



# Little Crow

*Solar Park*

*Little Crow Solar Park, Scunthorpe*

## ENVIRONMENTAL STATEMENT CHAPTER 11

### SOCIO ECONOMIC ISSUES

**TRACKED VERSION - FOR INFORMATION ONLY**

Revision:  
Regulation No:  
PINS Reference:

Revision A  
APFP Reg:5(2)(a)  
EN010101

Author:  
Date:

Pegasus Group  
April 2021

## **11 SOCIO ECONOMIC ISSUES**

### **11.1 INTRODUCTION**

- 11.1.1 This chapter establishes the baseline socio-economic conditions and then considers the likely socio-economic effects of the Proposed Development.
- 11.1.2 The considerations of this chapter are mostly related to the effects of the Proposed Development upon the human population who will live within the vicinity of the Order Limits.
- 11.1.3 This assessment is made by examining the potential effects on the population anticipated as a result of the Proposed Development and, in turn, assessing the effect that this could have on relevant services and facilities and the economy. It identifies the socio-economic baseline in relation to key issues, specifically the economy and labour force, and the potential effects that could occur, both direct and indirect, arising from the construction (temporary effects) and operation (permanent effects) of the Proposed Development.

### **11.2 ASSESSMENT APPROACH**

#### **Methodology**

- 11.2.1 There is no specific guidance available which establishes a methodology for undertaking an Environmental Impact Assessment (EIA) of the socio-economic effects of a proposed development. Accordingly, the approach adopted for this assessment is based on professional experience and best practice, and in consideration of the policy requirements/tests set out within the National Planning Policy Framework (NPPF) and local planning policy.
- 11.2.2 The Infrastructure Planning (Environment Impact Assessment) Regulations ~~2017~~<sup>2017</sup><sup>1</sup> state that an ES should contain:
- "A description of the factors specified in regulation 5(2) likely to be significantly affected by the development: population."
- 11.2.3 Following this guidance, the assessment specifically includes the following:
- Identification of the socio-economic baseline in respect of each of the key socio-economic issues identified, focussing on the characteristics of the economy and labour force. These characteristics have been used as a measure for assessing future changes associated with or resulting from the Proposed Development.
  - Qualification of the full range of socio-economic effects, both direct and indirect, arising from the construction (temporary effects) and operation (permanent effects) of the Proposed Development.
- 11.2.4 The baseline information has been collated with reference to the following:
- NPPF<sup>2</sup>; and

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<sup>1</sup> The Infrastructure Planning (Environmental Impact Assessment Regulations 2017), available from: [http://www.legislation.gov.uk/ukxi/2017/572/pdfs/ukxi\\_20170572\\_en.pdf](http://www.legislation.gov.uk/ukxi/2017/572/pdfs/ukxi_20170572_en.pdf)

<sup>2</sup> National Planning Policy Framework: HM Government, July 2018.

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- Office of National Statistics (ONS) data (various outputs as individually referenced in this chapter).

**Assessment of Significance**

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11.2.5 The first step in the assessment is to identify the sensitivity of the receptors. In socio-economic assessments, receptors are not sensitive to changing environmental conditions in the same way as many environmental receptors are. To address this, the assessment draws on a combination of measurable indicators and a consideration of the importance of the receptor in policy terms to gauge the receptor’s sensitivity. For example, the number of jobs in the area may increase as new developments are completed and occupied by businesses. This is considered alongside the weight attached to these issues in local policy. For example, the Local Plan may have identified that employment and business growth asis a particular priority. Table 11.1 shows the sensitivity criteria followed in this assessment.

**Table 11.1: Sensitivity Criteria**

Sensitivity	Evidence for Sensitivity Assessment
High	Evidence of direct and significant socio-economic challenges relating to receptor. Accorded a high priority in local, regional or national economic regeneration policy.
Medium	Some evidence of socio-economic challenges linked to receptor, which may be indirect. Change relating to receptor has medium priority in local, regional and national economic and regeneration policy.
Low	Little evidence of socio-economic challenges relating to receptor. Receptor is accorded a low priority in local, regional and national economic and regeneration policy.
Negligible	No socio-economic issues relating to receptor. Receptor is not considered a priority in local, regional and national economic development and regeneration policy.

11.2.6 The magnitude of change upon each receptor has been determined by considering the predicted deviation from baseline conditions, both before and, if required, after mitigation. The criteria used for the assessment of magnitude of change, which can be either positive (beneficial) or negative (adverse) are shown in Table 11.2.

**Table 11.2: Magnitude of Change Criteria**

Magnitude of Impact	Description / Criteria
Substantial	Proposed Development would cause a large change to existing socio-economic conditions in terms of absolute and/or percentage change.

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Magnitude of Impact	Description / Criteria
Moderate	Proposed Development would cause a moderate change to existing socio-economic conditions in terms of absolute or percentage change.
Minor	Proposed Development would cause a minor change to existing socio-economic conditions in terms of absolute and or percentage change.
Negligible	No discernible change in baseline socio-economic conditions.

11.2.7 In reporting the effects of significance resulting from the Proposed Development, at construction and operational stages, the assessment contextualises both the sensitivity of the receptor and the magnitude of change. The method uses the matrix shown in Table 11.3.

**Table 11.3: Significance Matrix**

Magnitude of Change	Sensitivity of Receptor				
		High	Medium	Low	Negligible
Substantial		Major	Major	Moderate	Negligible
Moderate		Major	Moderate	Minor to Moderate	Negligible
Minor		Moderate	Minor to Moderate	Minor	Negligible
Negligible		Negligible	Negligible	Negligible	Negligible

11.2.8 Using this scale, effects identified as major or moderate are regarded as being significant. Effects of minor or lesser significance are also identified but regarded as not significant.

