

East Anglia THREE

Chapter 28

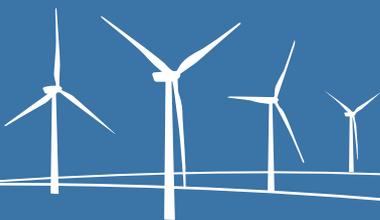
Socio-economics, Tourism and
Recreation

Environmental Statement

Volume 1

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Chapter 28 Socio-Economic, Tourism and Recreation figures are presented in **Volume 2: Figures** and listed in the table below.

Figure number	Title
28.1	Woodbridge 30 and 45 Minute Drive times
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28.3	Lowestoft 30; 45; 60 and 90 Minute Drive times
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Chapter 28 Socio-Economic, Tourism and Recreation appendices are presented in **Volume 3: Appendices** and listed in the table below.

Appendix number	Title
28.1	Socio-economics, Tourism and Recreation

28 SOCIO-ECONOMICS, TOURISM AND RECREATION

28.1 Introduction

1. This chapter of the Environmental Statement (ES) presents the Socio Economic, Tourism and Recreation Assessment for the proposed East Anglia THREE project. This includes assessment of the construction, operation and decommissioning phases of the project in relation to the labour markets around potential deployment ports or base ports and tourism in coastal areas, as well as in the vicinity of the onshore electrical transmission works.
2. This ES chapter includes a socio-economic and tourism policy review and baseline profile. The chapter also includes an impact assessment of the tourism and recreation impacts, as well as a socio-economic impact assessment of the onshore construction elements of the proposed East Anglia THREE project. An impact assessment of the offshore construction elements has also been completed.
3. This chapter summarises the consultation undertaken in regard to the above elements, outlines the scope and methodology of assessment and undertakes an assessment of potential impacts. The following elements have been assessed in detail:
 - Existing Environment;
 - Strategy and policy review;
 - Socio-economic baseline;
 - Business infrastructure and potential area absorption capacity;
 - Education and training infrastructure; and
 - Tourism and recreation baseline.

28.2 Consultation

4. A number of consultees were contacted to give their opinion on the intended scope and approach to the socio-economic assessment. The nature of consultation responses concerning socio-economic issues and how they have been considered in this assessment are summarised in *Table 28.1*. Note that a number of consultees did not respond to the consultation request¹.

¹ Suffolk Chamber of Commerce, Norfolk Chamber of Commerce, Mid Suffolk District Council, South Norfolk Council, the Forestry Commission, English Heritage, Sport England, Visit East Anglia

Table 28.1 Consultation Responses

Consultee	Date /Document	Comment	Response / where addressed in the Chapter
Scoping Opinion			
Planning Inspectorate on behalf of the Secretary of State (SoS)	November 2012 East Anglia THREE Scoping Opinion	<p>The SoS recommends that the assessment considers the potential significance of the impacts of the proposed development within a local context, and a regional context beyond that of the administrative boundary in which the proposed development is located. The types and number of jobs generated should be considered in the context of the available workforce in the area. Information should be provided on worker accommodation and include an assessment of the potential impacts of the influx of workers. The cumulative impact of workers from other nearby major projects should also be assessed.</p> <p>Details of the construction methods, working hours and duration of works should be provided in the ES. Cross-reference should be made to the traffic and transport assessment and any impacts the onshore works may have on public transport, including consideration of potential works to existing and new access roads (if required) to the substation.</p> <p>Recreational impacts associated with the coastline in the vicinity of the cable landfall should be assessed including the possible effects on beach areas, PROW and bathing water quality.</p> <p>Cross-reference should be made in this chapter of the ES to any visual impacts on public rights of way (PROW) identified in the seascape, landscape and visual amenity assessments.</p> <p>Consideration should be given as to what impact the use of tourist accommodation for the mobile workforce would have in the short, medium and long term situation for the local tourist industry.</p>	<p>Socio-economic impacts in this chapter are considered at a local and regional context. Impacts related to the offshore elements of the proposed project are assessed in this chapter. A labour market absorption analysis has been carried out to determine how readily the local labour market is able to absorb the jobs generated.</p> <p>The types of jobs created for the onshore element are considered at a regional and wider context in this chapter. An assessment of the potential accommodation locations for in-migrant workers related to the onshore elements has been carried out in the Potential Impacts section of this chapter. This assessment is based upon an accommodation survey carried out for the East Anglia ONE project.</p> <p>A comprehensive cumulative impact assessment is provided in section <i>Table 28.22</i>. This takes account of the potential positive and negative impacts of constructing East Anglia THREE in the same construction period as other major infrastructure projects in the area.</p> <p>An assessment of tourism and recreational impacts including impacts on PROW and the coastline, are covered in tourism and recreation impact section 28.8.9. Aspects such as visual, physical disturbance and traffic impacts are considered in relation to tourism and recreation.</p>

Consultee	Date /Document	Comment	Response / where addressed in the Chapter
Department of Energy & Climate Change (DECC)	March 2014	Thanks for your email. However, you will appreciate that it would not be appropriate for DECC to comment on the merits or otherwise of a potential development that would need to be subject to a future planning application and subsequent determination by our Secretary of State.	No response or action required.
Norfolk County Council	March 2014	<p>While the above East Anglia Three scheme is unlikely to raise any significant issues in its own right (in relation to Norfolk), there are wider issues which any proposal forming part of the East Anglia Array would need to address.</p> <p>In particular it is considered that the EIA/PEIR covering this and any other proposal, will need to address/consider the following cumulative impacts:</p> <p>(c) Economic Implications</p> <ul style="list-style-type: none"> • Consideration of the opportunities for new business (e.g. involved in the manufacturing process and supply); • The wider economic implications including impacts on tourism – welcome reference in the Scoping letter to tourism and recreation; • Implications for the Ports of Great Yarmouth and Lowestoft (i.e. opportunities for expansion); <p>(e) Cross-boundary Issues (Norfolk/Suffolk)</p> <p>There will need to be consideration of potential cross boundary issues including,</p> <ul style="list-style-type: none"> • Economic development – ascertaining where any manufacturing/assembly of turbines might take place (supply-chain issues) and how the on-going servicing of offshore wind turbines will be undertaken. <p>(f) Decommissioning – the EIA should address the decommissioning and the impacts on both the onshore and</p>	<p>The supply chain capacity has not been assessed as no final decision has been on the potential distribution of the supply chain. This would be developed as part of the Supply Chain Plan, which would be submitted when East Anglia THREE Limited (EATL) apply to the Department of Energy and Climate Change (DECC) for Contracts for Difference (CfD).</p> <p>A full tourism and recreation impact assessment has been carried out in this chapter in regard to the offshore and onshore elements of the proposed project.</p> <p>The ports of Great Yarmouth and Lowestoft are included in the baseline analysis of this chapter.</p> <p>This Chapter provides estimates of those likely to be employed during the construction, operational and decommissioning phases.</p>

Consultee	Date /Document	Comment	Response / where addressed in the Chapter
		<p>offshore environment.</p> <p>In addition to the above comments Norfolk County Council has prepared a Standard Pro-forma covering offshore windfarms setting out in general terms the issues, which will need to be considered in any EIA/Environmental Statement (Appendix):</p> <p>It would be helpful if the EIA/PEIR could provide accurate figures of those likely to be employed both during construction and once the Windfarm is fully operational. There should also be a statement as to whether the labour would be sourced from local firms or if expertise would need to be imported to the region. In addition the ES should provide an indication of the likely impact on the local fishing industry particularly when other proposals are taken into account.</p>	
Suffolk County Council (SCC)	April 2014	<p>In regard of study area definition should this read 'construction workers'? Would there be a difference for operation (may be smaller study area for operational workers?)</p> <p>Also not sure that using ports is relevant to the onshore construction - perhaps use the Primary Construction Consolidation Site as point of destination</p> <p>In terms of tourism and recreation impact, main focus in operation should be around the substation.</p> <p>Suggest that the study area is broadened to a 3km radius of the substation to align with the landscape/visual</p> <p>Could look at any data available from Greater Gabbard in particular which is in operation and will have records of how the supply chain was distributed, location of workforce</p> <p>Need to consider the likely baseline at the point of construction. with a number of NSIPs, labour market conditions might</p>	<p>Study area chosen is sufficient to cover both construction and operational workers. Information not currently available to differentiate.</p> <p>Woodbridge has been chosen as point of destination for onshore construction. This is because Woodbridge is assumed as the centre point of drive time catchments as the location is the mid-point of the cable corridor from the landfall point at Bawdsey to the Bramford grid point.</p> <p>The impact of the substation station is fully considered in the tourism and recreation impact section. The study area around the substation station has been broadened to 3km.</p> <p>Positive impacts arising from the proposed East Anglia THREE project are highlighted in section 28.8.1</p> <p>The supply chain capacity has not been assessed as no final decision has been made on the potential distribution of the supply chain.</p>

Consultee	Date /Document	Comment	Response / where addressed in the Chapter
		<p>be quite different than they are today</p> <p>Need to assess the capacity of the supply chain.</p> <p>Need to highlight measures to maximise any positive impacts</p> <p>In terms of cumulative assessment particular attention needs to be given to Sizewell C, Bramford to Twinstead Overhead Line (presume EA ONE is constructed)</p>	<p>This will be developed as part of the Supply Chain Plan, which would be submitted when EATL apply to DECC for CfD.</p> <p>A comprehensive cumulative impact assessment is provided in Table 28.22. This takes account of the potential positive and negative impacts of constructing the proposed East Anglia THREE project in the same construction period as other major infrastructure projects in the area.</p>
Suffolk Coastal District Council (SCDC)	April 2014	No response on Methodology consultation. Detailed comments were however received on Draft Final ES Chapter (August 2015)	Detailed comments were individually addressed
PEIR - Joint response of Mid Suffolk District Council (MSDC) SCC, SCDC	July 2014	<p>Comment in relation to the tables provided:</p> <p>We have some concerns with some of the principles behind these tables.</p>	<p>The principles behind all tables in the socio-economic assessment are clearly set out in the Final ES Chapter.</p> <p>An explanation of the principles of additionality has also been specifically added to paragraph 170.</p>
	July 2014	A clear explanation of the calculations on job numbers and use of terms in Table 28.8 is also required. Table 28-25 in Chapter 28 for EA ONE make more sense to me.	The socio-economic assessment uses the same methodology and follows a similar format as EA ONE.
	July 2014	More generally, the ES will need to assess separately, but also cumulatively, socioeconomic/ transport impacts associated with offshore construction and onshore construction, as I understand the respective skills profile requirements to be quite different and consequently the likely travel to work areas similarly variable.	<p>Cumulative socio-economic assessment provided (see 28.8.7). Transport impacts are assessed in the Transport Chapter.</p> <p>The detail of differential skills requirements has not been obtainable for this assessment.</p>
	July 2014	The sources of data used should also be clearly presented alongside each table	<p>Data sources added.</p> <p>Please also see Table 28.2.Data Sources.</p>
	July 2014	In respect of both onshore and offshore construction, while the comments on the supply chain are noted (Table 28.1), early interventions are likely to be required. Some sensitivity testing is likely to be	PBA does not consider that it is meaningful to project forward to 2020 in terms of socioeconomic impact. The baseline is based upon the most up to date figures

Consultee	Date /Document	Comment	Response / where addressed in the Chapter
		required as the labour market is likely to change somewhat between 2011 census and construction in 2020	from the 2011 Census and other data-sets. To project forward would be to require a wide range of assumptions, which themselves would/could be open to criticism.
	July 2014	Drive time to/from Woodbridge is not relevant for those working at Bramford – consequently a revision to the travel to work area is needed, meaning that there could be a centroid of 45 minutes from each of the primary CCSs and potentially a third from Bramford substation too, or potentially a single centroid based on Ipswich could be used (further discussion required). The socioeconomic assessment needs to better reflect the proposed strategy for movement of workers by minibus. The socio-economic study area – Chapter 28, paragraph 68/73 needs to be revised accordingly. The purpose of distinguishing between the 30 and 45 minute drive times (chapter 28, paragraph 7) is not clear.	Second drive time centroid added at Bramford (see 28.7.2.1). The study area for the onshore construction element is set at 45 minutes. Onshore Labour Market Absorption Capacity Table 28.21 does however show the potential impact on a range of geographies including 30, 45 and 60 minute drive time areas.
	July 2014	Distance decay does not seem to have been applied, meaning more construction workers are expected from Colchester than Ipswich, which is not likely. The % of construction workers from each area needs to be weighted according to the distance from the site. Travel costs dictate that the uptake will be higher locally. The EA ONE figures (para 94 of Chapter 27) are more realistic – but do need to be corroborated.	The concentration and level of potentially available construction workers is the key factor in estimating the origin of the resident onshore workforce model.
	July 2014	It is not clear on how the ratio of resident versus in migrant workers for the onshore construction workers (Chapter 28, Table 28.8/Chapter 27, para 98) has been derived. As mentioned, I would expect a majority of onshore construction workers to be resident rather than in –migrants, currently the split is 34% resident, 66% in migrant. This appears different to EA ONE assumptions.	The PBA stated 66%: 34% split assumes a greater proportion of in-migrant to resident workers. The EAONE Socioeconomics chapter assumed at best 70%: 30% ('high impact scenario) but as an aggregate for all construction workers – onshore and offshore. This is broadly aligned with the Sizewell C in-migrant to local resident percentage distribution. PBA have research evidence derived from RSK from EAONE on the split of workers undertaking the onshore works that demonstrates the majority of

Consultee	Date /Document	Comment	Response / where addressed in the Chapter
			construction workers would not be local resident workers.
	July 2014	<p>Notwithstanding the above, any in-migrant workers should likely be distributed within a 30 minute drive time of the primary CCSs (see 1). At the moment in-migrant workers for onshore construction work are distributed over a 45 minute drive time area - I am not sure you would relocate to Lowestoft/Witham to work in the Woodbridge area. Furthermore, when assessing the distribution of in-migrant workers, i.e. looking at available accommodation within the 30 minute drive time area, consideration needs to be given to the relative cost and type of accommodation (e.g. serviced or not).</p> <p>It is very unlikely 13% of in-migrant onshore construction workers will be accommodating themselves in Aldeburgh (a major tourist destination) – esp if working on onshore construction.</p>	<p>A 45 minute drive time study area has been used for the in-migrant onshore construction assessment. Distance decay has however been applied to locations from 31-45 minutes.</p> <p>PBA is content to accept the view that in-migrant workers could be located only within the 0-30 minute drive time catchment of the primary CCS but are not aware that there is research evidence to support this contention. There is little evidence other than intuition that construction workers would seek accommodation within either a 0-30 minute or 30-45 minute drive time catchment.</p> <p>Aldeburgh is within 0-30min drive time area of Woodbridge. PBA have no evidence to distinguish between Aldeburgh and other locations within a 30min drive-time. Hence PBA does not consider that weighting Aldeburgh at a lower level is valid. In addition, the assessment and analysis of in-migrant construction worker distribution has been established on the basis of available bedspace accommodation, within which Aldeburgh offers considerable capacity.</p>
	July 2014	<p>The ES could usefully present a more detailed skill profile for onshore construction workers. This can then be used to more fully assess the likely socio-economic/transport impacts by gaining a better understanding of the likely origin of workers with the requisite skills. There is data available at a much more detailed level than that of ‘construction employees’ (Table 28.7 and Appendix 28.1).</p>	<p>PBA possess a more detailed data on job type for construction workers derived from EAONE construction schedules. However this does not extend to skills type.</p> <p>More detailed data on construction skills is not available for unique drive time labour market study areas.</p>

Consultee	Date /Document	Comment	Response / where addressed in the Chapter
		This analysis should validate conclusions that a 45 minute drive time is appropriate and that a majority of workers can be secured locally. The timing of the demand for particular skill sets would be useful to help inform the cumulative assessments with other NSIPs in particular.	
MSDC, SCC, SCDC	4 th September 2015	Sensitivity analysis on EA3 offshore job numbers to cover uncertainty	Sensitivity testing carried out in paragraph 176
MSDC, SCC, SCDC	4 th September 2015	Include second centroid within final ES Chapter	Second drive time centroid added at Bramford (see 28.7.2.1).
MSDC, SCC, SCDC	4 th September 2015	Clarify text regarding training provision	Paragraph 122 amended.
MSDC, SCC, SCDC	4 th September 2015	Update wording around paragraph 108 to be clear EA3 impacts are not reliant on external parties implementing mitigation. Must also consider labour market availability updates.	The socio-economic assessment does not conclude EA3 is reliant on external parties implementing mitigation. A review of Jobs Seekers Allowance data (NOMIS) for those seeking construction opportunities did not provide a meaningful data set at or local authority or drive time level due to missing information.
MSDC, SCC, SCDC	4 th September 2015	SCC to send over additional sources of tourism information	Data used in ES Chapter is more recent than SCC data
MSDC, SCC, SCDC	4 th September 2015	Add reference to Skills Strategy	See section 28.8

28.3 Scope

28.3.1 Study Area

28.3.1.1 Socio-economics

- The Study Area has been identified using the East Anglia THREE site, offshore cable corridor and onshore cable corridor to define the search areas for socio-economic data for the proposed East Anglia THREE project.

