REPORT

Boston Alternative Energy Facility – Preliminary Environmental Information Report

Chapter 20 Socio-Economics

Client: Alternative Use Boston Projects Ltd

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Boston Alternative Energy Facility

Royal HaskoningDHV
Enhancing Society Together

HASKONINGDHV UK LTD.

Rightwell House
Rightwell East
Bretton
Peterborough
PE3 8DW
Industry & Buildings
VAT registration number: 792428892

+44 1733 334455 **T**
+44 1733 262243 **F**
email **E**
royalhaskoningdhv.com **W**

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Author(s):	Jonathan Standen

Drafted by:	Jonathan Standen
Checked by:	Gary Bower
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Approved by:	Gary Bower
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Non-Technical Summary

Socio-economics considers a large number of aspects, which in relation to this chapter included employment, housing market, community infrastructure (including primary and secondary education and health) and tourism during both the construction and operational phases of the Facility. Additionally, the chapter considered the impacts on energy security/reliability as part of the operational phase.

The potential impacts that this chapter covers were agreed through consultation with the Planning Inspectorate whose Scoping Opinion provided guidance on which potential impacts should be covered as part of the assessment.

Given the broad spread of topics included within socio-economics, the sources of information to describe the baseline were extensive, with the assessment drawing on a desk-based study of publicly available data.

The assessment has considered the potential for impact, including cumulative effects, finding that for the majority these will be of negligible significance. The assessment considered the potential for some positive impacts, including: moderate and minor positive impacts in construction and operational employment respectively; and, a moderate-substantial impact in relation to energy security/reliability.

20 Socio-Economics

20.1 Introduction

20.1.1 This chapter of the Preliminary Environmental Information Report (PEIR) describes the existing environment in relation to socio-economics and details the assessment of the potential impacts during construction, operational and decommissioning phases of the Boston Alternative Energy Facility ('the Facility'). Mitigation measures are provided and a discussion of the residual impacts provided where significant impacts were identified.

20.1.2 This chapter was prepared by Lichfields.

20.2 Legislation, Policy and Guidance

20.2.1 This section briefly summarises the policy context relating to the socio-economic aspects of the development at the local, district and national levels.

National Planning Policy

National Planning Policy Framework (NPPF)

20.2.2 The Government published the revised National Planning Policy Framework (NPPF) in February 2019 (MHCLG, 2019). This is the first revision of the NPPF since 2012.

20.2.3 The NPPF outlines that:

> *"the purpose of the planning system is to contribute to the achievement of sustainable development."*

20.2.4 Achieving sustainable development means that the planning system has three objectives – economic, social and environmental. The economic objective involves helping to build a strong, competitive economy. The environmental objective highlights the importance of using resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.

20.2.5 Chapter 6 of the NPPF concerns building a strong, competitive economy. Paragraph 80 sets out that:

> *"planning policies and decisions should help create the conditions in which businesses can invest, expand and adapt."*

20.2.6 It places significant weight on the need to:

"support economic growth and productivity, taking into account both local business needs and wider opportunities for development."

20.2.7 Paragraph 82 states that:

"planning policies and decisions should recognise and address the specific locational requirements of different sectors", including *"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."*

20.2.8 Paragraph 117 states that planning policies and decisions should promote effective use of land. Paragraph 118 identifies that substantial weight should be given to the value of using:

"suitable brownfield land within settlements for homes and other identified needs, and that appropriate opportunities to remediate despoiled, degraded, derelict, contaminated or unstable land" should be supported.

20.2.9 Paragraph 148 states that the:

"planning system should support the transition to a low carbon future" and that *"it should help to shape places in ways that contribute to radical reductions in greenhouse gas emissions", "encourage the reuse of existing resources"* and *"support renewable and low carbon energy and associated infrastructure."*

20.2.10 Paragraph 151 states that to help increase the use and supply of renewable and low carbon energy and heat, plans should provide a positive strategy for energy from these sources, that maximises the potential for suitable development and consider identifying suitable areas for renewable and low carbon energy sources.

20.2.11 Paragraph 154 identifies that

"when determining planning applications for renewable or low carbon development, local planning authorities should:

a) Not require applicants to demonstrate the overall need for renewable or low carbon energy, and recognise that even small-scale projects provide a valuable contribution to cutting greenhouse gas emissions; and

b) Approve the application if its impacts are (or can be made) acceptable. Once suitable areas for renewable and low carbon

energy have been identified in plans, local planning authorities should expect subsequent applications for commercial scale projects outside these areas to demonstrate that the proposed location meets the criteria used in identifying suitable areas."

Waste Management Plan for England (2013)

20.2.12 In England, the waste hierarchy is both a guide to sustainable waste management and a legal requirement, enshrined in law through the Waste (England and Wales) Regulations 2011. The hierarchy gives top priority to waste prevention, followed by preparing for reuse, then recycling, other types of recovery (including energy recovery) and last of all disposal (e.g. landfill).

20.2.13 In relation to energy recovery the Plan states:

"The Government supports efficient energy recovery from residual waste – of materials which cannot be reused or recycled – to deliver environmental benefits, reduce carbon impact and provide economic opportunities" (Department for Environment, Food and Rural Affairs , 2013, p. 13).

The Clean Growth Strategy (2017)

20.2.14 The Government published its Clean Growth Strategy in October 2017 (Department for Business, Energy and Industrial Strategy, 2017). The report acknowledges that:

"achieving clean growth, while ensuring an affordable energy supply for businesses and consumers, is at the heart of the UK's Industrial Strategy" and will *"increase productivity, create good jobs, boost earning power"* and *"help protect the climate".*

"The Strategy sets out a comprehensive set of policies and proposals that aim to accelerate the pace of "clean growth", i.e. deliver increased economic growth and decreased emissions."

20.2.15 These include the ambition for the UK to produce zero avoidable waste by 2050.

A Green Future: Our 25 Year Plan to Improve the Environment (2018)

20.2.16 The Government published its 25 Year Plan to Improve the Environment in January 2018 (Department for Environment, Food and Rural Affairs, 2018).

20.2.17 The Plan recognises the importance of managing resources more sustainably and diverting more waste away from landfill. Whilst the Plan seeks to maximise the amount of waste that can be re-used, re-manufactured and recycled, it

acknowledges that significant quantities of residual waste have been diverted from landfill through the development of Energy from Waste facilities. The Plan seeks to ensure the materials collected in the residual waste stream are managed to maximise their full value as a resource and minimise the environmental impact of treating them.

20.2.18 The Plan seeks to encourage operators to maximise the amount of energy recovered from residual waste while minimising the environmental impact of managing it, for example by utilising the heat as well as electricity produced.

Regional Planning Policy

Greater Lincolnshire Strategic Economic Plan

20.2.19 Boston is located within the Greater Lincolnshire Local Enterprise Partnership (GLLEP). The GLLEP published their Strategic Economic Plan (SEP) in 2014 before refreshing it in Spring 2016 (GLLEP, 2016).

20.2.20 The refreshed SEP outlines the ambition to secure new investment to accelerate the delivery of:

- 13,000 new jobs;
- Support up to 22,000 businesses;
- Up to 100,000 new homes; and
- An increase in the value of the Greater Lincolnshire economy by £3.2 billion.

20.2.21 The SEP identifies four core priority sectors which have the potential to add real value to the UK economy and contribute towards the Government's Industrial Strategy:

- Agri-food;
- Manufacturing and Engineering;
- Visitor Economy; and
- Low Carbon Economy.

20.2.22 The SEP identifies that the low carbon economy is worth £1.2 billion per annum to the Greater Lincolnshire economy, employing over 12,000 people, and with significant potential to secure up to £60 billion of private investment over the next 15 years. Linked to this potential investment, the SEP identifies energy from waste, in addition to other low carbon or environmental goods and services such as biomass and biofuels, as a major opportunity for growth. One of the priorities for the low carbon sector includes the development of a Greater Lincolnshire-wide

energy efficiency/waste management programme.

20.2.23 The SEP also states that the visitor economy is worth over £1.9 billion per annum to the Greater Lincolnshire economy, supporting over 39,000 jobs. The SEP sets out a priority to double the real value of the tourism by 2020.

Local Planning Policy

South-East Lincolnshire Local Plan 2011-2036

20.2.24 The adopted local plan for Boston is the South-East Lincolnshire Local Plan 2011-2036 (SELLP, 2019). This was adopted on 8th March 2019.

20.2.25 Policy 7 (Improving South-East Lincolnshire's Employment Land Portfolio) states that:

> *"the South-East Lincolnshire authorities will, in principle, support proposals which assist in the delivery of economic prosperity and some 17,600 jobs in the area".*

20.2.26 Under Policy 7, the Application Site is partially allocated as a 'Main Employment Area' (Riverside Industrial Estate, Boston Ref: BO006).

20.2.27 Policy 31 (Climate Change and Renewable and Low Carbon Energy) identifies that:

> *"the development of renewable energy facilities, associated infrastructure and the integration of decentralised technologies on proposed structures will be permitted provided there would be no significant harm to:*
> - *Visual amenity, landscape character or quality, or skyscape considerations;*
> - *Residential amenity in respect of: noise, fumes, odour, vibration, shadow flicker, sunlight reflection, broadcast interference, traffic;*
> - *Highway safety (including public rights of way);*
> - *Agricultural land take, landscape character or quality, or skyscape considerations;*
> - *Aviation and radar safety;*
> - *Heritage assets including their setting; and*
> - *The natural environment".*

20.2.28 The reasoned justification supporting Policy 9 (Promoting a Stronger Visitor Economy) indicates that tourism is an important part of South-East Lincolnshire's

economy, with economic benefits including job creation.

Guidance

20.3 Consultation

20.3.1 As part of the wider EIA, discussions have been held with key stakeholders and officers at Boston Borough Council which have informed the Proposed Development. In relation to socio-economic issues specifically, Lichfields has made best endeavours to engage with the relevant Destination Management Organisation for Boston/Lincolnshire in respect of tourism impacts; however, it has not been possible to make contact with the relevant organisation on this occasion.

20.3.2 Additionally, the content of and approach to the socio-economic assessment have been scoped and agreed with the Planning Inspectorate.

20.3.3 The Consultation for this chapter has been summarised in **Table 20.1**.

Table 20.1 Consultation

Consultee and Date	Response	Chapter Section Where Consultation Comment is Addressed
The Planning Inspectorate Scoping Opinion, July 2018	Scoping out Tourism: No evidence or justification has been provided in the Scoping Report to support scoping this matter out. On this basis, the Inspectorate cannot agree to scope this matter out from the ES. The ES should include an assessment of the impacts to tourism where significant effects are likely to occur.	**Section 20.7**
The Planning Inspectorate Scoping Opinion, July 2018	The ES should provide the information which informs the baseline assessment. Where this lack of available information has presented a limitation to the assessment this should be explained and the implications for the conclusions described in the ES.	**Section 20.6**
The Planning Inspectorate Scoping Opinion, July 2018	The Scoping Report refers to 'micro' and 'small' to describe businesses captured in the baseline information. It is not clear how this data will inform the assessment. The ES should define these terms, using relevant data sources or guidance as necessary, and set out how this and other information has been applied to the assessment.	**Section 20.6**

Consultee and Date	Response	Chapter Section Where Consultation Comment is Addressed
The Planning Inspectorate Scoping Opinion, July 2018	The information on the potential effects is high level and does not identify specific impacts of the Proposed Development, for example the Scoping Report refers to 'indirect effects on services' however little detail is provided as to what these would be. The socio-economic effects of impacts to human health, taking into account sensitive receptors such as disadvantaged socio-economic groups, should also be included in the assessment where significant effects could occur. The ES must identify the anticipated impacts of the Proposed Development and quantify these where possible, for example the number of jobs anticipated to be created.	**Section 20.7**
The Planning Inspectorate Scoping Opinion, July 2018	The Scoping Report states that the Macmillan Way will require a permanent diversion. The ES should assess any likely significant effects associated with this proposal. Cross reference should be made to the socio-economic assessment with respect to tourism.	**Section 20.7**
The Planning Inspectorate Scoping Opinion, July 2018	The Scoping Report gives a very broad description of the data that will be gathered to inform the ES. The ES should explain the methodology applied to the assessment, including the data sources used, consultation undertaken, the methodology applied to determining significance of effects, and any limitations encountered.	**Section 20.3 and Section 20.4**

20.4 Assessment Methodology

20.4.1 The baseline position in terms of economic conditions and the current provision of community facilities was established, before examining the potential impacts of the Facility and their significance. Opportunities for the mitigation of any adverse effects and the enhancement of beneficial effects were then examined, including any embedded mitigation elements of the scheme.

20.4.2 This assessment drew upon published Government and local authority data, including the latest available statistics from the 2001 and 2011 Census, mid-year estimate series, Experian datasets and other published datasets.

Significance Criteria

20.4.3 There are no generally accepted criteria for assessing the significance of socio-economic effects; therefore, these were assessed in a similar nature to the methodology presented in **Chapter 6 Approach to EIA**, based on the scale of the increase over the baseline position, as well as the nature and context of their effects. Where relevant, the location of the impact and its likely duration was taken into account. In some cases, this could not be quantified or measured, so the nature and context of the effects were considered more generally. Effects were

identified as positive (beneficial), neutral or negative (adverse), whilst their significance was classified as either 'negligible', 'minor', 'moderate' or 'substantial'.

20.4.4 The duration of the socio-economic effects was considered against whether it was temporary or permanent. Due to their nature, all operational effects were considered to be permanent unless otherwise stated. In terms of temporary effects, the duration was determined to be: short term (less than five years); medium term (five-10 years); or long term (more than 10 years).

Cumulative Impact Assessment

20.4.5 Lichfields has been provided with a list of schemes relevant to the Facility that could conceivably generate cumulative impacts by virtue of incremental changes to the baseline socio-economic conditions in the AOI. The list of schemes is detailed at **Section 20.8** (Cumulative Impacts) along with a Cumulative Impact Assessment. This has been carried out having regard to the anticipated socio-economic impacts generated by the cumulative schemes and the assessment methodology outlined above.

