12.6 ha of the land within the Solar PV Site Order Limits. The land yet to be surveyed is broadly similar to the surveyed area and it is anticipated that it continues the majority classification as Subgrade 3b, non-BMV land. However, the additional land ALC will be confirmed for the ES.
- 12.5.46 The breakdown of ALC grades for the surveyed land within the Solar PV Site is presented in Table 12-17. No Grade 1 or Grade 2 agricultural land was identified within the Solar PV Site.

**Table 12-17: Agricultural Land Classification Based Within the Solar PV Site**

<b>Agricultural Land Class</b>	<b>Total Area (Ha) *</b>	<b>Percentage of Solar PV Site Total (%)</b>
Subgrade 3a	12.6	4
Subgrade 3b	287.4	91
Grade 4	12.6	4
Non agricultural	3.2	1
<b>Total</b>	<b>315.8</b>	<b>100</b>

\* Further survey to be completed for the ES.

Source: Land Research Associates Limited (2023) ALC Survey – Solar PV Site (Ref. 12-28) (PEIR Volume III Appendix 12-3: Agricultural Land Classification Survey Report)

## **Grid Connection Corridor – Local Receptors**

### **Residential Properties**

- 12.5.47 The dominant land use within the Grid Connection Corridor is agricultural. There are no residential properties within the Grid Connection Corridor.
- 12.5.48 There are various settlements located within 500 m of the Grid Connection Corridor including Moss approximately 130 m to the west of the Grid Connection Corridor, Hawkhouse Green approximately 400 m to the east, Thorpe in Balne approximately 480 m to the west and Barnby Dun approximately 500 m to the east. Barnby Dun is the largest settlement area within 500 m of the Grid Connection Corridor, containing large concentrations of residential properties.

12.5.49 Moss mainly comprises of residential properties and farms (Moss Farm and Fir Tree Farm). Thorpe in Balne contains residential properties and multiple farms (Sickle Croft Farm, Ash Tree Farm, and Elm Stone Farm are all located on Thorpe Lane).

### Community Facilities

12.5.50 Table 12-18 illustrates the community and recreational facilities within 2 km of the Grid Connection Corridor and their distances from the Grid Connection Corridor. The facilities comprise of two village halls, four religious facilities, a primary school, community centre and a GP surgery. The nearest hospital (with an accident and emergency department) is the Doncaster Royal Infirmary, which is approximately 5 km to the south of the Grid Connection Corridor.

12.5.51 The latest GP (October 2023) data published by NHS Digital (Ref. 12-29) does not contain information on the number of GPs or number of patients registered at Barnby Dun Surgery and therefore the GP to patient ratio for Barnby Dun Surgery is not known. The average GP to patient ratio for the GP surgeries located within the Doncaster East and Doncaster North Primary Care Networks (PCN) (which the Solar PV Site and Grid Connection Corridor are located in) is 1,839 patients per GP. The Royal College of Practitioners (Ref. 12-30) targets a GP to patient ratio of 1,800 patients per GP.

12.5.52 There are no police or fire stations within 2 km of the Grid Connection Corridor. The nearest are South Yorkshire Police Station approximately 6.8 km south west of the Grid Connection Corridor and Doncaster Fire Station, approximately 6.2 km south of the Grid Connection Corridor.

**Table 12-18: Community and Recreational Facilities Within 2 km of the Grid Connection Corridor**

Receptor	Description	Approximate Distance from Grid Connection Corridor
The Church of St Peter and St Paul	Religious facility	570 m east of the Grid Connection Corridor on Church Road
Barnby Dun Primary School	Education facility	800 m east of the Grid Connection Corridor on Church Road
Barnby Dun Methodist Church	Religious facility	840 m east of the Grid Connection Corridor on High Street
Barnby Dun Community Association	Community centre	950 m east of the Grid Connection Corridor on Top Road

<b>Receptor</b>	<b>Description</b>	<b>Approximate Distance from Grid Connection Corridor</b>
Barnby Dun Surgery	Health facility	1 km east of the Grid Connection Corridor on Stainforth Road
Barnby Dun Parish Hall	Village hall	1 km south east of the Grid Connection Corridor on Top Road
Moss and Fenwick Village Hall	Village hall	1.2 km west of the Grid Connection Corridor on Fenwick Common Lane
St Oswald's Church	Religious facility	1.2 km south of the Grid Connection Corridor on Pilkington Road
St Mary's Church	Religious facility	1.3 km east of the Grid Connection Corridor on Top Lane

12.5.53 There are multiple community land assets located within 2 km of the Grid Connection Corridor - these are presented in Table 12-19.

**Table 12-19: Community Land Assets Within 2 km of the Grid Connection Corridor**

<b>Receptor</b>	<b>Description</b>	<b>Approximate Distance from Grid Connection Corridor</b>
Thorpe Marsh Nature Reserve	Nature reserve	870 m west of the Grid Connection Corridor accessed via Field Station Road
Barnby Dun Colts	Football pitch	900 m east of the Grid Connection Corridor accessed via Top Road
Barnby Dun Play Park	Park and playground	1 km east of the Grid Connection Corridor accessed via Top Road
Barnby Dun with Kirk Sandall Community Allotment	Allotments	1.1 km east of the Grid Connection Corridor accessed via Stainforth Road
Glass Park Millennium Green	Park	1.1 km south of the Grid Connection Corridor accessed via Moor Lane

<b>Receptor</b>	<b>Description</b>	<b>Approximate Distance from Grid Connection Corridor</b>
Barnby Dun and Kirk Sandall Sports Association	Park, garden, sports pitches	1.3 km south of the Grid Connection Corridor accessed via Doncaster Road
Barnby Dun Allotments	Allotments	1.4 km south east of the Grid Connection Corridor accessed via Armthorpe Lane
Pilkington Bowling Club	Bowling pitches	1.6 km south of the Grid Connection Corridor accessed via Doncaster Road
Doncaster Golf Range	Golf club	1.8 km south east of the Grid Connection Corridor accessed via Armthorpe Lane

### **Business Premises**

12.5.54 Aside of the farms which are covered separately under Agricultural Land Holdings below, the only business premises located within the Grid Connection Corridor is the Existing National Grid Thorpe Marsh Substation. Business premise locations within 500 m of the Grid Connection Corridor, along with their main activities, are outlined in Table 12-20.

**Table 12-20: Business Premises Within 500 m of the Grid Connection Corridor**

<b>Receptor</b>	<b>Description</b>	<b>Approximate Distance from Grid Connection Corridor</b>
Existing National Grid Thorpe Marsh Substation	Electrical substation	Within the Grid Connection Corridor
Glebe Farm Kennels and Cattery	Kennels and cattery	80 m west of the Grid Connection Corridor on Moss Lane
Sunway Leisure	Car dealership	180 m east of the Grid Connection Corridor on Moss Road
Fir Tree Farm Equestrian Centre	Equestrian centre	200m m west of the Grid Connection Corridor on Moss Road

<b>Receptor</b>	<b>Description</b>	<b>Approximate Distance from Grid Connection Corridor</b>
The Orchard Equestrian Centre	Equestrian centre	300 m west of the Grid Connection Corridor
Iron Horse Equestrian Supplies Ltd	Equestrian shop	390 m west of the Grid Connection Corridor on Moss Road
The Old Hayloft Tea Room	Café	390 m west of the Grid Connection Corridor on Moss Road
Work Shop Trading	PPE supplier	500 m west of the Grid Connection Corridor on Moss Road

### Visitor Attractions

12.5.55 There are no visitor attractions located within, or within 500 m of, the Grid Connection Corridor.

### Agricultural Land Holdings

12.5.56 Land use within the Grid Connection Corridor is dominated by arable agriculture. There are no farm buildings or working farm infrastructure located within it.

12.5.57 The Applicant and land agent are currently identifying and engaging with landowners located in the Grid Connection Corridor. An updated full description will be provided within the ES.

12.5.58 The following farms, which comprise various farm buildings and working infrastructure, are located within 500 m of the Grid Connection Corridor:

- a. Fir Tree Farm located approximately 185 m north west from the Grid Connection Corridor on Trumfleet Lane;
- b. Hawkhouse Green Lane Farm located approximately 300 m south from the Grid Connection Corridor on Hawkhouse Green Lane;
- c. Willowbridge Farm located approximately 310 m east from the Grid Connection Corridor on Willow Bridge Lane;
- d. Trumfleet Grange Farm located approximately 80 m west from the Grid Connection Corridor on Trumfleet Lane;
- e. Trumfleet Lane Farm (Langfield G P and Son) located approximately 180 m west from the Grid Connection Corridor on Trumfleet Lane;
- f. Spring Acre Farm located approximately 270 m west from the Grid Connection Corridor on Thorpe Lane;
- g. Elmstone Farm located approximately 280 m west from the Grid Connection Corridor on Thorpe Lane;

- h. Sickle Croft Farm located approximately 400 m west from the Grid Connection Corridor on Applehurst Lane; and
- i. Bramwith Lane Farm (Parkin Coates A) located approximately 350 m east from the Grid Connection Corridor on Bramwith Lane.

### Development Land

- 12.5.59 As of January 2024, two planning applications have been identified within the Grid Connection Corridor Study Area (Enso Green Holdings; 21/02567/FULM and Thorpe Marsh Green Energy Hub; 23/00793/FULM), as listed in **PEIR Volume I Chapter 15: Cumulative Effects and Interactions**. The Enso Green Holdings planning application (21/02567/FULM) comprises the installation of a solar farm and battery storage facility with associated infrastructure at Warren Farm, located on High Street in Dunsville. Planning permission was granted on 15 March 2022. The solar farm's underground cable route would overlap with the Grid Connection Corridor as the underground cable routes for both solar farms would be connected to the Point of Connection at the Existing National Grid Thorpe Marsh Substation, where the renewable energy generated by the Scheme would be exported to the grid.
- 12.5.60 The Thorpe Marsh Green Energy Hub planning application (23/00793/FULM) is for the construction and operation of up to 50MW Battery Energy Storage System (BESS), substation and associated infrastructure at the Existing National Grid Thorpe Marsh Substation on South Road. The planning application is currently awaiting a decision on whether the development can go ahead. The BESS, substation and associated infrastructure would overlap with the Grid Connection Corridor as both schemes would be connected to the Point of Connection at the Existing National Grid Thorpe Marsh Substation, where the renewable energy generated by the Scheme would be exported to the grid.

### Mineral Safeguarding Areas

- 12.5.61 The Minerals Safeguarding Report (**PEIR Volume III Appendix 12-2: Minerals Safeguarding Report**) identifies one Mineral Safeguarding Area (MSA) for sand and gravel within the 500 m Study Area for the Grid Connection Corridor Search Area (land to the east of Doncaster between Thorne and Bawtry). The Grid Connection Cables within the Grid Connection Corridor would enter the sand and gravel MSA and buffer zone near Trumfleet Grange and travel southward in the main MSA to Thorpe in Balne where they then skirts the edge of the MSA buffer before reaching the Existing National Grid Thorpe Marsh Substation.

### BMV Agricultural Land

- 12.5.62 The mapping of agricultural land and soils has been based on the Defra Natural England Provisional ALC dataset (Ref. 12-31, see **PEIR Volume II Figure 12-4: Predicted Agricultural Land Classification**). The Grid Connection Corridor is predominantly located in ALC Grade 4 (poor quality agricultural land) with some in Grade 3 (good to moderate quality agricultural land).