6. The socio-economic study areas are as follows:
 - Onshore construction: Drive time catchments² of 30 and 45-minutes from Woodbridge and Bramford (Figure 28.1) have been used to provide a locational assessment of onshore construction workers. Locations for in-migrant workers are weighted as a value of 1 within 30 minute drive-time catchment and 0.5 within a 31-45 minute drive-time catchment to reflect distance decay.
 - Offshore construction: the socio-economic assessment will be primarily based on a 90-minute drive time catchment from relevant ports (please see Figures 28.2, 28.3 and 28.4). Sub-area catchments of 30, 45 and 60-minutes will provide further context for the assessment and are used to identify potential capacity constraints.

28.3.1.2 Tourism

7. The tourism study area consists of a broad coastal strip (c.10km) from Winterton-on-Sea in the north to Walton-on-the-Naze in the south (Figures 28.5 and 28.6). This area covers the main tourism receptors with potential to experience visual effects from the proposed East Anglia THREE project. An additional study area covers a broad corridor, 2.5km either side of the onshore cable route from the landfall location to the proposed onshore substation station location (Figures 28.6, 28.7, 28.8 and 28.9). This area is where the majority of potential temporary construction and decommissioning impacts would be anticipated, centred on the alignment of the onshore cable route.

28.3.2 Worst Case

8. Socio-economic and tourism and recreation impacts associated with the proposed project are considered at an onshore and offshore level.
9. There are two approaches for the construction of the proposed East Anglia THREE project:
 - Single Phase - a single phase (up to 1200MW installed in a single construction period); or
 - Two Phased - two phases of up to 600MW each, with the start date of each phase of works separated by no more than 18 months).

² Drive times provide a precise catchment reflecting travel to work patterns.

28.3.2.1 Onshore

10. Ducts (including all horizontal directional drilling (HDD) operations) for the onshore cables for the proposed East Anglia THREE project will be installed during the construction of East Anglia ONE.
11. The ducts would be installed within the onshore Development Area for the proposed East Anglia THREE project, shown in *Figures 5.2 - 5.11*.

28.3.2.2 Offshore

12. Under the Single Phase approach, the programme would last approximately 41 months and have a lower requirement for construction workers compared to the two phase programme, which would last 45 months. Under the Single Phase approach, the programme is considered to be the worst case scenario for the socio-economic assessment as it would have a lower overall economic impact.

28.3.2.3 UK Content

13. The level of UK content will also affect the impact of the project. The following impact scenarios are considered:
 - ‘Low’ impact: 20% UK content. Assumes the current pattern of procurement for the construction of offshore windfarms observed in the UK to date is followed;
 - ‘Medium’ impact: 35% UK content. Assuming some regional infrastructural strengthening takes place (relating to skills and training and supply chain companies capability and capacity);
 - ‘High’ impact: taken as 55% UK content. The East Anglia ONE Supply Chain Plan indicates an aim to work towards 55% UK content following the completion of East Anglia ONE.³ This is taken as where the wider UK has attracted offshore wind manufacturing facilities resulting in a major increase in the share of UK suppliers for smaller components for the manufacturing of offshore wind turbines and for manufacturing of foundations and cables. It is considered that a UK based manufacturing capability on the eastern seaboard of England, has the potential to provide cost savings to offshore wind development. However, the selection of appropriate turbine supplier/suppliers would only be announced following a competitive tender process which

³ The East Anglia ONE Supply Chain Plan provides the intention to deliver “50% UK content over the life of the EA1 Project. Laying the groundwork for further increases to 55% UK content over the life for the next 3GW of EA Zone projects and 60% for the remaining 3.6GW of the zone.”

considers multiple technological and engineering factors and project objectives.

14. A low positive impact scenario would be considered the worst case scenario as the majority of economic benefit would not be retained with the UK.
15. Feedback during the consultation process also identified a concern that high regional and UK content could be considered to be the worst case scenario where there to be insufficient skilled labour to deliver the project thereby creating labour market distortions (wages and price inflation) and potential accommodation capacity issues. These aspects are robustly assessed through Labour Market Absorption Capacity Analysis.

28.4 Assessment Methodology

28.4.1 Guidance

16. The assessment follows UK Government guidelines and best practice. The methodology used to estimate impacts follows guidance set out in the HM Treasury's (2003) Green Book and Homes & Communities Agency (2014) Additionality Guide as well as taking account of the Department for Business Innovation and Skills research on additionality.
17. Six National Policy Statements for Energy (NPS) (DECC 2011) set out national policy against which proposals for major energy projects should be assessed. Specific guidance on assessment of socio-economic effects is provided in Overarching National Policy Statement for Energy (EN-1). Further information on the NPS are provided in Chapter 3 Policy and Legislative Context.
18. NPS EN-1 includes a section on socio-economics, which indicates that "the construction, operation and decommissioning of energy infrastructure may have socio-economic impacts at local and regional levels". Further, the guidance states that impact assessment should consider all relevant socio-economic impacts, "which may include:
 - The creation of jobs and training opportunities;
 - The provision of additional local services and improvements to local infrastructure, including the provision of educational and visitor facilities;
 - Effects on tourism;
 - The impact of a changing influx of workers during the different construction, operation and decommissioning phases of the energy infrastructure. This

could change the local population dynamics and could alter the demand for services and facilities in the settlements nearest to the construction work (including community facilities and physical infrastructure such as energy, water, transport and waste). There could also be effects on social cohesion depending on how populations and service provision change as a result of the development; and

- Cumulative effects – if development consent were to be granted for a number of projects within a region and these were developed in a similar timeframe, there could be some short-term negative effects, for example a potential shortage of construction workers to meet the needs of other industries and major projects within the region.”

19. NPS EN-1 guidance makes clear that the assessment should also consider any relevant positive provisions the developer has made or is proposing to make to mitigate impacts (for example through planning obligations) and any legacy benefits that may arise as well as any options for phasing development in relation to the socio-economic impacts.

28.4.2 Data sources

20. The data sources used in this Chapter are detailed in *Table 28.2* below. These sources all have a high level of confidence given that they are official statistics produced by nationally recognised bodies.

Table 28.2.Data Sources Features

Data	Year	Coverage	Confidence	Notes
MicromarketerG3 software, Experian Population Projections & 2011 Census-based Current Year Estimates	2015	UK	High	Source enables drive time data to be produced from any location in the UK.
Great Britain Tourism Survey (GBTS)	2013	UK	High	The Great Britain Tourism Survey (GBTS) is a national consumer survey measuring the volume and value of overnight domestic tourism trips taken by residents of Great Britain.
Annual Survey of Visits to Visitor Attractions	2014	UK	High	An annual survey conducted by VisitEngland, recording visitor numbers alongside other key information such as entrance fees and visitor profiles.
International Passenger Survey (IPS)	2014	UK	High	Continuous survey carried out by the Office for National Statistics (ONS). It covers all major air, sea and tunnel ports, providing detailed information on

Data	Year	Coverage	Confidence	Notes
				the numbers and types of visits made by people travelling to and from the UK.
Great Yarmouth Borough Council Borough Profile	2014	Great Yarmouth	High	Borough Profile which acts as a repository of key research information in the Great Yarmouth area
Business register and employment survey	2013	UK	High	Source of official employment statistics produced by ONS

28.5 Approach

21. The main stages of the approach are as follows:

28.5.1 Review Available Data/Information

22. Data and information from national, regional and local databases have been reviewed to inform this ES Chapter. Key data sources include: Experian Socio-economic data profiles (based on Census 2011 data), tourism volume and value information (obtained from Visit England and Visit Britain), and data obtained from the Office for National Statistics.

28.5.2 Existing environment

23. The study area's socio-economic position has been described using standard indicators. This provides a baseline, from which potential impacts can be assessed:

- Economic: the area has been described using a combination of standard sources and indicators, research available at study area level, and research into the business and labour market structure of the local economy;
- Tourism: the area's visitor attraction has been profiled including visitor attractions, visitor accommodation, tourism volume and value, and the local tourism economy;
- Social: the area's demographic structure has been examined; and
- Policy Context: planning, economic development and other relevant policy has been reviewed to identify related economic, social and regeneration objectives, which the proposed project may affect (whether contributing to their realisation or otherwise).

28.5.3 Assessment of Potential Economic Impacts

24. A detailed assessment of likely effects on the local, regional and national economy during construction, operation and decommissioning of the proposed project has been prepared. This has assessed the scale of:

- Direct economic impacts: jobs and Gross Value Added (GVA) that are wholly or largely related to construction, decommissioning, and operation and maintenance of the proposed project;
- Indirect economic impacts (positive and negative): jobs and GVA generated in the study area in the chain of suppliers of goods and services to the direct activities;
- Induced economic impacts: jobs and GVA created by direct and indirect employees' spending in the study area or in the wider economy; and
- Wider economic (catalytic) impacts (positive and negative): employment and income generated in the economy related to the wider role of the proposed project in influencing economic activities (including wider socio-economic effects).

28.5.4 Assessment of Potential Tourism Impacts

25. Tourism and recreational behaviour will only be detrimentally affected where the effects of the proposed project either change the visitor or user pattern in terms of numbers, and/or their patterns of expenditure for the worse. As such, opportunities for tourist and visitor expenditure, any potential variation in expenditure or visitor numbers, and consequent effects on turnover or employment are of key importance.
26. Facilities or other notable points of visitor focus in the study area such as Sutton Hoo and The Norfolk and Suffolk Broads have been identified. This analysis is based upon a desk-based assessment reviewing facilities on websites such as Visit England or listed in tourism visitor datasets. The impact assessment has been primarily based upon the proposed East Anglia THREE project's anticipated wind turbine visibility, and on the likelihood of influencing visitor and tourist attitudes and behaviour towards these visitor facilities and locations.
27. The significance of tourism impacts is determined through an understanding of the sensitivity of a receptor and the anticipated magnitude of effect.

28.5.5 Mitigation Measures

28. The classification of significant adverse impacts is detailed in section 28.6.2. Where impacts are assessed as significant adverse, mitigation measures have been outlined. As with impact identification, mitigation measures are provided to address construction, operation and decommissioning impacts.

28.5.6 Conclusions on Cumulative and Residual Effects

29. An assessment of likely cumulative and residual effects has been provided for the proposed East Anglia THREE project, stating the likely cumulative impacts of the proposed project with other projects in the study area or beyond; and in what way, if at all, the proposed project would have post-mitigated or residual effects on its local and wider socio-economic context.

28.6 Impact Assessment Methodology

28.6.1 Sensitivity, Magnitude and Significance Criteria

30. Impact significance is defined by the combination of the sensitivity of receptors and the potential magnitude of impacts on them.

31. The criteria below are specific to socio-economic factors and have been adopted to assess receptor sensitivity and impact magnitude, as shown in *Table 28.3*.

28.6.1.1 Determining Sensitivity of Socio-Economic Receptor

32. For economic impacts and effects (including employment), the availability of labour and skills is critical in accommodating the demands, needs and requirements of the proposed project.

33. The key socio-economic indicators for the labour market study area are reflected in the criteria including:

- The proportion of skilled workforce in the study area relative to national averages;
- The proportion of employment in relevant sectors i.e. manufacturing and construction workers;
- The availability of labour (including the unemployed workforce); and
- Relevant education and training provision, including existing and proposed programmes provided by institutions serving the study area.

Table 28.3 Socio-economics Sensitivity Criteria

Sensitivity	Criteria
High	The area has limited skills and labour capacity and an increased demand for local labour would result in pressure on available labour supply, increased labour and skills shortages, wage inflation, and the import of labour to meet demand.
Medium	The area has a low/ limited supply of labour and skills. Leads to labour market pressure or distortions.
Low	The area has a readily available labour force. Unlikely to lead to labour market pressure or distortions

Sensitivity	Criteria
Negligible	The area has a surplus of readily available labour with directly relevant and transferable skilled. Will not lead to labour market pressure or distortions.

28.6.1.2 Determining Socio-Economic Magnitude of Effect

34. The magnitude of the effect of potential socio-economic impacts has been assessed against the thresholds shown in *Table 28.4*.

Table 28.4. Socio-economics Magnitude of Effect

Magnitude	Adverse/ Beneficial	Criteria
High	Adverse	Effects would be observed on an international, national or regional scale; where the number of jobs lost in the study area would be greater than 250 (based upon EU definition of small and medium enterprises).
	Beneficial	Effects would be observed on an international, national or regional scale; where the number of jobs created in the study area would be greater than 250 (based upon EU definition of small and medium enterprises).
Medium	Adverse	Noticeable effects would arise that may be judged to be important at a local scale, either because there are large effects on few receptors or smaller effects on a larger proportion of receptors; where the number of jobs lost in the study area would be greater than 50, but fewer than 250.
	Beneficial	Noticeable effects would arise that may be judged to be important at a local scale, either because there are large effects on few receptors or smaller effects on a larger proportion of receptors; where the number of jobs created in the study area would be greater than 50, but fewer than 250.
Low	Adverse	Small scale effects would arise, with a limited number of affected receptors; and/or where the number of jobs lost in the study area would be greater than 10, but fewer than 50.
	Beneficial	Small scale effects would arise, with a limited number of affected receptors; and/or where the number of jobs created in the study area would be greater than 10, but fewer than 50.
Negligible	Adverse	Very minor loss
	Beneficial	Minimal benefit
No change	Beneficial	No change would be perceptible, either positive or negative

28.6.1.3 Determining Sensitivity of Tourism Receptor

35. Impact significance is determined through an understanding of the sensitivity of a receptor and the anticipated magnitude of effect. In establishing tourism sensitivity, the standing/status of the receptor or resource is the defining factor. This is considered against:

- The tourism business' relative attraction to customers from outside the study area and the proposed project's potential to influence broader perceptions of

the area. Where a majority of trade is non-local this is more likely to be the case; and

- The relative importance of tourism as a business sector. Where tourism is more important relative to other sectors, impacts may have the potential to generate broader effects. Similarly, where it is of relatively low significance, impacts on tourism and related sectors are unlikely to generate a high level of adverse impact across the broader economy.

