# East Anglia ONE North Offshore Windfarm

# Chapter 30

## Tourism, Recreation and Socio-Economics

Preliminary Environmental Information
Volume 1
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# Glossary of Acronyms

| | |
|---|---|
| AONB | Area of Outstanding Natural Beauty |
| BOAT | Byway Open to All Traffic |
| CCS | Construction Consolidation Site |
| CoCP | Code of Construction Practice |
| CIA | Cumulative Impact Assessment |
| CMS | Construction Method Statement |
| cSAC | candidate Special Areas of Conservation |
| CTMP | Construction Traffic Management Plan |
| DCLG | Department for Communities and Local Government |
| DCO | Development Consent Order |
| DECC | Department of Energy and Climate Change |
| Defra | Department for Environment, Food & Rural Affairs |
| DfT | Department for Transport |
| DMO | Destination Management Organisation |
| EEA | European Economic Area |
| EEEGR | East of England Energy Group |
| EIA | Environmental Impact Assessment |
| EPP | Evidence Plan Process |
| ES | Environmental Statement |
| ESC | East Suffolk Council |
| ETG | Expert Topic Group |
| FTE | Full Time Equivalent jobs per year |
| FTE Year | Full Time Equivalent jobs over the duration of the project |
| GSS | Government Statistical Service |
| GVA | Gross Value Added |
| HDD | Horizontal Directional Drilling |
| HGV | Heavy Goods Vehicle |
| IAIA | International Association for Impact Assessment |
| IEMA | Institution of Environmental Management and Assessment |
| IMD | Indices of Multiple deprivation |
| IOI | Intervention or Investment |
| IRTS | International Recommendations on Tourism Statistics |
| JSA | Jobs Seekers Allowance |
| km | Kilometre |
| LEP | Local Enterprise Partnership |
| LPA | Local Planning Authority |
| LSOA | Lower Super Output Area |
| MoU | Memorandum of Understanding |
| MSOA | Middle Super Output Area |

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|---|---|
| NALEP | New Anglia LEP |
| NCC | Norfolk County Council |
| NCTA | National Coastal Tourism Academy |
| NOMIS | NOMIS – a branch of ONS where the acronym has been dropped |
| NPPF | National Planning Policy Framework |
| NPS | National Policy Statement |
| NSIP | Nationally Significant Infrastructure Project |
| NUTS | Nomenclature of Territorial Units for Statistics |
| NVQ | National Vocational Qualifications |
| O&M | Operation and Maintenance |
| ONS | Office for National Statistics |
| PEI | Preliminary Environmental Information |
| PEIR | Preliminary Environmental Information Report |
| PID | Public Information Day |
| PRoW | Public Right of Way |
| ROWIP | Right of Way Improvement Plan |
| SAC | Special Area of Conservation |
| SCC | Suffolk County Council |
| SCI | Sites of Community Importance |
| SCDC | Suffolk Coastal District Council |
| SIC | Standard Industrial Classification |
| SoC | Secretary of State |
| SPA | Special Protection Area |
| SPR | ScottishPower Renewables |
| SSSI | Site of Special Scientific Interest |
| STEM | Science, Technology, Engineering, and Math |
| UK | United Kingdom |
| UNWTO | United Nations World Tourism Organisation |
| WCS | Worst-Case Scenario |
| WDC | Waveney District Council |

# Glossary of Terminology

| | |
|---|---|
| Applicant | East Anglia ONE North Limited. |
| Construction consolidation sites | Compounds which will contain laydown, storage and work areas for onshore construction works. The HDD construction compound will also be referred to as a construction consolidation site. |
| Development area | The area comprising the Proposed Onshore Development Area and the Offshore Development Area. |
| East Anglia ONE North project | The proposed project consisting of up to 67 wind turbines, up to four offshore electrical platforms, up to one construction operation and maintenance platform, inter-array cables, platform link cables, up to one operational meteorological mast, up to two offshore export cables, fibre optic cables, landfall infrastructure, onshore cables and ducts, onshore substation, and National Grid infrastructure. |
| European site | Sites designated for nature conservation under the Habitats Directive and Birds Directive, as defined in regulation 8 of the Conservation of Habitats and Species Regulations 2017 and regulation 18 of the Conservation of Offshore Marine Habitats and Species Regulations 2017. These include candidate Special Areas of Conservation, Sites of Community Importance, Special Areas of Conservation and Special Protection Areas. |
| Evidence Plan Process (EPP) | A voluntary consultation process with specialist stakeholders to agree the approach to the EIA and the information required to support HRA. |
| FTE | Full Time Equivalence is the number of jobs that would be created if all of the people were employed full time for a defined period of time. This assessment uses one year as the standard period of time. For example: if 20 people worked for half a year each that would be equivalent to 10 full time jobs – 10 FTE. Whereas is 10 people worked full time for a year that would still be 10 FTE. |
| FTE Year | Full Time Equivalent years is the sum of FTE per year over the duration of a project. If a project had an annual FTE of 10 for 5 years then it would create 50 FTE Years. This is an important concept when calculating regional value as a high employment for a short term could have the same number of FTE Years as a low employment over a long term. |
| Gross Domestic Product (GDP) | A measure of the total value of market goods produced and services provided in the country in one year. It should be noted that GDP was developed to measure the market production of a nation and, as such, does not capture the value from non-market goods such as services provided by nature and non-salaried services provided by households. |
| Gross Value Added (GVA) | A measure of the value of goods and services produced in an area, industry or sector of an economy. It is a component of GDP growth and, similarly, does not capture value added from non-market goods such as services provided by nature and non-salaried services provided by households. |
| Horizontal directional drilling (HDD) | A method of cable installation where the cable is drilled beneath a feature without the need for trenching. |
| Jointing bay | Underground structures constructed at regular intervals along the onshore cable route to join sections of cable and facilitate installation of the cables into the buried ducts. |

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| Landfall | The area (from Mean Low Water Springs) where the offshore export cables would make contact with land, and connect to the onshore cables. |
| Local Enterprise Partnerships (LEPs) | Voluntary partnerships between local authorities and businesses set up in 2011 by the Department for Business, Innovation and Skills to help determine local economic priorities and lead economic growth and job creation within the local area. |
| Lower Super Output Areas (LSOAs) and Middle Super Output Areas (MSOAs) | LSOAs and MSOAs are a geographic hierarchy designed to improve the reporting of small area statistics in England and Wales following the 2001 Census. These are built from groups of contiguous Output Areas and have been automatically generated by the Office for National Statistics. LSOAs have a population of 1,000 to 3,000 and from 400 to 1,200 households. MSOAs have a population of 5,000 to 15,000 and from 2,000 to 6,000 households. |
| Mitigation areas | Areas captured within the Development Area specifically for mitigating expected or anticipated impacts. |
| National Grid infrastructure | A National Grid substation, connection to the existing electricity pylons and National Grid overhead line realignment works which will be consented as part of the proposed East Anglia ONE North project Development Consent Order but will be National Grid owned assets. |
| National Grid overhead line realignment works | Works required to upgrade the existing electricity pylons and overhead lines to transport electricity from the National Grid substation to the national electricity grid. |
| National Grid overhead line realignment works area | The proposed area for National Grid overhead line realignment works. |
| National Grid substation | The substation (including all of the electrical equipment within it) necessary to connect the electricity generated by the proposed East Anglia ONE North project to the national electricity grid which will be owned by National Grid but is being consented as part of the proposed East Anglia ONE North project Development Consent Order. |
| National Grid substation location | The proposed location of the National Grid substation. |
| Natura 2000 site | A site forming part of the network of sites made up of SACs and SPAs designated respectively under the Habitats Directive and Birds Directive. |
| New Anglia LEP | New Anglia Local Enterprise Partnership which works with businesses, local authority partners and education institutions across the counties of Norfolk and Suffolk. |
| Nomenclature of Territorial Units for Statistics | Nomenclature of Territorial Units for Statistics (NUTS) are statistical divisions of areas of the United Kingdom (UK) based on population. Within the UK, NUTS1 is generally regional. NUTS2 is generally at a county level. NUTS3 is generally at a grouped local authority and district level. |
| Non-market goods | Most environmental goods and services, such as clean air and water, and healthy fish and wildlife populations, are not traded in markets. Their economic value (i.e. how much people would be willing to pay for them) and societal value (i.e. how much they contribute to society) is not captured in market prices. |

| | |
|---|---|
| Onshore cable corridor | The corridor within which the onshore cable route will be located. |
| Onshore cable route | This is the construction swathe within the onshore cable corridor which would contain onshore cables as well as temporary ground required for construction which includes cable trenches, haul road and spoil storage areas. |
| Onshore cables | The cables which would bring electricity from landfall to the onshore substation. The onshore cable is comprised of up to six power cables and two fibre optic cables. |
| Onshore infrastructure | The combined name for all of the onshore infrastructure associated with the proposed East Anglia ONE North project from landfall to the connection to the national electricity grid. |
| Onshore substation | The East Anglia ONE North substation and all of the electrical equipment, both within and connecting to the National Grid infrastructure. |
| Onshore substation location | The proposed location of the onshore substation for the proposed East Anglia ONE North project. |
| Productivity | Productivity is an economic measure of output per unit of input. Inputs include labour and capital, while output is typically measured in revenues and other gross domestic product components such as business inventories. |
| Proposed onshore development area | The area in which the landfall, onshore cable corridor, onshore substation, mitigation areas, temporary construction facilities (such as access roads and construction consolidation sites), and the National Grid Infrastructure will be located. |
| Transition bay | Underground structures at the landfall that house the joints between the offshore export cables and the onshore cables. |

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# 30 Tourism, Recreation and Socio-Economics

## 30.1 Introduction

1. This chapter of the Preliminary Environmental Information Report (PEIR) presents the assessment of socio-economic, tourism, and recreation effects for the proposed East Anglia ONE North project. The approach to the assessment uses the project design as currently defined in ***Chapter 6 Project Description*** to provide the basis of analysis.

2. ***Chapter 2 Need for the Project*** highlights the national benefits of the proposed East Anglia ONE North project. In accordance with the Overarching National Policy Statement for Energy (EN-1) (Department of Energy and Climate Change (DECC 2011), this PEIR chapter describes the potential for impacts relating to:

- The creation of employment and training opportunities;
- The tourism economy; and
- Effects to tourism and recreational assets.

3. Potential impacts are considered during construction and operation. Decommissioning impacts are assumed to be similar to construction impacts.

4. Impacts to the local population are considered in detail in ***Chapter 27 Human Health***. This includes both a consideration of changes to public health and the wellbeing of the local population, in line with the World Health Organisation definition of health. In combination, this chapter and ***Chapter 27 Human Health*** respond to the updated requirements of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 to consider significant effects to population and human health.

5. The socio-economic baseline has been developed as a framework using the Sustainable Livelihoods Approach. Recognised as a key concept for social impact assessment by the International Association for Impact Assessment (IAIA) (Vanclay 2015) and further developed in relation to the context of the UK by the Social Impact Taskforce of the Government Economic Services (Harper and Price 2011).

6. The tourism economy is a valuable part of the wider economy (Office for National Statistics (ONS) 2011b) and as such the effects have been considered as part of the socio-economic assessment.

## 30.2 Consultation

7. Consultation is a key driver of the Environmental Impact Assessment (EIA), and is an ongoing process throughout the lifecycle of a project, from the initial stages through to consent and post-consent. To date, consultation has been sought regarding tourism, recreation and socio-economics through the East Anglia ONE North Scoping Report submitted in November 2017 (ScottishPower Renewables (SPR) 2017) and an Expert Topic Group (ETG) consultation. Feedback received through this process has been considered in preparing the PEIR where appropriate and this chapter will be updated following the next stage of consultation for the final assessment submitted with the Development Consent Order (DCO) application.

8. ***Table 30.1*** provides a summary of those consultation responses that are relevant to tourism, recreation and socio-economics.

**Table 30.1 Consultation Responses**

| Consultee | Date/ Document | Comment | Response / where addressed in the PEI |
|---|---|---|---|
| Expert Topic Group (ETG) | 12/06/2018 / ETG Meeting | ETG agree on baseline data sources presented in the Method Statement but with the request that visitor surveys are undertaken and data used in the baseline. | Suffolk Coastal District Council (SCDC) are undertaking an independent visitor survey that will be included in the Environmental Statement (ES). A meta-study of visitor surveys (***Appendix 30.1***) and a survey of independent reviews of coastal attractions with a view of offshore windfarms have been used to understand visitor impression in ***section 30.6.2.2***. |
| Suffolk Coast and Heaths Area of Outstanding Natural Beauty (AONB) - AONB Manager<br>Suffolk Destination Management Organisation (DMO) – Chair of DMO | 12/06/2018 / ETG Meeting | Requested that visitors were considered separately to local populations although accepted that as both are human populations the pathway from determinant sources to impacts would be similar. | The potential impacts to local populations have been moved to ***Chapter 27 Human Health*** and potential impacts to visitors have been considered in ***section 30.6***. |
| | 12/06/2018 / ETG Meeting | Raised that the impact assessment must consider the disparity of wider benefits and local impacts, particularly relating to onshore infrastructure | ***Section 30.6*** includes assessments at a local, regional, and national level. |
| | 12/06/2018 / ETG Meeting | "Perception" impact not covered in the Method Statement. Request that consideration should be given to the impact on the perception of Suffolk as | Perception has been considered in ***section 30.6.2.2*** by including independent research and a survey of coastal tourism |

| Consultee | Date/ Document | Comment | Response / where addressed in the PEI |
|---|---|---|---|
| | | a tourist destination to those who either do or do not currently come to Suffolk as a holiday/tourist destination. | reviews for their stated opinion about offshore wind. |
| SCDC - Planning Case Officer | 12/06/2018 / ETG Meeting | Concern is ensuring the region has the skill set required to take advantage of the job creation. | The applicant and Suffolk County Council (SCC) have agreed a Memorandum of Understanding (MoU) to promote career opportunities in the offshore wind sector, as described in ***section 30.3.3.1***.<br>Qualification levels have been considered in ***section 30.5*** to inform the assessment in ***section 30.6***. |
| Norfolk County Council (NCC) - Economic Development Team | 12/06/2018 / ETG Meeting | Recent studies in Norfolk on tourism following construction of offshore windfarms should be referenced in the assessment. | At Preliminary Environmental Information (PEI) stage these were not available but will be considered as part of the ES. |
| SCC - Economic Development Team | 12/06/2018 / ETG Meeting | Asks if the 'Inclusive Growth Tool' will be considered in the assessment. | The Metro Dynamics Inclusive Growth Tool was reviewed following the ETG. The tool is important in public sector expenditure but not directly applicable to private investments that do not have a specific objective of social improvement. The Sustainable Communities Framework and wide range of impacts assessed do cover a variety of socio-economic groups. Furthermore, the applicant and SCC have agreed an MoU to promote career opportunities in the offshore wind sector, as described in ***section 30.3.3.1***. |
| SCC and SCDC | 08/12/2017<br>Scoping Response | Closures to the beach and the Suffolk Coast Path must be minimised as Sizewell beach is well used by fishermen and dog walkers and recreationally. Any closures would be resisted unless temporary and for essential health and safety justification. | The Applicant is committed to using techniques and managing construction in a manner that removes the need for closures. This is discussed in ***section 30.6.1.4.2.1*** |
| SCC and SCDC | 08/12/2017 | We would suggest that an additional document having | The proposed East Anglia ONE North project will |

| Consultee | Date/ Document | Comment | Response / where addressed in the PEI |
|---|---|---|---|
| | Scoping Response | regard to skills is required as well as a proper assessment in relation to tourism impacts of the proposed East Anglia ONE North project during construction and operational phases. | continue implementing the Skills Strategy that has been agreed by MoU with Suffolk County Council, as described in ***section 30.3.3.1***. Employment opportunity is discussed in ***sections 30.6.1.1, 30.6.1.2*** and ***30.6.2.1***. |
| SCC and SCDC | 08/12/2017 Scoping Response | The mitigation hierarchy should be implemented – compensation may well be required if mitigation of adverse effects is not possible. Scoping should include and consider impacts of offshore windfarms on the typical AONB visitor experience – knowledge of the construction work could be damaging for those many visitors who value the unique Suffolk experience. | Mitigation of impact determinants for visitors is discussed in relevant chapters. This is described in ***section*** and ***30.6.2.2***. |
| SCC and SCDC | 08/12/2017 Scoping Response | Scoping refers to the 3km buffer beyond the onshore study area, having regard to tourism impacts this may not be large enough. Given the size of the substations proposed in the sensitive landscape this may well need to be extended in order to assess fully impacts in relation to tourism in the vicinity. | Potential long-term tourism impacts due to the presence of onshore substations are discussed in ***section 30.6.2.2***. |
| Suffolk County Council and Suffolk Coastal District Council | 08/12/2017 Scoping Response | The timing of the construction period and the potential for any crossover / in combination impacts with the construction of Sizewell C will be critical from a tourism perspective and in relation to availability of skills and construction / workforce capacity – this is a risk that needs to be investigated and mitigated. | Cumulative impacts are considered in ***section 30.7***. |
| SCC and SCDC | 08/12/2017 Scoping Response | It appears that impacts on tourism generally are effectively dismissed in one sentence of the Scoping Report – this is not acceptable. There needs to be properly researched, evidence and analysis of the current visitor economy and the | The Scoping Report contained separate detailed sections for socio-economic and tourism impacts. The tourism economy is a sub-section of the wider economy (as defined by the ONS) and as |

| Consultee | Date/ Document | Comment | Response / where addressed in the PEI |
|---|---|---|---|
| | | potential impacts of disruptive construction projects in the area. There needs to be current research, local visitor surveys and a proper understanding of the importance of tourism to the local economy via up to date data collection and analysis in addition to that proposed. | such both elements are considered in ***section 30.6***. |
| SCC and SCDC | 08/12/2017<br>Scoping Response | The following should be added to the skills/training section of the impacts assessment; education, construction works, impact on local residents and the cumulative impacts with other projects. | Employment and tourism impacts are discussed in ***section 30.6***. Cumulative impacts are discussed in ***section 30.7***. Impacts to local communities are considered in ***Chapter 27 Human Health***. |
| SCC and SCDC | 08/12/2017<br>Scoping Response | There is potential to need more mitigation than just the skills strategy from EA ONE being updated – there will be other developments running concurrently with this development, putting pressure on the existing (low) workforce and the impact on tourism from the two offshore windfarm projects proposed is likely to be significant and require mitigation / compensation. | Employment and tourism impacts are discussed in ***section 30.6***. Cumulative impacts are discussed in ***section 30.7***. |
| SCC and SCDC | 08/12/2017<br>Scoping Response | The PEI needs to be more specific on what SPR are planning to do about impacts on national and regional supply chains than the Scoping Report. | Employment opportunity is discussed in ***sections 30.6.1.1, 30.6.1.2*** and ***30.6.2.1***. |
| NCC | 01/11/2017<br>Scoping Response | The PEI will need to address the impact of the windfarm on tourism, including tourism occurring in neighbouring counties, which may be affected if the natural landscape is altered sufficiently. | Tourism impacts are described in ***section 30.6.1.3*** and ***30.6.2.2***. |
| NCC | 01/11/2017<br>Scoping Response | The PEI should consider the likely impacts on Norfolk's tourism sector | Tourism impacts are described in ***sections 0*** and ***30.6.2.2*** |
| NCC | 01/11/2017<br>Scoping Response | It would be helpful if the PEI could provide accurate figures of those likely to be employed both during construction and once the WF is fully operational. | Employment opportunity is discussed in ***sections 30.6.1.1, 30.6.1.2*** and ***30.6.2.1***. |

| Consultee | Date/ Document | Comment | Response / where addressed in the PEI |
|---|---|---|---|
| | | 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. | |
| Natural England | 08/12/2017<br>Scoping Response | Measures such as reinstating existing footpaths together with the creation of new footpaths and bridleways are to be encouraged. Links to other green networks and, where appropriate, urban fringe areas should also be explored to help promote the creation of wider green infrastructure. Relevant aspects of local authority green infrastructure strategies should be incorporated where appropriate. | These potential impacts are described in ***section 30.6*** |
| Natural England | 08/12/2017<br>Scoping Response | The PEI should consider potential impacts on access land, public open land, rights of way and coastal access routes in the vicinity of the development. Appropriate mitigation measures should be incorporated for any adverse impacts. We also recommend reference to the relevant Right of Way Improvement Plans (ROWIP) to identify public rights of way within or adjacent to the proposed site that should be maintained or enhanced. | These potential impacts are described in ***section 30.6*** |
| The Planning Inspectorate | 20/12/2017<br>Scoping Response | The PEI should set out the sources of data used to inform the baseline and the dates that the data was gathered and last updated. | Sources of data are set out in ***section 30.4.2***. |
| The Planning Inspectorate | 20/12/2017<br>Scoping Response | Where information is cross-referenced within the PEI, it should be made clear how the conclusions from other aspect assessments have informed the tourism and recreation assessment. | ***Section 30.4.4*** sets out a clear methodology for impact assessment that is used in ***section 30.6*** to assess impacts. In general residual impacts of determinants of physical disturbance are used from corresponding chapters. ***Chapter 27 Human Health*** provides a similar |

| Consultee | Date/ Document | Comment | Response / where addressed in the PEI |
|---|---|---|---|
| | | | methodology to assess impacts to local communities. |
| The Planning Inspectorate | 20/12/2017<br>Scoping Response | The Scoping Report does not set out the methodology for the assessment and as such, the Inspectorate is unable to comment. The methodology should be discussed and agreed with relevant consultees. | ***Section 30.4.4*** sets out a methodology for impact assessment that is used in ***section 30.6*** to assess impacts. ***Chapter 27 Human Health*** provides a similar methodology to assess impacts to local communities. Both methodologies have been discussed and agreed with relevant stakeholders via the ETG. |
| The Planning Inspectorate | 20/12/2017<br>Scoping Response | The Scoping Report does not set out a study area for the assessment; the PEI should describe a study area and provide justification. | The study area is set out in ***section 30.3.1*** and further developed in ***section 30.5***. |
| The Planning Inspectorate | 20/12/2017<br>Scoping Response | The Scoping Report does not indicate that the socio–economic assessment will be cross-referenced with other aspect chapters. The Inspectorate considers that cross-referencing enables a thorough assessment and should be followed where necessary. Any social-economic impacts, to the AONB for example, should be assessed. | ***Table 30.68*** sets out where other aspects of chapters are used to inform the assessment. |
| The Planning Inspectorate | 20/12/2017<br>Scoping Response | The assessment should include consideration of the types of jobs generated by the Proposed Development in the context of the available skills and workforce in the area; this applies equally to both construction and operational stages. The assessment should be carried out in consultation with the local authorities and Local Enterprise Partnership (LEP) to ensure that the data used is up-to-date. | The assessment uses labour market statistics provided by NOMIS (***section 30.5.1*** and ***30.5.2***) to inform ***section 30.6***. |

9. Ongoing public consultation has been conducted through a series of Public Information Days (PIDs) and Public Meetings. PIDs have been held throughout Suffolk in November 2017, March 2018, and June / July 2018 with further events planned in 2019. A series of stakeholder engagement events were also undertaken in October 2018 as part of consultation phase 3.5. These events were held to inform the public of potential changes to the onshore substation location. This consultation aims to ensure that community concerns are well understood and that site specific issues can be taken into account, where practicable. Consultation phases are explained further in ***Chapter 5 EIA Methodology***. Full details of the proposed East Anglia ONE North project consultation process will be presented in the Consultation Report, which will be submitted as part of the DCO application.

10. ***Table 30.2*** summarises public consultation comments pertaining to tourism, recreation and socio-economics.

**Table 30.2 Public Consultation Responses relevant to Tourism, Recreation and Socio-Economics**

| Topic | Response / where addressed in the PEI |
|---|---|
| **Phase 1** | |
| • Impact of substation affecting local housing and quality of life<br>• Safety and security concerns<br>• Impacts on tourism<br>• Knodishall Common is very important to the local community at Knodishall | Impacts on tourism are assessed in ***section 30.6.1.3***<br>Impacts on Common land are assessed in ***Chapter 21 Land Use***<br>Quality of life issues are covered in ***Chapter 27 Human Health*** |
| **Phase 2** | |
| • Impacts on tourism and recreation (in both construction and operation phases)<br>• Impacts upon tourist accommodation at Aldeburgh<br>• Impacts upon tourist accommodation at Thorpeness<br>• Concern over reduced quality of life for Friston residents,<br>• Access to footpaths/bridleway diversion or closure<br>• Impacts on Aldringham Court nursing home<br>• Impacts due to construction workers and activities<br>• Implications of the proposed substation on selling land.<br>• Economic impacts on fishing, holiday trade and farming<br>• Compensation payments for adverse impacts | Impacts on tourism are assessed in ***section 30.6.1.3***<br>Economic impacts are assessed in ***section 30.6***<br>Quality of life issues are covered in ***Chapter 27 Human Health*** |

| Topic | Response / where addressed in the PEI |
|---|---|
| • Consideration of an environmental mitigation fund to be available to affected local communities<br>• Concerns over buying property in Aldringham due to the proposed scheme<br>• Concerns over impacts on property prices due to substations | |
| **Phase 3** | |
| • Development at the Grove Wood site will cause disruption and damage to tourism which is vital to the local economy;<br>• Impacts on holiday lets and social events<br>• Impacts of onshore cable corridor and pylon re-alignment on pheasant shoot at Blackheath Farms;<br>• Reduced tourism and economic implications<br>• Increased traffic impacting tourism and local amenities<br>• Impacts on recreational activities such as walking, cycling, carnival, golf etc.<br>• Impacts on Friston and surrounding environment, including villages along cable route<br>• Impacts on rural environment<br>• Local community benefit projects e.g Leiston Football Club, Pro Corda<br>• Support future coastal defence work as mitigation<br>• Impacts on public footpaths (Sandlings Way, Fitches Lane, Suffolk Coastal Path, between Sizewell and Thorpeness, north of Friston Parish Church, High House Farm, circular walk around proposed site)<br>• Implications for Benhall and Saxmundham outlined in the SCDC local plan<br>• Compensation for adverse impacts<br>• Dropping house prices<br>• Loss of value to property and farming land<br>• Post-construction economic benefits to local communities<br>• Impacts on farming<br>• Only short term construction jobs created<br>• Impact of cable corridor on local businesses<br>• Impacts on local economy/small businesses from noise/reduced visitors to area | Impacts on tourism (and therefore the local economy) are assessed in ***section 30.6.1.3***<br>Economic impacts are assessed in ***section 30.6***<br>Traffic impacts are assessed in ***Chapter 26 Traffic and Transport***<br>Impacts on PRoW are considered in ***section 30.6.1.4.2.1***<br>Impacts due to chemical leakage are assessed in ***Chapter 18 Ground Conditions and Contamination***<br>Impacts related to flood risk are assessed in ***Chapter 20 Water Resources and Flood Risk*** |

| Topic | Response / where addressed in the PEI |
|---|---|
| • Flood risk and home insurance<br>• Safety and security at the substation<br>• Fire risk concerns in close proximity to village<br>• Chemical spill concerns | |
| **Phase 3.5** | |
| • Development should not deter people from visiting Aldborough and Thorpeness<br>• Tourism main source of income<br>• Traffic on Aldeburgh Road will affect tourism<br>• Impact on tourism in Aldeburgh<br>• Heavy reliance on tourism<br>• Impact on local economy<br>• Impact on local services such as medical, fire, police and lifeboat<br>• Impacts on businesses around the landfall | Impacts on tourism (and therefore the local economy) are assessed in ***section 30.6.1.3***<br>Economic impacts are assessed in ***section 30.6*** |

11. With regards tourism, recreation and socio-economic effects, individual queries included the effect on Public Rights of Way (PRoWs) and how the presence of new infrastructure may affect the amenity value of the area surrounding the onshore substations. People were also interested to understand how the project may affect their businesses (either positively or negatively) and if it would have a detrimental effect on the tourism industry. These aspects have been included in the assessment in ***section 30.6*** and ***section 30.7***.

## 30.3 Scope

### 30.3.1 Study Area

12. The assessment uses two study areas as agreed with stakeholders at the ETG and in the method statement. These reflect the pathway of effect as follows.

#### 30.3.1.1 Economic Study Area

13. The economic study area falls within the geography covered by the New Anglia Local Enterprise Partnership (NALEP)[1] with particular focus on the local authorities of Suffolk County, Suffolk Coastal, Waveney, Ipswich and Great Yarmouth.

14. This was defined by the 60-minute travel to work radius for residential workers identified in ***Chapter 26 Traffic and Transport*** which shows that the most likely

[1] The New Anglia LEP includes the counties of Norfolk and Suffolk

origin of residential workers is Ipswich, Lowestoft and Great Yarmouth, travelling to work along the A12. However, the supply chain that supports the construction and operation would include the entire NALEP area due to the wider development of the offshore wind industry in the region.

15. At this stage, it is not possible to identify the exact location of the entire supply chain for the offshore windfarm at a national level because the supply contracts have not been agreed. Therefore, a probabilistic assessment of supply from the NALEP area is included.

#### 30.3.1.2 Tourism and Recreation Study Area

16. During construction, the potential for visitors to tourism and recreational assets to be affected would be limited to the following buffer zone around the proposed onshore development area:

- Direct impact – within the proposed onshore development area;
- Indirect impacts:
  - Noise – generally within 1km of the proposed onshore development area and as defined in ***Chapter 25 Noise and Vibration***;
  - Visual – as defined in ***Chapter 29 Landscape and Visual Impact***;
  - Dust – generally within 200m of the proposed onshore development area and as defined in ***Chapter 19 Air Quality***;
  - Traffic obstruction – visual assessment of routes and alternatives between settlements either side of the proposed onshore development area as defined in ***Chapter 26 Traffic and Transport***; and
  - Water sports obstruction – considered with regards to study areas / receptors covered in ***Chapter 8 Water and Sediment Quality*** (coastal water quality) and the impacts to recreational navigation in ***Chapter 14 Shipping and Navigation***.

17. It should be noted that the majority of tourism and recreation receptors are located beyond this buffer zone. Within the buffer zone there is a low density of receptors that could potentially be effected.

18. There is potential for the tourism economy to be affected by non-residential workers. The study area is defined by the 45-minute travel to work radius for non-residential workers staying in temporary accommodation. This is identified in ***Chapter 26 Traffic and Transport***.

19. During the offshore windfarm's operation, the potential effect is driven mainly by the visual change to the seascape. The study area is defined by the visual impacts defined in ***Chapter 28 Seascape, Landscape and Visual Amenity***.

### 30.3.2 Worst Case Scenarios

20. This section identifies realistic worst case parameters associated with the proposed East Anglia ONE North project alone. This includes all onshore infrastructure for the proposed East Anglia ONE North project and the National Grid infrastructure required for connection to the National Grid.

21. ***Chapter 6 Project Description*** details the project parameters using the Rochdale Envelope approach for the PEIR.

22. ***Table 30.3*** identifies those realistic worst case parameters of the infrastructure that are relevant to construction, operation and decommissioning phases of the proposed East Anglia ONE North project. Please refer to ***Chapter 6 Project Description*** for more detail regarding specific actvities, and their durations, which fall within the construction phase.