12.5.63 Grade 3 land comprises 15.9% or approximately 20.6 ha of the land within the Grid Connection Corridor. The breakdown of ALC grades the Grid Connection Corridor is presented in Table 12-21.

**Table 12-21: Agricultural Land Classification Within the Grid Connection Corridor**

<b>Agricultural Land Class</b>	<b>Total Area (Ha)</b>	<b>Percentage of Grid Connection Corridor Total (%)</b>
Grade 3	20.6	15.9
Grade 4	109.3	84.1
<b>Total</b>	<b>129.9</b>	<b>100.0</b>

*Source: Defra Natural England – Provisional ALC (2019) (Ref. 12-31)*

### **Future Baseline**

- 12.5.64 This section considers those changes to the baseline conditions, described above, that might occur in the absence of the Scheme and during the time period over which the Scheme would have been in place.
- 12.5.65 The future baseline scenarios are set out in **PEIR Volume I Chapter 5: Environmental Impact Assessment Methodology** and described for socio-economics and land use below.
- 12.5.66 A future year of 2043 has been considered in this section, which reflects 15 years post construction (assuming construction commences in 2028 and takes 24 months to complete) in accordance with industry good practice.
- 12.5.67 In the absence of the Scheme, the future baseline is anticipated to be largely the same as the existing baseline for socio-economics and land use. However, it would be reasonable to expect that the population would increase. According to ONS population projections (Ref. 12-32), the population of Doncaster is expected to increase from 308,705 in 2021 to 336,612 in 2042, which represents an increase of 9.0%. In addition, the population of Selby is projected to increase from 92,401 to 104,506 which represents a larger increase of 13.1%. In Yorkshire and the Humber and England as a whole, there are expected to be increases of 7.2% and 8.9% respectively.
- 12.5.68 Table 12-22 illustrates the population projections broken down by age group at five-year intervals and in 2021 as the baseline reference. It shows that by 2042, the percentage of the working-age population in Doncaster and Selby will fall from 62.0% to 58.8% and 61.6% to 56.6%, respectively. The percentage of the population aged 65 and over will grow from 19.5% in Doncaster in 2021 to 24.4% in 2042, and from 20.4% to 25.9% in Selby. This is indicative of trends in both Yorkshire and the Humber and England more generally.

**Table 12-22. Population Projections by Age Breakdown**

		2021	2027	2032	2037	2042
Doncaster	Aged 0 to 15 (%)	18.5	17.9	17.0	16.7	16.8
	Aged 16 to 64 (%)	62.0	60.6	59.8	58.9	58.8
	Aged 65+ (%)	19.5	21.4	23.2	24.4	24.4
Selby	Aged 0 to 15 (%)	18.0	18.0	17.5	17.3	17.4
	Aged 16 to 64 (%)	61.6	59.1	57.7	56.7	56.6
	Aged 65+ (%)	20.4	22.9	24.8	26.0	25.9
Yorkshire and the Humber	Aged 0 to 15 (%)	18.6	18.2	17.4	17.2	17.4
	Aged 16 to 64 (%)	62.3	61.1	60.2	59.1	58.8
	Aged 65+	19.1	20.8	22.4	23.7	23.8
England	Aged 0 to 15 (%)	18.5	18.2	17.3	17.1	17.2
	Aged 16 to 64 (%)	63.0	61.4	60.5	59.9	59.0
	Aged 65+ (%)	18.5	20.4	22.1	23.4	23.8

Source: ONS (2022) (Ref. 12-32)

12.5.69 In terms of the local economy, it would be reasonable to expect that employment and GVA would increase, associated with the expected increase in population. When considering effects on the local economy and employment, the assessment therefore uses the current baseline for construction phase effects and the future baseline for operation and maintenance and decommissioning phase effects.

12.5.70 It is expected that PRoW will continue to be used. Businesses and community facilities may open and close, however it is not expected that there will be any perceptible changes to the current baseline conditions and policies affecting them. When considering effects on these socio-economic receptors, the assessment therefore uses the current baseline for construction, operation and maintenance and decommissioning phase effects.

## 12.6 Embedded Mitigation

12.6.1 The Scheme has been designed, as far as practicable, to avoid and reduce impacts and effects on socio-economics and land use through the process of design development, and by embedding measures into the Scheme design. In addition, how the Scheme is constructed, operated and maintained, and decommissioned would be appropriately controlled in order to manage and minimise potential environmental effects (required as a result of legislative requirements and/or standard sectoral practices).

12.6.2 The delivery of these embedded mitigation measures will be secured through the detailed CEMP, detailed Operational Environmental Management Plan (OEMP) and detailed Decommissioning Environmental Management Plan (DEMP) via Requirements in the DCO. A Framework CEMP has been prepared as part of the PEIR (see **PEIR Volume III**

**Appendix 2-1: Framework Construction Environmental Management Plan**). A Framework OEMP and a Framework DEMP will be submitted at the ES stage.

- 12.6.3 Embedded measures are taken into account prior to the assessment of effects in order to avoid considering assessment scenarios that are unrealistic in practice.

### Measures Embedded into the Scheme Design

- 12.6.4 Mitigation measures are embedded within the Scheme to reduce construction and operation and maintenance effects relating to transport, which in turn will mitigate the effects on the local community and existing facilities from a socio-economic and land use perspective. The relevant mitigation measures are set out in **PEIR Volume I Chapter 13: Transport and Access**.
- 12.6.5 The Scheme has been designed to take into account the quality of agricultural land, such as positioning the permanent infrastructure to avoid BMV land, and avoiding other socio-economic and other sensitive environmental receptors, where practicable.
- 12.6.6 The scheme has been designed to minimise impacts on ProW. As described in **PEIR Volume I Chapter 2: The Scheme**, where ProW cross or are adjacent to Solar PV Site, fencing would be erected from the inside without impacting the ProW or preventing their use. Fencing is the first phase of construction and with this in place construction activities can operate without impacts to ProW. The ProW would also be buffered from the perimeter fencing with a minimum distance of either 20 m on both sides of the centre of the ProW where solar infrastructure lies to both sides (creating a 40 m wide corridor between the fence lines), or 15 m if solar infrastructure is to one side only.
- 12.6.7 The Scheme has been designed to keep ProW open throughout the construction phase, where practicable. It is expected that under a worst-case scenario, any ProW that are crossed by the Grid Connection Cables would only be impacted for a short time during the short-term trenching and restoration operations. These ProW would remain open (anticipated to be managed through traffic measurement measures), although routes may be slightly altered temporarily, for example moving from one side of the road to another.
- 12.6.8 Two ProW within the Solar PV Site would be diverted. ProW Fenwick 16 footpath, which runs along the length of Haggs Lane, would be temporarily diverted to allow access to a construction compound during the construction phase. The Applicant has confirmed that the temporary diversion will simply involve the ProW route being diverted along the agricultural field on the other side of the hedge adjacent to Haggs Lane; the diverted route will follow the same alignment as the existing route. This would increase the journey length by approximately 5 m. ProW Sykehouse 29 footpath, which runs south of Bunfold Shaw (the area of ancient woodland in the south east) eastwards to West Lane, would be permanently diverted. The permanent diversion would follow the path residents typically use, according to consultation with the ProW lead at the City of Doncaster Council feedback from local residents at the non-statutory consultation events held by the Scheme. The route would

be permanently diverted to continue along Bunfold Shaw Lane before joining up with the existing route by West Lane. This diversion would increase the journey length by approximately 40 m. The purpose of the diversions is to ensure ongoing access to ProW without additional risk to the safety of users.

## Management Measures

### Construction

- 12.6.9 A Framework CEMP has been prepared as part of the PEIR (see **PEIR Volume III Appendix 2-1: Framework Construction Environmental Management Plan**). An updated Framework CEMP will be produced at the ES stage which will further set out measures to mitigate effects on agricultural land and ProW, and may include a Soils Resource Management Plan.
- 12.6.10 A Framework Public Rights of Way Management Plan will be submitted as part of the DCO Application which will set out how ProW would be managed during the Scheme construction phase to ensure the safety of users and Site staff.
- 12.6.11 Agricultural soils would be managed, preserved, retained and reinstated in accordance with Defra guidance (Ref. 12-33). Such measures are detailed in the Framework CEMP prepared as part of the PEIR (see **PEIR Volume III Appendix 2-1: Framework Construction Environmental Management Plan**)
- 12.6.12 Direct impacts to land use would be managed through negotiations with stakeholders including landowners and owners of businesses to mitigate impacts.

### Operation and Maintenance

- 12.6.13 A Framework OEMP will be produced at ES stage which will set out management measures to mitigate the effects during the operation and maintenance phase.
- 12.6.14 The existing ProW which pass through or run adjacent to the Order Limits are expected to be unaffected during the operation and maintenance phase. The permanent diversion of ProW Sykehouse 29 footpath would remain in place during the operation and maintenance phase.
- 12.6.15 It is not expected that any temporary traffic management measures or any additional ProW diversions or closures would be required and the majority of vehicles accessing the Site would be maintenance vehicles/Light Goods Vehicles (LGVs) and would be nominal in number.

### Decommissioning

- 12.6.16 A Framework DEMP will be produced at ES stage which will set out management measures to mitigate the effects on agricultural land and ProW.
- 12.6.17 The Framework DEMP will also include measures that will ensure the restoration of agricultural land and soils to its existing use, following decommissioning. This will include guidance on handling of soil material, specific to the soil resource present. This will serve to conserve both soil volume and functional capacity for beneficial reuse.

## 12.7 Preliminary Assessment of Likely Significant Effects

- 12.7.1 This section sets out the likely impacts and effects of the Scheme on socio-economics and land use, taking account of the embedded mitigation measures as detailed in Section 12.6.
- 12.7.2 All adverse or beneficial effects and the significance of each of these effects are summarised in Table 12-27.

### Construction Effects

#### Employment

- 12.7.3 Subject to being granted consent and following a final investment decision, the earliest construction could start is in 2028. The construction phase is expected to be approximately 24 months in duration. It is noted that the Grid Connection Cables is anticipated to require 12 months to complete, whereas construction of the solar farm would require an estimated 24 months, with operation therefore anticipated to commence in 2030. Therefore, likely effects would be of a medium-term temporary nature. Although these jobs are temporary, they represent a positive economic effect for a substantial period that can be estimated as the function of the scale and type of activities required to construct the Scheme.
- 12.7.4 The Applicant estimates that the Scheme would require a peak workforce of 250 full-time equivalent (FTE) staff per day, and an average of 200 gross direct FTE jobs on-site per day during the construction phase, assumed to be equivalent to 200 FTE jobs per annum. The size of the workforce is based on activities required and would fluctuate during the period, therefore, being both higher and lower than average at times. The peak construction workforce (in 2028 when both the solar farm and its grid connection are being constructed) is based on a realistic worst-case assumption for the construction programme (24 months), as it represents the expected minimum build time and therefore the most intense activity onsite (and therefore greatest impacts associated with traffic). For this reason, the estimate of a peak workforce of 250 FTE staff per day may, as noted in Paragraph 12.4.53a, represent an overestimate of the maximum number of jobs during peak construction, however should the construction phase be extended and the peak job numbers be reduced, the amount of construction activity and spending overall and therefore the employment benefits of the Scheme would remain unchanged.

