Heckington Fen Solar Park

ENO10123

Chapter 11- Socio-Economics

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11 SOCIO-ECONOMIC

11.1 EXECUTIVE SUMMARY

11.1.1 An assessment of the socio-economic effects in respect of the Proposed Development is presented.

11.1.2 Socio-economic baseline conditions are identified considering all local authorities directly affected by the Proposed Development as well as comparator areas, namely North Kesteven, Boston, Lincolnshire County, East Midlands and England. Conditions are identified in respect of a range of topics including, but not limited to, population growth and projections, deprivation, employment, claimant count and commuting. In summary, there has been relatively higher population growth in North Kesteven and Boston compared to all other comparator areas between 2011 and 2021. North Kesteven has seen a higher employment growth and lower claimant count than Boston and all comparator areas.

11.1.3 Effects of all phases of development are considered, including the construction, operational and decommissioning phases. Effects relate to employment, economic contribution, accommodation demand, and business rates revenue, as relevant to each development phase. Most effects of the Proposed Development are beneficial, and therefore no mitigation is required. The accommodation demand effects as a result of the construction and decommissioning phase of the Proposed Development are adverse but not significant and therefore do not require mitigation. Maximisation of employment benefits for local workforce will be secured by the DCO process via an Outline Supply Chain, Employment and Skills Plan (document reference 7.12). Continued efforts to address wider benefits for the community will be undertaken separately and outside of the DCO process.

11.2 INTRODUCTION

11.2.1 This chapter determines the baseline socio-economic conditions and considers the likely socio-economic effects of the Proposed Development.

11.2.2 This assessment is made by examining the potential effects on the population arising from the Proposed Development and assessing the impact this could have on relevant services and facilities in the economy. It identifies the socio-economic baseline in relation to key economic and social variables. It then examines the potential effects that could occur, both direct and indirect, resulting from the Proposed Development during construction (short term effects), operation (long term effects), and decommissioning (short term effects).

11.3 ASSESSMENT APPROACH

Methodology

11.3.1 There is no specific guidance available which establishes a methodology for undertaking an Environmental Impact Assessment (EIA) of the socio-economic effects of a Proposed Development. The approach that has been adopted for this assessment is based on professional experience and best practice, and in consideration of relevant policy requirements at the national, regional and local scale.

11.3.2 The assessment specifically includes the following:

- Identification of the socio-economic baseline in respect of each of the key socio-economic issues identified, focusing on the characteristics of the economy and labour force. These characteristics have been used as a measure for assessing future changes associated with or resulting from the Proposed Development.

- Analysis of the full range of socio-economic effects, both direct and indirect, arising from the Proposed Development, during the construction (short term effects), operation (long term effects), and decommissioning (short term effects).

11.3.3 The baseline information has been collated with reference to the following:

- Overarching National Policy Statement for Energy (EN-1)[1].
- National Policy Statement for Renewable Energy (EN-3)[2].
- The National Planning Policy Framework (NPPF)[3].
- Office for National Statistics (ONS) data (various outputs as individually referenced within this chapter)[4].
- Ministry of Housing, Communities & Local Government (for deprivation data)[5].
- The Government's Levelling Up White Paper[6].
- The adopted Central Lincolnshire Local Plan[7].
- The Greater Lincolnshire Local Enterprise Partnership[8].
- Information obtained from the client.

Assessment of Significance

11.3.4 The first step in the assessment is to identify the sensitivity of the receptors. In socio-economic assessments, receptors (for example, the labour market) are not sensitive to changing environmental conditions in the same way as many environmental receptors are. To address this, the assessment draws on a combination of measurable indicators and a consideration of the importance of the receptor in policy terms to gauge the receptor's sensitivity. For example, the number of jobs in the area may increase as new developments are completed and occupied by businesses. This is considered alongside the weight attached to these issues in local policy. **Table 11.1** shows the sensitivity criteria followed in this assessment.

[1] *Draft Overarching National Policy Statement for Energy (EN-1).* Department for Business, Energy & Industrial Strategy, March 2023.

[2] *Draft National Policy Statement for Renewable Energy Infrastructure (EN-3).* Department for Business, Energy & Industrial Strategy, March 2023.

[3] *National Planning Policy Framework (Revised), July 2021*. Ministry of Housing, Communities and Local Government.

[4] *Office for National Statistics (ONS).* Available at: Home - Office for National Statistics (ons.gov.uk).

[5] *National statistics: English indices of deprivation 2019*, Ministry of Housing, Communities and Local Government, September, 2019.

[6] *Levelling Up*. HM Government (2022).

[7] *The Central Lincolnshire Local Plan* (April 20123).

[8] *Greater Lincolnshire Local Enterprise Partnership. Accessed 3 May 2022. Available at:* Home | Greater Lincolnshire LEP.

Table 11.1: Sensitivity Criteria

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

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

Table 11.2: Magnitude of Change Criteria

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

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

Table 11.3: Significance Matrix

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

Legislative and Policy Framework

National Policy Statements

Overarching National Policy Statement for Energy (EN-1)

11.3.7 The Overarching National Policy Statement (NPS) for Energy (EN-1)[9] notes that where a project is likely to have socio-economic impacts at local or regional levels, an assessment of such impacts should be undertaken. The existing socio-economic conditions in the areas surrounding the Proposed Development should be described as well as how the Proposed Development's socio-economic impacts correlate with relevant local planning policies. EN-1 stipulated the importance of evidence-based socio-economic assessment.

11.3.8 In making their decision, EN-1 noted that the Infrastructure Planning Commission (IPC) (now superseded by the Secretary of State (SoS)) should consider any relevant positive provisions and legacy benefits made by the Applicant in relation to socio-economics.

11.3.9 An update to the EN-1 (2011) was published in September 2021 (2021 Draft EN-1) and consultation closed in November 2021. Most recently, a further updated draft of EN-1 was published for consultation in March 2023, ending in June 2023. Key updates in the most recent Draft EN-1 compared to the 2011 publication relate to range of impacts to be considered and suggested specific mitigation relating to potential impacts during each of the phases of development.

11.3.10 2023 Draft EN-1 makes reference to a list of potential impacts to consider (as relevant) including (but not limited to) creation of jobs and training opportunities, contribution to low-carbon industries, provision of additional local services and improvements to local infrastructure, any indirect beneficial impacts for the region, effects on tourism, impact of a changing influx of workers, and cumulative effects.

11.3.11 The 2023 Draft EN-1 makes reference to the need to consider development of accommodation strategies, if appropriate, to address any potential impacts during the construction and decommissioning phases. In addition, it also refers to the potential for the SoS to require the approval of an employment and skills plan detailing arrangements to promote local employment and skills development opportunities.

[9] *Overarching National Policy Statement for Energy (EN-1),* Department of Energy and Climate Change, July 2011.

National Policy Statement for Renewable Energy (EN-3)

11.3.12 Socio-economic impacts were referenced only in respect of onshore wind and biomass power in the National Policy Statement (NPS) for Renewable Energy (EN-3) published in July 2011[10]. An update to the EN-3 (2011) was published in September 2021[11] (Draft 2021 EN-3), and a further revision was published in March 2023 (Draft 2023 EN-3) and is currently in consultation. In this latest draft, consideration of solar and potential for associated socio-economic effects is referenced in respect of the potential for socio-economic benefits of the site infrastructure being retained after the operational life of solar photovoltaic generation.

National Planning Policy Framework

11.3.13 The most recent NPPF[12] was published in July 2021. A key focus of the framework is to achieve sustainable development which requires three interdependent objectives that need to be pursued in a mutually supportive way:

- ***Economic Objective:*** Ensure that the economy is strong, responsive and competitive to support growth.

- ***Social Objective:*** Ensure there is a sufficient supply and range of homes available to meet present and future demand.

- ***Environmental Objective:*** Ensure the natural, built and historic environment is protected including mitigating and adapting to climate change

11.3.14 Other relevant points to note from the revised NPPF include:

- Paragraph 60 states that the government have set the objective of significantly increasing the supply of homes, to achieve this there needs to be sufficient land available where it is needed, specific housing requirements need to be met and land with permission needs to be developed without unnecessary delay.

- Paragraph 73 of the NPPF states that to achieve the supply of a large number of homes it is often best done through planning for larger scale development, such as settlements or significant extensions to existing villages and towns, provided they are well located and designed, and supported by the necessary infrastructure.

- The NPPF places significant weight on the need to support economic growth and productivity with chapter 6 setting out the objective of building a strong and competitive economy. Paragraph 82 states that the planning policies should:
    - Set out a clear economic vision and strategy which positively and proactively encourages sustainable economic growth, having regard

[10] National Policy Statement for Renewable Energy (EN-3), Department of Energy and Climate Change, July 2011.

[11] Draft National Policy Statement for Renewable Energy (EN-3, Department for Business, Energy & Industrial Strategy, September 2021.

[12] *National Planning Policy Framework*. HM Government, July 2021.

to Local Industrial Strategies and other local policies for economic development and regeneration.

- Set criteria, or identify strategic sites, for local and inward investment to match the strategy and to meet anticipated needs over the plan period.
- Seek to address potential barriers to investment, such as inadequate infrastructure, services or housing, or a poor environment.
- Be flexible enough to accommodate needs not anticipated in the plan, allow for new and flexible working practices (such as live-work accommodation), and to enable a rapid response to changes in economic circumstances.

- Paragraph 83 finds that alongside this, planning policies and decisions should recognise and address the specific locational requirements of different sectors.

Levelling Up White Paper

11.3.15 The strategy presented by the UK Government's **Levelling Up White Paper**[13] is underpinned by the fact that, although the UK as a whole is successful when compared to other countries globally, there is great disparity in respect of the shared value of that success within the UK itself and realising each communities' potential. As such, the White Paper sets out a programme to 'level up' the UK to transform places and boost local growth, including through, but not limited to, encouraging strong innovation, private sector investment, climate conducive development, and improvement in workers' skill and transport systems. The key missions set by the White Paper are, in summary:

- Boost in productivity, wages, jobs and living standards by investment and growth in the private sector.
- Provide opportunities and improvement in public services.
- Contribute to and encourage a sense of community, local pride and belonging.
- Empowerment of local leaders and communities.

11.3.16 It is imperative that the needs of an area are reflected in the proposals made, so that the benefits brought by development will appropriately contribute to, and ultimately result in, true levelling up of the economy, the environment, and society within the UK.

Central Lincolnshire Local Plan

11.3.17 The **Central Lincolnshire Local Plan** [14] (adopted April 2023) has been developed for the combined areas of the City of Lincoln, North Kesteven and West Lindsey. It outlines the vision of the districts and the aims and objectives they to enable development in Central Lincolnshire .

11.3.18 The Local Plan has the vision that:

> **"Central Lincolnshire will be a location of positive growth. Its city, market towns and many of its villages will see new homes built, new jobs created and improved infrastructure developed...**

[13] *Levelling Up*: HM Government (2022).

[14] *The Central Lincolnshire Local Plan* (April 2023).

> **"Echoing the vision of the Greater Lincolnshire Local Enterprise Partnership, the economy of Central Lincolnshire will be diverse and resilient, and continue to make an effective contribution to the UK economy. The local economy will provide real opportunities for people to live, work, invest and visit[15]."**

11.3.19 In order to achieve this vision in Central Lincolnshire, the Plan sets out a series of objectives including the creation of jobs and employment opportunities for everyone and to ensure the local economy is diverse and stable. A key objective looks at the effects of climate change and energy. To minimise the effects of climate change, Central Lincolnshire aim to further develop to areas renewable energy resources to enable them to reduce their dependence on fossil fuels and to minimize greenhouse gas emissions.

11.3.20 Section five of the Local Plan focuses on how a quality Central Lincolnshire can be achieved. This looks at how Central Lincolnshire can have a positive approach to the environment and how to achieve quality places that are attractive and sustainable, whilst supporting the quality of life, community wellbeing and local character.

11.3.21 A main focus of ensuring this is focusing on climate change and promoting low carbon living through reducing the amount of carbon that the population of Central Lincolnshire emit in their daily lives. This can be done through a new of means outlined below:

- Reducing demand for energy;
- Improving resource efficiency (sustainable design and construction);
- Increasing the amount of energy, heat and power generation from decentralised, renewable and low carbon sources (rather than from non-renewable sources); and
- Carbon offsetting.

Greater Lincolnshire Local Enterprise Partnership Strategic Economic Plan

11.3.22 The Greater Lincolnshire Local Enterprise Partnership (LEP) developed their Strategic Economic Plan[16] (SEP) in 2014, with a refresh in 2016 to ensure it included the continuing priorities for growth and investment in the LEP area. The programme in the SEP is nearing its completion date and will terminate in 2022.

11.3.23 The SEP outlines five strategies and priorities to enable economic growth and development within the LEP. These are:

- Greater Lincolnshire's important sectors.
- Greater Lincolnshire's emerging sectors.
- Growing Lincolnshire's Businesses.
- A location for investors.
- Greater Lincolnshire's homes and communities.

[15] *Ibid, page 10.*

[16] *Strategic Economic Plan 2014 – 2030*: Greater Lincolnshire Local Enterprise Partnership, 2014.

11.3.24 One of the key priorities for growth within the LEP is driving productivity in key economic sectors such as the low carbon economy. Some of the main priorities for the sector are outlined below.

- In an effort to drive down construction and operational costs, there needs to be increased investment in research and development of renewable energy technologies.

- Increase the availability in training, apprenticeships and employment opportunities within the renewable energy sector by working with local colleges, university and private training providers, as well as other sectors such as manufacturing and energy.

- The LEP want to explore the potential opportunities in new renewable technologies, whilst protecting and maintaining the environment.

Scoping Criteria

11.3.25 Informed by the Scoping process undertaken to date, the socio-economic assessment considers the following potential effects:

- **Construction Phase**
  - Employment.
  - Contribution to economic output.
  - Accommodation demand.
- **Operational Phase**
  - Employment.
  - Contribution to economic output.
  - Business rates revenue.
- **Decommissioning Phase**
  - Employment.
  - Contribution to economic output.
  - Accommodation demand.

Extent of Study Area

11.3.26 The assessment primarily focuses on the effects in the local authority areas of North Kesteven, Boston Borough and Lincolnshire County, and where appropriate, benchmark data for the East Midlands region and Great Britain are also provided.

11.3.27 Figure 11.1 (document reference 6.2.11 (Rev 2)) shows the site location in context to surrounding administrative boundaries. As shown, the site runs along the local authority border between North Kesteven and Boston. Therefore, Boston has been included in the baseline analysis and the effects of employment from the Proposed Development will be assessed in North Kesteven, while also considering the level of commuting into North Kesteven from Boston. When assessing the impacts of GVA and business rates, the effect will be assessed in North Kesteven as the Proposed Development is located within this authority and these impacts will remain local.

Limitations to Assessment

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

11.3.29 It is acknowledged that there are three elements in terms of what is to be constructed as part of this Proposed Development: the Energy Park and the Off-site cable route and above ground works at the National Grid Bicker Fen substation. In respect of Socio-Economics, the construction effects have been presented as a combined effect due to detail in terms of the estimated construction costs being available for the whole construction works rather than for each part of construction at this time.

11.3.30 The Applicant is intending to accommodate any construction or decommissioning workers who are from outside of the local area in Serviced and/or Non-Services Accommodation as opposed to residential dwellings (rental or otherwise). As such, consideration of potential effects on housing supply, be it affordable or otherwise, is scoped out of the assessment.

11.3.31 Full information regarding the expected effects of the Cumulative Sites is not publicly available at the time of writing this assessment. As such, a series of assumptions is used as the basis of assessment. These assumptions are presented in detail in Table 11.15. The key assumption relates to generation of construction workers. In the absence of definitive information publicly available regarding each considered Cumulative Site, and based on a review of the number of construction workers generated as a result of a solar farms previously assessed by Pegasus, as well as information provided by prospective construction contractors, an estimate of 1 FTE job per MW has been used as the basis of assessment. This aligns with the estimated number of jobs generated during the construction phase by the Proposed Development in isolation.

11.3.32 In respect of the decommissioning phase, in the absence of definitive publicly available information regarding each considered Cumulative Site, and based on a review of the number of decommissioning workers generated as a result of a solar farms previously assessed by Pegasus, as well as information provided by prospective construction contractors and the Applicant, an estimate of 0.5 FTE jobs per MW has been used as the basis of assessment in respect of Accommodation demand during decommissioning. This aligns with the estimated number of jobs generated during the decommissioning phase by the Proposed Development in isolation.

11.3.33 At the time of writing, it is understood that Serviced Accommodation located within North Kesteven district is being used to accommodate refugees seeking asylum in the UK. The effect that this has on occupation rates of accommodation is not reflected in the data used to inform the baseline as it is not currently publicly available. Although this would potentially have an influence on the availability of Serviced and Non-Serviced Accommodation bedspaces for workers associated with the Proposed Development and Cumulative Sites, the timeframe for workers needing accommodation is such that it is unlikely that refugees will be accommodated using these amenities at that time. As such, a reasoned assumption has been used as the basis of the assessment, excluding the numbers of potential refugees from the baseline and instead basing the assessment on published information only.

11.3.34 The baseline and associated assessment relating to Accommodation Demand has included for existing Serviced and Non-Serviced Accommodation bedspaces only, i.e. only those bedspaces which are included in latest published data. It is acknowledged that new Serviced and/or Non-Serviced Accommodation is likely to be available by the time the Proposed Development and Cumulative Schemes are in construction. It is considered that

excluding this information from the baseline and assessment at this time provides as a reasonable worst case assumption for the basis of the assessment.