**Table 30.3 Realistic Worst Case Scenarios**

| Impact | Parameter | Notes |
|---|---|---|
| **Construction** | | |
| Onshore | Size of employment opportunity.<br>Residual magnitude of determinants.<br>Duration of construction phase.<br>Travel to work times | It is assumed that the onshore construction would take three years, with two years of intensive construction and one year of commissioning[2]. Employment on site over this period would equate to 590 Full Time Equivalent Years (FTE years).<br>Indirect and induced employment multipliers have been calculated based on the supply chain assessment for East Anglia ONE. These are 1.31 for indirect and 1.21 for induced at a regional scale. If the labour market is considered to be more local the multipliers are reduced by 0.05 to reflect the smaller scale.<br>Residual magnitudes for the determinants listed in ***section 30.6*** are based on relevant chapters and it is assumed that all relevant mitigation measures would be implemented.<br>It is assumed that residential workers would travel up to 60 minutes to work whereas non-residential workers would prefer to stay in accommodation 45 minutes from work. This means that direct employment for residential workers would extend along the A12 to Great Yarmouth and Ipswich. However, it is assumed that much of the indirect and induced employment could be supplied from the NALEP region. |
| Offshore | Size of employment opportunity. | Offshore employment and the supply chain to support the proposed East Anglia ONE North project has been estimated using a supply chain assessment for East Anglia ONE. This assumes that direct employment would generate between 500 Full Time Equivalent Jobs (FTE) and 1,500 FTE in the UK. |

[2] This assumed construction start date has been used for the assessment presented in this PEIR. Any refinement of the programme prior to submission of the DCO will be captured in the Environmental Statement.

| Impact | Parameter | Notes |
|---|---|---|
| | Duration of construction phase. | To reduce this to a regional estimate a probabilistic approach has been taken based on current availability of relevant businesses in NALEP.<br><br>It is assumed that the proposed East Anglia ONE North project would operate for at least 25 years (25 years is therefore taken as the worst case as any greater period would increase positive effects) |
| **Operation** | | |
| Onshore | Size of employment opportunity.<br><br>Duration of operation phase | Offshore employment and the supply chain to support the proposed East Anglia ONE North project has been estimated using a supply chain assessment for East Anglia ONE. This assumes that direct employment would generate between 100 FTE and 300 FTE in the UK. It is assumed that the majority of this would be procured from the NALEP region.<br><br>It is assumed that the proposed East Anglia ONE North project would operate for at least 25 years (25 years is therefore taken as the worst case as any greater period would increase positive effects). |
| Offshore | Location of offshore wind farm. | It is assumed that the offshore wind turbines would be approximately 32km from the shore and therefore visible from multiple locations.<br><br>It is also assumed that variety of national studies used ensures that the data is representative of visitors to the East Anglia coast. |
| **Decommissioning** | | |
| No decision has been made regarding the final decommissioning policy for the onshore infrastructure as it is recognised that industry best practice, rules and legislation change over time. However, the onshore substation will likely be removed and be reused or recycled. It is expected that the onshore cables will be removed and recycled, with the transition bays and cable ducts (where used) left *in situ*. The detail and scope of the decommissioning works will be determined by the relevant legislation and guidance at the time of decommissioning and agreed with the regulator. A decommissioning plan will be provided. As such, for the purposes of a worst case scenario, impacts no greater than those identified for the construction phase are expected for the decommissioning phase. | | |

### 30.3.3 Enhancements and Mitigations

23. Potential socio-economic impacts can be both positive and negative therefore both mitigation and enhancement measures need to be considered where appropriate. This section summarises these project commitments with regards the potential impacts outlined in ***Table 30.46***.

#### 30.3.3.1 Skills and Training Enhancement

24. The Applicant is in the process of developing several windfarms off the coast of Suffolk. A Skills Strategy was formally agreed with SCC as a planning condition for East Anglia ONE.

25. The parties have agreed that the previously agreed planning condition and East Anglia ONE Skills Strategy could be more effectively delivered in a more collaborative and less transactional way. This would allow both parties to promote Science, Technology, Engineering, and Math (STEM) and career opportunities in the offshore wind sector.

26. The partnership agreement has been formalised in a non-legally binding MoU between SCC and the applicant. The MoU states that both parties will work together to achieve the following aims:

- Promote **employment and re-skilling** opportunities in the communities most closely associated with the projects and support people into long term, sustainable employment;
- Focus on **informing and inspiring teachers**, **students** and those that support the education infrastructure at all levels of participation to encourage people into careers in the energy sector and related industries;
- Make best use of existing local and national education and skills infrastructures and add value to these where appropriate;
- Utilise the applicant's existing **parent company skills** programmes where and when possible and appropriate; and
- Work in **collaboration with the associated supply chain and contracted partners** to maximise the benefit of education, skills and employment interventions to the majority of the workforce.

27. The MoU does not require the applicant to continue implementing the original East Anglia ONE Skills Strategy meaning the applicant can define alternative approaches based on experience in the region to promote STEM and career opportunities in offshore wind.

28. ScottishPower Renewables is committed to continuing this work and has developed a five-year strategy that is regularly redeveloped to enable sustainable employment. The Skills Strategy has been split into two focus areas:

- Industry and Career Activities - identified as routes to support a potential future workforce with experience and knowledge about the industry and opportunities to pursue careers; and
- STEM Activities.

#### 30.3.3.2 Embedded Mitigation

29. The proposed East Anglia ONE North project has committed to a number of techniques and engineering designs/modifications inherent as part of the proposed

East Anglia ONE North project, during the pre-application phase, in order to avoid a number of impacts or reduce impacts as far as possible. Embedding mitigation into the proposed East Anglia ONE North project design is a type of primary mitigation and is an inherent aspect of the EIA process. Aspects of this relevant to tourism and recreation effects are discussed in ***Table 30.4***.

30. A range of different information sources has been considered as part of embedding mitigation into the design of the proposed East Anglia ONE North project. These include engineering requirements, feedback from the community and landowners, ongoing discussions with stakeholders and regulators, commercial considerations and environmental best practice. For further details see ***Chapter 6 Project Description*** and ***Chapter 4 Site Selection and Assessment of Alternatives***

**Table 30.4 Embedded Mitigation**

| Parameter | Mitigation measures embedded into the project design |
|---|---|
| **General** | |
| Site Selection | The proposed East Anglia ONE North project has undergone an extensive site selection process which has involved incorporating environmental considerations in collaboration with the engineering design requirements.<br>Key design principles relevant to this chapter include:<br>• Avoiding proximity to residential dwellings;<br>• Avoiding proximity to historic buildings;<br>• Avoiding designated sites; and<br>• Minimising impacts to local residents in relation to access to services and road usage, including footpath closures; |
| Construction | Use of relevant best practice and techniques (including pollution prevention) to avoid or reduce impacts which will affect proposed onshore development area. See the following<br>• ***Chapter 8 Water and Sediment Quality;***<br>• ***Chapter 14 Shipping and Navigation;***<br>• ***Chapter 19 Air Quality;***<br>• ***Chapter 24 Archaeology and Cultural Heritage;***<br>• ***Chapter 26 Traffic and Transport;***<br>• ***Chapter 25 Noise and Vibration;***<br>• ***Chapter 28 - Offshore Seascape, Landscape and Visual Amenity;*** and<br>• ***Chapter 29 Landscape and Visual Impact Assessment.*** |
| **Onshore Substation and National Grid Substation (operational phase)** | |

| Parameter | Mitigation measures embedded into the project design |
|---|---|
| Landscape Mitigation | Landscape mitigation (e.g. bunding and screening from trees) will reduce the significance of landscape effects through the operational phase (see ***Chapter 29 Landscape and Visual Impact Assessment***.) |

### 30.3.4 Monitoring

31. Post-consent, the final detailed design of the proposed East Anglia ONE North project and the development of the relevant management plan(s) will refine the worst case parameters assessed in the EIA. It is recognised that monitoring is an important element in the management and verification of the impacts of the proposed East Anglia ONE North project. Outline management plans, across a number of environmental topics, will be submitted with the DCO application. These outline management plans will contain key principles that provide the framework for any monitoring that could be required. The requirement for and final appropriate design and scope of monitoring will be agreed with the relevant stakeholders and included within the relevant management plan(s), submitted for approval, prior to construction works commencing.

## 30.4 Assessment Methodology

32. There is no statutory guidance to direct the assessment of socio-economic, tourism, and recreation impacts on local communities affected by a Nationally Significant Infrastructure Projects (NSIP). As such a methodology has been developed by combining best practice from community development and human health assessment. This methodology is consistent with good practice to assess tourism, recreation and socio-economic effects of infrastructure projects used on large infrastructure projects.

### 30.4.1 Guidance

33. There are a number of pieces of legislation, policy and guidance applicable to tourism, recreation and socio-economics.  The following sections provide detail on key pieces of international and UK legislation, policy and guidance which are relevant.

34. Further detail is provided in ***Chapter 3 Policy and Legislative Context***.

35. Effects to tourism and recreational assets are estimated with reference to the following chapters:

- ***Chapter 8 Water and Sediment Quality;***
- ***Chapter 14 Shipping and Navigation;***
- ***Chapter 19 Air Quality;***

- ***Chapter 24 Archaeology and Cultural Heritage;***
- ***Chapter 26 Traffic and Transport;***
- ***Chapter 25 Noise and Vibration;***
- ***Chapter 28 Seascape, Landscape and Visual Amenity;*** and
- ***Chapter 29 Landscape and Visual Impact Assessment.***

#### 30.4.1.1 National Legislation and Policy

36. The Overarching National Policy Statement (NPS) for Energy (EN-1) states that where a project is likely to have an impact on socio-economics at a local or national scale the assessment should consider all relevant impacts. ***Table 30.5*** describes the requirements of the EN-1, Regulation 5(2) and Schedule 4 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017.

37. Although EN-1 is the most relevant planning policy in this context it does not provide specific guidance on what should be considered under a socio-economic assessment. Therefore, the National Planning Policy Framework (NPPF) has also been reviewed for further guidance.

**Table 30.5 Requirements of Policy in Relation to Socio-Economic (including tourism and recreation) and Population Impacts**

| Paragraph | Description | Reference |
|---|---|---|
| **National Policy Statements (NPS) for Energy (DECC 2011)** | | |
| 5.5.7 | The Environmental Statement (ES) should include an assessment of the effects on the coast. In particular, applicants should assess the effects of the proposed project on maintaining coastal recreation sites and features. | This is included in ***section 30.6.2.2***. |
| 5.10.6 | Applicants will need to consult the local community on their proposals to build on open space, sports or recreational buildings and land. Taking account of the consultations, applicants should consider providing new or additional open space including green infrastructure, sport or recreation facilities, to substitute for any losses as a result of their proposal.<br><br>Applicants should use any up-to-date local authority assessment or, if there is none, provide an independent assessment to show whether the existing open space, sports and recreational buildings and land is surplus to requirements. | Consultation is shown in ***section 30.2*** and described in ***Chapter 5 EIA Methodology***. |
| 5.12.1 | The construction, operation and decommissioning of energy infrastructure | Parts 2 and 3 of NPS EN-1 set out the national level socio-economic impacts |

| Paragraph | Description | Reference |
|---|---|---|
| | may have socio-economic impacts at local and regional levels. Parts 2 and 3 of this NPS set out some of the national level socio-economic impacts. | therefore these will not be considered further within this assessment. However, a brief assessment of employment compares to the national labour market is included in ***section 30.6.1.2*** and ***30.6.2.1***. |
| 5.12.2 | Where the proposed East Anglia ONE North project is likely to have socio-economic impacts at local or regional levels, the applicant should undertake and include in their application an assessment of these impacts as part of the ES | In combination with ***Chapter 27 Human Health*** and, this chapter responds to this overarching statement. The assessment is found in ***section 30.6***. |
| 5.12.3 | This assessment should consider all relevant socio-economic impacts, which may include: | Potential employment is considered in ***sections 30.6.1.2, 30.6.1.3*** and ***30.6.2.1.*** |
| | 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; | Additional local services are not within the scope of the proposed project. However, part of the scope of the MoU previously agreed between the applicant and SCC includes the provision of career guidance and examples in local educational facilities. |
| | effects on tourism; | Potential impacts are considered in ***sections 30.6.1.3, 0*** and ***30.6.2.2.*** |
| | the impact of a changing influx of workers during the different construction, operation and decommissioning phases of the energy infrastructure | As discussed in ***Chapter 27 Human Health*** potential impacts have been scoped out due to the low number of non-residential workers in comparison to the regional population, that incoming workers are expected to be distributed across the region, and are expected to return to their permanent residence over the weekend. |
| | cumulative effects | Cumulative impacts, inter-relationships, and interactions are considered in ***sections 267*** and ***30.7.2.1***. |
| 5.12.4 | Applicants should describe the existing socio-economic conditions in the areas surrounding the proposed development and should also refer to how the development's socio-economic impacts correlate with local planning policies | The existing socio-economic conditions are described in ***section 30.5***. Potential impacts are discussed in ***section 30.6***. |
| **The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017** | | |
| 5(2)(a) | The EIA must identify, describe and assess in an appropriate manner, in light | In combination with ***Chapter 27 Human Health***, this chapter responds to this |

| Paragraph | Description | Reference |
|---|---|---|
| | of each individual case, the direct and indirect significant effects of the proposed development on the following factors— (a) population and human health. | overarching statement. The assessment is found in ***section 30.6***. |
| Schedule 4.4 | A description of the factors specified in regulation 5(2) likely to be significantly affected by the development: population, human health…. | In combination with ***Chapter 27 Human Health***, this chapter responds to this overarching statement. The assessment is found in ***section 30.6***. |
| **National Planning Policy Framework, July 2018** | | |
| **Section 6 Building a strong, competitive economy** | | |
| 80 | Planning policies and decisions should help create the conditions in which businesses can invest, expand and adapt. Significant weight should be placed on the need to support economic growth and productivity, taking into account both local business needs and wider opportunities for development. | This chapter of the PEIR specifically focusses on understanding the employment opportunity created by the proposed East Anglia ONE North project, whether the local labour market would be able to supply this, and if work is ongoing to develop the labour market to enable the supply. This is covered in ***section 30.6***. |
| 83 | Supporting a prosperous rural economy: Planning policies and decisions should enable the sustainable growth and expansion of all types of business in rural areas, sustainable rural tourism and leisure developments; and the retention and development of accessible local services and community facilities. | This chapter assesses the impact of the proposed East Anglia ONE North project on supply chain businesses and tourism businesses (***section 30.6***).<br><br>Community assessment is included in ***Chapter 27 Human Health***. |
| **Section 8 Promoting healthy and safe communities** | | |
| 92 | To provide the social, recreational and cultural facilities and services the community needs, planning policies and decisions should guard against the unnecessary loss of valued facilities and services, particularly where this would reduce the community's ability to meet its day-to-day needs. | Potential tourism and recreation impacts are considered in ***section 30.6***<br><br>Community assessment is included in ***Chapter 27 Human Health***. |
| 98 | Planning decisions should protect and enhance public rights of way. | Potential PRoW impacts are considered in ***section 30.6*** |

#### 30.4.1.2 Regional Legislation and Policy

38. ***Table 30.6*** provides detail on regional legislation and policy.

**Table 30.6 Summary of Relevant Regional Legislation and Policy Relating to Socio-Economics and/or Tourism**

| Policy/Section/Priority | Policy/ Guidance Purpose | Reference |
|---|---|---|
| **NALEP Norfolk and Suffolk Economic Strategy** | | |
| Foreword | Building on success of the original 2014 Strategic Economic Plan which delivered more jobs, new businesses and housing. £350 million of government funding has been secured and will be invested in the region by 2021 in a wide range of projects to<br>• Improve skills;<br>• Drive innovation;<br>• Support growing businesses; and<br>• Improve transport and other infrastructure. | The proposed East Anglia ONE North project represents an important contributor to the High Impact sector of clean energy and will act as a collaborator to drive future success. |
| Norfolk and Suffolk 2017 – People and Skills | Skill levels and wages are lower than the national average with more jobs in lower paying industries. Focus on continuing to enable local people to access the skills they need to benefit from and drive future growth sectors such as clean energy, digital, life sciences and higher end business services. These will be central to continuing to increase wage levels and living standards | The proposed East Anglia ONE North project represents clean energy as a growth sector. |
| Our Sectors | Identifies nine key sectors where Norfolk and Suffolk have competitive advantages:<br>• Energy;<br>• Life Sciences and Biotech;<br>• ICT, Tech and Digital Creative;<br>• Advanced Agriculture, Food and Drink;<br>• Visitor Economy – Tourism and Culture;<br>• Financial Services and Insurance;<br>• Transport, Freight and Logistics;<br>• Construction and Development; and<br>• Advanced Manufacturing and Engineering.<br>In terms of Energy: The East of England Energy Zone is unrivalled in the UK for its unique mix of wind power, gas and nuclear energy production. The Orbis Energy Centre of Excellence and the East of England Energy Group (EEEGR) bring together over 300 energy businesses. The coast around Great Yarmouth and Lowestoft is at the centre of the world's largest market for offshore wind with capital investment in clean energy worth £50 billion planned for the region by 2020. | SPR is a platinum sponsor of EEEGR and is therefore contributing to driving this sector and collaboration forward within the region. SPR has worked with EEEGR to deliver supply chain engagement events in East Anglia.<br>SPR are also members of the Suffolk Chamber of Commerce and of Norfolk Chamber of Commerce. |

| Policy/Section/Priority | Policy/ Guidance Purpose | Reference |
|---|---|---|
| Priority Themes and Places | Driving business growth and productivity by increasing and encouraging connectivity, including investments in physical and digital infrastructure. It also focusses on human aspects by driving inclusion and skills growth through outreach and education programmes in schools, back to work schemes for adults, and the Youth Pledge which offers personal support to young people aged 16-24 to get an apprenticeship, training or work experience or job within three months of leaving education or employment. There is also a wider commitment to investment in the wider community through infrastructure and wellbeing, health and care. | The development of the proposed East Anglia ONE North project is a part of the development of four offshore windfarms in the NALEP area that would lead to economic growth for the region. |
| **Suffolk County Council: Raising the Bar Strategy 2018-2020** | | |
| | Suffolk County Council aims to promote young people's progression to higher education, including Higher Apprenticeships and also to improve youth employment rates. This will improve the skills base in the region in line with the Economic Strategy, to support and drive business development and local employment opportunities. | The Applicant and SCC have agreed an MoU to promote career opportunities in the offshore wind sector, as described in ***section 30.3.3.1***. |
| **Transforming Suffolk: Suffolk's Community Strategy 2008-2028. Suffolk Strategic Partnership** | | |
| Priority 1 | Being the most innovative and diverse economy in the East of England. By 2028, the aim is to have:<br>• Used Suffolk's unique selling points to capture emerging markets;<br>• Reduced economic inequalities across the county; and<br>• Improved transport and the infrastructure to support sustainable economic growth. | Suffolk is well placed to benefit from the development of offshore wind which can contribute to the regeneration of coastal communities. |
| Priority 2 | Having learning and skills levels in the top quartile in the country. By 2028, the aim is to have:<br>A workforce with the skills to meet the needs of Suffolk's economy.<br>High aspirations, and opportunities to realise them through quality learning opportunities. | The Skills Strategy for East Anglia ONE project included an Assessment of the gaps between now and the future requirements to inform. This is reviewed and updated to inform Industry Career and STEM activities as described in ***section 30.3.3.1***. |
| **East Suffolk Economic Growth Plan, 2018-23** | | |

| Policy/Section/Priority | Policy/ Guidance Purpose | Reference |
|---|---|---|
| Priority 1 | This economic growth plan aims to build business confidence and the capacity for investment and growth. Supporting entrepreneurs and entrepreneurship in East Suffolk where the economy is currently dominated by micro and small enterprises. This includes providing small business owners/managers with the skills they need. | The development of the proposed East Anglia ONE North project is a part of the development of four offshore windfarms in NALEP area that would have an operational life of at least 25 years. This would provide confidence for business investment. |
| Priority 2 | Encouraging established businesses to invest and grow. | |
| Priority 3 | Attracting inward investment to East Suffolk, focussed around existing emerging sectors and supply chains. In particular paying attention to seven key sectors which include energy and the visitor economy and cultural sectors. Progress will be measured through the use of Key Performance Indicators. | As evidenced by the development of the Supply Chain Plan for East Anglia ONE. SPR is actively enabling inward investment to the Suffolk region. |
| **East Suffolk Tourism Strategy 2017-2022** | | |
| Making our Visitor Economy Work - priorities | Outlines key areas that need to be developed:<br>Develop and support key tourism assets including seaside resorts, beaches, family attractions, heritage, natural landscapes, market towns, and culture.<br>Improve the visitor experience by having a clear vision of the unique offer the key destinations need to make, focussing on active tourism and health and wellbeing.<br>Ensure that the foundations underpinning the tourism economy are in place for the long term, including the infrastructure to support it such as car parking, mobile/broadband coverage, public toilet facilities.<br>Excel at destination marketing by exploiting digital technologies and filming to attract and engage visitors before during and after their stay to boost the volume and value of tourism. | Potential impact to tourism assets is covered in ***section 30.6***. |
| **Suffolk Coast Tourism Strategy 2013-2023** | | |
| Paragraph 4.9 | Tourism needs to be developed in a manner that is sympathetic to the environmental character, and through measures that are able to bring mutual benefits to businesses, conservation organisations and communities. | Potential impact to tourism assets is covered in ***section 30.6***. |
| Objective 7 | Ensure that tourism activity and visitor behaviour is truly sustainable by seeking mutual benefits for all stakeholders involved in the | Potential impact to tourism assets is covered in ***section 30.6***. |

| Policy/Section/Priority | Policy/ Guidance Purpose | Reference |
|---|---|---|
| | visitor economy, environmental conservation and community welfare.<br>This will involve continuing to manage visitor interests, behaviours and impacts through the Area of Outstanding Natural Beauty (AONB) and beyond. | |

### 30.4.1.3 Local Planning Policy

39. The proposed onshore development area falls under the jurisdiction of SCC and under SCDC local planning authority (LPA). SCDC are in the process of merging with Waveney District Council (WDC) into an East Suffolk Council (ESC) to take effect from 1st April 2019. At the time of writing, a single officer group serves both councils, but the formal merger is marked by the election of a new, single council chamber. Therefore, to ensure a robust assessment, current local planning policy for both WDC and SCDC are considered, alongside local planning policy for the new ESC where it exists, as these will be used for their respective geographic regions until they are replaced. Local planning policy is likely to change due to this development, but it is not expected that any contradictions will arise.

40. SCDC is reviewing their current Local Plan, a First Draft Local Plan has been published for public consultation (period of consultation from 20th July to 14th September) (SCDC 2018b). This plan sets out strategic planning policies within the region covered by SCDC and how the local planning authorities address the NPPF on a local basis. As above, this is to be used by the combined ESC for the Suffolk Coastal area until it is replaced. ***Table 30.7*** details Objectives, Strategic Policies and Development Management Policies that are relevant to socio-economics and tourism.

**Table 30.7 Regional and Local Planning Policy Review**

| Policy/Section | Policy/ Guidance Purpose | Reference |
|---|---|---|
| **SCDC (2018) First draft Local Plan** | | |
| Policy SCLP4.1 – Employment Areas | Proposals involving the redevelopment or change of use of employment premises to other employment uses will be supported and encouraged. Aims to ensure that the economy is able to prosper with a combination of suitable sites for serviced employment land and infrastructure. | Potential for short and long-term employment is covered in ***section 30.6***. |
| Policy SCLP4.2 – New Employment Areas | The council will support the delivery of new employment areas to provide greater site choice and economic opportunities. | Potential for short and long-term employment is covered in ***section 30.6***. |

| Policy/Section | Policy/ Guidance Purpose | Reference |
|---|---|---|
| Policy SCLP4.3 – Expansion and Intensification of Employment Sites | Facilitating the expansion and intensification of existing economic activities through allowing businesses to expand or intensify existing employment areas | Potential for short and long-term employment is covered in ***section 30.6***. |
| Policy SCLP4.5 – Economic Development in Rural Areas | Proposals will be supported that grow and diversify the rural economy, particularly where this will secure employment locally. This is provided that the design and construction does not have an adverse impact on the character of the surrounding area and landscape and provides additional community, cultural or tourism benefits. | Potential for short and long-term employment is covered in ***section 30.6***. Particular attention is given to the opportunity for construction and accommodation employment in rural Suffolk. Other potential effects are considered in ***section 30.6***. |
| SCLP6.1 – Tourism | Seeks to manage tourism across the district in a way that protects the features that make it attractive to visitors, and supports local facilities where the local road network has the capacity to accommodate the traffic generated from proposals.<br><br>Seeks to improve the visitor experience by developing the tourist opportunities both in and out of season, as well as those less sensitive areas of the District where increased tourism uses can be accommodated. | Potential impact to tourism assets is covered in ***section 30.6***. |
| SCLP6.2 – Existing Tourist Accommodation | Existing tourist accommodation will be protected. | Potential impacts to tourism accommodation are covered in ***section 30.6***. |
| SCLP8.1 – Community Facilities and Assets | It is considered important to retain community facilities across the District to both serve the local community and support tourism activities in the area. The Local Plan also provides protection to community facilities. | Community impacts are covered in ***Chapter 27 Human Health***. |
| **WDC - Renewable Energy and Sustainable Construction – Supplementary Planning Document (September 2013)** | | |
| Policy DM03 – Low Carbon and Renewable Energy | Renewable energy schemes will be permitted provided that there are no significant adverse or cumulative effects upon the landscape or historical features. Nearby residents must not be adversely affected by noise, dust, odour or increases in traffic. And wider environmental, economic and social and community benefits must outweigh any potentially adverse effects. | Potential impact to tourism assets is covered in ***section 30.6***. This draws upon assessment of visual impact in ***Chapter 28 Seascape, Landscape and Visual Amenity*** and ***Chapter 29 Landscape and Visual Impact***. |

### 30.4.1.4 Assessment Guidance

#### 30.4.1.4.1 Sustainable Livelihoods Approach

41. The socio-economic assessment takes the Sustainable Livelihoods Approach to develop a baseline for the existing environment. This is internationally recognised as a key concept for social impact assessment by the IAIA (Vanclay 2015). The concept was further developed in relation to the context of the UK by the Social Impact Taskforce of the Government Economic Services (Harper and Price 2011).

42. The International Principles for Social Impact Assessment considers that "social impacts include all the issues associated with a planned intervention (i.e. a project) that affect or concern people, whether directly or indirectly" (Vanclay 2012). Furthermore, "because 'social impact' is conceived as being anything linked to a project that affects or concerns any impacted stakeholder group, almost anything can potentially be a social impact so long as it is valued by or important to a specific group of people."

43. This would lead to a risk that the assessment of socio-economic impacts would be expansive and disproportionate to the risks identified at scoping. Therefore, Glasson (in Chapter 13, Therivel and Wood 2017) categorises impacts but gives no framework to compare the interrelated effects against one another. Therefore this methodology would need to be adapted to relate to current regulations.

44. The other population impact assessed under the EIA 2017 Regulations is human health. Emergent best practice is provided by the Institution of Environmental Management and Assessment (IEMA), 'Health in Environmental Impact Assessment: A Primer for a Proportionate Approach' (Cave et al. 2017). This states that in determining 'physical, mental and social wellbeing', contributory factors, known as 'determinants', are considered. Determinants are a reflection of a mix of influences from an individual's society and environment (***Plate 30.2***).

45. Similarly, modern economists such as Algan et al. (2017) and Raworth (2017) describe the economy as embedded within the wider environment and founded on a set of social foundations (***Plate 30.1***). This conceptual approach mirrors that proposed in the IEMA guidelines (Cave et al. 2017). Therefore, it will support in understanding the interrelationships between effects as stipulated under the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017.

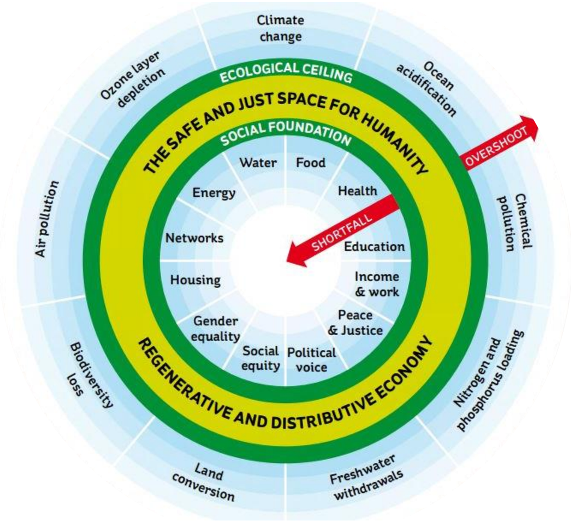


**Plate 30.1Social Foundations of the Doughnut Economy model** (Raworth 2017)

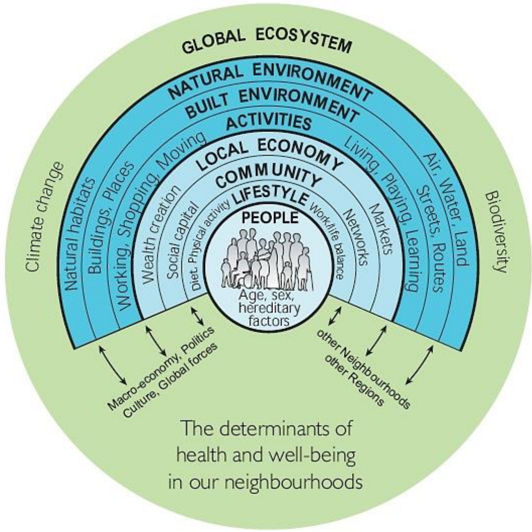


**Plate 30.2 Wider Determinants of Health.** Based on the Whitehead and Dahlgren (Dahlgren and Whitehead 1991) diagram as amended by Barton

46. Following the Sustainable Livelihood Approach, the social foundations outlined by Raworth and the impact areas described by Glasson can be grouped in to different stocks of Community Capital to form a baseline as described in ***Table 30.8***. This approach is consistent with that advised by the Social Impact Taskforce (Harper and Price 2011).

**Table 30.8 Community Capital Stocks**

| Stock | Description | Measured by |
|---|---|---|
| Human | The human resources available in population. | Skills, education, population size, spread of age, health, deprivation |
| Produced | Financial productivity of the population. | (Un)Employment, Gross Value Added (GVA), average wage, etc |
| Social | The strength of social support, feeling of satisfaction, and connection within the population | Well Being Statistic from the ONS, and Indices of Multiple Deprivation. |
| Physical | The physical assets available to the population like roads, hospitals, schools, etc | Location and density of roads, schools, GP surgeries, and communities. |
| Natural | The natural assets available to the population | Location of national parks, protected areas, recreational assets, PRoW. |

47. ***Plate 30.3*** sets out the conceptual framework developed by the Social Impact Taskforce (Harper and Price 2011) as the basis for understanding the relationships between the different components of capital, the production or flows of goods and

services using the stock of capital; the consumption or experience of those goods and services by society, and their combined impact on wellbeing. Both production and consumption of goods and services have social impacts.

48. For example, construction increases employment demand by creating jobs in an area. Productive and human capital is required for the local or regional population to benefit from this demand. If these are lower than required, the construction project could invest in development through training or supply chain engagement. However, by creating jobs through construction, environmental impacts have the potential to degrade natural capital. This may reduce the surrounding area's ability to produce tourism services and, therefore, its productive capital may be reduced.