**Legislative and Policy Framework**

11.2.9 Full details on the planning policy context are provided in **Chapter 5** of the environmental statement, however from a socio-economic perspective it is worth noting that guidance on producing EIAs published by the European Commission and UK Government suggests that the possible socio-economic effects that should be considered are those relating to changes in population, such as changes in the demand for housing and services like schools and recreation facilities.

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**Scoping Criteria**

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11.2.10 The scope and contents of this socio-economic assessment are based on professional experience and best practice. Consideration has been given only to the following socio-economic factors for which there is a potential for likely significant effects or which are relevant to assessing these effects:

- Construction Phase – local employment opportunities.
- Operational Phase – local employment opportunities.
- Operational Phase – socio-economic characteristics of local population.

11.2.11 The assessment has also taken into account the socio-economic comments provided in the Planning Inspectorate Screening Opinion dated January 2019. These comments have been set out in the following table with an additional column added setting out the responses to each of the matters.

**Table 11.4: Extract of Aspect based scoping tables from Scoping Opinion for Little Crow Solar park and S55 Acceptance of Applications Checklist**

<u>Extract of Scoping Opinion</u>			
<u>ID</u>	<u>Ref</u>	<u>Inspectorate’s Comments</u>	<u>Response</u>
<u>5.6.2</u>	<u>11.14</u>	The Inspectorate highlights the following statement from the Scoping Report which appears to be incorrect “For residents of North Lincolnshire, the median annual gross wage for full-time workers is £27,265, as of 2017. This is around £1,500 lower than that of the UK (£28,758), but around £1,000 below the regional figure (£26,236)”. It is assumed that the statement should read “...above the regional figure...”.	Amended (see paragraph 11.3.13)
<u>4.6.3</u>	<u>11.22</u>	A six month build phase is referred to, which is inconsistent with the eleven months/47 weeks referred to elsewhere in the ES.	Amended (see paragraphs 11.4.4, 11.4.5, 11.4.6, 11.4.7 and 11.7.3)
Extract of aspect set out in S55 advice: -			
<u>Item no</u>	<u>n/a</u>	<u>Inspectorate’s Comments</u>	<u>Response</u>
<u>30</u>		The capital cost for the Proposed Development has been estimated as being £160million using a capital investment cost of around £800,000 for building one megawatt and based on 150MW of solar generation and 50MW of battery storage. Battery storage of 50MW is inconsistent with the 90MW that has been referred to in the application documents.	Amended (see paragraphs 11.4.2, 11.7.1 and 11.7.3)

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**Extent of Study Area**

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~~11.2.11~~11.2.12 The assessment primarily focuses on the effects in the local authority area of North Lincolnshire and the ward within which the Proposed Development is located (~~Frodingham~~-Broughton and Appleby). Where appropriate, benchmark data at a regional and national level are also provided.

**Limitations to the Assessment**

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~~11.2.12~~11.2.13 Baseline information is derived from the latest available statistics, however, there is often a time-lag associated with the publication of this data.

**11.3 BASELINE CONDITIONS**

**Site Description and Context**

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11.3.1 A detailed description of the site and its surrounding context is provided within **Chapter 34** and therefore has not been repeated. However, the details of the Proposed Development as pertinent to the socio-economic assessment are based on the construction, operation, maintenance and decommissioning of a ground mounted park with a design capacity of over 50MWp, the candidate design varies between 150MWp to 200MWp.

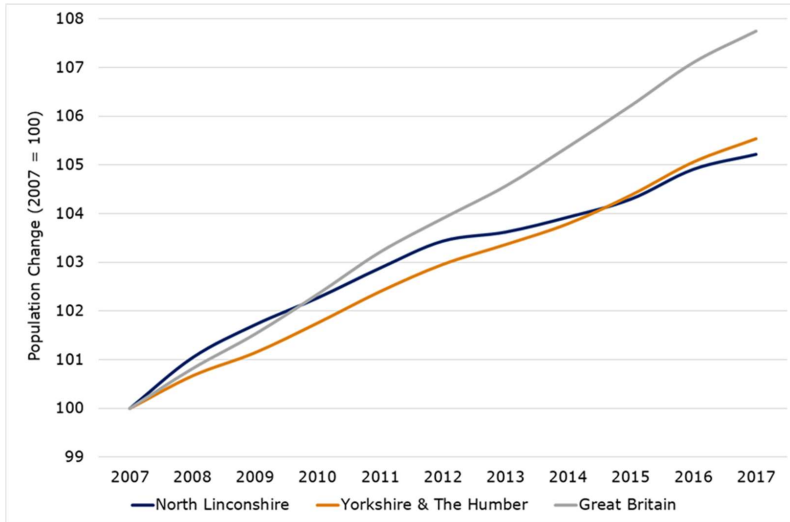
**Baseline Survey Information**

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**Population**

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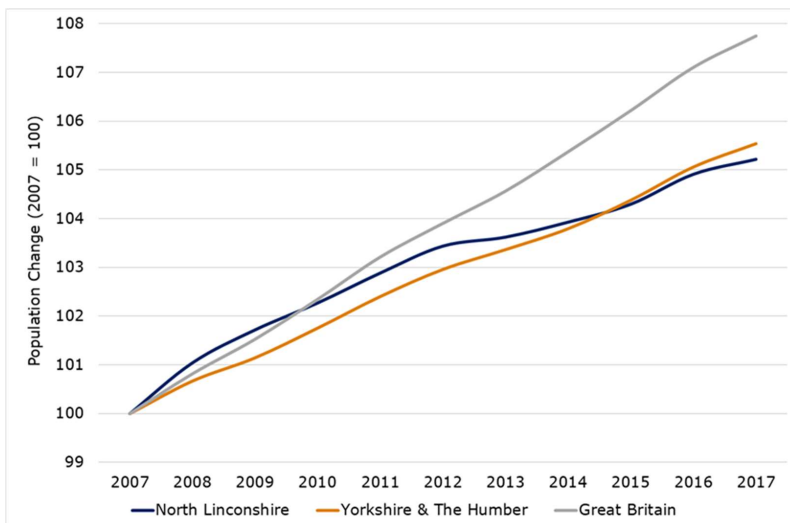
11.3.2 Based on data from the Census, the population of ~~Frodingham~~Broughton and Appleby ward was around ~~8,2006,800~~ in 2011. Data from the 2017 ONS Mid-Year Population Estimates show that, the total population of North Lincolnshire is around 171,300. Figure 11.1 shows population change between 2007 and 2017. Over this timeframe, North Lincolnshire's population grew by 5.2% – equating to 8,500 more people. The corresponding rises for Yorkshire and The Humber and Great Britain over the same period were 5.5% and 7.7% respectively.