36. The main factors relevant to this consideration are outlined in *Table 28.5*.

Table 28.5. Tourism Sensitivity Criteria

Sensitivity	Criteria
High	National or international status and / or high visitor numbers
Medium	Regional status and / or medium visitor numbers.
Low	Local status and / or few visitor numbers.
Negligible	Minimal numbers.

28.6.1.4 Determining Magnitude of Tourism Effect

37. The magnitude of effect is gauged by estimating the amount of change to the receptor arising from the proposed project. It is evaluated against the criteria set out in *Table 28.6*.

Table 28.6 Tourism Magnitude of Effect

Magnitude	Adverse/ Beneficial	Criteria
High	Adverse	A permanent or long term adverse impact on the value of the receptor.
	Beneficial	Large scale or major improvement of the facilities quality; extensive restoration or enhancement; major improvement of receptor quality.
Medium	Adverse	An adverse impact on the value of receptor, but recovery is possible and no permanent impacts are predicted.
	Beneficial	Benefit to, or addition of, key characteristics, features, or elements or improvement of receptors quality.
Low	Adverse	An adverse impact on the value of the receptor, but recovery is expected in the short-term and there would be no impact on its integrity.
	Beneficial	Minor benefit to, or addition of key characteristics, features or elements; some beneficial impact on the receptor or a reduction in the risk of a negative impact occurring.
Negligible	Adverse	Very minor loss
	Beneficial	Minimal benefit
No change	Beneficial	No change would be perceptible, either positive or negative

28.6.2 Significance of Impact

38. In line with standard EIA practice, the sensitivity of receptors (*Table 28.3 and Table 28.5*) has been considered against the Magnitude of Effect (*Table 28.4 and Table 28.6*) to determine the significance of impact (*Table 28.7*).

Table 28.7 Significance Criteria

Sensitivity	Magnitude				
	High	Medium	Low	Negligible	No Change
High	Major	Major	Moderate	Minor	No Impact
Medium	Major	Moderate	Minor	Negligible	No Impact
Low	Moderate	Minor	Negligible	Negligible	No Impact
Negligible	Minor	Negligible	Negligible	Negligible	No Impact

39. Impact significance is the term used to categorise the impact, i.e. no impact, negligible, minor, moderate and major; and can be positive, neutral or negative. This takes account of the sensitivity of the receptor and the magnitude of effects in Chapter 6 Environmental Impact Assessment Methodology.
40. Only impacts which are moderate or major are considered significant.

28.6.3 Cumulative Impact Assessment

41. A comprehensive cumulative impact assessment has been prepared for the proposed East Anglia THREE project. This has taken account of the potential positive and negative impacts of constructing the proposed East Anglia THREE project in the same construction period as other major infrastructure projects in the area. A cumulative assessment for the operational phase is not considered to be relevant as the number of new permanent employees will be relatively low and could be readily provided by the current labour market. A cumulative assessment for the decommissioning phases has also been omitted. This assessment would require knowledge of future projects which are currently unknown.

28.6.4 Transboundary Impact Assessment

42. The proposed East Anglia THREE project is required to consider the possibility of significant transboundary effects or why there would not be any significant effects on another European Economic Area (EEA) member states under the Espoo Convention (see Chapter 6 Environmental Impact Assessment Methodology). However, as the project procurement process would not commence until after submission of the ES for the proposed East Anglia THREE project, so it will not be

possible to assess the number of foreign workers that will be used in offshore elements of the project.⁴

43. The onshore elements of the proposed project are entirely in the UK so it is not anticipated that significant direct adverse socio-economic effects on neighbouring countries will arise. This has therefore not been considered further within this assessment.

28.7 Existing Environment

28.7.1 Strategy and Policy Review

28.7.1.1 National Policy Context

44. The regional and county policy environment is set in context by over-arching national policy on energy and socio-economics. Further information on this is available in Chapter 3 Policy and Legislative Context.
45. **The Offshore Wind Industrial Strategy – Business and Government Action** (HM Government 2013) highlights the economic importance of the offshore wind sector. The strategy aims to *“develop the UK’s offshore wind industry and provide the tools necessary to support large scale investment in the UK supply chain, raise awareness of the commercial opportunities in the UK and overseas and deliver the innovation and competition needed to bring down costs for consumers”*.
46. One of the main visions of the strategy is to deliver *“economic growth creating tens of thousands of long term UK jobs”*. It aims to do this through strengthening the UK supply chain to the offshore market. It highlights that ‘large economic benefits’ are one of the main opportunities of the UK Offshore Wind sector. In total the offshore wind sector is quoted as having the potential to deliver up to £7bn GVA and over 30,000 Full-time equivalent (FTE) jobs.
47. The key elements of the strategy include:
 - £20 million from the Regional Growth Fund for Offshore Wind Supply Chain Growth (GROW): Offshore wind, a Manufacturing Advisory Service programme to support the UK supply chain in England to become more competitive by offering tailored support from specialists;

⁴ Please note overseas worker numbers have been estimated in Table 28.9. However, it is not possible to predict where these workers will come from. Therefore it is not possible to predict transboundary impacts without detailed information about the origin of the foreign workforce.

- £46 million funding over five years for the Offshore Renewable Energy Catapult Centre to join up innovation between industry, government and academia and help companies to bring new products to market;
 - A new Offshore Wind Investment Organisation, established by UK Trade & Investment (UKTI), to attract inward investment to the UK;
 - Industry-led initiatives to share information with the supply chain about their procurement timelines and contracting decision points;
 - Proposal that would require developers of offshore windfarms above a certain size to produce a supply chain plan before they can apply for a Contracts for Difference (CfD) – long-term contracts to provide stable revenues for investors in low carbon energy projects – setting out how the project and procurement approaches will encourage a wider, more diverse supply chain and support innovation, competition and skills;
 - Expansion of the scope of the DECC offshore wind manufacturing funding scheme to support port and coastal infrastructure development in assisted areas of England. Any grants offered will be conditional on sites securing manufacturing investment; and
 - The Green Investment Bank (GIB) has an ambition to invest a significant proportion of its £3.8 billion capital in offshore wind, co-investing in projects with commercial parties.
48. **The UK Low Carbon Industrial Strategy** (BIS DECC, 2009) published by Department Business Innovation and Skills (BIS) and DECC acknowledges that economic activity in Britain will need to significantly reduce its carbon impact. This extends not only to energy being produced from low carbon sources, but to its consumption that should be reduced. This includes the manufacture of goods using low carbon materials, the use of vehicles that utilize low carbon fuels, the reduction in our consumption of food and water and a complete change in the way we deal with waste. The Strategy admits that the costs of this transition will be substantial. However, the benefits of reducing the UK's environmental impact and slowing down climate change will outweigh the costs. The results will change the industrial landscape, supply chains, and the way people live and work.
49. **The UK Low Carbon Transition Plan** (DECC 2009) takes the Climate Change Act a step further by addressing the following areas in terms of reducing carbon emissions:

power sector, homes and communities, workplaces and jobs and transport. Key steps of relevance to socio-economics highlighted in the Plan are:

- Helping make the UK a centre of green industry by supporting the development and use of clean technologies, including investment in offshore wind and marine energy.
50. **Building offshore wind in England: CORE: Centres for Offshore Renewable Engineering** (UK Trade & Industry, 2015) is a brochure which details the six Centres for Offshore Renewable Engineering (COREs) in England identified as having optimum conditions for the offshore wind industry. The brochure reinforces the UK Government's view that they wish to capitalise on the potential economic benefits of Offshore Wind. The brochure highlights that Offshore Wind is a sector with significant potential to create new jobs and economic growth via the enhancement of the UK supply chain.
51. The Department for UK Trade and Investment recently produced a promotional document titled **UK Offshore Wind: Opportunities for trade and investment** (UK Trade & Industry, 2014), which again stresses the desire to secure potential socio-economics benefits associated with the Offshore Wind Sector. In the forward from the Minister of State for Trade and Investment it is stated that *"It is vital that as the offshore wind sector grows, it strengthens its contribution to economic growth and creating jobs in the UK"*. The document highlights that through Government initiatives employment in the sector has doubled between 2011 and 2013 and that they would like to see this growth continue.
52. Overall, there is a strong Government policy and strategy drive to develop and promote the offshore windfarm industry. The benefits of creating jobs in a green industry are that they can simultaneously improve environmental quality and reduce unemployment.

28.7.1.2 Regional Context

28.7.1.2.1 New Anglia Strategic Economic Plan (New Anglia, 2014)

53. This plan produced by New Anglia, a Local Enterprise Partnership (LEP) for Norfolk and Suffolk, aims to create 95,000 more jobs and 10,000 new businesses by 2026. Specifically it mentions energy as being one of the sectors with the greatest potential for growth. It states that: *“the New Anglia area is well placed to capitalise on the rapid technological and market growth in renewable and low carbon sectors, along with significant investments in offshore wind”*
54. The Plan highlights that Great Yarmouth and Lowestoft are the main centres for offshore renewables with energy highlighted as a key growth opportunity. The Plan highlights that the two areas form *“one of the six ‘Centres for Offshore Renewable Engineering’ (CORE) designated by the Government to help attract investment, particularly in windfarm assembly and manufacturing”*. The Plan also stresses its continued support for the Enterprise Zone in Lowestoft and Great Yarmouth which is *“designated for energy businesses, offshore engineering, and ports and logistics”*. The Plan highlights that the Enterprise Zone is predicted to create up to 9,000 direct jobs and 4,500 indirect jobs by 2025.
55. Additionally smaller areas such as the port of Wells and business facilities at Egmere are also noted as having scope to service the renewables sector.
56. The Plan seeks to develop skills locally to meet the needs of the energy sector. The Plan states that the Skills Board the LEP has set up will be used *“to further develop a new way of planning skills investment that is more responsive to driving growth”*.
57. The growth of the energy sector in the New Anglia area is noted as *“a significant opportunity for private sector investment in major initiatives such as: supporting skills development to meet employer labour demands; clean technology development; infrastructure and the supply chain”*
58. The Plan seeks to ensure that the OrbisEnergy offshore renewable business centre in Lowestoft becomes a major delivery partner for the renewables sector.

28.7.1.2.2 Suffolk Growth Strategy (Suffolk County Council, 2013)

59. This Strategy again highlights that the energy sector is the greatest area for growth in Lowestoft. It states that additional offshore investment will in turn lead to further growth of the existing supply chain of businesses in the area.

28.7.1.2.3 Suffolk Coastal District Local Plan - Core Strategy & Development Management Policies (2013)

60. According to the Plan “the Suffolk Coastal area can contribute towards the generation of renewable energy, most notably through biomass schemes and wind power including turbines and landing points to serve off-shore provision.”
61. The Plan further states “The licensing of the East Anglian Array Offshore wind project creates a range of potential possibilities for energy development with the nuclear regime; not least in the learning and skills provision and in the local engineering and ports sectors.” The Plan will “support the transition to a low carbon future in a changing climate and encourage the use of renewable resources (for example, by the development of renewable energy).”

28.7.1.2.4 East Suffolk Growth Plan 2014 to 2025

62. The Plan identifies Energy and Ports and Logistics as priority growth sectors and lists Lowestoft and Great Yarmouth Enterprise Zone as a priority location. The Plan notes “we are at the heart of the world’s largest market for offshore wind” and states “the Government has granted Enterprise Zone (EZ) status to key employment sites in Lowestoft and Great Yarmouth, largely because of the potential of the fast-growing energy industry.” The area has also been designated by the Government as one of the country’s six Centres for Offshore Renewable Engineering (CORE).

28.7.1.2.5 Norfolk Growth Strategy (Norfolk County Council, 2012)

63. This Strategy highlights that Norfolk has strength in the offshore renewables sector.
64. The Strategy notes that Great Yarmouth has strengths in renewable energy and that the sector “provides a major opportunity to stimulate the economy”. North Norfolk District is also noted as having an “increasing role to play in the offshore wind sector and positive benefits are already being felt in areas such as Wells, Fakenham and Egmere”.
65. The Strategy cites reports commissioned by the County Council and Great Yarmouth Borough Council which “concluded that the offshore wind sector offered significant inward investment opportunities and that Great Yarmouth could benefit from 1400 new jobs from the sector, if enough action was taken to support the industry”.
66. In order to improve Norfolk’s business offer further and secure inward investment and growth in key sectors such as offshore renewables one of the key priorities of the Strategy is to maximise opportunities in offshore wind.

28.7.1.2.6 Essex Economic Growth Strategy (Essex County Council, 2012)

67. The renewable energy sector is highlighted as one of the sectors with the greatest potential for growth in the Essex area. The Strategy seeks a collaborative approach with Suffolk and Norfolk to develop the “East of England Energy Coast”. Specifically in relation to offshore wind sector there are already existing collaborative schemes in place including “*a joint skills initiative to deliver the workforce that this fast-growing sector requires*”.
68. In terms of skills the strategy seeks to “divert skills funding into training the unemployed in the technical skills required by the growth industries, e.g. renewables”.
69. The Harwich Incubation, Skills and Training Centre is noted in the Strategy as being a key Essex Gateway location for growth.

28.7.1.2.7 The Greater Essex Integrated County Strategy (Essex County Council, 2010)

70. One of the Strategy’s major areas of focus is to “support the growth of renewable and low carbon energy as a key sector and promote the growth and location of associated industries in Greater Essex”. Specifically off-shore renewables are noted as a key opportunity in Greater Essex.
71. Two of the key transformational changes noted in the Strategy specifically related to renewables sector are to provide for a transition to a low carbon economy and to support key economic sectors and drivers.
72. The Strategy seeks to ensure that Harwich “will be promoted as a location for wind port and associated industries, capitalising on supply chain opportunities and the development of a skills hub for the renewable energy sector”.
73. The Strategy calls for skills development to be linked to major economic developments in order to “*improve local skills in renewable energy and the ports and logistics sectors*”.
74. One of the priority investments noted in the Strategy is to “support the promotion and location of wind port and related industries focused on Harwich and Essex University”.

28.7.1.2.8 Draft South East LEP Strategic Economic Plan and Growth Deal (South East Local Enterprise Partnership, 2014)

75. The Plan recognises the potential value of the offshore renewables sector one of the South East LEP’s key initiatives is to “support the development of offshore energy

production, through developing facilities, increasing skills provision and supporting the development of the supply chain”.