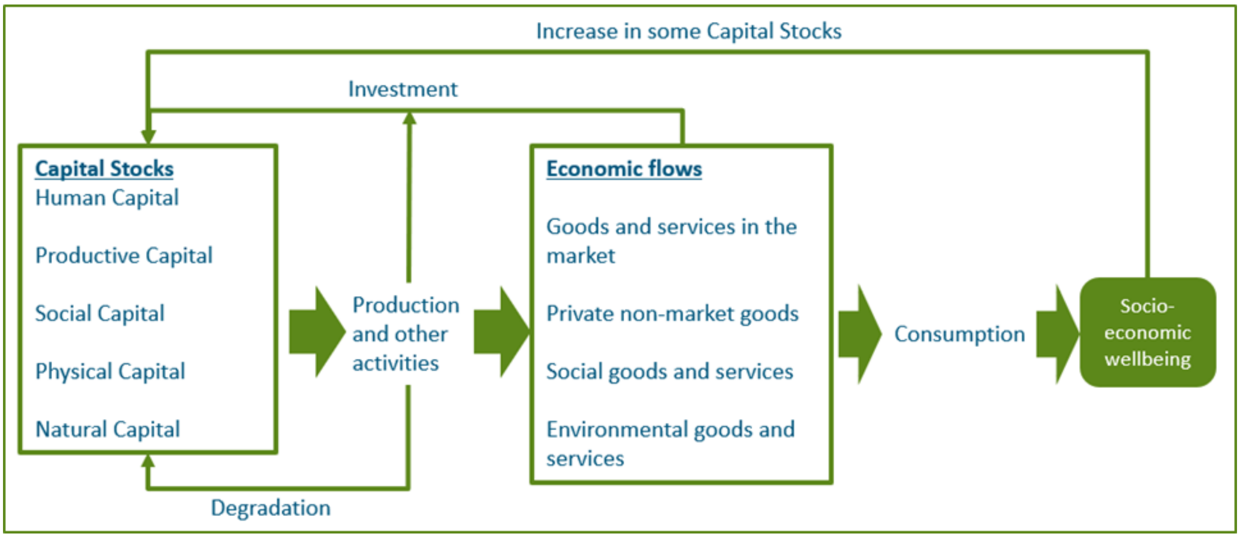


**Plate 30.3 Stocks and Flows of Community Capital, adapted from Harper and Price 2011**

### 30.4.1.4.2 Guidance on Employment

49. The employment assessment is consistent with the HM Treasury Green Book (HM Treasury 2018). This is guidance issued on how to appraise policies, programmes and projects. It also provides guidance on the design and use of monitoring and evaluation before, during and after implementation.

50. In line with Chapter 6: Valuation of Costs and Benefits, both market and non-market goods and services are considered in the assessment as well as concepts of subjective wellbeing. However, financial value is not given to non-market goods or subjective wellbeing. Instead it is assumed that a disturbance to non-market goods would create a negative economic impact and a precautionary approach is considered.

51. This is supported by the Homes and Communities Agency Additionality Guide (2014). Additionality is the extent to which something happens as a result of an intervention that would not have occurred in the absence of the intervention.

52. In addition, the ONS series 'Measuring the Economic Impact of an Intervention or Investment (IOI)' (ONS 2011a) provides "independent advice to regional users on the use of ONS and Government Statistical Service (GSS) statistics, including on technical issues, such as the use of statistics in monitoring performance against targets".

53. Section 5.1 of Paper One of this series considers the issues with using GVA to evaluate the economic impact of an investment at a company scale, it states that: "GVA estimates from official sources are volatile at low geographical levels. Any approach to estimating GVA (whether or not using official data) should produce consistently robust estimates at the scale of the IOI. If this issue is ignored any such approach will be unreliable when assessing an IOI." (ONS 2011a)

54. Section 3.10 of Paper Two of this series states that, "The complex calculations and imputations used to produce GDP and regional GVA estimates cannot be applied at the firm level to produce IOI Value Added." (ONS 2011a)

55. Section 8.4 of Paper Two states that, "An alternate, holistic approach to the calculation of GVA estimates could be the use of a scorecard, composite or basket indicator approach combining factors known to affect GVA." (ONS 2011a)

#### 30.4.1.4.3Guidance on Tourism

56. ONS (2011b) also published guidance notes explaining the framework within which data on tourism activity at local authority or destination level is measured and collected. These guidance notes were produced by the Tourism Intelligence Unit at ONS with the aim of providing a consistent framework within which to measure and collect data on various facets of tourism activity.

57. This defines tourism as *"a movement of people to places outside their usual place of residence, pleasure being the usual motivation."* The tourism industry has two sides; a demand driven by visitors to an area and a supply side of businesses serving these visitors.

58. The guidance uses the definition for a visitor from International Recommendations on Tourism Statistics (IRTS United Nations World Tourism Organisation (UNWTO) 2008) "*A Visitor is a traveler taking a trip to a main destination outside his/her usual environment, for less than a year, for any main purpose (business, leisure or other personal purpose) other than to be employed by a resident entity in the country or place visited*." As well as the definition of Usual Environment (IRTS 2008) as "*the geographical area within which an individual conducts his/her regular life routines*."

59. The ONS defines the supply side as *"the provision to visitors of the goods and services that make up tourism expenditure."* The supply side is made up of many types of businesses such as accommodation, food and beverage, passenger

transportation, travel agencies, and various forms of cultural, sporting, or recreational activities. It is recommended that accommodation and the employment of people within this sector are appropriate indicators of the tourism industry. This is because all other sectors are also used by local residents whereas only visitors need accommodation services.

60. The National Academy of Coastal Tourism has produced several guidance documents in understanding the tourism industry. In particular the Customer Journey: An analysis of decision making at a coastal resort (MRG 2014) is used to understand how recreational visitors would choose which area to visit and whether disturbance would have a negative effect to this.

##### 30.4.1.4.4 Assessment Guidance Summary

61. Following guidance developed by various departments of the UK Government an approach considering a basket of goods or services will be used to assess the socio-economic impacts on employment and tourism. First a baseline will be developed by considering the five capitals that sustainable communities require (these are described in ***Plate 30.3*** and ***section 30.5***). Then assessments will be developed based on best practice guidance from across social and population impact assessment in combination with economic guidance from HM Treasury, Homes and Communities Agency, and ONS.

### 30.4.2 Definitions

62. Based on ***section 30.4.1*** the following socio-economic aspects and relationships have been defined to inform the assessment.

#### 30.4.2.1 The Economy

63. The capitalist economy of the United Kingdom (UK) is made up of firms employing people to produce goods and services (Algan et al. 2017). All economies (regardless of type) are reliant upon the ecological capacity of the environment they are in and the social foundations that enable people to be productive (Raworth 2017, see ***Plate 30.1*** and Algan et al. 2017). Therefore, this assessment will study how people interact with each other and with their natural surroundings in producing their livelihoods, and how this changes over time (Algan et al. 2017).

64. As the UK has a capitalist economic system, the assessment will focus on supply and demand of goods or services. This includes the demand for labour and the demand for tourism services. The connectivity of this supply and demand with other environmental aspects is also covered. The productivity of labour is considered outside of the scope of an assessment because aspects required to understand contribution to GVA (ONS 2011a, and Roberts and Westbrook 2017) are not well known at a pre-consent stage. But aspects of productivity such as the potential for training and comparative wages are covered where possible. All other

chapters focus on the potential environmental impact that a project within the economy may create.

### 30.4.2.2 The Tourism Economy

65. The tourism economy generates income from the activities of visitors (ONS 2011b) – many of these are recreational visitors. It is an important part of the wider economy and a good indicator of quality of life because if more people are able to take time off and spend money on recreational activities it shows they must have a reasonable amount of disposable income to do so. However, jobs in the tourism industry are often lower skilled and lower paid than jobs in more technical industries. Therefore, its value should be considered in context of the wider economy.

66. Visitors create a demand for tourism services. This assessment uses the ONS (2011b) definition taken from the IRTS (2008) definition of visitors. *“A Visitor is a traveller taking a trip to a main destination outside his/her usual environment, for less than a year, for any main purpose (business, leisure or other personal purpose) other than to be employed by a resident entity in the country or place visited.”* (IRTS 2008)

67. The supply side is defined by the ONS (2011b) as *“the provision to visitors of the goods and services that make up tourism expenditure.”* This is provided by a variety of business and services such as accommodation, food and beverage, passenger transport, travel agencies, cultural activities, sports & recreation, and regionally specific goods or services.

68. This assessment mainly focusses on the accommodation industry as the main indicator of the supply side of the tourism economy because statistics relating to this are more accurate. The assessment considers the demand side by considering the effect to recreational visitors by disturbance due to physical activities.

### 30.4.2.3 Averages and Scenarios

69. The economy is made of millions of individual people, all are unique and none are average. When considering large datasets, such as those provided by ONS (see ***Table 30.9***), many of the differences do even out and an average can be taken. It cannot be assumed that this average reflects every person. To explore this, the assessment presents a range of averages from high to low so as to show if the relationship is sensitive to this change. Where possible these averages are based on evidence (such as the assessment of East Anglia ONE’s supply chain in ***section 30.6.1.2***) and if this is not available it is taken around an average agreed as part of the wider assessment (such as the non-residential employment used in ***section 30.6.1.3***). To undertake the impact assessment the mean value is used

unless there is evidence to use a higher or lower figure. This provides a conservative but not pessimistic assessment.

#### 30.4.2.4 Direct, Indirect, and Induced Employment Multipliers

70. Direct employment is the number of people employed by the project. The construction of a project requires other companies to provide goods and services. This is indirect employment. It is additional employment as a result of the demand created by the project. The people directly and indirectly employed by the project will spend money where they work and where they live. This expenditure induces additional demand which is provided by additional employment in the economy as a result of the project. It is important to explain if the indirect and induced employment will be within the local or regional area around the project or outside of this.

71. Multipliers are used to calculate these quantities which are often based on national averages produced by the ONS. As explained above, averages do not reflect every person or every project. So sometimes these are modified based on additional evidence that is more relevant to the sector being considered (such as the assessment of East Anglia ONE's supply chain in ***section 30.6.1.2***).

72. For example: an indirect employment multiplier of 1.9 shows that for every one job created by the project, 0.9 indirect jobs are created. An induced employment multiplier of 1.2 shows that for every one job directly and indirectly created by the project, 0.2 additional jobs are created.

#### 30.4.2.5 Full Time Equivalent Jobs and Years

73. All projects and companies have full time and part time employees (either permanently or by contract). But to compare employment demand that is created to the labour market that is available there is a need to convert everything to equivalent full time employees. In this assessment one year is used to show this.

74. For example, if 10 people work constantly for one year that equates to 10 FTE jobs. If 20 people each work for six months across one year (regardless of how this six months is achieved) this equates to 10 FTE (20 people x 0.5 years worked in one year).

75. A project lasts for more than one year. If the FTE is known for each year (or an average can be calculated) then this can be summed for every year of the project (or the average multiplied by the number of years of duration). This provides the FTE Years which allows two projects to be compared.

76. A project lasting three years and employing 200 FTE per year creates 600 FTE Years. Whereas a project lasting 30 years and employing 20 FTE per year also

creates 600 FTE Years. However, due to the longer duration the long-term benefit of the second project may be greater than the short-term benefit of the first one.

### 30.4.3 Data Sources

77. The sources of data that have been used are outlined with a confidence level in ***Table 30.9***. High confidence is associated with recent and localised datasets, lower confidence is associated with more broad scale or older datasets or those which include predictions / extrapolations. Note that these sources will be reviewed prior to production of the final ES and data updated if required.

**Table 30.9 Data Sources Features**

| Data | Year | Coverage | Confidence | Notes |
|---|---|---|---|---|
| Indices of Multiple deprivation (IMD) | 2013 | Local Authority and County level | High | https://www.gov.uk/government/statistics/english-indices-of-deprivation-2015 |
| Population estimates | 1981 – 2017 | Local Authority, County and LEP level | High | NOMIS website https://www.nomisweb.co.uk/query/construct/summary.asp?mode=construct&version=0&dataset=31 |
| Employment statistics | 2017 | Local Authority and County level | High | NOMIS website<br>https://www.nomisweb.co.uk/query/construct/summary.asp?mode=construct&version=0&dataset=17 |
| Earnings and gender equality | 2017 | Local Authority, County and National level | Medium | NOMIS website https://www.nomisweb.co.uk/query/select/getdatasetbytheme.asp?collapse=yes |
| UK Business: Activity | 2016 | Local Authority Level | High | ONS<br>https://www.ons.gov.uk/businessindustryandtrade/business/activitysizeandlocation/datasets/ukbusinessactivitysizeandlocation |
| Method of Travel to Work | 2016 | Local Authority and County Level | High | ONS, Labour Force Survey<br>https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/labourproductivity/adhocs/008005traveltoworkmethodsandthetimeittakestocommutefromhometoworklabourforcesurvey2007to2016 |
| Distance Travelled to Work | 2011 | Local Authority Level | Low | National Archives, ONS 2011 Census: |

| Data | Year | Coverage | Confidence | Notes |
|---|---|---|---|---|
| | | | | http://webarchive.nationalarchives.gov.uk/20160107181444/http://www.ons.gov.uk/ons/publications/re-reference-tables.html?edition=tcm%3A77-353514 |
| Future Population Predictions | 2018 | County Level | Medium | ONS: https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/datasets/localauthoritiesinenglandtable2 |
| GVA | 1997 – 2016 | National and County Level | High | ONS:<br>https://www.ons.gov.uk/economy/grossvalueaddedgva/datasets/regionalgrossvalueaddedincomeapproach |
| Access to Health Assets and Hazards, rate of people killed or seriously injured on the roads, rate of smoking, exercise, violent crime, early deaths, other health-related statistics | 2016 | Local Authority and National Level | High | Public Health Profiles, Fingertips website<br>https://fingertips.phe.org.uk/search/AHAH#pat/6/ati/101/par/E12000006<br>https://fingertips.phe.org.uk/ |
| Self-reported health statistics | 2011 | Local Authority and National level | Medium – high accuracy, old data | NOMIS: https://www.nomisweb.co.uk/query/select/getdatasetbytheme.asp?collapse=yes |
| Tourism Employment Summaries | 2014 | NUTS 3 Level | Medium | ONS:<br>https://www.ons.gov.uk/peoplepopulationandcommunity/leisureandtourism/articles/tourismemploymentsummaries/characteristicsoftourismindustries2014 |
| NALEP Norfolk and Suffolk Economic Strategy | Nov 2017 | LEP level | High | http://issuu.com/nakedmarketing1/docs/new_20anglia_20economic_20strategic?e=30940372/55099812 |
| SCC: Raising the Bar Strategy | 2018-2020 | County Level | High | https://www.suffolk.gov.uk/assets/Children-families-and-learning/raising-the-Bar/RtB-Strategy-2018-20.pdf |
| Transforming Suffolk: Suffolk's Community Strategy 2008-2028. | 2008-2028 | County Level | High | https://www.ipswich.gov.uk/sites/default/files/scd07_- |

| Data | Year | Coverage | Confidence | Notes |
|---|---|---|---|---|
| Suffolk Strategic Partnership | | | | _suffolk_community_strategy.pdf |
| East Suffolk Economic Growth Plan | 2018-23 | District Level | High | http://www.eastsuffolk.gov.uk/assets/Your-Council/WDC-Council-Meetings/2018/April/Cabinet-11-04-18/Item-08a-Appendix-A-Draft-East-Suffolk-Economic-Growth-Plan.pdf |
| East Suffolk Tourism Strategy | 2017-2022 | District Level | High | http://www.eastsuffolk.gov.uk/assets/Visitors/East-Suffolk-Tourism-Strategy.pdf |
| Suffolk Coast Tourism Strategy | 2013-2023 | District Level | High | http://www.suffolkcoastandheaths.org/assets/Projects--Partnerships/BALANCE/Executive-Summary.pdf |
| SCDC: First Draft Local Plan | 2018 | District Level | High | http://www.eastsuffolk.gov.uk/planning/local-plans/suffolk-coastal-local-plan/local-plan-review/first-draft-local-plan/ |
| WDC - Renewable Energy and Sustainable Construction – Supplementary Planning Document | 2013 | District Level | High | http://www.eastsuffolk.gov.uk/assets/Planning/Waveney-Local-Plan/Supplementary-Planning-Documents/Renewable-and-Sustainable/Adopted-Renewable-Energy-and-Sustainable-Construction-SPD.pdf |

### 30.4.4 Impact Assessment Methodology

78. The impact assessment methodology is adapted from the general approach described in ***Chapter 5 EIA Methodology***, as follows. There is no statutory guidance on assessing socio-economic, tourism, or recreation impacts, therefore a methodology has been developed using the principles set out in ***section 30.4.2*** and using:

- Good practice from the IAIA’s Social Impact Assessment: Guidance for assessing and managing the social impacts of projects (Vanclay 2015);
- Emerging best practice published by the IEMA in line with the ‘Health in Environmental Impact Assessment: A Primer for a Proportionate Approach’ (Cave et al. 2017);

- Published guidance from Glasson and Chadwick in Methods of Environmental and Social Impact Assessment (Natural and Built Environment Series) Fourth Edition. (Therivel and Wood 2017):
  - Chapter 13 Socio-economic impacts 1: overview and economic impacts and Socio-economic impacts;
  - Chapter 14 Socio-economic impacts 2: Social impacts;
- The methodology used to estimate the economic impacts follows the guidance set out in the HM Treasury's Green Book (HM Treasury 2018) and Homes and Communities Agency Additionality Guide (2014); and
- Guidance notes from the Office for National Statistics have been used to ensure appropriate use of national statistics:
  - Measuring the Economic Impact of an Intervention or Investment (ONS 2011a); and
  - Measuring Tourism locally (ONS 2011b).

79. Value rather than sensitivity has been assigned to tourism and recreation assets. This is because if a tourism or recreation asset is visited by a large number of people this would lead to induced expenditure elsewhere. If a project obstructed this it would generate a wider effect but the asset itself may not be sensitive to the change, i.e. it would continue functioning, whereas the rest of the economy may suffer.

80. Value has not been assigned to the economy as a single receptor as it is made of many component parts which make it difficult to qualify accurately. The broad economic impact is focussed on the outcomes or results from likelihood and magnitude of impact on the various component parts.

#### 30.4.4.1 Pathway Model

81. The first issue to consider in the assessment is the likelihood of the proposed East Anglia ONE North project having an effect. A likely effect should be both plausible and probable.

82. Plausible in the context of this assessment relates to there being a relevant source, pathway and receptor.

83. Probable in the context of this assessment relates to a qualitative judgement to exclude those effects that could only occur under certain very rare conditions.

84. The source-pathway-receptor model describes how a specific activity of the proposed East Anglia ONE North project could change a community capital stock and potentially result in a change in socio-economic outcomes (an effect). These

are defined below and the relationships further developed in ***Table 30.45*** of ***section 30.6***:

- A 'source' represents an activity or factor that could affect community capital stock;
- A 'pathway' describes whether a community stock is likely to be affected; and
- A 'receptor' is determined based on the impact being assessed.

### 30.4.4.2 Tourism and Recreation Sensitivity

85. The Green Book (HM Treasury 2018) defines the value of an economic asset (such as a tourism supply business) based on the national status of the asset. This approach was used to assess tourism and recreation assets within the study area but it was found that the result did not describe the importance of the assets with enough rigour. For example, a small bed and breakfast would be classified as a low value asset but due to it being small scale any change that reduces guest numbers could have a significant effect for the business owners.

86. Due to this an alternative approach has been developed and agreed with the Expert Topic Group. This considers the sensitivity of the receptor based on its capacity to adjust to the proposed change and whether the receptor is interlinked with other receptors. There are no standard sensitivity criteria for tourism and recreational receptors, thus a matrix approach, ***Table 30.10***, will be used to inform professional judgement. The definitions set out in ***Table 30.11*** are based on experience and professional judgement.

**Table 30.10 Sensitivity Matrix**

| Local interconnection | Ability to adjust to change | | | |
|---|---|---|---|---|
| | **Very Vulnerable** | **Vulnerable** | **Resilient** | **Very Resilient** |
| **High** | High | High | Medium | Low |
| **Moderate** | High | Medium | Low | Negligible |
| **Minor** | Medium | Low | Low | Negligible |
| **Negligible** | Low | Negligible | Negligible | Negligible |

**Table 30.11 Examples of the Sensitivity Levels for a Tourism and Recreation Receptors**

| Sensitivity | Examples |
|---|---|
| High | A small but locally renowned restaurant or guest house. One where people visit and stay to visit other places. A popular beach or nature resort would also be included. |
| Medium | A regionally or nationally important footpath. One that people are likely to travel to enjoy and spend money in other places to do so. |
| Low | A medium sized tourist business that is used locally but does not attract national or international visitors. |
| Negligible | A large attraction with a large turnover of visitors where potential impacts could be temporarily mitigated. |

### 30.4.4.3 Likelihood of Economic Effect

87. ***Table 30.12*** sets out factors characterising likelihood of economic pathways. The table informs the professional judgement on scoring high, medium, low or negligible significance. The ‘higher’ and ‘lower’ characterisations represent instructive positions on a spectrum that would also include more extreme, as well as intermediate, positions. Most situations have a mix of higher and lower characterising factors so a balanced expert view of sensitivity is taken.

**Table 30.12 Examples of Factors Characterising the Likelihood of a Pathway Existing**

| Likelihood | Economy example | Tourism economy example |
|---|---|---|
| Likely | There is a significant labour force with appropriate skills, people of working age, low levels of inequality, normal levels of unemployment in relation to the wider economy, plausible transport links, comparative projects being developed in the area, and there is opportunity for an employment pipeline to be created. | There are sufficient bed spaces for non-residential labour force to be accommodated within travelling distance of the East Anglia ONE North proposed onshore development area and the labour curve indicates that non-residential workers would be employed for relatively short to medium durations – i.e. days or weeks. This would indicate that it would be economically viable to stay in hotels or similar for short periods. |
| Unlikely | There is a small population, with low levels of skills, a significant proportion are not of working age, there is high inequality, high levels of unemployment, this project is unique to the area, and there is limited opportunity to that an employment pipeline would be created. | The non-residential labour force far exceeds the available bed spaces and the labour curve shows that non-residential workers would be employed long-term – i.e. months or years. This would suggest that it would be economically viable for them to rent accommodation rather than stay in hotels. |

### 30.4.4.4 Magnitude

88. The magnitude is characterised by first considering the size of the change (as defined in ***Table 30.13***) and then considering the duration, frequency, and timing of the change (as shown in ***Table 30.14***).

89. This allows the assessment to differentiate between large short-term effect and smaller long-term effects. For example, construction usually results in the short to medium term employment of a relatively large number of people. But this in itself is not enough to bring about a positive socio-economic benefit. Operation of an industrial site leads to long-term employment. Even if operations employ a smaller number of people the overall socio-economic benefit may be greater because people would have the opportunity to settle and invest in the local economy.

**Table 30.13 Definitions of Magnitude of Change**

| Size of change | Employment | Tourism employment | Tourism & recreation |
|---|---|---|---|
| High | Change of + or – 2% on baseline | Change of + or – 50% on baseline levels | Highly likely that majority of visitors would change their behaviour. |
| Medium | Change of + or – 1-2% on baseline employment levels | Change of + or – 20-50% on baseline levels | Likely that some visitors would change their behaviour. |
| Low | Change of less than + or – 1% of baseline employment | Change of + or – 10-20% on baseline levels | Plausible that some visitors may change their behaviour. |
| Negligible | No measurable change in employment levels | Change of less than + or – 10% on baseline levels | Unlikely that the majority of visitors would change their behaviour. |

**Table 30.14 Factors used for Characterising Magnitude of Effect**

| | Size of change | Duration | Frequency | Timing | Inter-relationship |
|---|---|---|---|---|---|
| Higher | Large change in comparison to baseline conditions. | Medium to long term temporal scope. | Continuous or daily effects. | Clashes with other periods of high turn-over, such as peak tourism season. | Are multiple effects combining on one or more receptors at the same time? |
| Lower | Small change in baseline conditions. | Very short to short temporal scope. | Monthly or yearly affects. | Supports periods lower turnover, such tourism offseason. | Is the receptor only effected with one disturbance? |

**Table 30.15 Definitions of Temporal Scope**

| Temporal Scope | Definition |
|---|---|
| Very short term | Effects measured in hours, days or weeks (e.g. effects, associated with cable laying activity past a particular dwelling) |
| Short term | Effects measured in months (e.g. requirements of the overall construction stage, such as workforce use of accommodation) |
| Medium term | Effects measured in years (e.g. the maturing of screening) |
| Long term | Effects measured in decades (e.g. the operational stage) |

### 30.4.4.5 Impact Significance

90. Significance for economic impacts is determined using the matrix as presented in ***Table 30.16***. Significance of impacts to tourism assets is determined using the matrix as presented in ***Table 30.17***.

91. It is important that the matrix is seen as a framework to aid understanding of how a judgement has been reached from the narrative of each impact assessment and it is not a prescriptive formulaic method. The magnitude of effect is compared to the sensitivity of the receptor and/or the likelihood that the impact would occur to determine the significance of the impact.

**Table 30.16 Economic Impact Significance Matrix**

| Economic Likelihood | Magnitude | | | | |
|---|---|---|---|---|---|
| | **High** | **Medium** | **Low** | **Negligible** | **No change** |
| **Likely** | Major | Major | Moderate | Minor | No change |
| **Possible** | Major | Moderate | Minor | Negligible | No change |
| **Unlikely** | Moderate | Minor | Minor | Negligible | No change |
| **Highly unlikely** | Minor | Negligible | Negligible | Negligible | No change |

**Table 30.17 Tourism Asset Impact Significance Matrix**

| Tourism Asset Sensitivity | Magnitude | | | | |
|---|---|---|---|---|---|
| | **High** | **Medium** | **Low** | **Negligible** | **No change** |
| **High** | Major | Major | Moderate | Minor | No change |
| **Medium** | Major | Moderate | Minor | Negligible | No change |
| **Low** | Moderate | Minor | Minor | Negligible | No change |
| **Negligible** | Minor | Negligible | Negligible | Negligible | No change |

92. Guide questions set out in ***Table 30.18*** are used to inform the professional judgement on scoring major, moderate, minor or negligible significance.

**Table 30.18 Guide Questions for Determining Significance**

| Factor | Guide Questions |
|---|---|
| Type of impact pathway | Is the impact an economic effect or physical disturbance? If the effect were to happen would there be a multiplier effect in the region? Has embedded mitigation avoided the effect? |
| Baseline conditions | Is there evidence that the baseline is resilient or would this change be unmanageable? Or are businesses reporting confidence in their future? |
| Value of Tourism Receptor | Is the tourism or recreation asset nationally significant or has a high visitor number? If it were effected would it lead to a change in the surrounding economy due to lower visitor numbers? |
| Likelihood of Economic Effect | Is it likely that the effect would occur? Is the asset close enough to actually be disturbed? Is there evidence to show that employment would be realised within the study area? |
| Size of change | Is the employment opportunity deliverable by the labour market? Do physical disturbances breach regulatory requirements? |
| Inter-relationship | Do multiple physical disturbances combine to make a more significant effect for one or more receptors? |
| Duration, frequency, reversibility and timing of effect | Is it a long or short-term effect? If it's a physical effect would it be reversed once the proposed East Anglia ONE North project is complete? Are there any other factor that the effect would clash with such as low or high tourist season? |
| Policy context | Is the change affecting an area that is a policy priority? |
| Consultation responses | Have local communities or statutory stakeholders expressed particular concern or support with regards the effect? |
| Mitigation | Is it possible to mitigate the impact and would this be likely to occur? If this did occur would the residual impact change? |

93. As with the definitions of magnitude and sensitivity, the matrix used for a topic is clearly defined by the assessor within the context of that assessment. The impact significance categories are divided as shown in ***Table 30.19***.

**Table 30.19 Impact Significance Definitions**

| Value | Definition |
|---|---|
| Major | Very large or large change, both adverse or beneficial, which are likely to be important considerations at a regional or district level because they contribute to achieving national, regional or local objectives, or, could result in exceedance of statutory objectives and / or breaches of legislation. |
| Moderate | Intermediate change in receptor condition, which are likely to be important considerations at a local level. |
| Minor | Small change in receptor condition, which may be raised as local issues but are unlikely to be important in the decision-making process. |
| Negligible | No discernible change in receptor condition. |
| No change | No impact, therefore no change in receptor condition. |

94. Note that for the purposes of the EIA, major and moderate impacts are deemed to be significant. In addition, whilst minor impacts are not significant in their own right, it is important to distinguish these from other non-significant impacts as they may contribute to significant impacts cumulatively or through interactions.

### 30.4.5 Cumulative Impact Assessment

95. The proposed East Anglia ONE North project Cumulative Impact Assessment (CIA) will initially consider the cumulative impact with only the proposed East Anglia TWO project against two different construction scenarios (i.e. construction of the two projects concurrently and sequentially). The realistic worst case scenario of each impact is then carried through to the full CIA which considers other developments which are in close proximity to the proposed East Anglia ONE North and East Anglia TWO projects.

96. For a general introduction to the methodology used for the CIA please refer to ***Chapter 5 EIA Methodology***.

97. Three main areas have been considered when undertaking the CIA by asking the following guidance questions:

- Employment – based on publicly available information, is it possible that the local labour market would be able to supply workers for projects that are occurring at the same time? Is there evidence that regional stakeholders are cooperating to increase the skills base to supply energy projects?

- Tourism economy – are projects running across peak seasons and would the regional hotel stock have enough space for non-residential workers? Is there evidence that the development of multiple projects (particularly energy projects) would detrimentally affect the perception of visitors to the area?
- Tourism and recreation – is there publicly available information to indicate that high value tourism and recreation assets would be cumulatively obstructed or disturbed by multiple projects?

### 30.4.6 Transboundary Impact Assessment

98. The proposed East Anglia ONE North project is required to consider the possibility of significant transboundary impacts on other European Economic Area (EEA) member states under the Espoo Convention (see ***Chapter 5 EIA Methodology***). However, the assessment is undertaken using the Rochdale Envelope approach that accepts certain details of the proposed East Anglia ONE North project will not be available at early stages of development. Advice Note Twelve Transboundary Impacts and Process (The Planning Inspectorate 2018) includes Annex 1, The Inspectorate's long form transboundary screening proforma. This indicates that Transboundary Screening focusses on the impact pathways relating to use of natural resources; production of waste; pollution and nuisances; risk of accidents; and use of technologies. But primarily focusses on the impact on important environmental areas.

99. Both infrastructure and labour are likely to be procured from other EEA states. Particularly with regards to elements of the offshore supply chain. Although this is known, until the procurement process is undertaken it is not possible to estimate what the specific non-UK input would be. Therefore, it is not possible to assess the characteristics outlined in Annex 1 of Advice Note 12 (The Planning Inspectorate March 2018).

100. It is unlikely that employment as a result of international procurement would lead to indirect adverse socio-economic transboundary effects. Furthermore, the offshore supply chain is likely to originate in EU countries such as Germany, the Netherlands, or Spain. As such environmental impacts as a result of manufacturing and employment are unlikely to be significant because they would be subject to relevant national regulations derived from EU Directives.

101. The onshore construction elements of the proposed East Anglia ONE North project are entirely present within the UK so it is not anticipated that significant direct adverse socio-economic effects on neighbouring countries will arise.

102. Given the above, transboundary impacts are therefore not considered further within this assessment. This approach has been agreed through consultation on the method statement with the ETG membership.

## 30.5 Existing Environment

103. The characterisation of the existing environment is undertaken using the five Community Capital Stocks framework from the Sustainable Livelihood Approach (***Table 30.8*** of ***section 30.4.1***). The data used to characterise the Existing Environment has been sourced from the ONS using the sources listed in ***Table 30.9*** of ***section 30.4.3***, unless stated otherwise.

104. The study areas are defined in ***section 30.3.1*** for economic and tourism impacts. The following assumptions about economic and tourism effects have been made so as to determine the baseline:

- Regional study to profile the socio-economic baseline for the supply chain uses statistics at the level of:
  - NALEP; and
  - County of Suffolk.
- Local study area to profile the socio-economic baseline for residential workers and workers in the tourism industry uses statistics at the level of:
  - Districts of Suffolk Coastal and Waveney; and
  - The boroughs of Ipswich and Great Yarmouth.
  - Visitor study area to profile the location of visitor attractions and tourism businesses that may potentially be affected by the proposed East Anglia ONE North project:
  - A boundary of 1km around the proposed onshore development area; and
  - Potential viewpoints.

