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16.0 Socio-economics

16.1 Introduction

16.1.1 This chapter of the Preliminary Environmental Information (PEI) Report addresses the potential effects of the construction, operation (including maintenance) and decommissioning of the Proposed Development on employment, local businesses and the local population.

16.1.2 The assessment considers:

- the present-day and future baseline socio-economic conditions during construction and at opening of the Proposed Development
- the potential effects of the Proposed Development on employment, local businesses and the local population, informed by Chapters 8-18 (PEI Report Volume I) and where appropriate, their supporting Appendices (PEI Report Volume II); and
- the potential effects of the eventual decommissioning of the Proposed Development.

16.1.3 The cumulative effects associated with the Proposed Development and other committed developments in the vicinity on socio-economics are described in **Chapter 19: Cumulative and Combined Effects** (PEI Report Volume I).

16.1.4 This chapter is supported by **Appendix 16A: Human Health Signposting** (PEI Report Volume II).

16.2 Legislation, planning policy and guidance

16.2.1 A full overview of the legislative and policy context that is relevant to the Proposed Development is provided within **Chapter 7: Legislative Context and Planning Policy** (PEI Report Volume I).

16.2.2 A summary of the legislation and planning policy of most relevance to socio-economics is provided in this section.

[National Energy Policy](#)

National Policy Statements for energy infrastructure (2011)

16.2.3 The National Policy Statements (NPSs) for energy infrastructure set out the Government's policy for delivery of major energy infrastructure.

16.2.4 The National Policy Statement for Energy (NPS EN-1) identifies that 'information on the likely significant social and economic effects of the development' should be set out alongside 'how any likely significant negative effects would be avoided or mitigated'. Impacts should be assessed at local or regional levels and cumulative effects should also be considered. NPS EN-1 requires the decision maker to take into account of the proposed developments 'potential benefits including its contribution to meeting the need for energy infrastructure, job creation and any long-term or wider benefits'. (paragraph 4.1.3)

- 16.2.5 Paragraph 5.12.2 states ‘Where the project is likely to have socio-economic impacts at local or regional levels, the applicant should undertake and include in their application an assessment of these impacts as part of the ES’.
- 16.2.6 Paragraph 5.12.3 states: “This assessment should consider all relevant socio-economic impacts, which may include:
- The creation of jobs and training opportunities;
 - The provision of additional local services and improvements to local infrastructure, including the provision of educational and visitor facilities;
 - Effects on tourism;
 - The impact of a changing influx of workers during the different construction, operation and decommissioning phases of the energy infrastructure. This could change the local population dynamics and could alter the demand for services and facilities in the settlements nearest to the construction work (including community facilities and physical infrastructure such as energy, water, transport and waste). There could also be effects on social cohesion depending on how populations and service provision change as a result of the development; and
 - Cumulative effects – if development consent were to be granted to for a number of projects within a region and these were developed in a similar timeframe; there could be some short-term negative effects, for example a potential shortage of construction workers to meet the needs of other industries and major projects within the region.”
- 16.2.7 Paragraph 5.12.4 states that ‘Applicants should describe the existing socio-economic conditions in the areas surrounding the proposed development and should also refer to how the development’s socio-economic impacts correlate with local planning policies’.
- 16.2.8 Paragraph 5.12.5 states that ‘Socio-economic impacts may be linked to other impacts, for example the visual impact of a development is considered in Section 5.9 but may also have an impact on tourism and local businesses.’

National Planning Policy

Marine and Coastal Access Act (2009)

- 16.2.9 The Marine and Coastal Access Act (‘MCAA’) (Marine Management Organisation, 2009) is the basis upon which the Marine Management Organisation (MMO) determine marine licensing determinations.
- 16.2.10 As the Proposed Development will require some limited working within the UK Marine Area (Section 42, MCAA), a Marine Licence will be sought from the MMO. Whether this is ‘Deemed’ within the DCO (currently the preferred option) or ‘standalone’, in reaching a determination, the MMO must consider several factors associated with marine works, including their potential to interfere with legitimate uses of the sea (Section 69, MCAA).
- 16.2.11 The MCAA sets out the legislative framework for the application of Marine Plans to relevant planning decisions in the UK Marine Area. Specifically, decisions affected by marine policy documents include ‘the determination of any application [...] for

authorisation of the doing of any act which affects or might affect the whole or any part of the UK marine area' (Section 58, MCAA).

16.2.12 As the Proposed Development includes works within part of the UK marine area (i.e. the Tidal River Trent), marine policy documents are relevant to the determination process for the project. In this instance, as prescribed by the MCAA, the published Eastern Marine Plan is the appropriate marine policy documents.

Eastern Marine Plan (2014)

16.2.13 Following preparation of and consultation on the draft East Inshore and East Offshore Plan Plans, the Eastern Marine Plan (EMP) was announced in April 2014. The East Inshore Marine Plan Area includes an area of sea from Flamborough Head to Felixstowe; this encompasses the Proposed Development Site alongside the (tidal) River Trent. The EMP covers two discrete areas – the East Inshore and East Offshore – however the adopted plan policies are designed to be implemented under a single approach spanning both areas.

16.2.14 The EMP introduces a strategic approach to planning and aims to provide an evidence-based approach to inform decision making by marine users and regulators. As part of the development of the EMP, 11 objectives were defined, which include:

- **Objective 1:** To promote the sustainable development of economically productive activities, taking account of spatial requirements of other activities of importance to the East marine plan;
- **Objective 2:** To support activities that create employment at all skill levels, taking account of the spatial and other requirements of activities in the East marine plan areas;
- **Objective 3:** To realise sustainably the potential of renewable energy [...] helping to achieve the United Kingdom's energy security and carbon reduction objectives; and
- **Objective 9:** To facilitate action on climate change adaptation and mitigation in the East marine plan areas.

16.2.15 Chapter 3 of the EMP details the Plan Polices for the Eastern Inshore Area; plan policies include:

- **Policy EC2:** Proposals that provide additional employment benefits should be supported, particularly where these benefits have the potential to meet employment needs in localities close to the marine plan areas;
- **Policy CC1:** Proposals should take account of [...] how they may be impacted upon by, and respond to, climate change over their lifetime and how they may impact upon any climate change adaptation measures elsewhere during their lifetime [and] where detrimental impacts on climate change adaptation measures are identified, evidence should be provided as to how the proposal will reduce such impacts; and
- **Policy CC2:** Proposals for development should minimise emissions of greenhouse gases as far as is appropriate. Mitigation measures will also be encouraged where emissions remain following minimising steps. Consideration

should also be given to emissions from other activities or users affected by the proposal.