Transboundary Impact Assessment

20.4.6 A Transboundary Impact Assessment is not relevant in respect of socio-economics. This is justified on the basis of the analysis of commuting data presented in **Section 20.5** which reveals that Boston is a self-contained labour market area. Boston local authority area is therefore the most appropriate geography in which to consider the impacts of the Facility.

20.5 Scope

Study Area

20.5.1 The Application Site is located immediately south of Boston town centre, Lincolnshire, east of the Riverside Industrial Estate. Sea flood defences along the tidal River Witham (known as The Haven) define the eastern boundary of the Application Site. Industrial and business properties surround the Application Site to the north, west, and south. These include a waste wood management facility and a household waste recycling centre. The consented Biomass UK No. 3 Ltd gasification plant, which will derive energy mostly from waste wood, is currently at the initial stages of commissioning on the eastern border of the Application Site. The Application Site is located within Boston Borough Council (BBC) and within the Boston 009 Middle Super Output Area (MSOA).

20.5.2 Given the Application Site's location close to the town of Boston, it is anticipated

that any effects of the Facility will be focused primarily within the local authority area of Boston. However, effects could also be observed over a wider Area of Impact (AOI) which is defined as the area from which the majority of the labour force is likely to be drawn. For the purposes of this assessment, the wider AOI was defined as the area from which the majority of the workforce will be drawn. The current criteria (ONS, 2016) for defining travel to work areas (TTWAs) is that generally at least 75% of an area's resident workforce work in the area and at least 75% of the people who work in the area also live in the area. The area must also have a working population of at least 3,500.

20.5.3 Applying this methodology to data from the 2011 Census relating to commuting patterns confirms that that the wider AOI is also the local authority area of Boston given that Boston Borough constitutes approximately 75% of both in-commuting and out-commuting flows, demonstrating high levels of self-containment. ONS TTWA analysis also demonstrates, in terms of commuting patterns, that Boston (TTWA E30000174) is a self-contained labour market area and is the appropriate AOI geography for the Facility.

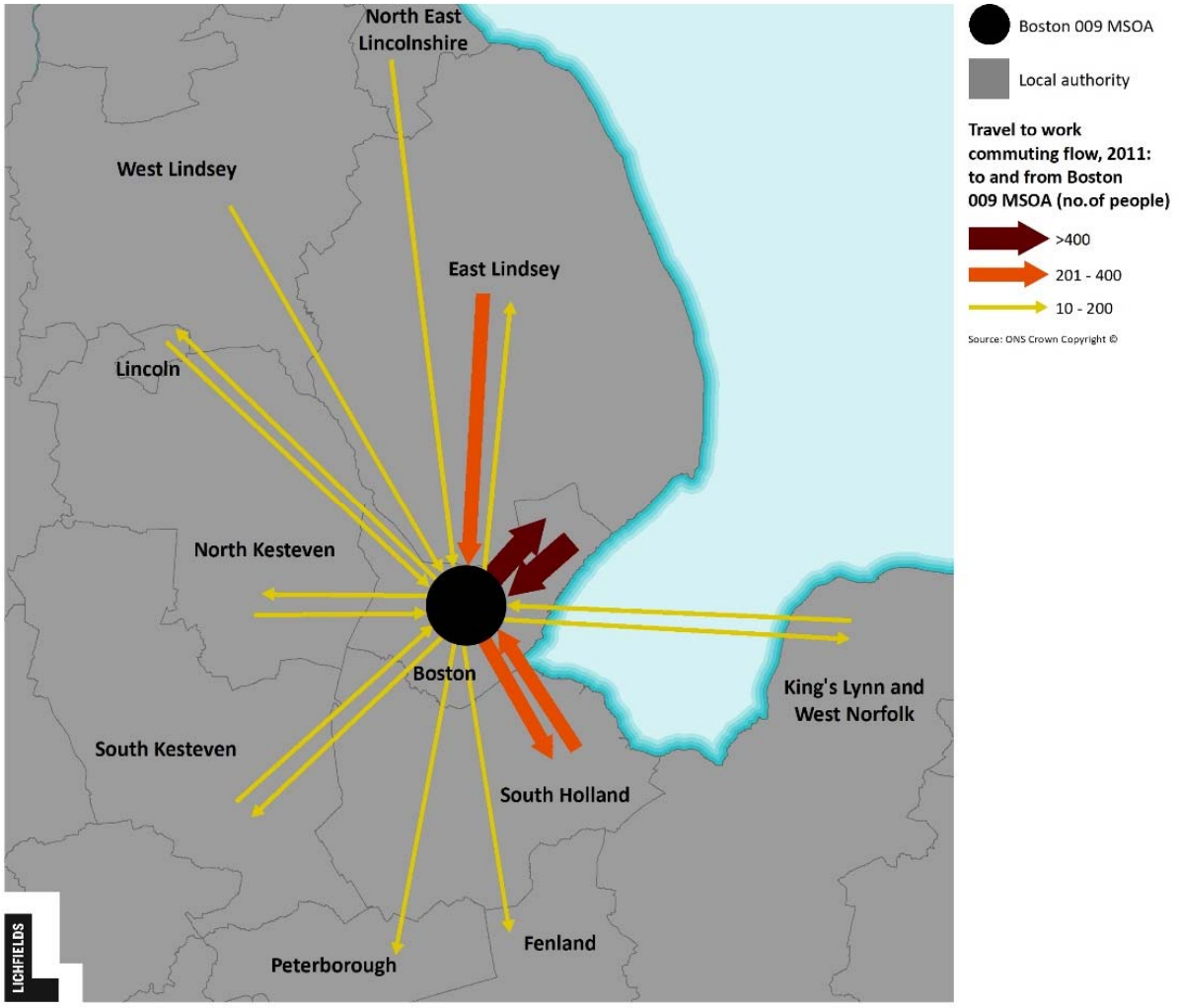

Plate 20.1 Travel to Work Flows from MSOA Boston 009. Source: Census 2011 / Lichfields analysis

20.5.4 The impact area(s) considered for the different potential effects are detailed in **Table 20.2.**

Table 20.2 Impact Area Considered for Different Uses

Potential effect	Main Impact Area	Wider Impact Area
Construction employment	Boston	Boston
Operational employment	Boston	Boston
Labour market	Boston	Boston
Housing market	Boston	Boston
Primary Education	Within 3 km of the Application Site	Boston
Secondary Education	Within 5 km of the Application Site	Boston
Healthcare	Within 5 km of the Application Site	Boston
Tourism	Boston	Boston
Energy security/reliability	Boston	Boston

Data Sources

20.5.5 The assessment was undertaken with reference to a number of sources, as detailed in **Table 20.3.**

Table 20.3 Key Information Sources

Data Source	Reference
WF01BEW - Location of usual residence and place of work (OA level)	Census, 2011
Travel to work area analysis in Great Britain, 2016	Office for National Statistics, 2016

Assumptions and Limitations

20.5.6 The limitations are identified where applicable. In particular, the data used from publicly available sources were not verified by Lichfields. Furthermore, whilst the latest available data were used, it should be noted that many data sources are frequently updated and could be subject to change since the time of drafting or during the course of the application process.

20.5.7 Assumptions were also identified where relevant within the appropriate sections of the chapter. Some of the key assumptions include:

- The assessment of employment associated with the construction period was based upon an indicative labour requirements schedule provided to Lichfields by Alternative Use Boston Projects Ltd (AUBP) ('the Applicant'); and

- The assessment of employment associated with the operational phase was based upon a schedule of employment requirements provided to Lichfields by the Applicant. The information was based upon the anticipated business/operating model for the proposals and outlined the labour requirements associated with four distinct functions, which were then aggregated to assess the direct employment to be created on-site.

20.6 Existing Environment

20.6.1 This section sets out the economic context and main socio-economic features of the AOI (BBC) relating to the Facility. This includes a summary of the current and future projected local demographic conditions, local economic and labour market conditions, existing provision of community infrastructure and local housing market conditions and projected household growth within the AOI. Where the availability of data permits, these conditions were benchmarked against equivalent regional and national statistics.

Local Demographic Conditions

Current Population and Projected Future Change

20.6.2 The latest available data from the Office for National Statistics (ONS) (ONS, 2018a) indicate that the population of the AOI in 2017 was 68,488. The same data indicate that 60.4% of the population are of 'working age' (16-64) which is lower than the equivalent percentages at the regional (62.4%) and national (62.8%) level. The AOI has a higher proportion of residents aged 65+ (20.9%) compared to the regional (19.1%) and national (18.0%) level.

20.6.3 The population of the AOI grew by 12.2% between 2007 and 2017. The equivalent rate of population growth was 8.3% for the East Midlands and 7.7% at the national level. The AOI's population to 2037 is expected to grow by 6.2% (72,727). Whilst in absolute terms, the projected population change within the 'working age' bracket over the same period is expected to increase by 1.3%, proportionately the working age population is projected to decrease from 60.4% to 57.6% of the total population. Approximately one quarter of the population of the AOI is projected to be aged 65+ in 2037 compared to approximately one fifth of the population in 2017.

Migration

20.6.4 Migration data from the 2011 Census indicates that 12% of the AOI's population in 2011 (64,637) were in the broadest sense migrants insofar as they had either: moved within the area (63%); moved into the area from within the UK (24%); or moved into the area from outside the UK (13%). This sits between the figures

recorded at the regional (11.5%) and national (12.3%) level. The AOI experienced higher levels of out-migration (3.9% of usual resident population) than the regional (2.1%) and national (0.2%) levels.

20.6.5 Taking account of the balance between in- and out-migration, net migration into the AOI was 5,472 (8.5% of the usual resident population). This compared to an equivalent net migration figure at the regional level of 9.5% and 12.1% at the national level.

Local Economic Conditions

Employment Growth

20.6.6 An analysis of ONS Job Density data (ONS, 2017) indicates that the total number of jobs in the AOI stood at 39,000 in 2016 (latest data available).

20.6.7 **Table 20.4** illustrates that jobs growth across the AOI during the period 2007 - 2017 was 18.2%, which was higher than the equivalent rate experienced regionally (9.4%) but lower than the rate nationally (12.9%).

20.6.8 ONS Job Density data also provide a measure of the ratio of total jobs to working age residents in a given area. The most recently published data (2017) show that the AOI has a job density ratio of 0.94, indicating that the authority has 94 jobs for every 100 residents of working age (aged 16-64). This is higher than the regional (0.81) and national averages (0.86).

Table 20.4 Employment and Jobs Density across the AOI

Area	Total jobs	Jobs density	% change 2007-2017
AOI	39,000	0.94	18.2
East Midlands	2,408,000	0.81	9.4
Great Britain	34,620,000	0.86	12.9

Source: ONS (2017a) Jobs Density Data / Lichfields analysis

Sectoral Structure

20.6.9 An analysis of Business Register and Employment Survey (BRES) data identifies that, as a proportion of total employment, in 2017 (most recent available data) the largest sectors across the AOI were Health (17.6%), Business administration and support services (17.6%) and Manufacturing (13.2%) (ONS, 2017b).

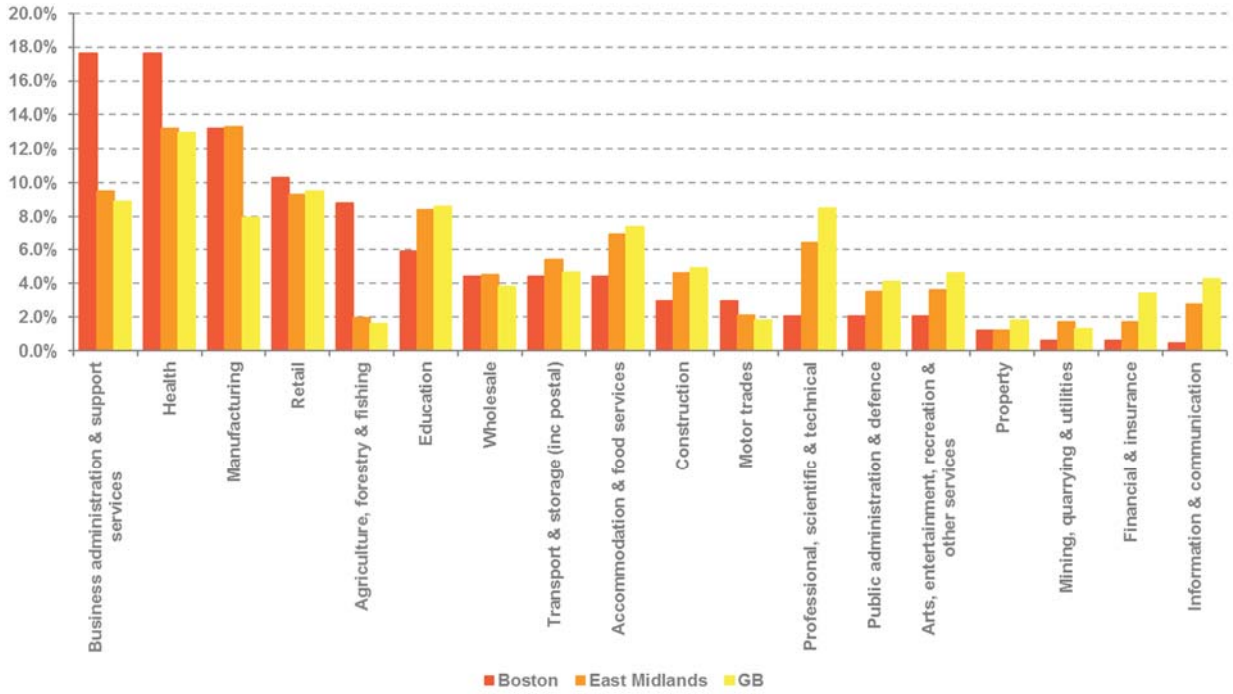

Plate 20.2 AOI Sectors as a Proportion of the Total Employment Base. Source: ONS (2017b) / Lichfields analysis

20.6.10 As shown in **Plate 20.2**, in comparison with the regional and national averages, the following sectors are over-represented in the AOI:

- Health: accounting for 17.6% of employment compared to 13.2% in the East Midlands and 13.0% nationally;
- Business administration and support services: accounting for 17.6% of employment compared to 9.5% in the East Midlands and 8.9% nationally;
- Retail: accounting for 10.3% of employment compared to 9.3% in the East Midlands and 9.5% nationally;
- Agriculture, forestry and fishing: accounting for 8.8% of employment compared to 1.9% in the East Midlands and 1.6% nationally; and
- Motor trades: accounting for of employment 2.9% compared to 2.1% in the East Midlands and 1.8% nationally.