#### Leakage

- 12.7.5 Leakage effects are the benefits to those outside the Study Area, defined as a 60-minute travel area in any direction from the Site as shown in Table 12-1. It is estimated that 45% of construction staff could be sourced from the Study Area. This would be subject to labour availability and take-up at the time of construction, however, it is considered to be a reasonable assumption on which to base this assessment, based on professional experience and benchmarking against other comparable renewable energy projects. As such, 55% of staff would be likely to reside outside of this Study Area. This indicates that although a reasonably high proportion of employment opportunities would be retained in the Study Area, a noticeable number of

jobs would be taken up by people living outside of the Study Area. Whilst it is not a specific consideration of the assessment, it is noted that a larger proportion of the jobs taken up by people living outside the area would likely be in more specialised solar PV professions owing to the scarcity of such resources within localised areas compared with less skilled professions.

- 12.7.6 An adjustment of 55% has therefore been applied to the estimated average 200 gross direct construction jobs on-site during the construction phase to estimate the jobs created within the target area. On this basis, it is estimated that the Scheme would create 90 FTE jobs per annum for residents within the Study Area during the construction phase.

### Displacement

- 12.7.7 Displacement measures the extent to which the benefits of a development are offset by reductions in output or employment elsewhere. Any additional demand for labour cannot simply be treated as a net benefit since it has the potential to displace workers from other positions and the net benefit is reduced to the extent that this occurs.
- 12.7.8 Construction workers typically move between construction projects when delays occur or to help the workforce meet construction deadlines. Due to the flexibility of the labour market, construction labour force displacement has been assumed to be low.
- 12.7.9 HCA Additionality Guide (Ref. 12-13) provides standards (or 'ready reckoners') for displacement. Within the context of a construction project in the Study Area, a low displacement factor for 25% is considered appropriate according to the HCA Additionality Guide (Section 4.3). This level of displacement reflects that there are expected to be some displacement effects (although only to a limited extent) and has been used in assessments for other comparable renewable energy schemes. Applying this level of displacement to the total gross direct average employment figure results in a total net direct employment figure of 150 FTE jobs per annum during the construction phase.

### Multiplier Effect

- 12.7.10 In addition to the direct employment generated by the construction of the Scheme, there would be an increase in local employment arising from indirect and induced effects of the construction activity. Employment growth would 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 would be spent in the Study Area, generating further employment (in terms of induced or income multipliers).
- 12.7.11 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 good practice approach in the absence of specific information that might form the basis for use of another multiplier effect factor, appropriate to the sectors concerned. The Study Area is likely to have 'average' supply linkages and induced effects, based on the scale of its

economy compared to other locations. Therefore, a medium multiplier effect of 1.5 (which the HCA Guidance indicates will be appropriate for the majority of interventions) has been considered appropriate. Applying the 1.5 multiplier to the total net direct employment figure of 150 workers results in net indirect and induced employment of 75 jobs per annum during the construction phase.

### Net Construction Employment

12.7.12 Table 12-23 presents the temporary annual employment generated by the Scheme, accounting for leakage, displacement, and multiplier effects. The Scheme would support, on average, 225 total net jobs per annum during the construction phase. Of these, 102 jobs per annum would be expected to be taken up by residents within the Study Area.

**Table 12-23: Net Additional Construction Employment Per Annum from the Scheme**

	<b>Study Area (60-minute travel area)</b>	<b>Outside Study Area</b>	<b>Total</b>
Gross Direct Employment	90	110	200
Displacement	-22	-28	-50
Net Direct Employment	68	82	150
Indirect and Induced Employment	34	41	75
<b>Total Net Employment<sup>1</sup></b>	<b>102</b>	<b>123</b>	<b>225</b>

*Source: AECOM Calculations 2023. Please note that figures have been rounded to the nearest whole number.*

12.7.13 The jobs created would be in the renewable energy sector, specifically relating to solar installation, but also electricity transmission. As such, they would contribute to the development of skills needed for the UK's transition to net zero by 2050 (as required by the Climate Change Act 2008 (2050 Target Amendment Order) 2019 (below) (Ref. 12-34), and described within the Net Zero Strategy: Building Back Greener (Ref. 12-35). The indirect jobs include those created within the supply chain and therefore reflect the opportunities for low carbon industries to contribute to the Scheme. Where practicable, there would be a preference for local staffing, although a main driver would be hiring staff with the required skills to deliver the Scheme. It is likely that the appointed contractors would employ trainees and apprentices as part of the construction workforce, but apprenticeship schemes would not be delivered by the Applicant.

12.7.14 The sensitivity of the local workforce to employment changes has been assessed as low, due to the low claimant count in the area (claimants are those who are unemployed and claiming job seekers allowance or other

<sup>1</sup> Sum of Net Direct Employment and Indirect & Induced Employment

unemployment related benefits). The direct, indirect and induced employment created from the construction of the Scheme must be judged in the context of the labour pool of construction workers in the Study Area (60-minute travel area) (approximately 141,000 according to BRES 2021 data) (Ref. 12-19). As the employment requirements associated with construction are relatively small compared to the labour pool of construction workers in the area, the impact of construction employment generation in the Study Area has been assessed as temporary low beneficial, which results in a short-term temporary **minor beneficial** effect. This is **not considered significant**.

### Local Accommodation Services

- 12.7.15 Considering existing seasonal demand and typical occupancy for Yorkshire and the Humber (2022 levels – which is the latest available data for a full calendar year), the peak workforce (250 workers) could be accommodated within existing provision within a 30-minute drive time radius of the Site. This is shown in Table 12-24. This is very much a worst-case scenario, given that approximately 45% of the workforce would likely be living within a 60-minute drive time of the Site and therefore be home-based (i.e. would live sufficiently close-by to return home in the evenings rather than needing overnight accommodation).
- 12.7.16 Further analysis to identify accommodation within a 60-minute drive time radius (as shown in Table 12-25) indicates that there would be a minimum of 5,432 remaining rooms available, after taking into account the peak construction workforce (250 workers) and typical seasonal occupancy levels.
- 12.7.17 If 138 peak workers from outside of the Study Area need accommodation (assuming that is the 55% leakage of the 250 peak workers who are not home-based), there would likely be 15.6% spare capacity within a 60-minute radius during peak occupancy (July). If all 138 peak workers from outside the Study Area are required to stay in accommodation at peak occupancy (July), there would be 681 remaining rooms within a 30-minute drive time radius from the Site and 5,544 remaining rooms within a 60-minute drive from Site.
- 12.7.18 In a worst-case scenario where all 250 peak workers need accommodation, there is still approximately 15.3% spare capacity within a 60-minute drive from Site at peak occupancy (July). There would still be 569 remaining rooms within a 30-minute drive time radius from the Site, and 5,432 remaining rooms within a 60-minute drive from the Site.
- 12.7.19 In summary, this analysis demonstrates that at peak workforce employment and typical seasonal occupancy levels, 100% of the Scheme's construction workers could be accommodated within both a 30 and 60-minute drive time of the Site.
- 12.7.20 Given this, there would be **no effect** on the hotel, bed and breakfast, and inns accommodation sector arising from the Scheme. It is anticipated that accommodation providers would be able to accommodate employees working at the Scheme without any adverse effects on the sector.
- 12.7.21 It can also be noted that this analysis only takes into consideration the hotel, bed and breakfast and inns accommodation sector. There are also alternative accommodations (such as Airbnb, serviced apartments, etc.) that



could also cater for a portion of any demand generated and therefore mitigate further any impact on accommodation provision.

**Table 12-24: Accommodation Capacity Within a 30-Minute Drive Time Radius of the Site**

Month	Room Occupancy (Yorkshire and the Humber %)	Rooms Typically Available after Existing Demand	All Construction Workers – Peak and (Workers from Outside Study Area only – Peak)	Remaining Rooms Available	Remaining Rooms Available (%)
January	53	2,407	250 (138)	2,157 (2,269)	42.1 (44.3)
February	72	1,434	250 (138)	1,184 (1,296)	23.1 (25.3)
March	74	1,331	250 (138)	1,081 (1,193)	21.1 (23.3)
April	77	1,178	250 (138)	928 (1,040)	18.1 (20.3)
May	78	1,127	250 (138)	877 (989)	17.1 (19.3)
June	79	1,075	250 (138)	825 (937)	16.1 (18.3)
July	84	819	250 (138)	569 (681)	11.1 (13.3)
August	79	1,075	250 (138)	825 (937)	16.1 (18.3)
September	81	973	250 (138)	723 (835)	14.1 (16.3)
October	81	973	250 (138)	723 (835)	14.1 (16.3)
November	80	1,024	250 (138)	774 (886)	15.1 (17.3)
December	71	1,485	250 (138)	1,235 (1,347)	24.1 (26.3)

*Source: CoStar (2023). Data reflects 2022 occupancy for Yorkshire and Humber.*

**Table 12-25: Accommodation Capacity Within a 60-Minute Drive Time Radius of the Site**

Month	Room Occupancy (Yorkshire and the Humber %)	Rooms Typically Available after Existing Demand	All Construction Workers – Peak and (Workers from Outside Study Area only – Peak)	Remaining Rooms Available	Remaining Rooms Available (%)
January	53	16,691	250 (138)	16,441 (16,553)	46.3 (46.6)
February	72	9,944	250 (138)	9,694 (9,806)	27.3 (27.6)
March	74	9,233	250 (138)	8,983 (9,095)	25.3 (25.6)
April	77	8,168	250 (138)	7,918 (8,030)	22.3 (22.6)
May	78	7,813	250 (138)	7,563 (7,675)	21.3 (21.6)
June	79	7,458	250 (138)	7,208 (7,320)	20.3 (20.6)
July	84	5,682	250 (138)	5,432 (5,544)	15.3 (15.6)
August	79	7,458	250 (138)	7,208 (7,320)	20.3 (20.6)
September	81	6,747	250 (138)	6,497 (6,609)	18.3 (18.6)
October	81	6,747	250 (138)	6,497 (6,609)	18.3 (18.6)
November	80	7,103	250 (138)	6,853 (6,965)	19.3 (19.6)
December	71	10,299	250 (138)	10,049 (10,161)	28.3 (28.6)

Source: CoStar (2023). Data reflects 2022 occupancy for Yorkshire and Humber.

### Gross Value Added

#### 12.7.22 Applying the average gross direct value added per construction worker in Yorkshire and the Humber to the total number of construction workers

generated from the Scheme gives the total GVA arising from the construction phase. This is shown in Table 12-26. This has been calculated based on the compound average GVA per worker in the construction sector in Yorkshire and the Humber, as data is not published at the more granular, LSOA-derived, Study Area level. In Yorkshire and the Humber, GVA per worker in the construction sector is estimated to be £63,314 per head. By applying this figure to the gross direct construction workers generated by the Scheme, it is estimated that construction would contribute approximately £12.6 million to the national economy, of which £5.7 million would likely be within the Study Area.

**Table 12-26: Gross Direct Value Added Per Annum from the Scheme**

	Study Area (60-minute travel area)	Outside Study Area	Total
<b>GVA (£m)</b>	5.7	6.9	12.6

*Source: ONS, (2017); Regional Gross Value Added (Income Approach) (Ref. 12-17) ONS, (2017); Business Register and Employment Survey (Ref. 12-19).*

- 12.7.23 The sensitivity of the economy within the Study Area has been assessed as medium, due to GVA per head being slightly lower in Doncaster compared to the region, and nation, but slightly higher in Selby. Due to the size of GVA generation associated with the Scheme relative to the Study Area GVA, this impact has been assessed as being of **low magnitude**. This results in a temporary **minor beneficial** effect which is **not considered significant**.