76. The Plan recognises the strategic importance of the South East Centre for Offshore Renewable Energy Programme (CORE) for growing the offshore renewables sector in the South East. It notes that the South East CORE in North Kent is *“well placed to be at the forefront of growth in this sector”*.
77. The Plan asks for additional CORE status to be granted to Harwich (which it subsequently has) so that the town can capitalise on the opportunities the offshore wind sector creates. It states that Harwich Internal Port (HIP) is *“one of the UK’s leading multi-purpose freight and passenger ports and is already at the leading edge of servicing offshore windfarm delivery”*. The Plan also notes that Energy Skills Centre in Harwich *“will continue to play an important role in supporting the low carbon and renewables sector”*. It is hoped that securing CORE status for Harwich will *“attract additional investment and further increase economic activity across the area”*.

28.7.1.3 Local Context

28.7.1.3.1 Great Yarmouth and Lowestoft

78. Great Yarmouth and Lowestoft are one of the Government’s low carbon Enterprise Zones where incentives are provided to new and expanding businesses and industries (such as the offshore wind sector). To provide the planning framework for the Enterprise Zone, Waveney District Council and Great Yarmouth Borough Council have created Local Development Orders (LDO) to help enable the further development of Beacon Park and South Denes, Ellough in Beccles and Mobbs Way, PowerPark (Beach Industrial Estate), Riverside Road and South Lowestoft Industrial Estate in Lowestoft. The goal is to enhance economic growth through the development of high-tech/research and development sector businesses, particularly those associated with the offshore energy industry. The aim is to allow greater permitted development rights for businesses in this sector.
79. Great Yarmouth and Lowestoft have also been included in the Government’s Assisted Area Status (AAS) map. The 2014 to 2020 UK Assisted Areas Map came into force on 1st July 2014. The status makes local businesses eligible to bid for additional Government and European funding and tax breaks to create jobs, invest in new premises or machinery and grow. This in turn could help businesses associated with the offshore wind sector grow and create more jobs and expertise.

80. The Draft Great Yarmouth Local Plan Core Strategy (Great Yarmouth Borough Council 2013) also supports the offshore wind sector and the economic importance it has for the area. Policy CS6 – Supporting the local economy, states that in order to grow the local economy there needs to be a *“greater presence of higher value, technology and energy-based industries including offshore renewable energy companies in the borough.”*
81. The plan safeguards a significant amount of employment land to accommodate potential growth in the offshore renewable energy sector.
82. The plan highlights that there is a Centre for Offshore Renewable Engineering (CORE) at Great Yarmouth and Lowestoft which *“ensure businesses looking to invest in manufacturing for the offshore renewable energy industry receive the most comprehensive support possible”*. It states that an offshore supply chain has been in place for over 45 years and that *“this experience has resulted in a concentrated network of highly experienced businesses that have successfully diversified into the Offshore Wind industry supporting the development, construction and operations of Round 1, 2 and 3 windfarm developments in the Southern North Sea”*.
83. Moving forward the Council is looking to create a high quality urban environment on the Great Yarmouth waterfront which will attract the offshore renewable energy industry to invest in the area. This in turn will *“reinforce Great Yarmouth as a regional hub for this industry”*.
84. Great Yarmouth Economic Strategy 2011 to 2016 (Great Yarmouth Borough Council 2010) states that Great Yarmouth is the *“main service base in England for the offshore energy industry”* and it is recognised as having expertise in this area particularly through the installation of Scroby Sands. The port is *“a major economic driver”* for Great Yarmouth. The strategy recognises the opportunity to *“become leaders in renewable energy and environmental services particularly by developing the offshore renewable energy sector”*. The strategy identifies three main growth sectors for Great Yarmouth:
- Energy and Engineering;
 - Port and Logistics; and
 - Tourism.
85. The adopted Waveney Core Strategy (Waveney District Council 2009) is looking for the offshore wind sector to increase employment numbers in the District area. Its

aim is for Lowestoft Port to *“have top quality freight handling and distribution facilities, fabrication, services and facilities for the offshore industry”*.

86. The Strategy highlights the desire to create a Renewable Energy Cluster in Lowestoft and Great Yarmouth. It states that *“Lowestoft is ideally located to capitalise on the predicted increase in offshore wind turbines in the North Sea, in order to meet enhanced Government targets for offshore wind energy production by 2020”*. The Strategy hopes to build on the existing positive economic impact the renewable energy companies have had on the area in terms of job creation.
87. The Waveney Economic Regeneration Strategy 2008 to 2017 (Waveney District Council 2008) states that Waveney is *“increasingly being recognised for its growing potential to become a leading European centre for the Renewable Energy industry”*. Lowestoft is recognised as having potential, building on the opening of OrbisEnergy in 2008. Waveney aims to *“Encourage inward investment and job creation around key sectoral clusters (renewable energy, office services, leisure and tourism)”*.
88. The Lowestoft Lake Lothing & Outer Harbour Area Action Plan (Waveney District Council 2012) aims for Lowestoft to capitalise on the expansion of the offshore energy market and its proximity to a number of planned offshore windfarms. Its vision for the Port is to *“have top quality freight handling and distribution facilities, fabrication, services and facilities for the offshore industry”*.

28.7.1.3.2 Harwich

89. As with Great Yarmouth and Lowestoft, Harwich has been granted Assisted Area Status. The area was also awarded CORE status in 2014, coming under the auspices of the existing South East CORE. This should encourage more businesses in the offshore renewables industry to invest in Harwich as CORE status has the backing of Central and Local Government and Local Enterprise Partnerships. The South East CORE has already supported a number of offshore developments. For example Dong Energy chose to set up their O&M base at Brightlingsea for servicing the Gunfleet Sands Offshore Windfarm.
90. In terms of regional policy, the Draft Tendring Local Plan (Tendring District Council 2012) highlights that in order to deliver new jobs in the area, focus should be on *“supporting the activities of Harwich International Port, taking account of longer-term port-expansion and associated logistics facilities and supporting growth and innovation in the emerging renewable energy industry”*.
91. The plan highlights that the Council is supportive of the renewable energy sector and is looking to exploit opportunities which create skilled jobs in the Harwich area. The

plan states that: *“the Council will seek to maximise opportunities to encourage businesses in the renewable sector to invest in the district and make best use of its coastal location and proximity to the windfarm developments taking place off the Tendring coast. In particular, the Council recognises the potential role Harwich could play in the growth of offshore windfarm development”.*

92. The Tendring Economic Strategy (Tendring District Council 2013) states that by 2018 Harwich should “provide a fulcrum for the East of England’s evolving Offshore Energy offer and to have “built upon its position as the busiest offshore energy port in the country”.
93. By 2023 “Harwich will be Europe’s fastest growing location for servicing the Offshore Energy sector having successfully encouraged longer term investment in manufacturing and assembly. These investments will anchor higher value careers in Harwich, providing visible opportunities for Tendring’s young people to commence long and rewarding careers”.
94. The economic strategy emphasises the importance of developing the offshore wind industry in Harwich and argues it is possibly Tendring’s biggest opportunity.

28.7.1.4 Conclusion

95. Overall there is considerable strategy and policy support for the location and development of offshore wind activities and support infrastructure in the East of England. Local authorities in the East of England recognise the huge potential economic benefits, which could arise from the development of the industry in their respective areas.

28.7.2 Socio-economic Baseline

28.7.2.1 Study Area

96. Drive time catchments from the towns of Woodbridge and Bramford, Paper Mill Lane (PML) have been used to determine the socio-economic profile and labour market sensitivity associated with the construction of the onshore cable route. Woodbridge is the nearest town to the onshore cable route while the substation and grid point will be located in Bramford. The inclusion of both locations was considered a robust approach to accurately evaluate the movement and location of construction workers for the onshore element.
97. In terms of the offshore construction aspects, equivalent drive time catchments of the following ports have been established:

- Great Yarmouth;

- Lowestoft; and
 - Harwich.
98. The above ports could potentially be used for construction or operation and maintenance for the proposed project. Though no decision will be made on this by the point of submission of the Development Consent Order (DCO) application for the proposed East Anglia THREE project, these drive time catchments will form the basis of, and provide context to, an impact assessment of the proposed East Anglia THREE project.
99. The socio-economic profile sets a context for the assessment and highlights key economic issues. The indicators are also used to determine the overall sensitivity of each area's labour market (socio-economic receptor).
100. The principal onshore construction socio-economic study area is the 45-minute drive time catchment around Woodbridge and Bramford. For offshore construction, the principal socio-economic (regional) study area is the 90-minute drive time catchment around each of the above stated ports.
101. *Table 28.8* identifies key information required to assess the sensitivity of each drive time catchment Study Area.
102. *Appendix 28.1* provides full socio-economic profile data for each study area and additional sub-study areas.

Table 28.8 Key Regional Socio-economic Data⁵ (Grey shading indicates above GB national average)

	Potential Deployment Ports			Onshore Construction		UK
	Great Yarmouth (90 minute drive time)	Lowestoft (90 minute drive time)	Harwich (90 minute drive time)	Woodbridge (45 minute drive time)	Bramford, PML (45 minute drive time)	
Population						
Population 2015	1,156,930	1,226,819	2,805,499	440,049	767,030	65.2m
Population Growth 2001-2015	11.6%	12.1%	11.6%	14.3%	12.9%	10.3%
Population Growth 2015-2021	4.1%	3.8%	4.9%	3.7%	6.8%	4.0%

⁵ Source: 2015 MicromarketerG3 software, Experian Population Projections & Census 2011. Data for Woodbridge and Bramford, PML is based on a 45 drive time catchment. Data for Great Yarmouth, Lowestoft and Harwich is based upon a 90 minute drive time catchment.

	Potential Deployment Ports			Onshore Construction		
	Great Yarmouth (90 minute drive time)	Lowestoft (90 minute drive time)	Harwich (90 minute drive time)	Woodbridge (45 minute drive time)	Bramford, PML (45 minute drive time)	UK
Working Age – 2015						
0 to 15	17.1%	17.4%	19.0%	18.4%	18.4%	19.1%
16 to 64	59.3%	59.9%	61.2%	60.3%	61.5%	61.7%
65 +	23.6%	22.7%	19.8%	21.2%	20.1%	19.2%
Economic Activity						
Active	69.1%	69.7%	71.9%	71.9%	70.9%	69.8%
Inactive	30.9%	30.3%	28.1%	28.1%	29.1%	30.2%
Unemployment	4.2%	4.4%	4.4%	4.0%	5.2%	5.4%
Key Employees						
% Manufacturing employees	9.3%	8.6%	7.5%	7.1%	8.2%	8.7%
% Construction employees	8.5%	8.3%	9.7%	8.2%	7.8%	8.1%
% Electricity, gas, steam and air conditioning supply	0.6%	0.8%	0.5%	1.2%	0.8%	0.6%
% Accommodation and food services	7.0%	6.7%	5.0%	5.9%	4.7%	5.5%
Qualifications						
Level 4+	23.9%	24.3%	24.1%	26.8%	25.5%	28.2%
Level 3	12.6%	12.7%	12.2%	12.5%	12.5%	12.9%
Level 2	15.6%	15.8%	16.5%	16.1%	16.4%	14.6%
Level 1	13.5%	13.8%	15.4%	13.9%	14.3%	13.6%
Apprenticeship	4.2%	4.2%	3.7%	3.9%	3.8%	3.3%
No qualifications	24.7%	24.2%	23.2%	22.0%	22.6%	22.3%
Other	5.5%	5.0%	4.9%	4.8%	4.9%	5.1%
Skills						
AB - Highly Skilled	19.2%	19.8%	21.4%	22.6%	22.0%	22.2%
C1 - Skilled	30.0%	29.9%	33.0%	30.6%	31.3%	30.9%
C2 - Skilled manual	24.7%	24.2%	22.9%	22.8%	22.7%	20.9%
DE - Semi-skilled/unskilled manual	26.0%	26.1%	22.7%	24.1%	23.9%	26.0%

Source: PBA (using Experian 2015 Labour Market Data)

28.7.2.2 Population

103. Each of the Study Areas is characterised by relatively high historic levels of population growth. The population in each of the Study Areas increased at a faster rate than the national average between 2001 to 2015.

28.7.2.3 Age Structure

104. All areas within the study area have a higher proportion of retired-aged people in relation to their working age populations, when compared with the national UK averages.

28.7.2.4 Economic Activity

105. The economic activity rate is a useful measure of labour market opportunities available in the area. Economic activity in Great Yarmouth and Lowestoft is comparable to the national average. The Woodbridge, Bramford and Harwich Study Areas are characterised by high levels of economic activity. This may be influenced by their southerly locations and relative proximity to London. Unemployment in each area is notably below the national average.

28.7.2.5 Employment Structure

106. All areas, with the exception of Bramford, have higher levels of construction employment relative to the national UK average.
107. Great Yarmouth has higher than average levels of construction, manufacturing and electrical and energy related labour.
108. Tourism and leisure related occupations i.e. accommodation and food services, account for a higher than average proportion of jobs in the Great Yarmouth, Lowestoft and Woodbridge study areas.

28.7.2.6 Qualifications

109. The Study Areas are characterised by higher than average mid-level qualification attainment levels and lower attainment of the highest levels of qualifications. All Study Areas have higher than average levels of people taking up apprenticeships.

28.7.2.7 Skills

110. Labour required for the construction and operation of the proposed project will mainly be skilled technical workers and skilled manual workers. All areas have an above average proportion of skilled manual workers, while Harwich and Bramford also have above average levels of skilled workers. Lowestoft also has a higher proportion of semi-skilled/ unskilled workers.

28.7.2.8 Socio-economic Sensitivity

111. *Table 28.9* shows the assessed sensitivity of each area's labour market based on the key statistics in *Table 28.8*, the Socio-economic profile data in *Appendix 28.1* and the Socio-economic criteria in *Table 28.3*.

Table 28.9 Assessed sensitivity of each area’s labour market

Receptor (labour market)	Assessed sensitivity	Reason
Great Yarmouth	Low ⁶	<ul style="list-style-type: none"> • High level of construction and manufacturing workers • high level of skilled manual workers and apprenticeships • Above average levels of population increase
Lowestoft	Low ⁷	<ul style="list-style-type: none"> • High level of construction workers • High level of skilled manual workers and apprenticeships • High level of energy related jobs
Harwich	Low ⁸	<ul style="list-style-type: none"> • High level of construction workers • High economic activity rate • High level of skilled manual workers and apprenticeships • Above average levels of population increase
Woodbridge	Low ⁹	<ul style="list-style-type: none"> • High level of construction workers • High level of energy related jobs • High economic activity rate • high level of skilled manual workers and apprenticeships
Bramford, PML	Low ¹⁰	<ul style="list-style-type: none"> • High economic activity rate • high level of skilled workers, skilled manual workers and apprenticeships, • high level of energy related jobs • Above average levels of population increase

Source: PBA

112. It is also anticipated that a large proportion of the East Anglia THREE construction jobs will be taken up by the workforce that constructed the East Anglia ONE project. This will involve the transfer of an established workforce that has built up project specific skills that are directly transferable to the East Anglia THREE project. This will further reduce the sensitivity of the labour market during the planned construction period.

⁶ The area has a readily available labour force. Unlikely to lead to labour market pressure or distortions.