20.6.11 Several sectors are also under-represented in the AOI, including (inter alia):

- Construction: accounting for 2.9% of employment compared to 4.6% in the East Midlands and 4.9% nationally;
- Accommodation and food services: accounting for 4.4% of employment compared to 6.9% in the East Midlands and 7.4% nationally;

- Information and communication: accounting for 0.4% of employment compared to 2.7% in the East Midlands and 4.2% nationally;
- Financial and insurance: accounting for 0.6% of employment compared to 1.7% in the East Midlands and 3.4% nationally;
- Professional, scientific and technical (including engineering activities): accounting for 2.1% of employment compared to 6.4% in the East Midlands and 8.5% nationally; and
- Education: accounting for 5.9% of employment compared to 8.4% in the East Midlands and 8.6% nationally.

20.6.12 Engineering activities (a sub-sector of the professional, scientific and technical sector) are also under-represented in the AOI, accounting for 0.3% of employment compared to 1.4% in the East Midlands and 1.7% nationally.

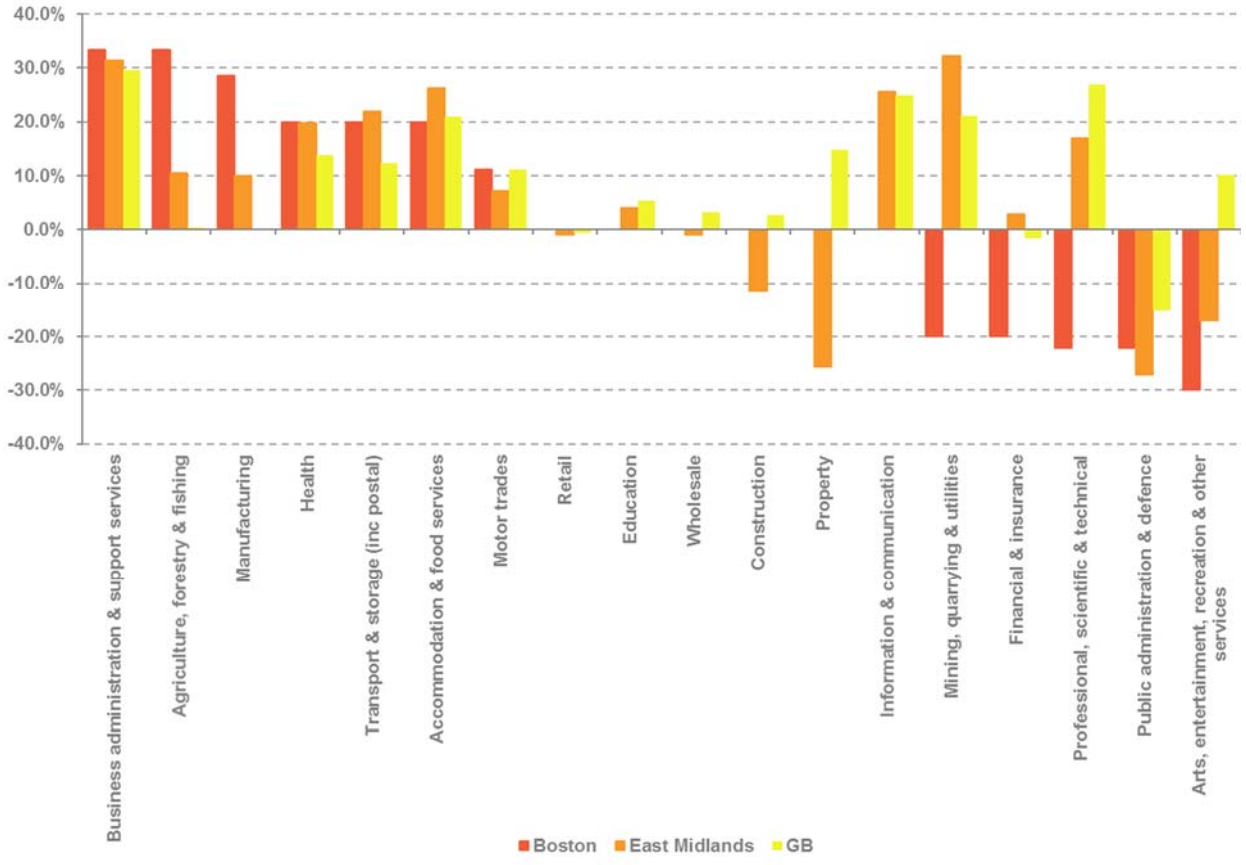

Plate 20.3 Employment Change 2009-2017. Source: ONS (2017b) / Lichfields analysis

20.6.13 **Plate 20.3** provides a summary of employment change within the AOI by sector over the period 2009 - 2017. This is shown in proportionate terms, to facilitate a comparison with the AOI, regional and national performance. From this it can be seen that:

- Business admin and support services, Agriculture, forestry and fishing and Manufacturing have all experienced stronger proportionate levels of growth in the AOI compared to regional and national averages; and
- Professional, scientific and technical (inclusive of engineering activities) , Mining, quarrying and utilities, Financial and insurance, Arts, entertainment, recreation and other services have experienced higher proportionate levels of decline than the regional and national averages.

Business Growth

20.6.14 Inter Departmental Business Register (IDBR) data (ONS, 2018a) shows that the number of active enterprises (defined as enterprises that had either turnover or employment at any time during the reference period) in the AOI increased from 1,970 to 2,170 over the period 2013 - 201 8. This represents a growth rate of 10.2%. This is lower than the equivalent percentage increases of 23.0% regionally and 23.6% nationally.

20.6.15 The AOI's comparatively lower rate of growth has been underpinned by a slower growth rate of Micro (0 to 9 employees) and Small (10 to 49 employees) firms (12.1% and 2.0% respectively) compared with the equivalent regional (24.8% and 10.4% respectively) and national (25.2% and 11.2% respectively) growth rates.

20.6.16 Whilst at the regional and national level the number of Medium-sized firms (50 - 249 employees) has grown (11.8% and 13.3% respectively), the number declined within the AOI by 9.1%. Similarly, the growth of Large (250+ employees) firms has remained static locally whilst there has been considerable growth at the regional (15.3%) and national (14.9%) level.

Tourism

20.6.17 Recent research (Visit Britain, 2018) indicates that, on average, Boston receives approximately 80,000 tourism-related trips per annum, contributing in the order of £11 million to the local economy. Boston tourism constitutes roughly 1% of total tourism trips and tourism expenditure within the East Midlands.

20.6.18 The share of Boston tourism in terms of trips is split relatively evenly between 'holidays' and 'visiting friends and relatives' with the former accounting for the majority of tourism spending (£8 million). This recent research also indicates that business tourism does not play any role within the Boston economy.

20.6.19 Data from the Business Register and Employment Survey (ONS, 2017b) indicate that broad employment sectors that align with tourism related activities are under-represented compared with the regional and national rates. In 2017, 4.3% of

Boston employment was in the Accommodation and food services sector. This is lower than the equivalent rate for the East Midlands (6.9%) and Great Britain (7.4%). Similarly, 2.0% of Boston employment was in the Arts, entertainment, recreation & other services, compared to higher rates at the regional (3.6%) and national level (4.6%).

Labour Market Conditions

Productivity

20.6.20 Productivity (measured by Gross Value Added (GVA) per Full-Time Equivalent (FTE) worker) of the labour force within the AOI averaged £51,897 in 2018, lower than the equivalent regional figure (£54,700) and significantly lower than the national average (£64,556) (Experian, 2018).

20.6.21 Between 2008 and 2018, the AOI experienced a slight decrease (-0.1%) in GVA per FTE in comparison with the equivalent growth rate across the East Midlands (4.3%) and nationally (3.6%).

Unemployment

20.6.22 The economic activity rate (i.e. the share of working-age residents either in or seeking employment) in the AOI, at 78.3%, is slightly higher than the regional (77.6%) averages, but broadly equivalent to the national (78.4%) average (ONS, 2018b).

20.6.23 Unemployment data for October 2018 shows that there are 390 residents in the AOI claiming Job Seeker's Allowance (JSA). This is equivalent to a claimant unemployment rate of 0.9%, which is marginally higher than both the regional and national rates (both 0.8%) (ONS, 2018c).

20.6.24 The proportion of long term JSA claimants (i.e. those claiming for 12 months or more) across the AOI (0.4%) is marginally higher than the regional rate (0.3%) but in alignment with the rate at the national level (0.4%).

Skills and Qualifications

20.6.25 The skills base of the resident workforce of the AOI is characterised by:

- A significantly lower proportion of residents with graduate level (NVQ level 4+) qualifications (11.8%) than that of the East Midlands (32.1%) and nationally (38.6%); and
- A higher proportion of residents with no qualifications (11.1%) than that of the East Midlands (8.2%) and nationally (7.7%) (ONS, 2018b).

20.6.26 An analysis of the existing occupational profile of the resident workforce (**Plate 20.4**) also shows that:

- The AOI (18.9%) has a significantly lower proportion of residents working in Standard Occupational Codes (SOC) 1-3, including: managers, directors and senior officials; professional occupations; and associate professional & technical occupations in comparison to the East Midlands (41.2%) and nationally (45.6%); and
- The AOI has a significantly higher proportion (53.5%) of residents working in Standard Occupational Codes (SOC) 7-9, including: sales and customer service occupations; process, plant and machine operatives; and elementary occupations in comparison to the East Midlands (27.5%) and nationally (24.3%).

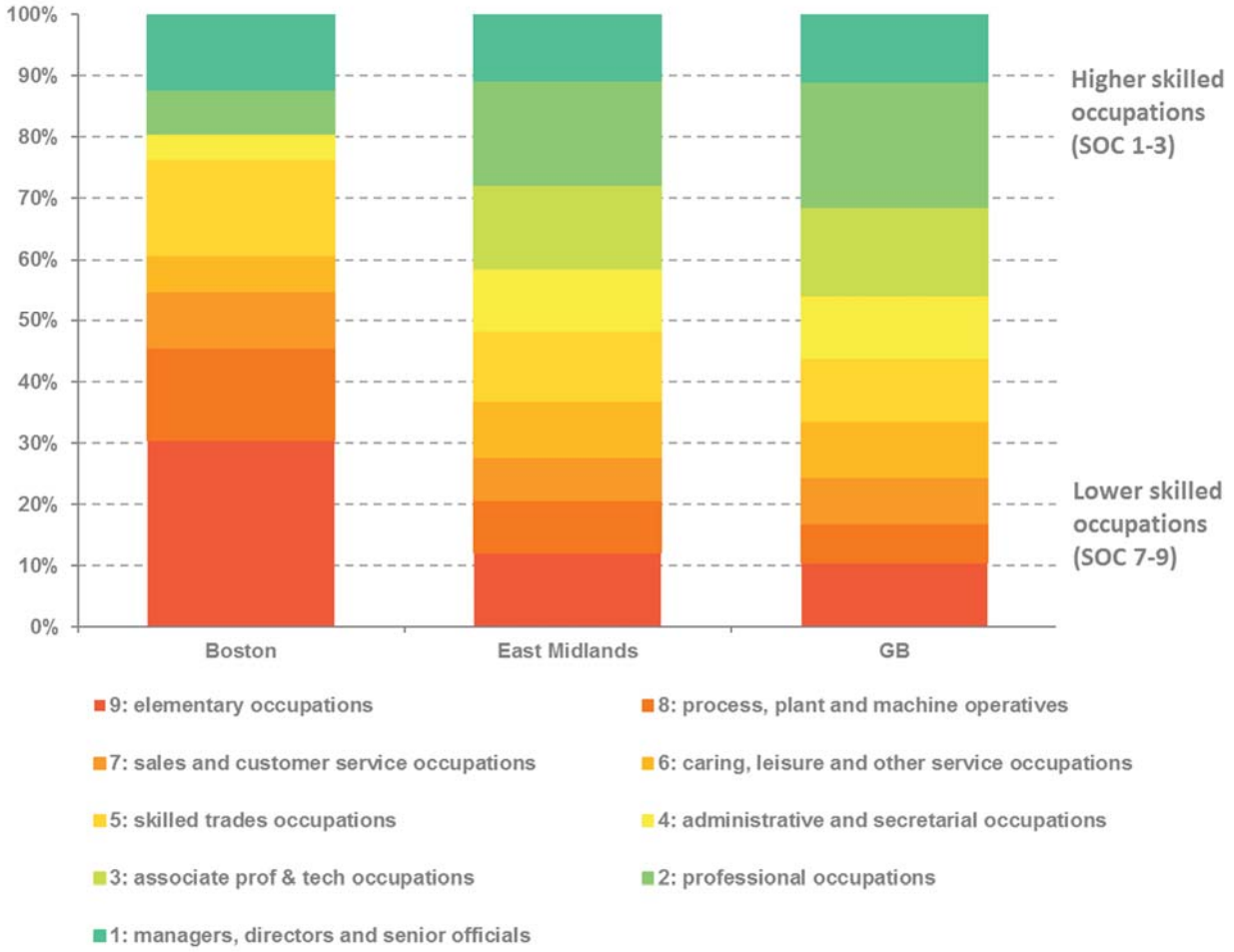

Plate 20.4 Occupational Profiles by Standard Occupational Code (SOC) (2018b). Source: ONS, 2018 (Annual Population Survey / Lichfields analysis).

Earnings

20.6.27 The Annual Survey of Hours and Earnings (ASHE) data (ONS, 2018d) indicates that gross weekly median resident wages across the AOI (£421.60) were lower than the East Midlands (£571.10) and the equivalent national figure (£529.90).