### Public Rights of Way

- 12.7.24 As detailed in Section 12.5, there are 31 ProW located within 500 m of the Solar PV Site, 11 of which are within, or which pass through the Solar PV Site. There are eight ProW which are located within, or intersect with the Grid Connection Corridor.
- 12.7.25 The Scheme has been designed to have minimal-to-no impact on ProW. Within the Solar PV Site, mitigation measures would be implemented including fencing and a minimum distance of 20 m on both sides of the centre of the ProW where solar infrastructure lies to both sides (creating a 40 m wide corridor between the fence lines), or 15 m if solar infrastructure is to one side only. This would ensure that ProW access is unaffected throughout construction.

### Temporary Impacts

- 12.7.26 The Scheme would require the temporary diversion of ProW Fenwick 16 footpath during the construction phase to provide access to the Site. The footpath runs along the length of Higgs Lane and consultation with the ProW lead at the City of Doncaster Council confirmed that the footpath is mainly used by local residents for recreational purposes, such as dog walking, cycling and equestrian use, rather than for commuting. Consultation with the ProW lead at the City of Doncaster Council confirmed that usage along this ProW was lighter than ProW within urban areas. Given the

relatively low importance of the ProW and alternative routes available, the sensitivity of ProW Fenwick 16 is assessed to be low. It is not possible to confirm with certainty the length of time that any affected route would be closed for at any one stage, so as a worst-case scenario it is assumed the diversion would be for the entire length of the construction phase. The temporary diversion of the ProW may cause increased journey length and journey time, and reduce the certainty of the route for users. However, the Applicant has confirmed that the temporary diversion will simply involve the ProW route being diverted into the agricultural field on the other side of the hedge adjacent to Hags Lane; the diverted route would follow the same alignment as the existing ProW but on the other side of the hedge. This would increase the journey length by approximately 5 m. Therefore, the magnitude of impact is assessed to be **very low**, which would result in a **negligible** effect. This is **not considered significant**.

### Permanent Impacts

- 12.7.27 The Scheme would require the permanent diversion of ProW Sykehouse 29 Footpath. The footpath runs south of Bunfold Shaw (the area of ancient woodland in the south east) eastwards to West Lane. Consultation with the ProW lead at the City of Doncaster Council confirmed that the footpath is mainly used by local residents for recreational purposes. Given the relatively low importance of the ProW and alternative routes available, the sensitivity is assessed to be low. Consultation with local residents at non-Statutory consultation and with the Council confirmed that most users do not follow the existing definitive map route and instead follow the route which is designed as the permanent diversion for the Scheme. **PEIR Volume II Figure 2-2: Public Rights of Way** shows that the route would be permanently diverted to continue along Bunfold Shaw Lane before joining up with the existing route by West Lane. This diversion would increase the journey length by 40 m. It is only a slight increase in journey length for users. Therefore, the magnitude of impact is assessed to be **low** as a result, which would result in a **negligible** effect. This is **not considered significant**.
- 12.7.28 The other PRow crossed by the Grid Connection Corridor would only be impacted during the short-term trenching and restoration operations. These PRow would remain open (likely managed through traffic management measures) although routes may be slightly diverted temporarily for a short period, for example moving from one side of a road to the other.
- 12.7.29 There are no national trails or national cycle routes within the Solar PV Site. The Grid Connection Corridor intersects the Trans Pennine Trail. The PRow in the Study Area do not connect rural areas to more urban areas or business parks and are therefore unlikely to be used for commuting. Given that no national trails or national cycle routes fall within the Solar PV Site, that PRow are not used to access employment and that there is a network of alternative PRow within the Study Area that could be used as substitutes, all of the other PRow within the Solar PV Site and Grid Connection Corridor are assessed to have low sensitivity. Due to the limited scale of impacts, the magnitude of impact upon these PRow is assessed to be **very low**, which would result in a **negligible** effect. This is **not considered significant**.

## Private and Community Assets

### Residential Properties, Business Premises, Community Facilities, Open Space, Visitor Attractions and Agricultural Land Holdings

- 12.7.30 There are no residential properties, local businesses, open spaces, community facilities or visitor attractions within the Solar PV Site and Grid Connection Corridor and therefore no direct land use impacts with regard to these types of receptor are expected.
- 12.7.31 The Scheme would be located on a number of agricultural land holdings.
- 12.7.32 Within the Solar PV Site, fields currently used to grow arable crops (with some grazing) would cease to be part of a working farm during construction. However, the Applicant has reached voluntary land agreements with the majority of landowners in the Solar PV Site and is finalising negotiations with the rest. The Applicant has also confirmed that there are no tenant farmers or contractors farming the land.
- 12.7.33 The Grid Connection Corridor, if required, would intersect a number of agricultural land holdings, which could affect their integrity and utility. However, trenching will occur for a limited time only and any impact would be reversible. Prior to start of construction, a Soil Management Plan (SMP) will be published (as outlined in the Framework CEMP submitted as **PEIR Volume III Appendix 2-1: Framework Construction Environmental Management Plan**); this will ensure soils are not degraded and farming activities can re-commence following completion of the construction works. As noted in **PEIR Volume I Chapter 2: The Scheme**, the Grid Connection Cables will be installed via a shallow and narrow trench (approximately 0.7 m wide and 1.2 m to 1.4 m deep) and the working corridor for the Cable Route Corridor is anticipated to be 30 m wide (this may be widening in some places and narrowed in others).
- 12.7.34 Overall, the sensitivity of the agricultural land holdings is assessed to be medium, due to the medium importance and rarity of the assets within the Study Area. The magnitude of impact is assessed to be **very low**, given the voluntary land agreements with the majority of landowners in the Solar PV Site and given that the land in the Grid Connection Corridor will be reinstated to its current condition after the construction phase. This results in a **negligible effect**, which is considered to be **not significant**.
- 12.7.35 Activities related to the construction of the Scheme may restrict, or create severance to, the accessibility of residential properties, business premises, community facilities, open space, visitor attractions, agricultural land holdings and development land for residents in the Study Area. **PEIR Volume I Chapter 13: Transport and Access** identifies that with embedded mitigation place, three road links would likely experience significant traffic, and severance effects during construction: Moss–Road - Askern Village, Moss–Road - East of Askern and Fenwick Common Lane (Access Point 1). The significant effects experienced at these links is caused by a high percentage increase in traffic and is driven by low baseline peak per hour; the actual predicted increase per hour/minute is relatively small. Therefore, no severance effects to private and community assets are anticipated. **PEIR Volume I Chapter 13: Transport and Access** finds that the traffic generated by the Scheme at Fenwick Common Lank (Access Point 1) would only

generate minor connectivity impacts for people accessing residential properties in Moss, the Moss and Fenwick Village Hall and the business premises on Moss Road. The Moss–Road - Askern Village and Moss–Road - East of Askern road links would also only cause minor connectivity impacts for users accessing the Norbreck Village Hall and Askern Moss Road Infant School.

- 12.7.36 Overall, sensitivity of private and community assets to socio-economic effects is assessed to be medium, due to the medium importance and rarity of private and community assets within the Study Area. Overall magnitude of impact is assessed to be **low**, given the limited connectivity impacts. This results in a **minor adverse effect**, which is considered to be **not significant**.

#### Healthcare Infrastructure

- 12.7.37 Construction of the Scheme may restrict, or create severance to hospitals, GPs and any other healthcare infrastructure for residents in the Study Area.
- 12.7.38 Baseline analysis shows that there are no GP practices local to the Solar PV Site and only one (Barnby Dun Surgery) within 2 km of the Grid Connection Corridor. The number of patients and FTE GPs at this surgery, and therefore the patient to GP ratio, is unknown but the GP is accepting registrations from new patients.
- 12.7.39 The general population of the local population is assessed to be of medium sensitivity. However, the average proportion of the population aged over 65 within the local population (Doncaster and Selby) is higher than in Yorkshire and the Humber and England and is projected to increase as a proportion of the population much faster than in England. In addition to this, there are likely to be some more vulnerable sub-populations within this; for example those experiencing high deprivation or with pre-existing health conditions, within the small pockets of deprivation identified in the baseline. Therefore, the vulnerable sub-populations are assessed to have a high sensitivity based on the elderly and more vulnerable sub-populations likely having a higher reliance on health services.
- 12.7.40 If workers reside locally already, they would likely be registered at a local practice currently and would not therefore place additional demand for services on local GPs. It is unlikely that many workers would move to live in the immediate area and access the Barnby Dun Surgery, which is the only GP practice within 2 km of the Site. However, under a worst-case, it is assumed that all of the 138 gross direct peak construction workers who are not likely to live locally, would require places at local GPs. The patients per GP provision at Barnby Dun Surgery is unknown but it is assumed that the patients per GP provision is the same as the average GP across the Doncaster East and Doncaster North PCN (1,839 patients per GP). If the additional 138 patients register at the Barnby Dun Surgery, and assuming as a worst case scenario that there is just one FTE GP, this would increase the average ratio to 1,977 patients per GP, slightly above the national target.
- 12.7.41 Due to the limited scale of impacts upon healthcare services, the short-term duration of effect and reversibility, the magnitude of these adverse impacts is assessed to be **very low**, which results in a **minor adverse effect**. This is **not considered significant**.

## BMV Agricultural Land and Soils

12.7.42 The Scheme would require land take from agricultural land both temporarily and, in some very limited circumstances, permanently. However, as outlined in Section 12.5, the majority of the agricultural land within the Study Area comprises Subgrade 3b land or lower quality (which is not defined as BMV land) and only 4% of the Solar PV Site consists of BMV land (noting that additional land in the south west and the single field in the east of the Solar PV Site were added to the Solar PV Site after completion of the ALC survey and are therefore not included within these figures).

### Temporary land take

12.7.43 As outlined above, the ALC survey showed that the agricultural land within the Solar PV Site is predominantly ALC Grade 3b (moderate quality agricultural land), which is not classified as BMV land, with some (4%, 12.6ha) Grade 3a (good quality agricultural land). The additional land added to the Solar PV Site will be surveyed for the ES. The sensitivity of the land within the Site Boundary is low, given that the sensitivity criteria set out Table 12-10 define low sensitivity as 'Agricultural land containing some Grade 3a'. Given that the loss of the BMV agricultural land is temporary and reversible (after operation for the Solar PV Site and after construction for the Grid Connection Corridor), the magnitude of impact is assessed to be **very low**. Therefore, the temporary effect of the Scheme on the use of BMV agricultural land is assessed to be **negligible**, which is **not significant**.

12.7.44 Temporary land take will also be required within the Solar PV Site for the construction of the BESS Battery Containers. The land required for the construction of these Scheme components was not included within the ALC survey undertaken between February and May 2023; it will however be surveyed for the ES. At this stage, predictive mapping of the land required has been used, based on the Defra Natural England Provisional ALC dataset (Ref. 12-31). Approximately 5.19 ha of Grade 4 land will be required for the construction of the BESS Battery Containers. The sensitivity of the land is assessed to be low. As, based on predictive mapping, none of the land required is BMV land, the magnitude of impact is assessed to be **very low**. Therefore, the temporary effect of the Scheme on the use of the BMV agricultural land required for the construction of the BESS Battery Containers and On-Site Substation is assessed to be **negligible**, which is **not significant**.