Consultation

11.3.35 A summary of consultation prior to issue of the Preliminary Environmental Assessment Report (PEIR) in June 2022 is presented in Table 11.4. It outlines matters raised within the Scoping Opinion and how these have been addressed through the ES in relation to socio-economics.

Table 11.4: Summary of Scoping Opinion Responses

Consultee	Details of Consultee response	How is matter addressed	Location of response
PINS Scoping Opinion	New Census data is due to be published in May 2022. This should be used to inform the baseline data and the ES assessment.	Data not published in advance of date for provision of draft PEIRs therefore not included in the PEIR socio-economic baseline. Baseline will be updated, where applicable, to account for Census 2021 publication prior to final submission. Note included in PEIR to this effect.	Presented in Section 11.4 Baseline of this ES Chapter.
	The Inspectorate agrees that it is unlikely that significant climate change effects on socio-economics and human health would arise as a result of the Proposed Development and this matter can be scoped out of the assessment at this stage.	Noted. No detail in respect of interrelation between climate change effects and socio-economics included in this ES chapter.	No further response required.

North Kesteven	Some employment-generating impact (i.e. maintenance/upkeep) is inferred through the reference to the proposed orchard which would be accessed via agreement with the Parish Council for certain community groups. However, there is no reference in the proposed scope to any socio-economic benefit enduring from continued agricultural use of part or all of the site. Paragraphs 13.15 and 16.8 state that sheep will be grazed within the site thus enabling some continuance of agricultural activity. The applicant should therefore attempt to quantify whether and how there are socio-economic benefits stemming from a change from predominantly arable agricultural use of the site pre-development to pastoral use post-development.	Further detail in respect of number of existing on-site jobs (linked to agriculture and indeed any other existing jobs has been sought from the Applicant.	Information requested by Applicant has been presented and used to inform Section 11.5 Assessment of Likely Significant Effects (para 11.5.17 – 11.5.20).
	We suggest under section 16 below that the applicant should also identify a mechanism by which a change in agricultural activity (and ergo any associated socio-economic effect) can be secured through the DCO process.	This issue has been a point of discussion between the Applicant and legal representatives during the pre-application stage.	Continued agricultural activity during the operational phase is secured in the Outline Landscape Ecological Management Plan (document reference 7.8). It is not addressed within Socio-Economics ES Chapter.

	Paragraph 11.5 notes in connection with construction activities that 'the scale and spatial distribution of these direct impacts will depend on the locations of the companies carrying out the activities and where they source their labour from'. An established way of calculating the extra value generated by local spend on contractors and services would be by using LM3 multipliers which the applicant might wish to consider depending on the certainty of construction contracts etc at this stage. The multiplier can be found at https://www.lm3online.com/.	Given the fact that much of the components of solar farms are brought in from elsewhere local spend are unlikely to be as high as other forms of development, for example, residential development. Therefore, standard guidance recommended by Government in respect of assessing the additionality effects of the scheme has been used.	Throughout Section 11.5 Assessment of Likely Significant Effects in respect of employment during each development stage.
	Socio Economics to consider what benefits (if any) there are altering the site from an arable use to a pastoral use.	This is addressed through the consideration of effects on business rates, as well as retention of employment of existing jobs relating to arable use, both in the operational phase.	Section 11.5 Assessment of Likely Significant Effects: • Operation - Employment (paras 11.5.17 – 11.5.20). • Operation - Business rates (paras 11.5.25 – 11.5.26).

UK Health Security Agency	Population and Human health assessment: It is noted that population and human health will be considered within existing chapters and not form a separate chapter within the ES. Given the current knowledge of the scheme and potential impacts this appears to be a proportionate approach. This should be kept under review as more information becomes available and a separate population and human health chapter may be justified as the assessments develop.	Noted.	No further response required.
	An approach to the identification of vulnerable populations has not been provided. The impacts on health and wellbeing and health inequalities of the scheme may have particular effects on vulnerable or disadvantaged populations, including those that fall within the list of protected characteristics. The identification of vulnerable populations and sensitive populations should be considered. The proposed educational facility has been noted in the scoping report and further details are required to assess any temporal overlap during the construction of the solar farm, particularly if the school will be operational at the time of construction. Baseline health data should be provided, which is adequate to identify any local sensitivity or specific vulnerable populations. The identification of vulnerable populations should be based on the list provided by the Welsh Health Impact Assessment Support	Linked to above. Noted, but no changes made to the scope and content of the PEIR submission in respect of vulnerable populations or protected characteristics. The education facility being constructed at Elm Grange is likely to be used by 60-80 students, aged 11-16. The school has a STEM focus and works on career-based goals for students. Further information on expected jobs associated with the operation of the Proposed Development is presented within the final ES chapter.	No further response required. No further response required. Assessment of Likely Significant Effects (para 11.5.17 – 11.5.20).

	Unit and the International Association of Impact Assessment (IAIA). Further details regarding the potential impact on the special educational needs school should be identified for the construction phase of the solar farm.		
	Housing affordability and availability / Socio-economic assessment: The scoping report does not identify the projected numbers of construction workers required for the scheme. The presence of significant numbers of workers could foreseeably have an impact on the local availability of affordable housing, particularly that of short-term tenancies and affordable homes for certain communities. The cumulative impact assessment will need to consider this across the wider study area but also identify the potential for any local (ward level) effects, where there could be knock-on effects on access to accommodation for residents with the least capacity to respond to change (for example, where there may be an overlap between construction workers seeking accommodation in the private rented sector, and people in receipt of housing benefit / low paid employment seeking the same lower-cost accommodation). It should be noted the Housing Needs Assessment for Central	Commentary regarding consideration of the potential effects on housing is presented in Limitations to the Assessment.	See Limitations to the Assessment (para 11.3.28 – 11.3.34).

	Lincolnshire (2020) identifies the private rented sector plays a particularly key role (between 26%-29%) in accommodating those in lower paid roles, such as customer services, caring and leisure service occupations. There are a number of renewable energy schemes proposed for the wider region increasing the potential for non-home-based construction workers to be seeking accommodation. The peak numbers of construction workers and non-home-based workers should be established and a proportionate assessment undertaken on the impacts for housing availability and affordability and impacts on any local services. Any cumulative impact assessment should consider the impact on demand for housing by construction workers and the likely numbers of non-home based workers required across all schemes.		
Lincolnshire County Council	The ES should consider the cumulative economic effect of other schemes including the other NSIP solar farms which are being proposed in the County with consideration to loss of agricultural land and crop production.	Further detail in respect of number of existing on-site jobs (linked to agriculture and indeed any other existing jobs) sought by Applicant.	Information requested by Applicant has been presented and used to inform Section 11.5 Assessment of Likely Significant Effects (para 11.5.17 – 11.5.20).

11.3.36 In addition, **Table 11.5**, outlines a summary of Section 42 consultation responses since the PEIR.

Table 11.5: Summary of Section 42 Consultation Responses since PEIR

Consultee	Details of Consultee response	How is matter addressed	Location of response
Lincolnshire County Council	Chapter 11: Socio-economic Paragraph 11.5.11 - it is estimated that once operational and fully occupied, the additional GVA supported by the Proposed Development is estimated to be around £625,800 per annum, allowing for multiplier effects. Over the 40-year operational lifespan of the solar farm the GVA generated is estimated to be around £13.9million (present value). Information should be presented within the ES that shows the economic impact that the solar development would have on the income of the landowner. A comparison should be made between the income that would be lost as a result of the land being taken out of intensive arable production and how this compares to that which would be received from the solar development and low-density sheep grazing which would replace it - whether this be positive or negative.	The assessment presented in the final submission includes consideration of GVA generate by existing activities on site, and the change that would result following completion of the Proposed Development. This is informed by information provided by the Client.	Section 11.5 Assessment of Likely Significant Effects – Operation – Economic Contribution (paras 11.5.21 – 11.5.24).
	There are local impacts felt by communities hosting NSIPs and so consideration should be given to the provision of community benefits and legacy opportunities other than just improved access to the public rights of way network and the Community Orchard as proposed. For example, consideration should be given to community outreach and public engagement events as part	Students from the Build-A-Future School at Elm Grange visited the Energy Park on 28th September 2022 while the trial trenching was underway. A talk was provided by representatives of Ecotricity and Wessex Archaeology. Feedback	Further opportunities for engagement in relation to archaeology are discussed in the Chapter 10: Cultural Heritage.

	of the archaeological programme of works in order to help local communities better understand the archaeology and the historic past of their local area. Additionally, whilst it is noted efforts to address wider community benefits will be undertaken outside the DCO process (paragraph 11.8.11) there are several similar such NSIP projects being promoted within the County that are to be delivered over a similar timescale. Opportunities should therefore be explored to help upskill and support local residents so that they can be ready to access the job opportunities that would be created by this development (as well as the other projects) and to enable local suppliers to access contracts. Other NSIP promoters have therefore proposed the submission of an Outline Skills, Supply Chain and Employment Plan as part of the DCO which would look at what actions could be taken and a similar approach for this scheme is therefore encouraged and would be supported.	was very positive noting it as "a valuable learning experience". The Applicant commits to preparing and agreeing an Employment and Skills Plan (ESP) with the aim of maximizing the local benefits of the Proposed Development.	Section 11.6 Mitigation and Enhancement – Additional Mitigation (para 11.6.2 – 11.6.3).
NHS	The CCG notes the work however we are not in a position to comment at this time.	Noted.	No further response required.
North Kesteven District Council	Paragraph 11.7.2 states that the significance of the cumulative operational phase effects (for the Proposed Development and cumulative solar schemes listed in 11.7.1) has been assessed as moderate beneficial, which is significant in EIA terms. This takes into account the labour market in North Kesteven District Council and the level of job creation. However this conclusion is drawn taking into account the 4 NSIP solar schemes that	The scope of the cumulative assessment has considered the administrative area in which the scheme is located in comparison to the Proposed Development. Given the potential effects being assessed and the nature of those effects being limited to the local scale (District), those schemes	Section 11.7 Cumulative and In-Combination Effects (paras 11.7.1 to 11.7.16).

	are located outside the District and where the impacts on job creation and the labour market within the District itself are unclear. It is likely that West Lindsey and Bassetlaw DC's will seek to promote job creation/contract awarding arising from these schemes within their own Authority areas and as such the degree of positive socio-economic impact within NKDC is at best unknown at this stage. Business rates from these schemes would not benefit NKDC and if pro-rata operational and decommissioning job creation Figures are assumed for those NSIPs (based on an estimated 12 jobs in North Kesteven and in the wider economy that would be supported by Heckington Fen) then the cumulative job creation/support impacts are unlikely to be cumulatively 'significant' in that geographical context during the operational phase of the development. Even if significant cumulative construction effects were assumed these would only be temporary.	located within North Kesteven are scoped into the assessment; all others are scoped out. Justification is given for the decision on whether to scope in or out for clarity. In addition, a review of publicly available information, for example in respect of job creation, has been undertaken to inform the consideration of effects of the cumulative schemes alongside the Proposed Development. A worst case assessment is presented in the cumulative assessment. The approach aims to enable a robust assessment whilst also presenting a realistic consideration of the cumulative effects at the local scale.	
	In terms of jobs creation, the section read contains some potentially contradictory details which should be clarified. Chapter 11 states that in the construction period, which will last 18 months, that up to 100 construction workers would be on site at peak construction time. However, elsewhere in the document, it states that the construction phase will deliver 67 jobs. There is no explanation, that we can see, as to why these figures differ. It may be that this is the	Correction made in final ES submission in respect of mis-typed data: 436 construction workers generated, with peak of 109, as provided by the Applicant. Construction period is 30 months. The generation of GVA and Business Rates over a prolonged period are calculated using what is	Section 11.5 Assessment of Likely Significant Effects: • Construction – Employment (paras 11.5.1 – 11.5.5). • Construction – Accommodation Demand (paras 11.5.8- 11.5.16).

	average over the period, but if that is the case, that needs explaining and calculation provided. In addition, in relation to NNDR (business rates) income the section notes that the development will pay £1.3 million per annum in rates, which it then says will be a payment of £28.8 million over the 40 year lifespan of the scheme. These figures do not align – should the figure be circa £52m? In relation to other matters, the implication in the PEIR is that because of the technical nature of the solar panels and installation, that the construction companies involved will be bringing in their own labour primarily with potentially reduced opportunity for local employment in the construction phase. However it is not explicitly stated. It would therefore for helpful if this chapter of the ES can set out how the construction element of the contract will be serviced; and what the scope is for the use of 'local' (perhaps taken to be District-wide?) labour in certain elements of the works programme. In addition the ES should confirm whether there are opportunities for any apprenticeships for local people. Some of the less specialised groundworks/infrastructure works appears to be fairly standard in nature so there appears to be sufficient opportunity to utilise at least some locally based contractors. The Chapter also states that there will subsequently be 5 FTE permanent positions that operate and maintain the scheme. Will these posts cover all conceivable maintenance on the scheme, or will there be the opportunity for some	termed 'present value'. The amount generated is discounted using a standard discount rate to convert all costs and benefits to present values. It is the based on the concept of an amount of money today being worth more money than that same amount in the future. Using the Treasury's Green Book, the recommended discount rate is 3.5% each year up to 30 years, and 3% per year thereafter. The Applicant commits to preparing and agreeing an Employment and Skills Plan (ESP) with the aim of maximizing the local benefits of the Proposed Development. Clarification regarding the types of jobs created once the Proposed Development is complete and operational is presented. This information has been provided by the Applicant. Continued efforts to address wider benefits for the community will be undertaken separately and outside of the DCO process. As such, this issue is not addressed in any further detail within this chapter.	• Decommissioning – Employment (paras 11.5.27 – 11.5.30). • Decommissioning – Accommodation Demand (paras 11.5.33- 11.5.37). Section 11.6 Mitigation and Enhancement – Additional Mitigation (para 11.6.2 – 11.6.3). Section 11.5 Assessment of Likely Significant Effects – Operation – Employment (paras 11.5.17 – 11.5.20).

	local servicing and maintenance contracts? If so, the ES should set out what these opportunities are and what trades might be involved. North Kesteven District Council also considers that further thought could be given to community outreach and public engagement events; for example in relation to the required archaeological programme of works, in order to help local communities better understand and engage with the development. Additionally, whilst it is noted efforts to address wider community benefits will be undertaken outside of the DCO process (paragraph 11.8.11 refers) there are several similar such NSIP projects being promoted within the County that are to be delivered over a similar timescale. Opportunities should therefore be explored to help upskill and support local residents so that they can be ready to access the job opportunities that would be created by this development (as well as the other proposed solar NSIP projects) and to enable local suppliers to access contracts.		
Member of the public during statutory consultation	What are the longer term plans for employment originating from this proposal? Does the site require 24/7 supervision for example? Will it act or support a role in training skills? Is there an educational aspect to the site perhaps? Farming provides skills and employment and supports a wider industry.....how does solar energy compare to this on the local scale?	The Proposed Development will provide a small number of FTE jobs associated with the operation and maintenance of the site (5), as well as the grazing (supporting 1.5 FTE jobs); however supporting industries will be required, for example security. An **Outline Supply Chain, Employment and Skills Plan** (document reference 7.12) is included as part of the	Section 11.5 Assessment of Likely Significant Effects – Operation – Employment (paras 11.5.17 – 11.5.20).

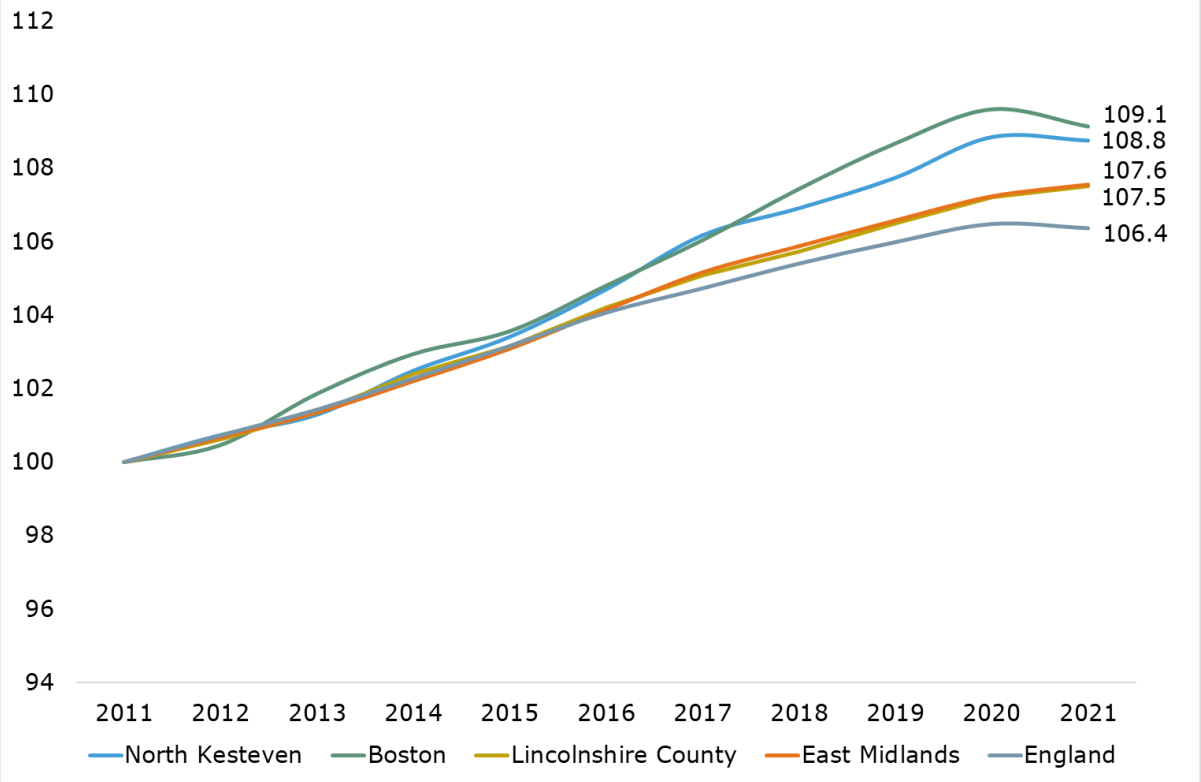
		DCO application and will be agreed with Planning Inspectorate and North Kesteven District Council, as secured by DCO requirement. The land is currently farmed as part of a wider landholding and no jobs will be lost.	