20.6.28 The gross weekly median workplace-based earnings were £439.60 across the AOI in comparison with the East Midlands (£570.90) and nationally (£515.90). This demonstrates that Boston is characterised by a low wage economy relative to the regional and national position. It also demonstrates that those who work within the AOI earn more than those living within the AOI – an indicator that a proportion of higher paid workers choose to live outside the AOI but commute in to access employment opportunities.

Deprivation

20.6.29 Deprivation at the local level is measured by the Index of Multiple Deprivation (IMD), which uses a series of datasets to rank areas across seven domains that range from income to health. These categories combined together produce a multiple deprivation score for each local area (DCLG, 2015).

20.6.30 The latest English Indices of Deprivation (DCLG, 2015) provides a composite measure of deprivation at a local level. The results show that Boston is ranked 66th out of 326 local authorities in England, where 1 represents the most deprived local authority and 326 is the least deprived. This means that the District is ranked just outside the most deprived 20% local authorities in England.

20.6.31 The IMD 2015 identifies in overall terms (i.e. a synthesis of the seven domains of deprivation) that Boston contains just one Lower Super Output Area (LSOA) within the 10% most deprived in England, five in the 20% most deprived and nine in the 30% most deprived LSOAs nationally. 15 LSOAs within the local authority area are within the 50% least deprived in England.

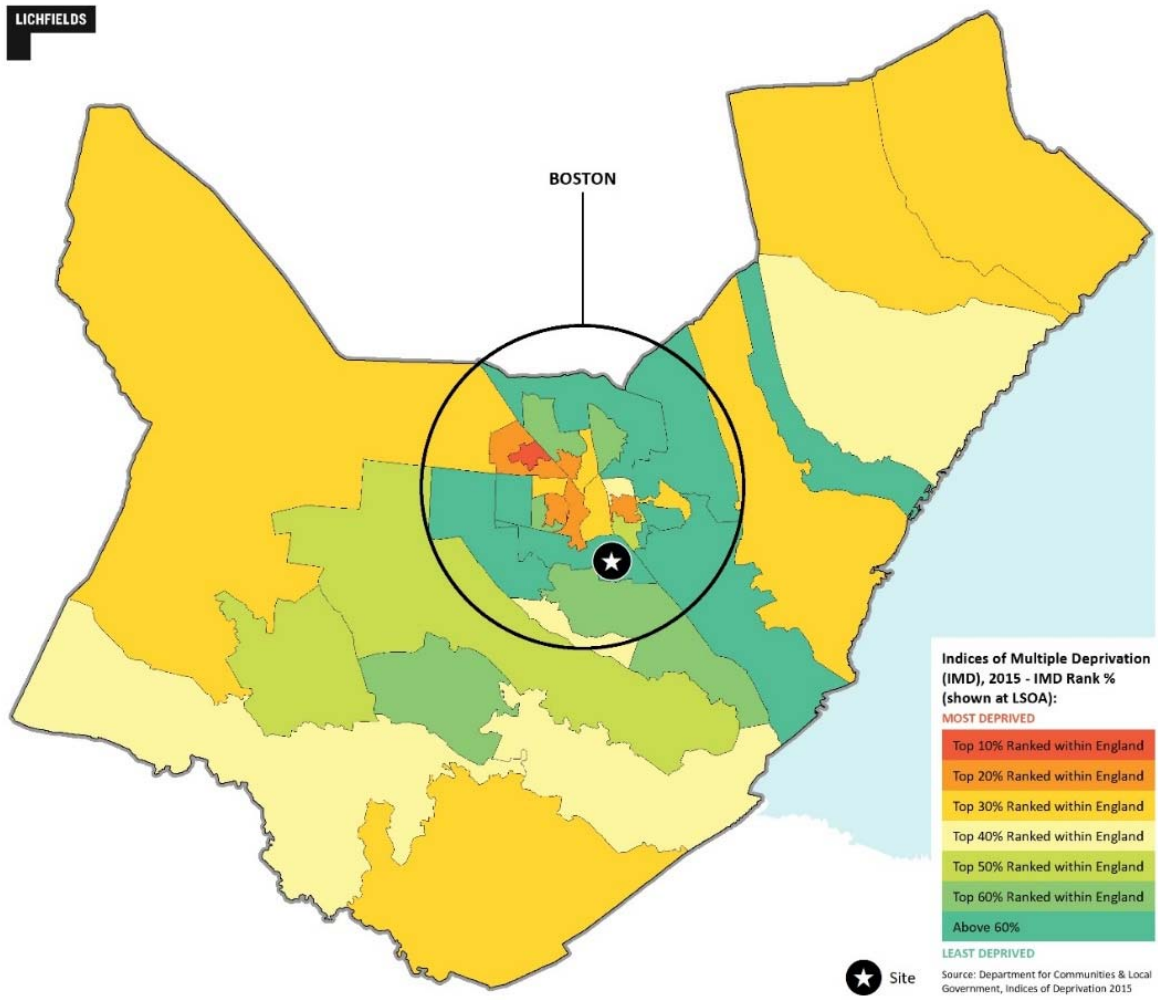

Plate 20.5 Deprivation Map of the AOI. Source: DCLG (2015) / Lichfields analysis

20.6.32 **Plate 20.5** illustrates that the six LSOAs classified within the most deprived 10% and 20% of English local authorities are all located within the town of Boston, and therefore within close proximity to the Application Site.

Community Infrastructure

Education

20.6.33 The Facility would not directly be expected to give rise to an additional demand for school places. However, where workers from outside the AOI move in to fill the employment opportunities created by the Facility, this could give rise to an additional demand for school places within the AOI. The extent to which labour will be sourced from beyond the AOI and the implications of this in relation to school places is considered in full in **Section 20.7**.

20.6.34 Schools in the AOI fall under the responsibility of Lincolnshire County Council which is the Local Education Authority (LEA). Using school capacity and roll data from the Department for Education (Department of Education, 2018), schools were filtered based upon their proximity to the Facility (i.e. the AOI).

20.6.35 Ten state primary schools, as detailed in **Table 20.5**, were identified as being located within the AOI (i.e. within 2 miles or 3.22 km). At primary level, schools in the AOI provide 3,814 places whilst the number of pupils on the roll is 3,673. This therefore indicates a surplus of 141 places (3.6%).

Table 20.5 Primary School Capacity within the AOI

Name	Distance from Development (km)	School Capacity	Surplus / Deficit (-)
Hawthorn Tree School	1.68	420	36
The Saint Thomas' Church of England Primary School, Boston	0.67	420	15
The St Nicholas Church of England Primary School, Boston	1.02	240	14
Wyberton Primary School	2.05	210	(20)
Tower Road Academy	2.04	630	13
Carlton Road Academy	2.38	459	9
Staniland Academy	2.21	630	3
Park Academy	2.89	315	(70)
Fishtoft Academy	2.10	70	15
Boston Pioneers Free School Academy	1.68	420	126
Boston St Mary's RC Primary Voluntary Academy	2.16	-	-
Total		**3,814**	**141**

Source: Department for Education (2018) / Lichfields analysis

20.6.36 The Department for Education recommendation is that, to avoid the risk of having insufficient capacity as a result of unexpected fluctuations in pupil numbers and to allow for flexibility and reasonable parent choice, schools should plan for a surplus of a minimum of 5% (Department for Education, 2013). Assuming an operational surplus capacity of 5% (191 places), the current balance of provision indicates that there is a deficit of 50 primary school places within the AOI.

20.6.37 At secondary level, total capacity in the AOI (within 3 miles or 4.83 km) is identified as 2,479 places. The number on the roll is 2,492 pupils, indicating a deficit of 13 places (less than 0.01%), as detailed in **Table 20.6**.

20.6.38 Assuming an operational surplus capacity of 5%, this indicates that there is currently a deficit of 137 secondary school places.

Table 20.6 Secondary School Capacity within the AOI

Name	Distance from Development (km)	School Capacity	Surplus / Deficit (-)
Haven High Academy	2.82	1,025	(14)
Boston High School	2.69	811	29
The Boston Grammar School	1.42	643	(28)
Total		**2,479**	**(13)**

Source: Department for Education (2018) / Lichfields analysis

Health

20.6.39 There are five GP surgeries located within the AOI (within three miles or 4.8 km of the Facility) as indicated in **Table 20.7**. **Table 20.7** indicates that, against a target ratio of 1,800 patients per GP (NHS HUDU, 2009), there is currently a shortfall of GPs within the AOI.

Table 20.7 GP Provision within the AOI

Surgery Name	Number of Patients	Number of Full Time GPs	Ratio of Patients to GPs
Liquorpond Surgery	11,390	4.6	2,476
Greyfriars Surgery	11,468	3.8	3,018
Stuart House Surgery	8,165	0	-
Parkside Medical Centre	14,586	5.15	2,832
Kirton Medical Centre	5,903	1.97	2,996
Total	**51,512**	**15.52**	**3,319**
Difference (+/-)			**-1,519**

Source: NHS Choices (2018) / Lichfields analysis

20.6.40 A review of dental provision within the AOI indicates that there are eight dental practices located within three miles (4.8 km) of the Facility (**Table 20.8**). Collectively, there are 27 dental practitioners operating within the AOI at present.

Table 20.8 Dental Provision within the AOI

Surgery Name	Number of Dentists
Pump Square Dental Practice	2
Bupa Dental Care, Boston	5
Community Dental Services CIC	4
Boston Smile Centre	-
Boston Dental Centre	8
Holland House Dental Practice (Portman Healthcare)	5
Smile Orthodontics Boston	3
Total	**27**

Source: NHS Choices (2018) / Lichfields analysis

Local Housing Market Conditions

Housing Stock

20.6.41 Live tables on dwelling stock from the Ministry of Housing, Communities and Local Government indicate that a total of 29,310 dwellings were located in Boston in 2017 (MHCLG, 2017). This represents an increase of 4.7% since 2009, which is compares to an increase of 5.9% across the East Midlands and 5.5% nationally over the same period.

Housing Type

20.6.42 The composition of the current housing stock within Boston, by type, is shown in **Plate 20.6**. This is benchmarked against the housing stock composition for the East Midlands and nationally.

Plate 20.6 Housing Stock by Type. Source: Census 2011a / Lichfields analysis

20.6.43 As shown in **Plate 20.6**, the housing stock in Boston contains a higher proportion of detached homes than the regional and national averages. It also contains a lower proportion of semi-detached and terraced homes relative to the regional and national averages.

Housing Tenure

20.6.44 The stock of housing in Boston is dominated by owner-occupied properties (63.9%). This is comparable to the national (63.3%) average but slightly below the regional (67.2%) average. Boston contains a marginally higher proportion of social rented housing (19.0%) compared to the regional (16.5%) and national averages (18.5%) (Census, 2011c) (see **Plate 20.7**).

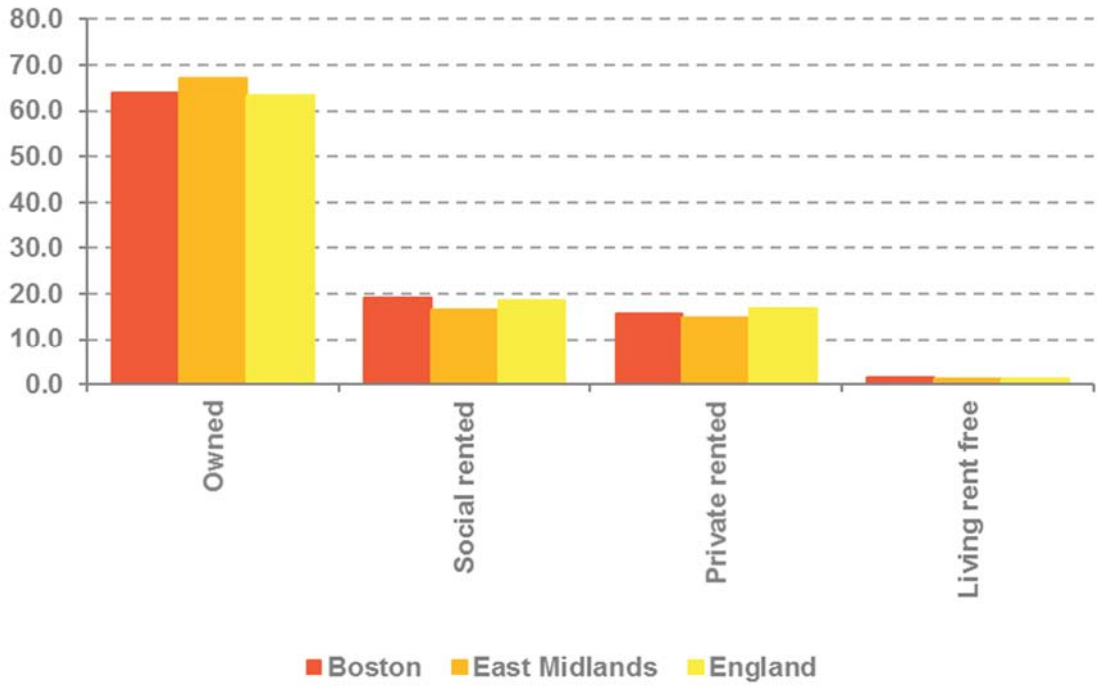

Plate 20.7 Percentage of Overall Housing Stock by Tenure. Source: Census 2011c / Lichfields analysis

Projected Housing Need

20.6.45 ONS 2016-based household projections indicate that, over the period 2011 - 2036, households in the BBC area are projected to increase from 27,000 to 31,000, equating to an increase of 14.8% (ONS, 2017c).

20.6.46 Using the 2016-based household projections, the most recent Strategic Housing Market Assessment (SHMA) produced for the South-East Lincolnshire Joint Strategic Planning Committee [1] sets out a net annual requirement for 295 dwellings in Boston over the period 2011 - 2036 to meet local housing needs.

20.6.47 The latest housing delivery data from MHCLG Live Dwelling Tables indicates that in 2017 - 2018, 310 net additional homes were delivered (MHCLG, 2018).