12.7.45 The Scheme has the potential to impact soil resources in terms of disturbance and damage. Prior to the start of construction, a SMP will be submitted. Damage to the structure, function and resilience of soil resources (and consequent impacts to its ability to support agriculture) will be mitigated by the use of industry standard good practice measures for the stripping, handling and storage of soil materials, in line with the SMP. This is included in the Framework CEMP provided as **PEIR Volume III Appendix 2-1: Framework Construction Environmental Management Plan**.

### Permanent land take

12.7.46 Permanent land take will be required within the Solar PV Site for the construction of the On-Site Substation. The land required for the construction

of the On-Site Substation was not included within the ALC survey undertaken between February and May 2023; it will however be surveyed for the ES. At this stage, predictive mapping of the land required has been used, based on the Defra Natural England Provisional ALC dataset (Ref. 12-31). Approximately 2 ha of Grade 4 land will be required for the construction of the On-Site Substation.

- 12.7.47 Permanent land take will also be required for planting but the quantity required and its location is dependent on the landscaping plans which are not yet confirmed. This element of permanent land take will be included the ES.
- 12.7.48 The sensitivity of the land is assessed to be low. As none of the land permanently required is BMV land, the magnitude of impact is assessed to be **very low**. Therefore, the permanent effect of the Scheme on the use of BMV agricultural land is assessed to be **negligible**, which is **not significant**.

### Development Land

- 12.7.49 There are two planning applications within 500 m of the Solar PV Site, both of which are associated with the demolition of Grade II listed 'Lil' Hall' and erection of one replacement residential farm worker's dwelling and associated works (22/01537/LBC and 22/01536/FUL), located on Lawn Lane. There are two planning applications located within the Grid Connection Corridor (Enso Green Holdings; 21/02567/FULM) for the installation of a solar farm and battery storage facility with associated infrastructure at Warren Farm, located on High Street in Dunsville and the Thorpe Marsh Green Energy Hub (23/00793/FULM) for the construction and operation of up to 50MW BESS, substation and associated infrastructure at the Existing National Grid Thorpe Marsh Substation on South Road. Both developments would overlap with the Grid Connection Corridor as both developments and the Scheme would be connected to the Point of Connection at the Existing National Grid Thorpe Marsh Substation, where the renewable energy generated by the Scheme would be exported to the grid. The Thorpe Marsh Green Energy Hub planning application is still awaiting a decision.
- 12.7.50 The sensitivity of the development land to socio-economic effects is assessed to be medium, due to the medium importance and rarity of development land within the Study Area. No direct land use impacts with regard to the development land at Lawn Lane is expected. The construction phase of the Scheme could coincide with that of the Enso Green Holdings solar project which would overlap the Grid Connection Corridor. The Applicant will engage with scheme promoters to share information on the construction process and timing of the Scheme as required, so that any potential for hinderance of or conflict with other schemes is minimised.
- 12.7.51 Activities related to the construction of the Scheme may restrict, or create severance to, the accessibility of development land for residents in the Study Area. **PEIR Volume I Chapter 13: Transport and Access** identifies that with embedded mitigation place, three road links would likely experience significant traffic, and severance effects during construction, of which one of the road links (Fenwick Common Lane (Access Point 1)) is likely to be the road link used to access Lawn Lane. The significant effects experienced at this road link is caused by a high percentage increase in traffic and is driven



by low baseline peak per hour; the actual predicted increase per hour/minute is relatively small. Therefore, no severance effects to development land are anticipated. The traffic generated by the Scheme at Fenwick Common Lank (Access Point 1) would only generate minor connectivity impacts for people accessing the development land site.

- 12.7.52 Overall, the magnitude of impact is assessed to be **low**, given the limited connectivity impacts, and potential for interference with the development. This results in a **minor adverse effect**, which is considered to be **not significant**.

#### Mineral Safeguarding Areas

- 12.7.53 There is one MSA for sand and gravel within 500 m of and partially located within the Grid Connection Corridor (Land to the east of Doncaster between Thorne and Bawtry). The Grid Connection Corridor enters the sand and gravel MSA and buffer zone near Trumfleet Grange and travels southwards in the main MSA to Thorpe in Balne where both routes then skirt the edge of the MSA buffer before reaching the Existing National Grid Thorpe Marsh Substation. Given the limited potential for substitution or access to alternatives as there are no alternative MSA in proximity to the Study Area, the sensitivity of the MSA is assessed to be high.

- 12.7.54 Construction of the Scheme at this location would require temporary land take from extraction areas within the consented mineral site. The Grid Connection Cables within the Grid Connection Corridor have been designed to minimise the potential impact; the Grid Connection Cables are proposed to be installed approximately 1.2 m below ground level, which is relatively shallow compared to potential mineral extraction depths which could be as deep as 18 m below ground level. Consequently, the land take required from the mineral extraction site for the installation of the grid connection would be very limited, as outlined in the Minerals Safeguarding Report (**PEIR Volume III Appendix 12-2: Minerals Safeguarding Report**). The report also notes that prior extraction of the mineral is not feasible at this current time for a number of reasons, owing to the location of the site and the potential impacts upon nearby sensitive receptors. The report concludes that the need for the development outweighs the need to safeguard the area for future mineral extraction.

- 12.7.55 The Minerals Safeguarding Report (**PEIR Volume III Appendix 12-2: Minerals Safeguarding Report**) also concludes that if a specific area along the Grid Connection Corridor was deemed to be commercially viable for mineral extraction in the future, it is considered that it would be possible to divert the Grid Connection Cables (subject to the appropriate consents and agreements being in place) in order to allow for mineral extraction to be undertaken. Therefore, it is considered that non-mineral development can potentially take place without preventing the economically viable mineral resource (if present) to be extracted in the future.

- 12.7.56 Overall, on the basis of the above and the conclusion of the Minerals Safeguarding Report, the magnitude of impact on the MSA is assessed to be **very low**. Therefore, the overall effect of the Grid Connection Corridor on the MSA is assessed to be **minor adverse**, which is **not significant**.

## Summary of Effects

12.7.57 No likely significant socio-economic and land use effects during the construction phase of the Scheme have been identified. A summary of magnitude of impact and significance of effect during Scheme construction is provided in Table 12-27.

**Table 12-27: Summary of Preliminary Assessment of Effects – Socio-Economics and Land Use (Construction)**

<b>Receptor</b>	<b>Potential Impacts</b>	<b>Duration</b>	<b>Mitigation</b>	<b>Likely Significant of Effect</b>
Local workforce	Employment generation	Temporary	N/A	Minor beneficial (not significant)
Local accommodation	Pressure on local accommodation facilities from construction workers	Temporary	N/A	No effect (not significant)
Local economy	GVA generation	Temporary	N/A	Minor beneficial (not significant)
ProW Fenwick 16 footpath	Changes to journey times, local travel patterns and certainty of routes	Temporary	Diversion as outlined in Section 12.6	Negligible (not significant)
ProW Sykehouse 29 footpath	Changes to journey times, local travel patterns and certainty of routes	Permanent	Diversion as outlined in Section 12.6	Negligible (not significant)
Remaining ProW within Solar PV Site	Changes to journey times, local travel patterns and certainty of routes	Temporary	N/A	Negligible (not significant)
Residential properties, business premises, community facilities, visitor	Land take	Temporary	N/A	Negligible (not significant)

Receptor	Potential Impacts	Duration	Mitigation	Likely Significant of Effect
attractions and agricultural land holdings				
Residential properties, business premises, community facilities, visitor attractions and agricultural land holdings	Connectivity impacts and potential hindrance to other developments	Temporary	Follow traffic management measures set out in <b>PEIR Volume I Chapter 13: Transport and Access.</b> The Applicant will engage with scheme promoters to share information on the construction process and timing of the Scheme as required	Minor adverse (not significant)
Healthcare facilities	Extra demand on healthcare facilities due to construction employment	Temporary	N/A	Minor Adverse (not significant)
BMV Agricultural Land and Soils	Loss of BMV resource and degradation to soils	Temporary	N/A	Negligible (not significant)
BMV Agricultural Land and Soils	Land take and degradation to soils for construction of the BESS Battery Containers	Temporary	N/A	Negligible (not significant)
BMV Agricultural Land and Soils	Land take and degradation to soils for construction of the On-Site Substation and planting	Permanent	N/A	Negligible (not significant)
Development Land – Planning Applications	Land take, connectivity impacts and potential hindrance to other developments	Temporary	Follow traffic management measures set out in <b>PEIR Volume I Chapter 13: Transport and Access.</b>	Minor adverse (not significant)

<b>Receptor</b>	<b>Potential Impacts</b>	<b>Duration</b>	<b>Mitigation</b>	<b>Likely Significant of Effect</b>
Development Land – Mineral Safeguarding Areas	Land take and hindrance to future mineral extraction due to construction of the Grid Connection Corridor.	Temporary	N/A	Minor adverse (not significant)

## Operation and Maintenance Effects

### Employment

12.7.58 The Scheme would generate long-term jobs once it is complete and operational. In estimating operational employment generation, it is important to consider not just the gross effects of the Scheme, but also net effects considering leakage, displacement and multiplier effects, as set out in Table 12-2.

### Existing Employment

12.7.59 The Site predominantly consists of agricultural land; there is approximately 536 ha of agricultural land located within the Site Boundary (Solar PV Site, Grid Connection Corridor and Existing National Grid Thorpe Marsh Substation). Land use is predominantly arable with some grazing. The Applicant has estimated (based on previous experience and benchmarking against other comparable solar schemes) that there is one existing FTE job on the Site related to agricultural activities. It is noted that increasingly the physical farming of land is undertaken by whole-farm contractors and arable farming is seasonal in nature.

### Total Net Operational Employment

12.7.60 The Applicant has estimated that to operate and manage the solar farm there would be a gross number of one or two permanent jobs generated by the Scheme. For the purposes of this assessment one job is assumed as a worst case scenario. It is noted that there would be additional ad hoc staffing for maintenance operations and deliveries but these would be temporary in nature. The job created would be in the renewable energy sector, assisting in the UK's transition to net zero.

12.7.61 As presented in Table 12-28, it is estimated that there would be no net change in the employment supported by activities on the Site as a result of the Scheme.

**Table 12-28: Total Net Employment during Operation of the Scheme**

	Study Area (60-minute travel area)	Outside Study Area	Total
<i>Existing Employment</i>			
Gross Direct Employment	0	1	1
Displacement	0	0	0
Net Direct Employment	0	1	1
Indirect and Induced Employment	0	1	1
<b>Total</b>	0	2	2

	Study Area (60-minute travel area)	Outside Study Area	Total
<i>New Employment</i>	0	1	1
Gross Direct Employment	0	1	1
Displacement	0	1	0
Net Direct Employment	0	1	1
Indirect and Induced Employment	0	1	1
<u>Total</u>	0	2	2
<b>Total Net Employment<sup>2</sup> (Existing Employment – New Employment)</b>	<b>0</b>	<b>0</b>	<b>0</b>

*Source: AECOM Calculations 2023. Please note that figures have been rounded to the nearest whole number.*

12.7.62 The sensitivity of the local workforce to employment changes has been assessed as low, due to the low claimant count in the area (claimants are those who are unemployed and claiming job seekers allowance or other unemployment related benefits). Given that would be no net change in the employment supported by activities on the Site, there would be no impact. There would therefore be **no effect** on operational employment.