**Figure 11.1: Population change, 2007-17**

**Source: ONS, Mid-Year Population Estimates**

11.3.3 Data on population change by age in North Lincolnshire shows that from 2007 to 2017, the young dependant population group (aged 0 to 15) increased by

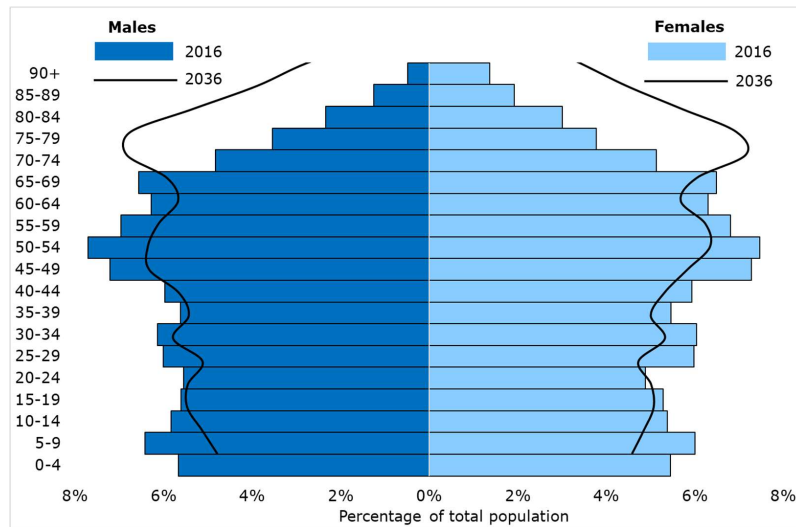


around 900 (2.9% growth), the number of economically active people (16-64) increased by about 100 (0.1% growth) and people aged 65+ increased by approximately 7,500 (a rise of 26.9%). All three age groups experienced growth over the same timeframe in Yorkshire and The Humber and UK,

although the 65+ cohort grew fastest in both areas – by 21.1% in Yorkshire and The Humber and 23.0% in the UK.

11.3.4 The latest ONS population projections (2016-based) were published in May 2017 and these indicate that the population of North Lincolnshire is predicted to increase steadily – by around 5,600 between 2016 and 2036 (a 3.3% increase). Population growth in Yorkshire and The Humber (5.9%) and England (10.2%) is expected to be higher over the same period. In North Lincolnshire between 2016 and 2036, the population aged 65+ is expected to rise by just over 15,200 (43.8%). The 16-64 cohort is projected to decline by around 6,400 (6.15), while the number of people aged 0-15 is estimated to decrease by 3,300 (10.5%) over the same time period. Figure 11.2 presents a population pyramid for North Lincolnshire between 2016 and 2036, highlighting a long-term contraction in the young population and a rise in the number of elderly people.

**Figure 11.2: Population projections, 2016-36**



**Source:** ONS, Mid-Year Population Estimates



Skills

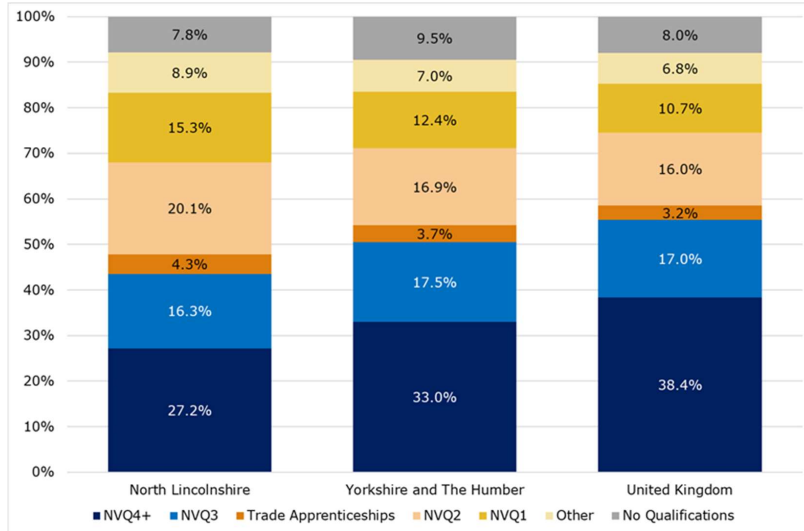
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11.3.5 In 2017, 27.2% of working age residents (16-64) in North Lincolnshire had a degree level qualification or higher (NVQ4+); 16.3% had NVQ3 only, which equates to 2 A Levels and 4 AS Levels; and 20.1% had NVQ2 only (5+ GCSEs or equivalent). Around 7.8% of the District's population had no qualifications. Yorkshire and The Humber region and the UK have a greater proportion of people aged 16-64 with higher level (NVQ4+) qualifications – 33.0% and 38.4% respectively. North Lincolnshire has a lower proportion of working age residents with no qualifications compared with the UK (8.0% versus 7.8%), and the region (9.5%). Figure 11.3 shows the full skills breakdown.