National Planning Policy Framework (2019)

- 16.2.16 The National Planning Policy Framework (NPPF) (Ministry of Housing, Communities and Local Government, 2019) requires local authorities to set out a clear economic vision and strategy for their area which encourages sustainable economic growth. It states that planning policies should help create the conditions in which businesses can invest, expand and adapt.
- 16.2.17 Paragraph 8 of the NPPF states that to achieve sustainable development and support a competitive economy, the following economic objective should be delivered: *“ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure.”*
- 16.2.18 The NPPF states that: *“Significant weight should be placed on the need to support economic growth and productivity, taking into account both local business needs and wider opportunities for development.”* (paragraph 80)
- 16.2.19 The NPPF indicates that this approach will allow areas to build on their strengths especially in areas of high productivity. Paragraph 82 of the NPPF states that planning policies should *“recognise and address the specific locational requirements of different sectors. This includes making provision for clusters or networks of knowledge and data-driven, creative or high technology industries; and for storage and distribution operations at a variety of scales and in suitably accessible locations.”*
- 16.2.20 Paragraph 148 of the NPPF states that *“the planning system should support the transition to a low carbon future in a changing climate... and support renewable and low carbon energy and associated infrastructure.”*

The UK's Draft Integrated National Energy and Climate Plan (2019)

- 16.2.21 In 2019, the UK Government set out the dimensions of the country's 'Energy Union', establishing direction of energy policy for the country. The five dimensions of the National Energy and Climate Plan (NECP) are:
- decarbonisation;
 - energy efficiency;
 - energy security;
 - internal energy market; and
 - research, innovation and competitiveness.

[Regional Planning Policy](#)

Lincolnshire Strategic Economic Plan

- 16.2.22 Low carbon power generation is addressed in the Lincolnshire Strategic Economic Plan (LSEP). The focus of the energy part of the LSEP focuses on the off-shore wind

power of the Humber Estuary, but low carbon generation like CCGT technology can benefit from building a local low-carbon skillset.

Humber Local Energy Strategy

16.2.23 The Proposed Development falls in both the Lincolnshire LEP and Humber LEP areas. The Humber LEP places a large focus on its low carbon sector around the Humber Estuary. The role of carbon capture and storage is recognised in the Local Energy Strategy, including its potential to help the Humber's potential decarbonisation of regional industry.

Local Development Plan Policy

16.2.24 The Proposed Development Site lies entirely within the administrative area of NLC. The statutory development plan for the area currently comprises the following documents:

- North Lincolnshire Local Development Framework Core Strategy (NLC, 2011) - adopted June 2011;
- North Lincolnshire Local Development Framework Housing and Employment Land Allocations (NLC, 2016) - adopted March 2016; and
- Saved Policies of the North Lincolnshire Local Plan (Local Development Frameworks Government Office for Yorkshire and The Humber, 2007) - adopted May 2003, saved September 2007.

North Lincolnshire Local Development Framework

16.2.25 The North Lincolnshire Local Development Framework (NLLDF) is a folder of documents covering all the local planning authority's local development documents. A key element is the Core Strategy which sets out the long-term vision for North Lincolnshire and provides a blueprint for managing growth and development in the area up to 2026.

16.2.26 The Core Strategy recognises North Lincolnshire's position as a 'renewable energy capital' due to its leading role in the sector. The role of carbon capture in the area is recognised: "The emerging technology of carbon capture and storage - pumping CO₂ from heavy industry and power generation to disused gas wells under the southern North Sea, will also be important, particularly given the presence of the steel, power generation and petrochemicals industries within and adjacent to the area." (paragraph 1.6)

16.2.27 The implementation of carbon capture and storage at Keadby Power Station is not referenced but the Core Strategy does recognise the technology's potential in North Lincolnshire.

Other Guidance

Planning for Renewable Energy Development Supplementary Planning Document (SPD), North Lincolnshire Council (November 2011)

16.2.28 The SPD was created to reflect North Lincolnshire's leading role in energy creation in the UK, with the area producing around 7% of the country's electricity requirement.

The SPD does not include plans for a development at the Keadby Power Station site but does reflect the need for renewable energy developments in North Lincolnshire.

16.2.29 Whilst there is no dedicated UK legislation that details the content required for a socio-economic assessment as part of an Environmental Impact Assessment (EIA), the socio-economic assessment presented in this Chapter is based upon a range of relevant guidance. This includes:

- Research to Improve the Assessment of Additionality (Department for Business, Innovation and Skills, 2009);
- The Green Book: Central Government Guidance on Appraisal and Evaluation (HM Treasury, 2018); and
- The Magenta Book: Guidance for evaluation (HM Treasury, 2011); and
- Additionality Guide (Fourth Edition) (Homes and Communities Agency, 2014).

16.3 Assessment methodology and significance criteria

16.3.1 This assessment considers the role of the Proposed Development in the generation of direct and indirect employment opportunities at the local and regional level.

Consultation

16.3.2 A full summary of comments raised via the formal Scoping Opinion and responses is available within **Appendix 1C: Matters Addressed in Scoping Opinion** (PEI Report Volume II). A summary of comments raised of relevance to this chapter is attached below in Table 16.1.

Table 16.1 Summary of Responses in relation to Socio-economics

Consultee	Topic	Summary of Scoping Opinion Comment	How comments have been addressed in this Chapter
Planning Inspectorate	Study area	The study area should be described and justified within the ES.	The extent of the study area has been defined and justified within this Chapter of the PEI Report.
Planning Inspectorate	Guidance	The ES should include a reference to the formal reference list and guidance documents used to inform the assessment.	This Chapter of the PEI Report details legislation, planning policy and guidance used to inform the assessment, and also provides a formal reference list.
Planning Inspectorate	Inequalities	The ES should consider how the development might impact local inequality,	Consideration has been given as to how the development might impact local inequality, including health inequality

Consultee	Topic	Summary of Scoping Opinion Comment	How comments have been addressed in this Chapter
		including health inequality.	within Appendix 16A: Population and Health Signposting (PEI Report Volume II).
Planning Inspectorate	Impacts	The ES should assess any likely significant effects associated with the influx of workers during the construction stage (e.g. increased demand on local services such as housing, healthcare, recreational/open space).	This Chapter assess the likely significant influx of workers during the construction stage, and subsequent reductions during the operational stage.
Planning Inspectorate	Assessment methodology	The Inspectorate expects the figures and calculations used to generate an assessment of employment opportunities to be clearly stated within the ES, together with adequate justification for their use in the methodology section. The ES should clearly describe the methodology used to assess loss of private land in the ES. The ES should clearly state the assessment criteria which the effects are to be assessed against, and clearly state the value of receptors identified.	This Chapter clearly outlines the figures and calculations used to assess employment opportunities.
Planning Inspectorate	Althorpe Parish Council	The Parish Council has questioned how socio-economic effects of the expansion of the Keadby site and the associated health risks will be mitigated.	Mitigation measures to reduce potential adverse socio-economic effects on local communities are outlined in this Chapter.

Extent of Study Area

- 16.3.3 Office for National Statistics (ONS) statistical geographies have been used to define the Study Area for the socio-economic assessment as described below. The direct impact area has been taken to be Local Super Output Areas (LSOAs) that the Proposed Development Site is within. There are 34,753 LSOAs across England and Wales with a minimum population of 1,000 and a maximum population of 3,000.
- 16.3.4 As well as understanding the socio-economic conditions surrounding the Proposed Development Site (as per the LSOA analysis), the socio-economic assessment also takes into account the principal labour market catchment area, or the Travel to Work Area (TTWA). TTWA contain at least 75% of the area's workforce that both live and work in the area. TTWA have populations of at least 3,500 people. The Proposed Development Site falls within the Scunthorpe TTWA.
- 16.3.5 The Proposed Development Site falls within the North Lincolnshire Council Local Authority areas. The LSOA that the Site lies within is North Lincolnshire 006C (E01013247).