### Public Rights of Way

12.7.63 The temporary diversion of PRow Fenwick 16 footpath would be reinstated to the original route during the operation and maintenance phase. The permanent diversion of PRow Sykehouse 29 footpath would remain during the operation and maintenance phase. As outlined during the construction phase, the permanent diversion of PRow Sykehouse 29 would result in a **negligible** effect. This is **not considered significant**. There would be no additional effects on PRow. Therefore, there would be a **negligible effect** on local community severance or users of PRow arising from the Scheme.

### Private and Community Assets

#### Residential Properties, Business Premises, Community Facilities, Open Space, Visitor Attractions and Agricultural Land Holdings

12.7.64 With regard to community connectivity, **PEIR Volume I Chapter 13: Transport and Access**, states that as predicted traffic levels owing to the operation and maintenance phase are so low, consideration of the transport and access effects within the operation and maintenance phase have been scoped out of the assessment in agreement with the Planning Inspectorate. It is not therefore anticipated that there would be any adverse impacts on

<sup>2</sup> Sum of Net Direct Employment and Indirect & Induced Employment

community connectivity due to traffic generation during the operation and maintenance phase.

- 12.7.65 There may be impacts on agricultural land holdings in the Grid Connection Corridor due to access required to the Grid Connection Cables for maintenance during the operation and maintenance phase. This would consist of routine inspections and any reactive maintenance, such as where a cable is damaged. However, any such arrangement is unlikely to hinder the associated farming activities located onsite as it would be carried out over a very limited time period and be of a limited spatial extent.
- 12.7.66 To minimise any potential hindrances or adverse impacts on other proposed developments which overlap geographically with the Scheme, the Applicant will engage with scheme promoters and operators if and as required, in the framework of the consenting process, so that any potential for hinderance of or conflict with other schemes is minimised.
- 12.7.67 Overall, it is assessed that there will be likely **no effect** on private and community assets in the operation and maintenance phase of the Scheme.

#### Healthcare Infrastructure

- 12.7.68 As a result of the operation and maintenance of the Scheme and the associated employment, there is the potential for local healthcare services to be impacted due to restrictions to, or severance to, the accessibility of hospitals, GPs and other health infrastructure. As outlined for the construction phase, the sensitivity of the local population is assessed to be medium. The vulnerable sub-populations are assessed to have a high sensitivity based on the elderly and more vulnerable sub-populations likely having a higher reliance on health services.
- 12.7.69 During the operation and maintenance phase, the Applicant has estimated that there are expected to be approximately one to two full-time staff working on the Scheme per day (based on previous experience and benchmarking against other solar farm schemes, taking into account size and scale). Assuming a worst-case scenario whereby the employee moves to the area and require places at local surgeries, the impact of additional demand places on healthcare services in the area would be very low.
- 12.7.70 Due to the low number of operational staff, the Scheme is likely to only generate very low levels of traffic and would not impact on local residents' ability to access healthcare facilities. It is assessed that the magnitude of impact would be **very low**.
- 12.7.71 The impact on the local population's ability to access health services (high sensitivity) is assessed to be a **negligible effect**, which is considered **not significant**.

#### **BMV Agricultural Land and Soils**

- 12.7.72 The agricultural land located within the Solar PV Site which is required for the duration of the Scheme will be unavailable for farming activities, although there is potential for grazing by sheep for management of the grassland. However, as outlined in Paragraph 12.7.43, only 4% of the Solar PV Site surveyed to date (12.6ha) is classified at Grade 3a, with all other land being of lower grade. Additionally, as outlined in Paragraph 12.7.44, the Defra



Natural England Provisional ALC dataset indicates that the land take required for the construction of the BESS Battery Containers will not involve BMV land. Impacts are therefore temporary and reversible given that after operation farming land uses can resume, apart from the land permanently required to accommodate the On-Site Substation and planting (see Paragraph 12.7.46).

- 12.7.73 The Framework OEMP that will be submitted with the DCO Application will set out measures to ensure the protection and conservation of soil resources onsite during operation and maintenance, and will identify good practice to maintain the physical properties of the soils on site, including the management of trafficking onsite to reduce the risk of compaction. The SMP will be published which will follow industry standard good practice measures for the operation and maintenance of soils, as outlined in the Framework CEMP submitted as **PEIR Volume III Appendix 2-1: Framework Construction Environmental Management Plan**. Soil handling operations will be appropriately supervised to ensure compliance with the SMP to ensure soils are suitable for re-use within the Scheme.
- 12.7.74 All of the land within the Grid Connection Corridor is assumed to be available for farming during operation and maintenance. As part of the SMP, the Grid Connection Cables would be installed at a depth of up to 1.4 m below ground level. This would allow typical farming operations to continue (including ploughing) and so the Scheme would not affect the agricultural use of the land during operation and maintenance. Additionally, during the operation and maintenance phase, it is likely that soil function would improve due to the removal of tillage leading to soil structural improvement and increased carbon sequestration.
- 12.7.75 As outlined in Paragraph 12.7.43, the sensitivity of the agricultural land within the Site Boundary is assessed to be low. Given that the loss of BMV agricultural land is temporary and reversible, the magnitude of impact is assessed to be **very low**. Therefore, the temporary effect of the Scheme on the use of BMV agricultural land is assessed to be **negligible**, which is **not significant**.

### Development Land

- 12.7.76 With regard to community connectivity, **PEIR Volume I Chapter 13: Transport and Access**, states that as predicted traffic levels owing to the operation and maintenance phase are so low, consideration of the transport and access effects within the operation and maintenance phase have been scoped out of the assessment in agreement with the Planning Inspectorate. It is not therefore anticipated that there would be any adverse impacts on development land due to traffic generation during the operation and maintenance phase.
- 12.7.77 To minimise any potential hindrances or adverse impacts on other proposed developments which overlap geographically with the Scheme, the Applicant will engage with scheme promoters and operators if and as required, in the framework of the consenting process, so that any potential for hinderance of or conflict with other schemes is minimised.
- 12.7.78 Overall, it is assessed that there will be likely **no effect** on development land in the operation and maintenance phase of the Scheme.

### Mineral Safeguarding Areas

12.7.79 As outlined in the construction phase assessment, the sensitivity of the MSA is assessed to be high. To access the extraction areas which overlap with the Grid Connection Corridor, during the operation of the Scheme, further construction work would be required. However, the Minerals Safeguarding Report (**PEIR Volume III Appendix 12-2: Minerals Safeguarding Report**) concludes that if a specific area along the Grid Connection Corridor was deemed to be commercially viable for mineral extraction in the future, it is considered that it would be possible to divert the cable (subject to the appropriate consents and agreements being in place) in order to allow for mineral extraction to be undertaken. Therefore, it is considered that non-mineral development can potentially take place without preventing the economically viable mineral resource (if present) to be extracted in the future. On this basis, the magnitude of impact on the MSA is assessed to be **very low**. Therefore, the overall effect of the Grid Connection Corridor on the MSA is assessed to be **minor adverse**, which is **not significant**.

### **Summary of Effects**

12.7.80 There are no significant socio-economic and land use effects expected during the operation and maintenance phase of the Scheme. A summary of magnitude of impact and significance of effect during operation and maintenance is provided in Table 12-29.

**Table 12-29: Summary of Preliminary Assessment of Effects – Socio-Economics and Land Use (Operation and Maintenance)**

Receptor	Potential Impacts	Duration	Mitigation	Likely Significant of Effect	Confidence in Prediction
Local workforce	Employment generation	Permanent	N/A	No effect (not significant)	High Estimated employment requirements associated with operation are confirmed.
PRoW	Changes to journey times, local travel patterns and certainty of routes	Permanent	N/A	Negligible (not significant)	High Consultation with City of Doncaster PRoW lead to understand the potential impacts.
Residential properties, business premises, community facilities, visitor attractions and agricultural land holdings	Land take and connectivity impacts	Permanent	Follow traffic management measures set out in <b>PEIR Volume I Chapter 13: Transport and Access.</b>	No effect (not significant)	High Based on mitigation measures and assessment findings set out in <b>PEIR Volume I Chapter 13: Transport and Access.</b>
Healthcare facilities	Extra demand on healthcare facilities due to operational employment	Permanent	N/A	Negligible (not significant)	High Estimated employment requirements associated with operation are confirmed and based on

Receptor	Potential Impacts	Duration	Mitigation	Likely Significant of Effect	Confidence in Prediction
					GP analysis, it is anticipated that the demand on local GP services would only marginally increase.
BMV Agricultural Land	Land take and soil impacts	Temporary	Measures set out in the OEMP	Negligible (not significant)	Low Require confirmation of land take quantity and extension of ALC survey.
Development Land – Planning Applications	Land take, connectivity impacts and potential hindrance to other developments	Permanent	Follow traffic management measures set out in <b>PEIR Volume I Chapter 13: Transport and Access.</b>	No effect (not significant)	High Based on mitigation measures and assessment findings set out in <b>PEIR Volume I Chapter 13: Transport and Access.</b>
Development Land - Mineral Safeguarding Areas	Land take and hindrance to future mineral extraction	Permanent	N/A	Minor adverse (not significant)	High The design is sufficiently evolved to understand the location and scale of permanent infrastructure.

## Decommissioning Effects

### Employment

- 12.7.81 At the end of its operational life, the most likely scenario is that the Scheme would be decommissioned and all above-ground infrastructure removed. As set out in **PEIR Volume I Chapter 2: The Scheme**, the future of the Grid Connection Cables, Grid Connection Line Drop and On-Site Substation (i.e. whether these would also be removed, or remain in situ) would be agreed with National Grid Electricity Transmission (NGET) and/or the asset owners Independent Distribution Network Operators (IDNO) Eclipse Power prior to the commencement of decommissioning. It can be expected that employment would be generated to carry out the removal of the infrastructure from the Site. All Solar PV Panels, Solar PV Mounting Structure, Field Stations and associated cabling, inverters, transformers, and switchgear, BESS Battery Containers and the containerised unit of the Operations and Maintenance Hub would be removed from the Solar PV Site and recycled or disposed of in accordance with good practice and market conditions at that time.
- 12.7.82 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 Site.
- 12.7.83 It is assumed based on the activities taking place that the same number of jobs required for constructing the Scheme would be needed to carry out the activities required to remove the infrastructure from the Site. Therefore, an average of 200 gross FTE jobs would be on-site per day during this decommissioning phase. Taking account for leakage, displacement, and multiplier effects, the Scheme would support, on average, 225 total net jobs per annum during the decommissioning phase. Of these, 102 jobs per annum would be expected to be taken up by residents within the economic Study Area (60 minute drive time). The likely temporary impact of decommissioning employment generation is assessed as a **minor beneficial** effect, which is not considered significant.

### Public Rights of Way

- 12.7.84 Changes to journey times, local travel patterns, and certainty of routes for users could arise from any disruptions to PRow. Detailed plans for any PRow diversions required during decommissioning or management plans will be prepared at the time of decommissioning. In a worst-case scenario, PRow crossing the Grid Connection Corridor may be disrupted by traffic management or temporary diversions, but these disruptions would be short-term in duration. PRow have been assessed to have low sensitivity, due to the alternative recreational routes available in the area, the lack of national trails and the likely low use of PRow for commuting purposes. Due to the limited scale of impacts upon PRow, these impacts are assessed to be very low adverse for the Grid Connection Corridor, which results in a **negligible effect**. This is considered **not significant**.