Anticipated Evolution of the Baseline Condition

20.6.48 Please include a paragraph on how you expect the baseline to change over time in the absence of the Facility. The South-East Lincolnshire Joint Strategic Planning Unit's Employment Land Technical Paper Update (SELJSPU, 2017) indicates that by 2036 (the end of the Local Plan period) it is anticipated that there will be an additional 3,800 jobs in the AOI (BBC).

[1] Boston local authority area falls within this administrative area for strategic planning purposes

20.6.49 The AOI's population to 2037 is expected to grow by 6.2% (72,727). Whilst in absolute terms, the projected population change within the 'working age' bracket over the same period is expected to increase by 1.3%, proportionately the working age population is projected to decrease from 60.4% to 57.6% of the total population. Approximately one quarter of the population of the AOI is projected to be aged 65+ in 2037 compared to approximately one fifth of the population in 2017.

20.6.50 ONS 2016-based household projections indicate that, over the period 2011 - 2036, households in the BBC area are projected to increase from 27,000 to 31,000, equating to an increase of 14.8% (ONS, 2017c).

20.7 Potential Impacts

20.7.1 This section assesses the main socio-economic effects of the Facility during construction, operation and decommissioning.

Embedded Mitigation

20.7.2 As part of the project design, embedded mitigation measures have been proposed to reduce potential socio-economic impacts. These measures are considered standard industry practice for this type of the development. It is understood that the intention is for the Facility is to gradually increase the proportion of workers at the Facility sourced from the local area over a period of time. This phased integration of local labour will align with necessary improvements in training capabilities within the site's workforce and operating model. This incremental shift towards increasing the proportion of locally recruited employees will help to reduce the displacement impacts associated with the Facility by ensuring that any resultant adjustments within the local labour market occur gradually.

Worst Case

20.7.3 This section establishes the Worst Case Scenario (WCS) for each key impact category, forming the basis for the subsequent impact assessment.

20.7.4 Full details of the range of development options being considered are provided within **Chapter 5 Project Description**.

20.7.5 For the purpose of the socio-economic chapter, only those design parameters with the potential to influence the level of impact to relevant receptors are identified.

20.7.6 The assessment of potential socio-economic impacts has been conducted

following the provision of information about the job creation effects of the Facility both during the construction and operational phases. This information has been presented as absolute figures rather than as a range of different job creation outcomes. As such, the assessment of potential socio-economic impacts assessed at **Section 20.7** also represents the Worst Case Scenario. Since the assessment of employment impacts - both during construction and operation – influences the remainder of potential impacts these also represent the Worst Case Scenario.

Potential Impacts during Construction

Employment

Direct Employment

20.7.7 Lichfields was advised by the Applicant that the Facility is expected to support, on average, approximately 300 jobs per annum throughout the duration of a build period of up to 42 months.

20.7.8 It is understood that the lower end of the range is based upon the indicative labour requirements schedule shown in **Table 20.9**. This is predicated on the assumption that all three gasifiers are delivered sequentially.

Table 20.9 Indicative Labour Requirement Schedule During Construction

Role	No. of Jobs
Fairport Engineering Ltd (Principal Contractor)	30
AUBP	3
Package Suppliers	19
Visitors	10
Carbon Capture Storage Auditor	1
Installation Team	150
Crane Operatives	6
Civils Team	30
Indicative Total	**249**
Estimated Range	**250-300**

Source: The Applicant

20.7.9 Levels of construction employment are not, however, anticipated to remain uniform over the duration of the build but will, instead, ebb and flow over time to reflect the differing labour requirements of the various stages of the build programme. For instance, the early stages of the build (site enabling works,

groundworks and foundation preparatory works) are anticipated to require lower levels of construction labour. Lichfields was advised, by the Applicant, that the level of construction employment is currently anticipated to peak at 300 workers.

20.7.10 The Applicant has advised that they expect to be able to source a large number of direct construction workers from within the local area (indeed it is understood that the proposed groundworks and civil engineering contractor is based in Boston), but with some more specialist roles being sourced from specialist contractors that may be located beyond the area of impact. It is understood that the specialist roles relate to those labour inputs to be provided by the package suppliers (19 jobs) and installation team (150 jobs). In total, these jobs account for approximately 56% of the peak labour requirement. As such, it is estimated that a minimum of 44% of the direct construction jobs to be created will be filled by local residents. 44% (132 jobs) constitutes approximately 14% of the current construction labour force in Boston. It is not anticipated that this would give rise to any local labour shortages but in the event that it did, it is likely that this could be absorbed across the wider Greater Lincolnshire LEP area across which the current construction labour force totals 22,000.

20.7.11 It is not anticipated that the Facility would have any effect in relation to employment within the agricultural or fishery sectors. **Chapter 11 Contaminated Land, Land Use and Hydrology** considers issues related to land use in further detail. This identifies that the Application Site is predominantly disused agricultural land. It is not, however, currently utilised for an agricultural land use and has been allocated for industrial uses within the Lincolnshire Minerals and Waste Local Plan (LMWLP, 2016) and as 'Employment' land in the South-East Lincolnshire Local Plan (SELJSPC, 2019). As such, it is considered unlikely to be used for agricultural production again in the future. With respect to fisheries, **Chapter 18 Navigational Issues** provides a series of embedded mitigation measures which will minimise any potential effects of the Facility.

Indirect and Induced Employment

20.7.12 Construction typically involves purchases from a range of suppliers, who in turn purchase from their own suppliers further down the supply chain. The relationship between the initial direct and total economic effects is referred to as the 'multiplier effect'. It demonstrates that an initial investment can have much greater 'spin-off' effects as it works through the economy. The construction sector is recognised as being a part of the UK economy where there is a particularly large domestic effect in the supply chain.

20.7.13 In this context, it is anticipated that businesses in the local and wider impact areas would benefit from supply chain linkages and trade connections established during the construction phase. This would create additional indirect jobs in suppliers of construction materials and equipment etc.

20.7.14 In addition, local businesses would be expected to benefit from a temporary increase in demand as a result of expenditure by direct and indirect workers during construction. This could be expected to include wage spending of workers in shops, bars, restaurants and other services and facilities and helps to create additional induced jobs.

20.7.15 Research published in 2013 indicates that the construction industry has an indirect and induced multiplier of 2.51 (National Housing Federation, 2013). Applying this to the 300 direct jobs per annum to be supported indicates that the Facility could be expected to create 455 additional indirect/induced jobs per annum over the duration of the build period (in addition to the direct jobs derived above). The overall employment effect of the Facility is therefore estimated to be 755 total jobs per annum over a 42 month build period.

20.7.16 It is understood that no employment-generating uses are accommodated on the Application Site at present. As a result, no loss of on-site employment is anticipated during construction.

20.7.17 Taking the above into account, the employment effects of the Facility during the construction phase are considered to be temporary, short term and of **moderate beneficial** significance.

Housing Market

20.7.18 As set out in the preceding paragraphs, the Facility is expected to support 300 direct construction jobs throughout the duration of an estimated 42-month build period. The Applicant has advised that they expect to be able to source many of these (at least 44% but possibly more) from within the local area, whilst more specialist labour inputs may need to be sourced from specialist contractors located beyond the area of impact.

20.7.19 This assumption is broadly supported by case study analysis of the geographical distribution of construction workers in relation to the delivery of Nuclear Power Stations at Sizewell B and Flamanville 3 in France. It is acknowledged that these sites are not direct comparators to the Facility. They are, however, considered helpful in understanding the broad balance between the need for specialist skills procured at the national level and the ability to use more locally available construction workers when delivering major, energy-related civil engineering

projects.

20.7.20 With respect to Sizewell B, it is understood that the proportion of the construction workforce recruited locally peaked in the early stages of the build programme and ranged from 40% to 60% (EDF Energy, 2011). The majority of construction jobs filled by local workers (60%) were categorised as being semi-skilled/unskilled roles. With fewer local workers (30% and 10% respectively) accounting for skilled and professional, technical and managerial roles. It is estimated that 45-50% of workers at Flamanville 3 were recruited from the local area.

20.7.21 Based upon the above, it is estimated that 40%-60% of direct construction workers could be expected to be recruited from beyond the local area. Applying this to the indicative labour requirement at **Table 20.9**, this translates to between 100 and 180 workers.

20.7.22 The Facility does not allow for the provision of any on-site accommodation (in the form of a construction camp or similar) which reflects the scale of employment effects anticipated. As such, any increased demand associated with construction workers from beyond the local area will likely be focussed on the private housing market, as well as less permanent forms of accommodation, such as guesthouses and B&Bs.

20.7.23 An analysis of housing market effects set out within the Hinkley Point C Environmental Appraisal (EDF Energy, 2011) provides a helpful starting point for estimating the possible distribution of demand by accommodation type. It is recognised, however, that the scale of employment to be supported by Hinckley Point C and the length of the build are both greater than for the Facility considered within this PEIR. As such, it is considered likely that the Facility would generate (in proportionate terms) less demand for owner occupied properties than Hinkley Point C. This would be offset by an increase in the share of demand attributable to private rented properties and guesthouses/B&Bs.

20.7.24 Notwithstanding the above, the work shows that – excluding on-site accommodation – demand for accommodation from non-local workers at Hinkley Point C is expected to breakdown as follows:

- Approximately 20% of workers in owner occupied properties;
- Approximately 40% of workers in private rented properties; and
- Approximately 40% of workers in guesthouses/B&Bs etc.

20.7.25 Applying this indicative breakdown to a maximum of 180 workers from beyond the local area, indicates that the proposals could create demand for:

- 36 owner occupied properties;
- 72 private rented properties; and
- 72 guesthouse/B&B bed spaces.

20.7.26 As set out in **Section 20.5**, Boston currently contains 29,310 homes. As such, an increase in demand equivalent to a maximum of 108 (owner occupied and private rented) units corresponds to 0.4% of stock. It should be noted that this allows for no house sharing between workers and assumes that all workers from beyond the local area choose to live in Boston Borough. ONS travel to work data (2016) (Census 2011) shows that 25% of those working within Boston commute in from the surrounding local authorities, most notably: East Lindsey (9% of workers); South Holland (7% of workers); and North Kesteven (5% of workers). As such, the observed effects of the Facility with respect to housing could be lower than estimated.

20.7.27 Taking the above into account, the housing market effects of the Facility during the construction phase are considered to be temporary, short term and negligible.

Community Infrastructure

20.7.28 The Facility could, by attracting construction workers to move into the local area, create additional demand for community infrastructure including education and health facilities.

Education

20.7.29 With respect to education facilities, the South-East Lincolnshire Infrastructure Delivery Plan (PBA, 2016) sets out the assumed relationship between additional housing delivery and demand for primary and secondary school places. Whilst it is not anticipated that the Facility will necessitate an increase in housing delivery, the same allowances (pupil yields) can be applied to the increased demand for housing in the local area in order to arrive at a view regarding the potential impacts with respect to education.

20.7.30 **Table 20.10** applies the pupil yields to the additional 108 (owner occupied and private rented homes) derived above. This shows that the Facility could be expected to increase demand for primary school places by up to 22 places. This represents 0.6% of the current capacity of primary schools within the area of impact, as set out in **Section 20.6**. The schools currently operate with surplus capacity of 3.6% (141 surplus places), which is lower than the 5% operational surplus typically planned for. There are, however, several schools in the area of impact where surplus places remain available (most notably Hawthorn Tree

School and Boston Pioneers Free School Academy) and which could accommodate the demand associated with the Facility.

20.7.31 Taking this into account, as well as the scale of demand (0.6% of total existing capacity) the effect of the Facility with respect to primary school education during construction is considered to be temporary, short term and **negligible**.

20.7.32 In addition, it can be seen from **Table 20.10** that the Facility could be expected to create demand for an additional 21 secondary school places. This corresponds to 0.8% of the current capacity of secondary schools within the area of impact, as set out in **Section 20.6**. There are three secondary schools located in the area of impact at present, with a current deficit (in aggregate terms) equivalent to 13 places. As such, any additional demand associated with the Facility would increase the current deficit of provision.

20.7.33 Taking the above into account, as well as the scale of demand associated with the Facility (0.8% of existing capacity) the effect with respect to secondary school education during construction is considered to be temporary, short term and **minor adverse**.

Table 20.10 Education Impacts During Construction

	Primary Schools	Secondary Schools
Pupil Yield	0.2	0.19
Increase Housing Demand	108	108
Resultant Pupil Places	22	21

Source: South-East Lincolnshire Infrastructure Delivery Plan (PBA, 2016) / Lichfields Analysis

Health

20.7.34 As set out above, it is anticipated that the Facility could result in a small number of construction workers relocating to the area of impact during the build period. It is estimated that this would total no more than 108 workers.

20.7.35 If it is assumed that these workers all moved their families into the area, and based upon an average household size of 2.3 (in accordance with the South-East Lincolnshire Infrastructure Delivery Plan (PBA, 2016)) then this could be estimated to correspond to an additional 248 residents. Based upon the nationally accepted benchmark of 1,800 patients per FTE GP (NHS HUDU, 2009) this is estimated to correspond to a need for 0.1 additional GPs.

20.7.36 In relation to dental provision, an additional 248 residents would require each of the eight dental practices in the local area to accommodate, on average, an

additional 31 patients. This is equivalent to nine additional patients for each of the 27 dental practitioners currently operating from the local practices.

20.7.37 It is therefore anticipated that the Facility would give rise to temporary, short term and negligible effect with respect to health.

Tourism

20.7.38 The Application Site is situated within an area of land allocated for employment uses (industrial and commercial) in the SELLP. It is bounded by existing industrial uses – including a waste wood management facility and a household waste recycling centre – to the north, west and south. In addition, the Biomass UK No. 3 Ltd gasification plant is located on the eastern border of the site. As such, the Facility will be situated in an area that is already established and in use for similar industrial activities – it will not, therefore, alter the character of the surrounding area in a way that could be expected to impact upon the tourism appeal of the area of impact.

20.7.39 It is understood that the Facility will lead to minor modifications to the local public right of way network including The England Coast Path and the Macmillan Way (an interconnected series of footpaths stretching from Boston to Abbotsbury in Dorset). It is anticipated that the development of the Facility will lead to small alterations to the route so that the public right of way does not run along the flood bank where the wharf will be created. As such, it is considered that the impact of this will be minor.