11.4 BASELINE CONDITIONS

Population

11.4.1 Data from the 2021 Census estimates show the total population of North Kesteven is around 118,075 and the population of Boston is around 70,500. Figure 11.2 presents population change between 2011 and 2021. Over this timeframe, North Kesteven's population increased by 8.8% – equating to 9,557 more people, whilst the population growth seen in Boston was relatively higher at 9.1% (5,888). The corresponding population increases for Lincolnshire County and the East Midlands were 7.5% and 7.6% respectively and the growth in Great Britain over the same period was 6.4%.

Figure 11.2: Population Change, 2011-21



Source: ONS, Mid-Year Population Estimates

11.4.2 Data on population change by age in North Kesteven show that from 2011 to 2021, the young dependant population group (aged 0-15) increased by around 910 (4.8%), the number of economically active people (16-64) grew by 3,719 (5.6%) and people aged 65+ increased by around 4,928 (a rise of 21.7% - see Table 11.6). Table 11.8 shows that in Boston the fastest growing age group between 2011 and 2020 were those aged 0-15, with an increase of 13.6% (1,551). In the same time period, Boston saw a growth of 12.1% (1,551) in those aged 65+ and an increase of 6.9% (2,786) in those aged 16-64. All three age groups experienced growth over the same timeframe in Lincolnshire County, the East Midlands and Great Britain, however it was the 65+ cohort that grew the fastest in all areas –by 20.8% in Lincolnshire County, 22.1% in the East Midlands and 19.1% in Great Britain.

Table 11.6: North Kesteven Population Change by Age, 2011-21

	2011	2021	Absolute Change	% Change
0-15	19,148	20,058	910	4.8%
16-64	66,688	70,407	3,719	5.6%
65+	22,682	27,610	4,928	21.7%
Total	**108,518**	**118,075**	**9,557**	**8.8%**

Source: ONS, Mid-Year Population Estimates

Table 11.7: Boston Population Change by Age, 2011-2~~1~~0

	2011	2021	Absolute Change	% Change
0-15	11,367	12,918	1,551	13.6%
16-64	40,393	43,179	2,786	6.9%
65+	12,855	14,406	1,551	12.1%
Total	**64,615**	**70,503**	**5,888**	**9.1%**

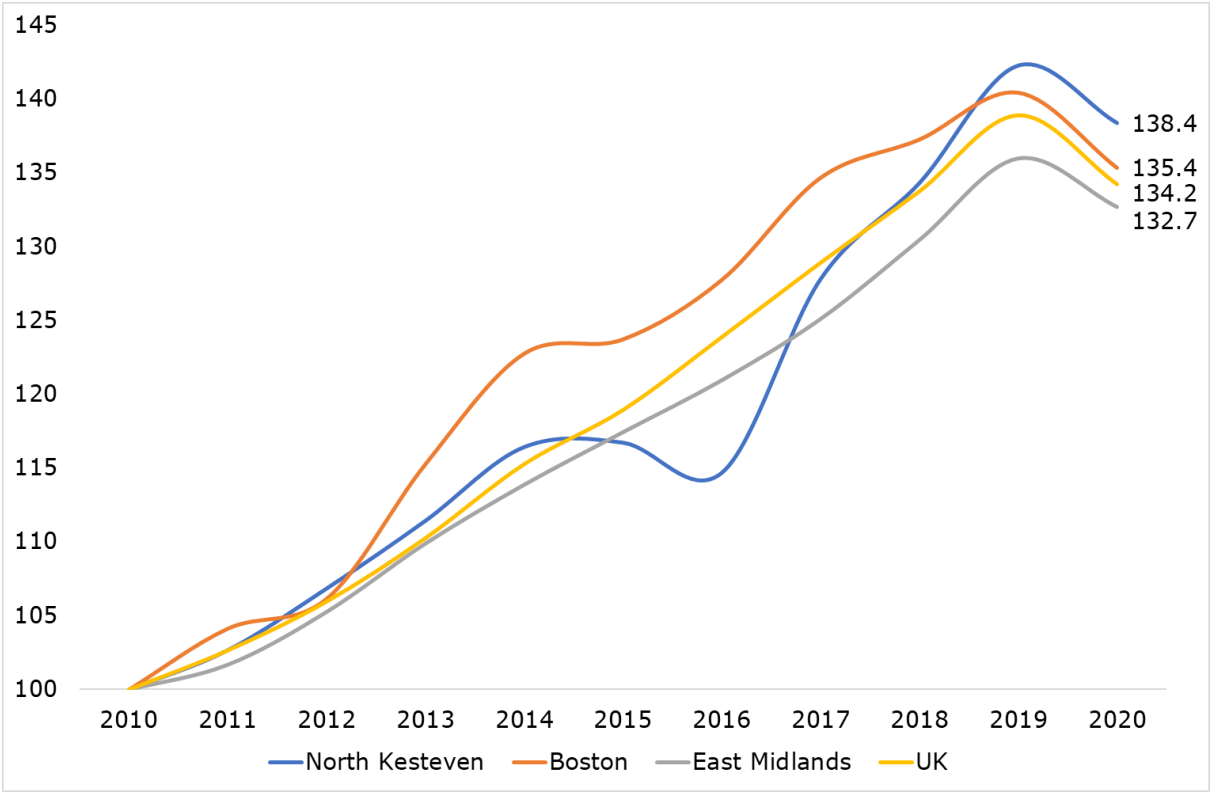
Source: ONS, Mid-Year Population Estimates

Economic Output

11.4.3 Figure 11.3 shows the GVA in North Kesteven, Boston, the East Midlands and the United Kingdom between 2010 and 2020. In this time the GVA in North Kesteven increased by 38.4%. This was above the increase in GVA seen in Boston (35.4%), the East Midlands (32.7%) and the UK (34.2%).

11.4.4 Between 2010 and 2020, the GVA of the construction sector in North Kesteven increased by 26.7%. This compares to an 83.3% increase in construction GVA in Boston, 138.7% increase in the East Midlands and a 36.7% increase in the UK.

Figure 11.3: Gross Value Added at Current Basic Prices, 2010-20

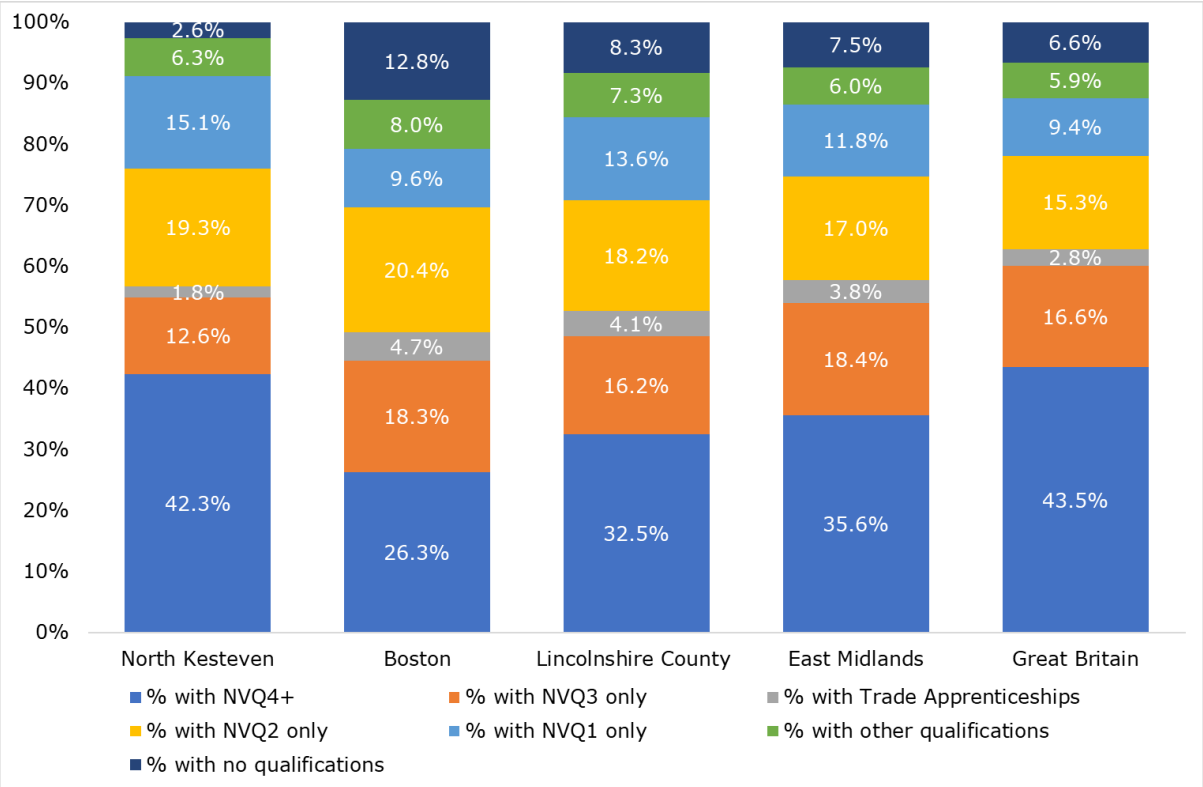


Source: ONS

Skills

11.4.5 In 2021, 42.3% of working age residents (16-64) in North Kesteven had a degree level qualification or higher (NQF4+); 12.6% had NQF3 only, which equates to 2 A Levels and 4 AS Levels; and 19.3% had NQF2 only (5+ GCSEs or equivalent). Around 2.6% of the area's population had no qualifications. Of all comparator areas, Boston had the lowest proportion of those aged 16-64 that had a degree level qualification at 26.3%, and it also had the highest proportion with no qualifications at 12.8%. Lincolnshire County and the East Midlands had a slightly higher proportion of people aged 16-64 with higher level (NQF4+) qualifications at 32.5 and 35.6% respectively, however Great Britain had the highest proportion at 43.5%. Figure 11.4 shows the full skills breakdown.

Figure 11.4: Skill Levels of the Resident Working Age (16-64) Population, 2021



Source: Annual Population Survey, January-December 2021

Deprivation

11.4.6 The 2019 Index of Multiple Deprivation provides an indication of the average levels of deprivation for Lower Layer Super Output Areas (LSOAs) across England. The index provides an overall assessment of the average levels of deprivation as well as an assessment against domains of deprivation. In total, England has 32,844 LSOAs, with 57 in North Kesteven.

11.4.7 The Energy Park Site falls within the LSOA North Kesteven 012B, which is ranked 15,660 and placed it in the top 50% most deprived LSOAs in England. Looking at the individual domains of deprivation, North Kesteven has its highest level of deprivation for the barriers to housing and services domain where it has a rank of 5,238, placing it in the top 20% most deprived LSOAs for this indicator. It has its lowest rank in crime with a rank of 31,762, putting it in the top 10% least deprived LSOAs for this domain. Table 11.8 shows the rank of each domain in detail.

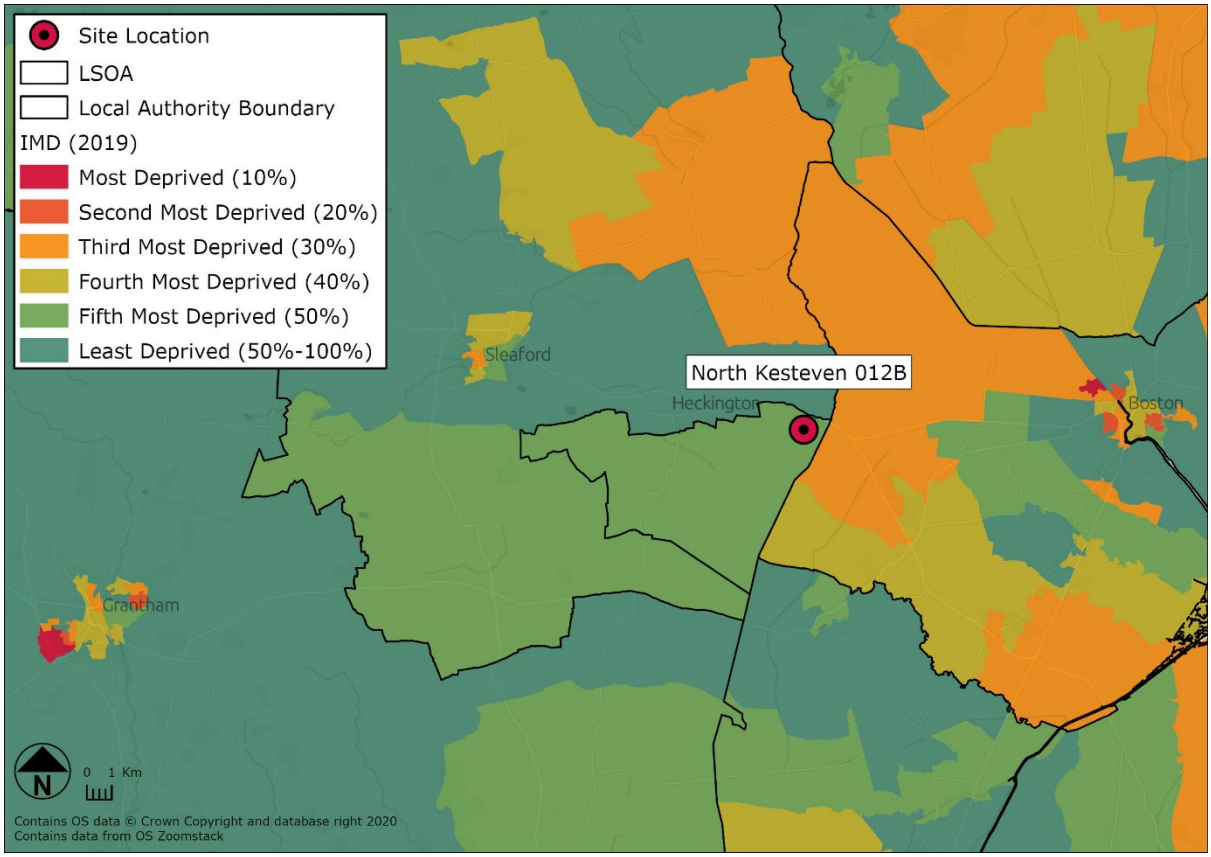
Table 11.8: Index of Multiple Deprivation for North Kesteven 012B

IMD 2019 Domain	North Kesteven 012B Rank (out of 32,844, 1 being the most deprived)
Overall IMD	**15,660**
Income	14,791
Employment	15,772
Education & Training	10,606
Health	28,462
Crime	31,762
Barriers to Housing and Services	5,238
Living Environment	7,640

Source: Ministry for Housing, Communities & Local Government

11.4.8 Figure 11.5 (document reference 6.2.11 (Rev 2)) (below and more detailed in standalone figure) maps the overall level of deprivation in North Kesteven 012B and its neighbouring LSOAs. As can be seen from Figure 11.3 that many LSOAs the east of the site fall within the top 30% most deprived LSOAs in the country, where the majority to the west are the top 50% least deprived LSOAs in the country. However, there is a pocket of deprivation to the west of the site, with some LSOAs falling into the top 10% most deprived areas.