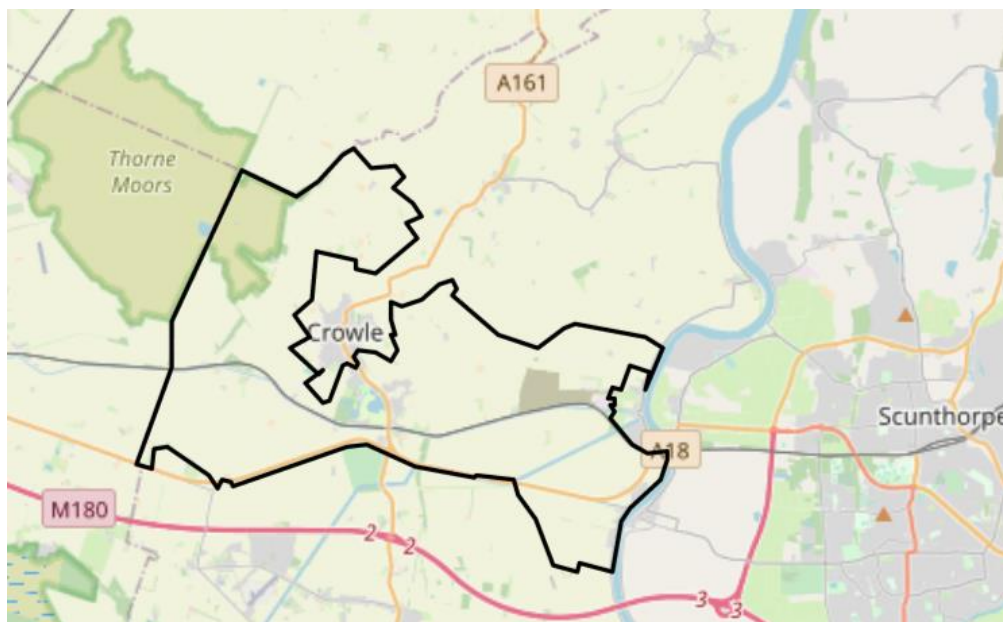


Figure 16.1: Map of Direct Impact Area (LSOA North Lincolnshire 006C – E01013247)

- 16.3.6 The Proposed Development Site falls within the Scunthorpe TTWA which has been used as the wider impact area for the Proposed Development.

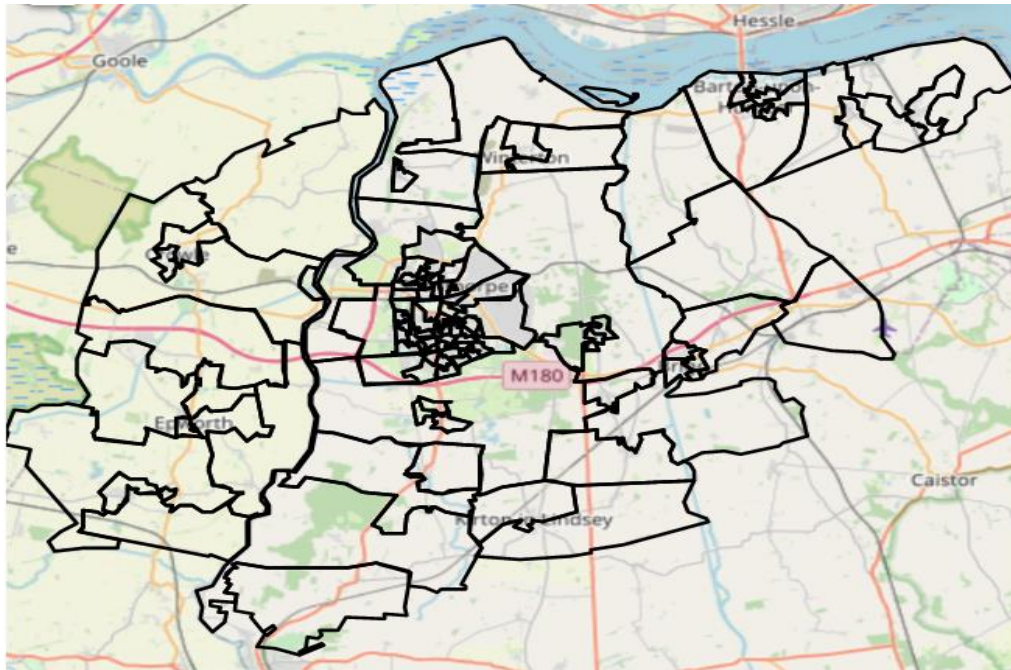


Figure 16.2: Map of LSOAs in Scunthorpe TTWA

16.3.7 Section 16.4 (**Error! Reference source not found.s**) summarises the receptors that will be affected during construction, operation (including maintenance) and decommissioning of the Proposed Development.

Assessment Methods

16.3.8 Where possible, socio-economic impacts have been appraised against relevant national standards, such as those provided by HM Treasury, the Department for Business, Energy and Industrial Strategy, and Homes England. Where relevant standards do not exist, professional experience and expert judgement have been applied.

16.3.9 The following ONS datasets have been reviewed to inform the assessment:

- Business Register and Employment Survey (BRES) (2018); Jobseeker’s
- Allowance by Occupation (2019); Census of Population (2011); and
- Population Projections (2016).

16.3.10 15.3.9 Where possible, socio-economic impacts have been appraised against relevant national standards, such as those provided by HM Treasury, the Department for Business, Innovation and Skills (now Department for Business, Energy and Industrial Strategy), and Homes and Communities Agency (now Homes England). Where relevant standards do not exist, professional experience and expert judgement have been applied.

16.3.11 The socio-economic assessment determines the:

- sensitivity of receptors;
- magnitude of impacts; and

- the consequent significance of effects.

Assessment of Value (Sensitivity)

16.3.12 The sensitivity of socio-economic receptors is assessed as high, medium, low or very low. The socio-economic receptors include those who will potentially benefit from employment generation (either directly, indirectly or induced (secondary impacts, for example due to construction workers spending money at local businesses)). The sensitivity of these receptors is considered to be high due to the availability of labour and skills in the local area required for the Proposed Development based on the criteria and definitions presented in Table 16.2.

Table 16.2: Criteria for assessing socio-economic receptor sensitivity

Level of Sensitivity	Description
High	There are limited/no comparable and accessible alternatives that exist within the relevant catchment area; and/or receptors have limited ability to absorb the change; and/or receptors are generally travelling from greater distances (nationally) to use the facility; and/or there are higher numbers utilising the facility; and/or identified as a high priority in published policy and strategy.
Medium	There are limited comparable and accessible alternatives within the relevant catchment area; and/or receptors have limited ability to absorb the change; and/or receptors are generally travelling from relatively far distances (regionally) to use the facility; and/or there are moderate numbers utilising the facility; and/or identified at a sub-regional and/or local level as policy/strategy priorities.
Low	Receptors are able to relatively easily absorb the change; and/or there are some comparable and accessible alternatives that exist within the relevant catchment area; and/or receptors are mainly travelling from nearby (local/within the study area) to use the facility; and/or there are low numbers utilising the facility; and/or referenced in policy and strategy but do not accord a high priority.
Very Low	Receptors are able to relatively easily absorb the change; and/or there are many comparable and accessible alternatives that exist within the relevant catchment area; and/or receptors are travelling from nearby (local/within the study area) to use the facility; and/or there are low numbers utilising the facility.