20.7.40 Additionally, **Plate 20.8** illustrates the proximity of the Application Site to a range of key tourism facilities and natural assets in the local area. From this, it can be seen that no key tourist attractions are located within half a mile of the Application Site and that no natural assets are located within a mile and half. It is therefore assessed that any construction activity at the Application Site – which will be undertaken in accordance with good environmental practice – is unlikely to have a material effect on the demand for or attractiveness of existing tourism facilities.

20.7.41 In some instances, it would be reasonable to assume that increased demand for labour from beyond the local area during construction could generate a beneficial tourism effect due to increased demand for hotels, guesthouses etc. from workers as well as visits from friends and family which could increase demand for a variety of tourism attractions. Given the number of construction jobs that are expected to be sourced from beyond the area of impact, it is anticipated that any impacts of this nature would be negligible.

20.7.42 Overall, therefore, the Facility is expected to have temporary, short term and

negligible effect with respect to tourism.

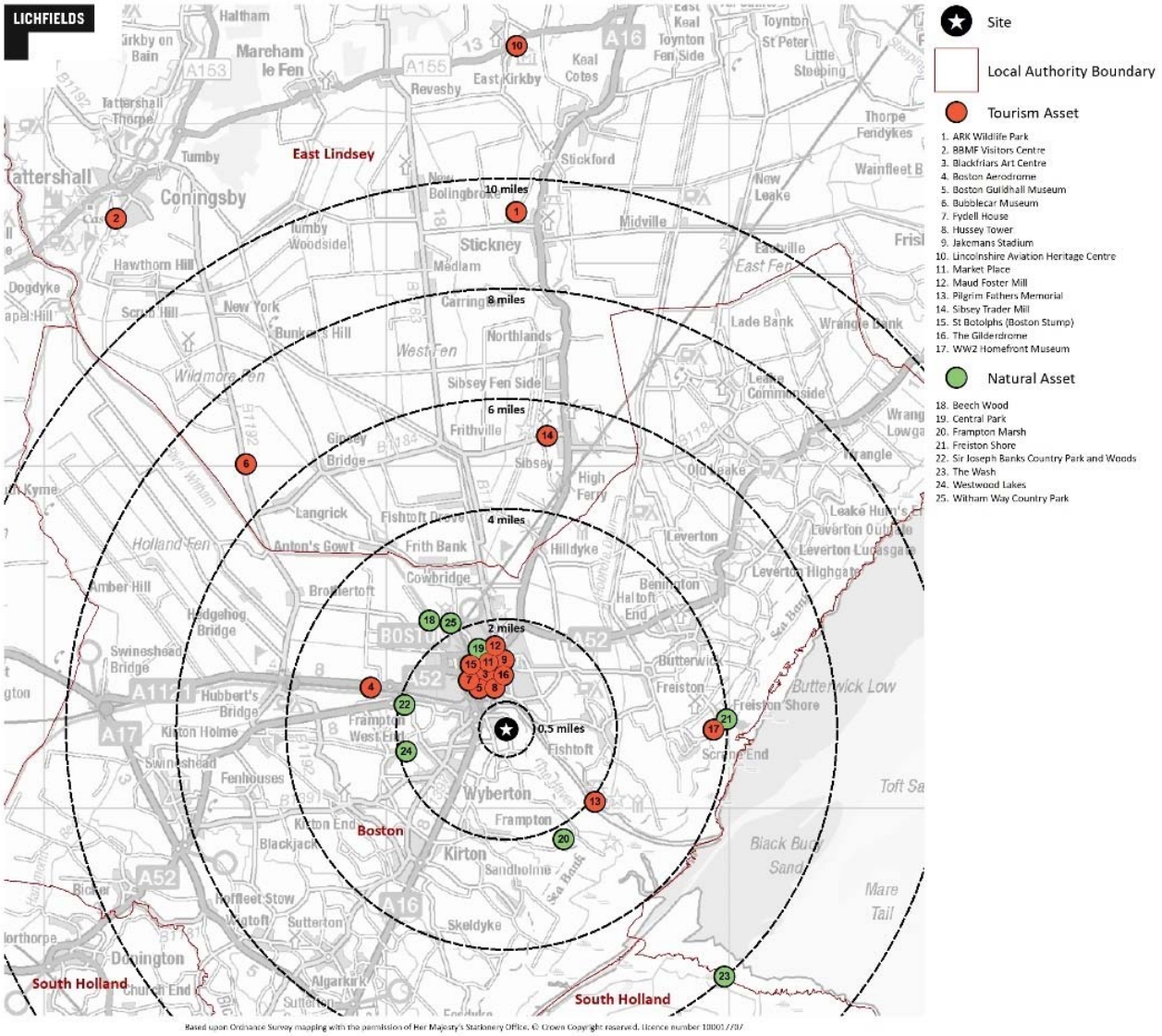

Plate 20.8 Proximity to Existing Tourism Assets. Source: Lichfields analysis.

Potential Impacts during Operation

Employment

Direct Employment

20.7.43 Lichfields was advised by the Applicant that the Facility is expected to support an estimated 104 gross direct FTE jobs during operation. This is summarised in **Table 20.11**.

Table 20.11 Indicative Employment Schedule During Operation

Function	FTE Jobs
Lightweight aggregate plant	59
Gasification	32
RDF Storage Operatives	10
RDF Feedstock Processing	3
Total	**104**

Source: The Applicant / Lichfields analysis

Net Additional Employment

20.7.44 In estimating the net additionality of the above employment effects, it is important to make allowances for the relocation of existing jobs currently based at the Application Site and to account for wider displacement effects.

20.7.45 It is understood that no employment generating uses are accommodated on the Application Site at present. As a result, no loss of on-site employment is anticipated. In addition, the Facility is not expected to have any effect in relation to employment within the agricultural or fishery sectors. **Chapter 11 Contaminated Land, Land Use and Hydrogeology** considered issues related to land use in further detail. This identified that the Application Site is predominantly agricultural land. It is not, however, currently utilised for an agricultural land use and has been allocated for Employment use in the South-East Lincolnshire Local Plan; and; industrial uses within Lincolnshire's Minerals and Waste Local Plan. As such, it is considered unlikely to be used for agricultural production again in the future. With respect to fisheries, **Chapter 18 Navigational Issues** details a series of embedded mitigation measures which will be applied which will minimise any potential effects of the Facility.

20.7.46 Wider displacement effects refer to the extent to which the Facility could reduce demand for competitor businesses in the local area or create shortages of labour in other local businesses. Given the UK's commitment to generate at least 15% of energy demand from renewable sources by 2020 and to further reduce carbon emissions by 80% to 2050DECC, 2015 it is anticipated that the Facility is unlikely to materially reduce demand for competitor organisations. In relation to the availability of labour, however, it is acknowledged that there are only 390 residents in the AOI claiming JSA, of which only five are currently seeking work as process plant and machinery operatives (ONS, 2018e). This would perhaps suggest that the employment opportunities to be created at the Application Site could result in some tightening of the local labour market.

20.7.47 The Applicant estimate that all 32 jobs related to gasification functions will be filled by existing staff relocating to Boston from elsewhere in the first instance, in order to ensure that the necessary skills are in place when the operational phase commences. Some additional roles may also need to be recruited/relocated from beyond the area of impact initially, although the Applicant advised that this is more difficult to quantify with any degree of accuracy.

20.7.48 Lichfields understands that the Applicant's ultimate aspiration for the Facility is to increase the proportion of workers sourced from the local area over time once the necessary training capability has been embedded within the site's workforce and operating model. This incremental shift towards increasing the proportion of locally recruited employees will help to reduce the displacement impacts associated with the Facility by ensuring that any resultant adjustments within the local labour market occur gradually. Lichfields has been informed by the Applicant that Boston College has expressed an interest in providing bespoke apprenticeship schemes related to the Facility as part of the college's expansion to engineering sector education.

20.7.49 Taking the above account, a displacement rate of 50% has been applied. As such, it is estimated that the Facility offers the opportunity to deliver net on-site employment equivalent to approximately 52 FTE jobs. It is anticipated that most, if not all, of these jobs will be filled by local residents once the training capability is in place to allow existing employees drawn in from beyond the area of impact (to provide the necessary skills for the commencement of the operational phase) to be redeployed elsewhere.

Indirect and Induced Employment

20.7.50 In addition to the direct jobs considered above, some indirect employment would also be created by the additional spending on goods and services by the operator. The wage expenditure of workers employed directly at the Facility, as well as those employed in local businesses in the supply chain, would also support induced employment in shops, services and other businesses in the local economy.

20.7.51 The HCA Additionality Guide (HCA, 2014) estimates that industrial uses typically give rise to multiplier effects of 1.29 at the local level, rising to 1.44 at the regional level. On this basis, it is estimated that the 52 net additional FTE jobs derived above could support the creation of a further 15 indirect and induced FTE jobs in the local economy (i.e. the AOI). At the regional (East Midlands) level a total of 23 indirect and induced FTE jobs are estimated to be supported – including the 15 to be captured locally. This corresponds to 67 FTE jobs, in total, across the

AOI – rising to 75 FTE jobs at the regional level.

20.7.52 This is considered to represent a permanent and **minor beneficial** effect.

Housing Market

20.7.53 As set out in **Table 20.11**, the Facility is expected to support approximately 104 gross direct FTE jobs once operational. The Applicant estimate that 32 jobs related to gasification functions will be filled by existing staff relocating to Boston from elsewhere in the first instance, to ensure that the necessary skills are in place when the operational phase commences. Some additional roles may also need to be recruited/relocated from beyond the area of impact initially, although the Applicant advise that this is more difficult to quantify with any degree of accuracy.

20.7.54 It is understood that the Applicant's ultimate aspiration for the Facility is to increase the proportion of workers sourced from the local area over time once the necessary training capability has been embedded within the site's workforce and operating model. As such, whilst there may be some temporary, short-term effects observed in the housing market, any permanent effects are anticipated to be negligible.

20.7.55 If it is assumed that 50% of all gross direct jobs are recruited/relocated from beyond the AOI in the first instance (32 gasification jobs plus an allowance for additional roles across other business functions) then this would equate to 52 workers. As with the construction stage, it is anticipated that the accommodation needs of any operational employees from outside of the AOI would be met through a combination of owner occupation, private rented accommodation and guesthouses/B&Bs. As a maximum, it is therefore anticipated that the Facility could result in a temporary, short-term increase in demand for housing in the AOI equivalent to 52 units. This allows for no house sharing between workers and assumes that all workers from beyond the local area choose to live within Boston Borough. ONS travel to work data (Census 2011) shows that 25% of those working within Boston commute in from the surrounding local authorities, most notably: East Lindsey (9% of workers); South Holland (7% of workers); and North Kesteven (5% of workers). As such, the observed effects of the Proposal with respect to housing could be lower than estimated.

20.7.56 Notwithstanding the above, a temporary increase in demand for housing equivalent to 52 units would correspond to 0.2% of Boston Borough's current supply of 29,310 homes (as set out in **Section 20.6**).

20.7.57 Overall, therefore, it is anticipated that the Facility would have a permanent and

negligible effect with respect to housing.

Community Infrastructure

20.7.58 Where the Facility attracts workers from beyond the AOI to relocate within Boston Borough in response to the employment opportunities created it could generate additional demand for community infrastructure including education and health facilities.

Education

20.7.59 As set out above, the Applicant's ultimate aspiration for the Facility is to recruit all workers from the local area eventually. As such, any permanent effects with respect to education are anticipated to be negligible. In the short term, however, some workers will need to be sourced from beyond the AOI to ensure that the necessary skills are in place when the operational phase commences. This could, therefore, give rise to some temporary and short term increases in demand for school places.

20.7.60 Based upon the assumptions outlined above in relation to the housing market, it is assumed that a maximum of 52 workers could be recruited from beyond the AOI in the first instance, with this level reducing incrementally over time.

20.7.61 The South-East Lincolnshire Infrastructure Delivery Plan (PBA, 2016) sets out the assumed relationship between additional housing delivery and demand for primary and secondary school places. Whilst it is not anticipated that the Facility will necessitate an increase in housing delivery, the same allowances (pupil yields) can be applied to the increased demand for housing in the local area in order to arrive at a view regarding the potential impacts with respect to education.

20.7.62 **Table 20.12** applies the pupil yields to the additional 52 households to be generated by the Facility (assuming that no house sharing takes place between colleagues employed at the Application Site). This shows that the Facility could be expected to increase demand for primary school places by up to 10 places. This represents 0.3% of the current capacity of primary schools within the AOI, as set out in **Section 20.6**. The schools currently operate with a surplus of 3.6% (141 surplus places) which is lower than the 5% operational surplus typically planned for. There are, however, a number of schools in the area of impact where surplus places remain available (most notably Hawthorn Tree School and Boston Pioneers Free School Academy) and which could accommodate the short-term increase in demand associated with the Facility.

20.7.63 Taking the above into account, the effect of the Facility with respect to primary

school education during operation is considered to be permanent and negligible. Whilst a temporary, short term effect will be observed as the facility transitions towards a workforce drawn from the local area the effect of this is also expected to be negligible.

Table 20.12 Education Impacts During Operation

	Primary Schools	Secondary Schools
Pupil Yield	0.2	0.19
Increased Housing Demand	52	52
Resultant Pupil Places	10	10

Source: South-East Lincolnshire Infrastructure Delivery Plan (PBA, 2016) / Lichfields analysis

20.7.64 It can also be seen from **Table 20.12** that the Facility is expected to create demand for an additional 10 secondary school places. This corresponds to 0.4% of the current capacity of secondary schools within the AOI, as set out within **Section 20.6**. There are three secondary schools located within the AOI at present, with a current deficit (in aggregate terms) equivalent to 13 places. Any additional demand associated with the Facility would increase this shortfall of provision.