105. These translate to the framework as follows in the sections below.

**Table 30.20 Study Area Considered under each Community Capital Stock**

| Capital Stock | Economic study area | Tourism study area |
|---|---|---|
| Human Capital | Regional and local | Local |
| Productive Capital | Regional and local | Local |
| Social Capital | Local | Local |
| Physical Capital | Visitor | Visitor |
| Natural Capital | Visitor | Visitor |

### 30.5.1 Human Capital

#### 30.5.1.1 Population

106. The population of all of the study areas (NOMIS 2018a and 2018b) has increased between 2011 and 2017, ***Table 30.21***. However, during the same period the working age population (16-64) has decreased and the number of older age (65+) people has increased. This follows a general trend in Britain of an aging population with a corresponding decrease in the proportion of working age people, ***Plate 30.4***.

107. In Suffolk, the proportion of people that are above 65 years old is higher than the national average and the proportion of working age people is lower. Economically, people above 65 contribute less because they are no longer in employment but as they get older they require more support from the state through pensions and health support. Younger people contribute economically because they are in employment, however the proportion of working age people in Suffolk is lower than the national average. This indicates that a project that could attract more working age people to Suffolk would potentially have a beneficial economic effect.

**Table 30.21 Population Trends**

| Age range | Year | Great Yarmouth | Ipswich | Suffolk Coastal | Waveney | Suffolk | Britain |
|---|---|---|---|---|---|---|---|
| 16-64 | 2011 | 60,900 | 89,300 | 75,400 | 69,100 | 459,700 | 40,518,400 |
| | 2017 | 59,100 | 89,700 | 74,100 | 67,600 | 455,200 | 41,044,000 |
| | Change | -3% | 0% | -2% | -2% | -1% | 1% |
| 65+ | 2011 | 23,300 | 23,200 | 33,300 | 31,800 | 167,200 | 11,568,100 |
| | 2017 | 26,900 | 25,800 | 39,800 | 35,800 | 197,600 | 13,241,700 |
| | Change | 15% | 11% | 20% | 13% | 18% | 14% |
| Total | 2011 | 97,400 | 133,700 | 124,600 | 115,400 | 730,100 | 61,470,800 |
| | 2017 | 99,400 | 138,500 | 129,000 | 117,900 | 757,000 | 64,169,400 |
| | Change | 2% | 4% | 4% | 2% | 4% | 4% |

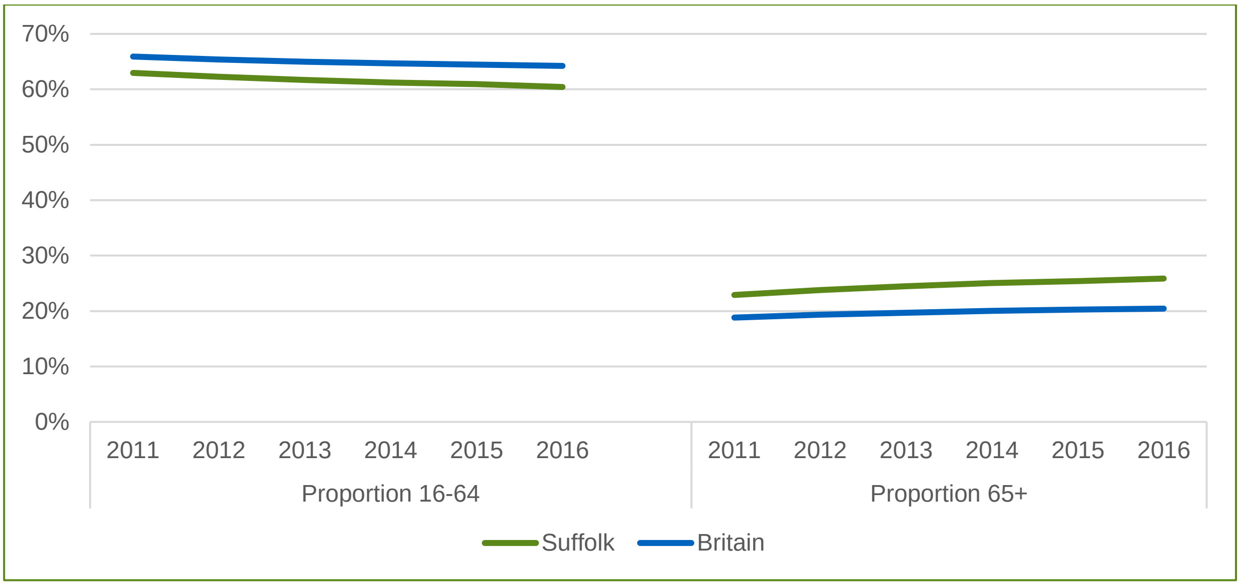


**Plate 30.4 Population Trends in Suffolk and Britain**

### 30.5.1.2 Population Projections

108. The ONS (2018) provides population projections up to 2040. This shows that the proportion of the population that is of a working age is predicted to decline, ***Plate 30.4,*** and the proportion of older age people is predicted to increase, ***Plate 30.5***. These trends within Suffolk and the local study area follow the same trend as the national trend. However, the proportion of the population that is working age is approximately 4% lower in Suffolk and the local study area than the national average. Whereas, the proportion of the population that is of an older age is approximately 5% higher than the national average.

109. ***Table 30.21*** shows that there has been a relatively high growth in the older age population in Suffolk Coastal and Waveney in comparison with other areas. In combination with the projections in ***Plate 30.5***, this suggests that there will be a higher proportion of older people in the population that is very local to the proposed onshore development area. As older people are more likely to be retired they are more likely to spend more time at home and would therefore be more sensitive to changes. This is discussed further in ***Chapter 27 Human Health***.

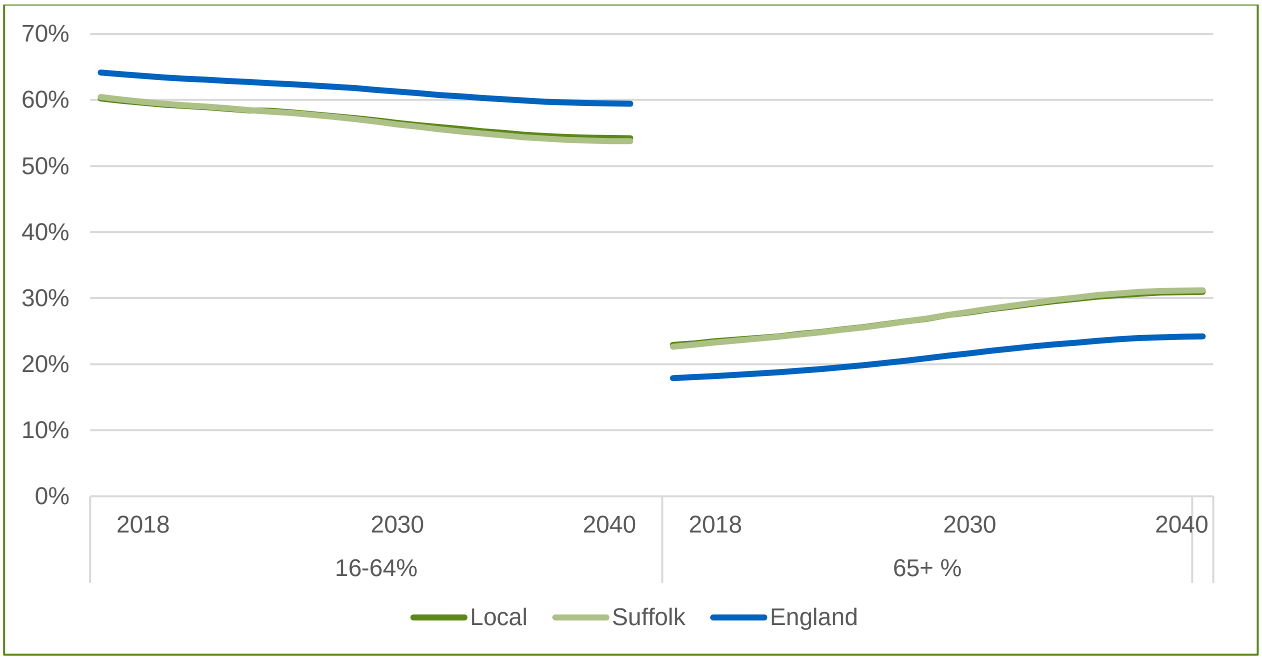


**Plate 30.5 Population Projections to 2040**

### 30.5.1.3 Qualifications

110. Qualification levels correlate well with income levels (NOMIS 2018a and 2018b). Across all study areas there has been an increase in all qualification levels (defined in ***Table 30.23***) between 2005 and 2017, ***Table 30.22***. Qualification levels in NALEP, Suffolk, and locally are marginally lower than the national average. The gap increases as the subject size decreases so the local population has relatively fewer qualifications than the average across NALEP and in comparison, to the national average. The proportion of the local population with no qualifications or other qualifications (defined by NOMIS as foreign qualifications and some professional qualifications) is also marginally higher than national or regional average, ***Plate 30.6***.

111. It should be noted that smaller statistical groupings are more likely to be influenced by external factors such as geography. For example, a small group in certain areas of Cambridge may have disproportionately high levels of qualifications due to the location of universities. In the case of the skill set for the energy sector, there is a similar concentration in Lowestoft and Great Yarmouth, a legacy from the oil and gas activity in the Southern North Sea and built on with windfarm projects off the East Anglia coast. Whereas the local population may have relatively lower qualifications because its rural and agricultural or tourist employment requires fewer academic qualifications.

112. It is not possible to cross reference the qualification levels with the employment areas shown below, but this does indicate that the regional population may have the level of qualifications required to take advantage of employment opportunities

in the offshore wind sector. But that there is also opportunity to improve these levels through vocational training in technical sectors that could lead to higher qualifications.

**Table 30.22 Change in Qualification Levels**

| | NALEP % | | | Suffolk % | | | Local % | | | Britain % |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2005 | 2017 | Change | 2005 | 2017 | Change | 2005 | 2017 | Change | 2017 |
| NVQ4+ | 21.8 | 30.9 | 9.10 | 23.5 | 32.2 | 8.70 | 19.93 | 26.49 | 6.56 | 38.6 |
| NVQ3+ | 39.1 | 53 | 13.90 | 40.3 | 54.1 | 13.80 | 37.31 | 47.08 | 9.77 | 57.2 |
| NVQ2+ | 60.5 | 71.9 | 11.40 | 61.5 | 73.4 | 11.90 | 58.82 | 66.77 | 7.95 | 74.7 |
| NVQ1+ | 77.3 | 85.7 | 8.40 | 77 | 86.9 | 9.90 | 74.96 | 81.67 | 6.71 | 85.4 |
| Other | 7.4 | 6.2 | -1.20 | 7.5 | 5.6 | -1.90 | 7.32 | 7.30 | -0.02 | 6.9 |
| None | 15.3 | 8.1 | -7.20 | 15.5 | 7.5 | -8.00 | 17.83 | 11.06 | -6.77 | 7.7 |

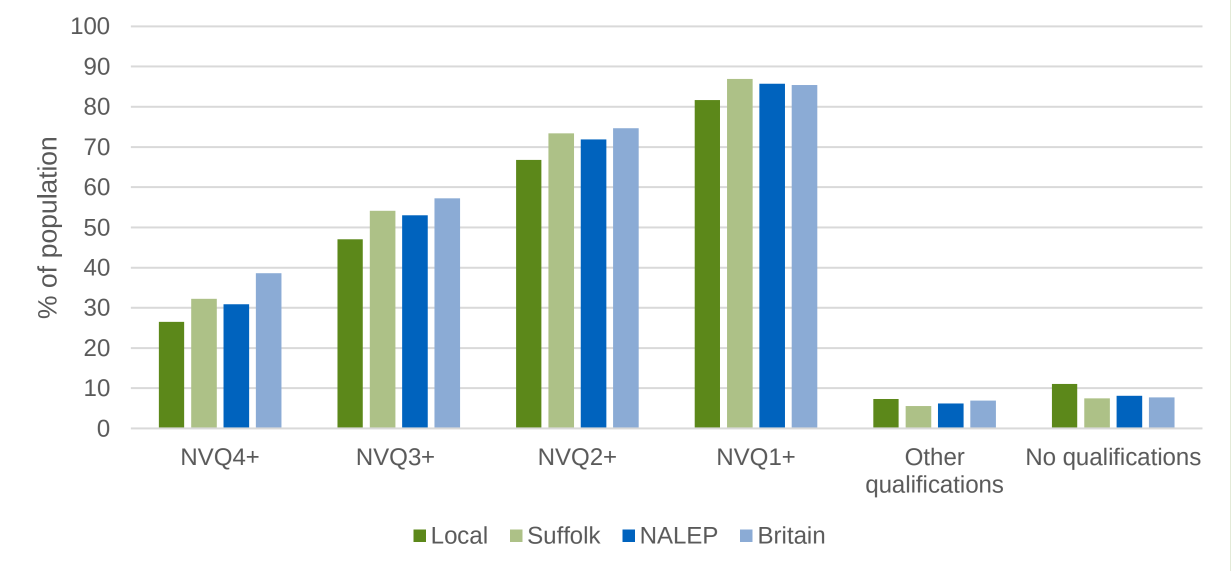


**Plate 30.6 Comparison of Qualification Levels in 2017**

**Table 30.23 Summary of National Vocational Qualifications (NVQs) as defined by ONS**

| NVQ level | Equivalent Academic Level | Notes |
|---|---|---|
| NVQ1+ | GCSE grades D-G, 3/Foundations S Grade, Scottish Access 1-2, Level 1 vocational awards | Routine tasks and basic knowledge |
| NVQ2+ | GCSE Grades A*-C, Scottish Intermediate 2/Credit S Grade, Level 2 vocational awards | Need some prior knowledge of subject area |

| NVQ level | Equivalent Academic Level | Notes |
|---|---|---|
| NVQ3+ | A-Level, Scottish Higher, Level 3 vocational awards BTEC National Certificate/Diploma | Covers more complex work and supervisory skills. |
| NVQ4+ | Licentiateship (LCGI), Higher Professional Diploma, Level 4 vocational awards, Undergraduate level | Likely to have management experience. |
| Other NVQ+ qualifications including NVQ level 5 | Can include Graduateship (GCGI), Associateship (ACGI), equivalent to a Graduate level. | For senior managers. |

#### 30.5.1.4 Travel to Work

113. Census data from 2011 shows that the largest proportion of people travel to work by car, ***Plate 30.7***, and that on average people travel 15 to 20 miles to work, ***Plate 30.8***. Department for Transport (DfT) statistics (DfT 2016) show that the average speed on an A road in England, such as the A12, is 24-25mph during the 7am-10am peak. This suggests that the average commuter time would between 36 minutes (15 miles at 25mph) and 50 minutes (20 miles at 24mph).

114. This approximately correlates with the 60 and 45-minute travel to work radius used in ***Chapter 26 Traffic and Transport*** for residential[3] and non-residential[4] workers, respectively. It should also be considered that staff in the construction sector tend to travel longer distances on average due to the contractual nature of their employment and the need to travel to wherever the work is for short durations. So, it is reasonable to assume that construction staff would be drawn from Ipswich, Lowestoft, and Great Yarmouth because they can travel along the A12 to the project construction site. However, non-residential staff are likely to try to minimise their commute by staying as close as possible to site and therefore would benefit the hotels outlined in ***section 30.5.4*** through expenditure.

[3] Those that live permanently in the area
[4] Those that are visiting the area for work

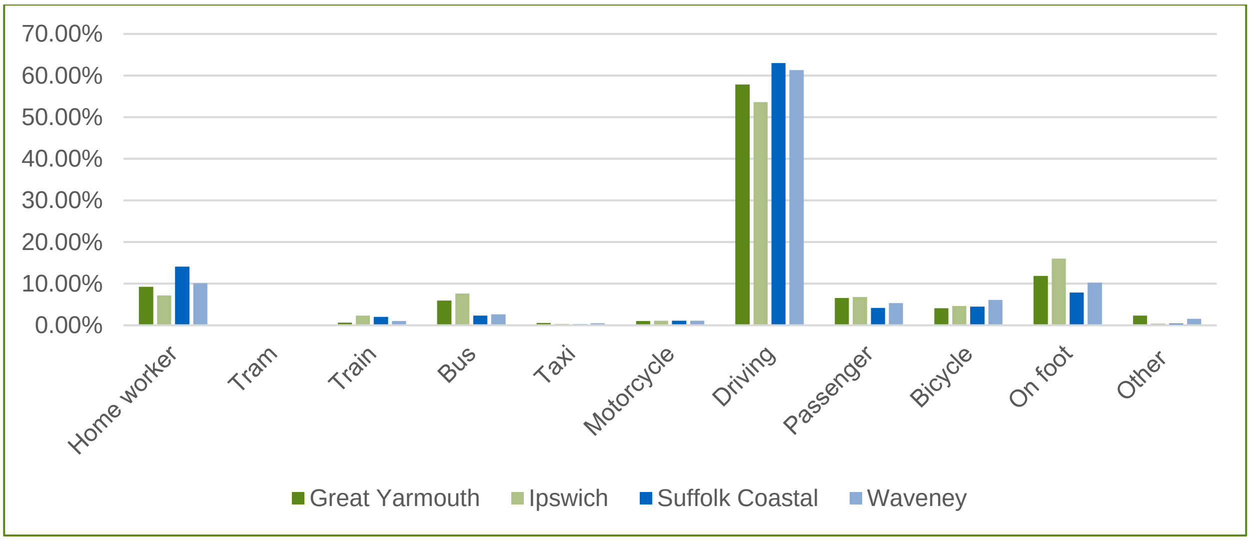


**Plate 30.7 Method of Travel to Work**

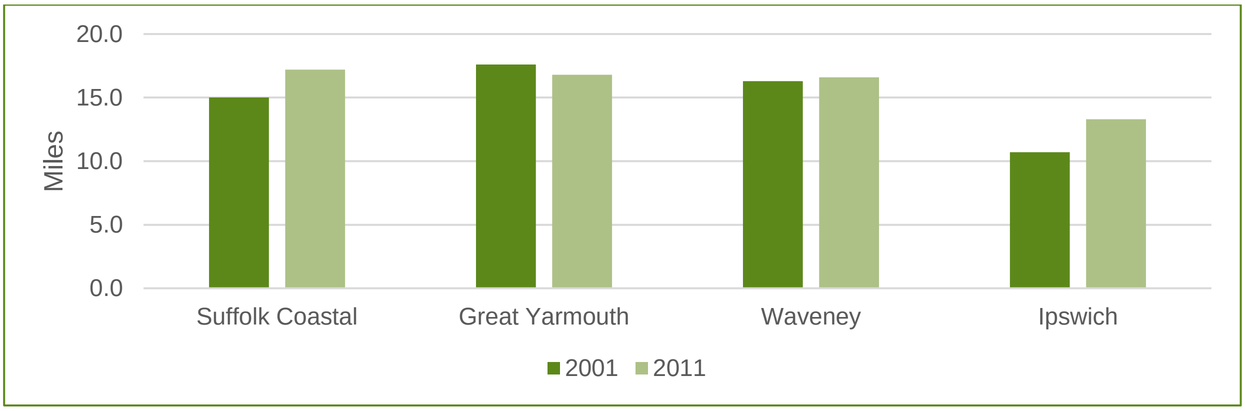


**Plate 30.8 Average Distance Travelled to Work**

## 30.5.2 Productive Capital

### 30.5.2.1 Economic Activity

115. During the 2004-2017 period, the economic activity rate of people aged 16-64 in Great Yarmouth and Waveney (NOMIS 2018a and 2018b) is lower than those in Suffolk Coastal, and in Ipswich where the rate is dropping, ***Plate 30.9***.

116. In general, the current rate in the local study area is slightly below that of Suffolk and the NALEP (***Table 30.24***). The level of economic activity in the local and regional study areas is marginally higher than the British average of 78.4% (between April 2017-March 2018). The economic activity rate in both NALEP and Suffolk County have a relatively stable increase rate, rising 2% from 2004 to 2017, ***Table 30.24***.

**Table 30.24 Economic Activity**

| | Local | | Suffolk | | NALEP | |
|---|---|---|---|---|---|---|
| Year | People | % | People | % | People | % |
| 2011 | 209,100 | 77.28 | 386,300 | 77.30 | 718,900 | 78.00 |
| 2017 | 220,300 | 79.13 | 413,525 | 79.20 | 762,300 | 79.85 |
| Change | 5.36% | 1.85 | 7.05% | 1.90 | 6.04% | 1.85 |

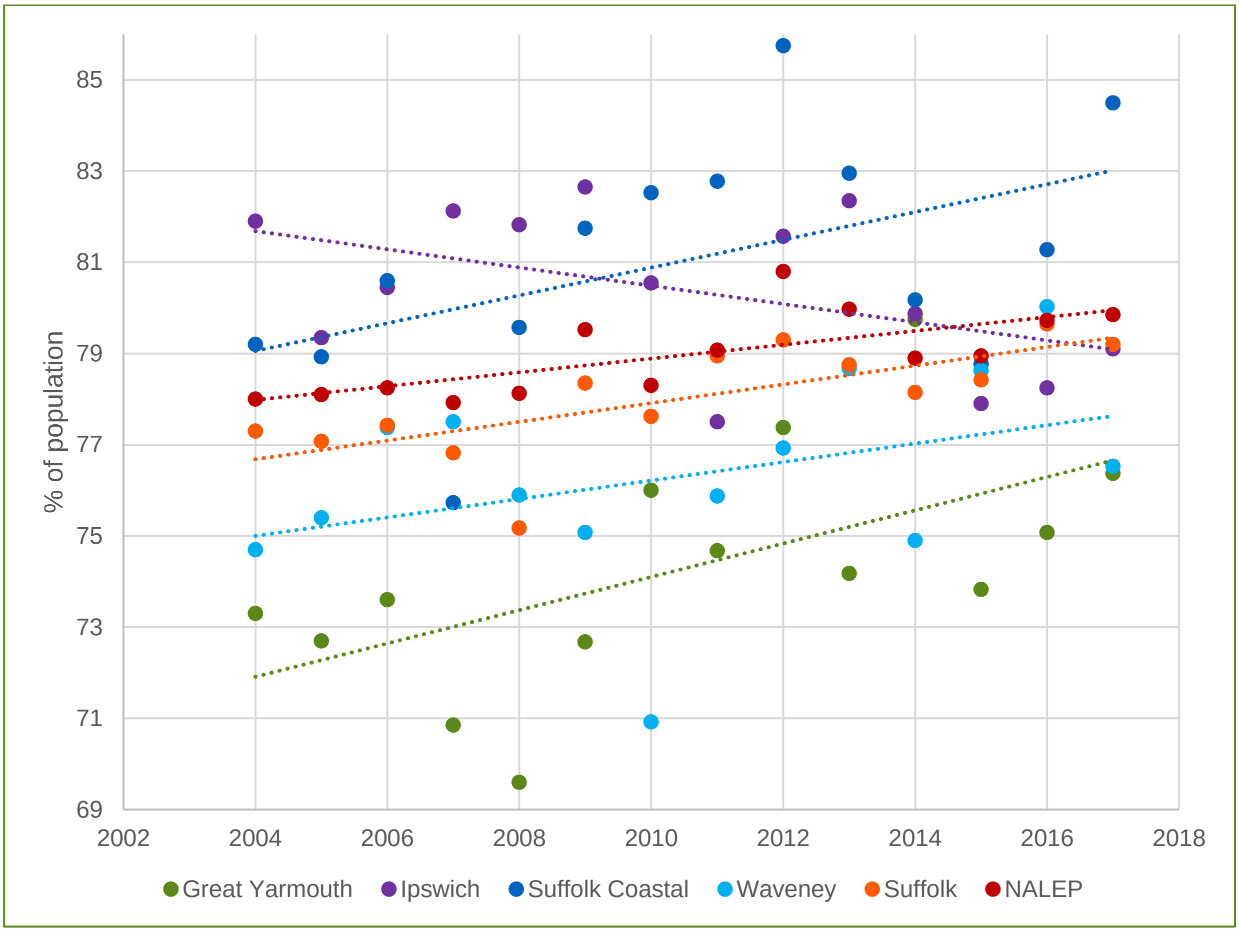


**Plate 30.9 Economic Activity Trends**

### 30.5.2.2 Economic Inactivity

117. As can be expected the economic inactivity rate (NOMIS 2018a and 2018b) mirrors the economic activity rate, ***Plate 30.10***. Economic inactivity has been dropping across the region between 2004 and 2017. As with economic activity, in Ipswich economic inactivity has been increasing. The levels of economic inactivity are generally lower in Ipswich and Suffolk Coastal than in Waveney and Great Yarmouth. Regionally, economic inactivity has reduced by approximately 2% in both Suffolk and NALEP, ***Table 30.25***.

**Table 30.25 Economic Inactivity Rate**

| | Local | | Suffolk | | NALEP | |
|---|---|---|---|---|---|---|
| **Year** | People | % | People | % | People | % |
| **2004** | 60,400 | 22.73 | 113,700 | 22.70 | 202,900 | 22.00 |
| **2017** | 57,675 | 20.88 | 108,575 | 20.80 | 192,575 | 20.15 |
| **Change** | -4.51% | -1.85 | -4.51% | -1.90 | -5.09% | -1.85 |

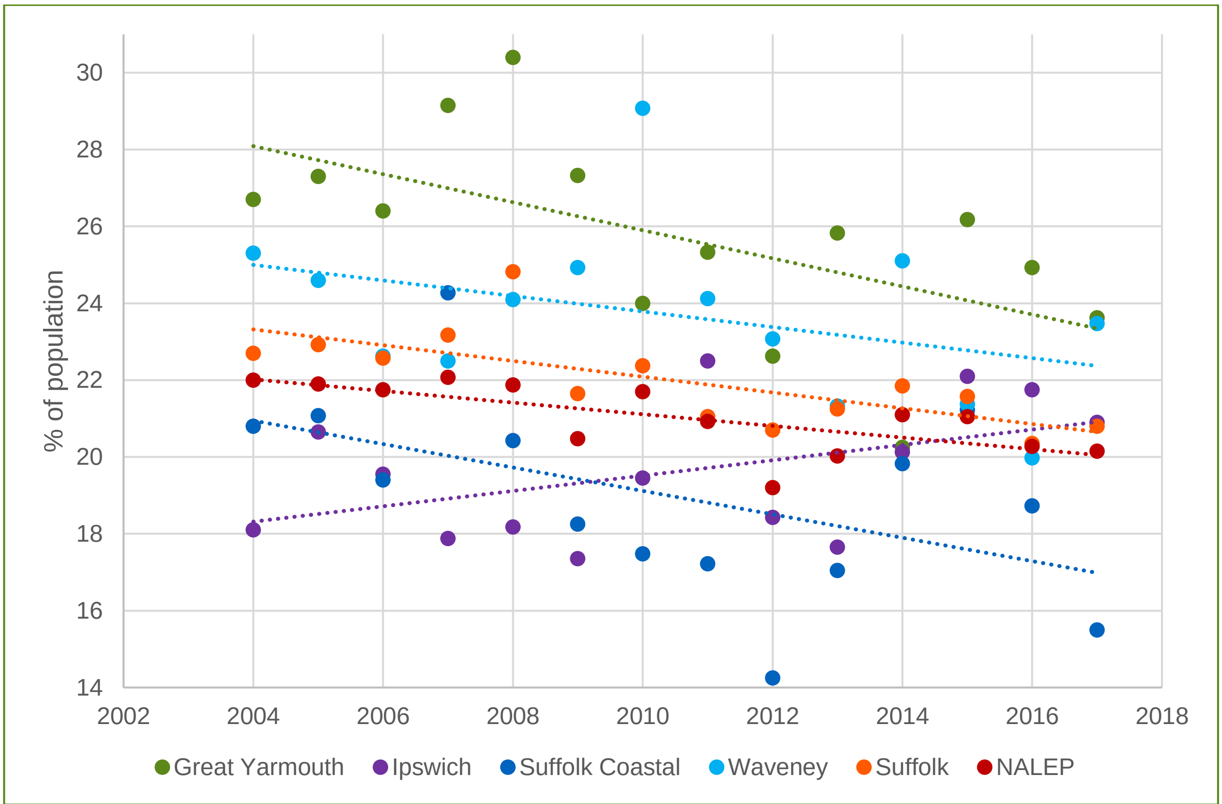


**Plate 30.10 Economic Inactivity Trends**

### 30.5.2.3 Employment Levels

118. Employment levels in Suffolk Coastal and Great Yarmouth (NOMIS 2018a) are increasing, ***Table 30.26***. In Ipswich, they are decreasing and in Waveney they are static. Employment in Great Yarmouth and Waveney is generally lower than in Ipswich and Suffolk Coastal. However, if trends continue the employment level in Great Yarmouth will be higher than in Ipswich and Waveney. But it should be noted that there are significantly more people in Ipswich than other local areas studied. In general, the employment level in Suffolk and NALEP is increasing, ***Plate 30.11***, and have increased by 1.25% from 2004 to 2017, ***Table 30.26***.

**Table 30.26 Employment Levels**

| | Local | | Suffolk | | NALEP | |
|---|---|---|---|---|---|---|
| Year | People | % | People | % | People | % |
| 2004 | 201,700 | 74.50 | 369,200 | 75.30 | 694,100 | 75.30 |
| 2017 | 208,950 | 74.89 | 396,425 | 76.55 | 730,825 | 76.55 |
| Change | 3.59% | 0.39 | 7.37% | 1.25 | 5.29% | 1.25 |

### 30.5.2.4 Employment by Sector

119. The largest employment sectors (NOMIS 2018c) regionally are "public, education, and health", then "hotels and restaurants", and then "banking, finance, and insurance", ***Plate 30.11***. Both manufacturing and construction make up approximately 10% of employment individually and have declined as employment sectors from 2004 to 2017, ***Table 30.27***.

120. Within the NALEP labour market there were 54,610 people in 2016 working in sectors relevant to either the construction or operation of the proposed East Anglia ONE North project, ***Table 30.28***. The number of people in these sectors has increased since 2015. Of those working in relevant sectors the largest proportion are in *"specialised construction", "construction of buildings",* and *"engineering activities",* ***Plate 30.11***.

121. Within the NALEP labour market the largest proportion of people are working in *"professional occupations",* then *"associated professional and technical operations",* and *"skilled trades".* Although it is not possible to identify the overlap between those working in technical or skilled occupations with those working in sectors relevant to the proposed East Anglia ONE North project, this does suggest that the NALEP labour market has a significant number of people that could potentially benefit from the construction of an offshore windfarm through employment opportunities.