Magnitude of Impacts

16.3.13 The magnitude of the impacts of the Proposed Development is assessed as being high, medium, low, or very low as shown in Table 16.3. This is determined by:

- extent of change – the absolute number of people affected and the size of area in which effects will be experienced (i.e. the level of change to baseline conditions including the proportion of the existing workforce); and
- scale of the impact – more weight is given to permanent changes than to short-term, temporary ones, where temporary and short-term impacts are considered to be those associated with the construction works (up to four years), and medium to long-term impacts are those associated with the operation of the Proposed Development (estimated at 25 years).

Table 16.3: Criteria for Assessing Impact Magnitude

Magnitude	Description
High	A major adverse/ beneficial impact on employment creation or the well-being of receptors and/ or constitutes a long-term change to baseline conditions (i.e. it would be likely to continue and effectively be permanent and irreversible).
Medium	A moderate adverse/ beneficial impact on employment creation or the well-being of receptors and/ or constitutes a medium-term change to baseline conditions.
Low	A minor adverse/ beneficial impact on employment creation or the well-being of receptors constitutes a short-term change to baseline conditions.
Very Low	A slight or no adverse/ beneficial impact on employment creation and/ or constitutes a very short-term/ temporary change to baseline conditions.

Classification of Effects

16.3.14 The scale, permanence and significance of identified effects has been assessed relative to the baseline scenario. The assessment covers relevant direct, indirect and induced impacts of the construction, operation and decommissioning of the Proposed Development.

16.3.15 The effects of the Proposed Development are defined as either:

- beneficial – an advantageous or beneficial effect on an impact area;
- negligible – an imperceptible effect on an impact area; or
- adverse – a disadvantageous or negative effect on an impact area.

Table 16.4: Classification of Effects on Socio-Economics

Magnitude of Impact	Sensitivity/importance 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

16.3.16 Where an effect is assessed as being beneficial or adverse, the effect has been classified as minor, moderate, major or negligible. The assessment of significance is informed by the sensitivity of the receptor and the magnitude of impact as set out in Table 16.3. For the purposes of this assessment, ‘significant’ effects are those identified as being moderate or major (adverse or beneficial). Effects identified as being negligible or minor are ‘not significant.’

Use of The Rochdale Envelope

16.3.17 In order to ensure a robust assessment of the likely significance of the environmental effects of the Proposed Development, the EIA is being undertaken adopting the principles of the ‘Rochdale Envelope’ approach in line with The Planning Inspectorate’s Advice Note 9 (The Planning Inspectorate, 2018). This involves assessing the maximum (or where relevant, minimum) parameters for the elements where flexibility needs to be retained (building dimensions or operational modes for example).

16.3.18 The Rochdale Envelope (i.e. the maximum or relevant minimum parameters for the Proposed Development and in particular its main buildings and structures) does not affect this assessment because technological changes in the design of the Proposed Development and variations in building size or layout within the defined parameters set out in **Chapter 4: The Proposed Development** (PEI Report Volume I) are not likely to change socio-economic impacts. At this early stage, based on the scale of parameters that have been assessed, it is expected that minor design changes and project developments will not greatly affect the number or type of jobs and benefits generated by the Proposed Development. Notwithstanding, as the design of the Proposed Development toward the DCO submission, the socio-economic assessment in the Environmental Statement will be updated, as required.

16.4 Baseline conditions

16.4.1 This assessment outlines the socio-economic context of the TTWA and makes comparisons to the whole of England. Key indicators include population and labour force; skills and unemployment; industry and the economy.

16.4.2 This section outlines the socio-economic baseline conditions in the Direct Impact Area, Wider Impact Area and England. The Direct Impact Areas comprises of LSOA

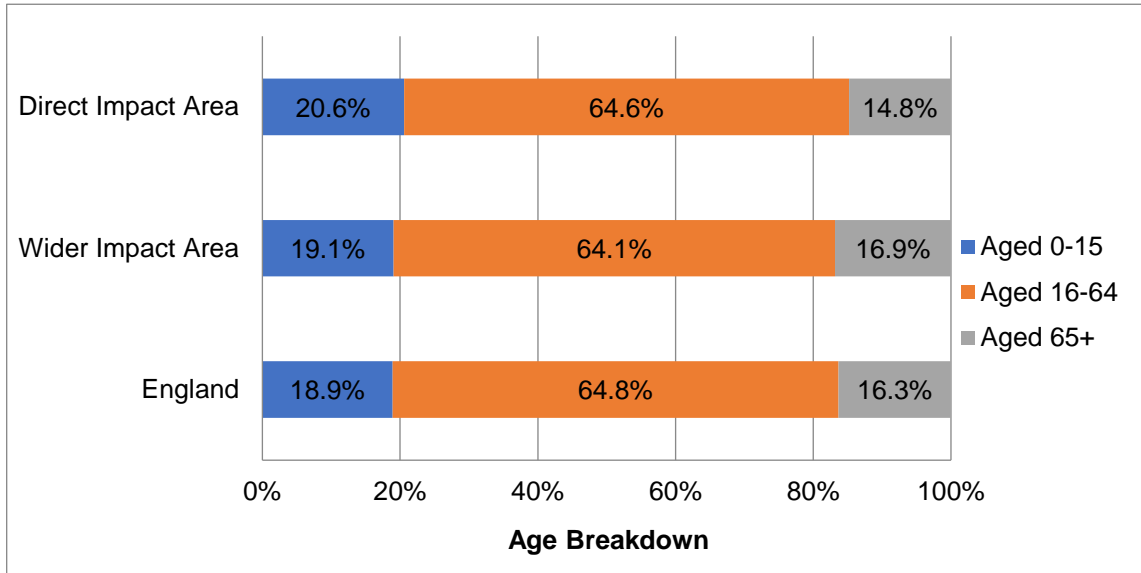
that the Proposed Development Site falls into. The Wider Impact Area is comprised of the TTWA the Proposed Development Site is located in (Scunthorpe TTWA).

- 16.4.3 The local population and labour market in the Wider Impact Area are the main receptors in the assessment for employment effects. The baseline conditions help to determine the impact of employment generated by the Proposed Development, and the impact of the Proposed Development on tourism, amenity and other local businesses. The impact is mostly influenced by the size of the labour market and whether it has the relevant skills, occupations and sector strengths to access employment opportunities.

Demographic Profile

- 16.4.4 The 2011 Census data shows that the Direct Impact Area had a population of 1,756, while the wider impact area had a population of 168,721(ONS, 2011). **Error! Not a valid bookmark self-reference.** shows that the Direct Impact Area had a slightly smaller proportion of young people (17.5% aged 0 to 15) than the Wider Impact Area (18.7%) and England (18.9%). The Direct Impact Area had a slightly higher proportion of working age population (66.5% aged 16 to 64) compared to the Wider Impact Area (63.3%) England (64.8%). The Direct Impact Area had a lower proportion of older residents (16.0% aged 65+) than the Wider Impact Area (17.9%) but comparable proportion to England (16.4%).