**Figure 11.3: Skill Levels of the Resident Working Age (16-64) Population, 2017**

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**Source: Annual Population Survey, January-December 2017**

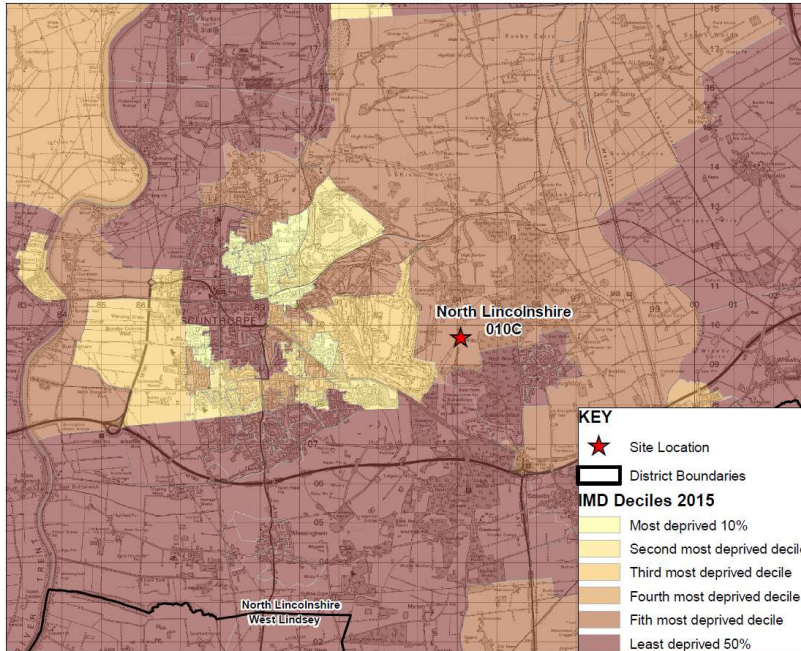
Deprivation

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- 11.3.6 The Index of Multiple Deprivation 2015<sup>3</sup> provides an indication of the average levels of deprivation for LSOAs (Lower layer Super Output Area) across England. The Index provides an overall assessment of the average levels of deprivation as well as an assessment against particular domains of deprivation.
- 11.3.7 The Order Limits falls within the North Lincolnshire 010C LSOA. The area has medium levels of deprivation, ranking at 14,964, falling inside the fifth most deprived decile amongst the 32,844 LSOAs nationally (see Figure 11.4). The LSOA is within the 30% most deprived areas nationally for education, skills and training; and living environment. However, it is within the 10% least deprived areas nationally for Barriers to Housing and Services.

<sup>3</sup> September 2015, English Indices of Deprivation 2015, Department for Communities and Local Government.

**Figure 11.4: Index of Multiple Deprivation for Site Location, 2015**



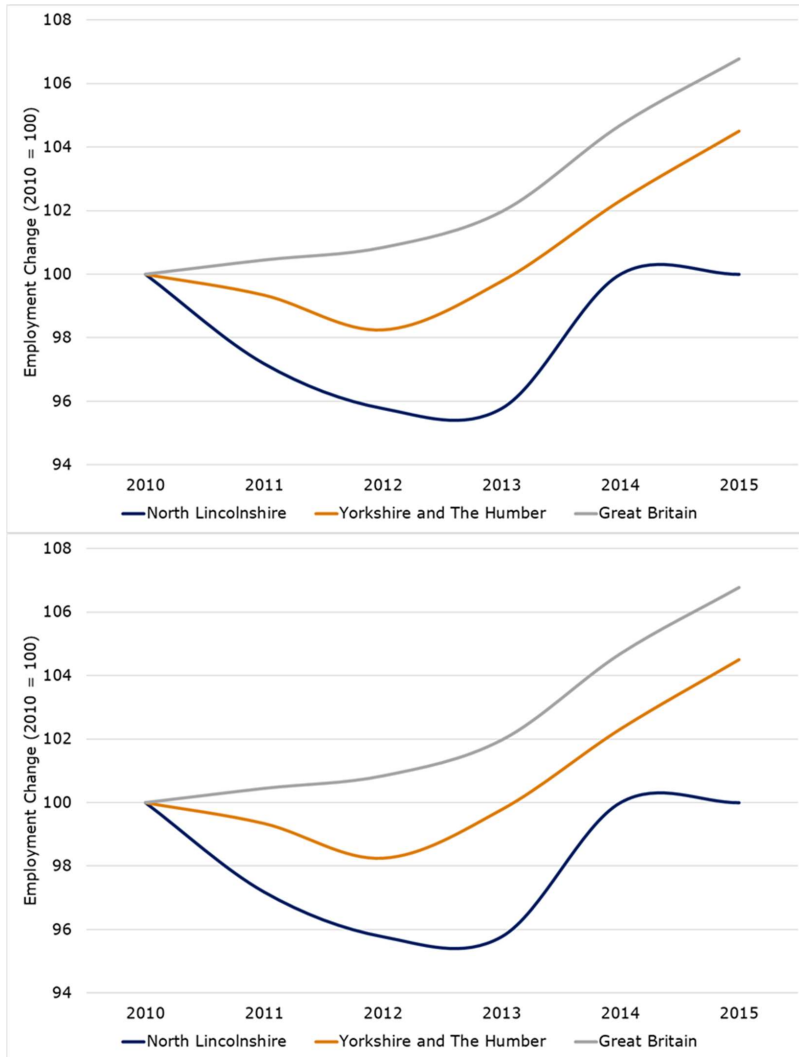
**Source: Ministry of Housing, Communities & Local Government**

Employment

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11.3.8 Based on data from the 2016 Business Register & Employment Survey, published by ONS, 72,000 people work in North Lincolnshire (~~1,250 (1.7,000 (10.0%)~~ of which work in FrodinghamBroughton and Appleby ward). Overall, between 2010 and 2015, employment in North Lincolnshire remained flat. While it fluctuated in the intervening years, job numbers in 2010 were 71,000 – the same as 2015. Yorkshire and The Humber and Great Britain saw increases of 4.5% (103,000 jobs) and 6.8% (1.9million jobs) respectively over the same timeframe (see Figure 11.5)<sup>4</sup>.