**Table 30.27 Broad Regional Employment Grouping**

| Grouping | NALEP % | | | Suffolk % | | |
|---|---|---|---|---|---|---|
| | 2004 | 2017 | Change | 2004 | 2017 | Change |
| Agriculture and fishing | 2.0 | 2.2 | 0.2 | 1.3 | 2.1 | 0.8 |
| Energy and Water | 1.4 | 2.3 | 0.9 | 1.5 | 2.2 | 0.7 |
| Manufacturing | 13.9 | 9.7 | -4.2 | 14.1 | 9.8 | -4.3 |
| Construction | 9.1 | 8.4 | -0.7 | 9.2 | 8.7 | -0.5 |
| Distribution, Hotels, Restaurants | 19.5 | 21.4 | 1.9 | 18.5 | 20.3 | 1.8 |
| Transport and Communications | 8.5 | 7.6 | -0.9 | 10.2 | 9.4 | -0.8 |

| Grouping | NALEP % | | | Suffolk % | | |
|---|---|---|---|---|---|---|
| | 2004 | 2017 | Change | 2004 | 2017 | Change |
| Banking, finance, insurance | 12.9 | 13.2 | 0.3 | 11.9 | 13.8 | 1.9 |
| Public administration. education and health | 26.2 | 28.9 | 2.7 | 26.7 | 27.4 | 0.7 |
| Other services | 5.8 | 5.9 | 0.1 | 5.8 | 5.8 | 0.0 |

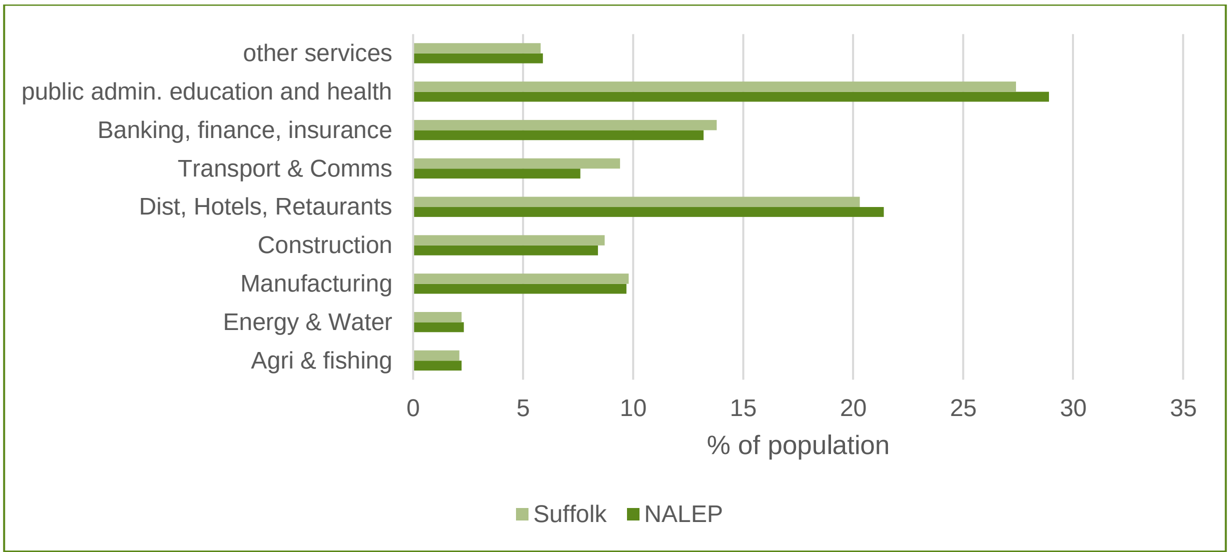


**Plate 30.11 Comparison of Employment by Sector in 2017**

**Table 30.28 Employment in New Anglia LEP that is Relevant to the Proposed East Anglia ONE North project**

| Standard Industrial Classification (SIC) relevant to the proposed East Anglia ONE North project | | England | | New Anglia | | Suffolk | | Local | |
|---|---|---|---|---|---|---|---|---|---|
| | | 2015 | 2016 | 2015 | 2016 | 2015 | 2016 | 2015 | 2016 |
| 6 | Extraction of crude petroleum and natural gas | 4,600 | 4,500 | 400 | 255 | 0 | 0 | 50 | 50 |
| 28 | Manufacture of machinery and equipment | 71,000 | 85,000 | 2,450 | 2,500 | 1,370 | 1,505 | 760 | 800 |
| 30 | Manufacture of other transport equipment | 12,000 | 12,000 | 300 | 225 | 250 | 200 | 265 | 165 |
| 33 | Repair and installation of machinery and equipment | 466,000 | 497,500 | 2,245 | 3,675 | 765 | 1,430 | 705 | 920 |
| 35 | Electricity, gas, steam and air conditioning supply | 17,200 | 18,200 | 2,500 | 2,930 | 2,140 | 2,470 | 1,800 | 2,180 |
| 41 | Construction of buildings | 94,000 | 118,500 | 12,250 | 11,500 | 5,600 | 5,700 | 3,135 | 3,265 |
| 42 | Civil engineering | 386,250 | 363,000 | 5,785 | 5,660 | 2,905 | 2,760 | 1,335 | 1,365 |
| 43 | Specialised construction activities | 667,000 | 690,000 | 20,345 | 18,065 | 8,590 | 7,845 | 4,565 | 4315 |
| 50 | Water transport | 19,000 | 18,000 | 425 | 650 | 350 | 575 | 355 | 515 |

| Standard Industrial Classification (SIC) relevant to the proposed East Anglia ONE North project | | England | | New Anglia | | Suffolk | | Local | |
|---|---|---|---|---|---|---|---|---|---|
| | | 2015 | 2016 | 2015 | 2016 | 2015 | 2016 | 2015 | 2016 |
| 71 | Engineering activities; technical testing and analysis | 23,000 | 22,000 | 7,000 | 9,000 | 2,850 | 3,500 | 3,125 | 3,500 |
| 82 | Office administrative, | 22,000 | 20,000 | 125 | 150 | 75 | 75 | 40 | 35 |
| | Total | 1,782,050 | 1,848,700 | 53,825 | 54,610 | 24,895 | 26,060 | 16,135 | 17,110 |

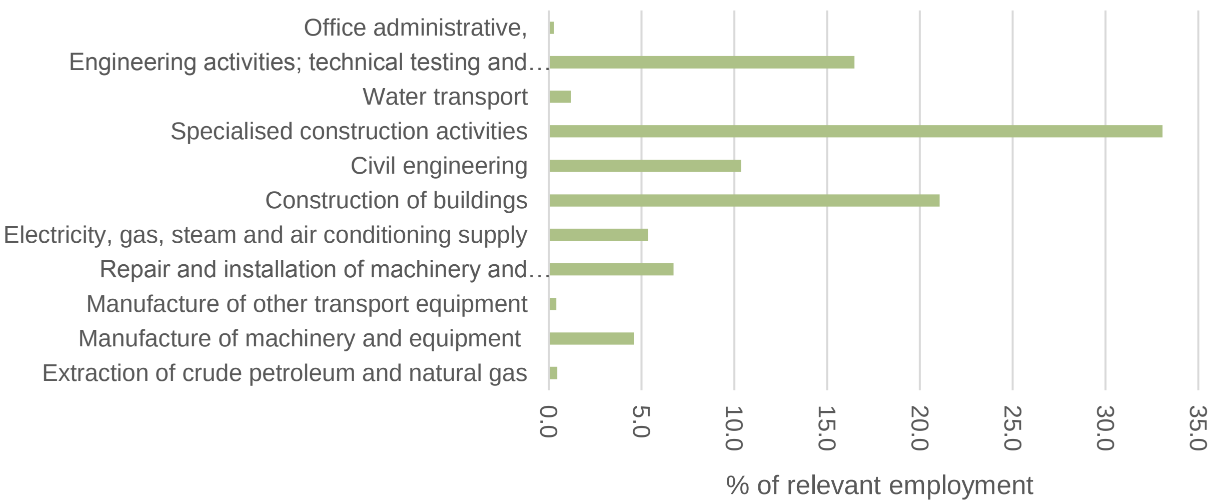


**Plate 30.12 Distribution of the 54,610 people employed in NALEP in sectors relevant to the proposed East Anglia ONE North project in 2016**

**Table 30.29 Employment by type of Occupation**

| | NALEP % | | | Suffolk % | | | Local % | | |
|---|---|---|---|---|---|---|---|---|---|
| | 2005 | 2017 | Change | 2005 | 2017 | Change | 2005 | 2017 | Change |
| 1: Managers, directors and senior officials | 9.3 | 11.2 | 1.90 | 8.9 | 11.5 | 2.60 | 8.15 | 8.55 | 0.40 |
| 2: Professional occupations | 14.8 | 17.6 | 2.80 | 15.2 | 15.6 | 0.40 | 14.66 | 12.88 | -1.78 |
| 3: Associate prof and tech occupations | 12.3 | 12 | -0.30 | 12.6 | 11.7 | -0.90 | 11.57 | 12.51 | 0.94 |
| 4: Administrative and secretarial occupations | 12 | 10.4 | -1.60 | 12.3 | 12.1 | -0.20 | 12.92 | 10.24 | -2.69 |
| 5: Skilled trades occupations | 13.9 | 11.9 | -2.00 | 13.1 | 12 | -1.10 | 13.07 | 12.51 | -0.56 |
| 6: Caring, leisure and other service occupations | 8 | 10.6 | 2.60 | 8.2 | 9.6 | 1.40 | 8.87 | 12.60 | 3.73 |
| 7: Sales and customer service occupations | 8 | 7.9 | -0.10 | 8.3 | 8.8 | 0.50 | 9.16 | 9.87 | 0.71 |
| 8: Process, plant and machine operatives | 9.1 | 7.7 | -1.40 | 9.1 | 8.3 | -0.80 | 9.74 | 9.05 | -0.69 |
| 9: Elementary occupations | 12.4 | 10.7 | -1.70 | 12.1 | 10 | -2.10 | 11.52 | 11.56 | 0.03 |

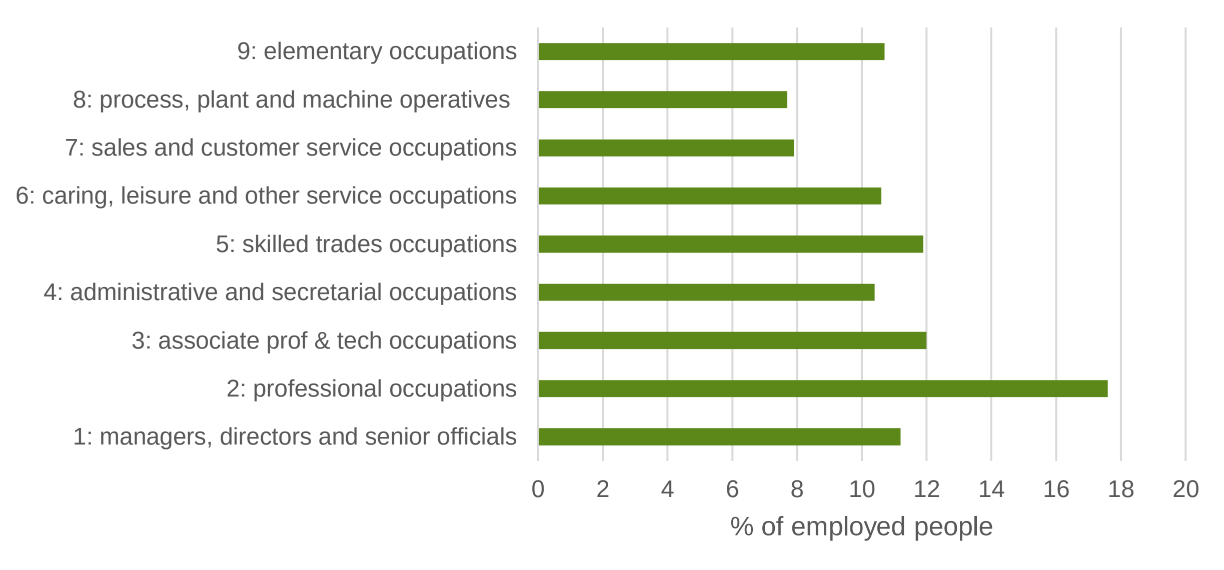


**Plate 30.13 Employment by type of Occupation in NALEP in 2017**

### 30.5.2.5 Unemployment Rates

122. The number of people claiming Jobs Seekers Allowance (JSA) in NALEP (NOMIS 2018b) in sectors that are relevant to the proposed East Anglia ONE North project have dropped significantly from 2013 to 2017, ***Table 30.30***. However, as shown in ***Plate 30.14*** and ***Plate 30.15*** the number of JSA claimants has dropped faster than the number of unemployed people. A similar trend is seen in JSA claimant rates at a national level and therefore this drop may be attributed to a change in how JSA claimants are recorded or categorised rather than an actual drop in the real number. However, the decline in unemployment and JSA claimants does correlate with the decline in economic inactivity across NALEP and may show that there is opportunity to employ appropriately skilled unemployed people.

**Table 30.30 Job Seekers Allowance claimants in NALEP categorise by their usual work or the work they are seeking**

| | | Science and Technology | | Skilled | | Transport and Machine Drivers | Plant Related | Total |
|---|---|---|---|---|---|---|---|---|
| | Year | Professionals | Associate Professionals | Metal and Electronic | Construction | | | |
| **Usual** | 2013 | 232 | 283 | 655 | 891 | 1286 | 3999 | 7346 |
| | 2014 | 112 | 156 | 331 | 404 | 666 | 2379 | 4048 |
| | 2015 | 39 | 73 | 150 | 164 | 290 | 1124 | 1841 |
| | 2016 | 22 | 38 | 68 | 84 | 145 | 663 | 1020 |
| | 2017 | 10 | 26 | 33 | 49 | 78 | 412 | 608 |
| | | | | | | | | |
| **Sought** | 2013 | 226 | 294 | 664 | 888 | 1333 | 3915 | 7320 |

| | Science and Technology | | | Skilled | | Transport and Machine Drivers | Plant Related | Total |
|---|---|---|---|---|---|---|---|---|
| | Year | Professionals | Associate Professionals | Metal and Electronic | Construction | | | |
| | 2014 | 106 | 159 | 334 | 393 | 696 | 2348 | 4037 |
| | 2015 | 42 | 72 | 155 | 163 | 303 | 1099 | 1833 |
| | 2016 | 23 | 33 | 77 | 82 | 154 | 633 | 1000 |
| | 2017 | 13 | 21 | 35 | 46 | 86 | 400 | 600 |

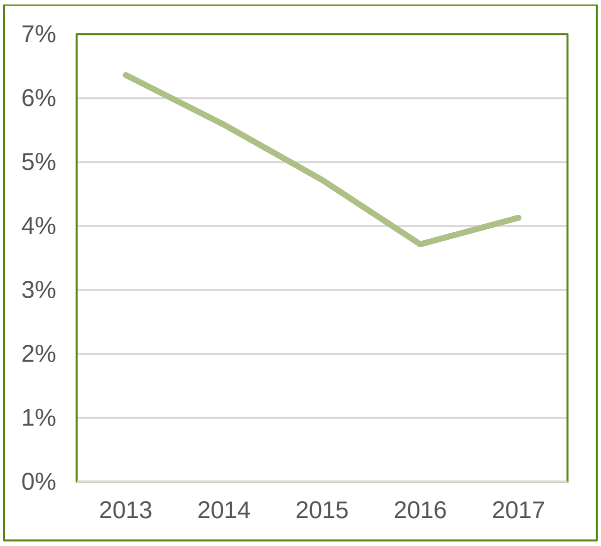


**Plate 30.14 Unemployment levels in New Anglia LEP**

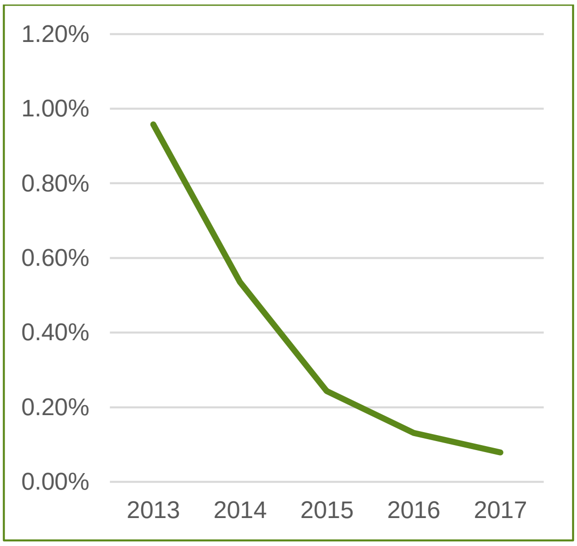


**Plate 30.15 Job Seekers Allowance levels in New Anglia LEP**

### 30.5.2.6 Average Income

123. ***Plate 30.16*** shows that average weekly earnings for full time workers in NALEP (NOMIS 2018b) are significantly lower than in the United Kingdom as a whole, with the current average for NALEP being £578.00 and for the UK £662.50 in December 2017. Earnings at both scales have increased linearly over time at a similar rate. This indicates that there is potential to improve average wage levels.

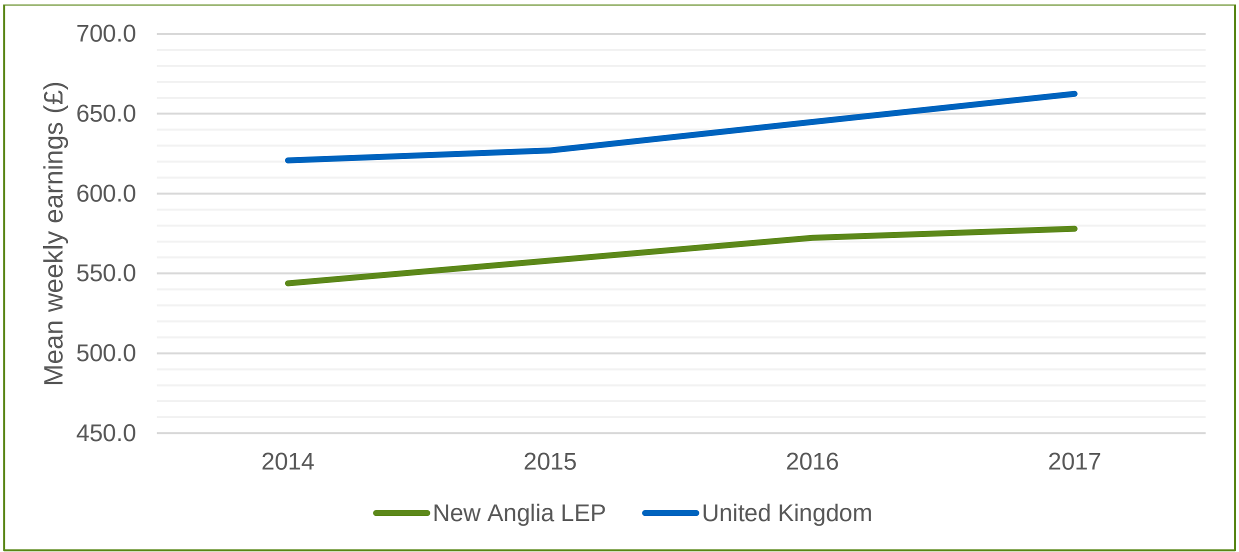


**Plate 30.16 Mean Weekly Earnings for full time workers in the New Anglia LEP compared to the UK as of December 2017**

### 30.5.2.7 Employment in Tourism

124. Using statistics for employment in distribution, hotels, and restaurants (NOMIS 2018c) it can be seen that tourism-related employment has increased across all areas by 1.7 to 1.9% between 2004 and 2017, ***Plate 30.17*** and ***Table 30.31***. Except Waveney where it has dropped by approximately 2% and Suffolk Coastal where it is generally stagnant. Across the local study area 48,200 people were employed in tourism related industries in 2017, which is 29.4% of the total tourism employment in NALEP.

**Table 30.31 Employment in Tourism**

| | Local | | Suffolk | | NALEP | |
|---|---|---|---|---|---|---|
| Year | People | % | People | % | People | % |
| 2004 | 41,500 | 20 | 61,500 | 19 | 139,100 | 20 |
| 2017 | 48,200 | 22 | 71,800 | 20 | 163,900 | 21 |
| Change | 16.14% | 1.70 | 16.75% | 1.80 | 17.83% | 1.90 |


**Plate 30.17 Tourism Employment Trends**

### 30.5.2.8 Value and Volume of Tourism

125. In 2015, Destination Research produced a study of the Economic Impact of Tourism to the Suffolk Coastal AONB (Destination Research 2015). ***Plate 30.18*** shows that peak tourism is in the summer months, as would be expected and that there is a dip from October to April, particularly for overnight visitors.

126. ***Table 30.32*** shows that on average an overnight visitor would spend between £54 and £216 in total per night. Whereas ***Table 30.33*** shows that visitors tend to spend slightly more if they're visiting the coast than rural or urban areas. A comparison of the total value of tourism to the number of FTE jobs in tourism (***Table 30.32***) shows a ratio of approximately 1 FTE job per £60,000 of tourism expenditure.

**Table 30.32 Summary of Tourism Impacts for Suffolk Coast AONB (Destination Research 2015)**

| Factor | Amount |
|---|---|
| Total number of trips (day and staying) | 4,028,128 |
| Total staying trips | 308,300 |
| Total staying nights | 1,236,000 |
| Total staying spend | £66,716,000 |
| Total day trips | 3,719,828 |
| Total day trip spend | £81,460,486 |
| Total visitor spend | £150,462,315 |
| Indirect / induced spend | £41,434,000 |
| Indirect / induced Multiplier | 0.28 |
| Total Tourism Value | £191,896,315 |
| Full time equivalent jobs | 3,104 |
| Ratio of Tourism Value to FTE | £61,822 per FTE |
| Average length stay (nights x trip) | 4.01 |
| Spend x overnight trip | £216.40 |
| Spend x night | £53.93 |
| Spend x day trip | £21.90 |

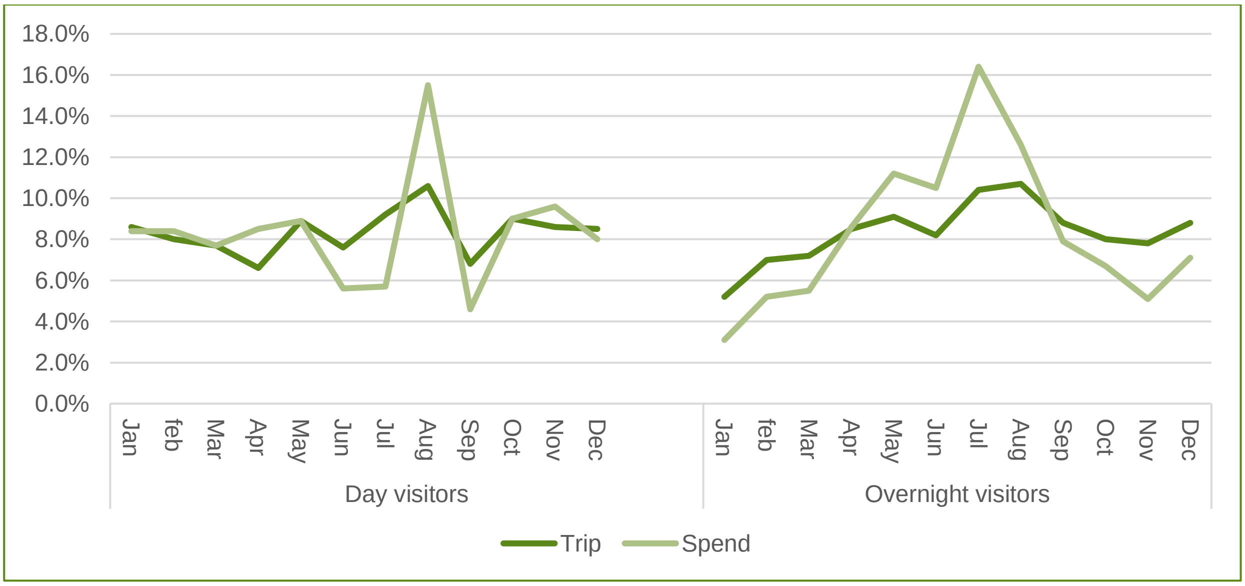


**Plate 30.18 Seasonality of Tourism in Suffolk Coast AONB (Destination Research 2015)**

**Table 30.33 Day Trip Expenditure in Urban, Rural, and Coastal Areas (Destination Research 2015)**

| | Trips | Spend | Spend per day trip |
|---|---|---|---|
| Urban visits | 317,000 | £9,414,900 | £29.70 |
| Countryside visits | 1,461,254 | £20,574,449 | £14.08 |
| Coastal visits | 1,941,574 | £51,471,136 | £26.51 |
| Total | 3,719,828 | £81,460,486 | £21.90 |

#### 30.5.2.9 Summary of Human and Productive Capital Stocks

127. The population of NALEP, Suffolk, and local districts are aging in line with national averages but have a higher proportion of older people. Qualification levels are slightly below national averages at all levels across NALEP.

128. There are a significant number of people working in sectors that are relevant to the proposed East Anglia ONE North project and at levels that are relevant, both for construction and operation. During construction, it is reasonable to assume that staff would be drawn from the labour markets around Ipswich, Lowestoft, and Great Yarmouth due to the location relative to the A12. These areas have lower levels of employment and economic activity, so would benefit more from employment opportunities. It is also reasonable to assume that a notable proportion of the wider supply chain may be drawn from the NALEP labour market but further analysis is needed to understand this probability.

129. Tourism accounts for approximately 20% of employment at all study levels. In general employment in tourism is growing except in Suffolk Coastal where employment levels are relatively static. Tourism in Suffolk Coastal AONB peaks in the summer months and drops in the winter months, this may be limiting the growth in FTE jobs and therefore there may be an opportunity to benefit local hoteliers and restaurateurs through the off-peak season. Overnight visitors tend to spend around £50 per night and day visitors tend to spend more if they are visiting the coast than if they are visiting inland areas. This indicates that the coastal tourism industry would be more sensitive to impacts as they would lose more per head if people were deterred.

### 30.5.3 Social Capital

130. Social capital is a particularly difficult concept to measure. The ONS produces national statistics and last published these in May 2017. ONS (2017) uses *“25 measures have been developed using a framework that covers four key aspects of social capital: personal relationships, social network support, civic engagement and trust and cooperative norms.”* (ONS 2015)

131. These statistics are not published at a smaller geographic scale than nationally, but they do provide a general insight to the social capital of the nation and can be summarised as follows:

- The most recent data show a largely positive picture of social capital in the UK over the longer-term with over half of the indicators showing improvement over a period of three years;
- Most adults in the UK have at least one close friend. However, there has been a fall in the proportion of people saying they have someone to rely on a lot in case of a serious problem;
- Over two-thirds of UK adults report stopping and talking to their neighbours; and
- More people are engaging in unpaid volunteering.

#### 30.5.3.1 Indices of Multiple Deprivation

132. In absence of smaller scale social capital statistics, IMD (Department for Communities and Local Government (DCLG) 2015 via ONS) will be used to understand the general wellbeing at a local and regional scale (site specific deprivation levels of communities are considered in ***Chapter 27 Human Health***). IMD use 9 indicators and one general indicator (***Table 30.34***) to indicate how deprived an area is in comparison to other areas in the UK of a similar scale. IMD cannot be used to show the absolute levels of wellbeing, only the level in comparison to other areas. A low rank shows a high level of deprivation in comparison to other areas. To be ranked 1$^{st}$ shows that the area is the most deprived in that aspect in comparison to all other areas.

133. As each indicator has a different scoring system the rank of scoring has been used in ***Plate 30.19***, ***Plate 30.20***, and ***Plate 30.21***. These have been depicted as spider diagrams because it is easier to see which aspects are most or least deprived. A small circle on the spider diagram indicates comparatively high deprivation in all levels. Whereas a large circle indicates comparatively low deprivation.

134. In comparison with other LEPs in England, ***Plate 30.19*** shows that NALEP is relatively deprived in education and there are barriers to housing but average on most other aspects. That is, people find it harder to access either of these elements than in other LEPs. The NALEP area experiences relatively low crime.

135. In comparison to other counties in England, ***Plate 30.20*** shows that Suffolk has low deprivation levels in most areas except education and barriers to housing. The difference may be due to deprived areas in Norfolk, such as Great Yarmouth (***Plate 30.21***), that reduce the overall average.

136. In comparison to other districts in England, ***Plate 30.21*** shows that Suffolk Coastal has relatively low deprivation levels – i.e. it is not deprived in comparison to other districts. Whereas urban areas such as Waveney (Lowestoft), Great Yarmouth and Ipswich are relatively deprived in most areas except barriers to housing.

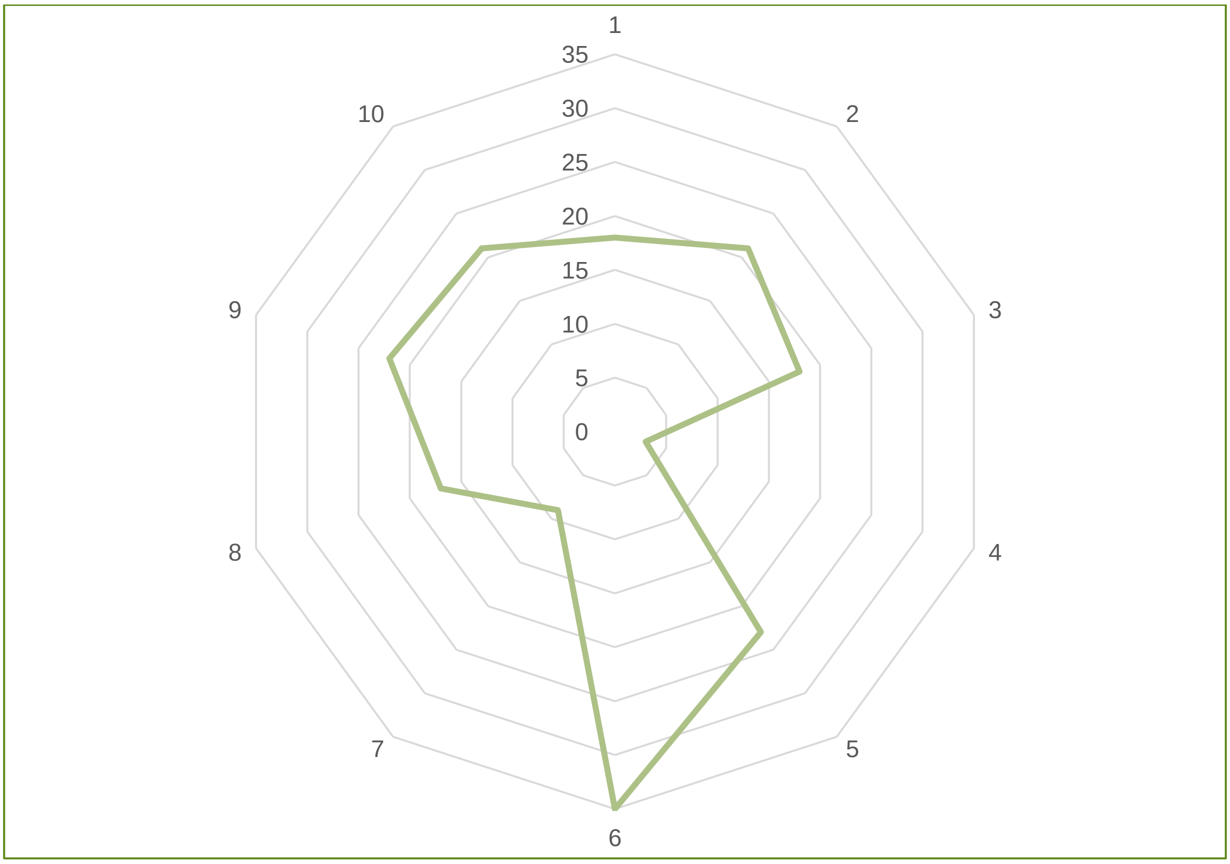


**Plate 30.19 IMD for NALEP**


**Plate 30.20 IMD for Suffolk**

**Table 30.34 Key for Indices of Multiple Deprivation**

| | | | |
|---|---|---|---|
| 1 | **IMD** | 6 | **Crime** |
| 2 | **Income** | 7 | **Barriers to Housing and Services** |
| 3 | **Employment** | 8 | **Living Environment** |
| 4 | **Education** | 9 | **Deprivation Affecting Children** |
| 5 | **Health Deprivation** | 10 | **Deprivation Affecting Older People** |

137. The relative deprivation levels in Great Yarmouth, Waveney, and Ipswich indicate that these areas may benefit from sustainable employment through the development of offshore wind and the creation of a market to support these. Whereas the relatively low levels of deprivation in Suffolk Coastal indicate that the population may be more resilient to change and less vulnerable to impacts.