Plate 16.1: Age Breakdown of Population



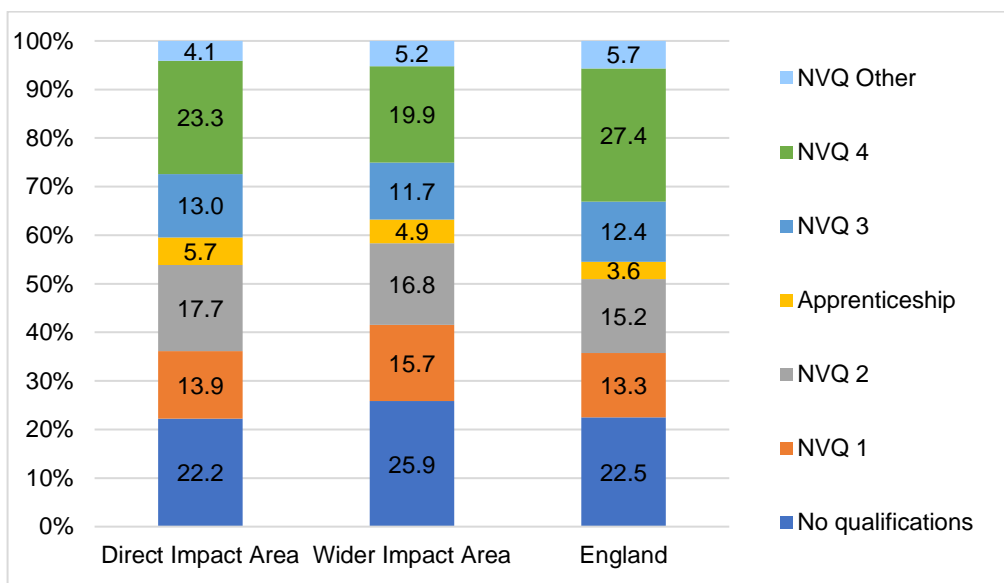
Source: Census 2011, ONS

Skills

- 16.4.5 Qualifications levels differ noticeably between each of the geographies (see Plate 2). In the Direct Impact Area, 13.9% of residents were qualified to NVQ 1, this is lower than both the Wider Impact Area (15.7%) but comparable to England (13.3%).
- 16.4.6 Just under a quarter (22.2%) of residents in the Direct Impact Area had no qualifications. This is slightly lower than the Wider Impact Area (25.9%) but

comparable to England (22.5%). Similarly, there is a slightly higher level of those residents qualified to NVQ 2 in the Direct Impact Area (17.7%) compared to the Wider Impact Area (16.8%) and England (15.2%). The proportion with NVQ 4 qualifications is 19.9% in the Wider Impact Area, rising to 23.3% in the Direct Impact Area, compared to 27.4% in England.

Plate 16.2: Qualification levels



Source: Census 2011, ONS

Employment

16.4.7 Table 16.5 shows that the largest employment sector in the Direct Impact Area is Wholesale and retail trade, is (in line with all three of the geographical areas), but it is slightly lower in the Direct Impact Area (16.3%) than the Wider Impact Area (16.7%). Other key employment sectors include manufacturing ((13.5%) compared to of (19.3%) the Wider Impact Area and (8.8%) in England; and. construction (10.7%) compared to (8.0%) in the Wider Impact Area and (7.7%) in England.

16.4.8 'Agriculture, forestry and fishing' is a larger employment sector in the Direct Impact Area (3.9%) than both the Wider Impact Area (1.6%) and England (0.8%). Although the proportion of the population employed in service-based industries in the Direct Impact Area is lower than England, it is comparable to the Wider Impact Area. This is evident in the 'Financial and insurance activities' sector which employs 2.2% of the Direct Impact Area and 1.9% of the Wider Impact Area. There are fewer people employed in serviced-based sectors in the Direct Impact Area than in England. This is shown in the 'Information and communication' sector that employs 1.0% of people in the Direct Impact Area compared to 4.1% in England.

Table 16.5: Employment by Sector

Sectors	Direct Impact Area	Wider Impact Area	England
Agriculture, forestry and fishing	3.9	1.6	0.8%
Mining and quarrying	0.1	0.3	0.2%
Manufacturing	13.5	19.3	8.8%
Electricity, gas, steam and air conditioning supply	0.3	0.7	0.6%
Water supply; sewerage, waste management and remediation activities	0.6	0.8	0.7%
Construction	10.7	8.0	7.7%
Wholesale and retail trade; repair of motor vehicles and motorcycles	16.3	16.7	15.9%
Transport and storage	7.5	6.2	5.0%
Accommodation and food service activities	4.2	5.0	5.6%
Information and communication	1.0	1.2	4.1%
Financial and insurance activities	2.2	1.9	4.4%
Real estate activities	1.2	1.0	1.5%
Professional, scientific and technical activities	4.0	3.4	6.7%
Administrative and support service activities	3.8	3.9	4.9%
Public administration and defence; compulsory social security	6.1	5.0	5.9%
Education	9.4	8.6	9.9%
Human health and social work activities	11.7	12.8	12.4%
Other	3.3	3.7	5.0%

Source: Census 2011, ONS

Economic Activity

16.4.9 As shown in Table 16.6, slightly more residents are economically active in the Direct Impact Area (71.4%) than both the Wider Impact Area (69.2%) and England (69.9%) (948 people). There is a comparable proportion of the Direct Impact Area (40.1%) that are in full-time employment than in the Wider Impact Area (39.5%) and England (38.6%). 11.4% of the Direct Impact Area were Self-employed, this is higher than both the Wider Impact Area (7.3%) and England (9.8%).

16.4.10 The level of unemployment in the Direct Impact Area (3.5%) is slightly lower than both the Wider Impact Area (4.7%) and England (4.4%).

Table 16.6: Economic Activity

	Direct Impact Area		Wider Impact Area		England	
	Number	%	Number	%	Number	%
In employment	862	64.9	76,518	62.1	24,143,464	62.1
<i>Employee: Part-time</i>	178	13.4	18,933	15.4	5,333,268	13.7
<i>Employee: Full-time</i>	533	40.1	48,614	39.5	15,016,564	38.6
<i>Self-employed</i>	151	11.4	8,971	7.3	3,793,632	9.8
Economically active: Unemployed	47	3.5	5,843	4.7	1,702,847	4.4
Economically active: Full-time student	39	2.9	2,921	2.4	1,336,823	3.4
Total	948	71.4	85,282	69.2	27,183,134	69.9

Source: Census 2011, ONS

16.4.11 Table 16.7 shows the economic inactivity rates for all of the three chosen geographies. There is a lower proportion of those in the Direct Impact Area (28.6%) that are economically inactive than the Wider Impact Area (30.8%) and England (30.1%). Retirees make up the largest proportion of those economically inactive in all three areas. In the Direct Impact Area, 16.6% are retired, this is comparable to the Wider Impact Area (16.7%) but higher than England whose proportion of those retired is 13.7. Table 16.7 breaks down the economic activity for each of the areas.