⁷ Ibid

⁸ Ibid

⁹ Ibid

¹⁰ Ibid

28.7.3 Business Infrastructure and Potential Area Absorption Capacity

113. The region acts as an existing focus for offshore wind, having been home base to a number of earlier Round 1 and 2 offshore windfarms, as well as the long term offshore gas fields in the southern North Sea basin. However, while extensive energy industry capability exists across the region, there is a need for extensive further investment in all aspects of infrastructure to increase local and regional supply chain capacity to enable the area to benefit from the continuing growth in offshore development. Existing infrastructure, upon which further capacity can be built includes a variety of key facilities and focal points as follows:

- The port of **Lowestoft** (which acts as the operations and maintenance (O&M) base for the Greater Gabbard Round 2 project and acted as one of the construction bases for the Scroby Sands Round 1 project);
- The port of **Great Yarmouth** (which acted as a construction base for Scroby Sands Round 1 project, Sheringham Shoal and Lincs Round 2 projects and the O&M base for the Dudgeon Round 2 project);
- The port of **Harwich** which acted as the construction port for Gunfleet Sands Round 1 project and Greater Gabbard Round 2 project. It also acted as an installation port for the London Array Round 2 project and as a support facilities base for Thanet Round 2;
- All these ports have existing capabilities and services in and for the offshore energy industry, together with the other intermediate scale and minor ports. In addition, Bathside Bay, Harwich offers potential for offshore wind development in the area;
- The **Power Park at Lowestoft** (Beach Industrial Estate) comprising 15ha of land in and around the outer harbour area extending north to Ness Point, offering major potential for offshore O&M activities and services complementing existing energy capabilities;
- **OrbisEnergy, Lowestoft** - the region's specialist offshore renewables innovation, incubation and enterprise centre, which already acts as the base for a number of offshore businesses including the RWE and SSE joint venture's Greater Gabbard Offshore WindFarm Ltd and East Anglia Offshore Wind (EAOW), amongst others;
- **Great Yarmouth EastPort UK**, currently the largest operations and maintenance base for Southern North Sea oil and gas operations has a recently developed deep-water outer harbour offering potential berthing, accommodation, and services to the offshore industry, which is also the closest deep-water port to the East Anglia Zone.

114. While the existing domestic supply chain is not yet capable of meeting all the needs of the offshore wind industry, emerging developments in business and infrastructural capacity and capability point to the region enhancing its already significant offer, which will be able to offer a wide range of facilities and services.
115. These will address much of the proposed East Anglia THREE project's development and operational requirements by the time of construction and operation. However, this will only be the case if significant levels of additional investment continue to be made in the area.
116. As mentioned above the Government has awarded Enterprise Zone (EZ) status to significant areas of land in Great Yarmouth and Lowestoft, particularly the land around both ports, which are intended to encourage business development and create employment opportunities through a combination of financial incentives and simplified planning regulations. Businesses within the Enterprise Zone benefit from a Business Rate Discount which has recently been extended to March 2018. In addition, the Great Yarmouth and Lowestoft's EZ has a specific energy focus and aims to capitalise on the area's competitive advantages namely its energy and engineering experience and expertise, developed supply chains, port infrastructure and access.
117. New energy related development will be encouraged as a focus at each of these ports to complement and build upon the critical mass of existing energy infrastructure and energy businesses already located within the area, which has serviced the needs of the offshore wind industry for a number of years stretching from the Humber and Greater Wash areas, south to the Thames Estuary. With significant investment, the land availability, existing infrastructure, positive planning regime and status offers major potential for answering the construction, deployment, operation and maintenance and decommissioning phases of major offshore projects including the proposed East Anglia THREE project and the subsequent projects making up the overall East Anglia Zone.
118. Backing up these physical resources is a series of support organisations, which provide a co-ordinated approach to development across the region. These organisations include: the East of England Energy Group (EEEGR), the New Anglia LEP, county councils, and the Suffolk Energy Coast Delivery Board amongst others.
119. Further, central government has recognised the importance of offshore renewables to the economy by implementing a number of CORE partnerships between central government and local partners. As mentioned above, the three potential port locations have CORE status. This status recognises that such areas have:

120. “the existing port infrastructure, skills, supply chain and local Government support to enable rapid growth within the offshore wind sector”¹¹.
121. The above review shows that there is considerable investment, support and infrastructure in place at the three potential ports to assist Offshore Windfarm development.

28.7.4 Education and Training Infrastructure

122. The area possesses an extensive range of education, training and skills providers, services and infrastructure and has a broad range of training programmes and university/ college courses specifically designed to provide a skilled labour market to develop the region’s energy industry. Access to nearby leading universities and corporate research further strengthens the region’s capacity to achieve the full potential of the growing renewable energy market. A summary but not exhaustive list of relevant training programmes, academic courses and R&D providers is provided below. Industry skills and training programmes provided across the region include the following, amongst others:
- Skills for Energy East of England part of EEEGR - leading skills programmes supported by many of East Anglia’s major energy employers including: Seajacks, Perenco, Shell, ODE, EDF, SSE, The Crown Estate, 3Sun Group and Sembmarine SLP;
 - The Energy Skills Foundation Programme - industry designed and supported pre-apprenticeship college-based course;
 - The Energy Skills Centre at Harwich - a joint initiative between Colchester Institute and Hutchison Ports UK Ltd to concentrate on engineering and the offshore wind industry in particular;
 - The COREs in Great Yarmouth and Lowestoft and South East (including Harwich);
 - New Anglia Skills Manifesto – Document which seeks to deliver the skills businesses need now and in the future including those in the renewables sector. Part of the manifesto is to establish a New Anglia Skills Investment Fund which will give “employers more control over how skills funding is spent and provides new ways to reward employers who invest in skills that will drive future growth for our economy”.
 - Apprenticeships Norfolk – Norfolk, Suffolk and Essex County Councils all invest in apprenticeships that support, in particular, access to STEM subjects.

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https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/405959/CoreBrochure_2015.pdf p14

123. Regional University and College infrastructure and courses include the following:

- University of East Anglia - Produces a large number of trained graduates, with the energy sector being a major market for these graduates. Offers a course titled MSc Energy Engineering and Environmental Management - MSc programme developed in partnership with industry and employers, through close collaboration with EEEGR;
- Anglia Ruskin University – Offers engineering courses at HNC, Bachelors and Masters levels in multiple Engineering disciplines;
- Cambridge University: Institute for Manufacturing - one of the largest integrated engineering departments in Europe;
- City College Norwich - Offers a wide range of vocational and academic courses including the BTEC Diploma in Engineering Level 3;
- College of West Anglia - CWA offer the BTEC Diploma in Engineering Level 3;
- West Suffolk College – a strong engineering and construction offer of vocational and academic courses;
- Lowestoft College - four Centres of Vocational Excellence, including one specialising in Offshore Technology and the Energy Skills Foundation Programme, a legacy from Shell;
- Norfolk UTC – New college which provides excellence for the young people of Norfolk interested in Advanced Engineering, High Value Manufacturing and the Energy sector.
- Essex University – has undergraduate and postgraduate courses in science and electronic engineering;
- University Campus Suffolk – construction management and various engineering courses;
- Great Yarmouth College - training in engineering skills for apprentices and other workers in the Energy sector;
- EAGIT - East Anglia Group for Industrial Training (EAGIT) is a training organisation for the industrial and commercial aspects of engineering;
- Petans - courses and training for Offshore Survival, Fire-fighting, Helicopter Operations, and Marine and Management of Safety

- GCSE Engineering Courses at Pakefield High School, Suffolk and Lowestoft Sixth Form College.
124. Research and Development capacity includes the following regional facilities and providers, amongst others:
- Cranfield University – internationally recognised leading research and training in energy technologies;
 - University Campus Suffolk – research based university specialising in risk management, and on offshore transportation and logistics, and energy technology;
 - Centre for Environment, Fisheries & Aquaculture Science (Cefas) – internationally renowned research and advisory centre working in, environmental protection, aquaculture and fisheries management; and
 - The Welding Institute (TWI) – based in nearby Cambridge; leading independent research and technology organisation working across all industry sectors, and offering services to both onshore and offshore industries.
125. While the region offers this wide range of skills, training and educational providers to the offshore wind industry, and continues to attract investment, as is the case across the UK the demand for appropriate skills and labour to staff up the growing industry will place pressure upon resources available to the industry in the area. There will be a need to provide further capacity and capability as the industry develops. However, the scale of the opportunity is such that this is likely to provide the confidence in training and skills providers to invest further in such capacity, from which the proposed project will be able to benefit.
126. The current mid-2015 position regarding the oil and gas industry, the low price of oil currently standing around \$57 per barrel of Brent crude, and contraction of offshore operations in the UKCS since mid-2014, has resulted in an increased availability of skilled labour in East Anglia, which has the potential to potentially meet at least in part the labour and skill requirements of the East Anglia THREE project. This could act as a useful addition to the available regional and local labour supply upon which the project can draw. However, the volatility in the price of oil and resulting uncertainty as to the direction of demand for oil and gas based skilled labour in the short to medium term must lead to a cautious approach in terms of assessment of the regional and local labour market for this assessment.

28.7.5 Tourism Baseline

127. The following section provides a tourism baseline profile of Suffolk, Norfolk, Essex and Cambridgeshire and the wider East of England area, including:

- A tourism overview;
- A list of the most significant tourism attractions;
- Details on accommodation provision;
- Detail of the volume and value of tourism; and
- Tourism business density in the coastal area.

128. Tourism baseline tables and diagrams are found in *Appendix 28.1*.

28.7.5.1 East of England Tourism Overview

129. The East of England has a diverse tourism profile with a wide range of activities and places to visit. The region covers about 19,114 km² and its countryside is predominantly low lying and has a range of gentle landscapes.

130. The Norfolk and Suffolk Broads (an area with a status similar to a national park) is situated in the region. In addition, there are three Areas of Outstanding Natural Beauty (AONB) located at the Norfolk and Suffolk Coasts, and the Dedham Vale in Essex and Suffolk. The BBC Two outdoor wildlife programme is filmed annually from RSPB Minsmere on the Suffolk coast.

131. The coastline of the East of England stretches 400km and is home to popular beaches, cliffs, mudflats and saltmarshes. There are also a number of key seaside destinations including Great Yarmouth in Norfolk and Lowestoft in Suffolk. The area also has a number of architectural attractions and traditions and is home to a number of historic cities and towns including Colchester, Cambridge, Bury St Edmunds and Norwich.

28.7.5.2 East of England Key Visitor Attractions and Activities

132. VisitEngland carries out an annual survey to determine the most popular visitor attractions in the East of England. The most popular paid and unpaid visitor attractions were ZSL Whipsnade Zoo and Needham Lake and Nature Reserve respectively. These figures do not however include one of Suffolk's main attractions; the National Trust's Sutton Hoo visitor centre, near Woodbridge, which has achieved visitor numbers of over 200,000, or the Great Yarmouth Pleasure Beach, which receives over a million visitors annually (Explore Norfolk UK, 2015).

133. The International Passenger Survey is carried out annually. The survey collects information on the activities visitors undertake. The top three most popular things to do in the East of England in 2013 were ‘dining in restaurants’, ‘shopping’ and ‘shopping for clothes and accessories’. In 2014/15 Norwich was ranked in the top 20 of the most popular shopping venues in the UK (Javelin Group 2014). Other common things to do included ‘visiting the countryside and villages,’ , ‘going to pubs’ and going for a ‘walk in countryside’. Less prominent activities include playing golf and going cycling.

28.7.5.3 East of England Visitor Accommodation

134. In 2014 VisitEngland carried out an accommodation audit in the East of England. This audit established the number of serviced establishments versus the number of non-serviced establishments in the area, and also specified the number of bed-spaces contained within these establishments.
135. The greatest amount of serviced accommodation provision is located within Norfolk (31%). The majority of non-serviced accommodation is also found in Norfolk (54%). In comparison with the other counties in the study, Cambridgeshire has significantly fewer serviced and non-serviced accommodation.
136. In terms of the number of serviced bed-spaces, Essex holds around 20% of the region’s stock, whilst Suffolk only holds around 10%. Although Norfolk has the majority of the East of England’s non-serviced accommodation, it has only about 40% of the region’s non-serviced bed-spaces. The largest share of non-serviced bed-spaces is found in Essex (43%), while only 3% of non-serviced bed-spaces are found in Cambridgeshire.

28.7.5.4 Domestic Nights and Spend

137. Norfolk accounts for a significant proportion of the East of England region’s domestic tourism volume and value. For the most recent reporting period, 2011to 13, Norfolk was the most popular tourist destination, accounting for 26% of all domestic trips, 34% of bed-nights and 35% of expenditure. In comparison Suffolk only accounted for around 16 to 18% of trips, bed-nights and expenditure.
138. Domestic tourism in the East of England has suffered from the effects of the recession. Between 2009 and 2013 the average number of trips fell in most areas of the East of England. However, in many areas of East of England the average spend received has increased.
139. Norfolk and Suffolk witnessed a reduction in the average duration of stay. Norfolk also recorded reductions in average annual spend, whilst Suffolk noted a fall in trips

and nights, its average annual spend increased slightly. Despite experiencing a fall in the number of domestic trips to the area, Essex recorded an increase in number of nights and spend.

28.7.5.5 Overseas Visitor Trips

140. In terms of overseas tourism, Essex and Cambridgeshire are the most popular destinations in comparison with other parts of the region. In 2014 these two areas accounted for over 50% of overseas tourism trips in the East of England. Suffolk accounted for around 10% of trips.
141. Between 2009 and 2014 the numbers of overseas trips in the East of England remained relatively stable with no significant falls or increases in numbers. Suffolk experienced the largest reduction in visitor trips (-11%). Essex and Norfolk also experienced losses in overseas trips (5 to 6%) whereas Cambridgeshire only experienced a small increase (4%).
142. The majority of overseas visits were from those either on holiday or visiting friends or relatives.
143. In 2013¹² the majority of overseas visitors stayed with friends or relatives (48%); nearly a third stayed in hotels. Very few visitors had their own homes or stayed in a rented house. These figures differ from the figures for England as a whole where a much higher proportion of visitors stayed in hotel accommodation.

28.7.5.6 Overseas Visitor Nights

144. In terms of overseas nights, as with trips, Cambridgeshire and Essex accounted for the majority of stays in comparison with the other regions in the study area. Moreover, these two counties collectively cover nearly half of the East of England's overseas nights' market. Again Suffolk accounted for around 10% of visitor nights. All four counties have experienced fluctuations in overseas nights between 2009 and 2014. The biggest change was recorded in Essex, which saw an 25% decrease in nights from 3.8 million nights in 2009 to 2.8 million nights in 2014. The most recent figures in 2014 show that all counties apart from Essex have seen an increase in the visitor nights from the previous year.

28.7.5.7 Overseas Visitor Spend

145. Cambridgeshire has traditionally secured a large amount of overseas tourism spending across the East of England, and has increased its amount of overseas spend received in spite of the recession, from £196 million in 2009 to £348 million in 2014; an increase of 78%. In 2014 Cambridgeshire accounted for over a third of overseas

¹² 2014 Accommodation data currently not available

spend in the East of England.

146. Norfolk also experienced a significant increase in overseas spend (62%) between 2009 and 2014.
147. Overseas spend in Suffolk has also increased between 2009 and 2014 experiencing a 17% upturn in spend between 2009 and 2014. Over the last few years overseas spend in Essex has increased moderately (9%).