20.7.65 Taking the above into account, the Facility is considered to have a temporary and **minor adverse** effect with respect to secondary school provision. As the proportion of local workers employed at the site increases, however, this is expected to shift to a permanent and **negligible** effect.

Health

20.7.66 As set out above, the Applicant's ultimate aspiration for the Facility is to recruit all workers from the local area eventually and as a result any permanent effects with respect to health are anticipated to be negligible. In the short term, however, it is estimated that up to 52 workers may need to be sourced from beyond the AOI to ensure that the necessary skills are in place when the operational phase commences. This could give rise to some temporary and short term increases in demand for GP and dental facilities.

20.7.67 Assuming that all workers from beyond the area of impact relocate with their families – and based upon an average household size of 2.3 (as set out in the South-East Lincolnshire Infrastructure Delivery Plan (PBA, 2016)) – it is estimated that this could correspond to an additional 120 residents. Based upon the nationally accepted benchmark of 1,800 patients per FTE GPHUDU, 2009 this would represent a short-term increase in demand equivalent to 0.06 additional GPs.

20.7.68 In relation to dental provision, a short-term increase of 120 residents would require each of the eight dental practices in the local area to accommodate, on average, an additional 15 patients. This is equivalent to four additional patients for each of the 27 dental practitioners currently operating from the local practices.

20.7.69 Having regard to the above, the Facility is considered to have a permanent and **negligible** effect in relation to health.

Tourism

20.7.70 The Application Site is situated within an area of land allocated for employment uses (industrial and commercial) in the SELLP. It is bounded by existing industrial uses to the north, west and south. In addition, the Biomass UK No. 3 Ltd gasification plant is located on the eastern border of the site. As such, the Facility will be situated in an area that is already established and in use for similar industrial activities – it will not, therefore, be altering the character of the surrounding area in a way that could be expected to impact upon the tourism appeal of the AOI.

20.7.71 Additionally, **Plate 20.8** illustrates the proximity of the Application Site to a range of key tourism facilities and natural assets in the local area. From this, it can be seen that no key tourist attractions are located within half a mile of the Application Site and that no natural assets are located within a mile and half. As such, operational activity at the Facility is unlikely to have a material effect on the demand for or attractiveness of existing tourism facilities.

20.7.72 In some instances, it would be reasonable to assume that the need to recruit workers from beyond the AOI could generate beneficial tourism by driving visits from friends and family (thereby increasing demand for visitor accommodation and attractions). Additionally, some operational staff from beyond the AOI may choose to stay in hotel/guesthouse accommodation, which would again serve to increase demand. Given the number of operational jobs that are expected to be sourced from beyond the AOI, however, it is anticipated that any (short term) impacts of this nature would be negligible.

20.7.73 Overall, therefore, the Facility is expected to have permanent and **negligible** effect with respect to tourism.

Energy Security/Reliability

20.7.74 The Facility represents a long-term sustainable source of renewable energy. It can help to meet renewable energy targets and reduce carbon emissions – including the UK's commitment to generate at least 15% of energy demand from

renewable sources by 2020 and beyond and to further reduce carbon emissions by 80% to 2050.

20.7.75 It is understood that the Facility is capable of generating 80 MW of energy per hour and will operate 8,000 hours per annum. In total, therefore, the Facility offers the potential to generate an estimated 640,000 MW of energy each year.

20.7.76 The 2011 Census indicates that the average UK household uses 3.1 MW of energy per annum. As such, the Facility is capable of generating sufficient energy to meet the needs of 206,000 households. This corresponds to more than two-thirds of all households in Lincolnshire (306,970) and is 7.5 times higher than the number of households in Boston (27,290) as identified within the 2011 Census. The Facility therefore offers the potential to provide a sustainable source of renewable energy for the population that is representative of more than two-thirds of the county it is in. This is considered to represent a permanent and **moderate-to-substantial beneficial** effect.

Potential Impacts during Decommissioning

20.7.77 As set out within the Scoping Report, an assumption has been made (for the purposes of the PEIR and to allow a decommissioning assessment to be presented) that the Facility will have a lifetime of 25 years. This is understood to be typical for facilities of this nature.

20.7.78 The Scoping Report also sets out that the effects associated with any decommissioning phase are assumed to be of a similar level to those to be observed during the construction phase.

Employment

20.7.79 The decommissioning of the Facility is likely to generate a range of employment opportunities. In the absence of a phasing plan or indicative labour requirement schedule, it has been assumed that the effects would be broadly similar to the construction phase. As set out above, this approach is consistent with that proposed within the Scoping Report. It is therefore estimated that the decommissioning of the Facility could be expected to support 300 direct jobs per annum over a 42-month period. Further indirect and induced employment opportunities are also likely to be supported, although the scale of magnitude could perhaps be expected to be lower than the 455 estimated in relation to construction (due to a lower requirement for raw materials etc.).

20.7.80 Taking the above into account, the employment effects of the Facility during decommissioning are considered to be temporary, short term and **moderate**

beneficial.

Housing Market

20.7.81 As set out above, no phasing plan or indicative labour requirement schedule is available with respect to decommissioning. It has therefore been assumed that the direct employment effects of would be broadly similar to the construction phase (which is expected to support 300 direct jobs per annum over a period of 42 months).

20.7.82 If it is also assumed that the proportion of workers from beyond the local area is broadly comparable to that assumed with respect to construction (40%-60%) as well as the breakdown of non-local workers' housing preferences by tenure, then the Proposal could be estimated to create additional demand for a maximum 108 homes. This corresponds to 0.4% of stock at present, although the percentage share is likely to be lower in 25 years' time due to the delivery of additional housing in the intervening period.

20.7.83 The housing market effects of the Facility during decommissioning are therefore expected to be temporary, short term and **negligible**.

Tourism

20.7.84 The Application Site is situated within an area of land allocated for employment uses (industrial and commercial) in the SELLP. It is bounded by existing industrial uses to the north, west and south. In addition, the Biomass UK No. 3 Ltd gasification plant is towards the eastern border of the Application Site.

20.7.85 **Plate 20.8** illustrates the proximity of the Facility to a range of key tourism facilities and natural assets in the local area. The maps demonstrate that no key tourist attractions are located within half a mile of the Facility and that no natural assets are located within a mile and half. As such, any decommissioning activity – which will be undertaken in accordance with good environmental practice – is unlikely to have a material effect on the demand for or attractiveness of existing tourism facilities.

20.7.86 In some instances, it would be reasonable to assume that increased demand for labour from beyond the local area during decommissioning could generate a beneficial tourism effect due to increased demand for hotels, guesthouses etc. from workers as well as visits from friends and family which could increase demand for a variety of tourism attractions. Given the estimated job creation effects of decommissioning (and the likelihood that only a proportion of these will be specialist roles that need to be recruited from beyond the area of impact) it is

anticipated that any impacts of this nature would be negligible.

20.7.87 Overall, therefore, the Facility is expected to have temporary, short term and **negligible** effect with respect to tourism during decommissioning.

Mitigation Measures

20.7.88 This section considers the need for mitigation measures in order to address any adverse effects of the Proposed Development.

During Construction

20.7.89 It is anticipated that the Facility could give rise to a temporary, short term and moderate beneficial effect with respect to employment during construction. In addition, temporary, short term and negligible effects are expected in relation to: housing markets; primary education; health (GP and dental provision); and tourism. No mitigation measures are considered to be necessary in relation to any of the above.

20.7.90 A temporary, short term and minor adverse effect is anticipated with regards secondary education. A current deficit of secondary school place is already observed within the area of impact and the Proposal will increase demand by an estimate 21 places in the short term. It is understood that proposals are already in place for the provision of additional secondary school provision which would effectively mitigate the effects of the Proposal. The South-East Lincolnshire Infrastructure Delivery Plan (PBA, 2016) identifies that a new secondary school should be delivered within Boston (to meet the needs of Boston, Bicker and Butterwick) as an essential infrastructure priority for the local authority area. Given the scale of demand associated with the Facility, it is anticipated that this additional provision would be capable of accommodating the temporary uplift projected to occur during the construction phase. In the event of the delivery of a new secondary school in Boston (which is outwith the control of the Applicant), effective mitigation through the provision of additional capacity would see the secondary education effects of the Proposal shift from temporary, short term and minor adverse to temporary, short term and **negligible**.

During Operation

20.7.91 The Facility is expected to give rise to a permanent and moderate-to-substantial beneficial effect with respect to energy security/reliability and a permanent and minor beneficial effect in relation to employment. Permanent and negligible effects are anticipated with respect to all other effects (housing markets, education, health and tourism). As a result, no mitigation measures are considered to be necessary.

During Decommissioning

20.7.92 During decommissioning, it is anticipated that the Proposal would give rise to a: temporary, short term and moderate beneficial effect with respect to employment; and a temporary, short term and negligible effect in relation to both housing markets and tourism. No mitigation measures are therefore considered to be necessary.

Residual Impacts

20.7.93 This section considers the residual effects of the Facility, taking account of any mitigation measures. The majority of residual effects are the same as the effects discussed in the mitigation measures section. This reflects the fact that few mitigation measures were identified as being necessary.

During Construction

20.7.94 As set out above, a temporary, short term and minor adverse effect is anticipated with regard to secondary education. It is understood that proposals are already in place for the provision of additional secondary school provision which would effectively mitigate the effects of the Facility. This would see the secondary education effects of the Proposal shift from temporary, short term and minor adverse to temporary, short term and **negligible**.

20.7.95 All other effects were assessed as being **beneficial** or **negligible**. As a result, no mitigation measures are identified as necessary and the residual effects are the same as those described in **Section 20.7**.

During Operation

20.7.96 All effects were assessed as being **beneficial** or **negligible**. As a result, no mitigation measures were identified as necessary and the residual effects are the same as those described in **Section 20.7**.

During Decommissioning

20.7.97 All effects were assessed as being beneficial or negligible. As a result, no mitigation measures were identified as necessary and the residual effects are the same as those described in **Section 20.7**.

20.8 Cumulative Impacts

20.8.1 **Table 20.13** below considers whether impacts presented in **Section 20.7** have the potential to act cumulatively with other projects.

Table 20.13 Potential Cumulative Impacts

Impact	Potential for cumulative impact	Data confidence	Rationale
Construction: Employment	Yes	Medium	Potential for the capacity of the labour market in the AOI to be lowered if several large construction projects occur simultaneously.
Construction: Housing Market	Yes	Low	Other construction schemes could give rise to additional housing requirements in the AOI due to increased demand associated with construction workers from outside the AOI.
Construction: Primary Education	Yes	Low	Additional housing requirements could give rise to an increased demand for primary school places within the AOI.
Construction: Secondary Education	Yes	Low	Additional housing requirements could give rise to an increased demand for secondary school places within the AOI.
Construction: Health	Yes	Low	Additional housing requirements could give rise to an increased demand healthcare facilities within the AOI.
Construction: Tourism	Yes	Low	Potential for impacts of additional schemes on tourism to act cumulatively.
Operation: Employment	Yes	Medium	Potential for the capacity of the labour market in the AOI to be lowered if the operational periods of other projects occur simultaneously.
Operation: Housing Market	Yes	Low	Other schemes could give rise to additional housing requirements in the AOI due to increased demand associated with workers from outside the AOI.
Operation: Primary Education	Yes	Low	Additional housing requirements could give rise to an increased demand for primary school places within the AOI.
Operation: Secondary Education	Yes	Low	Additional housing requirements could give rise to an increased demand for secondary school places within the AOI.

Operation: Health	Yes	Low	Additional housing requirements could give rise to an increased demand healthcare facilities within the AOI.
Operation: Tourism	Yes	Low	Potential for impacts of additional schemes on tourism to act cumulatively.
Operation: Energy Security/Reliability	Yes	Low	Potential for impacts of additional schemes on Energy Security/Reliability to act cumulatively.
Decommissioning	Potential cumulative impacts during decommissioning will be the same as during construction		

20.8.2 Projects considered in the CIA are detailed in **Table 20.14**.

Table 20.14 Summary of Projects considered for the CIA in Relation to Socio-Economics

Project	Status	Development period	Distance from the Facility (km)	Project definition	Project data status	Included in CIA	Rationale
Boston Barrier Flood Defence	Transport and Works Act Order consented	2017 - ongoing	Boston Barrier at closest point to the Application Site is 500 m.	Environmental Statement	Complete/high	Yes	Potential for labour market competition with the Application Site for construction and operational employment and associated impacts to community infrastructure.
Triton Knoll Offshore Wind Farm	DCO consented	2008 - ongoing	Onshore cable corridor and Construction compound at Langrick 9.7 km from the Application Site	Environmental Statement	Complete/ high	Yes	Potential for labour market competition with the Application Site for construction and operational employment and associated impacts to community infrastructure. Potential for cumulative impact in relation to Energy Security/Reliability.
Viking Link Interconnector B/17/0340	Application approved	2014 - 2023	Bicker Fen substation 14.4 km from the Application Site	Environmental Statement	Incomplete	Yes	Potential for labour market competition with the Application Site for construction employment and associated impacts to community infrastructure.
Battery Energy Storage Plant	Application approved	2017 - ongoing	Beeston Farm less than 10 m	Detailed application	Incomplete	Yes	Potential for labour market competition with the

Project	Status	Development period	Distance from the Facility (km)	Project definition	Project data status	Included in CIA	Rationale
(Marsh Lane) B/17/0467			from the Application Site				Application Site for construction employment and associated impacts to community infrastructure.
The Quadrant Mixed-use development of 502 dwellings and commercial/ leisure uses B/14/0165	Application approved Construction started	2014 - ongoing	Quadrant 1 1.2 km from the Application Site	Details within ES	Quadrant 1 – Complete/ high Quadrant 2 - Incomplete/low	Yes	Potential for labour market competition with the Application Site for construction and operational employment and associated impacts to community infrastructure. Potential impact on overall housing supply within the AOI.
Land to the west of Stephenson Close Residential Development of up to 85 dwellings B/17/0515	Application not yet determined	2017 - ongoing	From the most eastern part of the Scheme to the Application Site is 550 m.	Outline only	Incomplete/low	Yes	Potential for labour market competition with the Application Site for construction and operational employment and associated impacts to community infrastructure. Potential impact on overall housing supply within the AOI.