Table 16.7: Economic Inactivity

	Direct Impact Area		Wider Impact Area		England	
	Number	%	Number	%	Number	%
Retired	221	16.6	20,541	16.7	5,320,691	13.7
Student (including full-time students)	42	3.2	4,574	3.7	2,255,831	5.8
Looking after home or family	46	3.5	5,444	4.4	1,695,134	4.4
Long-term sick or disabled	57	4.3	5,157	4.2	1,574,134	4.0
Other	14	1.1	2,174	1.8	852,450	2.2
Total	380	28.6	37,890	30.8	11,698,240	30.1

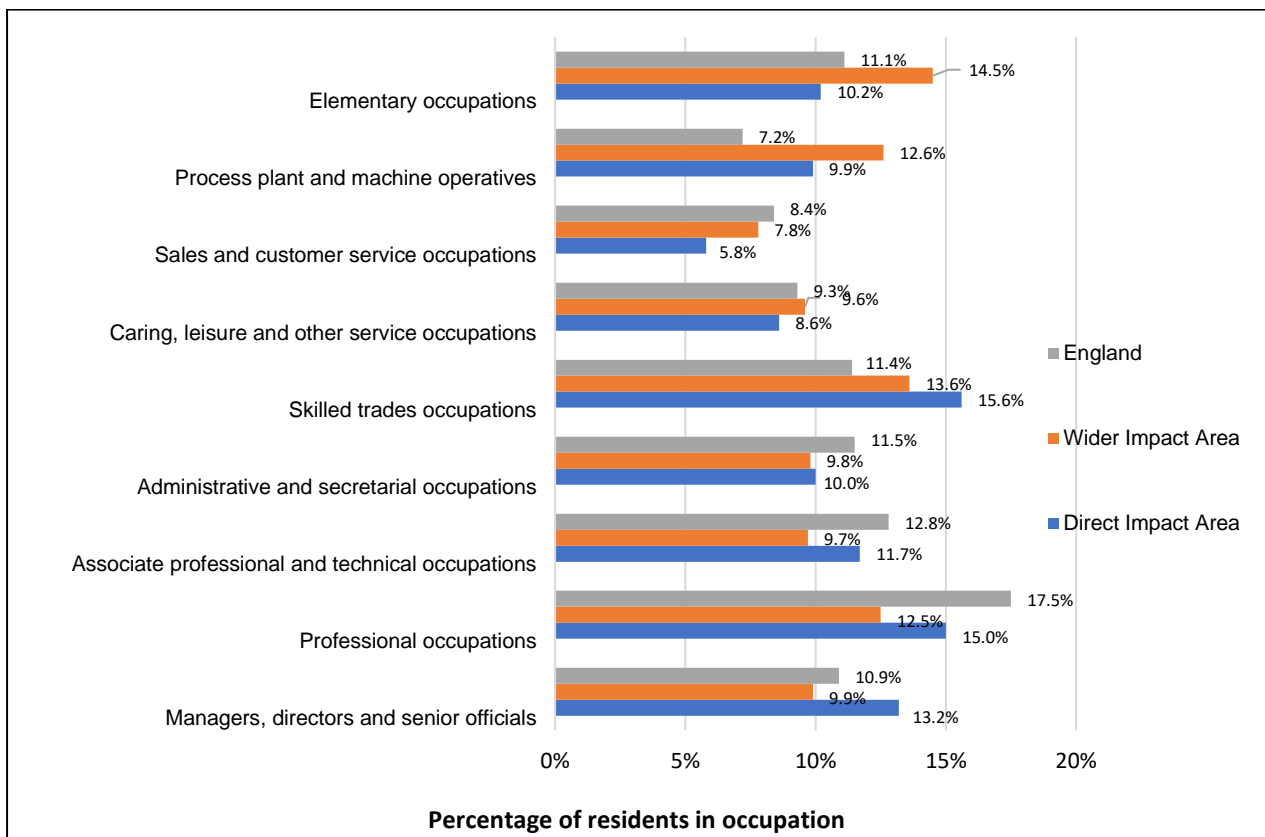
Source: Census 2011, ONS

16.4.12 There are some noticeable differences in the workforce occupation profile between the different geographical areas. The largest proportion of the population in the Direct Impact Area is employed in 'Skilled trades occupations' (15.6%). This is larger than the Wider Impact Area (13.6%) and England (11.4%). The second largest occupation is 'Professional occupations' which makes up 15.0% of the Direct Impact Area. This is higher than the Wider Impact Area (12.5%) but comparable to England (17.5%). There are also more 'Managers, directors and senior officials' in the Direct Impact Area (13.2%) compared to the Wider Impact Area (9.9%) and England (10.9%)

16.4.13 There are significantly fewer residents occupied in 'Sales and customer service occupations' in the Direct Impact Area with only 5.8% compared to 7.8% and 8.4% for the Wider Impact Area and England respectively.

16.4.14 Plate 16.3 displays the breakdown of the categories. There is also slightly lower proportion of those in 'Elementary occupations' than both the Wider Impact Area (14.5%) and England (11.1%)

Plate 16.3 Workforce Occupations



Source: Census 2011, ONS

Deprivation

16.4.15 The Proposed Development takes place in the LSOA North Lincolnshire 006C. It ranks 20,122 out of 32,844 LSOAs, placing it in the 40% least deprived neighbourhoods in England. The neighbouring LSOA, covering Keadby village, features in the 30% most deprived neighbourhoods in the country, illustrating the

disparity between the areas. There is a similar picture in the nearby town of Scunthorpe, where multiple LSOAs fall in the top 10% of deprived areas in the country.

- 16.4.16 The North Lincolnshire district is an area highly affected by deprivation. North Lincolnshire ranks 120 out of 317 Local Authorities, placing it in the top 40% of deprived Local Authority areas. It is in the top 25% of most deprived authorities for the 'Education, Skills and Training' domain, and top third of authorities for the 'Employment', 'Health', 'Crime' and 'Income' domains.

Community Facilities

- 16.4.17 The closest residents to the Proposed Development Site are located in the village of Keadby, approximately 1km to the south. This residential area is located close to the existing Keadby power station site, approximately 150m west of the power station site boundary. The nearest town is Scunthorpe, located over 4km from the Proposed Scheme.
- 16.4.18 Althorpe and Keadby Primary School is located approximately 1.6km to the south east of the Proposed Development. The Guinness and Burringham Church of England Primary School is located 2.4km to the south east of the Proposed Development. The closest secondary school is The Axholme Academy, located 4.1km to the west of the Proposed Development.

Local Businesses

- 16.4.19 The largest business close to the Proposed Scheme is Keadby Port, which is adjacent to the development boundary. PD Ports operates Keadby Port, an inland port on the River Trent with canal connectivity. The port handles commodities including steel, forest products, dry bulks and pallets in 4,000 sqm of warehousing at the site. The port is accessed from the North Sea via the Humber Estuary. Adjacent to Keadby Port is a public house called the Auld South Yorkshire.
- 16.4.20 In Keadby village, there is a non-for-profit social enterprise called Holly Hall Farm. This is an educational farm to assist schools and community groups to experience rural education, as well as providing other experiencing days.

Future Baseline

- 16.4.21 The future baseline is a prediction of baseline conditions in the future, assuming the Proposed Development has not been, or is not being, constructed.
- 16.4.22 Keadby 1 Power Station began commercial operation in 1996. The gas-fired power station has a contract to provide capacity to the grid until September 2022 and will have opportunities to secure further agreements in future auctions. Future plans for Keadby 1 Power Station will be confirmed by the Applicant in due course.
- 16.4.23 It is recognised that it is likely that Keadby 1 Power Station would not be in operation with the Proposed Development, however uncertainty regarding plans for the timing of future closure of Keadby 1 Power Station mean that effects have not been considered in the preliminary assessment in this chapter,

16.4.24 Construction of Keadby 2 Power Station by the Applicant's Engineering, Procurement, and Construction (EPC) contractor Siemens Energy commenced in April 2019 and is ongoing; expected completion is by quarter 1 (Q1), 2022. The socio-economic effects associated with the development could result in an economic impact of over £1bn to the UK economy over its lifetime.