28.7.5.8 Profile of Tourism Businesses in Coastal area

148. The composition of tourism businesses remained relatively constant between 2003 and 2008 (the most recent period for which data is available). The majority of businesses were either restaurants or bars and pubs. The largest rate of increase occurred in the budget accommodation sector which saw a 15% increase in camping and other short stay businesses. It is likely that this trend has continued in recent years as people try to find cost effective holidays. The largest net increases were found in the restaurant and bars and pubs sectors, which saw an increase of 17 businesses (4%).
149. The biggest percentage and net decrease was recorded in the library, museum and cultural activities sector which saw a reduction of 18 businesses with a decrease of 28%.
150. *Figure 28.5 and Figure 28.6* details tourism business density within the Lower Super Output Areas (SOA¹³) contained within the coastal area, in closest proximity to the proposed East Anglia THREE project. Overall there is a relatively low density of tourism across the area, with the majority of SOA's containing 0 to 10 tourism businesses. However, as might be expected, there are strong clusters of tourism businesses around the seaside towns of Great Yarmouth and Lowestoft.
151. Great Yarmouth represents a particular focus of tourism activity in the area. It is the third most popular UK seaside destination after Blackpool and Torquay, with over 70,000 available bed spaces, 5 million staying visitors and 4 million day visitors (Great Yarmouth Borough Council, 2014). Collectively the tourism industry is worth over £530 million a year to the local economy. 78% of jobs in the town are employed in the service sector. Great Yarmouth Pleasure Beach is the most popular attraction, and the Scroby Sands Windfarm Visitor Centre is also very popular, with some 35,000 visitors per annum.

¹³ A Lower Super Output Area (LSOA) is a geographic area. There is a LSOA for each postcode in England and Wales. They are automatically generated to be as consistent in population size as possible (the minimum population is 1,000 and the mean is 1,500).

152. There are also smaller clusters of businesses in other seaside towns including Southwold, Aldeburgh and Walton-on-the-Naze.
153. *Figure 28.7* shows important tourism facilities within the coastal area¹⁴, which potentially could be affected by the proposed project. It shows the location of the main seaside destinations, as well as areas of landscape importance, namely; The Broads, two AONBs and the nature conservation site at Orford Ness. Dunwich Heath Coastal Centre is also illustrated as it is the only free attraction in the East of England Top 10 located in the area. None of the Top 10 paid attractions on this list are located in the study area. The popular Anglo-Saxon site, Sutton Hoo is identified as well as a number of important recreational cruising routes, which lie off the coast of the study area. The Pleasurewood Hills theme park is also shown along with Southwold Pier.
154. Offshore, the coastal area particularly south of Aldeburgh is home to a number of recreational boating and cruising routes, particularly off the Suffolk Heritage Coast (*Figure 28.8*). In addition, there are a number of sailing clubs, small harbours, marinas and moorings for leisure boating, particularly on the Rivers Deben, Ore and Alde, and in the southern part of the study area the Rivers Stour and Orwell, where there is considerable recreational and leisure boating activity.

28.7.5.9 Tourism-related Employment

155. The annual Business register and employment survey provides an understanding of tourism-related employment within the study area. Those employed in the accommodation and food sector (sectors traditionally associated with tourism) in the areas of Norfolk, Suffolk, Essex and Cambridgeshire are not significantly high when compared to the East of England and national averages. Public sector employment in health and education and employment in manufacturing are more important employment sectors within the study area.

28.7.5.10 Onshore Cable Route Tourism and Recreation Provision

156. *Figure 28.9* highlights the level of tourism and recreation activity in the area surrounding the onshore cable route. Within 2.5km either side of the proposed onshore cable route there are a wide range of tourism and recreation receptors including cultural heritage sites, water based activities, golf courses, cycle paths and walking routes.
157. The historic town of Woodbridge, which will lie within 2 to 3km of the onshore cable route also acts as a focus of tourism businesses, with a large number of restaurants,

¹⁴ As defined by receptors which are frequently mentioned on tourism information sites and web searches

cafes, shops, pubs and bars serving visitors to the most important Anglo-Saxon site in the UK - the Sutton Hoo Anglo-Saxon ship burial, and the related National Trust visitor centre located at the site. Recently remains of a royal palace associated with Sutton Hoo have been found at Rendlesham.

28.7.5.11 Tourism and Recreation Summary

158. The East of England and East Anglia offer a wide range of tourist and visitor facilities and destinations, with the Broads, AONBs and the Suffolk Coast being the key attractions. Offshore, there is a wide range of recreational boating and cruising routes, particularly off the Suffolk Heritage Coast. There are a number of yachting connections from the east coast ports to the continent.¹⁵
159. Regional tourism has fluctuated in the decade to 2013, with domestic tourism affected by the recession. Norfolk is the most popular domestic tourism destination in the East of England. Overseas visitor numbers have also fluctuated with Cambridgeshire and Essex being the most popular destinations over the past 5 years.
160. Within the coastal area, which is the closest landward point to the East Anglia THREE site, tourism business density is relatively low, although there are greater concentrations of businesses¹⁶ in and around Great Yarmouth, Lowestoft and Southwold, with similar clusters in the other smaller seaside towns. It is important to note that the East Anglia THREE site will not be visible from the shore being some 79km offshore.¹⁷
161. While there are a wide range of tourism and recreation receptors in relatively close proximity to the proposed onshore cable route, the only tourism business concentration of note is at Woodbridge where Sutton Hoo is located.

28.7.6 Tourism Study Area Sensitivity

162. The tourism and recreation profile outlined above indicates the tourism and recreation study area in relation to the proposed East Anglia THREE project is of medium sensitivity. This reflects the concentration of tourism activity along the coast, the presence of regionally important receptors, the large amount of recreational marine activity and the declining tourism performance of the area in recent years.
163. The tourism and recreation sensitivity of the onshore cable route is also considered to be of medium sensitivity due to the wide range and number of receptors in the

¹⁵ Primarily at Lowestoft Yacht Club

¹⁶ Per Lower Super Output Area (LSOA)

¹⁷ Source: Terminology and Style Guide. Distance Section 1.3.

area.

28.8 Potential Impacts

164. It should be noted that the East Anglia ONE project is not included in the analysis of this chapter. Due to the anticipated timescales for the construction of East Anglia THREE and East Anglia ONE there is a possibility that jobs may be carried over from East Anglia ONE to East Anglia THREE. This will prolong temporary construction effects and allow the East Region to experience positive employment impacts and supply chain contracts for a longer period of time.
165. The East Anglia ONE project developed a skills strategy to support its Supply Chain Plan. EATL would continue to build on the initiatives identified in this strategy beyond the construction of East Anglia ONE, with the intention of evolving and supporting the strategy. This work will be led at a business wide level and will be developed with involvement from EATL.

28.8.1 Socio-economic Impacts

166. The proposed East Anglia THREE project will deliver positive socio-economic impacts through:
- Employment creation; and
 - Capital expenditure and workers spending in the local economy.
167. An Economic Impact Model was developed to measure net additional employment and GVA. The Guidance has been used along with professional judgment to estimate values for:
- Deadweight - what would happen in the absence of the Project;
 - Leakage - the proportion of employment opportunities accessed by people living outside the study area;
 - Displacement – the proportion of Project benefit accounted for by a reduction in benefit elsewhere;
 - Substitution - when a firm substitutes one activity for another to take advantage of public sector assistances; and
 - Multipliers –to estimate further economic activity associated with additional income and supplier purchases.

28.8.1.1 Offshore Construction

28.8.1.1.1 Gross Impact

168. The construction workforce for Single Phase and Two Phased project has been provided by East Anglia THREE Limited. A Single Phase project will provide employment opportunities for 2,375 Full-time Equivalent ¹⁸(FTEs) while a Two Phase project (built over a slightly longer construction programme) will require 2,485 FTEs.

169. *Table 28.10* shows the quantity of jobs that could ‘leak out’ of the region to the rest of the UK and the overseas labour market according to High, Medium and Low scenarios. The proportion of the proposed project expenditure spent in the East of England could potentially support between 356 and 870 FTE direct jobs at a regional level depending on the impact scenario and the construction programme.

Table 28.10 Gross Jobs by Area

	Low Impact		Medium Impact		High Impact	
Single Phase						
East of England	356	15%	594	25%	831	35%
Other UK based	119	5%	238	10%	475	20%
Overseas based	1,900	80%	1,544	65%	1,069	45%
FTE jobs	2,375	100%	2,375	100%	2,375	100%
Two Phased						
East of England	373	15%	621	25%	870	35%
Other UK based	124	5%	249	10%	497	20%
Overseas based	1,988	80%	1,616	65%	1,118	45%
FTE jobs	2,485	100%	2,485	100%	2,485	100%

Source: PBA

28.8.1.1.2 Net Additional Impact

170. Best practice principles outlined in HM Treasury Green Book Appraisal Guidance have been applied to assess the net effect of temporary and permanent employment.

171. An Economic Impact Model was developed to measure net additional employment and GVA. The Guidance has been used along with professional judgment to estimate values for:

- Deadweight - what would happen in the absence of the proposed East Anglia THREE project;
- Leakage - the proportion of employment opportunities accessed by people living outside the study area;

¹⁸One person working full-time is equivalent to 1 FTE . One person working part-time is equivalent to 0.5FTE

- Displacement – the proportion of the proposed East Anglia THREE project benefit accounted for by a reduction in benefit elsewhere; and
- Multipliers – to estimate further economic activity associated with additional income and supplier purchases.

172. *Table 28.11* shows the values used in the model. Explanatory comments are given for each value. The same assumptions have been used for each project based on the similarities in construction timescales and location.

Table 28.11 Additionality Assumptions

Area/ Additionality Factor	Value used in Economic Impact Model	Comments
East of England		
Leakage	See <i>Table 28.12</i> .	Based on High, Medium and Low scenarios (see <i>Table 28.11</i> .)
Displacement	5 to 10%	Low 5% to 10%. Limited businesses and workers operating in appropriate sector at present.
Multipliers	High: 2.365; Medium: 2.385; Low: 3.41	Multiplier values based on CEBR Offshore Windfarm Economic Impact Assessment (2012). ¹⁹ Scenario-based assessment of alternative realisations of offshore wind capacity.
Deadweight	0%	Assumed to be zero as without the project no impacts will result
UK		
Leakage	See <i>Table 28.12</i> .	Based on High, Medium and Low scenarios (see <i>Table 28.11</i> .)
Displacement	5 to 10%	Low 5% to 10%. Limited businesses and workers operating in appropriate sector at present. Senior management may be sourced from outwith East Region.
Multipliers	High: 2.365; Medium: 2.385; Low: 3.41	Multiplier values based on CEBR Offshore Windfarm Economic Impact Assessment (2012). ²⁰ Scenario-based assessment of alternative realisations of offshore wind capacity.
Deadweight	0%	Assumed to be zero as without the project no impacts will result.

Source: PBA and CEBR Offshore Windfarm Economic Impact Assessment (2012)

173. The additionality assumptions have been used along with the gross jobs estimate to establish the net additional employment and GVA impact of the Single Phase and Two Phase programmes under each impact scenario.
174. *Table 28.11* shows the net additional impact will be between 800 and 2,670 FTEs and £68.5million GVA and £228.4 million GVA at an East of England level. Nationally the net value of the project will be between 1,067 and 4,195FTEs and £91.3 million GVA and £359.0 million GVA.

¹⁹ <http://www.cebr.com/reports/economic-impact-of-offshore-wind/>

²⁰ *ibid*

175. The Single Phase and Two Phase offshore construction programme will provide a **high beneficial magnitude of effect** according to the assessment criteria outlined *Table 28.4*.

Table 28.11 Net Additional Economic Impact

	Low Impact		Medium Impact		High Impact	
Single Phase						
Region						
East of England	356		594		831	
Displacement effect	18	5%	59	10%	83	10%
Net additional local jobs	338		534		748	
Multiplier effect	2.365		2.385		3.41	
Net Additional East of England jobs	800		1,274		2,551	
GVA £million	£68.5		£109.1		£218.3	
Rest of UK						
Other UK based	119		238		475	
Displacement effect	6	5%	24	10%	48	10%
Net additional UK jobs	113		214		428	
Multiplier effect	2.365		2.385		3.41	
Net Additional UK jobs	267		510		1,458	
GVA £million	£22.8		£43.6		£124.7	
Total UK						
All UK based jobs	1,067		1,784		4,009	
GVA £million	£91.3		£152.7		£343.0	
Two Phased						
Region						
East of England	373		621		870	
Displacement effect	19	5%	62	10%	87	10%
Net additional local jobs	354		559		783	
Multiplier effect	2.365		2.385		3.410	
Net Additional East of England jobs	838		1,334		2,670	
GVA £million	£71.7		£114.1		£228.4	
Rest of UK						
Other UK based	124		249		497	
Displacement effect	6	5%	25	10%	50	10%
Net additional UK jobs	118		224		447	
Multiplier effect	2.365		2.385		3.410	
Net Additional UK jobs	279		534		1,526	
GVA £million	£23.9		£45.7		£130.5	
Total UK						
All UK based jobs	1,117		1,867		4,195	
GVA £million	£95.6		£159.8		£359.0	

Source: PBA

28.8.2 Labour market absorption

176. Estimated construction phase impacts have been assessed against the current labour market (as set out in the baseline and *Appendix 28.1*²¹) for drive time study areas centred on Lowestoft, Great Yarmouth and Harwich as the most likely potential port locations for construction and deployment activities in the region.
177. *Tables 28.13 and Tables 28.14* below show little pressure will be placed on the 90 minute drive time labour markets surrounding each port location for both a Single Phased and a Two Phased programme. However, some pressure could be placed on the geographically smaller 30 minute and 45 minute drive time areas from each port, under each scenario. However, it is unlikely the full construction labour force will be sourced from the smaller catchment areas, but much more likely be sourced from a much wider area.
178. Analysis has also been carried out to establish the sensitivity of varying the number of offshore construction workers by -10% and +10%. This analysis shows there will be no change to the level of assessed magnitude for a single or two phase project.²²
179. Adjusting the employment figure downwards by 10% will not create any adverse labour market pressures. However, increasing the figure upwards by 10% could create very minor labour market distortions within the Lowestoft and Great Yarmouth 'available labour markets.'²³ The requirement would still be less than 10% of the construction related workforce. Absorption Capacity Tables for the sensitivity analysis are provided in in *Table 28.13* in *Appendix 28.1*.

²¹ *Appendix 28.1: Socio-economics, Tourism and Recreation*5

²² Magnitude of Impact would still be High according to Table 28.4 i.e. greater than 250 workers

²³ High Sensitivity Figure of 2,937 would represent 11% and 12% of Lowestoft and Great Yarmouth's 'available labour' labour force.