20.8.3 An assessment was carried out to establish whether any cumulative effects may arise from the Facility when considered with various other schemes in proximity to the site (**Table 20.14**). The objective is to identify whether impacts from several developments which individually might be insignificant could, when considered together, cause a significant indirect and cumulative impact requiring mitigation.

20.8.4 A review of the relevant documentation has indicated that the cumulative schemes could give rise to an increase in demand for construction industry employment within the AOI and more widely. The construction employment associated with The Quadrant mixed-use development was assessed as 87 direct FTE jobs and a further 244 FTE jobs in the supply chain. The overall assessment of significance was major beneficial. The precise quantum of construction employment impacts associated with the remaining cumulative schemes has not been established following a review of the relevant documentation. Notwithstanding, it is anticipated that they would all give rise to construction industry employment within the AOI. However, given the nature of some of these schemes (offshore wind, flood defence, battery energy storage), it is highly likely that construction labour required would be highly specialised and therefore is more likely to be sourced from outside the AOI and is unlikely to directly compete with other schemes for local construction labour. As such, it is assessed that, collectively, the cumulative impact on construction employment is likely to be negligible. The resulting impact likely to be experienced on the housing market, community infrastructure and tourism during construction is also assessed as negligible.

20.8.5 During operation, The Quadrant development was assessed as delivering 663 full time and part time jobs and an overall impact that was major beneficial in significance. The scale of the operational employment impacts associated with the remaining as likely to be low and are unlikely to directly compete for local labour given their specialised nature. The delivery of c.500 homes over 7 years as part of the Quadrant Development will increase the supply of homes within the AOI, resulting in an impact on the housing market of moderate beneficial significance. It is anticipated that the delivery of these homes, alongside the potential to deliver a further 85 at land to the west of Stephenson Close, Boston could help to alleviate any potential increase in demand for housing associated with the delivery of the Facility or indeed the remaining cumulative schemes.

20.8.6 It is assessed that the cumulative impacts on energy security/reliability associated with the delivery of Triton Knoll offshore wind farm could combine positively with the Facility to give rise to an enhanced beneficial effect.

20.8.7 Overall, it is assessed that the cumulative impact of the schemes highlighted in

Table 20.14 would be negligible during both the construction and operational phases. There would therefore be no additional requirement for mitigation.

20.9 Transboundary Impacts

20.9.1 Transboundary Impact Assessment is not relevant in respect of socio-economics. This is justified on the basis of the analysis of commuting data presented in **Section 20.5** which reveals that Boston is a self-contained labour market area. Boston local authority area is therefore the most appropriate geography in which to consider the impacts of the Facility.

20.10 Inter-Relationships with Other Topics

20.10.1 **Table 20.15** below shows the other chapters which inter-relate to this Socio-Economics chapter.

Table 20.15 Chapter Topic Inter-Relationships

Topic and description	Related Chapter	Where addressed in this Chapter
Contaminated Land, Land Use and Hydrogeology	11	**Section 20.7**
Marine and Coastal Ecology	17	**Section 20.7**

20.11 Interactions

20.11.1 The impacts identified and assessed in this chapter have the potential to interact with each other, which could give rise to synergistic impacts because of that interaction. The worst case impacts assessed within the chapter take these interactions into account and for the impact assessments are considered conservative and robust. For clarity, the areas of interaction between impacts are presented in **Table 20.16**, along with an indication as to whether the interaction may give rise to synergistic impacts.

Table 20.16 Interaction Between Impacts

Potential interaction between impacts						
Construction						
	1 Employment	2 Housing Market	3 Primary Education	4 Secondary Education	5 Health	6 Tourism
1 Employment	-	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
2 Housing Market	**Yes**	-	**Yes**	**Yes**	**Yes**	**Yes**
3 Primary Education	**Yes**	**Yes**	-	**Yes**	**No**	**No**
4 Secondary Education	**Yes**	**Yes**	**Yes**	-	**No**	**No**
5 Health	**Yes**	**Yes**	**No**	**No**	-	**No**
6 Tourism	**Yes**	**Yes**	**No**	**No**	**No**	-

Operation							
	1 Employment	2 Housing Market	3 Primary Education	4 Secondary Education	5 Health	6 Tourism	7 Energy Security and Reliability
1 Employment	-	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**No**
2 Housing Market	**Yes**	-	**Yes**	**Yes**	**Yes**	**Yes**	**No**
3 Primary Education	**Yes**	**Yes**	-	**Yes**	**No**	**No**	**No**
4 Secondary Education	**Yes**	**Yes**	**Yes**	-	**No**	**No**	**No**
5 Health	**Yes**	**Yes**	**No**	**No**	-	**No**	**No**
6 Tourism	**Yes**	**Yes**	**No**	**No**	**No**	-	**No**
7 Energy Security and Reliability	**No**	**No**	**No**	**No**	**No**	**No**	-

Decommissioning		
It is anticipated that the decommissioning impacts will be similar in nature to those of construction.		

20.12 Summary

20.12.1 **Table 20.17** provides an overview of the effects of the Facility (with and without mitigation) during: construction, operation and decommissioning. From this it can

be seen that:

- Beneficial employment effects are expected to be observed during construction, operation and decommissioning;
- Beneficial effects with respect to energy security/reliability are anticipated during operation;
- A temporary, short term and minor adverse effect is anticipated in relation to secondary education during construction, but it is considered that this can be effectively mitigated throughout the course of the operational phase through the requirement identified in the SELLP Infrastructure Delivery Plan to deliver a new secondary school within the area of impact (Boston); and
- All other effects are anticipated to be negligible in scale.

20.12.2 Overall, and on balance, the Facility is assessed as having a **minor beneficial** effect from a socio-economic perspective.

Table 20.17 Impact Summary

Potential Impact	Receptor	Value/ Sensitivity	Magnitude	Significance	Mitigation	Residual Impact
Construction						
Employment	AOI	Medium	Beneficial	Moderate	n/a	Beneficial, Moderate
Housing Market	AOI	Low	Negligible	Negligible	n/a	Negligible
Primary Education	3 km of Application Site	Medium	Negligible	Negligible	n/a	Negligible
Secondary Education	5 km of Application Site	Medium	Adverse	Minor	Effective mitigation through the commitment of BBC to deliver a new secondary school in Boston, as identified in the SEELP Infrastructure Delivery Plan	Negligible
Health	5 km of Application Site	Medium	Negligible	Negligible	n/a	Negligible
Tourism	AOI	Low	Negligible	Negligible	n/a	Negligible
Operation						
Employment	AOI	Medium			n/a	Beneficial, Minor
Housing Market	AOI	Low	Negligible	Negligible	n/a	Negligible
Primary Education	3 km of Application Site	Medium	Negligible	Negligible	n/a	Negligible
Secondary	5 km of Application	Medium	Negligible	Negligible	n/a	Negligible

Potential Impact	Receptor	Value/ Sensitivity	Magnitude	Significance	Mitigation	Residual Impact
Education	Site					
Health	5 km of Application Site	Medium	Negligible	Negligible	n/a	Negligible
Tourism	AOI	Low	Negligible	Negligible	n/a	Negligible
Energy Security/Reliability	AOI	Medium/High	Beneficial	Moderate-Substantial	n/a	Beneficial, Moderate-Substantial
Decommissioning						
Impact Summary during decommissioning will be the same as during construction.						

20.13 References

Census (2011a) Origin Destination WF01BEW - Location of usual residence and place of work (OA level). Available at: https://www.nomisweb.co.uk/query/select/getdatasetbytheme.asp?theme=75&subgrp=Origin+Destination [Accessed: 12/12/2018].

Census (2011b) Key Statistics KS401EW - Dwellings, household spaces and accommodation type. Available at: https://www.nomisweb.co.uk/query/select/getdatasetbytheme.asp?theme=75&subgrp=Key+Statistics [Accessed: 12/12/2018].

Census (2011c) Key Statistics KS402EW - Tenure Available at: https://www.nomisweb.co.uk/query/select/getdatasetbytheme.asp?theme=75&subgrp=Key+Statistics [Accessed: 12/12/2018].

Department for Business, Energy and Industrial Strategy (BEIS) (2017). The Clean Growth Strategy: Leading the way to a low carbon future.

Department for Communities and Local Government (DCLG) (2015). The English Indices of Deprivation 2015.

Department for Education (2013) Capital Funding for New School Places. Available at: https://www.nao.org.uk/wp-content/uploads/2013/03/10089-001_Capital-funding-for-new-school-places-Executive-summary.pdf [Accessed: 12/12/2018].

Department for Education (2018) Get information about schools. Available at: https://get-information-schools.service.gov.uk/ [Accessed: 12/12/2018].

Department for Energy and Climate Change (DECC) (2015) 2010 to 2015 government policy: greenhouse gas emissions. Available at: https://www.gov.uk/government/publications/2010-to-2015-government-policy-greenhouse-gas-emissions/2010-to-2015-government-policy-greenhouse-gas-emissions [Accessed: 12/12/2018].

Department for Environment, Food & Rural Affairs (Defra) (2013). Waste Management Plan for England.

Department for Environment, Food & Rural Affairs (Defra) (2018). A Green Future: Our 25 Year Plan to Improve the Environment. HMSO: London.

EDF Energy (2011) Hinckley Point C Pre-Application Consultation – Stage 2 Environmental Appraisal – Volume 2. Available at: https://www.edfenergy.com/sites/default/files/V2%20C08%20SOCIO%20ECONOMICS.pdf [Accessed: 12/12/2018].

Experian (2018) Gross Value Added (GVA) and FTE employment by sector, June 2018.

Greater Lincolnshire Local Enterprise Partnership (GLLEP) (2016). Greater Lincolnshire LEP Strategic Economic Plan 2014-2030, Refresh Spring 2016. Available at: https://www.greaterlincolnshirelep.co.uk/assets/documents/Strategic_Economic_Plan_2016_Refresh.pdf [Accessed: 12/12/2018].

Healthy Urban Development Unit (HUDU) (2009). Royal College of General Practitioners Standard, as recommended by the NHS Healthy Urban Development Unit.

Homes and Communities Agency (HCA) (2014). Additionality Guide.

Lincolnshire County Council (LMWLP) (2016). Lincolnshire Minerals and Waste Local Plan. Available at: https://www.lincolnshire.gov.uk/residents/environment-and-planning/planning-and-development/minerals-and-waste/ [Accessed: 12/12/2018].

Ministry of Housing, Communities and Local Government (MHCLG) (2019). National Planning Policy Framework.

Ministry of Housing, Communities and Local Government (MHCLG) (2018). Table 100: Dwelling stock: number of dwellings by tenure and district, England, 2017. Available at: https://www.gov.uk/government/statistical-data-sets/live-tables-on-house-building [Accessed: 12/12/2018].

Ministry of Housing, Communities and Local Government (MHCLG) (2018). Table 253: Housebuilding: permanent dwellings started and completed, by tenure and district, 2017-2018 Available at: https://www.gov.uk/government/statistical-data-sets/live-tables-on-house-building [Accessed: 12/12/2018].

National Health Service (NHS) (2018). Find services. Available at: https://www.nhs.uk/service-search [Accessed: 12/12/2018].

National Housing Federation (2013). Housing and Economic Growth.

Office of National Statistics (ONS) (2016). Travel to work area analysis in Great Britain: 2016.

Office of National Statistics (ONS) (2017a). Jobs Density. Available at: https://www.nomisweb.co.uk/query/construct/summary.asp?mode=construct&version=0&dataset=57 [Accessed: 12/12/2018]

Office of National Statistics (ONS) (2017b). Business Register and Employment Survey. Available at: https://www.nomisweb.co.uk/query/construct/summary.asp?mode=construct&version=0&dataset=189 [Accessed: 12/12/2018]

Office of National Statistics (ONS) (2017c). National population projections: 2016-based. Available at: https://www.ons.gov.uk/releases/nationalpopulationprojections2016basedstatisticalbulletin [Accessed: 12/12/2018]

Office of National Statistics (ONS) (2018a). Mid Year Population Estimates. Available at: https://www.ons.gov.uk/releases/populationestimatesforukenglandandwalesscotlandandnorthernirelandmid2017 [Accessed: 12/12/2018].

Office of National Statistics (ONS) (2018b). Annual Population Survey. Available at: https://www.nomisweb.co.uk/query/construct/summary.asp?mode=construct&version=0&dataset=17 [Accessed: 12/12/2018].

Office of National Statistics (ONS) (2018c). Jobseeker's Allowance by age and duration with proportions. Available at: https://www.nomisweb.co.uk/query/construct/summary.asp?mode=construct&version=0&dataset=18 [Accessed: 12/12/2018].

Office of National Statistics (ONS) (2018d). Annual Survey of Hours and Earnings. Available at: https://www.nomisweb.co.uk/query/construct/summary.asp?mode=construct&version=0&dataset=30 [Accessed: 12/12/2018].

Peter Brett Associates (PBA) (2016). South-East Lincolnshire Delivery Plan 2016 Final Report. Available at: http://www.southeastlincslocalplan.org/wp-content/uploads/2016/11/FINAL-South-East-Lincs-IDP-17th-November-2016.pdf [Accessed: 12/12/2018].

South-East Lincolnshire Joint Strategic Planning Committee (SELJSPC) (2017). South-East Lincolnshire Local Plan: Employment Land Technical Paper Update. Available at: http://www.southeastlincslocalplan.org/wp-content/uploads/2017/04/Employment-Land-Technical-Paper-Update-March-2017.pdf [Accessed: 12/12/2018].

South-East Lincolnshire Joint Strategic Planning Committee (SELJSPC) (2019). South-East Lincolnshire Local Plan. Available at: http://www.southeastlincslocalplan.org/ [Accessed: 12/12/2018].

Visit Britain (2018). The GB Tourist 2017 Annual Report. Available at: https://www.visitbritain.org/sites/default/files/vb-corporate/Documents-Library/documents/England-documents/40413193-260c_gb_tourist_2017_annual_report_v17.pdf [Accessed: 12/12/2018].