## Private and Community Assets

### Residential Properties, Business Premises, Community Facilities, Open Space, Visitor Attractions and Agricultural Land Holdings

- 12.7.85 The fields within the Solar PV Site would be available to be returned to arable use following completion of the decommissioning. Ground physical infrastructure would be removed and the Site returned to landowners in the same condition as at the end of operation. As set out in Paragraph 12.7.81, the future of the Grid Connection Cables, Grid Connection Line Drop and On-Site Substation would be agreed with NGET and/or the asset owners prior to the commencement of decommissioning. Additionally, as set out in **PEIR Volume I Chapter 2: The Scheme**, all Solar PV Panels, Solar PV Mounting Structure, Field Stations and associated cabling, inverters, transformers, and switchgear, BESS Battery Containers and the containerised unit of the Operations and Maintenance Hub would be removed from the Solar PV Site and recycled or disposed of in accordance with good practice and market conditions at that time. The only permanent features remaining on the Site would be the On-Site Substation and any planting. The Solar PV Site would not be available for farming during decommissioning activities, while works are taking place onsite. However, as long as it is safe to do so, farming would be allowed in fields cleared of Solar PV Panels and associated infrastructure while decommissioning activities occur in other fields. The sensitivity of the agricultural land holdings is assessed to be medium, due to the medium importance and rarity of the assets within the Study Area. The magnitude of impact is assessed to be very low, given the short time frame of any disruption to farming activities during decommissioning and the return of the Site as available for farming practices following completion of decommissioning. This results in a **negligible effect** in terms of land take, which is considered to be **not significant**.
- 12.7.86 Roads bordering the Site may be used by decommissioning related traffic which could impact on travel between settlements and cause community severance. As set out in **PEIR Volume I Chapter 13: Transport and Access**, it is considered reasonable to assume that decommissioning impacts will be the same as, or less than, the construction phase. This may overestimate the actual impacts slightly, but it is considered broadly accurate. The construction phase assessment finds that, with embedded mitigation place, three road links would likely experience significant traffic, and severance effects during construction: Moss Road - Askern Village, Moss Road - East of Askern and Fenwick Common Lane (Access Point 1). The significant effects experienced at these links is caused by a high percentage increase in traffic and is driven by low baseline peak per hour; the actual predicted increase per hour/minute is relatively small. Therefore, no severance effects to private and community assets are anticipated. The traffic generated by the Scheme at Fenwick Common Lank (Access Point 1) would only generate minor connectivity impacts for people accessing residential properties in Moss, the Moss and Fenwick Village Hall and the business premises on Moss Road. The Moss Road - Askern Village and Moss Road - East of Askern road links would also only cause minor connectivity impacts for users accessing the Norbreck Village Hall and Askern Moss Road Infant School.

- 12.7.87 It is not known what if any other developments which overlap geographically with the Scheme would be forthcoming during the decommissioning phase. It is assumed that the Applicant would continue to work with other scheme promoters as required and as relevant within the framework of the consenting process to minimise any hindrances or adverse effects which the decommissioning of the Scheme may have on other developments.
- 12.7.88 Overall, sensitivity of private and community assets to socio-economic effects is assessed to be medium, due to the medium importance and rarity of private and community assets within the Study Area. Overall magnitude of impact is assessed to be low, given no direct land take, some connectivity effects, and limited potential for hindrance of other developments. This results in a **minor adverse** effect, which is considered to be **not significant**.

#### Healthcare Infrastructure

- 12.7.89 Similar to the construction phase, decommissioning workers could place additional demand on local healthcare services. The sensitivity of the local population is assessed to be medium. However, the vulnerable sub-populations are assessed to have a high sensitivity based on the elderly and more vulnerable sub-populations likely having a higher reliance on health services.
- 12.7.90 The patients per GP provision at Barnby Dun Surgery is unknown. It is very likely that the patient per GP provision will have changed over the operation and maintenance phase following the population increases outlined in Table 12-22, and given that there is potential for additional GPs to open in the area to accommodate for population increase in this period of time. Therefore, the future patient per GP provision is not known, however even if the additional 138 patients (workers) register at Barnby Dun Surgery, the impact on the healthcare services is anticipated to be limited. Furthermore, the short-term duration and reversibility of the effect has resulted in the magnitude of impact to be assessed very low, which results in a **minor adverse** effect. This is **not considered significant**.

#### BMV Agricultural Land

- 12.7.91 An increase in soil organic matter content may occur during the lifetime of the Solar PV Site. In addition, the removal of tillage during the operation and maintenance phase will lead to improved soil function and increased carbon sequestration during the lifetime of the Solar PV Site. The land would therefore be in the same or better condition than it currently is, as a result of the expected natural enhancement through being set aside for a long period of time. However, this benefit is likely to be temporary once the agricultural uses recommence on the land, and would then on be subject to good agricultural land management practices being adopted after decommissioning.
- 12.7.92 As set out in **PEIR Volume I Chapter 2: The Scheme**, all Solar PV Panels, Solar PV Mounting Structure, cabling, inverters, transformers, switchgear, BESS Battery Containers and the containerised unit of the Operations and Maintenance Hub would be removed from the Solar PV Site and recycled or disposed of in accordance with good practice and market conditions at that time. The only permanent features remaining will on the Site will be the On-Site Substation and any planting. The future of the Grid Connection Cables,

Grid Connection Line Drop and On-Site Substation would be agreed with NGET and/or the asset owners prior to the commencement of decommissioning. The Site would be returned to landowners in the condition as at the end of operation including seeded and grassed land. Drainage systems will be reinstated if grass/drainage is disturbed during decommissioning works.

- 12.7.93 Overall, given the short time frame of any disruption to farming activities during decommissioning activities and the return of the Solar PV Site as available for farming practices following completion of the decommissioning, the magnitude of change during the decommissioning phase is considered to be low, which results in a **negligible effect**. This is considered not significant.

### Development Land

- 12.7.94 The impacts on development land during the decommissioning phase would be expected to be in line with the impacts assessed during the construction phase. As set out in **PEIR Volume I Chapter 13: Transport and Access**, it is considered reasonable to assume that decommissioning impacts will be the same as, or less than, the construction phase. This may overestimate the actual impacts slightly, but it is considered broadly accurate. The construction phase assessment finds that, with embedded mitigation in place, three road links would likely experience significant traffic, and severance effects during construction: Moss Road - Askern Village, Moss Road - East of Askern and Fenwick Common Lane (Access Point 1). The significant effects experienced at these links is caused by a high percentage increase in traffic and is driven by low baseline peak per hour; the actual predicted increase per hour/minute is relatively small. Therefore, no severance effects to development land are anticipated. The traffic generated by the Scheme at Fenwick Common Lane (Access Point 1) would only generate minor connectivity impacts for people accessing the development land site.
- 12.7.95 It is not known what if any other developments which overlap geographically with the Scheme would be forthcoming during the decommissioning phase. It is assumed that the Applicant would continue to work with other scheme promoters as required and as relevant within the framework of the consenting process to minimise any hindrances or adverse effects which the decommissioning of the Scheme may have on other developments.
- 12.7.96 Overall, the sensitivity of development land to socio-economic effects is assessed to be medium, due to the medium importance and rarity of development land assets within the Study Area. Overall magnitude of impact is assessed to be low, given no direct land take, some connectivity effects, and limited potential for hindrance of other developments. This results in a **minor adverse effect**, which is considered to be **not significant**.

### Mineral Safeguarding Areas

- 12.7.97 The future of the Grid Connection Cables would be agreed with National Grid Electricity Transmission (NGET) and/or the asset owners prior to the commencement of decommissioning.



12.7.98 If the Grid Connection Cables are removed, the impacts on the MSA during the decommissioning phase would be expected to be in line with the impacts assessed during the construction phase.

12.7.99 If the Grid Connection Cables are not removed, the impacts on the MSA during the decommissioning phase would be in line with those identified for the operation and maintenance phase.

12.7.100 Therefore, in line with the effects assessed for the above two scenarios in Paragraphs 12.7.53 to 12.7.56 for the construction phase and Paragraph 12.7.79 for the operational phase above, the overall effect of the Scheme on the MSA is assessed to be **minor adverse**, which is not significant.

### Summary of Effects

12.7.101 There are no significant socio-economic and land use effects expected during the decommissioning phase of the Scheme. A summary of magnitude of impact and significance of effect during decommissioning is provided in Table 12-30.

**Table 12-30: Summary of Preliminary Assessment of Effects – Socio-Economics and Land Use (Decommissioning)**

<b>Receptor</b>	<b>Potential Impacts</b>	<b>Duration</b>	<b>Mitigation</b>	<b>Likely Significant of Effect</b>	<b>Confidence in Prediction</b>
Local workforce	Employment generation	Temporary	N/A	Minor beneficial (not significant)	High Estimated employment requirements associated with decommissioning are confirmed.
PRoW	Changes to journey times, local travel patterns and certainty of routes due to the Grid Connection Corridor	Temporary	Temporary traffic management or diversions as outlined in Section 12.6	Negligible (not significant)	High Consultation with City of Doncaster PRoW lead to understand the potential impacts.
Residential properties, business premises, community facilities, visitor attractions and agricultural land holdings	Land take, impact on farming activities connectivity impacts and potential hindrance to other developments	Temporary	Site returned to landowners in condition at the end of operation as outlined in Section 12.6	Minor adverse (not significant)	High Based on mitigation measures and assessment findings set out in <b>PEIR Volume I Chapter 13: Transport and Access</b> .
Healthcare facilities	Extra demand on healthcare facilities due to decommissioning employment	Temporary	N/A	Minor Adverse (not significant)	High Estimated employment requirements associated with decommissioning are confirmed and based on GP analysis, it is anticipated that the demand on

Receptor	Potential Impacts	Duration	Mitigation	Likely Significant of Effect	Confidence in Prediction
					local GP services would only marginally increase.
Agricultural land holdings	Land take, inability to farm	Temporary	N/A	Negligible (not significant)	Medium The design is sufficiently evolved to understand the location and scale of permanent infrastructure.
BMV Agricultural Land	Land take and soil impacts	Temporary	Measures set out in the DEMP	Negligible (not significant)	Medium DEMP will mitigate potential soil impacts. Also, over the lifetime of the Solar PV Site, the soil is likely to benefit from improved soil function due to the removal of tillage.
Development Land – Planning Applications	Land take, connectivity impacts and potential hindrance to other developments	Temporary	Follow traffic management measures set out in <b>PEIR Volume I Chapter 13: Transport and Access.</b>	Minor adverse (not significant)	High Based on mitigation measures and assessment findings set out in <b>PEIR Volume I Chapter 13: Transport and Access.</b>
Development Land - Mineral Safeguarding Areas	Land take and hindrance to future mineral extraction	Temporary	N/A	Minor adverse (not significant)	High The design is sufficiently evolved to understand the location and scale of permanent infrastructure.

## 12.8 Additional Mitigation and Enhancement Measures

- 12.8.1 No additional mitigation measures are required, due to no significant adverse effects associated with Socio-Economics and Land Use being identified.
- 12.8.2 No additional enhancements are required with respect to socio-economic and land use effects arising from the Scheme.