Figure 11.5: Index of Multiple Deprivation for Site Location, 2019



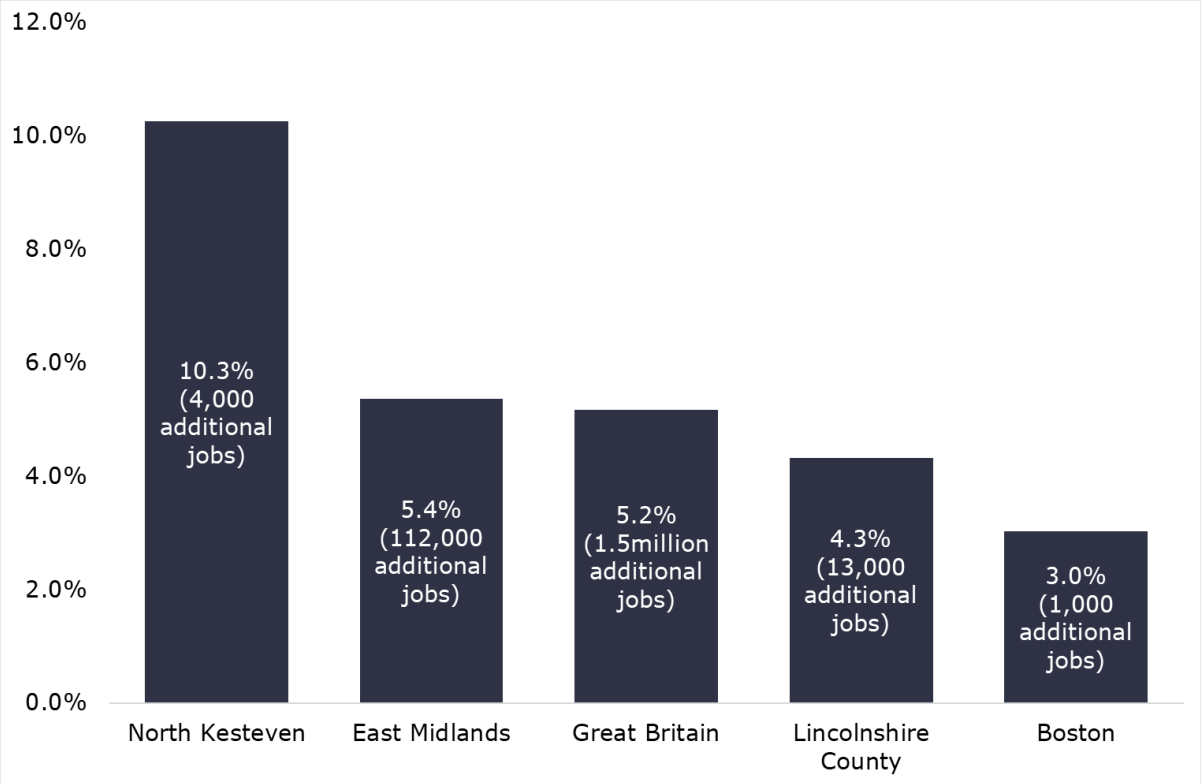
Source: Ministry of Housing, Communities & Local Government

Employment

11.4.9 Based on jobs data sourced from the ONS Business Register and Employment Survey, in absolute terms, North Kesteven saw job numbers increase by around 4,000

between 2015 and 2021 (growing from 39,000 to 43,000 – see Figure 11.6). In relative terms, this equated to a rise of 10.3%. North Kesteven's growth rate was above that for Boston (3%), Lincolnshire County (4.3%), the East Midlands (5.4%) and Great Britain (5.2%).

Figure 11.6: Employment Change, 2015-21



Source: ONS, Business Register & Employment Survey

11.4.10 The largest sector in North Kesteven as of 2021 is public administration, education and health, with 10,250 jobs – representing 24% of total employment. Job numbers in the sector increased by 500 between 2015 and 2021, equating to growth of 5.1%. This sector also accounted for the largest proportion of total employment in Boston at 26%, supporting 8,700 jobs and growing by 650 (8.1%) jobs between 2015 and 2021.

11.4.11 In terms of overall size, public administration, education and health is followed by the wholesale and retail in North Kesteven. In 2021, the sector supporting 7,250 jobs in North Kesteven and accounted for 17% of employment. In Boston the second largest sector was business, financial and professional services accounting for 18.2% of employment and supporting 6,100 jobs in 2021. The construction sector, which is likely to see increased employment opportunities during the Proposed Development's build phase, supports around 3,000 jobs in North Kesteven. This represents 7% of total employment in the District, above the proportion of total jobs in Lincolnshire County (5.1%), the East Midlands (4.9%) and Great Britain (5%). In Boston, the construction sector accounted for 3.7% of employment and supported 1,250 in 2021. Table 11.9 shows total employment by sector in more detail.

Table 11.9: Employment by Sector, 2021

	North Kesteven	Boston	Lincolnshire County	East Midlands	Great Britain
Agriculture, mining, utilities etc.	5.7%	9.5%	6.2%	3.3%	2.8%
Manufacturing	14.1%	11.9%	11.5%	11.6%	7.4%
Construction	7.0%	3.7%	5.1%	4.9%	5.0%
Wholesale & retail	17.0%	17.9%	17.3%	16.2%	14.4%
Transport & storage	3.5%	5.2%	4.2%	6.4%	5.1%
Accommodation & food services	5.9%	3.7%	8.0%	6.6%	7.5%
Information & communication	3.5%	1.0%	1.9%	2.9%	4.3%
Business, financial & professional services	14.6%	18.2%	15.8%	18.2%	23.0%
Public admin, education & health	24.0%	26.0%	25.6%	25.6%	26.3%
Arts, entertainment, recreation & other services	4.7%	2.7%	4.5%	4.4%	4.3%

Source: ONS, Business Register & Employment Survey

Business Numbers

11.4.12 Table 11.10 shows the change in the number of businesses in North Kesteven and Boston between 2012 and 2022. It also presents the change for comparator areas of Lincolnshire County, the East Midlands and Great Britain. Boston saw business growth of 11.7% (295 new businesses) between 2012 and 2022, this was above the growth seen in North Kesteven where businesses grew by 7.3% over this timeframe, equating to 330 new companies. However, business growth in both LPAs was behind the growth seen in Lincolnshire County (13.2% - 3,955 new businesses), the East Midlands (25.4% - 44,365 new businesses) and Great Britain (23.7% - 599,160 new businesses).

Table 11.10: Change in Business Numbers, 2012-22

	2012	2022	Absolute Change	% Change
North Kesteven	4,525	4,855	330	7.3%
Boston	2,525	2,820	295	11.7%
Lincolnshire County	29,960	33,915	3,955	13.2%
East Midlands	174,645	219,010	44,365	25.4%
Great Britain	2,527,640	3,126,800	599,160	23.7%

Source: ONS, UK Business Count

Commuting

11.4.13 Based on data from the 2011 Census, just under 19,850 people live and work in North Kesteven. Around 16,396 people work in North Kesteven and live elsewhere, with the top origin destinations being Lincoln (6,795), West Lindsey (1,978) and South Kesteven (1,501). Of the workers commuting into North Kesteven, 807 (4.9%) travel from neighbouring LPA Boston.

11.4.14 Around 22,966 people currently live in North Kesteven and work elsewhere, with the top locations to commute to being Lincoln (11,050), South Kesteven (2,247) and East Lindsey (1,396).

11.4.15 With an inflow of 16,396 people commuting into North Kesteven and an outflow of 22,966 people commuting out of North Kesteven, there is a net flow of 6,303 out of the LPA.

11.4.16 Around 18,205 people live and work in Boston. There are 7,501 people that work in Boston and live elsewhere, with the top origin destinations being East Lindsey (3,278), South Holland (1,677) and North Kesteven (1,121).

11.4.17 There are around 7,112 people living in Boston and working elsewhere with the top locations to commute to being South Holland (2,920), East Lindsey (1,432) and North Kesteven (807).

11.4.18 With an inflow of 7,501 people commuting into Boston and an outflow of 7,112 people commuting elsewhere from Boston, there is a net inflow of 389 workers into Boston.

Claimant Count

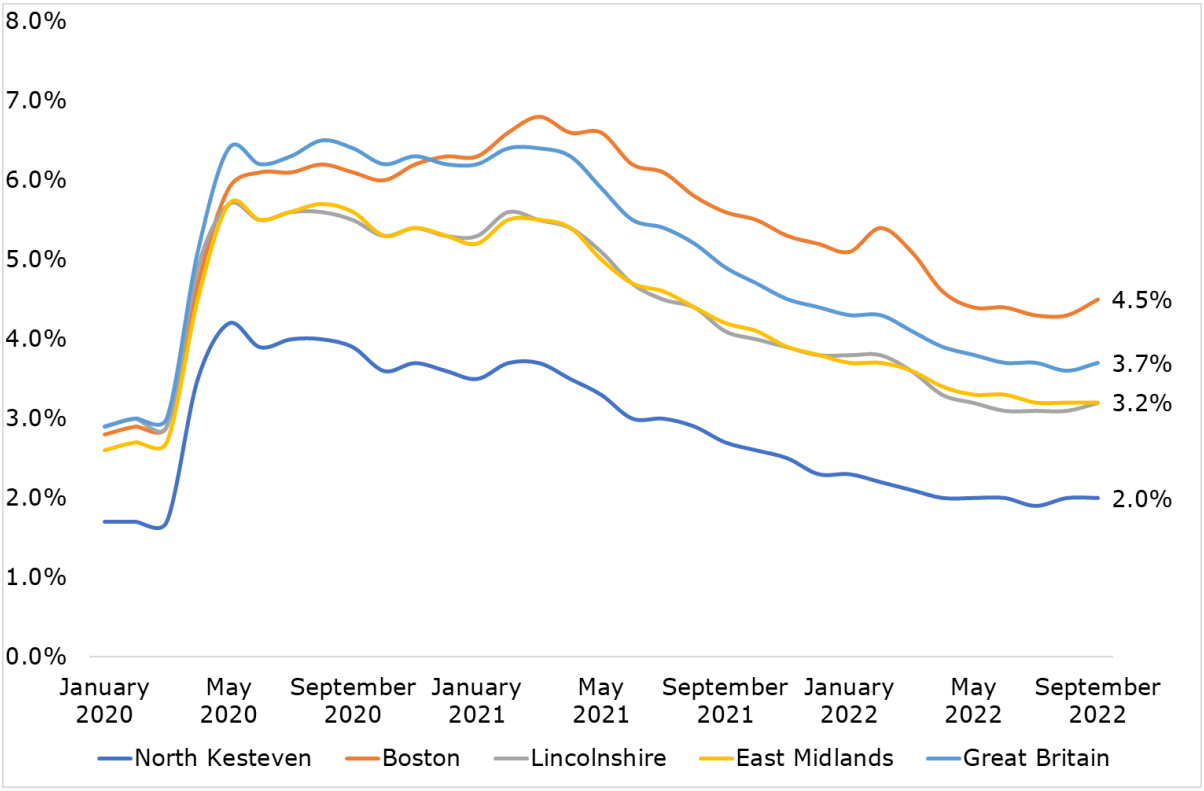
11.4.19 The claimant count records the number of people claiming Jobseeker's Allowance plus those who claim Universal Credit and are required to seek work and be available for work.

11.4.20 Figure 11.7 shows the claimant count as a proportion of people aged 16-64 in North Kesteven, Boston, Lincolnshire County, the East Midlands and Great Britain for the period January 2020 to September 2022, for all residents aged 16+. A sharp rise is evident in the claimant count between March and April 2020, which will be down to the impact of Covid-19. This is down in part to more people claiming unemployment-related benefits and also because of changes made to the system by government which means more people are eligible to claim benefits. Further details on this are provided below.

11.4.21 ONS state that enhancements to Universal Credit as part of the UK Government's response to the coronavirus mean that an increasing number of people became eligible for unemployment-related benefit support despite still being in work. Consequently, changes in the claimant count will not be wholly because of changes in the number of people who are not in work. It is not possible to identify to what extent people who are employed or unemployed have affected the numbers.

11.4.22 In January 2020, the claimant count in Boston was 2.8%, by September 2022 it had risen to 4.5%. This is an increase of 735 more people claiming benefits. This is currently above all other comparator areas. In January 2020, the claimant count in North Kesteven was 1.7% and by September 2022 it had risen to 2%, which represented an increase of 275 more people claiming benefits. However, in this period the claimant count has consistently been below the rates seen in Lincolnshire County and the East Midlands which are both currently 3.2% and Great Britain which is currently 3.7%.

Figure 11.7: Claimant Count, January 2020-September 2022



Source: ONS, Claimant Count

Bedspaces

11.4.23 In 2019[17], tourism contributed £2.49billion to the local economy in Greater Lincolnshire, which represented an increase of 4.5% from 2018 figures[18]. The visitor economy supported 23,760 jobs in Greater Lincolnshire.

11.4.24 Central Lincolnshire Local Plan includes the addition of policies specific to promoting tourism in the local area [19]. This is in response to an acknowledgement of growth in terms of employment in this sector since 2012, its importance in the current economy and an aspiration to encourage further growth going forward.

11.4.25 The South East Lincolnshire Local Plan (SELLP) 2011-36[20] (which covers the area of Boston) sets out a policy (Policy 9) which focuses on 'Promoting a Stronger Visitor Economy', underlining tourism as an important part of the South East Lincolnshire economy.

[17] Data for 2020 is the most recent available information in respect of visitor economy. However, latest relevant data pre-Covid 19, e.g. 2019 or 2018, is used as it is considered more representative.

[18] Greater Lincolnshire & Rutland Tourism Action Plan 2021-2025. Available at: GLR-Tourism-Action-Plan-Final-Draft3-1.pdf (visitlincolnshire.com).

[19] Central Lincolnshire Local Plan, April 2023. Available at: Central Lincolnshire Local Plan Adopted April 2023.

[20] South East Lincolnshire Local Plan 2011-36. Available at: Local-Plan-text-March-2019.pdf (southeastlincslocalplan.org)

11.4.26 The STEAM Final Trend Report for 2011-2022[21] shows that, in 2022, North Kesteven had a total of 3,455 bedspaces, with a split of 35% Serviced Accommodation (1,211 bedspaces) and 65% Non-Serviced Accommodation (2,244 bedspaces).

11.4.27 In terms of Serviced Accommodation (e.g. Hotels and Bed & Breakfasts), there were 1,211 bedspaces in 2022. The 2019 monthly occupancy rates for the East Midlands as a region detailed in Visit Britain publication (2021[22] - the most up to date available data) for hotel bedspaces range from a high rate of 79% occupancy in September to a low rate of 61% in January. Applying these rates to the available bedspaces, means that the estimated maximum number of bedspaces occupied is 957 out of 1,211 in September, and the minimum number occupied is 739 out of 1,211 in January.

11.4.28 In terms of Non-Serviced Accommodation (e.g. self-catering accommodation, static caravans, touring caravans and camping provision), there were 1,943 bedspaces in 2019. A report prepared by the UK Caravan & Camping Alliance (2019[23]) presents 2018 average occupancy rates for holiday parks and campsites within the study sample. The sample is UK-wide so is not specific to East Midlands. Furthermore, the sample includes for some but not all of the Non-Serviced Accommodation types as defined by STEAM Final Trend Report 2009-2020. Nevertheless, these occupancy rates are used as they represent the most relevant data known to be available for use at this present time. The highest occupancy rate of Non-Serviced Accommodation in the UK is 70% in August, and the lowest rate is 11% in January. Applying these rates to the available bedspaces, means that the estimated maximum number of bedspaces occupied is 1,571 out of 2,244 in August, and the minimum number occupied is 247 out of 2,244 in January.

11.4.29 Table 11.11 presents a summary of the data published in respect of available bedspaces for Serviced and Non-Serviced Accommodation in North Kesteven, applied occupancy rates, and the estimated actual number of bedspaces occupied for both accommodation types on a monthly basis.

[21] STEAM Final Trend Report for 2011-2022, North Kesteven District Council. Available directly from NKDC, 26 October 2023.

[22] Accommodation Occupancy: Latest Results. Visit Britain, 2021. Available at: https://www.visitbritain.org/accommodation-occupancy-latest-results.

[23] Pitching the Value, 2019 Economic Benefit Report: Holiday Parks and Campsites UK. Report for the UK Caravan & Camping Alliance, February 2019. Available at: https://britishdestinations.files.wordpress.com/2019/04/2019-economic-benefits-report-holiday-parks-and-campsites-uk-final-report.pdf.

Table 11.11: Applied occupancy rates of paid accommodation in North Kesteven, 2022

	Month											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Serviced Accommodation bedspaces	1,211	1,211	1,211	1,211	1,211	1,211	1,211	1,211	1,211	1,211	1,211	1,211
Room occupancy rate East Midlands**	0.61	0.70	0.71	0.72	0.74	0.78	0.78	0.74	0.79	0.76	0.75	0.64
Actual number of bedspaces occupied	739	848	860	872	896	945	945	896	957	920	908	775
Non-Serviced Accommodation bedspaces	2,244	2,244	2,244	2,244	2,244	2,244	2,244	2,244	2,244	2,244	2,244	2,244
Occupancy rate UK***	0.11	0.13	0.30	0.47	0.52	0.58	0.67	0.70	0.54	0.39	0.22	0.12
Actual number of bedspaces occupied	247	292	673	1,055	1,167	1,302	1,503	1,571	1,212	875	494	269

Source: * STEAM Final Trend Report, 2023; ** Visit Britain, 2021; *** UK Caravan & Camping Alliance, February 2019.

11.4.30 The STEAM Final Trend Report for 2011-2022[24] shows that, in 2022, Boston had a total of 2,588 bedspaces, with a split of 20% Serviced Accommodation (523 bedspaces) and 80% Non-Serviced Accommodation (2,065 bedspaces).

11.4.31 In terms of Serviced Accommodation (e.g. Hotels and Bed & Breakfasts), there were 523 bedspaces in 2022. The 2019 monthly occupancy rates for the East Midlands as a region detailed in Visit Britain publication (2021[25]) for hotel bedspaces range from a high rate of 79% occupancy in September to a low rate of 61% in January. Applying these rates to the available bedspaces, means that the estimated maximum number of bedspaces occupied is 413 out of 523 in September, and the minimum number occupied is 319 out of 523 in January.