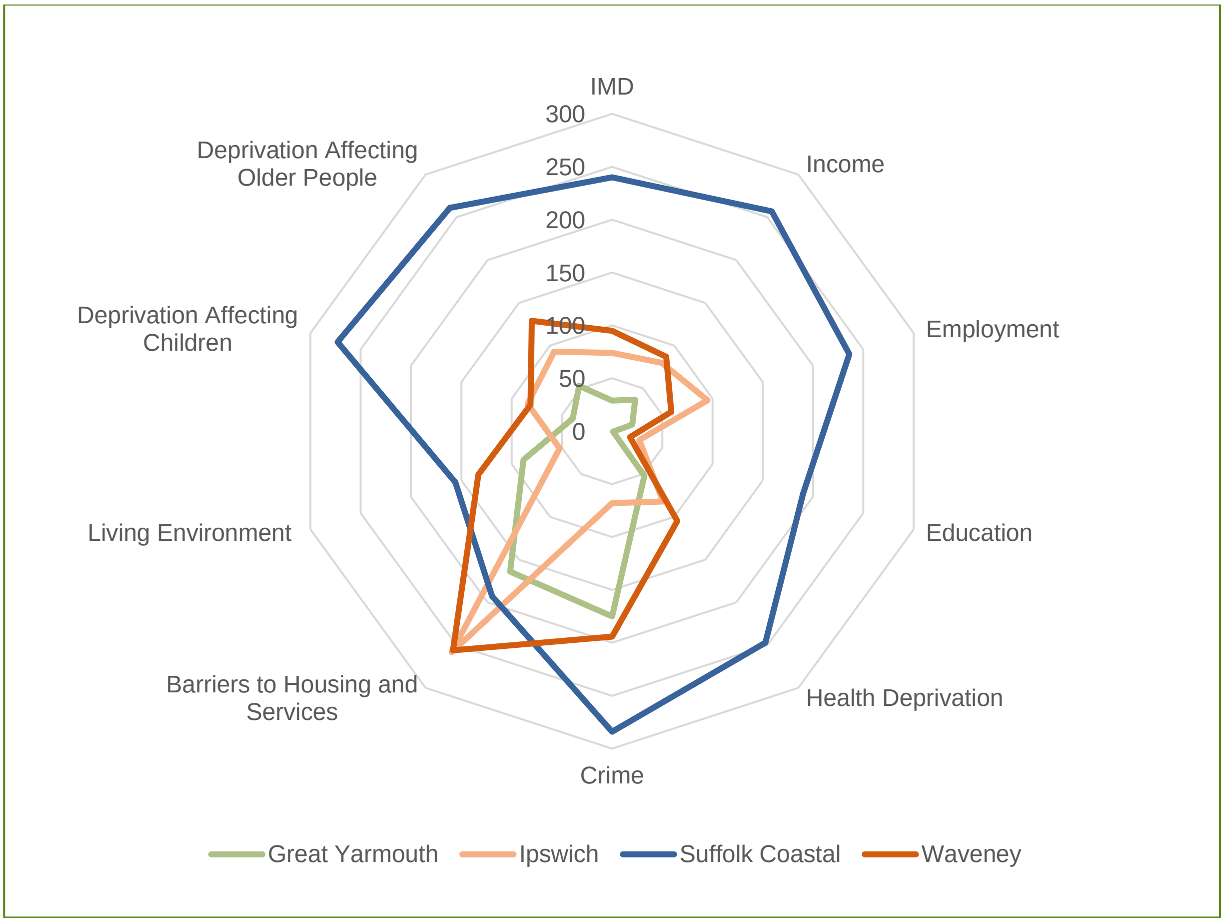


**Plate 30.21 Local IMD rankings**

### 30.5.3.2 Wellbeing Statistics

138. The Annual Population Survey conducted by the ONS in 2015 (ONS 2015) also categorised the wellbeing of the UK and these findings have been published at a district level. These are given out of 10 and generally shows that people in the four districts have about average levels of wellbeing, ***Table 30.35***. People in Suffolk Coastal are reported to have slightly higher levels of wellbeing across three positive indicators but are also reported to be slightly more anxious than people in other districts.

**Table 30.35 Wellbeing Statistics (out of 10) at a Local Level**

| | Suffolk Coastal | Waveney | Great Yarmouth | Ipswich | UK average |
|---|---|---|---|---|---|
| Life Satisfaction | 7.6 | 7.6 | 7.6 | 7.4 | 7.5 |
| Worthwhile | 7.9 | 7.8 | 7.8 | 7.7 | 7.8 |
| Happiness | 7.4 | 7.4 | 7.5 | 7.4 | 7.4 |
| Anxiety | 3.1 | 2.8 | 2.8 | 3.2 | 2.9 |

### 30.5.3.3 Opinions of Tourism Visitors with Regards Offshore Wind

139. Tourism stakeholders who represent tourism businesses often believe that the presence of wind turbines would deter visitors. Studies have been conducted (***Appendix 30.1***) to understand visitor opinion about wind power development. On average 75-80% of people surveyed across multiple studies expressed neutral or positive views of wind energy and stated that it would not deter them from visiting an area. Furthermore, an economic study of tourism employment in regions with established onshore wind projects shows no change in employment rates. However, these studies primarily focus on onshore wind and are not directly comparable to an offshore wind project. Therefore, further data analysis has been undertaken to understand if there are consistent trends in visitor reviews where offshore windfarms are visible from the coast.

140. The National Coastal Tourism Academy (NCTA) conducted research in to why visitors choose to visit coastal areas (NCTA 2015). This showed that although the main factor was price around half of the respondents indicated that the beach was an important factor in choosing to visit a coastal area. Nearly half of the respondents indicated that they used information from the internet to inform their decision.

141. As the internet is seen to be the main source of information for visitors that have not visited an area before, a survey of Trip Advisor[5] reviews has been conducted for coastal assets where there is currently a view of offshore wind turbines (***Table 30.36***).

142. The location of offshore windfarms around England that are visible from the coast have been gathered to understand the perception of visitors to this area in ***section 30.6.2.2***. The offshore windfarms shown in ***Table 30.36*** are all within 32km of the coast and would therefore be comparably visible during certain conditions from coastal areas such as beach or coastal paths.

**Table 30.36 Offshore Windfarms and Coastal Assets Considered**

| Windfarm | Coastal assets |
|---|---|
| Barrow: 7km off Walney Island coast of Cumbria. 30 turbines<br>Ormonde: off Walney Island. 30 turbines<br>West of Duddon Sands 30 turbines<br>Walney Phase 1 and 2 102 turbines | South Walney Nature Reserve<br>Earnse Bay<br>Silecroft Beach |
| Burbo Bank + extension, 57 turbines | Ainsdale Beach<br>Hilbre Island |

[5] Trip Advisor users are seen as representative and have been used in previous studies (e.g. Conlon and Halterbeck 2017)

| Windfarm | Coastal assets |
|---|---|
| | Wallasey Beach |
| | Wirral Coastal Path |
| | Leasowe Lighthouse |
| Teesside: 1.5 km from NE Teesmouth, 27 turbines | Redcar Beach |
| | Seaton Carew Beach |
| Westermost Rough: 8km from the coast, approx. 25 km north of Spurn Head, 35 turbines<br>Humber Gateway: 8km off the Holderness Coast, 73 turbines | Withernsea Lighthouse Museum |
| | Spurn Point |
| | Hornsea Beach |
| Lynn and Inner Dowsing: 5km off Skegness, 54 turbines<br>Lincs: 8km off Skegness, 75 turbines | Gibraltar Point |
| | Skegness Beach |
| | Ingoldmells Beach |
| | Anderby Creek |
| Scroby Sands: 3km NE of Great Yarmouth, 30 turbines | Caister-on-Sea Beach |
| | Hemsby Beach |
| | Gorleston Beach |
| Gunfleet Sands 1 and 2: 7km off Clacton-On-Sea, 48 turbines | Clacton-On-Sea Beach |
| | Frinton-On-Sea Beach |
| | Jaywick Beach |
| Kentish Flats: 8.5km off Whitstable, 30 turbines | Tankerton Beach |
| | West Beach |
| | Herne Bay |
| | Leysdown Beach |
| Rampion: 13-23km off the Sussex Coast, 116 turbines | Brighton Beach |
| | Undercliff Walk |
| | Seaford Beach |

143. Total reviews per coastal asset were searched using for example the terms “wind farm”, “windfarm” and “wind turbine”. The corresponding reviews were then assessed to understand if the reviewer was expressing a positive, negative, or neutral view. To do this the reviewer had to specifically refer to the windfarm in a positive or negative manner. If they remarked that it was there then they were

classed as neutral. The findings of the review are shown in ***Table 30.37*** and summarised in ***Table 30.78***.

144. This search of independent reviews of 30 coastal assets with a view of offshore windfarms shows that of 12,278 reviews (as of 31st of August 2018) only 81 reviewers mention windfarms or wind turbines (or derivatives) at all. The opinions are relatively evenly split with 21 positive, 30 negative and 30 neutral.

145. 81 of 12,278 reviewers (0.66%) mention windfarms or wind turbines at all. 30 of 12,278 reviewers (0.24%) express a negative opinion of windfarms. This indicates that the majority of visitors (99.44%) to the coast of England do not hold strong enough opinions about the location of offshore wind development to comment or did not notice or see the infrastructure.

**Table 30.37 Trip Advisor Reviews of Coastal Assets with a view of a Windfarm**

| Beach | Total reviews | Positive | Negative | Neutral | Total |
|---|---|---|---|---|---|
| South Walney Nature Reserve | 65 | 1 | | | 1 |
| Earnse Bay | 75 | | 2 | | 2 |
| Silecroft Beach | 20 | | 1 | | 1 |
| Ainsdale Beach | 394 | | | 1 | 1 |
| Hilbre Island | 90 | | | 1 | 1 |
| Wallasey Beach | 7 | | | | 0 |
| Wirral Coastal Path | 5 | | | | 0 |
| Leasowe Lighthouse | 22 | | | | 0 |
| Redcar Beach | 50 | 2 | 4 | 1 | 7 |
| Seaton Carew Beach | 312 | | | 4 | 4 |
| Withernsea Lighthouse Museum | 167 | | | | 0 |
| Spurn Point | 193 | | | 3 | 3 |
| Hornsea Beach | 228 | | | | 0 |
| Gibraltar Point | 637 | | | 1 | 1 |
| Skegness Beach | 645 | 3 | 10 | 4 | 17 |
| Ingoldmells Beach | 27 | | | | 0 |
| Anderby Creek | 141 | | | | 0 |
| Caister-on-Sea Beach | 247 | 5 | | | 5 |
| Hemsby Beach | 274 | | | | 0 |
| Gorleston-on-Sea Beach | 1,853 | 1 | 1 | 1 | 3 |

| Beach | Total reviews | Positive | Negative | Neutral | Total |
|---|---|---|---|---|---|
| Clacton-On-Sea Beach | 800 | 3 | 4 | 2 | 9 |
| Frinton-On-Sea Beach | 406 | 1 | 5 | 2 | 8 |
| Jaywick Beach | 165 | | 2 | | 2 |
| Tankerton Beach | 170 | 2 | 1 | 5 | 8 |
| West Beach | 29 | | | 1 | 1 |
| Herne Bay | 204 | 1 | | 1 | 2 |
| Leysdown Beach | 143 | 2 | | | 2 |
| Brighton Beach | 3,907 | | | 2 | 2 |
| Undercliff Walk | 686 | | | | 0 |
| Seaford Beach | 316 | | | 1 | 1 |
| Total | 12,278 | 21 | 30 | 30 | 81 |

146. National Grid conducted a study in to the effect of major infrastructure projects on socio-economic factors (National Grid 2014). This showed that although people did perceive negative impacts to landscape it did not change their behaviour, likelihood to visit an area, or levels of expenditure in an area.

#### 30.5.3.4 Summary

147. Wellbeing statistics and IMD both indicate that Suffolk Coastal District has relatively high wellbeing because people are broadly more satisfied and they have fewer barriers to prosperity. Considering that the population has a higher proportion of older aged people it can be assumed that they may be more socio-economically secure however they're also slightly more anxious.

148. IMD also show that Ipswich, Great Yarmouth, and Waveney are relatively deprived (in comparison to other English districts). Therefore, they would stand to benefit from long term employment. The IMD indicated that these areas are relatively deprived with regards access to education, but qualifications statistics suggest that the level of education is only marginally below national averages.

149. Studies of visitor opinions with regards offshore wind show no evidence that tourists are deterred by either the presence of wind turbines or high voltage distribution infrastructure (National Grid 2014).

### 30.5.4 Physical Capital

150. The physical capital assessment will focus on assets that support the tourism industry because the assessment of potential impact will compare these assets to

sources of impact in supporting chapters. Baselines from the following assessments also inform the understanding of physical capital:

- ***Chapter 24 Archaeology and Cultural Heritage;***
- ***Chapter 26 Traffic and Transport;*** and
- ***Chapter 27 Human Health.***

#### 30.5.4.1 Assets Close to the Proposed Onshore Development Area

151. As shown in ***Table 30.38*** there are 31 PRoWs that may be affected by the proposed East Anglia ONE North project as they are within or adjacent to the proposed onshore development area. These are shown on ***Figure 30.1***. Until the final onshore route is known, the precise interaction with each of these PRoWs cannot be assessed, and some of the 32 may fall outside the onshore development area assessed for the DCO application. Current assessment shows that one PRoW is a high value nationally significant coastal path and one PRoW at the onshore substation location will need to be permanently diverted.

**Table 30.38 Public Rights of Way (Working Inland from Landfall across Proposed Onshore Development Area)**

| Asset | Within proposed onshore development area | Relative importance/notes |
|---|---|---|
| Suffolk Coastal Path | Crosses at landfall | Nationally significant |
| E-106/031/0 | Landfall | Status = 1 : footpath |
| E-106/020/0 | Yes | Status = 1 : footpath |
| E-106/025/0 | Yes | Status = 4 : byway open to all traffic (BOAT) |
| E-363/026/0 | Yes | Status = 4 : BOAT |
| E-363/024/0 | Yes | Status = 3 : bridleway |
| E-363/029/0 | Yes | Status = 1 : footpath |
| E-363/023/0 | Yes | Status = 1 : footpath |
| E-363/022/0 | Yes | Status = 1 : footpath |
| E-363/027/0 | Yes | Status = 3 : bridleway |
| E-363/015/0 | Yes | Status = 3 : bridleway |
| E-106/008/0 | Yes | Status = 1 : footpath |
| E-106/006/0 | Yes | Status = 3 : bridleway |
| E-363/014/0 | Yes | Status = 1 : footpath |
| E-363/014/A | Yes | Status = 1 : footpath |

| Asset | Within proposed onshore development area | Relative importance/notes |
|---|---|---|
| E-106/003/0 | Yes | Status = 1 : footpath |
| E-106/065/0 | Yes | Status = 1 : footpath |
| E-260/030/0 | Yes | Status = 1 : footpath |
| E-260/007/0 | Yes | Status = 1 : footpath |
| E-260/009/0 | Yes | Status = 1 : footpath |
| E-260/012/A | Adjacent/along redline boundary | Status = 1 : footpath |
| E-354/020/0 | Yes | Status = 3 : bridleway |
| E-354/036/0 | Yes | Status = 3 : bridleway |
| E-354/001/0 | Yes | Status = 3 : bridleway |
| E-354/003/0 | Yes | Status = 1 : footpath |
| E-354/019/0 | Yes | Status = 1 : footpath |
| E-354/018/0 | Yes | Status = 1 : footpath |
| E-354/018/A | Yes | Status = 1 : footpath |
| E-354/007/A | Yes | Status = 1 : footpath |
| E-354/006/0 | Yes | Status = 1 : footpath |
| E-354/007/0 | Yes | Status = 1 : footpath |
| E-260/017/0 | On boundary | Status = 1 : footpath |

152. There are 22 accommodation businesses and 4 visitor attractions located within a 1km radius of the proposed onshore development area. All of these are considered to be low to medium value with regards to ***Table 30.11*** as none are nationally important.

153. ***Table 30.39*** shows the accommodation in the vicinity of the proposed onshore development area, shown on ***Figure 30.1***.

**Table 30.39 Accommodation in the Vicinity of The Proposed Onshore Development Area**

| Asset | Distance from onshore development area (km) | Relative importance/notes |
|---|---|---|
| Ogilvie Lodge Apartments | 0.37 | 5 stars by 2 Trip Advisor reviews |
| The Dolphin Inn | 0.12 | 4.5 stars by 298 Trip Advisor reviews |

<table>
<tr><th>Asset</th><th>Distance from onshore development area (km)</th><th colspan="2">Relative importance/notes</th></tr>
<tr><td>Thorpeness Golf Club and Hotel</td><td>0.39</td><td colspan="2">4 stars by 431 Trip Advisor reviews</td></tr>
<tr><td>Beach View Holiday Park</td><td>0.17</td><td colspan="2">4.5 stars by 108 Trip Advisor reviews</td></tr>
<tr><td>Manor Farm Knodishall</td><td>Surrounded</td><td colspan="2">5 starts by 19 Trip Advisor reviews</td></tr>
<tr><td>Tirah Guest House</td><td>0.56</td><td colspan="2">5 stars by 199 Trip Advisor reviews</td></tr>
<tr><td colspan="4">Holiday Cottages in Thorpeness sourced from www.suffolk-secrets.co.uk, all between 1km and adjacent to red line boundary:</td></tr>
<tr><td colspan="3">1. The Dormy<br>2. Truman Lodge<br>3. The Dormy<br>4. Old Homes – Pebble Cottage<br>5. Truman Lodge<br>6. The Haven<br>7. Sanctuary<br>8. The Whinlands</td><td>1. Alexander House<br>2. Church House<br>3. Holly House<br>4. Micawbers<br>5. Rainbow Cottage<br>6. The Boat House<br>7. The Lamp House</td></tr>
</table>

154. ***Table 30.40*** lists the visitor attractions within the vicinity of the proposed onshore development area based on Trip Advisor.

**Table 30.40 Visitor Attractions in the Vicinity of The Proposed Onshore Development Area**

| Asset | Distance from onshore development area (km) | Relative importance/notes |
|---|---|---|
| Thorpeness Meare | 0.29 | 4.5 stars from 156 Trip Advisor reviews |
| Meare Shop and Tearooms | 0.43 | 4 stars from 136 Trip Advisor reviews |
| Thorpeness Country Club | 0.30 | 4.5 stars from 60 Facebook reviews |
| Thorpeness Golf Club | 0.39 | 4 stars from 431 Trip Advisor reviews |

### 30.5.4.2 Worker Accommodation

155. It is assumed that non-residential workers would choose to stay in accommodation that is no more than a 45-minute drive from the proposed onshore development area. This is the same assumption that has been used in ***Chapter 26 Traffic and Transport*** to inform that assessment. Online booking websites have been used to assess the number of hotels in the region as it is assumed that this is the most likely method that non-residential workers would use to book accommodation. As

shown in ***Figure 30.3*** there are 2,107 within the vicinity of the proposed onshore development area as shown in ***Table 30.41***.

**Table 30.41 Accommodation within 45 minutes of the Proposed Onshore Development Area**

| Post-code | Time (min) | Apartments | B&B | Chalet | Guesthouse | Hostel | Hotel | Inn | Lodge | Motel | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| IP1 | 40 | | | | 4 | | 26 | | | | 30 |
| IP11 | 40 | | | | | | 157 | | | | 157 |
| IP12 | 26 | 2 | 38 | | 2 | 8 | 122 | 4 | 7 | | 183 |
| IP13 | 30 | 47 | 24 | | | | 32 | 14 | | | 117 |
| IP15 | 12 | 4 | | | 7 | | 152 | | | | 163 |
| IP16 | 10 | 1 | 19 | | | | 47 | 3 | 1 | | 71 |
| IP17 | 12 | 1 | 31 | | 5 | | 46 | 40 | | | 123 |
| IP18 | 24 | 1 | | | | | 77 | 5 | | | 83 |
| IP19 | 24 | 6 | | | | | | | | | 6 |
| IP20 | 40 | | 6 | | | | 39 | 5 | | | 50 |
| IP21 | 40 | | 4 | | | | | | | | 4 |
| IP3 | 35 | | | | 6 | | 80 | | | | 86 |
| IP4 | 30 | 3 | | | 17 | | | | | | 20 |
| IP5 | 45 | | | | | | 23 | | | | 23 |
| IP6 | 35 | 1 | | | | | 144 | 12 | | | 157 |
| NR32 | 35 | | | | 52 | | 31 | | | | 83 |
| NR33 | 45 | 10 | 26 | 1 | 30 | | 594 | | | | 661 |
| NR34 | 40 | | 10 | | 5 | | 32 | 22 | | 14 | 83 |
| NR35 | 40 | 2 | 1 | | | | | 4 | | | 7 |
| Total | Average = 30 | 78 | 159 | 1 | 128 | 8 | 1602 | 109 | 8 | 14 | 2107 |

### 30.5.4.3 Offshore Windfarms in NALEP

156. There is a strong pipeline of offshore wind projects in NALEP being developed by several companies as shown in ***Table 30.42***.

**Table 30.42 Pipeline of Offshore Wind Projects in NALEP (RenewableUK 2018)**

| Status | Project | Developer | Capacity MW |
|---|---|---|---|
| In Development | East Anglia ONE North | ScottishPower Renewables | 800 |
| | East Anglia TWO | ScottishPower Renewables | 900 |
| | Norfolk Boreas | Vattenfall AB | 1800 |
| | Norfolk Vanguard East | Vattenfall UK | 1800 |
| | Hornsea Project 3 | Orsted | 2400 |
| Consented | East Anglia THREE | ScottishPower Renewables | 1200 |
| Under construction | East Anglia ONE | ScottishPower Renewables | 714 |
| Operational | Dudgeon | Statkraft | 402 |
| | Galloper | Innogy Renewables UK Ltd | 353 |
| | Greater Gabbard | SSE and RWE Npower Renewables | 504 |
| | Race Bank | Orsted A/S | 573 |
| | Scroby Sands | E.ON Climate and Renewables UK Ltd | 60 |
| | Sheringham Shoal | Scira Offshore Energy Ltd | 316.8 |
| Total | 13 projects | Total generation in GW | 11.82 |

### 30.5.5 Natural Capital

157. The natural capital assessment primarily focusses on areas that can be used for recreation or as visitor attractions. Baselines from the following assessments also inform the understanding of natural capital:

- ***Chapter 20 Water Resources and Flood Risk;***
- ***Chapter 21 Land Use;*** and
- ***Chapter 22 Onshore Ecology.***

158. The proposed onshore development area interacts with seven areas of common and open land as shown in ***Table 30.43*** and ***Figure 30.2***. The onshore works will would potentially directly interact with three coastal assets as shown in ***Table 30.44*** but the offshore turbines may be visible from 10 bathing water beaches along the Suffolk coast (***Figure 30.4***) during periods of high visibility (corresponding with approximately 20% to 30% of the year).

**Table 30.43 Common and Open Land**

| Asset | Distance from onshore development area (km) | Within proposed onshore development area |
|---|---|---|
| Aldringham Common and Thorpeness Common Registered Common Land | 0.5 - 0.1 | - |
| Registered Common land Thorpeness Common North | - | Adjacent |
| The Fens Registered Common Land | 0.70 | - |
| Aldringham Green Registered Common Land | - | Adjacent |
| Knodishall Common Registered Common Land | - | Adjacent |
| Thorpeness Common (North) | - | Within and adjacent |
| Sizewell Common Registered Common Land | - | Adjacent |

**Table 30.44 Natural Assets**

| Asset | Interaction with proposed onshore development area / offshore infrastructure | Relative importance/notes |
|---|---|---|
| Suffolk Coast and Heaths AONB | Extends inland for around 2.5 km from landfall. | High value |
| Thorpeness Beach | At landfall | Regionally important, medium value |
| Sizewell Beach | 0.6km from onshore development area | Regionally important, medium value |
| Southwold Denes and The Pier | Wind turbines may be visible | Bathing Water Beach, high value |
| Lowestoft North and South of Pier | | Bathing Water Beach, high value |
| Lowestoft Gunton Denes | | Bathing Water Beach, high value |
| Gorleston Beach | | Bathing Water Beach, high value |
| Great Yarmouth South, Pier and North | | Bathing Water Beach, high value |
| Caister Point | | Bathing Water Beach, high value |

### 30.5.5.1 Summary of Physical and Natural Capital

159. The physical and natural capital assessment shows that the proposed East Anglia ONE North project has limited potential for effect with assets either used

recreationally or by visitors. However, the offshore wind turbines will be visible from several locations under certain climatic conditions, but studies show this would not detract from the enjoyment of coastal areas (see ***section 30.5.3.3***).

### 30.5.6 Anticipated Trends in Baseline Condition

160. The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 require assessments to consider trends within the existing environment to understand if conditions now would be the same or different to conditions when the proposed East Anglia ONE North project is implemented. As such, statistics for the existing environment have been compiled by using timelines of data to visualise the trends rather than using single year statistics. It is assumed that historic trends shown in the existing environment would continue as shown under the various sections.

## 30.6 Potential Impacts

161. Following the methodology described in ***section 30.4.4.1***, the first step in understanding potential socio-economic, tourism, and recreation impacts is to consider the sources of impacts and if they have a plausible pathway to receptors.

**Table 30.45 Plausible Socio-Economic Source-Pathway-Receptor Models for the proposed East Anglia ONE North project**

| Type | Source | Pathway | Receptor |
|---|---|---|---|
| Economy | The source of economic impacts is the opportunity to be employed as a result of the proposed East Anglia ONE North project. | The pathway is through direct employment by the proposed East Anglia ONE North project, indirect employment through the supply chain, and induced employment due to expenditure by people that are directly or indirectly employed. | The receptor is the local and regional labour market. Data has been compiled in ***sections 30.5.1, 30.5.2*** and ***30.5.3*** to describe this. |
| Tourism Economy | The source of economic tourism impacts is through expenditure by visitors as a result of the proposed East Anglia ONE North project. | The pathway for effect is through non-residential employees spending money when staying overnight. As defined by ONS (***section 30.4.1.4.3***) a visitor is anybody travelling to a region for any purpose. | The receptor is local accommodation market and the people that it employs. Data has been compiled in ***section 30.5.4*** to describe this. |
| Tourism or recreation | There is the potential for tourism and recreational assets to be affected by physical disturbances such as noise, dust, and traffic delays. | The pathway is through construction activities disturbing people visiting an area or using the area recreationally. This is dependent upon the location of the asset in relation to the effect. | Receptors are visitors to tourism assets. Therefore, the value is based on the number of visitor and/or the national significance of the asset. Data has been compiled in ***section 30.5.4.2*** to describe this. |

| Type | Source | Pathway | Receptor |
|---|---|---|---|
| Long term tourism | Due to the proximity of the wind turbines to the Suffolk coast they may be seen during periods of high visibility whilst tourists are visiting the area. | The pathway has two components. First of all people have to see the wind turbines and secondly they have to believe that this change is bad enough not to visit the area to spend money. | The receptors are tourists visiting the area. A meta-study of visitor surveys and a study of Trip Advisor reviews of coastal assets with a view of offshore windfarms have been used to understand visitor opinions of offshore wind energy. See ***Appendix 31.1***. |

162. Based on the source-pathway-receptor model the potential impacts in ***Table 30.46*** are both plausible and probable.

**Table 30.46 Potential Impacts**

| No. | Title | Description | Project phase |
|---|---|---|---|
| 1a | Onshore construction employment | During the construction of the onshore infrastructure the proposed East Anglia ONE North project would employ people. These people may be recruited locally or regionally. | Construction phase. |
| 1b | Offshore construction employment | During construction of the offshore infrastructure the proposed East Anglia ONE North project would employ people. These people may be recruited regionally or nationally. | Construction phase. |
| 2 | Tourism employment | Non-residential onshore workers would spend money in the local economy which would lead to further employment in the accommodation industry. | Construction phase. |
| 3 | Tourism and recreation disturbance | Construction of the proposed East Anglia ONE North project may temporarily disturb people while they enjoy recreational activities. | Construction phase. |
| 4 | Long term employment | Long-term employment opportunities created by the proposed East Anglia ONE North project for people in the local and regional study area. | Operation phase. |
| 5 | Long term tourism | There is potential for visitors to the coast to be deterred by the presence of offshore wind turbines and potential for visitors to Friston to be deterred by the onshore substations. | Operation phase. |

## 30.6.1 Potential Impacts during Construction

163. In this section, the potential impacts outlined in ***Table 30.46*** will be assessed following the methodology outlined in ***section 30.4.***

### 30.6.1.1 Impact 1a: Onshore Construction Employment

164. Construction of the landfall, cable route, and onshore substations is scheduled to begin in 2024. As described in ***Chapter 4 Site Selection and Assessment of Alternatives***, the works are completely within the Suffolk Coastal District.

Therefore, this assessment will consider the significance of impact at a local and regional level.

#### 30.6.1.1.1Potential Labour Market

165. Using the information presented in ***Table 30.28*** (***section 30.5.2.4***) the likely labour markets at a local and regional level are outlined in ***Table 30.47***. This data is based on the UK Business Register and Employment Survey (NOMIS 2018c) and is the most recent at time of writing. It shows that in 2016 there were 16,545 people working in relevant sectors locally and 54,610 people working in relevant sectors regionally.

**Table 30.47 Local and Regional Labour Market Relevant to Construction of the proposed East Anglia ONE North project**

| Standard Industrial Classification (SIC) relevant to the proposed East Anglia ONE North project | | Local | Regional |
|---|---|---|---|
| 28 | Manufacture of machinery and equipment | 800 | 2,500 |
| 30 | Manufacture of other transport equipment | 165 | 225 |
| 33 | Repair and installation of machinery and equipment | 920 | 3,675 |
| 35 | Electricity, gas, steam and air conditioning supply | 2,180 | 2,930 |
| 41 | Construction of buildings | 3,265 | 11,500 |
| 42 | Civil engineering | 1,365 | 5,660 |
| 43 | Specialised construction activities | 4,315 | 18,065 |
| 71 | Engineering activities; technical testing and analysis | 3,500 | 9,000 |
| 82 | Office administrative, | 35 | 150 |
| Total | | 16,545 | 54,610 |

#### 30.6.1.1.2 Magnitude of Employment

166. The assessment considers local employment to be that which is taken by residential workers. Therefore, the local study area for onshore construction employment will be the districts/boroughs of Suffolk Coastal, Waveney, Great Yarmouth, and Ipswich. For the purpose of the assessment, it is assumed for the traffic and transport assessment that 36% of direct employment will be locally procured. This assumption has been agreed with SCDC in collaboration with authors of ***Chapter 26 Traffic and Transport***.

167. The remaining 64% of direct employment will therefore be sourced from outside of the local region. East Anglia ONE is currently under construction by SPR and to understand the UK content of its supply chain, SPR is monitoring the origin of suppliers. This monitoring shows that the majority of construction staff are likely to be procured from within the NALEP area.

168. The assessment considered NALEP to be the regional study area. For purposes of assessment, it is assumed that 48% of direct employment will be from NALEP (that is 75% of the remaining 64%).

169. That leaves 16% (100% minus 48% and 36%) of direct employment that is assumed to be procured from outside of NALEP during construction. It is not possible to determine if this would be staff from the UK or international.