<sup>4</sup> 2016 jobs data are also available, however due to changes in the methodology they are not comparable with figures dating back to 2010. Jobs growth has therefore been analysed over the period 2010-15 to allow for like-for-like comparison.



**Figure 11.5: Employment Change, 2010-15**

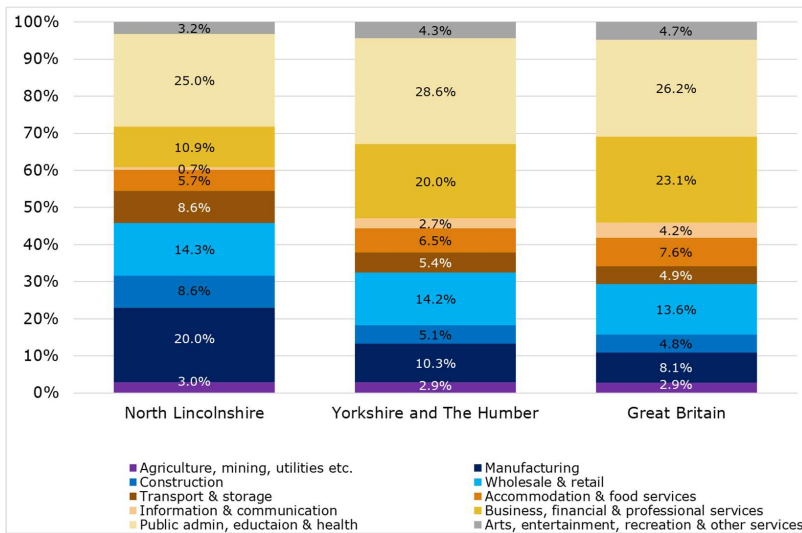
**Source: Office for National Statistics - Business Register & Employment Survey**

11.3.9 The largest sector in North Lincolnshire as of 2016 is public administration, education and health, with 17,500 jobs - representing 25.0% of total employment. Job numbers in the sector decreased by 2,500 between 2010 and 2015. Between 2015 and 2016, jobs in the sector remained the same (17,500).

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11.3.10 In terms of overall size, health is followed by two sectors – manufacturing (which supports 14,000 jobs in the District – 20.0%) and wholesale and retail (which supports 10,000 jobs (14.3%) in North Lincolnshire). The construction sector, which is likely to see employment opportunities during the Proposed Development’s build phase, supports around 6,000 jobs in North Lincolnshire. This equates to approximately 8.6% of total employment in the District, above the corresponding shares for Yorkshire and The Humber (5.1%) and the UK (4.8%). Figure 11.6 presents the sector employment share in further detail.



**Figure 11.6: Sector Employment Share, 2016**  
**Source: Office for National Statistics – Business Register & Employment Survey**

Business Base

11.3.11 The total number of businesses in North Lincolnshire has increased by 500 since 2010 (8.2% growth). This was below the increases seen in Yorkshire and

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The Humber (18.0%) and UK (21.6%) over the same timeframe (see Table 11.45).

**Table 11.45: Change in business numbers, 2010-17**

Area	2010	2017	Absolute Change	% Change
North Lincolnshire	6,120	6,620	500	8.2%
Yorkshire and The Humber	187,810	221,560	33,750	18.0%
United Kingdom	2,574,225	3,129,385	555,160	21.6%

**Source: ONS, UK Business Count**

11.3.12 In terms of business share by size, North Lincolnshire is broadly in line with Yorkshire and The Humber. The District has a slightly lower proportion of micro businesses – 82.3% (between 0 and 9 employees) than the UK – 84.5% - and a slightly higher proportion of small (10 to 49 employees) and medium-sized (50 to 249 employees) businesses than the national average (see Table 11.56).

**Table 11.56: Business share by size, 2017**

Area	Micro (0 to 9)	Small (10 to 49)	Medium-sized (50 to 249)	Large (250+)
North Lincolnshire	82.3%	14.3%	3.7%	0.5%
Yorkshire and The Humber	82.6%	14.0%	3.6%	0.4%
United Kingdom	84.5%	12.6%	3.0%	0.4%

**Source: ONS, UK Business Count**

Wages

11.3.13 For residents of North Lincolnshire, the median annual gross wage for full-time workers is £27,265, as of 2017. This is around £1,500 lower than that of the UK (£28,758), but around £1,000 below above the regional figure (£26,236). Since 2010, gross annual wages for full-time workers who are residents of North Lincolnshire have increased by approximately £1,700 – an increase of

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6.9%. This is lower than the growth seen in Yorkshire and The Humber (9.5% – around £2,300), and the UK (11.1% – around £2,900)<sup>5</sup>.

11.3.14 For workers in North Lincolnshire, the median annual gross wage for full-time jobs (£27,505 in 2017) is around £1,200 lower than the UK median (£28,758), but £1,200 above Yorkshire and The Humber median (£26,258). Between 2010 and 2017, residents’ wages in North Lincolnshire increased by 6.4% (£1,643), lower than the growth seen in Yorkshire and The Humber (£2,402 – 10.1%) and the UK (11.1% – around £2,900<sup>6</sup>) over the same period<sup>7</sup>.

Commuting<sup>8</sup>

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11.3.15 Just over 50,400 people live and work in North Lincolnshire. There are a substantial number of people travelling into North Lincolnshire from surrounding/neighbouring areas to work – around 12,600. This includes around 3,800 from North East Lincolnshire, 2,600 from Doncaster and 1,400 from West Lindsey.

11.3.16 There is also a high number of residents commuting out for work – around 12,000. This includes almost 4,700 working in North East Lincolnshire, over 2,900 in West Lindsey, 2,000 in Doncaster and just over 1,100 in East Riding of Yorkshire.