16.5 Development design and impact avoidance

16.5.1 The design of the Proposed Development is following an iterative process, based on preliminary environmental assessments and consultation with statutory and non-statutory consultees. As the design of the Proposed Development evolves, specific measures to avoid, minimise or reduce potential environmental effects will be identified. At this preliminary stage, measures which have been identified to-date are identified within Chapter 8 – 18 (PEI Report Volume I) and associated Appendices (PEI Report Volume II). Project-wide development design and impact avoidance is discussed further in **Chapter 4: The Proposed Development** and **Chapter 5: Construction Programme and Management** (PEI Report Volume I)

16.5.2 Due to the nature of this assessment, no specific design development or impact avoidance measures have been identified at this stage. This will be reviewed following responses to consultation on the PEI Report.

16.6 Likely impacts and effects

Effects During the Construction Phase

16.6.1 The following section estimates gross construction employment arising from the Proposed Development and then takes into account leakage, displacement and multiplier effects (to assess indirect and induced employment) in order to assess net impacts on the sub-regional and national economies.

16.6.2 It should be noted that a report has been issued by SSE Thermal outlining the socio-economic impact of the separate Keadby 2 power station, currently under construction.

Employment

16.6.3 Based on the current information associated with the development of The Proposed Development as described in **Chapter 4: The Proposed Development** (PEI Report Volume I), construction of the Proposed Development anticipated to take up to four years between 2022 and 2026. During this time employment opportunities will be created as a result of the works. Although these jobs are temporary, they represent a positive economic impact that can be estimated as a function of the scale and type of construction. The direct expenditure involved in the construction phase will lead to increased output generated in the Scunthorpe TTWA economy.

16.6.4 The average number of gross construction workers over the preliminary indicative 42-month construction period have been calculated at 776. There is a peak of 1,300 in months 23 and 24 of construction, and the average number of construction workers is 776 workers per month. This is based on the Construction Worker Profile.

Leakage

- 16.6.5 Leakage effects refer to the proportion of jobs within an Impact Area that are filled by residents living outside the Impact Area (i.e. outside the Wider Impact Area, defined as the Scunthorpe TTWA).
- 16.6.6 Using a 15% leakage figure, in line with the proportion of jobs taken by non-residents of the Scunthorpe TTWA, was considered but this was seen as too low to account for the high skilled construction employment positions expected to be required on the construction of the Proposed Development.
- 16.6.7 A high leakage figure has therefore been considered appropriate to account for the construction phase. HM Treasury Additionality Guidance suggests a high rate of leakage of 50%. Therefore 50% discount is therefore applied to the estimated 776 gross jobs created per year and as such it is conservatively estimated that 388 people from outside the Scunthorpe TTWA and 388 from within will benefit from working at the Proposed Development each year during the construction period.

Displacement

- 16.6.8 Displacement measures the extent to which the benefits of a project are offset by reductions of output or employment elsewhere. Any additional demand for labour cannot simply be treated as a net benefit, it removes workers from other posts, such as other construction project, and the net benefit is reduced to the extent that this occurs.
- 16.6.9 Overall it is assumed that due to the flexibility of a typical construction workforce (i.e. it is possible for workers to move from project to project) displacement effects are considered to be low. The Homes and Communities Agency (HCA) Additionality Guide (Homes and Communities Agency, 2014) suggests using 25% as a 'ready reckoner' for low levels of displacement, for example when there are expected to be some displacement effects, although only to a limited extent. Applying this low level of displacement to total gross direct employment results in 194 jobs displaced. This results in net direct employment of 582 jobs per year.

Multiplier Effect

- 16.6.10 In addition to the direct construction employment generated by the Proposed Development itself there will be an increase in local employment arising from indirect and induced effects of the construction activity. Employment growth is anticipated to arise locally through manufacturing services and suppliers to the construction process (indirect or supply linkage multipliers). Additionally, part of the income of the construction workers and suppliers will be spent in the Scunthorpe TTWA, generating further employment (induced or income multipliers).
- 16.6.11 Construction employment is assessed with a multiplier of 1.85¹. Applying this multiplier of 1.85 generates an additional 247 indirect and induced jobs in the Scunthorpe TTWA arising from the Proposed Development during the construction

¹ Input-Output Tables 1998-2014 - Leontief Type 2 Table, Scottish Government. Type II employment multiplier for the construction industry (2014). Standard practice for multipliers for specific industries.

period. As well as the jobs taken by residents outside of the TTWA, there will be a total net indirect employment of 494 construction workers.

Net Construction Employment

16.6.12 Based on the gross construction worker requirements for construction of the Proposed Development and the additionality factors outlined above, 1,076 net construction jobs would be generated, of which 538 are expected to be from the Scunthorpe TTWA.

Table 16.8: Net Construction Employment in the Scunthorpe TTWA (average no. of workers onsite per year of construction)

	Scunthorpe TTWA	Outside of Scunthorpe TTWA	Total
Gross Direct Employment	388	388	776
Displacement	97	97	194
Net Direct Employment	291	291	582
Net Indirect/Induced Employment	247	247	494
Total Net Employment	538	538	1,076

Source: AECOM calculation (2020)

16.6.13 Table 16.8 presents the short-term employment created by the Proposed Development taking leakage, displacement and multiplier effects into account.

16.6.14 The sensitivity of receptors is considered as high. Taking into account the size of the labour pool of construction workers in the Scunthorpe TTWA (4,500 (ONS, 2018)), the magnitude of impacts is considered to be high. For example, the gross direct employment (in the TTWA) required during the construction phase of the Proposed Development would account for around 12% of the existing construction workforce in the Scunthorpe TTWA, and likely to require high skilled construction workers from outside the area. Therefore, the direct, indirect and induced employment created by the construction phase of the Proposed Development is likely to have a major beneficial short-term (significant) effect on the Scunthorpe TTWA's economy.

16.6.15 Construction phase effects are assessed on the basis of ten years of construction worker jobs being equal to one Full Time Equivalent (FTE job), as per HM Treasury Guidance. The anticipated construction manpower generated by the Proposed Development is therefore calculated as the equivalent of approximately 138 FTE permanent jobs during the construction period, including the equivalent of 69 FTE permanent jobs in the Scunthorpe TTWA.

Temporary Workers Accommodation

16.6.16 The construction of the Proposed Development will see increased local demand for accommodation during the construction period comprising temporary bed and

breakfast or hotel, or short-term rentals. This is expected to have positive impacts on the local economy through the additional demand for accommodation and the subsequent expenditure in the area from this activity.

16.6.17 It should be acknowledged that whilst the additional demand for accommodation and economic boost to the economy as a result of workers relocating to work on the Proposed Development, there may also be an element of adverse effect. There is an impact of increased rent costs (and accommodation) which can impact the local population who rely on the local rental market.

16.6.18 The magnitude has been assessed as low because of the limited leakage anticipated from construction work at the Proposed Development. The sensitivity has been assessed as low because the area's pool of temporary accommodation has capacity, as seen with Yorkshire and Humberside's 72% bed space usage in February 2020², which is comparable than the England rate of 73%³, though there is likely to be a reasonable in-flow of construction workers to the project. This pool of accommodation will likely benefit from the medium-term increase in usage. However, there are negative impacts on the increased cost of temporary and rental accommodation on the existing local population is also acknowledged and could outweigh with the positive benefit. Considering the positives and negatives, it is anticipated that this will result in an overall negligible effect.