170. The design engineers have provided an estimate of average staff required on site per day for the purpose of transport modelling in ***Chapter 26 Traffic and Transport***. This data has been used to estimate average daily employment per quarter to indicate the construction labour curve shown in ***Plate 30.22***. This shows that peak employment would be during the fourth quarter of year one (333 staff per day) and the first quarter of year two (254 staff per day). This is unknown at this point because the exact point at which the onshore construction project will start in 2024 is not known at present.

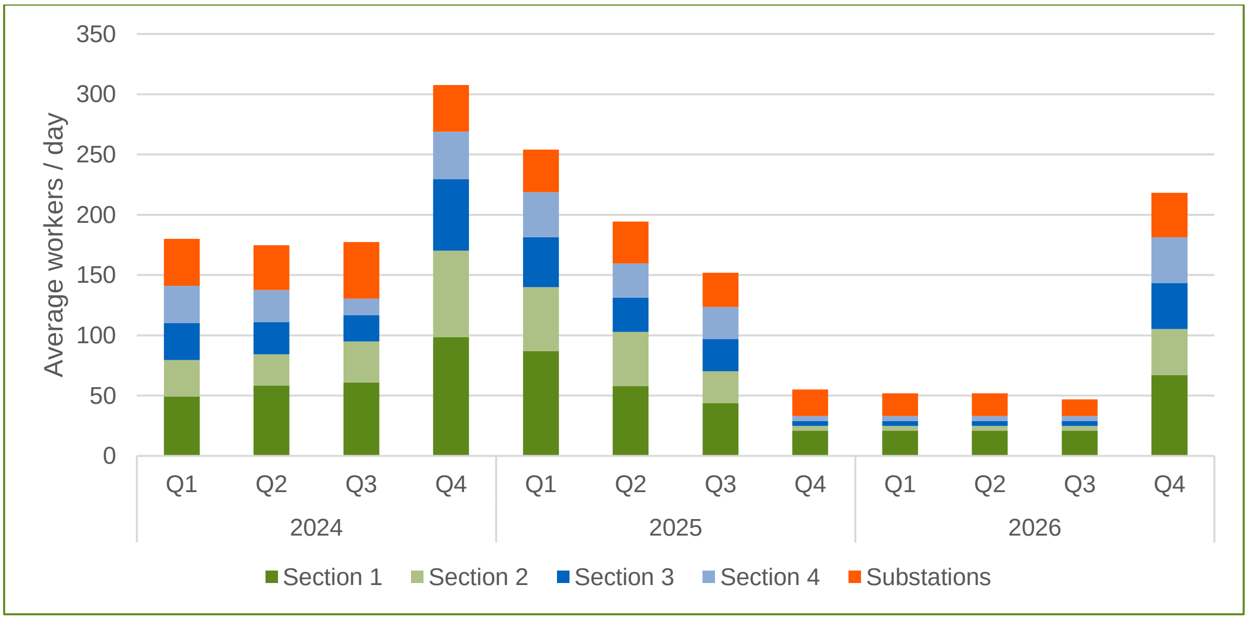


**Plate 30.22 Labour Curve for Onshore Construction Assuming a start date of Q1 2024**

171. Average total employees per day data has also been used to estimate the FTE employment per year, ***Table 30.48***. This uses multipliers for indirect and induced employment taken from recent supply chain studies.

172. BVG Associates has undertaken an economic evaluation report for East Anglia ONE for SPR (BVG Associates 2018) based on actual expenditure post consent and using the local content methodology (Roberts and Westbrook 2017). This shows that for every 1 FTE created through direct employment, 1.31 FTE are created in the supply chain (i.e. an indirect employment multiplier of 1.31). Similarly, the study also shows that for every FTE created by Direct and Indirect

employment 1.21 FTE are created through expenditure in the wider economy (i.e. induced employment multiplier of 1.21).

173. These multipliers are used in preference over ONS national averages because they are derived from the most recent studies of a directly comparable offshore windfarm. They are also lower than the national averages calculated by the ONS for construction projects and therefore provide a conservative figure that is more realistic for regional assessment.

**Table 30.48 Total Employment Estimates during Onshore Construction**[6]

| | Direct (D) | Indirect (InD) | D + InD | Induced | Total |
|---|---|---|---|---|---|
| Year 1 FTE | 266 | 82 | 349 | 73 | 422 |
| Year 2 FTE | 208 | 187 | 395 | 83 | 477 |
| Year 3 FTE | 117 | 105 | 222 | 47 | 269 |
| FTE years over 3-year construction | 591 | 375 | 965 | 203 | 1168 |
| Average FTE per year | 197 | 125 | 322 | 68 | 389 |

**Table 30.49 Local Employment (within 60min drive) at 36%**[7]

| | Direct (D) | Indirect (InD) | D + InD | Induced | Total |
|---|---|---|---|---|---|
| Year 1 FTE | 96 | 25 | 121 | 19 | 140 |
| Year 2 FTE | 75 | 19 | 94 | 20 | 114 |
| Year 3 FTE | 42 | 11 | 53 | 11 | 64 |
| FTE years over 3-year construction | 213 | 55 | 268 | 50 | 318 |
| Average FTE per year | 71 | 18 | 89 | 17 | 106 |

**Table 30.50 Regional Employment (outside of 60 min drive) at 48%**

| | Direct (D) | Indirect (InD) | D + InD | Induced | Total |
|---|---|---|---|---|---|
| Year 1 FTE | 128 | 40 | 167 | 35 | 202 |
| Year 2 FTE | 100 | 90 | 189 | 40 | 229 |
| Year 3 FTE | 56 | 51 | 107 | 22 | 129 |
| FTE years over 3-year construction | 284 | 180 | 463 | 97 | 561 |
| Average FTE per year | 95 | 60 | 154 | 32 | 187 |

[6] FTE Years is the sum of FTE across the whole period. To calculate FTE from FTE Year it is necessary to divide FTE Years by the duration of the project in years.
[7] Due to the reduced scale of the local labour market it is likely that some of the indirect and induced benefit would be created outside of the local area, therefore the multipliers have been reduced to 1.26 for indirect employment and 1.16 for induced employment.

**Table 30.51 Total Regional Employment (i.e. 36%+48%)[8]**

| | Direct (D) | Indirect (InD) | D + InD | Induced | Total |
|---|---|---|---|---|---|
| Year 1 FTE | 224 | 69 | 293 | 61 | 354 |
| Year 2 FTE | 174 | 157 | 331 | 70 | 401 |
| Year 3 FTE | 98 | 88 | 187 | 39 | 226 |
| FTE years over 3-year construction | 496 | 315 | 811 | 170 | 981 |
| Average FTE per year | 165 | 105 | 270 | 57 | 327 |

**Table 30.52 Remaining Non-Regional Employment at 16%**

| | Direct (D) | Indirect (InD) | D + InD | Induced | Total |
|---|---|---|---|---|---|
| Year 1 FTE | 43 | 13 | 56 | 12 | 67 |
| Year 2 FTE | 33 | 30 | 63 | 13 | 76 |
| Year 3 FTE | 19 | 17 | 36 | 7 | 43 |
| FTE years over 3-year construction | 95 | 60 | 154 | 32 | 187 |
| Average FTE per year | 32 | 20 | 51 | 11 | 62 |

174. ***Table 30.48*** to ***Table 30.52*** show that on average the proposed East Anglia ONE North project would create 389 FTE per year. Of this 106 FTE could be created locally (***Table 30.49***) and a further 187 FTE would be created regionally (***Table 30.50***) which equates to 327 FTE across NALEP (***Table 30.51***). The remaining 62 FTE would be created outside of NALEP (***Table 30.52***). It is assumed that these would be technical specialists and their origin would depend on their specialism, which is not possible to estimate at a pre-consent stage.

175. The magnitude of employment is shown below in ***Table 30.53*** and ***Table 30.54*** using the definitions in ***Table 30.13*** and ***Table 30.14*** respectively.

**Table 30.53 Size of Change due to Construction Employment**

| Element | Local | Regional |
|---|---|---|
| Employment opportunity | 106 | 327 |
| Labour market | 16545 | 54610 |
| Size of change | 0.64% | 0.60% |
| Definition | Small | Small |

[8] Note that direct employment is summed and then original multipliers are used which leads to a larger total than the sum of local and regional totals.

**Table 30.54 Characterisation of Magnitude**

| Characteristic of magnitude | Description |
|---|---|
| Size of change | Small change against baseline |
| Duration | Medium term over three years |
| Frequency | Some people may be continuously employed but it is likely that many people will be periodically employed on a contract basis |
| Timing | The works appear to not clash with tourist season |
| Inter-relationships | Employment benefits are reliant upon an appropriate supply chain plan that includes opportunity for training and upskilling |
| Magnitude | Considering all aspects, this is a low magnitude effect |

#### 30.6.1.1.3Likelihood of Effect

176. Assessment of human capital in ***section 30.5.1*** and productive capital in ***section 30.5.2*** shows that people within the local labour market generally have lower qualifications than regional and national averages. Therefore, it is likely that lower skilled workers may be procured locally whereas higher skilled workers may need to travel in to site from other areas.

177. Locally there is growth in economic activity and a corresponding decrease in economic inactivity, in all regions except Ipswich. Therefore, it is likely that employment opportunities may be particularly beneficial for people in Ipswich.

178. However, across the region there has been a decline in employment in construction, manufacturing, and transport whilst other sectors have grown. Unemployment assessment shows that JSA claimants in relevant sectors have decreased as well. This suggests that either people are moving to other sectors or moving out of the region in search of work in construction, manufacturing, and transport.

179. The average construction worker's salary is around £38,000 per year (Indeed 2018). This equates to an average gross weekly income of £730 which is above both the average in NALEP of £578 and the UK of £662.

180. To gain this level of income requires specialist skills and qualifications which may not be as prevalent in the local and regional area as in the rest of the UK.

181. In conclusion, based on the comparison of labour market size to FTE jobs created it is likely that these could be supplied in the proportions assumed. However, for the region to gain maximum benefit the opportunity needs to be matched by a supply chain plan to upskill local or regional staff.

#### 30.6.1.1.4 Significance

182. Based on the above assessment and the matrix in ***Table 30.16*** the significance of the onshore construction impact is assessed as having **moderate beneficial** significance for the local and regional labour market, as summarised in ***Table 30.55***.

**Table 30.55 Significance of Onshore Construction Employment**

| Factor | Consideration |
|---|---|
| Type of impact pathway | Impact is generated through local and regional employment. |
| Baseline conditions | Baseline conditions suggest that there is a significant labour market but perhaps the qualification levels need to be supported to gain maximum benefit from this opportunity. |
| Likelihood of effect | It is likely that onshore construction can be procured from the local and regional labour market based on the experience of East Angle ONE and the size of the available labour market. |
| Magnitude of change | The magnitude of the change is assessed to be low |
| Inter-relationship | The impact is reliant upon a supply chain plan being developed that include opportunity for training. |
| Duration, frequency, reversibility and timing of effect | The impact is of a medium duration of periodic frequency. However, due to the significant pipeline of offshore windfarm construction in the region it is plausible that people could gain continuous employment between projects. |
| Policy context | Development of the offshore wind industry is in line with national, regional, and local policy. |
| Consultation responses | Consultation responses support the opportunity for employment locally and regionally. |
| Enhancement | The applicant has partnered with SCC and other industry stakeholders to engage local suppliers and enable a local supply chain as far practicable. |

### 30.6.1.2 Impact 1b: Offshore Construction Employment

183. At pre-consent stage, a decision has not been made on where the loadout port will be based. Therefore, this assessment will consider the significance of impact at a regional and national level.

184. It is important to note that the UK content is due to both the location of suppliers, and their competitiveness, and the supply chain cannot be defined at this stage.

185. To understand the regional and national content of the supply chain for the offshore construction a probabilistic assessment has been used. This uses the national impact assessment conducted by BVG Associates for East Anglia ONE (BVG Associates 2018) and the estimates provided by suppliers in the East Anglia ONE Supply Chain Plan (SPR 2014).

### 30.6.1.2.1 Potential Labour Market

186. UK Content assessment shows that on average the capital expenditure (capex) of an offshore wind project (during construction) constitutes 53% of the total expenditure (totex) (BVG Associates 2015). The largest proportion of capex is due to turbine supply (39%), balance of plant (i.e. foundations, substations, and cables) (28%), and installation and commissioning (30%). In 2015 BVG Associates estimated that 18% of totex was sourced from the UK and RenewableUK (2017) now estimates that on average 29% of totex is sourced from the UK. The largest portion of this is during installation and commissioning, then the balance of plant, and then turbine supply.

187. Using the information presented in ***Table 30.28*** (***section 30.5.2.4***) the likely labour markets at a regional and national level are outlined in ***Table 30.56***. This data is based on the UK Business Register and Employment Survey (NOMIS 2018) and is the most recent at time of writing. It shows that in 2016 there were 54,610 people working in relevant sectors locally and 1,848,700 people working in relevant sectors nationally.

**Table 30.56 Labour Market Relevant to the proposed East Anglia ONE North project in NALEP and England**

| Standard Industrial Classification (SIC) relevant to the proposed East Anglia ONE North project | | NALEP | England |
|---|---|---|---|
| 6 | Extraction of crude petroleum and natural gas | 255 | 4,500 |
| 28 | Manufacture of machinery and equipment n.e.c[9]. | 2,500 | 85,000 |
| 30 | Manufacture of other transport equipment | 225 | 12,000 |
| 33 | Repair and installation of machinery and equipment | 3,675 | 497,500 |
| 35 | Electricity, gas, steam and air conditioning supply | 2,930 | 18,200 |
| 41 | Construction of buildings | 11,500 | 118,500 |
| 42 | Civil engineering | 5,660 | 363,000 |
| 43 | Specialised construction activities | 18,065 | 690,000 |
| 50 | Water transport | 650 | 18,000 |
| 71 | Architectural and engineering activities; technical testing and analysis | 9,000 | 22,000 |
| 82 | Office administrative, office support and other business support activities | 150 | 20,000 |
| Total | | 54,610 | 1,848,700 |

[9] n.e.c 'not elsewhere classified' for definition see https://www.ons.gov.uk/economy/economicoutputandproductivity/output/bulletins/indexofproduction/2015-09-09#industry-spotlight-manufacture-of-machinery-and-equipment-not-elsewhere-classified

30.6.1.2.2 Magnitude of Employment

188. A generalised estimate of the construction programme of an offshore windfarm in the UK is presented in ***Plate 30.23*** based on assessment by BVG Associates (2018). This shows that the supply chain would start to develop approximately 2 years prior to the installation of the offshore windfarm and that the operational phase would continue for at least 25 years (discussed further in ***section 30.6.2.1***).

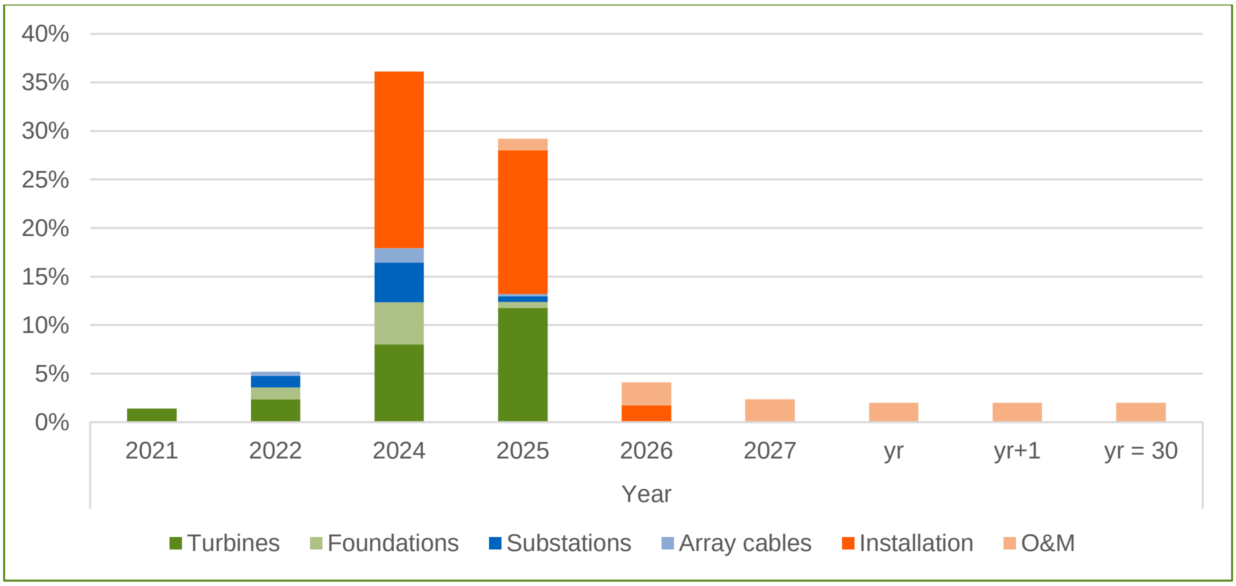


**Plate 30.23 General Programme for Construction of an offshore windfarm in the UK superimposed to an assumed start date of 2024**

189. BVG Associates assessment and supplier's assessment of FTE for East Anglia ONE has been used to produce a range of FTE for elements supplied from the UK, ***Table 30.57***. As discussed in ***section 30.4.2.3*** it is good practice to use a range of inputs where there is uncertainty. It should be noted that these figures are estimates based on best available information and as such are approximations. Figures have been provided to the nearest hundred because it is not plausible for a project to estimate FTE for employment across a national supply chain more accurately at a pre-consent stage.

190. ***Table 30.57*** and ***Table 30.58*** should be read in combination with ***Plate 30.23***.This indicates that turbine supplies would have a four year duration, balance of plant would have a three year duration, and installation and commissioning would have a three year duration. Note that this is an indication of works in the supply chain and does not mean that works in NALEP would have these durations.

**Table 30.57 National Employment Estimation of the proposed East Anglia ONE North project (given to nearest 100 FTE)**

| Element | Employment type | FTE Years | | | Yr | UK FTE Range | | |
|---|---|---|---|---|---|---|---|---|
| | | Max | Mid | Min | | Max | Mid | Min |
| Turbine supply | Direct | 1,600 | 1,200 | 800 | 4 | 400 | 300 | 200 |
| | Indirect | 1,800 | 1,400 | 1,000 | | 500 | 300 | 200 |
| | Induced | 700 | 500 | 400 | | 200 | 100 | 100 |
| | Total | 4,100 | 3,100 | 2,200 | | 1,000 | 800 | 500 |
| Balance of plant | Direct | 1,200 | 600 | 500 | 3 | 400 | 200 | 200 |
| | Indirect | 1,200 | 600 | 500 | | 400 | 200 | 200 |
| | Induced | 500 | 300 | 200 | | 200 | 100 | 100 |
| | Total | 2,900 | 1,500 | 1,200 | | 1,000 | 500 | 400 |
| Installation and commissioning | Direct | 2,200 | 1,500 | 800 | 3 | 700 | 500 | 300 |
| | Indirect | 2,900 | 1,900 | 1,000 | | 1,000 | 600 | 300 |
| | Induced | 1,200 | 800 | 400 | | 400 | 300 | 100 |
| | Total | 6,200 | 4,200 | 2,200 | | 2,100 | 1,400 | 700 |
| **Total** | | 13,200 | 8,800 | 5,600 | | 4,100 | 2,700 | 1,600 |

191. The UK FTE range provided in ***Table 30.57*** has been reduced to the potential employment in NALEP. This is accomplished by estimating the probability that businesses exist in NALEP that could provide the element of an offshore windfarm. This is based on monitoring data from East Anglia ONE.

**Table 30.58 Regional Employment Estimation of the proposed East Anglia ONE North project (given to nearest 100 FTE)**

| Element | Description | Probability | Type | FTE Years | | | Yr | UK FTE Range | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Max | Mid | Min | | Max | Mid | Min |
| Turbine supply | There is no supply of nacelle, hub, blades, or towers in NALEP. | 0% | Direct | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| | | | Indirect | 0 | 0 | 0 | | 0 | 0 | 0 |
| | | | Induced | 0 | 0 | 0 | | 0 | 0 | 0 |
| | | | Total | 0 | 0 | 0 | | 0 | 0 | 0 |
| Balance of plant | There is no supply of jackets foundations, or transmission equipment. Only a low probability of subsea cable or offshore transmission structures. | 0% | Direct | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| | | | Indirect | 0 | 0 | 0 | | 0 | 0 | 0 |
| | | | Induced | 0 | 0 | 0 | | 0 | 0 | 0 |
| | | | Total | 0 | 0 | 0 | | 0 | 0 | 0 |
| Installation and commissioning | Great Yarmouth has contractors supplying foundation and turbine installation services but not cable or substation installation. | 40% | Direct | 300 | 200 | 100 | 3 | 900 | 600 | 300 |
| | | | Indirect | 400 | 300 | 100 | | 1100 | 800 | 400 |
| | | | Induced | 200 | 100 | 100 | | 500 | 300 | 200 |
| | | | Total | 800 | 600 | 300 | | 300 | 200 | 100 |
| Total | | | | 800 | 600 | 300 | | 300 | 200 | 100 |

192. ***Table 30.57*** shows that nationally the proposed East Anglia ONE North project may generate 1,600 to 4,100 FTE during the construction period. The midpoint of 2,700 will be used for assessment. It should be noted that not all of these people would travel to NALEP because they may be involved in offsite manufacturing and other supporting functions.

193. ***Table 30.58*** shows that within NALEP the proposed East Anglia ONE North project may generate 100 to 300 FTE during construction of offshore infrastructure. The

midpoint of 200 FTE will be used for assessment. It should be noted that if there is a commitment to a load out port in NALEP, it is possible that more of the economic benefit from offshore construction staff could be retained in the region. However, where staff will be based and which port vessels use would be based on multiple factors outside the control of the proposed East Anglia ONE North project.

194. The magnitude of employment is shown below in ***Table 30.59*** and ***Table 30.60*** using the definitions in ***Table 30.13*** and ***Table 30.14*** respectively.

**Table 30.59 Size of Change Due to Construction Employment**

| Element | Regional | National |
|---|---|---|
| Employment opportunity | 200 FTE | 2,700 FTE |
| Labour market | 54,610 | 1,848,700 |
| Size of change | 0.37% | 0.15% |
| Definition | Small | Small |

**Table 30.60 Characterisation of Magnitude**

| Characteristic of magnitude | Description |
|---|---|
| Size of change | Small change against baseline |
| Duration | Medium term over 3 or 4 years |
| Frequency | Due to the specialist nature of offshore construction and the significant pipeline of offshore wind projects in NALEP and the UK, it is likely that people would be continuously employed. |
| Inter-relationships | Employment benefits are reliant upon an appropriate supply chain plan that includes opportunity for training and upskilling |
| Magnitude | Considering all aspects, this is a low magnitude effect both regionally and nationally. |

#### 30.6.1.2.3Likelihood of Effect

195. Nationally it is very likely that the conservative estimate of 2,700 FTE can be supplied by the national labour market. Offshore wind is a growing sector with significant overlap to the oil and gas sector as well as other engineering sectors.

196. Assessment of human capital in ***section 30.5.1*** and productive capital in ***section 30.5.2*** shows that regional qualification levels are slightly below national averages but qualification levels in Suffolk are higher than NALEP averages. If a port in NALEP were to be used for load out, the most likely location is Great Yarmouth or Lowestoft. Qualification levels in these areas are lower than average and both are relatively deprived when compared to national IMD statistics. Therefore, either would benefit from investment that could lead to longer term employment (as discussed in ***section 30.6.2.1***).

197. BVG Associates undertook an assessment of Job Roles in Offshore Wind for Green Port Hull in 2017 (Green Port Hull 2017). This indicates that the average salary for people involved in various aspects of offshore wind development is above £30,000 gross per annum and that specialist offshore workers or technical management can earn up to £60,000 gross per annum. This equates to an average of £576 up to £1,153 per week. This compares favourably with both regional and national averages of £578 and £662 respectively.

198. To gain employment in the offshore wind sector or supporting sectors requires specialist skills and higher qualifications.

#### 30.6.1.2.4 Significance

199. Based on the above assessment and the matrix in ***Table 30.16*** the significance of the onshore construction impact is assessed as having **moderate beneficial** significance for the regional and national labour market, as summarised in ***Table 30.61***.

**Table 30.61 Significance of Offshore Construction Employment**

| Factor | Consideration |
|---|---|
| Type of impact pathway | Impact is generated through regional and national employment. |
| Baseline conditions | Baseline conditions suggest that there is a significant labour market but perhaps the qualification levels regionally need to be supported to gain maximum benefit from this opportunity. |
| Likelihood of effect | It is likely that offshore construction can be procured from the regional and national labour market based on the experience of East Angle ONE and the size of the available labour market. Furthermore, the continuity provided by the Skills Strategy developed during East Anglia ONE and MoU agreed with Suffolk County Council during East Anglia THREE shows that significant investment is being made to enable to a local and regional supply chain. |
| Magnitude of change | The magnitude of the change is assessed to be low |
| Inter-relationship | The impact is reliant upon a Supply Chain Plan being developed that include opportunity for regional training. |
| Duration, frequency, reversibility and timing of effect | The impact is of a medium duration of continuous frequency. Due to the significant pipeline of offshore windfarm construction in the region it is plausible that people could gain continuous employment between projects. |
| Policy context | Development of the offshore wind industry is in line with national, regional, and local policy. |
| Consultation responses | Consultation responses support the opportunity for employment regionally. |
| Enhancement | Employment opportunities are further enhanced by continuity between projects being developed by SPR and support by Skills Strategy that |

| Factor | Consideration |
|---|---|
| | includes an MoU with Suffolk County Council to engage local supply chains to enable local procurement as far as practicable. |

### 30.6.1.3 Impact 2: Tourism Employment

200. As discussed in ***section 30.6.1.1***, the proposed East Anglia ONE North project has the potential to create employment for an average of 197 FTE per year during onshore construction (***Table 30.48***) some of which will travel to the area and stay in local accommodation. As shown in ***Plate 30.22*** the average number of people required on site per day varies throughout the proposed East Anglia ONE North project and peaks at 333 staff in the fourth quarter of 2024 (assuming a January start date). This section will determine how this demand for accommodation would translate to employment opportunities for local residents.

#### 30.6.1.3.1 Receptor

201. ***Table 30.31*** of ***section 30.5.2.7*** shows that there are currently 48,200 people working within the distribution, hotels, and restaurants in the districts of Suffolk Coastal, Waveney (including Lowestoft), Ipswich, and Great Yarmouth. This can be broken down as shown in ***Table 30.62***.

**Table 30.62 Employment in Hotel, Restaurants, and Distribution In 2017**

| District | Employment in 2017 |
|---|---|
| Suffolk Coastal | 9,700 |
| Waveney (including Lowestoft) | 10,100 |
| Ipswich | 18,600 |
| Great Yarmouth | 9,800 |
| Total | 48,200 |

202. The Suffolk Coastal AONB Value and Volume study (Destination Research 2015, ***Table 30.32*** of ***section 30.5.2.8***) shows that 3,104 people are employed in relation to visitors to the AONB. NOMIS (2018c) data shows that the majority of people working in tourism are employed in the urban areas of Ipswich and Great Yarmouth. ***Figure 30.3*** shows that the majority of accommodation likely to be used by onshore workers is within Suffolk Coastal district but outside of the AONB. Therefore, the FTE created by the proposed East Anglia ONE North project will be compared to the 9,700 people employed in the sector in the Suffolk Coastal District in 2017. The AONB is shown on ***Figure 30.2***.

203. As shown in ***Table 30.41*** of ***section 30.5.4.2*** there are 126 businesses within a 45-minute drive that provide 2,107 rooms. Assuming a labour market of 9,700

people and dividing by 2,107, this suggests that income from each room would lead to employment for four to five people within that labour market. Which is a plausible ratio.

#### 30.6.1.3.2 Pathway

204. As discussed in ***section 30.6.1.1*** it is assumed that on average 36% of staff would be residential and the remaining 64% would be non-residential[10].

205. However, it is not possible to determine exactly how many of these non-residential staff would require accommodation at a given time. As discussed in ***section 30.4.2.3*** it is good practice to use a range of inputs where there is uncertainty. Therefore, a range from 40% (low scenario) to 80% (high scenario) of site staff are assumed to be staying in accommodation.

206. Based on a 5-day week, there are 21.7 days worked in a month on average. If a person were working away from home they would only stay over for about 80% of that time which equates to 17.3 nights on average per month. This is because if they were working Monday to Friday they probably would not stay on Friday night. By multiplying the workforce figures (***Plate 30.23***) by 17.3, the number of nights stayed per quarter can be calculated (***Plate 30.24***).

207. In creating this expenditure, it is also important to understand if non-residential staff would displace visitors that would ordinarily stay in local accommodation. This is important to understand because if non-residential staff are taking rooms that would ordinarily be used by tourists the risk that tourists would not return increases.

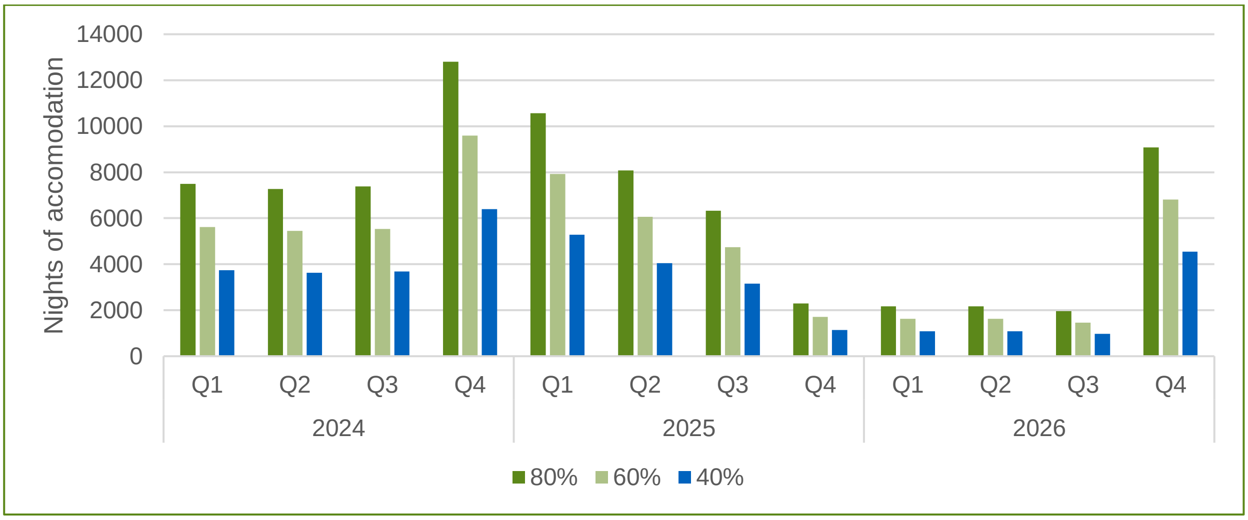


**Plate 30.24 Nights Stayed per Quarter assuming 80% to 40% of staff are non-residential**

[10] It should be noted that the accommodation due to offshore construction has not been included in this calculation because it is not known where the vessels would depart from, how long they would be at sea and if offshore workers would stay overnight in the port town or immediately travel to their usual place of residence.

### 30.6.1.3.3 Magnitude

208. The Suffolk Coastal AONB Value and Volume study (Destination Research 2015) (***Table 30.32*** of ***section 30.5.2.8***) shows that people spend around £50 per night in the local economy when they stay in Suffolk Coastal District. To be conservative, the cost of accommodation has not been included. It also indicates that for every £60,000 spent in the area one FTE job is created. By multiplying the figures shown in ***Plate 30.24*** by £50, summing the quarters to make a year, and then dividing by £60,000 the number of FTE created per year in the tourism economy can be calculated. As shown in ***Table 30.63***, expenditure by non-residential staff could lead to 11 to 22 FTE on average during the construction period. To be conservative but not pessimistic the median of 16 FTE will be considered for assessment.