11.4.32 In terms of Non-Serviced Accommodation (e.g. self-catering accommodation, static caravans, touring caravans and camping provision), there were 2,065 bedspaces in 2022. A report prepared by the UK Caravan & Camping Alliance (2019[26]) presents 2018 average occupancy rates for holiday parks and campsites within the study sample. The sample is UK-wide so is not specific to East Midlands. Furthermore, the sample includes for some but not all of the Non-Serviced Accommodation types as defined by STEAM Final Trend Report 2011-2022. Nevertheless, these occupancy rates are used as they represent the most relevant data known to be available for use at this present time. The highest occupancy rate of Non-Serviced Accommodation in the UK is 70% in August, and the lowest rate is 11% in January. Applying these rates to the available bedspaces, means that the estimated maximum number of bedspaces occupied is 1,446 out of 2,065 in August, and the minimum number occupied is 227 out of 2,065 in January.

11.4.33 Table 11.12 presents a summary of the data published in respect of available bedspaces for Serviced and Non-Serviced Accommodation in Boston, applied occupancy rates, and the estimated actual number of bedspaces occupied for both accommodation types on a monthly basis.

11.4.34 Table 11.13 presents a summary of the data combined for both North Kesteven and Boston, split by Serviced and Non-Serviced Accommodation. It shows that when looking at accommodation across the two districts in aggregate there is significant capacity, with 1,734 Serviced Accommodation bedspaces and 4,309 Non-Serviced Accommodation bedspaces.

[24] STEAM Final Trend Report for 2011-2022, Boston Borough Council, Global Tourism Solutions (UK) Ltd, June 2023. Available on the Visit Lincolnshire website as a PDF entitled BOSTON-STEAM-2022.

[25] Accommodation Occupancy: Latest Results. Visit Britain, 2021. Available at: https://www.visitbritain.org/accommodation-occupancy-latest-results.

[26] Pitching the Value, 2019 Economic Benefit Report: Holiday Parks and Campsites UK. Report for the UK Caravan & Camping Alliance, February 2019. Available at: https://britishdestinations.files.wordpress.com/2019/04/2019-economic-benefits-report-holiday-parks-and-campsites-uk-final-report.pdf.

Table 11.12: Applied occupancy rates of paid accommodation in Boston, 2022

	Month											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Serviced Accommodation bedspaces	523	523	523	523	523	523	523	523	523	523	523	523
Room occupancy rate East Midlands**	0.61	0.70	0.71	0.72	0.74	0.78	0.78	0.74	0.79	0.76	0.75	0.64
Actual number of bedspaces occupied	319	366	371	377	387	408	408	387	413	397	392	335
Non-Serviced Accommodation bedspaces	2,065	2,065	2,065	2,065	2,065	2,065	2,065	2,065	2,065	2,065	2,065	2,065
Occupancy rate UK***	0.11	0.13	0.30	0.47	0.52	0.58	0.67	0.70	0.54	0.39	0.22	0.12
Actual number of bedspaces occupied	227	268	620	971	1,074	1,198	1,384	1,446	1,115	805	454	248

Source: * STEAM Final Trend Report, 2023; ** Visit Britain, 2021; *** UK Caravan & Camping Alliance, February 2019.

Table 11.13: Applied occupancy rates of paid accommodation for North Kesteven & Boston combined, 2022

	Month											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Serviced Accommodation bedspaces	1,734	1,734	1,734	1,734	1,734	1,734	1,734	1,734	1,734	1,734	1,734	1,734
Room occupancy rate East Midlands**	0.61	0.70	0.71	0.72	0.74	0.78	0.78	0.74	0.79	0.76	0.75	0.64
Actual number of bedspaces occupied	1,058	1,214	1,231	1,248	1,283	1,353	1,353	1,283	1,370	1,318	1,301	1,110
Non-Serviced Accommodation bedspaces	4,309	4,309	4,309	4,309	4,309	4,309	4,309	4,309	4,309	4,309	4,309	4,309
Occupancy rate UK***	0.11	0.13	0.30	0.47	0.52	0.58	0.67	0.70	0.54	0.39	0.22	0.12
Actual number of bedspaces occupied	474	560	1,293	2,025	2,241	2,499	2,887	3,016	2,327	1,681	948	517

Source: * STEAM Final Trend Report, 2023; ** Visit Britain, 2021; *** UK Caravan & Camping Alliance, February 2019.

11.5 ASSESSMENT OF LIKELY SIGNIFICANT EFFECTS

Construction Phase

Employment

11.5.1 Economic benefits will arise through the provision of temporary jobs during the construction phase at the site. Based on information provided by the client, it is estimated that the total cost of the Proposed Development is in the region of £400million.

11.5.2 Investment in the proposed scheme is likely to create opportunities for local businesses through the supply chain, during the construction process. The Applicant estimates that there will be around 436 on-site jobs generated across the Proposed Development during the construction phase. Furthermore, it is estimated that there will be around 109 workers on-site during the peak times of the construction period, which is expected to be up to 30-months. These will include jobs in civil works, electricians, mechanical installation, security installation, landscaping, and fencing.

11.5.3 In the solar powered growth in the UK report, Cebr[27] give an employment multiplier for large-scale solar PV investments of 2.33 – i.e. for every job supported on-site, 1.33 indirect/induced jobs are supported in the wider economy. Applying this multiplier to the 436 on-site jobs, the Proposed Development could support 580 temporary jobs in the wider economy during the 30-month build phase.

11.5.4 In total, the Proposed Development could support 1,016 temporary jobs, both direct jobs on-site and indirect/induced roles in the wider economy, during the 30-month construction period.

11.5.5 The significance of construction phase effect in respect of employment is assessed as follows:

- The sensitivity of the receptor (employment in construction and other sectors of the economy in North Kesteven and Boston) is assessed as being **medium,** in line with the criteria set out in Table 11.1. Construction employment represents around 7% of total employment in North Kesteven and 3.7% in Boston. Although the 436 on-site jobs will still be created within a relatively short timeframe, the construction jobs created during the build period are unlikely to add any significant pressure to the labour supply.
- The magnitude of the impact is assessed as **medium**, in line with the criteria in Table 11.2. The 436 jobs per annum supported by the construction phase (direct) represent a moderate increase in the number of new employment opportunities for local residents, for a temporary period of time. This is acknowledged in the context that 4.9% of commuters into North Kesteven live in Boston and therefore there will be a small amount of leakage to this adjacent authority.
- The significance of the temporary effect is therefore considered to be **moderate beneficial** in North Kesteven and Boston, which is significant in EIA terms.

Contribution to Economic Output

[27] *Solar powered growth in the UK – the macroeconomic benefits for the UK of investment in solar PV*: Cebr (report for the Solar Trade Association), September 2014.

11.5.6 Another way of looking at the economic impact of the construction phase is to calculate the contribution a development makes to wealth creation, as measured by the increase in the value of goods and services generated within an area. This can be done by looking at the increase in gross value added (GVA), a common proxy for economic output. Using ONS data, it is possible to calculate GVA per employee by sector at a regional level. The Cebr report referred to in paragraph 8.4.3 gives a GVA multiplier of 2.39. Factoring this into the analysis, the overall GVA impact associated with the construction phase is estimated at £190.6million over the 30-month build timeframe (current prices), equivalent of £76.2million per annum.

11.5.7 The significance of construction phase effect in respect of contribution to economic output is assessed as follows:

- The sensitivity of the receptor in North Kesteven and Boston is assessed as being **medium,** in line with the criteria set out in Table 11.1. GVA in the North Kesteven construction sector increased 26.7% between 2010 and 2020, and 83.3% increase in Boston in the same time period.
- The magnitude of the impact is assessed as **high**, in line with the criteria in Table 11.2. The £190.6million in GVA generated over the 30-month build timeframe (current prices), equivalent of £76.2million per annum. This would cause a large uplift in construction GVA in both North Kesteven and Boston (North Kesteven annual construction GVA amounts to £243million, therefore a 31.4% uplift is estimated, and Boston construction GVA amounts to £61million, therefore a 125% uplift is estimated).
- The significance of the temporary effect is therefore considered to be **major beneficial** in North Kesteven and Boston, which is significant in EIA terms.

Accommodation Demand

11.5.8 A total of up to 436 (direct) construction workers are forecast to be on Site during the construction period. To enable a worst-case assessment in respect of accommodation demand, the total number of direct on-site construction workers is used as the basis of the assessment.

11.5.9 It is estimated that, based on Ready Reckoners in respect of Leakage defined by the Additionality Guide (2014), between 50% and 75% of benefits of the construction period will go to people living outside of the local area when considering baseline characteristics of North Kesteven and Boston economies. By association, it can be estimated that between 50% and 75% of construction workers will need to be sourced from outside of the local area; this would equate to between 218 and 327 workers at peak times. As such, for a worst case assessment it is assumed that the upper limit of this proportion of construction workers (327) will be sourced from outside the local area and require accommodation for the duration of the construction period.

11.5.10 It is understood that construction workers sourced from outside the local area will be accommodated in local hotels[28] (i.e. Serviced Accommodation) and Non-Serviced accommodation. As such, there would be no impact on affordable housing supply within North Kesteven District or Boston Borough Council.

11.5.11 In order to identify the effect on available Serviced and Non-Serviced Accommodation in the relevant areas, the upper proportion of construction workers to be sourced from outside the District is assumed (ref para 11.5.9), i.e. 327 out of the total 436 construction workers. Table 11.14. presents Serviced and Non-Serviced Accommodation available bedspaces in North Kesteven in 2022 and the monthly applied

[28] Information provided by Applicant.

occupancy rates (as presented in the Baseline), and the addition of the upper proportion of construction workers. To enable a worst case and understand the effect at any time during a 12-month period, it is assumed that accommodation for the 327 workers would be needed in each of the 12 months, albeit is noted that the peak number of workers would likely only be on-site for a maximum 6-month period. In addition to this, to enable a worst case Table 11.14 assumes that all workers would be accommodated in North Kesteven, whilst Table 11.15 assumes that all workers would be accommodated in Boston. Table 11.16 shows the potential impact for combined accommodation capacity across North Kesteven and Boston; workers being accommodated across each of North Kesteven and Boston is the more realistic and more likely scenario.

11.5.12 Table 11.14 shows that, following accommodation of the 327 construction workers, the maximum estimated occupancy rate of Serviced and Non-Serviced Accommodation combined in North Kesteven would be 81% in August (actual number of bedspaces occupied 2,794 with 661 remaining). The minimum estimated occupancy rate of this accommodation would be 38% in the month of January (actual number of bedspaces occupied 1,313 and 2,142 remaining). On that basis, there is sufficient available bedspaces in North Kesteven to accommodate the workers likely to need accommodation during the construction period, with surplus bedspaces remaining for use by other overnight visitors.

11.5.13 Table 11.15 shows that, following accommodation of the 327 construction workers, the maximum estimated occupancy rate of Serviced and Non-Serviced Accommodation combined in Boston would be 83% in August (actual number of bedspaces occupied 2,160 with 428 remaining). The minimum estimated occupancy rate of this accommodation would be 34% in the month of January (actual number of bedspaces occupied 873 and 1,715 remaining). On that basis, there is sufficient available bedspaces in Boston to accommodate the workers likely to need accommodation during the construction period, with surplus bedspaces remaining for use by other overnight visitors.

11.5.14 Table 11.16 shows that, following accommodation of the 327 construction workers, the maximum estimated occupancy rate of Serviced and Non-Serviced Accommodation combined across the two districts combined would be 77% in August (actual number of bedspaces occupied 4,626 with 1,417 remaining). The minimum estimated occupancy rate of this accommodation would be 31% in the month of January (actual number of bedspaces occupied 1,859 and 4,184 remaining). On that basis, there is sufficient available bedspaces to accommodate the workers likely to need accommodation during the construction period if accommodation were to be provided split between the two districts, with surplus bedspaces remaining for use by other overnight visitors.

Table 11.14: Assumed occupancy of Serviced and Non-Serviced Accommodation including housing of construction workers in North Kesteven (based on 2022 data)

	Month											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Total Serviced and Non-Serviced Accommodation bedspaces	3,455	3,455	3,455	3,455	3,455	3,455	3,455	3,455	3,455	3,455	3,455	3,455
Actual number of bedspaces occupied (COMBINED) INCL. INCLUSIVE OF ASSOCIATED OCCUPANCY RATES SHOWN IN BASELINE	986	1,139	1,533	1,927	2,063	2,246	2,448	2,467	2,168	1,796	1,402	1,044
Construction workers requiring accommodation	327~~164~~	327~~164~~	327~~164~~	327~~164~~	327~~164~~	327~~164~~	327~~164~~	327~~164~~	327~~164~~	327~~164~~	327~~164~~	327~~16~~ 4
Occupancy rate inclusive of construction workers	0.38~~0.3~~ ~~3~~	0.42~~0.38~~	0.54~~0.4~~ ~~9~~	0.65~~0.6~~ ~~1~~	0.69~~0.6~~ 4	0.74~~0.7~~ ~~0~~	0.80~~0.7~~ ~~6~~	0.81~~0.7~~ ~~6~~	0.72~~0.6~~ ~~8~~	0.61~~0.5~~ ~~7~~	0.50~~0.4~~ ~~5~~	0.40~~0.~~ ~~35~~
Actual number of bedspaces occupied	1,313~~1,~~ ~~150~~	1,466~~1,30~~ ~~3~~	1,860~~1,~~ ~~697~~	2,254~~2,~~ ~~091~~	2,390~~2,~~ ~~227~~	2,573~~2,~~ ~~410~~	2,775~~2,~~ ~~612~~	2,794~~2,~~ ~~631~~	2,495~~2,~~ ~~332~~	2,123~~1,~~ ~~960~~	1,729~~1,~~ ~~566~~	1,371~~1~~ ~~,208~~
Available bedspaces following housing of accommodation workers	2,142~~2,~~ ~~305~~	1,989~~2,15~~ ~~2~~	1,595~~1,~~ ~~758~~	1,201~~1,~~ ~~364~~	1,065~~1,~~ ~~228~~	882~~1,04~~ ~~5~~	680~~843~~	661~~824~~	960~~1,12~~ ~~3~~	1,332~~1,~~ ~~495~~	1,726~~1,~~ ~~889~~	2,084~~2~~ ~~,247~~

Table 11.15: Assumed occupancy of Serviced and Non-Serviced Accommodation including housing of construction workers in Boston, (based on 2022 data)

	Month											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Total Serviced and Non-Serviced Accommodation bedspaces	2,588	2,588	2,588	2,588	2,588	2,588	2,588	2,588	2,588	2,588	2,588	2,588
Actual number of bedspaces occupied (COMBINED) INCL. INCLUSIVE OF ASSOCIATED OCCUPANCY RATES SHOWN IN BASELINE	546	635	991	1,347	1,461	1,606	1,791	1,833	1,528	1,203	847	583
Construction workers requiring accommodation	327	327	327	327	327	327	327	327	327	327	327	327
Occupancy rate inclusive of construction workers	0.34	0.37	0.51	0.65	0.69	0.75	0.82	0.83	0.72	0.59	0.45	0.35
Actual number of bedspaces occupied	873	962	1,318	1,674	1,788	1,933	2,118	2,160	1,855	1,530	1,174	910
Available bedspaces following housing of accommodation workers	1,715	1,626	1,270	914	800	655	470	428	733	1,058	1,414	1,678

Table 11.16: Assumed occupancy of Serviced and Non-Serviced Accommodation including housing of construction workers COMBINED (based on 2022 data)

	Month											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Total Serviced and Non-Serviced Accommodation bedspaces	6,043	6,043	6,043	6,043	6,043	6,043	6,043	6,043	6,043	6,043	6,043	6,043
Actual number of bedspaces occupied (COMBINED) INCL. INCLUSIVE OF ASSOCIATED OCCUPANCY RATES SHOWN IN BASELINE	1,532	1,774	2,524	3,274	3,524	3,852	4,240	4,299	3,697	2,998	2,248	1,627
Construction workers requiring accommodation	327	327	327	327	327	327	327	327	327	327	327	327
Occupancy rate inclusive of construction workers	0.31	0.35	0.47	0.60	0.64	0.69	0.76	0.77	0.67	0.55	0.43	0.32
Actual number of bedspaces occupied	1,859	2,101	2,851	3,601	3,851	4,179	4,567	4,626	4,024	3,325	2,575	1,954
Available bedspaces following housing of accommodation workers	4,184	3,942	3,192	2,442	2,192	1,864	1,476	1,417	2,019	2,718	3,468	4,089

11.5.15 The significance of construction phase accommodation effect is assessed as follows:

- The sensitivity of the receptor in North Kesteven is assessed as being **medium,** in line with the criteria set out in Table 11.1. Tourism is a growing sector in both of the Districts and wider area.
- The magnitude of the impact is assessed as **low**, in line with the criteria in Table 11.2. There will be some change in terms of use of the existing amenities, but there remains surplus bedspaces in both of the districts when workers are assumed to be accommodated in one or other district as a worst case scenario, and even more surplus bedspaces if workers are accommodated within both districts rather than limited to just one, which is a more realistic scenario.
- The significance of the temporary effect is therefore considered to be **minor to moderate adverse** in North Kesteven and Boston Borough, which is not significant in EIA terms.