11.3.17 The overall figure for out-commuters (15,778) is higher than the figure for in-commuters (14,802), giving a net outflow of just under 1,000 commuters.

Unemployment

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11.3.18 Overall, the unemployment rate in North Lincolnshire fell between 2010 and 2018 (see Figure 11.7). As of April 2017-March 2018, the unemployment rate for people aged 16-64 in North Lincolnshire was 5.8%. Compared with the figure of 8.1% for 2010, this represents a substantial improvement. However, the rate did increase slightly between 2017 and 2018 (by 0.7 percentage points, from 5.1% to 5.8%). The unemployment rate in North Lincolnshire is higher than the regional rate (4.9%) and the UK average of 4.4%<sup>9</sup>.

<sup>5</sup> Data sourced from Annual Survey of Hours & Earnings (Resident Analysis) for 2010 and 2017, published by ONS.

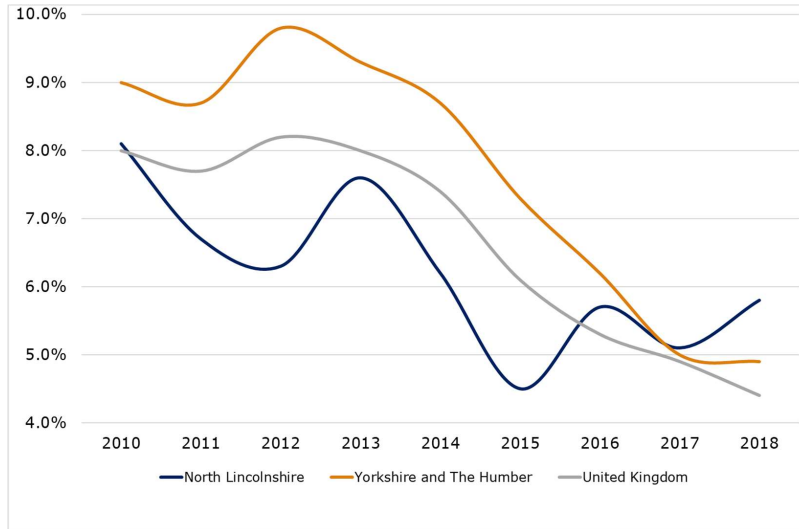
<sup>6</sup> Resident and workplace-based wages are both the same at a UK level, hence the reported changes in paragraphs 6.3.12 and 6.3.13 are the same.

<sup>7</sup> Data sourced from Annual Survey of Hours & Earnings (Workplace Analysis) for 2010 and 2017, published by ONS.

<sup>8</sup> Based on travel to work data from the 2011 Census.

<sup>9</sup> Unemployment data sourced from Annual Population Survey (April 2017-March 2018), published by ONS.

Figure 11.7: Unemployment Rate (16-64), 2010-2018



Source: Office for National Statistics – Annual Population Survey

Economic Activity

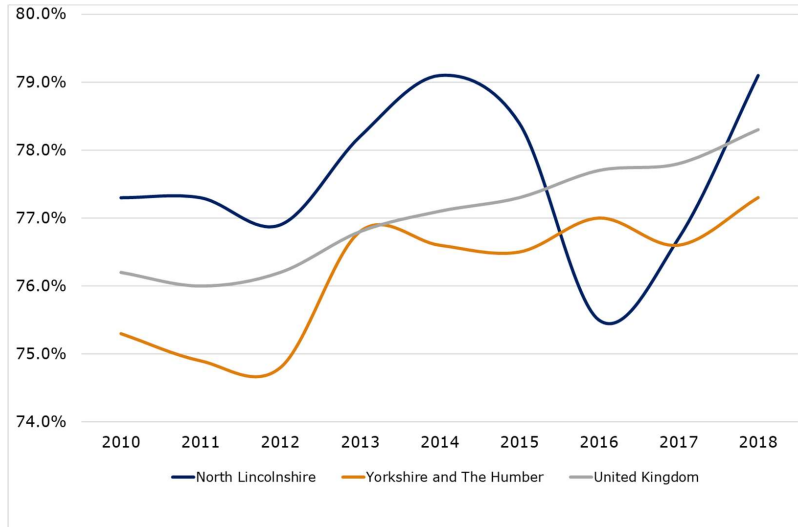
11.3.19 The economic activity rate in North Lincolnshire is 79.1%, based on ONS data for April 2017-March 2018. This is 0.8 percentage points than the rate in the UK, which is 78.3%. It is also above Yorkshire and The Humber average of 77.3%<sup>10</sup>. Although the rate of economic activity dropped to a low point of 76.7% in 2016, it recovered to the peak of 79.1% in 2018 (See Figure 11.8).

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<sup>10</sup> Economic activity data sourced from Annual Population Survey, published by ONS.



**Figure 11.8: Economic Activity Rate (16-64), 2010-2018**



**Source:** Office for National Statistics – Annual Population Survey

**11.4 ASSESSMENT OF LIKELY SIGNIFICANT EFFECTS**

**Construction**

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11.4.1 The socio-economic effects will apply largely during the construction phase of the solar park.

**Economy**

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11.4.2 Economic benefits will arise through the provision of temporary jobs during the construction phase at the site. Research published in 2014 by the Centre for Economic & Business Research (Cebr) on solar powered growth in the UK<sup>11</sup> highlighted analysis by the Solar Trade Association on the cost of solar energy. The analysis estimated that by 2016, the capital investment cost of building one megawatt of solar power for a large-scale development<sup>12</sup> would be around £800,000. Assuming ~~this~~the price is broadly similar in 2018, when applied to ~~the Proposed Development (both the development of approximately 150MW to 200MW of solar photovoltaics and the 50MW/90MW of battery storage)~~, this equates to a capital cost of ~~£160million at least £192 million~~.