Table 28.13 Single Phase: Offshore Construction Employment: Scenarios versus Labour Market Scale

	Lowestoft Drive Times				Great Yarmouth Drive Times				Harwich Drive Times			
	30 mins	45 mins	60 mins	90 mins	30 mins	45 mins	60 mins	90 mins	30 mins	45 mins	60 mins	90 mins
Working Age population	106,968	163,344	345,891	734,676	128,683	342,493	430,909	685,745	53,313	229,244	541,716	1,636,479
Economically active	85,689	134,045	282,432	613,255	104,114	277,793	354,078	572,800	42,870	185,338	452,424	1,372,613
Potentially available labour	5,854	7,570	13,791	26,967	6,537	14,001	16,644	24,301	1,884	8,800	19,838	60,660
Construction related workers	6,654	10,836	21,434	47,739	8,061	21,084	27,578	45,306	3,472	15,244	37,183	124,748
Single Phase												
Net Additional FTEs (Low Scenario)	800											
Working Age population	1%	0%	0%	0%	1%	0%	0%	0%	2%	0%	0%	0%
Economically active	1%	1%	0%	0%	1%	0%	0%	0%	2%	0%	0%	0%
Potentially available labour	14%	11%	6%	3%	12%	6%	5%	3%	42%	9%	4%	1%
Construction related workers	12%	7%	4%	2%	10%	4%	3%	2%	23%	5%	2%	1%
Net Additional FTEs (Medium Scenario)	1,274											
Working Age population	1%	1%	0%	0%	1%	0%	0%	0%	2%	1%	0%	0%
Economically active	1%	1%	0%	0%	1%	0%	0%	0%	3%	1%	0%	0%
Potentially available labour	22%	17%	9%	5%	19%	9%	8%	5%	68%	14%	6%	2%
Construction related workers	19%	12%	6%	3%	16%	6%	5%	3%	37%	8%	3%	1%
Net Additional FTE Jobs (High Scenario)	2,551											
Working Age population	2%	2%	1%	0%	2%	1%	1%	0%	5%	1%	0%	0%
Economically active	3%	2%	1%	0%	2%	1%	1%	0%	6%	1%	1%	0%
Potentially available labour	44%	34%	18%	9%	39%	18%	15%	10%	135%	29%	13%	4%
Construction related workers	38%	24%	12%	5%	32%	12%	9%	6%	73%	17%	7%	2%

Source: PBA (using Experian 2015 Labour Market data)

Table 28.14. Two Phase: Offshore Construction Employment: Scenarios versus Labour Market Scale

	Lowestoft Drive Times				Great Yarmouth Drive Times				Harwich Drive Times			
	30 mins	45 mins	60 mins	90 mins	30 mins	45 mins	60 mins	90 mins	30 mins	45 mins	60 mins	90 mins
Working Age population	106,968	163,344	345,891	734,676	128,683	342,493	430,909	685,745	53,313	229,244	541,716	1,636,479
Economically active	85,689	134,045	282,432	613,255	104,114	277,793	354,078	572,800	42,870	185,338	452,424	1,372,613
Potentially available labour	5,854	7,570	13,791	26,967	6,537	14,001	16,644	24,301	1,884	8,800	19,838	60,660
Construction related workers	6,654	10,836	21,434	47,739	8,061	21,084	27,578	45,306	3,472	15,244	37,183	124,748
Two Phase												
Net Additional FTEs (Low Scenario)	838											
Working Age population	1%	1%	0%	0%	1%	0%	0%	0%	2%	0%	0%	0%
Economically active	1%	1%	0%	0%	1%	0%	0%	0%	2%	0%	0%	0%
Potentially available labour	14%	11%	6%	3%	13%	6%	5%	3%	44%	10%	4%	1%
Construction related workers	13%	8%	4%	2%	10%	4%	3%	2%	24%	5%	2%	1%
Net Additional FTEs (Medium Scenario)	1,334											
Working Age population	1%	1%	0%	0%	1%	0%	0%	0%	3%	1%	0%	0%
Economically active	2%	1%	0%	0%	1%	0%	0%	0%	3%	1%	0%	0%
Potentially available labour	23%	18%	10%	5%	20%	10%	8%	5%	71%	15%	7%	2%
Construction related workers	20%	12%	6%	3%	17%	6%	5%	3%	38%	9%	4%	1%
Net Additional FTE Jobs (High Scenario)	2,670											
Working Age population	2%	2%	1%	0%	2%	1%	1%	0%	5%	1%	0%	0%
Economically active	3%	2%	1%	0%	3%	1%	1%	0%	6%	1%	1%	0%
Potentially available labour	46%	35%	19%	10%	41%	19%	16%	11%	142%	30%	13%	4%
Construction related workers	40%	25%	12%	6%	33%	13%	10%	6%	77%	18%	7%	2%

Source: PBA (using Experian 2015 Labour Market data)

28.8.3 Onshore Construction

180. East Anglia THREE Limited estimates 285 construction workers will be required to construct the onshore cable route. This will provide an estimated 229 net additional regional jobs and a further 445 within the UK. In total the onshore element will provide 674 FTE net additional jobs and £57.7million GVA.

Table 28.15 Onshore Construction Phase Employment Net Effects

Table 28.15 Onshore Construction Phase Employment Net Effects		
Total Gross Jobs	285	
East Region²⁴		
Retention effect	97	34%
Displacement effect	97	0%
Net additional local jobs	97	
Multiplier effect	2.4	
Net Additional East Region jobs	229	
GVA £millions	£19.6	
UK (outwith East Region)		
Retention effect	188	66%
Displacement effect	188	0%
Net additional UK jobs	188	
Multiplier effect	2.4	
Additional Other UK jobs	445	
All UK based jobs	674	
£GVA millions	£57.7	

Source: PBA

181. Appendix 28.1 Table 28.12 shows the 229 FTEs could be provided by the Woodbridge and Bramford labour markets within creating any minor labour market distortions.²⁵

182. The onshore construction phase will provide a **medium beneficial magnitude of effect** according to the assessment criteria outlined *Table 28.4*.

28.8.4 Potential Distribution of Onshore Construction Workers

183. Workers constructing the onshore element will be both resident and in-migrants. Workers in the East Region are considered to be resident based. Whereas workers outside the East Region will be classed as in-migrant. In-migrant workers will however live in nearby accommodation²⁶ during the construction of the onshore route.

184. Table 28.16 and Table 28.18 forecasts the location of resident workers from the Woodbridge and Bramford centroids.²⁷ *Table 28.17* and *Table 28.19* forecasts the

²⁴ Assumed to be a 30 and 45 minute drive time from Woodbridge

²⁵ i.e. the jobs requirement does not exceed more than 5% for the 30, 45 and 60 minute labour market areas.

²⁶ i.e. within approximately 60 minute drive time of the onshore cable route

²⁷ Resident workers are based upon the distribution of residents by construction occupation from the Census 2011.

location of in-migrants' likely accommodation during the construction of the onshore route.²⁸

28.8.4.1.1 Location of Resident Workers using Woodbridge Centroid

185. Using this centroid it is expected that over a quarter (26%) of resident workers will come from Colchester and more than a fifth (22%) will come from Ipswich. Around 12% will come from Bury St Edmunds and a further 7% from Clacton on Sea. The remainder are distributed over 16 other areas. The highest number of workers originating from the same location is 25 (Colchester), which suggests the local impact from this element of the project will be relatively modest.

Table 28.16 Origin of Resident Onshore Construction Workers using Woodbridge Centroid

Area	Postcodes	% distribution by location (resident workers)	Location of resident workers
Aldeburgh	IP15	<1%	0
Beccles	NR34	2%	2
Bungay	NR35	1%	1
Bury St Edmunds	IP28-IP33	12%	11
Chelmsford	CM3	1%	1
Clacton on Sea	CO15, CO16	7%	7
Colchester	CO1-CO7	26%	25
Diss	IP21, IP22	2%	2
Eye	IP23	<1%	0
Felixstowe	IP11	2%	2
Halesworth	IP19	1%	1
Harleston	IP20	<1%	0
Harwich	CO12	2%	2
Ipswich	IP1-IP10	22%	22
Leiston	IP16	1%	1
Lowestoft	NR32	3%	3
Manningtree	CO11	1%	1
Saxmundham	IP17	1%	1
Southwold	IP18	<1%	0
Stowmarket	IP14	6%	6
Sudbury	CO10	4%	3
Witham	CM8	3%	3
Woodbridge	IP12, IP13	4%	4
TOTAL	-	100%	97

Source: PBA

28.8.4.1.2 Location of In-Migrants using Woodbridge Centroid

186. The location of in-migrant workers is based on the accommodation survey carried out for East Anglia ONE. It is expected that nearly a quarter (24%) of in-migrants will

²⁸ Please note: For the In-Migrants tables, Great Yarmouth and Norwich are excluded as they are located outside the 60min drive time. Locations are weighted as a value of 1 within 30mins and 0.5 within the 45min drive-time catchment.

stay in Ipswich with Aldeburgh (13%) and Lowestoft (11%) being other popular locations.

187. Accommodation providers will benefit from the in-migrant customer base. In real terms however the number of workers is relatively low. Ipswich is likely to cater for the highest number of in-migrant workers of the 12 areas. However, this amounts to a modest 45 workers.

Table 28.17 Location of In-Migrants Accommodation Facilities using Woodbridge Centroid

Area	Postcodes	% distribution by location (in-migrants)	Location of In-Migrants Workers
Aldeburgh	IP15	13%	24
Beccles	NR34 & NR35	3%	6
Clacton on Sea	CO15 & CO16	6%	11
Felixstowe	IP11	10%	19
Harwich	CO12	1%	2
Ipswich	IP	24%	45
Leiston	IP16	3%	6
Lowestoft	NR32 & NR33	11%	21
Saxmundham	IP17	6%	11
Southwold	IP18	9%	17
Walton on the Naze	CO14	1%	2
Woodbridge	IP12	7%	13
Other	-	6%	11
Total	-	100%	188

Source: PBA

28.8.4.1.3 Location of Resident Workers using Bramford, PML Centroid

188. The drive time from the Bramford centroid is c.15 km west of Woodbridge. This is the key factor that alters the likely distribution of onshore workers between the Woodbridge and Bramford centroids.
189. Over a quarter (28%) of resident workers will originate from Colchester compared to just over a fifth (22%) using the Woodbridge centroid. Slightly less will come from Ipswich (17% compared to 22%) and Woodbridge (5% compared to 4%) while slightly more will come from Bury St Edmunds (14% compared to 12%).

Table 28.18 Origin of Resident Onshore Construction Workers using Bramford PML Centroid

Area	Postcodes	% distribution by location (resident workers)	Location of resident workers
Saxmundham	IP17	1%	1
Woodbridge	IP12, IP13	5%	5
Felixstowe	IP11	3%	3
Ipswich	IP1-IP10	17%	17
Stowmarket	IP14	6%	6
Diss	IP21, IP22	4%	4
Eye	IP23	< 1%	0

Area	Postcodes	% distribution by location (resident workers)	Location of resident workers
Harleston	IP20	3%	3
Bury St Edmunds	IP28-IP33	14%	14
Clacton on Sea	CO15, CO16	6%	5
Harwich	CO12	1%	1
Manningtree	CO11	1%	1
Colchester	CO1-CO7	28%	27
Sudbury	CO10	5%	5
Witham	CM8	3%	3
Bures	CO8	< 1%	0
Braintree	CM7, CM77	< 1%	0
Newmarket	CB8	1%	1
Total		100%	97

Source: PBA

28.8.4.1.4 Location of In-Migrants using Bramford, PML Centroid

190. The Bramford centroid is located further inland compared to the Ipswich centroid. A greater proportion of number of in-migrant workers are likely to stay urban areas as opposed to coastal areas using the Bramford centroid.
191. The location of in-migrant workers is based on the accommodation survey carried out for East Anglia ONE. It is expected that nearly a quarter (24%) of in-migrants will stay in Ipswich with Aldeburgh (13%) and Lowestoft (11%) being other popular locations. Ipswich will accommodate one third (32%) of workers while Colchester will accommodate over a quarter (22%).

Table 28.19 Location of In-Migrants Accommodation Facilities using Bramford PML Centroid

Area	Postcodes	% distribution by location (in-migrants)	Location of In-Migrants Workers
Clacton on Sea	CO15 & CO16	8%	15
Felixstowe	IP11	13%	25
Harwich	CO12	2%	3
Ipswich	IP	32%	60
Saxmundham	IP17	4%	7
Woodbridge	IP12	4%	8
Colchester	CO1-CO7	22%	41
Stowmarket	IP14	4%	7
Hadleigh	IP7	2%	3
Needham Market	IP6	2%	3
Other		8%	15
Total		100%	188

Source: PBA

28.8.5 Operation and Maintenance

192. East Anglia THREE Limited estimates the annual operation and maintenance requirement will be approximately 100 FTEs²⁹ for a Single and Two Phase project.

²⁹ Median of 81, 94, 106 and 122. Source: East Anglia THREE Limited (September 2015)

This will support 160 net additional jobs and provide £13.7million GVA per annum. The operation and maintenance phase will provide £341.5million³⁰ cumulative GVA to the East Region over the lifetime³¹ of the project.

Table 28.20 Onshore O&M Phase Employment Net Effects

Total Gross Jobs	100	
East Region³²		
Retention effect	90	90%
Displacement effect	68	25%
Net additional local jobs	68	
Multiplier effect	2.4	
Net Additional East Region jobs	160	
GVA £millions	£13.7	
UK (outwith East Region)		
Retention effect	100	100%
Displacement effect	75	25%
Net additional UK jobs	75	
Multiplier effect	2.4	
Additional Other UK jobs	177	
All UK based jobs	337	
£GVA millions	£28.8	

Source: PBA

193. The operation and maintenance phase will provide a **medium beneficial magnitude of effect** according to the assessment criteria outlined in *Table 28.4*.
194. Estimated operation and maintenance phase impacts have been assessed against the current labour market (as set out in the baseline assessment) for drive time study areas centred on Lowestoft, Great Yarmouth and Harwich as the most likely potential port locations for ongoing operations and maintenance activities in the region. *Table 28.21* shows there is sufficient labour with a 60 minute drive time of each port i.e. the labour market requirement does not exceed 10%.

³⁰ £13.7m x 25 years = £341.5m

³¹ Assumed to be 25 years

³² Assumed to be a 30 and 45 minute drive time from Woodbridge

Table 28.21. Single & Two Phase: O&M Employment: Scenarios versus Labour Market Scale

	Lowestoft Drive Times				Great Yarmouth Drive Times				Harwich Drive Times			
	30 mins	45 mins	60 mins	90 mins	30 mins	45 mins	60 mins	90 mins	30 mins	45 mins	60 mins	90 mins
Working Age population	106,968	163,344	345,891	734,676	128,683	342,493	430,909	685,745	53,313	229,244	541,716	1,636,479
Economically active	85,689	134,045	282,432	613,255	104,114	277,793	354,078	572,800	42,870	185,338	452,424	1,372,613
Potentially available labour	5,854	7,570	13,791	26,967	6,537	14,001	16,644	24,301	1,884	8,800	19,838	60,660
Electricity³³ related workers	6,654	10,836	21,434	47,739	8,061	21,084	27,578	45,306	3,472	15,244	37,183	124,748
Single & Two Phased												
Net Additional FTEs	160											
Working Age population	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Economically active	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Potentially available labour	3%	2%	1%	1%	2%	1%	1%	1%	8%	2%	1%	0%
Electricity related workers	23%	13%	8%	4%	24%	11%	9%	5%	99%	21%	6%	2%

Source: PBA (using Experian 2015 Labour Market Data)

³³ Electricity, gas, steam and air conditioning supply

28.8.6 Decommissioning

195. The offshore decommissioning of the project will be subject to a detailed decommissioning programme process as required by DECC under the Energy Act 2004. Onshore decommissioning will be controlled by the requirements of the DCO. The approach provided below provides a high level likely approach, which could be taken. Further details are provided in Chapter 5 Description of the Development.
196. It is anticipated that the onshore cable will be decommissioned (de-energised) and the cables and jointing pits left in-situ. However, where cables are installed in ducts, it may be possible to remove and recycle them. It is assumed that the jointing pits will be left in-situ. Therefore in the worst case cables will be accessed via jointing pits and removed.
197. In relation to the substation, the programme for decommissioning is expected to be similar in duration to the construction phase. Whilst details regarding the decommissioning of the substation are currently unknown, considering the worst case scenario, which will be the removal and reinstatement of the current land use at the site.
198. The decommissioning methodology will need to be finalised nearer to the end of the lifetime of the project so as to be in line with current guidance, policy and legislation at that point. Any such methodology will be agreed with the relevant authorities and statutory consultees.
199. East Anglia ONE Socio-economic ES Chapter indicates the decommissioning process is likely to involve 200 FTEs for 12 to 18 months. A broad assessment of magnitude of effect is provided for the decommissioning phase given the uncertainty of predicting labour requirements and decommissioning processes 25 to 30 years into the future.
200. The decommissioning phase is likely to provide a **medium beneficial magnitude of effect** according to the assessment criteria outlined in *Table 28.4*.