Operational Phase

Employment Impact

11.5.16 Based on information provided by the client, it is estimated that once operational there will be up to 6.5 FTE jobs supported on-site. These will include jobs in general operation and maintenance, and a shepherd for managing the flock. It is likely that jobs such as security will be outsourced. Applying the multiplier outlined above, as well as the 6.5 jobs on-site, there will be an estimated 9 jobs supported in the wider economy.

11.5.17 In total, once operational the Proposed Development will support an estimated 15.5 jobs in North Kesteven and/or Boston and in the wider economy.

11.5.18 In addition to the jobs created by the Proposed Development, the site is part of a landholding which forms part of a larger business whereby the farming team moves around. There are 7 FTEs supported by these existing activities and they will continue in the future, therefore there will be no job losses associated with the Proposed Development.

11.5.19 The significance of the operational phase effect in respect of employment has been assessed as follows:

- The sensitivity of the receptor (labour market of North Kesteven and Boston) is considered to be **medium**, in line with the criteria set out in Table 11.1.
- The magnitude of the impact is identified as being **negligible**, in line with the criteria in Table 11.2. The number of on-site jobs created in the operational phase (6.5) would represent only a small increase in current employment levels in North Kesteven and Boston, but the employment supported by the operational phase will be long-term. This is acknowledged in the context that 4.9% of commuters into North Kesteven live in Boston and therefore there will be a small amount of leakage to this adjacent authority.
- The significance of the operational effect is therefore considered to be **negligible** in North Kesteven and Boston, which is not significant in EIA terms.

Contribution to Economic Output

11.5.20 Based on information provided by the client there are currently around 7 FTE jobs supported on-site in agriculture. To calculate the current GVA generated on site, the 7 FTEs have been multiplied by the GVA per employee in the agricultural sector in the East

Midlands. This gives GVA generated by the existing employment on-site at an estimated £201,409 per annum.

11.5.21 The contribution of the site to economic output has been calculated by taking the job creation associated with the scheme and multiplying this by an estimate of average levels of GVA per employee for all jobs in the East Midlands.

11.5.22 It is estimated that once operational and fully occupied, the additional GVA supported by the Proposed Development is estimated to be around £815,137per annum, allowing for multiplier effects[29] which is above the estimated GVA per annum generated by the existing employment on-site. Over the 40-year operational lifespan of the solar farm the GVA generated is estimated to be around £18.1million (present value[30]).

11.5.23 The significance of the operational phase effect in respect of contribution to economic output has been assessed as follows:

- The sensitivity of the receptor in North Kesteven and Boston is considered to be **medium**, in line with the criteria set out in Table 11.1.
- The magnitude of the impact is identified as being **low**, in line with the criteria in Table 11.2. There will be a limited uplift in GVA for North Kesteven and Boston.
- The significance of the operational effect is therefore considered to be **minor to moderate beneficial** in North Kesteven and Boston, which is not significant in EIA terms.

Business Rates

11.5.24 Business rates are an important economic contributor to an area. It is estimated that the solar project element of the proposed scheme could generate up to £1.3million per annum in business rates[31]. Over the intended 40-year lifespan of the scheme, business rates generated could total around £29.3million (present value).

11.5.25 The significance of the operational phase effect in respect of business rates has been assessed as follows:

- The sensitivity of the receptor in North Kesteven is considered to be **medium**, in line with the criteria set out in Table 11.1.
- The magnitude of the impact is identified as being **medium**, in line with the criteria in Table 11.2. Given agricultural land and buildings are exempt from business rates, the business rates revenue generated from the Proposed Development would represent an uplift on current activities.
- The significance of the operational effect is therefore considered to be **moderate beneficial** in North Kesteven, which is significant in EIA terms.

[29] For the GVA estimate, the same multipliers used are the same as the construction GVA multipliers outlined above.

[30] Where future benefits are calculated over a longer timeframe, they have been discounted to produce a present value. This is the discounted value of a stream of either future costs or benefits. A standard discount rate is used to convert all costs and benefits to present values. Using the Treasury's Green Book, the recommended discount rate is 3.5% up to 30 year and 3% thereafter.

[31] Based on information on price per MW of £6,450 in 2017 sourced from Photovoltaic Memorandum of Agreement.

Decommissioning Phase

Employment

11.5.26 Economic benefits will arise through the provision of temporary jobs during the decommissioning phase at the site.

11.5.27 It is estimated that there will be around 218 workers on-site during the peak times of the decommissioning phase, which is expected to be up to 18 months. In the solar powered growth in the UK report, Cebr[32] give an employment multiplier for large-scale solar PV investments of 2.33 – i.e. for every job supported on-site, 1.33 indirect/induced jobs are supported in the wider economy. Applying this multiplier to the 218 on-site jobs, the Proposed Development could support 290 temporary jobs in the wider economy.

11.5.28 In total, the Proposed Development could support 508 temporary jobs, both direct jobs on-site and indirect/induced roles in the wider economy, during the 18-month decommissioning phase.

11.5.29 The significance of decommissioning phase effect in respect of employment is assessed as follows:

- The sensitivity of the receptor (employment in construction (assumed most relevant in respect of decommissioning workforce) and other sectors of the economy in North Kesteven and Boston) is assessed as being **medium,** in line with the criteria set out in Table 11.1. Construction employment represents around 7% of total employment in North Kesteven and 3.7% in Boston.
- The magnitude of the impact is assessed as **medium**, in line with the criteria in Table 11.2. The 218 jobs per annum assumed to be supported by the decommissioning phase (direct) represent a moderate increase in the number of new employment opportunities for local residents, for a temporary period of time. This is acknowledged in the context that 4.9% of commuters into North Kesteven live in Boston and therefore there is expected to be a small amount of leakage to this adjacent authority.
- The significance of the temporary effect is therefore considered to be **moderate beneficial** in North Kesteven and Boston, which is significant in EIA terms

Contribution to Economic Output

11.5.30 Contribution to economic output is calculated in the same way it was calculated for the construction phase. The overall GVA impact associated with the Decommissioning phase is estimated at £57.1million over the 18-month decommissioning phase, equivalent to £38.1million per annum.

11.5.31 The significance of decommissioning phase effect in respect of contribution to economic output is assessed as follows:

- The sensitivity of the receptor in North Kesteven and Boston is assessed as being **medium,** in line with the criteria set out in Table 11.1. GVA in the North Kesteven construction sector increased 26% between 2010 and 2020 and 83.3% increase in Boston during this same time period.

[32] *Solar powered growth in the UK – the macroeconomic benefits for the UK of investment in solar PV*: Cebr (report for the Solar Trade Association), September 2014.

- The magnitude of the impact is assessed as **medium**, in line with the criteria in Table 11.2. The £57.1million over the 18-month decommissioning timeframe (current prices), equivalent to £38.1million per annum . This would cause a moderate uplift in (construction-related) GVA in both North Kesteven and Boston (North Kesteven annual construction GVA amounts to £243million, therefore a 16% uplift is estimated, and Boston construction GVA amounts to £61million, therefore a 62% uplift is estimated).
- The significance of the temporary effect is therefore considered to be **moderate beneficial** in North Kesteven and Boston, which is significant in EIA terms.

Accommodation Demand

11.5.32 Housing demand effects during the decommissioning phase have been calculated in the same way that they were for the construction phase, but instead of up to 436 workers, for the decommissioning phase it is expected that there will be up to 50% of this number, meaning 218 workers. It is assumed that the same Ready Reckoners in respect of Leakage are applied during the decommissioning phase, as applied during the construction phase. As such, it is estimated that 75% of workers would be sourced from outside the local area, which amounts to 164 workers of the total 218 being sourced from outside of the local area and requiring accommodation.

11.5.33 Table 11.17 shows that, following accommodation of the 164 decommissioning workers, the maximum estimated occupancy rate of Serviced and Non-Serviced Accommodation in North Kesteven would be 76% in August (actual number of bedspaces occupied2,631, with 824 remaining). The minimum estimated occupancy rate of this accommodation would be 33% in the month of January (actual number of bedspaces occupied 1,150 and 2,305 remaining). On that basis, there is sufficient available bedspaces in North Kesteven to accommodate the workers likely to need accommodation during the decommissioning period, with surplus bedspaces remaining for use by other overnight visitors.

11.5.34 Table 11.18 shows that, following accommodation of the 164 decommissioning workers, the maximum estimated occupancy rate of Serviced and Non-Serviced Accommodation in Boston would be 77% in August (actual number of bedspaces occupied 1,997, with 591 remaining). The minimum estimated occupancy rate of this accommodation would be 27% in the month of January (actual number of bedspaces occupied 710 and 1,878 remaining). On that basis, there is sufficient available bedspaces in Boston to accommodate the workers likely to need accommodation during the decommissioning period, with surplus bedspaces remaining for use by other overnight visitors.

11.5.35 Table 11.19 shows that, following accommodation of the 164 decommissioning workers, the maximum estimated occupancy rate of Serviced and Non-Serviced Accommodation in North Kesteven and Boston would be 74% in August (actual number of bedspaces occupied 4,463, with 1,580 remaining). The minimum estimated occupancy rate of this accommodation would be 28% in the month of January (actual number of bedspaces occupied 1,696 and 4,347 remaining). On that basis, there is sufficient available bedspaces to accommodate the workers likely to need accommodation during the decommissioning period, with surplus bedspaces remaining for use by other overnight visitors.

Table 11.17: Assumed occupancy of Serviced and Non-Serviced Accommodation including housing of workers during the decommissioning phase for North Kesteven (based on 2022 data)

	Month											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Total Serviced and Non-Serviced Accommodation bedspaces	3,455	3,455	3,455	3,455	3,455	3,455	3,455	3,455	3,455	3,455	3,455	3,455
Actual number of bedspaces occupied	986	1,139	1,533	1,927	2,063	2,246	2,448	2,467	2,168	1,796	1,402	1,044
Construction workers requiring accommodation	164	164	164	164	164	164	164	164	164	164	164	164
Occupancy rate inclusive of construction workers	0.33	0.38	0.49	0.61	0.64	0.70	0.76	0.76	0.68	0.57	0.45	0.35
Actual number of bedspaces occupied	1,150	1,303	1,697	2,091	2,227	2,410	2,612	2,631	2,332	1,960	1,566	1,208
Available bedspaces following housing of accommodation workers	2,305	2,152	1,758	1,364	1,228	1,045	843	824	1,123	1,495	1,889	2,247

Table 11.18: Assumed occupancy of Serviced and Non-Serviced Accommodation including housing of workers during the decommissioning phase for Boston (based on 2022 data)

	Month											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Total Serviced and Non-Serviced Accommodation bedspaces	2,588	2,588	2,588	2,588	2,588	2,588	2,588	2,588	2,588	2,588	2,588	2,588
Actual number of bedspaces occupied	546	635	991	1,347	1,461	1,606	1,791	1,833	1,528	1,203	847	583
Construction workers requiring accommodation	164	164	164	164	164	164	164	164	164	164	164	164
Occupancy rate inclusive of construction workers	0.27	0.31	0.45	0.58	0.63	0.68	0.76	0.77	0.65	0.53	0.39	0.29
Actual number of bedspaces occupied	710	799	1,155	1,511	1,625	1,770	1,955	1,997	1,692	1,367	1,011	747
Available bedspaces following housing of accommodation workers	1,878	1,789	1,433	1,077	963	818	633	591	896	1,221	1,577	1,841

Table 11.19: Assumed occupancy of Serviced and Non-Serviced Accommodation including housing of workers during the decommissioning phase (based on North Kesteven and Boston 2022 data)

	Month											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Total Serviced and Non-Serviced Accommodation bedspaces	6,043	6,043	6,043	6,043	6,043	6,043	6,043	6,043	6,043	6,043	6,043	6,043
Actual number of bedspaces occupied	1,532	1,774	2,524	3,274	3,524	3,852	4,240	4,299	3,697	2,998	2,248	1,627
Construction workers requiring accommodation	164	164	164	164	164	164	164	164	164	164	164	164
Occupancy rate inclusive of construction workers	0.28	0.32	0.44	0.57	0.61	0.66	0.73	0.74	0.64	0.52	0.40	0.30
Actual number of bedspaces occupied	1,696	1,938	2,688	3,438	3,688	4,016	4,404	4,463	3,861	3,162	2,412	1,791
Available bedspaces following housing of accommodation workers	4,347	4,105	3,355	2,605	2,355	2,027	1,639	1,580	2,182	2,881	3,631	4,252

11.5.36 The significance of decommissioning phase accommodation effect is assessed as follows:

- The sensitivity of the receptor in North Kesteven and Boston is assessed as being **medium,** in line with the criteria set out in Table 11.1. Tourism is a growing sector in both of the Districts and wider area.
- The magnitude of the impact is assessed as **low**, in line with the criteria in Table 11.2. There will be some change in terms of use of the existing amenities, but there remains surplus bedspaces in both of the districts when workers are assumed to be accommodated in one or other district as a worst case scenario, and even more surplus bedspaces if workers are accommodated within both districts rather than limited to just one, which is a more realistic scenario.
- The significance of the temporary effect is therefore considered to be **minor to moderate adverse** in North Kesteven and Boston Borough, which is not significant in EIA terms.

11.6 MITIGATION AND ENHANCEMENT

Mitigation by Design

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

Additional Mitigation

11.6.2 As only beneficial effects are identified in this assessment, an **Outline Supply Chain, Employment and Skills Plan** (document reference 7.12) is included as part of the DCO application and will be agreed with the relevant planning authorities (North Kesteven District Council and Borough of Boston Council), as secured by DCO requirement.

11.6.3 Measures will include but will not be limited to:

- Local employment opportunities in landscaping, fencing, security, plant hire and operators, and materials including aggregate and concrete.
- Opportunities for apprenticeships, traineeships and back to work opportunities.
- Partnering with local schools, sixth form colleges, other further education colleges, universities, Jobcentre Plus and PeoplePlus to develop local skills and raise awareness of renewable technologies, in particular solar and energy storage.

Table 11.20: Mitigation

Ref	Measure to avoid, reduce or manage any adverse effects and/or to deliver beneficial effects	How measure would be secured	
		By Design	By DCO Requirement
1	**Outline Supply Chain, Employment and Skills Plan** (document reference 7.12)	n/a	Yes

Enhancements

11.6.4 All socio-economic effects of the Proposed Development are expected to be positive. No enhancement measures are proposed.

Other Measures

11.6.5 Continued efforts to address wider benefits for the community will be undertaken separately and outside of the DCO process.

11.7 CUMULATIVE AND IN-COMBINATION EFFECTS

11.7.1 In September 2023 it was agreed at Issue Specific Hearing (ISH) 2 with the Planning Inspectorate that the cumulative assessment for this Proposed Development should be updated. Through discussion at ISH 2 the expanded shortlist for cumulative assessment was agreed. This revised long list and shortlist is presented within ES Technical Note- Updated Information on Cumulative Projects (Document Ref: ExA ESTN-Cumulative D2 V1).

11.7.2 Within the ExA Questions 1, it was suggested that this updated cumulative assessment was submitted to the Planning Inspectorate as a standalone report, which all ES technical assessments input into rather than updating each of the ES chapters. Therefore, the cumulative assessment below has not been updated except table numbers to allow for the additional assessment tables inserted into this chapter at Deadline 2. Instead, this information sits within the standalone ES Technical Note- Updated Information on Cumulative Projects (Document Ref: ExA ESTN-Cumulative D2 V1), which was submitted to the ExA at Deadline 2 (November 2023), therefore Section 11.7 Cumulative and In-Combination Effects has not been updated since the DCO submission in February 2023.

11.7.3 The cumulative assessment approach aims to enable a robust assessment whilst also presenting a realistic consideration of the cumulative effects at the local scale (North Kesteven and Boston). Table 11.15 presents the cumulative assumptions in respect of each potential socio-economic effect.

11.7.4 Fifteen sites have been considered in the assessment of cumulative effects in respect of socio-economics (see Table 11.16). The information presented in Table 11.16 includes a summary of the known proposals, estimation of employment numbers for each phase of the scheme where available, and whether the scheme is scoped in or out of the socio-economic cumulative assessment with justification.

11.7.5 The scope of the cumulative assessment has considered the administrative area in which the scheme is located in comparison to the Proposed Development. Given the potential effects being assessed and the nature of those effects being limited to the local scale (North Kesteven and Boston), those schemes located within North Kesteven and Boston are scoped into the assessment; all others are scoped out.

11.7.6 Where possible, definitive information regarding estimated jobs is presented in Table 11.15, obtained through a review of publicly available documentation held for public viewing on National Infrastructure Planning website[33] or local authority planning portals, whichever is applicable to each cumulative scheme.

11.7.7 Where quantified information is not available, assumptions are made. Assumptions made are dependent on the potential effect in consideration with the aim of presenting a worst case assessment of each potential effect.

[33] National Infrastructure Planning. Available at: National Infrastructure Planning (planninginspectorate.gov.uk).