11.4.3 In a design and access statement by TGC renewables associated with a planning application (15/00588/FUL) for a proposed 21MW solar farm on the land at Radbrook Pastures in Stratford-on-Avon<sup>13</sup>, it is noted that solar farms create opportunities for local businesses through the supply chain, including aggregates suppliers, security and monitoring during operation, farming and

<sup>11</sup> Solar powered growth in the UK – the macroeconomic benefits for the UK of investment in solar PV: Cebr (report for the Solar Trade Association), September 2014.

<sup>12</sup> Cebr’s report noted that large-scale arrays usually have a capacity of at least 1MW.

<sup>13</sup> Planning, Design & Access Statement – Proposed Solar Farm on Land at Radbrook Pastures: TGC Renewables, August 2018.

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landscaping contractors and other aspects of the construction process, such as fencing. The report goes on to quote a 2014 solar farm appeal decision: APP/K1128/A/13/2206258, which states that solar farms:

“Would provide some support for the construction industry and local contractors/suppliers could be engaged during the construction and eventual decommissioning stages. Some construction workers may also use some local services. Furthermore, the scheme would generate additional income for the landowners, enhancing farm incomes and possibly diversifying some farm businesses. This would accord with the Government’s objective of promoting a strong rural economy. In addition, the development would assist in increasing the security and diversity of electricity supply. These economic benefits are important considerations that can be given much weight” (Paragraph 17).

11.4.4 In the Construction and Traffic Management Plan associated with the Proposed Development in Scunthorpe<sup>14</sup>, Transport Planning Associates (TPA) state that there will be a maximum of 100 construction workers on-site during the peak times during the construction period, which ~~the plan states will~~ is expected to be six around 11 months. In the *solar powered growth in the UK* report, Cebr<sup>15</sup> give an employment multiplier for large-scale solar PV investments of 2.33 – i.e. for every job supported on-site, 1.33 indirect/induced jobs are supported in the wider economy. Applying this multiplier to the 100 on-site jobs, the Proposed Development could support 133 temporary jobs in the wider economy during the ~~six~~11-month build phase.

11.4.5 In total, the Proposed Development could support 233 temporary jobs, both direct jobs on-site and indirect/induced roles in the wider economy, during the ~~six~~11-month construction period.

Gross value added

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11.4.6 The contribution of the site to economic output has been calculated by taking the 100 on-site jobs associated with the scheme, and multiplying this by an estimate of average levels of gross value added (GVA) per construction employee in Yorkshire and The Humber. The estimated 133 indirect/induced jobs have been multiplied by the average GVA per job in the region overall. Adding these together, it is estimated that during the ~~six~~11-month construction of the Proposed Development, the GVA associated with the 233 temporary jobs supported on-site and in the wider economy during the ~~six~~11-month construction phase is around ~~£6.3million~~15.9million.

Significance of construction impacts

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11.4.7 The significance of the effect is assessed as follows:

- The sensitivity of the receptor (temporary employment in the economy) is assessed as being **low**, in line with the criteria set out in Table 11.1. As demonstrated in the baseline section (paragraph 11.3.10), the construction sector supports around 6,000 jobs in North Lincolnshire, meaning there should be a readily available market to meet the requirement of on-site construction jobs during the build phase.

<sup>14</sup> *Construction Traffic Management Plan: INGRINRG Solar (Little Crow) Ltd*: Transport Planning Associates, July 2018.

<sup>15</sup> *Solar powered growth in the UK – the macroeconomic benefits for the UK of investment in solar PV*: Cebr (report for the Solar Trade Association), September 2014.

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- The magnitude of the impact is assessed as **minor**, with the 233 jobs supported during the ~~six~~**11**-month construction phase increasing employment in North Lincolnshire by only 0.3%.
- The significance of the temporary effect is therefore considered to be **minor beneficial in the short-term** (not a significant impact in EIA terms).

**Operation**

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11.4.8 The main socio-economic effects of the operational phase can be placed into two categories – employment and gross value added.

**Employment**

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11.4.9 Details of permanent on-site jobs supported by the Proposed Development are still to be finalised. However, the numbers are not expected to be significant, and a maximum of 10 gross full-time equivalent (FTE) jobs has been used to inform this socio-economic chapter.

11.4.10 For consistency, to arrive at a net estimate for job creation, the same multiplier has been applied as the on-site construction jobs (~~12~~.33, as per the Cebr report). Applying this multiplier to the estimated 10 gross FTE jobs, it is estimated that the scheme will support around ~~1323~~ net additional FTE jobs in North Lincolnshire and the wider economy once it is built and fully operational.

**Gross value added**

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11.4.11 The contribution of the site to economic output has been calculated by taking the job creation associated with the scheme, and multiplying this by an estimate of average levels of GVA per employee in Yorkshire and The Humber. It is estimated that once operational and fully occupied, GVA associated with the direct, indirect and induced jobs will be around ~~£660,000~~**1.2million** per annum.

11.4.12 Looking at the economic output contribution over a longer timeframe, over a ten-year period the additional GVA associated with the permanent jobs supported on-site is estimated to be ~~£5.7million~~**10.2million** (present value)<sup>16</sup>.

**Other Benefits**

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11.4.13 Using data on regional and local authority electricity consumption published by the Department for Business, Energy and Industrial Strategy<sup>17</sup>, it has been possible to calculate the site-specific capacity for solar parks. For the Proposed Development in North Lincolnshire, 150MW of solar park capacity is estimated to power around 40,200 UK homes per annum. It is also estimated that the scheme could offset 62,200 tonnes of CO<sub>2</sub> per annum, or 1.6million tonnes over the next 25 years. This is even before any potential impacts of the battery storage element of the Proposed Development are taken into account.

<sup>16</sup> Where future benefits are calculated over a 10-year timeframe, they have been discounted to produce a present value. This is the discounted value of a stream of either future costs or benefits. A standard discount rate is used to convert all costs and benefits to present values. Using the Treasury's Green Book, the recommended discount rate is 3.5%.