28.8.7 Cumulative Impact

201. *Table 28.22* provides a schedule of projects to be included in the cumulative assessment. The Table shows the construction job requirement for each project. Where available, estimates have been taken from the Environmental Statements associated with the schemes. Estimates based on construction costs have been applied for the remaining projects without Environmental Statements using Building Cost Information Service data (BCIS).

202. A total of 12,593 temporary construction jobs (equivalent to 1,259 permanent jobs³⁴) will be required to build the cumulative projects listed in Table 28.22. The Sizewell C project accounts for almost half (44%) of this.

Table 28.22 Cumulative Impacts

Project	Description	Status (October 2015)	Construction data source	Maximum construction jobs per annum
Sizewell C	Nuclear Power Station	Pre-Application	EDF Sizewell C: Project Update	5,600
Bramford-Twinstead	Connection Project	Pre-Application	PBA Estimate Based on experience of similar construction projects	100
SnOasis	Winter sport centre	Planning permission granted (expires in 2016)	Developer Website	3,500
Old Fisons site (land west of Paper Mill Lane)	Business park and housing scheme	Planning permission granted (subject to Section 106 Agreement)	PBA Estimate based on BCIS data	224
Adastral park	Business park and housing scheme. Master plans available	Outline Planning application submitted 2009 - pending consideration	PBA Estimate based on BCIS data	2,002
Ipswich Northern Fringe	Urban development	Planning application under consideration until 30th September 2015	PBA Estimate based on BCIS data	861
Progress Power, Eye, Suffolk	Gas fired power station	Consented	ES Chapter (Prepared by PBA)	135
Land North Of Woods Lane, Melton, Suffolk	Residential development	Conditionally Allowed	PBA Estimate based on BCIS data	170
East Anglia ONE	Offshore Windfarm Project	Consented	-	N/A Construction periods do not overlap
A Future EAOW Project	Offshore Windfarm Project	Pre-Application	-	N/A Construction periods do not overlap
SITA (Efw plant)	Energy From Waste Plant	Operational	-	N/A Operational
			Total	12,593

Source: PBA

³⁴ In economic appraisals 10 years of continuous employment is considered to be equivalent to a permanent job. 12,593 temporary construction jobs (or 12,593 person years of employment) is equivalent to 1,259 permanent jobs.

203. The Absorption Capacity Table 28.23 demonstrates that there is sufficient labour in the East of England region and the combined local authority areas of Suffolk, Norfolk and Essex to build all of the cumulative projects i.e. the total requirement does not exceed 10%. The cumulative projects could therefore be built without creating any minor labour market distortions. In reality the labour market for the cumulative projects will be drawn from a much wider area providing access to a wider labour pool.

Table 28.23 Absorption Capacity

	Construction workers	Cumulative projects as % of available construction workers
East of England	252,146	5%
Essex, Suffolk, Norfolk	134,569	9%

Source: PBA (using Experian 2015 Labour Market Data)

204. The Absorption Capacity analysis assumes a worst case scenario i.e. all cumulative projects will be constructed at the same time using. In practice this is unlikely to occur for a number of reasons:
- Some of the projects may not be consented or developed;
 - The construction of the noted schemes is unlikely to take place concurrently. Some involve construction over a more extended period than the Project (further diluting absorption effects);
 - The labour market catchments for a number of the noted projects will differ from that of the Project;
 - A number of the projects are likely to require more specialist construction skills. It is unlikely that the construction needs for all of the projects noted can be met from within localised catchments;
 - Construction labour is highly mobile and flexible. Should capacity bottlenecks emerge, labour can generally be brought in from further afield; and
 - A proportion of specialist labour will be sourced from across the UK.

28.8.8 Socio-economic Summary

205. *Table 28.24* summarises the likely socio-economic effects associated with the proposed project. The assessed sensitivity, magnitude and overall significance levels for each phase of the project are the same for a Single and Two Phase project.

206. **Minor and Moderate beneficial impacts** are expected which are not significant according to *Table 28.7*. No adverse socio-economic impacts or effects are predicted by the assessment.

Table 28.24 Potential Socio-economic Impact of East Anglia THREE Project

Potential Impact	Receptor	Sensitivity	Magnitude	Significance	Mitigation	Residual Impact
Onshore Cable Corridor						
Construction FTEs	Labour market	Low	Medium beneficial	Minor beneficial	None required	Minor beneficial
Offshore Windfarm						
Construction FTEs	Labour market	Low	High beneficial	Moderate beneficial	None required	Moderate beneficial
Operation & Maintenance						
O&M FTEs	Labour market	Low	Medium beneficial	Minor positive	None required	Minor beneficial
Decommissioning						
Decommissioning FTEs	Labour market	Low	Medium beneficial	Moderate beneficial	None required	Moderate beneficial

Source: PBA

28.8.9 Tourism and Recreation Impacts

207. This section introduces the impacts associated with the proposed East Anglia THREE project, which may potentially affect the local tourism and recreation economy.

28.8.9.1 Offshore

208. During construction the following potential impacts are assessed:

- Visual impacts of marine construction traffic experienced during the construction phase will only be transient and temporary in nature as confirmed in Chapter 29 Seascape, Landscape and Visual Amenity. They are therefore unlikely to be considered significant in tourism terms.
- There is limited recreational sailing usage in and around where construction traffic will sail as confirmed in Chapter 15 Shipping and Navigation. Recreational boating activities should therefore be able to operate alongside commissioning traffic, without any potential impacts.

209. During operation the following potential impacts are assessed:

- Direct effects on land-based tourism and recreational resources during the operational phase of the proposed East Anglia THREE project are unlikely, as visual effects on these resources are likely to not be significant (as stated in

Chapter 29 Seascape, Landscape and Visual Amenity) due to the distance of the offshore development from the coast.

- Recreational marine users e.g. sailor, may experience some limited visual impact from the proposed East Anglia THREE project (Chapter 29 Seascape, Landscape and Visual Amenity). However, there are already established views of offshore windfarms in the area e.g. Scroby Sands and Greater Gabbard, and there is recent research available (OnePoll 2011, YouGov 2013) to demonstrate there is no negative causal relationship between the sight of windfarms and a significant reduction in recreational users. It is therefore unlikely that any significant impacts will occur.

210. During decommissioning the following potential impacts are assessed:

- As during the construction phase, any visual impact will be temporary and transient in nature (see Chapter 29 Seascape, Landscape and Visual Amenity) and is therefore unlikely to be considered significant in EIA terms.
- As during the construction phase, recreational boating activities will be able to operate alongside decommissioning traffic as the amount of traffic on the sea will not be significant (as outlined in Chapter 15 Shipping and Navigation).

211. As outlined in the baseline analysis of this Chapter, the tourism and recreation profile of the Study Area has a medium sensitivity. The above analysis indicates that at most the magnitude of effect during the construction, operation and maintenance and decommissioning phases will be low. Therefore the overall significance of impact will be minor and not significant.

28.8.9.2 Onshore

212. During construction the following potential impacts are assessed:

- Visual impacts - As per Chapter 29 Seascape, Landscape and Visual Amenity, visual impacts of may only be experienced during the construction phase of the onshore cable route and are therefore temporary with limited visibility across the wider and would not be significant.
- The site of the substation will be well contained and its view diminished as a result of the screening effect of intervening woodland. Chapter 29 Seascape, Landscape and Visual Amenity confirmed that there would be limited significant impacts with any impacts being short term, localised and reversible. Any visual impacts of the substation will be reduced through existing off-site landscaping and on-site screening put in place for the East Anglia ONE project.

There are also examples of other energy infrastructure in the area e.g. pylons, masts, and an existing converter station which will lessen the visual effect further.

- Physical obstruction - Any physical obstruction of recreational routes associated with the construction of the proposed project will be temporary and unlikely to be significant. Suitable mitigation measures will be applied to minimise temporary impacts.
- Noise impacts – As confirmed in Chapter 26 Noise and Vibration there would only be some limited minor noise impacts during construction; these will be temporary and localised to the area of construction along the onshore cable route and therefore no considered significant.
- Traffic - There may be occasional, temporary and short term delays on the road network around the onshore cable route and substation site as a result of abnormal load movements. The mitigation measures noted in Chapter 27 Traffic and Transport should ensure that there will be no significant effects.
- Air Quality – Adherence to the mitigation measures noted in Chapter 20 Air Quality should ensure that there are no significant impact upon tourism and recreational receptors.

213. During operation the following potential impacts are assessed:

- Visual impacts;
- Physical obstruction;
- Noise impacts; and
- Traffic.

214. Due to the cables being underground there are likely to be minimal impacts upon any of the above, with impact being restricted to times of routine or ad hoc maintenance along the onshore cable route. With regard to the substation as there are limited tourism and recreational receptors within close proximity, the overall visual effects will be minimal. Views of the substation will be further reduced as a result of the embedded mitigation measures noted in Chapter 29 Seascape, Landscape and Visual Amenity. Mitigation planting would mature and the substation would become largely enclosed by a combination of existing and mitigation planting. Noise mitigation measures noted in Chapter 26 Noise and Vibration should ensure that there are no significant noise effects from the substation. Chapter 27 Traffic

and Transport confirmed that traffic impacts are considered to be negligible during the operation phase.

215. During decommissioning the impacts are likely to be similar to those of construction at the substation. It is likely that the cables will be left *in situ* (see section 28.8.5) therefore there would be minimal impacts upon tourism and recreation receptors along the onshore cable route.
216. Overall during the construction, operation and maintenance and decommissioning phases the magnitude of effect would be low. Given the Study Area's medium sensitivity the significance of effect will be minor and therefore not significant.

28.8.9.3 Tourism Summary

217. Table 28.24 summarises the likely tourism and recreation effects associated with the proposed project during the construction and operation and maintenance phases of the proposed project. No significant adverse tourism and recreation impacts are predicted by the assessment.

Table 28.24. Potential Tourism and Recreation Impact of East Anglia THREE Project

Potential Impact	Receptor	Sensitivity	Magnitude	Significance	Mitigation	Residual Impact
Construction						
Onshore Cable Corridor						
Impact on tourism and recreation	Tourism and recreation facilities within study area	Medium	Low adverse – Some minimal visual effects. Temporary transport and noise effects	Minor adverse	None required	Minor adverse
Offshore Windfarm						
Impact on tourism and recreation	Tourism and recreation facilities within study area	Medium	Low adverse - Some minimal visual effects of construction activity in the sea	Minor adverse	None required	Minor adverse
Operation & Maintenance						
Onshore Cable Corridor						
Impact on tourism and recreation	Tourism and recreation facilities within study area	Medium	Low adverse - Some minimal visual effects of substation	Minor adverse	None required	Minor adverse
Offshore Windfarm						
Impact on tourism and recreation	Tourism and recreation facilities within study area	Medium	Low adverse - Some minimal visual effects	Minor adverse	None required	Minor adverse

Potential Impact	Receptor	Sensitivity	Magnitude	Significance	Mitigation	Residual Impact
Decommissioning						
Onshore Cable Corridor						
Impact on tourism and recreation	Tourism and recreation facilities within study area	Medium	Low adverse - Low adverse – Some minimal visual effects. Temporary transport and noise effects	Minor adverse	None required	Minor adverse
Offshore Windfarm						
Impact on tourism and recreation	Tourism and recreation facilities within study area	Medium	Low adverse - Some minimal visual effects of decommissioning activity in the sea	Minor adverse	None required	Minor adverse

Source: PBA

28.8.10 Cumulative Tourism Impacts

218. No significant cumulative impacts on land-based tourism and recreation activity are predicted. Peter Brett Associates has recently³⁵ carried out an ex-post analysis of the potential effects, which various other operational UK offshore windfarms have had on tourism. The analysis compared tourism figures during pre-construction, construction and operational phases. In most cases the volume of tourism increased over time and in general local onshore tourism was not negatively affected by the presence and visibility of offshore windfarms.
219. It is unlikely that any other construction activity proposed to be carried in the vicinity of the proposed onshore cable route will have any direct impact due to differing construction schedules. Therefore no significant cumulative impacts are predicted.

28.8.11 Inter-relationships

220. In order to address the environmental impact of the proposed project as a whole, this section establishes the inter-relationships between socio-economics and other physical, environmental and human receptors. The objective is to identify where the accumulation of impacts on a single receptor, and the relationship between those impacts, may give rise to a need for additional mitigation.
221. Table 28.25 highlights the inter-relationships that are considered of relevance to socio-economics and where they are addressed in this Chapter.

³⁵ PBA 2013

Table 28.25 Chapter Topic Inter-relationships

Topic and description	Related Chapter	Where addressed in this Chapter
Shipping and Navigation	Chapter 15	Sections 28.8.9.1 and 28.8.9.2
Air Quality	Chapter 20	Sections 28.8.9.1 and 28.8.9.2
Noise and Vibration	Chapter 26	Sections 28.8.9.1 and 28.8.9.2
Traffic and Transport	Chapter 27	Sections 28.8.9.1 and 28.8.9.2
Seascape, Landscape and Visual Amenity.	Chapter 29	Sections 28.8.9.1 and 28.8.9.2

Source: PBA

28.8.12 Summary

222. No significant tourism and recreation impacts are predicted as a result of the proposed East Anglia THREE project, and its associated offshore and onshore electrical infrastructure. Tourism and recreation receptors will experience minimal visual impacts and only temporary physical obstruction, noise and traffic impacts.
223. The project delivered as Single Phase or a Two Phase project will provide beneficial but not significant employment impacts. The offshore construction phase will provide **moderate temporary beneficial residual impacts** while the onshore construction element will provide a **minor temporary beneficial residual impact**. The operation and maintenance phase is likely to provide a **minor ongoing beneficial residual impact**.
224. A programme of up-skilling and training programmes is being developed, supported by regional initiatives central government. These initiatives would mitigate any potential adverse labour market pressures. The project and up-skilling initiatives will also provide further support to develop the offshore renewables industry in East Anglia.

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Chapter 28 Ends Here