## 12.9 Residual Effects

- 12.9.1 Given no further mitigation or enhancement measures have been proposed, the potential effects identified in Section 12.7 remain valid.
- 12.9.2 The residual effects therefore remain the same as reported in Section 12.8, with no significant effects identified on socio-economics and land use.

## 12.10 Cumulative Effects

- 12.10.1 This section assesses the potential effects of the Scheme in combination with the potential effects of other proposed and committed plans and projects including other developments (referred to as 'cumulative developments') within the surrounding area.
- 12.10.2 The cumulative developments to be considered in combination with the Scheme were prepared and shared with City of Doncaster Council, North Yorkshire Council and East Riding of Yorkshire Council and are listed in **PEIR Volume I Chapter 15: Cumulative Effects and Interactions** and presented in **PEIR Volume II Figure 15-3: Location of Short List Schemes**. The assessment has been made with reference to the methodology and guidance set out in **PEIR Volume I Chapter 5: Environmental Impact Assessment Methodology**.
- 12.10.3 This cumulative effect assessment identified, for each receptor, the areas where the predicted effects of the Scheme could interact with effects arising from other plans and/or projects on the same receptor based on a spatial and/or temporal basis.
- 12.10.4 There are two cumulative developments that have been identified which may coincide with the Site Boundary, which are included on the short list of developments presented in **PEIR Volume I Chapter 15: Cumulative Effects and Interactions**. A further seven other developments are located within 2 km of the Scheme, which is the Zone of Influence (Zoi) for Socio-Economics and Land Use.
- 12.10.5 Both of the cumulative developments that have been identified as potentially coinciding with the Site Boundary are at approval status: the Enso Green Holdings Solar Farm and Battery Storage scheme (21/02567/FULM) and Thorpe Marsh Green Energy Hub development (23/00793/FULM) for the construction and operation of up to 50MW Battery Energy Storage, substation and associated infrastructure.

## Construction and Decommissioning

### Employment

- 12.10.6 In combination with the employment impacts identified in this assessment, all cumulative developments will generate additional construction related employment within the Study Area and/or in the surrounding areas to the Study Area if they were to go ahead.
- 12.10.7 In the instance where there is an overlap in construction activities between the schemes, the combined effect of the cumulative developments will lead to additional employment in the Study Area. It is likely that while there may be an increase in construction and decommissioning employment, the incremental change will be minor therefore the overall cumulative effect on the Study Area from the generation of workers during construction and decommissioning will remain as temporary **minor beneficial** effect which is considered **not significant**.

### Temporary Accommodation

- 12.10.8 The planning applications associated with the demolition of Grade II listed 'Lily Hall' and erection of one replacement residential farmworker's dwelling and associated works (22/01537/LBC and 22/01536/FUL) will not have temporal overlap with this Scheme. Otherwise, there is a possibility that the construction phases of multiple schemes may overlap. If the construction phases of multiple schemes were to overlap, this would in turn increase demand in the accommodation sector from the increased workforce at a peak construction or decommissioning phase. However, within the assessment for this Scheme it was anticipated that there would be no effect (i.e. not even a negligible or a minor effect) on the hotel, bed and breakfast, and inns accommodation sector arising from the Scheme. In line with the methodology presented in **PEIR Volume I Chapter 5: Environmental Impact Assessment Methodology**, effects to temporary accommodation are therefore not considered within the cumulative assessment as the Scheme would not make a meaningful contribution to any cumulative effect which may occur from the other developments in the area.

### GVA

- 12.10.9 The only other development for which details are available on GVA generated during the construction phase is the planning application for the installation of a 180MW battery energy facility and associated works (23/01746/FULM). Based on the number of construction jobs created by the development and the average GVA per job in all sectors in Yorkshire and the Humber, it is anticipated that the development would generate £3.5 million in GVA during the construction phase. Therefore, the overall cumulative effect on the economy of the Study Area owing to generation of GVA from construction is likely to remain temporary medium beneficial, resulting in a temporary **minor beneficial** effect, which is considered **not significant**.

### PRoW

- 12.10.10 This chapter has found potential effects on PRoW during construction and decommissioning to be negligible (**not significant**). Therefore, in line

with the methodology presented in **PEIR Volume I Chapter 5: Environmental Impact Assessment Methodology**, effects to PRow during construction and decommissioning are not considered within the cumulative assessment as the Scheme would not make a meaningful contribution to any cumulative effect which may occur from other developments in the area.

### Residential Properties, Business Premises, and Community Facilities

12.10.11 This chapter has identified that during the construction and the decommissioning phase, there is potential for minor adverse effects (**not significant**) on residential properties, business premises, community facilities and development land associated with land take and connectivity impacts. There is limited information available on how the cumulative developments might affect such assets during the construction and decommissioning stage, however based on the assumption that each scheme will be designed to minimise such impacts wherever possible, it is considered that the cumulative effect is likely to remain **minor adverse (not significant)**. Any further information released on the impacts of the developments on residential properties, business premises, community facilities and development land associated with land take and connectivity impacts available will be considered further in the ES Chapter.

### BMV Agricultural Land and Soils

12.10.12 This chapter has found effects on BMV agricultural land during construction and decommissioning to be negligible (**not significant**). Therefore, in line with the methodology presented in **PEIR Volume I Chapter 5: Environmental Impact Assessment Methodology**, effects to BMV during construction and decommissioning are not considered within the cumulative assessment as the Scheme would not make a meaningful contribution to any cumulative effect which may occur from the other developments in the area.

### Mineral Safeguarding Areas

12.10.13 This chapter has identified that during the construction and the decommissioning phase, there is potential for minor adverse effects on the MSA for sand and gravel (Land to the east of Doncaster between Thorne and Bawtry). The only development which has the potential to impact MSAs is the planning application (19/03034/FULM) for the excavation of approximately 4 million tonnes of by-product material comprising mostly silica sand and also soda lime glass and iron oxides (also known as burgy) from previous glass manufacturing and the reinstatement of the flood plain, creating new habitats. The rest of the planning applications are not located within an MSA. The developer for the planning application (19/03034/FULM) is a member of the Mineral Products Association and is committed to minimising the impacts on MSAs. Therefore, it is considered that the cumulative effect is likely to remain **minor adverse (not significant)**.

## Operation and Maintenance

### Employment

12.10.14 If all the cumulative developments are realised there is potential for additional employment to be generated within the local area. However, there would be no net change in the employment supported by activities on the Site during the operation and maintenance phase of the Scheme. Therefore, it was assessed that there would be no effect on operation and maintenance employment meaning that the Scheme would not make a meaningful contribution to any cumulative effect which may occur from other developments in the area. Cumulative effects between the Scheme and other developments on operation and maintenance employment are therefore not assessed.

### PRoW

12.10.15 The permanent diversion of PRoW Sykehouse 29 footpath would remain during the operation and maintenance phase, however this would result in a **negligible (not significant)** effect. No additional effects on PRoW are anticipated during the operation and maintenance phase. Therefore, this chapter found effects on PRoW during the operation and maintenance phase to be **negligible (not significant)**. Therefore, in line with the methodology presented in **PEIR Volume I Chapter 5: Environmental Impact Assessment Methodology**, effects to PRoW during operation and maintenance are not considered within the cumulative assessment as the Scheme would not make a meaningful contribution to any cumulative effect which may occur from the other developments in the area.

### Residential Properties, Business Premises, and Community Facilities

12.10.16 No plans or projects identified as a part of the above listed schemes are considered in combination to impact residential properties, business premises, and community facilities identified within this assessment. Other schemes are not likely to contribute to the effects on these receptors. For example, only one or two LGVs are anticipated per week during the operational phase of the Thorpe Marsh Green Energy Hub Ltd development (23/00793/FULM). Also, the Transport Statement for the planning application (23/01746/FULM) assesses the operational impact of the scheme as negligible. Therefore, the cumulative operational effect on residential properties, business premises, and community facilities is expected to remain as not significant.

### BMV Agricultural Land and Soils

12.10.17 This chapter found effects on BMV agricultural land, associated with land take, during the operation and maintenance phase to be **negligible (not significant)**. Therefore, in line with the methodology presented in **PEIR Volume I Chapter 5: Environmental Impact Assessment Methodology**, effects on BMV agricultural land during construction and decommissioning are not considered within the cumulative assessment as the Scheme would not make a meaningful contribution to any cumulative effect which may occur.

## Mineral Safeguarding Areas

- 12.10.18 This chapter has identified that during the operation and maintenance phase, there is potential for minor adverse effects on the MSA for sand and gravel (Land to the east of Doncaster between Thorne and Bawtry). As outlined above in Paragraph 12.10.13, the developer for the planning application (19/03034/FULM) is a member of the Mineral Products Association and is committed to minimising the impacts on MSAs. Therefore, it is considered that the cumulative effect is likely to remain **minor adverse (not significant)**.

## 12.11 Summary and Conclusions

- 12.11.1 No significant residual socio-economics and land use effects are anticipated.
- 12.11.2 The construction phase would include employment and GVA generation effects which would create minor beneficial effects within the local economy. The employment generated would cause additional demand for hotel and bed and breakfast accommodation but this would have a minimal impact on local accommodation capacity. The Scheme would generate construction job opportunities for workers outside the Study Area which may increase the demand for healthcare services. However, it is anticipated that the additional demand would only marginally increase the ratio of patients to GP provision and therefore this was assessed to be a minor adverse effect. Given that the loss of BMV agricultural land (which comprises 4% of the Solar PV Site based on surveys undertaken to date) would be temporary and reversible, the Scheme is assessed to have a negligible effect on BMV agricultural land during construction. The Scheme would require minimal land take from the MSA and future mineral extraction would still be possible, therefore, effects are assessed to be a minor adverse.
- 12.11.3 The employment generated during the operation and maintenance phase is considered to have no effect because there would be no net change in the employment supported by activities on the Site as a result of the Scheme. One FTE job would be created to manage the Scheme which is anticipated to have a negligible impact on local healthcare facilities. Agricultural land within the Solar PV Site would be required for the duration of the Scheme, including a small amount of BMV land; however effects would be temporary and reversible on most of the Site. Therefore, the impact on agricultural land is expected to be negligible. No new effects on the MSA are anticipated during the operational phase. During the operation of the Scheme, further construction work would be required in order to access the extraction areas which overlap with the Grid Connection Corridor. However, if a specific area along the Grid Connection Corridor was deemed to be commercially viable for mineral extraction in the future, mineral extraction would still be possible, therefore effects are assessed to be a minor adverse effect.
- 12.11.4 The decommissioning phase effects are expected to be similar to those during the construction phase whereby temporary employment is generated, which would generate a marginal increase in demand for local healthcare services (minor adverse effect). There would be negligible effects on PRoW. The Solar PV Site would not be available for farming during decommissioning activities, while works are taking place on site. However, this would only be for a short time frame and the Site would be returned to



farming practices following completion of the decommissioning phase. This is expected to result in a negligible effect on agricultural land. The impacts on MSA during the decommissioning phase would be expected to be in line with the impacts assessed during the construction phase.

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An aerial photograph of a vast solar farm at sunset. The rows of solar panels stretch across the landscape, creating a strong sense of perspective. The sky is a deep, dark orange, and the sun is low on the horizon, casting a warm glow over the scene. The panels are arranged in neat, parallel lines that recede into the distance.

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