Table 11.15: Cumulative assessment assumptions in respect of socio-economics

Scheme phase	Potential effect	Worst Case Assumptions
Construction	Employment	Unless information is publicly available regarding construction jobs generated by the cumulative scheme, it is assumed that 0 jobs are generated at the local scale to contribute to a worst case scenario in respect of employment.
	Economic contribution	Unless information is publicly available regarding GVA generated by the construction phase of the cumulative scheme, it is assumed that £0 GVA is generated to contribute to a worst case scenario in respect of economic contribution.
	Accommodation demand	In the absence of definitive publicly available information regarding each considered Cumulative Site, and based on a review of the number of construction workers generated as a result of a solar farms previously assessed by Pegasus, as well as information provided by prospective construction contractors, an estimate of 1 job per MW has been used as the basis of assessment in respect of Accommodation demand. It is assumed that the construction phases align with that of the Proposed Development, and the number of workers requiring accommodation during the construction phase of the Cumulative Scheme also aligns with those needing accommodation during construction phase of the Proposed Development, i.e, up to 50% workers seeking accommodation in either Serviced or Non-Serviced Accommodation. This enables a worst case assessment to be undertaken.
Operation	Employment	Unless information is publicly available regarding operational jobs generated by the cumulative scheme, it is assumed that 0 jobs are generated at the local scale to contribute to a worst case scenario in respect of employment.

	Economic contribution	Unless information is publicly available regarding GVA generated by the operational phase of the cumulative scheme, it is assumed that £0 GVA is generated to contribute to a worst case scenario in respect of economic contribution.
	Business rates	Business rates are calculated on the basis of same assumptions used for the Proposed Development in isolation, and based on the proposed output of each of the Cumulative Schemes as listed in Table 11.16.
Decommissioning	Employment	Unless information is publicly available regarding decommissioning jobs generated by the cumulative scheme, it is assumed that 0 jobs are generated at the local scale to contribute to a worst case scenario in respect of employment.
	Economic contribution	Unless information is publicly available regarding GVA generated by the decommissioning phase of the cumulative scheme, it is assumed that £0 GVA is generated to contribute to a worst case scenario in respect of economic contribution.
	Accommodation demand	In the absence of definitive publicly available information regarding each considered Cumulative Site, and based on a review of the number of decommissioning workers generated as a result of a solar farms previously assessed by Pegasus, as well as information provided by prospective construction contractors and the Applicant, an estimate of 0.5 FTE jobs per MW has been used as the basis of assessment in respect of Accommodation demand during decommissioning. It is assumed that the decommissioning phases align with that of the Proposed Development, and the number of workers requiring accommodation during the construction phase of the Cumulative Scheme also aligns with those needing accommodation during decommissioning phase of the Proposed Development, i.e, up to 50% workers seeking accommodation in either Serviced or Non-Serviced Accommodation.

Table 11.16: Summary of Cumulative Schemes and relevant information for socio-economic assessment _

Cumulative Scheme	Proposal summary	Estimated FTE jobs based on publicly available information for those schemes scoped into the assessment			Scoped in / out of assessment	Justification
		Construction	Operational	Decommissioning		
Land at Little Hale Fen (21/1337/EIASCR)	This proposal is for a 49.9 MW solar farm located 4.6km north-east of the Application Site in North Kesteven LPA. A review of the North Kesteven planning website shows no socio-economic benefits have been quantified for this scheme. Therefore, an assumption is made regarding the estimated construction, operational and decommissioning workers.	-	-	-	Scoped in	Solar farm within North Kesteven. Similar effects generated by this scheme as for the Proposed Development.
Land at Ewerby Thorpe (14/1034/EIASCR)	This proposal is for a 28MW solar farm located 4.1km north-west of the site in North Kesteven LPA. A review of the North Kesteven planning website shows that the socio-economic benefits have not yet been quantified. Therefore, an assumption is made regarding the estimated construction, operational and decommissioning workers.	-	-	-	Scoped in	Solar farm within North Kesteven. Similar effects generated by this scheme as for the Proposed Development.

Land to the north of White Cross Lane (19/0863/FUL)	This proposal is for a 32MW solar farm located 8.4km west of the Application Site in North Kesteven LPA. The Planning, Design and Access Statement produced as part of the planning application has reference to socio-economic benefits. It shows that solar farms enable farmers and land owners to diversify, helping to strengthen the economy and support local businesses and services. However, there has been no quantified socio-economic benefits produced. Therefore, an assumption is made regarding the estimated construction, operational and decommissioning workers.	-	-	-	Scoped in	Solar farm within North Kesteven. Similar effects generated by this scheme as for the Proposed Development.
Land South of Gorse Lane, Silk Willoughby (19/0060/FUL)	This proposal is for a 20MW ground mounted solar farm located 11km west of the Application Site in North Kesteven LPA. From a review of the North Kesteven planning website there is no socio-economic analysis available for the scheme. Therefore, an assumption is made regarding the estimated construction, operational and decommissioning workers.	-	-	-	Scoped in	Solar farm within North Kesteven. Similar effects generated by this scheme as for the Proposed Development.
Temple Oaks Renewable Energy Park (EN010126)	This proposal is for an NSIP consisting of a 250MW Solar Farm, accompanied by 400MWh Battery Energy Storage System photovoltaic electricity) located 18.4km south-west of the Application Site located across South Kesteven, North Kesteven, Boston and South Holland LPAs. The Scoping Report submitted by the applicant in June 2022 suggests that there would be 126 workers on site. The full, detailed assessment is yet to be publicly available.	126	-	126	Scoped in	Solar farm within North Kesteven (as well as other neighbouring authorities). Similar effects generated by this scheme as for the Proposed Development.
Outer Dowsing Off Shore Wind (EN010130)	This proposal is located 390m to the east of the Application Site (in respect of indicative grid connection cable route	n/a	n/a	n/a	Scoped out	Offshore wind farm with infrastructure relating to onshore grid connection. Study areas

	scoping boundary at its closest point 390m east of the Proposed Development red line boundary). The scoping note submitted for the scheme scopes socio-economics into the Environmental Statement and will look at the impacts of the scheme during the construction and operational phases of the project in terms of job creation, GVA and the impact on tourism in the local area.					relating to the socio-economics assessment proposed as part of the EIA for Outer Dowsing considers the districts of Boston, East Lindsey and South Holland. On this basis, there is considered to be limited overlap in respect of potential for cumulative effects in respect of socio-economics.
Vicarage Drove (B/21/0443)	This proposal is for a 49.9MW solar farm, battery storage and associated infrastructure located 4.5km south of the Application Site in Boston LPA. A review of the Boston Borough planning website shows no socio-economic benefits have been quantified for this scheme.	n/a	n/a	n/a	Scoped out	Solar farm located within Boston administrative area. Limited overlap in terms of potential effects.
Cottam Solar Project (EN010133)	This proposal is for a Nationally Significant Infrastructure Project (NSIP) located 43.6km north-west of the Applications Site in Bassetlaw LPA and West Lindsey LPA. The scoping report available on the PINS website outlines that there is a potential for adverse economic impacts through the loss of agricultural income for businesses affected by the operational phase. It is recommended that this could be mitigated against through alternative incomes.	n/a	n/a	n/a	Scoped out	Solar farm located within Bassetlaw and West Lindsey administrative areas. Limited overlap in terms of potential effects.
Gate Burton Energy Park (EN010131)	This proposal is for an NSIP located 48.6km north-west of the Applications Site in Bassetlaw LPA and West Lindsey LPA. The scoping report for the application outlines that temporary effects on employment and GVA will be considered during the construction and decommissioning phases of the development. The creation of long-term employment opportunities once the scheme is operational will be assessed as	n/a	n/a	n/a	Scoped out	Solar farm located within Bassetlaw and West Lindsey administrative areas. Limited overlap in terms of potential effects.

	well as any impacts that may arise from the displacement of agricultural land. However, no socio-economic benefits for the scheme have been quantified.					
West Burton Solar Project (EN010132)	This proposal is for an NSIP located 41.3km north-west of the site in Bassetlaw LPA and West Lindsey LPA. The scoping report produced for the scheme identifies that there is potential for the scheme to have socio-economic effects at a local and regional level. This includes employment opportunities, increased population in the site location and increase economic activity. The impact that the scheme will have on agricultural and farming practices will be explored further in the Environmental Statement	n/a	n/a	n/a	Scoped out	Solar farm located within Bassetlaw and West Lindsey administrative areas. Limited overlap in terms of potential effects.
Mallard Pass Solar Farm (EN010127)	This proposal is for an NSIP located 33.2km south-west of the Application Site in South Kesteven LPA. After a review of PINS website there has not been any analysis of the socio-economic impacts of the scheme. The Scoping Report for the Application outlines that the scheme would be designed and maintained safely to not pose a risk to human health. The construction of the Proposed Development would be undertaken in accordance with safe construction industry practice and would be monitored to ensure it is safe.	n/a	n/a	n/a	Scoped out	Solar farm located within South Kesteven administrative area. Limited overlap in terms of potential effects.
Land west of Cowbridge Road (B/22/0356)	This proposal is for a 49.9MW 5.3km south of the Application Site in Boston LPA and South Holland LPA. The Planning Design and Access Statement for the Proposed Development outlines that the sheep grazing proposed underneath the solar panels would support an estimated 1.5 FTEs jobs for the duration of the solar farms' operations. There would also be a	n/a	n/a	n/a	Scoped out	Solar farm located within Boston and South Holland administrative areas. Limited overlap in terms of potential effects.

	further3 FTE jobs supported by the maintenance and monitoring requirements during the lifetime of the Proposed Development.					
Boston Alternative Energy Facility (EN010095)	This proposal is for an NSIP located 11.7km west of the Application Site in Boston LPA. A socio-economic chapter produced for the scheme gives the estimated employment generated during the construction and operational phases of the development. During the estimated 48 month construction period around 250-300 jobs are estimated to be supported on-site. Taking into account multiplier effects, around 540 to 651 jobs could be supported on-site and in the local area. Once operational it is estimated that there will be 72 net FTE jobs supported by the Proposed Development.	n/a	n/a	n/a	Scoped out	Energy facility located within Boston administrative area. Limited overlap in terms of potential effects.
Tillbridge Solar Project (EN010142)	This proposal is for an NSIP located 47.9km north west of the Application site in Bassetlaw LPA and West Lindsey LPA. A review of the PINS website shows that socio-economic analysis has not yet been undertaken for this development, but the scoping report submitted scopes in socio-economics and recognises that there will be socio-economic impacts during the construction phase and operational phase of this scheme.	n/a	n/a	n/a	Scoped out	Solar farm located within Bassetlaw and West Lindsey administrative areas. Limited overlap in terms of potential effects.
South Lincolnshire Reservoir (TBC)	No details available as yet.	n/a	n/a	n/a	Scoped out	Insufficient information currently available.

Significance of the Cumulative Construction Phase Effects

Employment

11.7.8 Estimated jobs created as a result of the construction phase are publicly available for one of the Cumulative Schemes located within North Kesteven administrative area: Temple Oaks Renewable Energy Park (EN010126) estimated to generate 126 on site construction phase jobs. An assumption is made regarding the remaining four Cumulative Schemes located within North Kesteven that 0 jobs are generated at the local scale so as to contribute a worst case scenario in respect of cumulative employment effects during the construction phase. The known 126 on-site construction phase jobs generated by one of the cumulative schemes combined with the number of on-site construction phase jobs generated by the Proposed Development is 562.

11.7.9 The significance of cumulative construction phase effect in respect of employment is assessed as follows:

- The sensitivity of the receptor (employment in construction and other sectors of the economy in North Kesteven and Boston) is assessed as being **medium,** in line with the criteria set out in Table 11.1. Construction employment represents around 7% of total employment in North Kesteven and 3.7% in Boston. The construction jobs created during the build period are unlikely to add any significant pressure to the labour supply, the 562 on-site jobs will still be created within a relatively short timeframe.
- The magnitude of the impact is assessed as **medium**, in line with the criteria in Table 11.2. The 436 jobs per annum supported by the construction phase of the Proposed Development and the known 126 jobs per annum supported by the construction phase of the Cumulative Scheme represent a moderate increase in the number of new employment opportunities for local residents, for a temporary period of time. This is acknowledged in the context that 4.9% of commuters into North Kesteven live in Boston and therefore there will be a small amount of leakage to this adjacent authority.
- The significance of the temporary cumulative effect in respect of employment is therefore considered to be **moderate beneficial** in North Kesteven and Boston, which is significant in EIA terms.

Contribution to Economic Output

11.7.10 The known on-site construction jobs generated by the Proposed Development (436) and those generated by Temple Oaks Renewable Energy Park (126) are factored into the calculation of estimated cumulative contribution to economic output during the construction phase. For all other Cumulative Schemes within North Kesteven it is assumed that 0 jobs are generated.

11.7.11 Assuming at least 562 on-site construction jobs are generated by the Proposed Development and Cumulative Schemes, the overall GVA impact associated with the construction phase is estimated to be at least £294.8million.

11.7.12 The significance of cumulative construction phase effect in respect of contribution to economic output is assessed as follows:

- The sensitivity of the receptor in North Kesteven and Boston is assessed as being **medium,** in line with the criteria set out in Table 11.1. GVA in the North Kesteven construction sector increased 26% between 2010 and 2020 and 83.3% in Boston in the same time period.
- The magnitude of the impact is assessed as **high**, in line with the criteria in Table 11.2. The £294.8million in GVA generated by the construction phase would cause a large uplift in construction GVA in North Kesteven and Boston.
- The significance of the temporary cumulative effect in respect of economic output is therefore considered to be **major beneficial** in North Kesteven and Boston, which is significant in EIA terms.

Accommodation Demand

11.7.13 The proportion of workers requiring accommodation during the construction phase of each of the schemes located in North Kesteven is based on the commuting baseline data analysed earlier in this chapter, i.e. up to 50% of workers will need to be sourced from outside the local area.

11.7.14 For those schemes where estimated construction workers are publicly available (Proposed Development 436 workers, and Temple Oaks Renewable Energy Park 126 workers), it is possible to estimate the proportion of the workers that will require accommodation (Proposed Development 218 workers, and Temple Oaks Renewable Energy Park 63 workers). In the absence of further definitive publicly available information regarding each considered Cumulative Site, and based on a review of the number of construction workers generated as a result of a solar farms previously assessed by Pegasus, as well as information provided by prospective construction contractors, an estimate of 1 job per MW has been used as the basis of assessment in respect of Accommodation demand. It is also assumed that the proportion of these workers needing accommodation aligns with that of the Proposed Development in isolation, i.e, up to 50% workers seeking accommodation in either Serviced or Non-Serviced Accommodation. Table 11.17 summarises the assumptions made regarding Cumulative FTE jobs and proportion needing accommodation during the construction phase

Table 11.17: Cumulative assessment assumptions – Accommodation demand during construction phase

Cumulative Scheme	Proposal summary	Number of FTE jobs generated during construction (Publicly known / Estimated)	Assumed number of workers needing accommodation during construction phase
Proposed Development – Heckington Fen	See ES Chapter 4 for full detail	436	218
Land at Little Hale Fen (21/1337/EIASCR)	49.9 MW solar farm	50	25
Land at Ewerby Thorpe (14/1034/EIASCR)	28MW solar farm	28	14
Land to the north of White Cross Lane (19/0863/FUL)	32MW solar farm	32	16
Land South of Gorse Lane, Silk Willoughby (19/0060/FUL)	20MW ground mounted solar farm	20	10
Temple Oaks Renewable Energy Park (EN010126)	250MW Solar Farm	126	63
Total		692	346

11.7.15 Table 11.17 indicates that there is estimated to be 346 construction workers requiring accommodation in Serviced and Non-Serviced Accommodation in North Kesteven as a result of the Proposed Development and Cumulative Schemes.

11.7.16 Table 11.18 shows that, following accommodation of the 346 construction workers, in addition to the assumed occupancy rate of Serviced and Non-Serviced Accommodation, there would be surplus capacity in each of the 12 months of the year. In reality it is likely that accommodation would only be required for part of a 12-month period, for example the peak number of construction workers for the Proposed Development in isolation is understood to be six months as therefore less workers would likely require bedspaces for at least some months of the year.

Table 11.18: Cumulative assessment – assumed accupancy of Serviced and Non-Serviced Accommodation including housing of construction workers (based on 2019 data)_

	Month											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Serviced and Non-Serviced Accommodation bedspaces	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247
Actual number of bedspaces occupied	1,009	1,165	1,509	1,852	1,975	2,144	2,319	2,325	2,079	1,749	1,405	1,068
Construction workers requiring accommodation	346	346	346	346	346	346	346	346	346	346	346	346
Occupancy rate inclusive of construction workers	41.7	46.5	57.1	67.7	71.5	76.7	82.1	82.3	74.7	64.5	53.9	43.5
Actual number of bedspaces occupied	1,355	1,511	1,855	2,198	2,321	2,490	2,665	2,671	2,425	2,095	1,751	1,414
Available bedspaces following housing of construction workers	1,892	1,736	1,392	1,049	926	757	582	576	822	1,152	1,496	1,833

11.7.17 The significance of cumulative construction phase accommodation demand effect is assessed as follows:

- The sensitivity of the receptor in North Kesteven is assessed as being **medium,** in line with the criteria set out in Table 11.1. Tourism is a growing sector in the District and wider area.
- The magnitude of the impact is assessed as **low**, in line with the criteria in Table 11.2. There will be a some change in terms of use of the existing amenities, with the need to accommodate 346 workers, but surplus capacity will still be available in all months of the year.
- The significance of the temporary cumulative effect in respect of accommodation demand is therefore considered to be **minor to moderate adverse** in North Kesteven, which is **not significant** in EIA terms.