Demographic Effects / Community Disruption

16.6.19 It is acknowledged that a development of this scale and nature may attract construction workers from across the UK in addition to the existing local construction workforce. While in-migration to the local and wider areas of influence for employment opportunities is expected, principally for the highly skilled or niche construction or supervisory roles, the scale of this is not anticipated to significantly affect the demographic characteristics of the local or wider areas. No significant difference from baseline conditions is expected in relation to local services, such as schools or health, during the construction phase, and therefore no additional provision of local services or infrastructure is required. A minor adverse (non-significant) adverse impact is anticipated.

Business Impacts

16.6.20 The Proposed Development is not anticipated to directly impact any businesses. The boundary for the Proposed Development Site primarily covers the existing Keadby power stations (Keadby 1 and Keadby 2) which are not anticipated to be impacted by the construction of the Proposed Development.

16.6.21 The water connection corridor that extends east from the Proposed Development might interact with land in the vicinity of existing buildings (for example, buildings on Trent Road). This includes an existing pumping station under ownership of the Applicant. Whilst the Proposed Development Site is within the immediate vicinity of

² February 2020 has been used as it was the final months prior to a drop-off in occupancy due to Covid-19 restrictions.

³ England Occupancy Survey - Visit Britain, November 2019

these receptors, the activities at this location are expected to be minor in nature and primarily focused on upgrades to or repurposing/ replacement of existing infrastructure, as described in **Chapter 4: The Proposed Development** (PEI Report Volume I). On this basis, and given the nature of construction methods, as reported within **Chapter 5: Construction Programme and Management** (PEI Report Volume I), it is anticipated the impact is likely to be minor adverse (non-significant) impact. This is due to a low sensitivity and low impact magnitude.

Skills and Employment

- 16.6.22 Due to the size of the Proposed Development, and the minimum number of approximately 766 (average, across the construction period) gross construction jobs created during the construction phase, it is anticipated that there could be skills and employment programmes provided by the applicant. This could include employment support programmes to help local residents and unemployed workers into roles at the development. This could lead on to training for roles at the Proposed Development.
- 16.6.23 The sensitivity of the skills and employment enhancement is anticipated to be low, and the magnitude is anticipated to be Medium. This is anticipated to have a minor beneficial (non-significant) impact during the construction phase.

Cumulative Effect During Construction

- 16.6.24 A detailed assessment of potential construction effects during construction has been provided within Chapters 8-18 (PEI Report Volume I); this includes a consideration of potential cumulative and in-combination effects for each discipline. A project-wide assessment of potential cumulative and in-combination effects is provided within **Chapter 19: Cumulative and In-Combination Effects** (PEI Report Volume I).

Effects During Operation Phase

Employment

- 16.6.25 The Proposed Development will also generate long-term jobs once operational. The following analysis estimates gross operational employment arising from the Proposed Development and then takes into account deadweight (existing employment on site), leakage, displacement and multiplier effects (to assess indirect and induced employment) in order to assess net impacts in the wider impact area and beyond.
- 16.6.26 During the operational period of the Proposed Development (expected to be 25 years), employment would be generated in operative, management and maintenance roles at the Proposed Development. It is estimated that there will be approximately 100 full-time equivalent (FTE) gross direct jobs per annum during the Operation and Maintenance phase. This is anticipated to include maintenance of the Power Station.
- 16.6.27 There is anticipated to be no Deadweight loss of employment from the development. Deadweight considers what would have happened in the absence of investment in the Proposed Development. In this scenario, there would be no positive employment benefits due to the development not going ahead; it is not preventing any planned development on the development site.

16.6.28 Leakage has been assumed to be low with the majority of jobs anticipated to be filled by residents of the TTWA. Therefore, a leakage figure of 14% has been used for the operational state (the leakage of jobs in local TTWA to outside residents), displacement of 25% (the 'low' ready reckoner by the HCA) and a composite multiplier of 1.5 (consistent with previous CCGT projects), it is estimated that the total net employment for the Proposed Development is up to 130 employees. Of these, 110 are anticipated to be from the TTWA, and 20 outside the Scunthorpe TTWA, as presented in Table 16.9.

Table 16.9: Net employment of the Proposed Development in Operation⁴

	Scunthorpe TTWA	Outside of Scunthorpe TTWA	Total
Gross direct employment	90	10	100
Displacement	20	0	20
Net direct employment	70	10	80
Net indirect/induced employment	40	10	50
Total net employment	110	20	130

Source: AECOM calculations based on development information and assumptions (2020)

16.6.29 The magnitude of impact is considered to be medium during the operational phase due to the beneficial impact of this job creation for the local area. The sensitivity is assessed as low, therefore, the direct, indirect and induced employment created by the operational phase of the Proposed Development is likely to have a minor beneficial long-term (non-significant) impact.

Community Disruption and Demographic Change

16.6.30 Some in-migration for employment opportunities (estimated as 14% leakage of jobs from the TTWA) is expected for the operation of the power station, mainly for the highly skilled and/or niche operational roles or supervisory roles. However, the scale of operational employment is not anticipated to be sufficient to affect the demographic characteristics of the local or wider areas of influence, due to the anticipated low amount of in-migration for operational roles.

16.6.31 No perceptible difference from baseline conditions is therefore expected in relation to demand for housing, accommodation, local services, amenity or community disruption. No additional provision of local services or infrastructure is therefore required. This is assessed as a minor adverse (non-significant) effect.

⁴ Order of magnitude of 1 has been used to round the employment figures.

Business Impact

- 16.6.32 There are not anticipated to be any impacts on businesses from the operation of the Proposed Development. The businesses in the area are currently located within close proximity to an existing operational power station (Keadby 1) and a further power station which is under development (Keadby 2). It is therefore not anticipated they would experience any change from their current interaction with the wider Keadby site. The impact would be negligible (non-significant).

Effects During Decommissioning

- 16.6.33 The workforce employed to decommission the Proposed Development would have a positive effect on the economy by spending their wages, in the same way as those employed during construction and operation. It is envisaged that the Proposed Development would have an operational life of up to circa 25 years, therefore decommissioning activities are currently anticipated to commence after 2050 at the earliest. At this stage the significance of the employment effects is uncertain due to limited information available regarding decommissioning methods, timescales and associated staffing requirements.

16.7 Mitigation and enhancement measures

- 16.7.1 No significant adverse effects are predicted during the construction, maintenance, operation and decommissioning of the Proposed Development, and as such no specific mitigation is required.
- 16.7.2 No other additional mitigation measures, over and above that stated in the other technical chapters of this PEI Report, are required to avoid or minimise the socio-economic effects identified in this chapter.
- 16.7.3 Due to the size and nature of the Proposed Development, it is anticipated that skills and education programmes and events will be provided by the contractor as mitigation.
- 16.7.4 Other possible mitigation could be considered. A mechanism for managing stakeholders' questions, concerns, and grievances and provide appropriate conflict resolution processes could be considered to ensure any issues are heard by the developer.

16.8 Monitoring

- 16.8.1 No monitoring for the scheme has been identified as part of the assessment.

16.9 Limitations or difficulties

- 16.9.1 The socio-economic assessment is based on the available data at the time of writing and has been based on a desk-based study with no site visits undertaken. The need for site surveys will be considered for the Environmental Statement, but it is expected the assessment will be largely desk-based.

Summary of likely significant residual effects

- 16.9.2 There are likely to be beneficial significant impacts as a result of the development. An estimated 1,076 net jobs average during the construction phase of the scheme will benefit the area.
- 16.9.3 No significant adverse effects have been identified.

16.10 References

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