<sup>17</sup> *Regional and local authority electricity consumption statistics*: Department for Business, Energy and Industrial Strategy, January 2018.

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11.4.14 A design and access statement produced as part of a planning application for a solar farm in Stratford-upon-Avon<sup>18</sup> lists a number of wider economic benefits associated with solar power. These are as follows:

- Additional investment of £40billion is expected in renewable energy generation projects up to 2020, boosting energy security, reducing reliance on imported fossil fuels and supporting up to 200,000 jobs by 2020.
- TGC present data published by the Centre for Economic and Business Research (Cebr) that states, by 2030 British Solar could provide 60GW of power, supplying 18 million homes and supporting an average of 49,900 jobs per annum – nearly twice as many jobs as new nuclear and more than twice as many as on-shore wind, per unit of energy generated. The research found that, with bold government backing, by 2030, solar farms could contribute £25.5billion to the UK economy and put £425million back into consumers’ pockets through reduced energy costs.

Significance of operational impacts

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11.4.15 The significance of the effect has been assessed as follows:

- The creation of direct, indirect and induced employment is a **permanent beneficial effect** on North Lincolnshire’s economy and labour supply receptor.
- The sensitivity of the receptor (employment at the solar park & within the wider economy) is assessed as being **medium**, in line with the criteria set out in Table 11.1. The Proposed Development will create new jobs in the local economy, which is important given employment in North Lincolnshire has remained flat in recent years.
- The magnitude of the impact is assessed as **moderate**, in line with the criteria in Table 11.2, due to the large level of investment associated with the Proposed Development (~~£160million~~192million), along with the small increase in permanent employment the scheme will create and the annual contribution it will make to economic output.
- The significance of the permanent effect is therefore considered to be a **long-term moderate positive impact**, which is significant in EIA terms.

**11.5 MITIGATION, ENHANCEMENT AND RESIDUAL EFFECTS**

**Mitigation by Design**

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11.5.1 There are no identified negative effects associated with the Proposed Development. When the Proposed Development is considered in isolation it may generate a small number of additional commuting flows although this is considered to be outweighed by the other positive effects that the Proposed Development would have on the economy.

<sup>18</sup> *Planning, Design & Access Statement – Proposed Solar Farm on Land at Radbrook Pastures: TGC Renewables, August 2018.*

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**Additional Mitigation**

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11.5.2 Due to the beneficial impacts identified in this assessment, no specific mitigation measures have been identified. The specific operational requirements of the Proposed Development have been carefully considered to ensure the proposed design provides the best and most efficient layout required, resulting in the socio-economic benefits that have been identified.

**Enhancements**

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11.5.3 Without mitigation being proposed, there will be no enhancements arising from such mitigation.

**Residual Effects**

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11.5.4 Given no specific mitigation measures are required, the 'residual' effects remain as those identified in the above section.

**11.6 CUMULATIVE AND IN-COMBINATION EFFECTS**

11.6.1 There are no other proposed developments in close proximity to the site, meaning there are no cumulative effects to consider.

**11.7 SUMMARY**

**Introduction**

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11.7.1 This chapter has assessed the socio-economic impacts arising from ~~the Proposed Development of a new 150-MW solar park, with 50-MW development over 50MWp and 90MW~~ of battery storage, in Santon, North Lincolnshire.

**Baseline Conditions**

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11.7.2 North Lincolnshire has an older population when compared with the regional and national picture, while jobs growth has been flat over the last five years. Wages are also below the UK average, but higher than Yorkshire and The Humber as a whole. North Lincolnshire is also faced with the issue of having a net outflow of commuters who work in other parts of the region. The flat labour market and net out-commuters would suggest that more developments that create new employment opportunities are needed to support growth in the District.

**Likely Significant Effects**

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11.7.3 In respect of the construction phase, the assessment indicates that the Proposed Development will have the following temporary effects:

- **233** direct and indirect/induced construction jobs and indirect/induced supply chain jobs over the ~~six~~**11**-month construction programme.
- ~~£6.3million~~**£15.9million** of gross value added over the ~~six~~**11**-month construction programme.
- ~~£160million~~**At least £192million** of direct capital investment during the ~~six~~**11**-month construction programme.

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11.7.4 In EIA terms, these impacts are considered to have a minor beneficial effect in the short-term.

11.7.5 In respect of the operational phase, the assessment suggests that the Proposed Development will have the following permanent effects:

- ~~1323~~ net additional jobs in the North Lincolnshire economy.
- ~~£660,000~~**£1.2million** of gross value added per annum in the North Lincolnshire economy or ~~£5.7million~~**£10.2million** over ten years (present value).

11.7.6 The significance of the permanent effect is therefore considered to be a long-term moderate positive impact.

**Mitigation and Enhancement**

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11.7.7 There are no identified negative effects associated with the Proposed Development. When the Proposed Development is considered in isolation it may generate a small number of additional commuting flows although this is considered to be outweighed by the other positive effects that the Proposed Development would have on the economy.

**Conclusion**

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11.7.8 Overall the Proposed Development is considered to provide significant positive effects.

11.7.9 Table 11.67 provides a summary of effects, mitigation and residual effects.

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**Table 11.6Z: Summary of Effects, Mitigation and Residual Effects.**

Receptor / Receiving Environment	Description of Effect	Nature of Effect	Sensitivity Value	Magnitude of Effect	Geographical Importance	Significance of Effects	Mitigation / Enhancement Measures	Residual Effects
<b>Construction</b>								
Construction jobs	Increase in employment in the construction sector	Temporary	Low	Minor	District	Minor beneficial	N/A	Minor beneficial
<b>Operation</b>								
Direct employment	Increase in local employment	Permanent	Medium	Moderate	District	Moderate beneficial	N/A	Moderate beneficial
<b>Cumulative and In-combination</b>								
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