Significance of the Cumulative Operational Phase Effects

Employment Impact

11.7.18 Only local jobs relating to the Proposed Development at operational stage are known, i.e. 6.5 jobs associated with the operations of the Proposed Development are estimated to be generated and retained within North Kesteven workforce. There is no publicly available information regarding operational jobs for the other Cumulative Schemes located within North Kesteven. As such, in keeping with the need to assess a worst case position in terms of Cumulative Schemes, no additional operational jobs at the local scale are assumed.

11.7.19 The significance of the cumulative operational phase effect in respect of employment has been assessed as follows:

- The sensitivity of the receptor (labour market of North Kesteven and Boston) is considered to be **medium**, in line with the criteria set out in Table 11.1.
- The magnitude of the impact is identified as being **negligible**, in line with the criteria in Table 11.2. The number of on-site jobs created in the operational phase (6.5) would represent a small increase in current employment levels in North Kesteven and Boston, but the employment supported by the operational phase will be long-term.
- The significance of the cumulative operational effect in terms of employment is therefore considered to be **negligible beneficial** in North Kesteven and Boston, which is not significant in EIA terms.

Contribution to Economic Output

11.7.20 No information regarding economic contribution during the operational phase of any of the Cumulative Schemes within North Kesteven is publicly available at this time. Therefore, it is assumed that, as a minimum, the GVA generated for North Kesteven by the Proposed Development and Cumulative Schemes is that which is calculated for the Proposed Development in isolation, but in reality, is likely to be significantly greater than this. Nevertheless, the significance of cumulative effect is calculated using the GVA generated by the Proposed Development only as a worst case assumption: estimated to be around £815,137 per annum, allowing for multiplier effects[34], and over the 40-year operational lifespan of the Proposed Development.

[34] For the GVA estimate, the same multipliers used are the same as the construction GVA multipliers outlined above.

11.7.21 The GVA generated is estimated to be around £18.1million (present value[35]).

11.7.22 The significance of the operational phase effect in respect of contribution to economic output has been assessed as follows:

- The sensitivity of the receptor in North Kesteven and Boston is considered to be **medium**, in line with the criteria set out in Table 11.1.
- The magnitude of the impact is identified as being **low**, in line with the criteria in Table 11.2. The annual GVA generated by the Proposed Development once operational of £815,137 will result in a limited uplift in GVA in North Kesteven and Boston.
- The significance of the operational effect is therefore considered to be **minor to moderate beneficial** in North Kesteven and Boston, which is not significant in EIA terms.

Business Rates

11.7.23 It is estimated that the Proposed Development and Cumulative Schemes could generate up to £2.5million per annum in business rates[36]. Over the intended 40-year lifespan of the scheme, business rates generated could total around £56.4million (present value)[37].

11.7.24 The significance of the operational phase effect in respect of business rates has been assessed as follows:

- The sensitivity of the receptor in North Kesteven is considered to be **medium**, in line with the criteria set out in Table 11.1.
- The magnitude of the impact is identified as being **high**, in line with the criteria in Table 11.2. Given agricultural land and buildings are exempt from business rates, and on the basis that the much of the land on which the Cumulative Sites are to be constructed are arable agricultural land whereby no business rates revenue would be generated, the additional revenue would represent a significant uplift on current activities.
- The significance of the operational effect is therefore considered to be **major beneficial** in North Kesteven, which is significant in EIA terms.

Significance of the Cumulative Decommissioning Phase Effects

Employment

11.7.25 Economic benefits will arise through the provision of temporary jobs during the decommissioning phase in respect of the Proposed Development and Cumulative Schemes.

11.7.26 It is estimated that there will be around 200 workers on-site during the peak times of the decommissioning phase for the Proposed Development and assumed to be 126 for Temple Oaks Renewable Energy Park. The number of decommissioning jobs for the four other schemes in North Kesteven is currently unknown. Therefore, an assumption of 0 jobs for these schemes is used as a worst case.

[35] Where future benefits are calculated over a longer timeframe, they have been discounted to produce a present value. This is the discounted value of a stream of either future costs or benefits. A standard discount rate is used to convert all costs and benefits to present values. Using the Treasury's Green Book, the recommended discount rate is 3.5% up to 30 year and 3% thereafter.

[36] Based on information on price per MW of £6,450 in 2017 sourced from Photovoltaic Memorandum of Agreement.

[37] Business rates are based on solar farms only.

11.7.27 The estimated total decommissioning jobs generated by the Proposed Development and cumulative schemes is 326 direct jobs on-site.

11.7.28 . As such, the significance of cumulative decommissioning phase effect in respect of employment is assessed as follows:

- The sensitivity of the receptor (employment in construction (assumed most relevant in respect of decommissioning workforce) and other sectors of the economy in North Kesteven and Boston) is assessed as being **medium,** in line with the criteria set out in Table 11.1.
- The magnitude of the impact is assessed as **medium**, in line with the criteria in Table 11.2.
- The significance of the temporary cumulative effect in respect of employment is therefore considered to be **moderate beneficial** in North Kesteven and Boston, which is significant in EIA terms.

Contribution to Economic Output

11.7.29 Contribution to economic output is calculated in the same way it was calculated for the construction phase. The overall GVA impact associated with the Decommissioning phase of the Proposed Development and Cumulative Schemes is estimated at £85.5million. As such, the significance of decommissioning phase effect in respect of contribution to economic output is assessed as follows:

- The sensitivity of the receptor in North Kesteven and Boston is assessed as being **medium,** in line with the criteria set out in Table 11.1.
- The magnitude of the impact is assessed as **medium**, in line with the criteria in Table 11.2.
- The significance of the temporary cumulative effect in respect of contribution to economic output is therefore considered to be **moderate beneficial** in North Kesteven and Boston, which is significant in EIA terms.

Accommodation Demand

11.7.30 The proportion of workers requiring accommodation during the decommissioning phase of each of the schemes located in North Kesteven is based on the commuting baseline data analysed earlier in this chapter, i.e. up to 50% of workers will need to be sourced from outside the local area.

11.7.31 For those schemes where estimated decommissioning workers are publicly available (Proposed Development 200 workers, and Temple Oaks Renewable Energy Park 126 workers), it is possible to estimate the proportion of the workers that will require accommodation (Proposed Development 100 workers, and Temple Oaks Renewable Energy Park 63 workers). In the absence of further definitive publicly available information regarding each considered Cumulative Site, and based on a review of the number of decommissioning workers generated as a result of a solar farms previously assessed by Pegasus, an estimate of 0.5 FTE jobs per MW has been used as the basis of assessment in respect of Accommodation demand during the decommissioning phase. It is also assumed that the proportion of these workers needing accommodation aligns with that of the Proposed Development in isolation, i.e, up to 50% workers seeking accommodation in either Serviced or Non-Serviced Accommodation.

11.7.32 Table 11.19 summarises the assumptions made regarding Cumulative FTE jobs and proportion needing accommodation during the decommissioning phase.

Table 11.19: Cumulative assessment assumptions – Accommodation demand during decommissioning phase

Cumulative Scheme	Proposal summary	Number of FTE jobs generated during decommissioning (Publicly known / Estimated)	Assumed number of workers needing accommodation during decommissioning phase
Proposed Development – Heckington Fen	See ES Chapter 4 for full detail	200	100
Land at Little Hale Fen (21/1337/EIASCR)	49.9 MW solar farm	25	13
Land at Ewerby Thorpe (14/1034/EIASCR)	28MW solar farm	14	7
Land to the north of White Cross Lane (19/0863/FUL)	32MW solar farm	16	8
Land South of Gorse Lane, Silk Willoughby (19/0060/FUL)	20MW ground mounted solar farm	10	5
Temple Oaks Renewable Energy Park (EN010126)	250MW Solar Farm	126	63
Total		391	189

11.7.33 Table 11.19 indicates that there is estimated to be 189 decommissioning workers requiring accommodation in Serviced and Non-Serviced Accommodation in North Kesteven as a result of the Proposed Development and Cumulative Schemes.

11.7.34 Table 11.20 shows that, following accommodation of the 189 decommissioning workers in addition to the assumed occupancy rate of Serviced and Non-Serviced Accommodation, there would be surplus capacity in all months of the year.

Table 11.20: Cumulative assessment - assumed occupancy of Serviced and Non-Serviced Accommodation including housing of decommissioning workers (based on 2019 data)_

	Month											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Serviced and Non-Serviced Accommodation bedspaces	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247	3,247
Actual number of bedspaces occupied	1,009	1,165	1,509	1,852	1,975	2,144	2,319	2,325	2,079	1,749	1,405	1,068
Decommissioning workers requiring accommodation	189	189	189	189	189	189	189	189	189	189	189	189
Occupancy rate inclusive of decommissioning workers	36.9	41.7	52.3	62.9	66.7	71.9	77.2	77.4	69.9	59.7	49.1	38.7
Actual number of bedspaces occupied	1,198	1,354	1,698	2,041	2,164	2,333	2,508	2,514	2,268	1,938	1,594	1,257
Available bedspaces following housing of decommissioning workers	2,049	1,893	1,549	1,206	1,083	914	739	733	979	1,309	1,653	1,990

11.7.35 The significance of decommissioning phase cumulative accommodation effect is assessed as follows:

- The sensitivity of the receptor in North Kesteven is assessed as being **medium,** in line with the criteria set out in Table 11.1. Tourism is a growing sector in the District and wider area.
- The magnitude of the impact is assessed as **low**, in line with the criteria in Table 11.2.
- The significance of the temporary cumulative effect in relation to accommodation demand is therefore considered to be **minor to moderate adverse** in North Kesteven, which is not significant in EIA terms.

11.8 SUMMARY

Introduction

11.8.1 This chapter has analysed the baseline socio-economic conditions and then gone on to assess the likely socio-economic effects of the Proposed Development.

Baseline Conditions

11.8.2 North Kesteven experienced population growth of 8.8% between 2011 and 2021 (9,557 additional people), and in Boston there was a relatively higher population growth of 9.1% (5,888 additional people). Relative to the benchmark areas of East Midlands and Great Britain, North Kesteven and Boston's population grew at a faster rate over this timeframe. Employment growth in North Kesteven over the last five years has been strong with 10.3% increase in job numbers, especially when compared to the picture at a regional and national level (5.4% and 5.2% respectively). Boston's employment growth was 3% in that same period. The construction sector, which is likely to see increased employment opportunities during the Proposed Development's build phase represents 7% of total employment in the District, which is above the proportion of total jobs at the regional scale (4.9%) and Great Britain (5%). North Kesteven has a net outflow of commuters, while Boston has a net inflow of commuters. The claimant count in Boston has risen by 1.7% in the period January 2020 to September 2022 and is currently above all other comparator areas. The claimant count in North Kesteven increased but only by 0.3% in this period from 1.7% to 2.0% and is well below all other comparator areas as well as Boston.

Likely Significant Effects

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

- 436 on-site construction jobs generated, over the 30-month construction programme, with an estimated peak of 109.
- £182.9million of gross value added over the 30-month construction programme.
- Increase (of up to 327 construction workers) in demand on Serviced and Non-Serviced Accommodation in North Kesteven and Boston.

11.8.4 In respect of the operational phase, the assessment indicates that the Proposed Development will have the following effects:

- 6.5 direct additional jobs in the North Kesteven and Boston economy.

- £815,137 of gross value added per annum or £18.1million over 40-year lifespan of the project (present value).

- Business rates £1.3million per annum and £29.3million over the 40-year project lifespan (present value).

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

- 218 peak on-site construction jobs over the 18-month decommissioning programme.

- £57.1million of gross value added over the 18-month decommissioning programme.

- Increase (up to 164 construction) in demand on Serviced and Non-Serviced Accommodation in North Kesteven and Boston.

11.8.6 Overall, there are beneficial effects in terms of employment, economic contribution, and business rates in all relevant phases of development. Notably, beneficial economic contribution effects are considered to be significant in the construction and decommissioning phases, and beneficial business rates effects are considered to be significant in the operational phase. Effects relating to accommodation demands in the construction and decommissioning phases are adverse but not significant.

Mitigation and Enhancement

11.8.7 Most effects of the Proposed Development are beneficial, and therefore no mitigation is required. The accommodation demand effects as a result of the construction and decommissioning phase of the Proposed Development are adverse but not significant and therefore do not require mitigation.

11.8.8 It is noted that, to maximise the beneficial impacts identified by the scheme, an **Outline Supply Chain, Employment and Skills Plan** (document reference 7.12) will be produced to optimise the number of local people who will have access to employment and training opportunities arising from the Proposed Development, and will be secured by DCO requirement.

11.8.9 Wider benefits for the community will be undertaken separately and outside of the DCO process.

Cumulative and In-Combination Effects

11.8.10 As for the Proposed Development in isolation, there are likely to be beneficial effects in terms of employment, economic contribution, and business rates in all relevant phases of development. Similarly, significant beneficial economic contribution effects are predicted in the construction and decommissioning phases, and significant beneficial business rates effects are predicted in the operational phase. Effects relating to accommodation demands in the construction and decommissioning phases are adverse but not significant, with surplus bedspaces available in all 12 months of the year after factoring in the potential number of construction and decommissioning workers requiring accommodation during those build phases.

Conclusion (Socio-Economics)

11.8.11 The Proposed Development would lead to no adverse significant effects from a socio-economic perspective. The Proposed Development will result in beneficial effects in terms of employment, economic contribution, and business rates in all relevant phases of development, and adverse but not significant effects on accommodation demands in the construction and decommissioning phases.

11.8.12 An **Outline Supply Chain, Employment and Skills Plan** (document reference 7.12) will be produced to optimise the number of local people who will have access to employment and training opportunities arising from the Proposed Development and will be secured by DCO requirement. Continued efforts to address wider benefits for the community will be undertaken separately and outside of the DCO process.

11.8.13 **Table 11.20** provides a summary of effects, mitigation and residual effects.

Table 11.20: Summary of Effects, Mitigation and Residual Effects

Receptor/ Receiving Environment	Description of Effect	Nature of Effect	Sensitivity Value	Magnitude of Effect	Geographical Importance	Significance of Effects	Mitigation/ Enhancement Measures	Residual Effects
Construction								
Employment	Increase in employment in the construction sector	Short term	Medium	Medium	District	Moderate beneficial	Outline Supply Chain, Employment and Skills Plan (document reference 7.12)	Moderate beneficial, which is significant
Gross value added	Increased contribution to economic output	Short term	Medium	High	District	Major beneficial	None required	Major beneficial, which is significant
Accommodation Demand	Increased demand on Housing / Serviced Accommodation / Non-Serviced Accommodation	Short term	Medium	Low	District	Minor to moderate adverse	None required	Minor to moderate adverse, which is not significant
Operation								
Employment	Increase in employment once operational	Long term	Medium	Negligible	District	Negligible	Outline Supply Chain, Employment and Skills Plan (document reference 7.12)	Negligible, which is not significant
Gross value added	Increased contribution to economic output	Long term	Medium	Low	District	Minor to moderate beneficial	None required	Minor to moderate beneficial,

Receptor/ Receiving Environment	Description of Effect	Nature of Effect	Sensitivity Value	Magnitude of Effect	Geographical Importance	Significance of Effects	Mitigation/ Enhancement Measures	Residual Effects
								which is not significant
Business rates	Increase in business rates revenue	Long term	Medium	Medium	District	Moderate beneficial	None required	Moderate beneficial, which is significant
Decommissioning								
Employment	Increase in employment in the construction sector	Short term	Medium	Medium	District	Moderate beneficial	Outline Supply Chain, Employment and Skills Plan (document reference 7.12)	Moderate beneficial, which is significant
Gross value added	Increased contribution to economic output	Short term	Medium	Medium	District	Moderate beneficial	None required	Moderate beneficial, which is significant
Accommodation Demand	Increased demand on Housing / Serviced Accommodation / Non-Serviced Accommodation	Short term	Medium	Low	District	Minor to moderate adverse	None required	Minor to moderate adverse, which is not significant

Cumulative and In-combination								
Construction								
Employment	Increase in local employment	Short term	Medium	Medium	District	Moderate beneficial	Outline Supply Chain, Employment and Skills Plan (document reference 7.12)	Moderate beneficial, which is significant
Gross value added	Contribution to economic output	Short term	Medium	High	District	Major beneficial	None required	Major beneficial, which is significant
Accommodation Demand	Increased demand on Housing / Serviced Accommodation / Non-Serviced Accommodation	Short term	Medium	Low	District	Minor to moderate adverse	None required	Minor to moderate adverse, which is not significant
Operation								
Employment	Increase in local employment	Long term	Medium	Negligible	District	Negligible	Outline Supply Chain, Employment and Skills Plan (document reference 7.12)	Negligible, which is not significant
Gross value added	Contribution to economic output	Long term	Medium	Low	District	Minor to moderate beneficial	None required	Minor to moderate beneficial, which is not significant
Business rates	Business rates revenue	Long term	Medium	High	District	Major beneficial	None required	Major beneficial, which is significant

Decommissioning								
Employment	Increase in local employment	Short term	Medium	Medium	District	Moderate beneficial	Outline Supply Chain, Employment and Skills Plan (document reference 7.12)	Moderate beneficial, which is significant
Gross value added	Contribution to economic output	Short term	Medium	Medium	District	Moderate beneficial	None required	Moderate beneficial, which is significant
Accommodation Demand	Increased demand on Housing / Serviced Accommodation / Non-Serviced Accommodation	Short term	Medium	Low	District	Minor to moderate adverse	None required	Minor to moderate adverse, which is not significant