**Table 30.63 FTE Potentially Created Due to Expenditure by Non-Residential Staff**

| Non-residential staff | 2024 | 2025 | 2026 | Total FTE | Average FTE |
|---|---|---|---|---|---|
| 80% | 29 | 23 | 13 | 65 | 22 |
| 60% | 22 | 17 | 10 | 48 | 16 |
| 40% | 15 | 11 | 6 | 32 | 11 |

209. At peak employment 333 staff (***section 30.6.1.1.2***) will be required on site. There are 2,107 rooms available within a 45-minute drive. If it is assumed that these businesses would operate at between 80% to 40% of capacity and that peak staff could be from 40% to 80% non-residential then the number of rooms used by the proposed East Anglia ONE North project can be estimated. As shown in ***Table 30.64*** the worst case impact of displacing room availability for tourists would be if 80% of peak employment were non-residential at a time that businesses only have 20% availability. In this case 63% of available rooms would be used by project staff. However, if peak employment coincided with the off-season where more rooms would be available. Both of these factors indicate that the proposed East Anglia ONE North project would have a positive impact for local accommodation businesses.

**Table 30.64 Proportion of Available Rooms Used by Non-Residential Staff**

| Proportion non-residential | Peak staff | Proportion available | 20% | 40% | 60% |
|---|---|---|---|---|---|
| | | No. of rooms | 421 | 843 | 1,264 |
| 80% | 266 | | 63% | 32% | 21% |
| 60% | 200 | | 47% | 24% | 16% |
| 40% | 133 | | 32% | 16% | 11% |

210. The magnitude of the two elements are shown in ***Table 30.65*** and characterised in ***Table 30.66*** using the definitions in ***Table 30.13*** and ***Table 30.14*** respectively. Although the change in employment is small the increased demand for accommodation during the off-peak season could have a large benefit for local businesses. However, a realistic worst case scenario would be that peak construction coincides with peak tourism season where it is assumed 20% of bed spaces are available. Under this scenario, 63% of the available bed space would be used by non-residential staff. This would not displace tourism visitors and would provide additional income for hoteliers which would be a similarly large benefit for hoteliers.

**Table 30.65 Size of Change due to Construction Employment**

| Element | Employment | Room displacement |
|---|---|---|
| Magnitude | 16 FTE | 266 peak staff |
| Receptor | 9,700 employed in Suffolk Coastal | 421 rooms available |
| Size of change | 0.17% | 63% of available bed spaces used if peak construction period coincides with peak tourism season |
| Definition | Small | Large benefit for local accommodation businesses |

**Table 30.66 Characterisation of Magnitude**

| Characteristic of magnitude | Description |
|---|---|
| Size of change | Small change in employment levels but potentially large benefit to local accommodation businesses. |
| Duration | Medium term over three years |
| Frequency | There is expected to be a reasonably constant demand for accommodation in the first two years of the construction phase that would reduce in the third year due to the reduced demand for staff on site. |
| Timing | The exact start date of the onshore construction is not currently known however even if peak tourist and peak employment periods coincide it is believed that there would be enough available accommodation to facilitate both tourism visits and non-residential staff. |
| Magnitude | High |

#### 30.6.1.3.4 Significance

211. Based on the above assessment and the matrix in ***Table 30.16*** the significance of the onshore construction impact is assessed as having **major beneficial**

significance for local businesses and people working for them as summarised in ***Table 30.67***.

**Table 30.67 Significance of Tourism Employment Impacts**

| Factor | Consideration |
|---|---|
| Type of impact pathway | Non-residential staff would stay overnight in local accommodation. Their expenditure may lead to increased demand for staff in the tourism sector but could also reduce availability of rooms for tourists visiting the area. |
| Baseline conditions | Baseline conditions show that there is a significant and growing tourism sector locally with a significant number of rooms available within a 45-minute drive of the proposed onshore development area. |
| Likelihood of effect | It is highly likely that non-residential staff would stay overnight and local tourism studies show a clear link between expenditure and employment. Peak demand during the low or high season would not displace tourists and provide additional income to local businesses |
| Size of change | There is expected to be a small increase in employment to facilitate the increased demand for accommodation and a significant take up of available accommodation. |
| Inter-relationship | This is not reliant upon any other factors. |
| Duration, frequency, reversibility and timing of effect | The demand would be constant throughout the construction phase, highest in the first two years and reduce in the last year. However, it would also stop at the end of the construction phase. |
| Policy context | National and regional policy require projects to consider their impact on tourism. |
| Consultation responses | Impacts to tourism are a particular concern of Suffolk Coastal District Council |
| Enhancements | No enhancement measures are required |

### 30.6.1.4 Impact 3: Tourism and Recreation Disturbance

212. During construction, there is the potential for works to disturb tourists as they spend their time in the Suffolk Coastal district. To understand this impact requires an understanding of both the location of assets that people would use recreationally and the factors that determine the scale of the disturbance.

213. As discussed in ***section 30.4.2.2*** the tourism economy consists of visitors that create a demand for goods and services supplied by tourism businesses. Potential disturbances to both sides of the economic equation are considered.

#### 30.6.1.4.1 Receptors

214. The Physical and Natural Capital review (***section 30.5.4*** and ***30.5.4.3***) shows that there are the following assets within the vicinity of the proposed onshore development area.

215. The following recreational assets were noted within the vicinity of the proposed development area:

- 32 PRoW either within the proposed onshore development area or intersected by it;
- 7 areas of common or open land; and
- 2 beaches within 0.6km of landfall.

216. Recreational assets are moderately important for local users but individually they are not nationally significant enough to draw tourism visitors. Footpaths, common land and beaches are resilient to change if managed appropriately. Therefore, using the matrix in ***Table 30.10*** the sensitivity of recreational assets is low.

217. The following tourism assets were noted within the vicinity of the proposed onshore development area:

- 6 accommodation businesses within a 1km radius of the proposed onshore development area that receive 4 to 5 star ratings;
- 16 self-catering cottages between 1km and adjacent to red line boundary; and
- 4 visitor attractions receiving 4 to 4.5-star rating.

218. Trip Advisor shows that the number of reviews for top rated tourist attractions in Suffolk range from several hundred to over a thousand. Only Thorpeness Golf Course and the Dolphin Inn receive several hundred reviews. This suggests that these assets have a regional importance but may be resilient to a small change in visitor numbers due to their medium size. Using ***Table 30.10*** the sensitivity of these assets is medium.

219. All other accommodation and visitor attractions receive from 100 to 200 reviews. This suggests that they are smaller businesses with fewer customers and would therefore be very vulnerable to a change in visitor numbers. However, due to their smaller size they provide less interconnection with other tourism businesses. Using ***Table 30.10*** the sensitivity of these assets is also medium.

220. In summary, recreational asset sensitivity is regarded as low and tourism asset sensitivity is regarded as medium for the purposes of assessment.

#### 30.6.1.4.2 Disturbance Pathways

221. ***Table 30.68*** indicates the determinants of physical disturbance. Consultation indicates that the visual effect of the onshore works is of particular concern to local stakeholders. Due to this ***Table 30.69*** includes the summary of landscape and visual effects from ***Chapter 29 Landscape and Visual Impact***.

**Table 30.68 Determinants of Physical Disturbance**

| Determinants | Chapter | Residual Impact |
|---|---|---|
| Reduced water quality | **8** and **20** | Assessment shows that there would be a low magnitude effect on the Hundred River that could be mitigated through appropriate construction practice resulting in a minor adverse impact significance. |
| Reduced air quality | **19** | Residual impact significance is expected to be negligible. |
| Increased noise | **25** | Residual impact significance is expected to be negligible. |
| Traffic delays | **26** | Residual impact significance is assessed as follows:<br>• Severance due to traffic flow is expected to result in negligible to minor adverse impacts;<br>• Pedestrian amenity effects due to traffic flow is expected to result in minor adverse impacts. Effects are related to roads that are likely to have few pedestrians such as:<br>  o B1069 from the junction of the A1094 to the south of Knodishall. This link is assessed as low value sensitivity noting there is minimal frontage development, and no footways along the road, suggesting limited pedestrian demand; and<br>  o Lover's Lane / Sizewell Gap. This link is assessed as having low value sensitivity noting there is minimal frontage development and pedestrians and cyclists are segregated from traffic with a dedicated shared use pedestrian footway / cycleway.<br>• Road safety impacts are expected to be minor adverse and effects are related to:<br>  o A12 junctions with B1119 and A1904; and<br>  o Along B1121 and A1094;<br>• Driver delay is expected to be minor adverse due to slow moving vehicles and temporary road works. Effects are centred mainly around landfall due to the reduced width of roads in the vicinity.<br>These impacts are not universal across the entire road network and only apply to certain areas. |

**Table 30.69 Determinants of Onshore Landscape and Visual Effects (summary, see *Chapter 29 Landscape and Visual Impact Assessment* for full details)**

| Area | Landscape effects | Visual effects |
|---|---|---|
| Landfall | Not significant in general short-term significant effect in the very localised landscape within and immediately around the landfall location | Significant localised and temporary effects on the views experienced by local residents, some motorists and some walkers on short sections of the Suffolk Coastal Path and Sandling's Walk where the route of these paths crosses the landfall location |

| Area | Landscape effects | Visual effects |
|---|---|---|
| | | The reinstatement of the land and landscape elements at the end of the construction period would make the effects temporary. |
| Onshore cable route | Significant, localised and temporary effects on the character of the AONB within a localised area between Thorpeness, Sizewell and Leiston. Not significant effects elsewhere | Significant localised and temporary effects on the views experienced by local residents (i.e. Aldringham, Coldfair Green and Friston) adjacent to the works,<br>Some motorists may also experience significant, short-term and temporary visual effects<br>The visual effects are also assessed as being significant on views experienced by walkers over short sections of the Suffolk Coastal Path, the Sandlings Walk and the Suffolk Coastal Cycle Route where these recreational routes cross the onshore cable route. |
| Onshore Substation and National Grid Infrastructure | Significant effects on the character of the landscape are assessed as occurring within a localised area of approximately 1km around the onshore substation and National Grid substation.<br>Construction will have not significant effects on the character or special qualities of the AONB. | Despite the notable screening provided in the local landscape, the construction of the onshore substation and National Grid substation are assessed as having significant visual effects on some residents (Friston), some walkers (e.g. users of PRoW network between Friston and Fristonmoor) and some motorists.<br>These significant visual effects would all occur within approximately 1.1 km of the onshore substation, making them localised, and they will also occur temporarily over the short-term, during the construction period. |

#### *30.6.1.4.2.1 Potential Effect on PRoWs*

222. The proposed onshore development area includes 32 PRoWs and it is likely that some of these may need to have management measures or temporary alternative routeing. However, this is a common occurrence during the construction of linear infrastructure (such as cable routes) and can be mitigated through appropriate signage and safety measures that will be agreed with Suffolk County Council prior to construction. Experience from the East Anglia ONE project shows that residual impact following mitigation is negligible.

223. There is one PRoW in the location of the onshore substations that will require permanent diversion. This could result in a significant impact but this can be mitigated through proper consultation and the implementation landscaping to develop an attractive footpath that walkers can enjoy. Therefore, the residual impact is likely to be negligible and at worst minor adverse before landscape features have matured.

224. The commitment to using HDD would remove impacts to the coastal path and beach at Thorpeness. Impacts to Thorpeness and Sizewell beach would therefore be limited to indirect impact during drilling.

#### 30.6.1.4.3 Magnitude

225. Impacts due to noise, dust, emissions or water pollutions determinants will be negligible ***Table 30.68*** and would therefore have no effect on tourism visitors and recreational users within the study area. Therefore, only magnitude relating to traffic, visual and landscape effects are considered in ***Table 30.70***.

226. The magnitude due to traffic density would be low. Due to the localised nature of visual and landscape effects the magnitude would also be low.

**Table 30.70 Magnitude of Tourism and Recreation Impact**

| Factors | Consideration |
|---|---|
| Size of change | The size of change due to increased traffic density is low across all aspects that are assessed and following appropriate mitigation.<br>The size of change to landscape character and views is generally low because the construction will be sheltered by natural aspects like woodland and topography. However, there may be significant effect from some locations. |
| Duration | Duration and frequency are variable and unknown at present. However, all disturbances (except the visual impact of the onshore project substation) will be reversible as they would end when construction ends. |
| Frequency | Duration will vary depending upon which area of the onshore project is being considered. |
| Timing | It is not possible to determine the exact timing of construction. A realistic worst case scenario is to assume that peak construction would occur during peak tourism season. |
| Inter-relationship | This impact assessment is reliant upon the determinants listed in ***Table 30.68*** and ***Table 30.69***. |

#### 30.6.1.4.4 Significance

227. Based on the above assessment and the matrix in ***Table 30.16*** the significance of the onshore construction impact is assessed as having **negligible significance** for local businesses and people working for them as summarised in ***Table 30.71***.

**Table 30.71 Significance of Tourism and Recreation Impact**

| Factor | Consideration |
|---|---|
| Type of impact pathway | Physical disturbance due to construction works |
| Baseline conditions | Baseline shows a limited number of tourism and recreational assets in the vicinity of the proposed onshore development area. |

| Factor | Consideration |
|---|---|
| Sensitivity of receptor | Recreational assets such as PRoWs, beaches and common land have a low sensitivity to change because this can be managed through appropriate construction management.<br><br>Tourism assets are considered to have medium sensitivity to change. Either because they are small businesses that are vulnerable to change or because they are medium size businesses that are more resilient but have greater interconnection with other regional tourism businesses. |
| Size of change | The size of change is considered to be low due to the localised nature of traffic, landscape and visual effects. Change due to noise, dust, emission and water pollution is assessed as negligible and will therefore have no effect on tourism visitors or recreational users of the area. |
| Inter-relationship | This impact assessment is reliant upon the determinants listed in ***Table 30.68*** *and* ***Table 30.69.*** |
| Duration, frequency, reversibility and timing of effect | Duration and frequency are variable and unknown at present. However, all disturbances (except the visual impact of the onshore project substation) will be reversible as they would end when construction ends. |
| Policy context | National and regional policy require an assessment of impacts on the tourism industry, |
| Consultation responses | Impacts to tourism are of particular concern to Suffolk Coastal Council and local tourism stakeholders such as Suffolk Coast DMO and Suffolk Coast AONB. |
| Mitigation | Mitigation of determinants would be as described in the chapters of the relevant determinants. |

### 30.6.2 Potential Impacts during Operation

#### 30.6.2.1 Impact 1: Long Term Employment

228. RenewableUK (2017) estimates that on average 75% of the operational expenditure of an offshore windfarm is procured in the UK and BVG Associates (2015) estimates that on average 45.5% of the total expenditure of an offshore windfarm is spent during the operational phase.

229. The reason for both of these significant proportions of expenditure is that offshore windfarms have at least a 25 to 30-year operational duration. This allows operation and maintenance (O&M) facilities to be developed in coastal regions of the UK which leads to a continuous demand for goods and services. This has the potential to bring significant benefit to an area over several decades.

230. At the pre-consent stage, the Applicant has not made a commitment to the location of the O&M facility for the proposed East Anglia ONE North project.

##### 30.6.2.1.1 Potential Labour Market

231. Based on the development of an offshore wind market in NALEP and the high probability of UK content in this stage, it can be assumed that the labour market

would be regionally and nationally based. Due to the O&M tasks being similar to the offshore construction tasks it can be assumed that the regional and national labour market would be as shown in ***Table 30.56***, as follows:

- Regional: 54,610 people; and
- National: 1,848,700 people.

### 30.6.2.1.2 Magnitude of Employment

232. BVG Associates' (2018) assessment and supplier's assessment of FTE for East Anglia ONE have been used to produce a range of FTE for elements supplied from the UK, ***Table 30.72*** and ***Table 30.73***. It should be noted that these figures are estimates based on best available information and as such are approximations. Figures have been provided to the nearest hundred because it is not possible for a project to estimate FTE for employment across a national supply chain more accurately at a pre-consent stage.

233. As discussed in ***section 30.4.2.3*** it is good practice to use a range of inputs where there is uncertainty. Therefore, estimates have been provided as Maximum, Midrange, and Minimum estimates. As discussed in ***section 30.6.1.2***, BVG Associates' study of supply chain impacts for East Anglia ONE indicates that there is an 80% chance that elements of the operation and maintenance phase would be procured from NALEP.

**Table 30.72 Estimated National FTE range of East Anglia ONE North (to nearest 100) based on assessment of East Anglia ONE**

| Element | Employment type | FTE Years | | | Yr | UK FTE Range | | |
|---|---|---|---|---|---|---|---|---|
| | | Max | Mid | Min | | Max | Mid | Min |
| Operation and maintenance | Direct | 7,800 | 5,600 | 3,400 | 25 | 300 | 200 | 100 |
| | Indirect | 10,300 | 7,400 | 4,500 | | 400 | 300 | 200 |
| | Induced | 3,100 | 2,200 | 1,300 | | 100 | 100 | 100 |
| | Total | 21,300 | 15,300 | 9,300 | | 900 | 600 | 400 |

**Table 30.73 Estimated Regional FTE range based on assessment of East Anglia ONE (assuming 80% likelihood of regional procurement)**

| Element | Employment type | FTE Years | | | Yr | NALEP FTE Range | | |
|---|---|---|---|---|---|---|---|---|
| | | Max | Mid | Min | | Max | Mid | Min |
| Operation and maintenance | Direct | 6,300 | 4,500 | 2,700 | 25 | 300 | 200 | 100 |
| | Indirect | 8,300 | 5,900 | 3,600 | | 300 | 200 | 100 |

| Element | Employment type | FTE Years | | | Yr | NALEP FTE Range | | |
|---|---|---|---|---|---|---|---|---|
| | | Max | Mid | Min | | Max | Mid | Min |
| | Induced | 2,500 | 1,800 | 1,100 | | 100 | 100 | 0 |
| | Total | 17,000 | 12,200 | 7,400 | | 700 | 500 | 300 |

234. ***Table 30.72*** shows that nationally the proposed East Anglia ONE North project may generate 400 to 900 FTE for at least 25 years. The midpoint of 600 will be used for the assessment. ***Table 30.73*** shows that within NALEP the proposed East Anglia ONE North project may generate 300 to 700 FTE for at least 25 years. To be conservative but not pessimistic the midpoint of 500 FTE will be used for assessment.

235. It should be noted that this represents continuous employment over several decades with wages above the national average. This type of employment opportunity is sufficient to drive other effects. People would move to an area where well paid, long-term employment is available. Similarly, young people may aspire to work in this sector which provides well paid, secure employment. These effects would lead to further effects such as investing in housing, higher local expenditure, growing families, and supporting communities.

236. The magnitude of employment is shown below in ***Table 30.59*** and ***Table 30.60*** using the definitions in ***Table 30.13*** and ***Table 30.14*** respectively.

**Table 30.74 Size of Change due to Construction Employment**

| Element | Regional | National |
|---|---|---|
| Employment opportunity | 500 FTE | 600 FTE |
| Labour market | 54,610 | 1,848,700 |
| Size of change | 0.92% | 0.03% |
| Definition | Medium | Small |

**Table 30.75 Characterisation of Magnitude**

| Characteristic of magnitude | Description |
|---|---|
| Size of change | Medium change against baseline |
| Duration | Long term (at least 25 years) |
| Frequency | Continuous employment |
| Inter-relationships | Continuous employment leads to further economic opportunities that support communities and regional growth |

| Characteristic of magnitude | Description |
|---|---|
| Magnitude | Considering all aspects, this is a medium magnitude effect regionally and low magnitude effect nationally. |

#### 30.6.2.1.3 Likelihood of Effect

237. Data from RenewableUK's Project Intelligence Hub (2018) shows that there are 68 offshore wind projects either in development, construction, or operation across England, Wales, Scotland, and Northern Ireland with a total planned generating capacity of 35GW. Twelve of these are located in the NALEP (***Table 30.42***) with a planned generating capacity of 9.4GW. This represents 18% of the offshore windfarm projects in the UK and 27% of the offshore wind energy generation capacity – approximately a fifth and a quarter of the UK's offshore wind industry respectively.

238. This shows that a significant proportion of the UK's offshore wind generation will be located off the east coast that falls within NALEP's geography. Four of the twelve projects are being developed by SPR which would represent 38% of the region's generating capacity. This makes SPR a significant stakeholder in the regional market. As such SPR began taking steps to develop a regional supply chain as part of East Anglia ONE (SPR 2014). This was further developed for East Anglia THREE and an MoU signed with Suffolk County Council to enable a partnership to develop both parties approach to STEM and skills training in response to the development of the sector.

239. RenewableUK's assessment shows that UK content of the offshore wind market increased by 5% from 2015 to 2017 and now stands at 48% overall (RenewableUK 2017). This analysis shows that the weighted average for UK content in the operational phase is 75% and this increased by 2% from 2015. Therefore, it can be seen that the supply from the UK is increasing with the demand created by the current 68 projects.

240. There is evidence that there is significant growth in offshore wind nationally and regionally, that UK supply to meet this demand is growing, and SPR is working with regional stakeholders to facilitate regional growth. Therefore, it can be concluded highly likely that long term employment opportunities would be created in the NALEP region.

#### 30.6.2.1.4 Significance

241. Based on the above assessment and the matrix in ***Table 30.16*** the significance of the onshore construction impact is assessed as having **major beneficial** significance regionally and **moderate beneficial** nationally, as summarised in ***Table 30.76.***

**Table 30.76 Significance of Offshore Construction Employment**

| Factor | Consideration |
|---|---|
| Type of impact pathway | Impact is generated through regional and national employment. |
| Baseline conditions | Baseline conditions suggest that there is a significant demand for employment created a pipeline of offshore wind projects, a fifth of which are based in the NALEP area. The labour market is also of sufficient size to supply people to fill the employment opportunities. |
| Likelihood of effect | A growing proportion of the offshore wind industry's supply chain is being procured from the UK and there is significant evidence that SPR is enabling this growth at a regional scale. |
| Magnitude of change | The magnitude of the change is moderate regionally and low nationally. |
| Inter-relationship | The impact is reliant upon a Supply Chain Plan being developed that include opportunity for regional training and there is evidence that this is developing. |
| Duration, frequency, reversibility and timing of effect | The impact is of long term continuous duration. The effect would create a permanent demand for employment in the region that would lead to relocation, training, and development opportunities. Higher wages in the offshore wind industry would lead to increased expenditure, facilitate long term personal planning, and would support regional growth. |
| Policy context | Development of the offshore wind industry is in line with national, regional, and local policy. |
| Consultation responses | Consultation responses support the opportunity for employment regionally. |
| Enhancement | Employment opportunities will be matched by the continued development of the Skills Strategy that was started as part of East Anglia ONE and in partnership with Suffolk County Council and regional stakeholders. |

### 30.6.2.2 Impact 2: Long Term Tourism

242. Consultation responses show that stakeholders are concerned that the development of offshore wind would have a detrimental effect on the image of Suffolk as a tourist destination.

243. When considering onshore impact pathways for tourism, the main concern represented through consultation is related to the long-term presence of the onshore substations at Grove Wood, Friston.

244. To understand this the assessment of visual impact from ***Chapter 29 Landscape and Visual Impact*** has been used to understand the change in landscape.

245. When considering offshore impact pathways for tourism, the main concern represented through consultation is related to the visual change due to the offshore wind turbines.

246. To understand this the assessment of visual impact from ***Chapter 28 Seascape, Landscape and Visual Amenity*** has been used to understand the change in landscape.

247. Both of these have been compared to research on visitor's opinions about offshore wind based on the following evidence:

- A literature review of visitor studies to identify trends in the perception of tourists to onshore windfarm development and in actual changes in tourist visits to areas that have experienced windfarm development, as there are no studies available on perception of onshore substations. This is included in ***Appendix 30.1*** and summarised below; and
- A review of Trip Advisor reviews of tourist attractions where an offshore windfarm is in operation within 32km[11] of the coast.

248. There was also concern raised at the ETG about an overall impression of industrialisation that would detract from the image of the Suffolk Coast and Heaths AONB. Stakeholders are concerned that this would lead to a reduction in the number of tourists.

249. The Trip Advisor reviews and literature review above give an overall understanding of visitor's impression of renewable energy. National Grid conducted a study in to the effect of major infrastructure projects on socio-economic factors (National Grid 2014). This showed that although people did perceive negative impacts to landscape it did not change their behaviour, likelihood to visit an area, or levels of expenditure in an area.

250. A visitor survey is planned to be conducted by SCDC and will be included in the Environmental Statement to explore this aspect in more depth.

#### 30.6.2.2.1 Receptors

251. With regards to onshore infrastructure, ***Figure 30.1*** shows that in the vicinity of the onshore substations there is a very low density of businesses that would be classified as a tourist asset of medium sensitivity. ***Table 30.69*** shows that only households on the boundaries of surrounding settlements would experience a significant change to landscape views and that this could be mitigated by screening through tree planting.

252. There are also five PRoWs in the vicinity of the onshore substations which are classified as low sensitivity with regards the definitions in ***Table 30.11***. One PRoW

[11] The turbines for the proposed East Anglia ONE North project would be 32km from the coast at their closest point

would need to be permanently diverted around the onshore substations but the route would continue to be open and landscaping is being developed to increase the amenity value of the route.

253. With regards to offshore infrastructure, ***Figure 30.4*** shows that there are 10 bathing water beaches along the Suffolk coast within theoretical visual range of the wind turbines. Visualisations have been developed (***Figure 28.2***) and ***Chapter 28 Seascape and Landscape Visual Impact Assessment*** shows that the following viewpoints may have a significant effect during high visibility periods that occur between 26.1% and 33% of the year:

- Walkers on Suffolk Coastal Path;
- Residents of Kessingland seafront;
- Beach users at Covehithe;
- Beach users, seafront residents and walkers at Southwolds and Gunhill;
- Beach users, seafront residents and walkers at Walberswick;
- Beach users and walkers at Dunwich and Dunwich Heath;
- Visitors to the visitor centre at Minsmere Nature Reserve;
- Beach users, seafront residents and walkers at Thorpeness;
- Beach users, seafront residents and walkers at Aldeburgh; and
- Visitors to Orford Ness Lighthouse.

#### 30.6.2.2.2 Disturbance Pathways

254. For the presence of the onshore substations to affect the tourism industry there would need to be a significant number of tourism assets within visual range of the substation. The residual visual change would need to be significant. This would need to be combined with significant evidence to show that visitors hold strong enough views that they would stop visiting these tourism businesses.

255. For the presence of the wind turbines to affect the tourism industry visitors must be able to see the wind turbines from the Suffolk coast and for this to elicit strong enough negative feelings that they would not revisit the area. Similarly, potential visitors would have to have strong enough opposition to offshore renewable energy that they would choose not to visit an area. If this were to occur then the visitor expenditure would decrease because the visitor numbers would decrease.

#### 30.6.2.2.3 Magnitude

##### *30.6.2.2.3.1 Onshore*

256. The construction of onshore substations would have a residual effect on the landscape near Friston. However, the density of tourism receptors with viewpoints

of the substations is very low. Furthermore, evidence shows that the presence of electrical infrastructure does not change recreational users' behaviour.

257. In 2014 National Grid commissioned a Business and Recreational User Survey to understand the effect of National Grid major infrastructure projects on socio-economic factors. This included surveys in relation to five projects that are in operation, to projects in development, and two control locations where projects neither existed or were planned. Both businesses and recreational users (including local residents and visitors/tourists) were surveyed.

258. The majority of businesses surveyed stated "*that they anticipated no impact to their business operations following the commencement of a National Grid Project*" (National Grid 2014).

259. The majority of recreational users surveyed stated that "*a National Grid project would not affect their behaviour or spend in an area*." (National Grid 2014)

260. Both survey groups indicated that they felt the main impact was to the area itself due to landscape and visual impacts. However, neither group indicated that this impact would affect their behaviour or the expected performance of their business.

261. Therefore, the pathway of effect onshore is likely only under circumstances where tourism and recreational visitors have strong enough opinions about electrical infrastructure to change their behaviour. Evidence shows that there is a low likelihood of this occurring.

262. As summarised in ***Table 30.77*** this would equate to a negligible impact magnitude on the tourism industry in Suffolk Coastal District and Suffolk County.

**Table 30.77 Characterisation of Long Term Onshore Tourism Impact Magnitude**

| Characteristic of magnitude | Description |
|---|---|
| Size of change | There will be a change to the landscape but there are very few tourism receptors to experience this change. The onshore substation cannot be seen from viewpoints in Suffolk Coast AONB. |
| Duration | Long term (at least 25 years). |
| Frequency | Continuous |
| Inter-relationships | It is assumed that visitors would have negative opinion of the residual impact noted in ***Chapter 29 Landscape and Visual Impact***. Survey results indicate that even if negative perceptions are experienced this would not affect recreational user's behaviour. |
| Magnitude | There is a low density of low to medium tourism and recreation receptors. Significant landscape and visual impacts may be experience from a low number of viewpoints. Recreational users and tourism visitors are unlikely to change their behaviour due to this |

| Characteristic of magnitude | Description |
|---|---|
| | change. Therefore, there is likely to be a negligible impact magnitude on the tourism industry in Suffolk Coastal District and Suffolk County. |

*30.6.2.2.3.2 Offshore*

263. The construction of wind turbines would have a residual effect on the seascape of the Suffolk coast. However, the change in seascape would be limited to days of very good visibility. For this change to the seascape to have an effect on the tourism industry tourists would need to hold a strong enough opinion of offshore wind turbines that they either do not visit an area or do not return.

264. Although the proposed East Anglia ONE North project would have an effect on the seascape of the Suffolk coast studies show that visitors to an area do not hold negative views of this type of development and would not be put off re-visiting an area. Studies show that potential visitors use the internet for their main source of information. Surveys of Trip Advisor reviews show that potential visitors would have a 99% chance of finding reviews that do not mention windfarms even when one is visible and a 99% of finding reviews that either do not mention windfarms or have a positive to neutral review of their presence. These studies are detailed in ***section 30.5.3.3*** and summarised in ***Table 30.78***.

**Table 30.78 Reviewer's Views of Offshore Wind**

| Factor | Value |
|---|---|
| Total comments | 12,278 |
| Average comments per beach | 409 |
| Mention Windfarms or Wind Turbines | 81 (0.66%) |
| Positive | 21 (0.17%) |
| Negative | 30 (0.24%) |
| Neutral | 30 (0.24%) |

265. Based on this the impact is assessed to have a negligible magnitude, as shown in ***Table 30.79***.

**Table 30.79 Characterisation of Long Term Offshore Tourism Impact Magnitude**

| Characteristic of magnitude | Description |
|---|---|
| Size of change | There will be a change to the seascape |
| Duration | Long term (at least 25 years) |
| Frequency | Continuous |

| Characteristic of magnitude | Description |
|---|---|
| Inter-relationships | Visitors would have to have a negative opinion of the residual impact noted in ***Chapter 28 Seascape, Landscape and Visual Amenity***. |
| Magnitude | Visitor surveys show that this is highly unlikely to lead to a change in visitor numbers. Therefore, the magnitude of the change is negligible. |

### 30.6.2.2.4 Significance

266. Based on the above assessment and the matrix in ***Table 30.16*** the impact is assessed as having **negligible** significance for the tourism industry in Suffolk Coast AONB, Suffolk Coastal District and Suffolk County as shown in ***Table 30.80***.

**Table 30.80 Significance of Long Term Tourism Impacts**

| Factor | Consideration |
|---|---|
| Type of impact pathway | Potential for visual, landscape and seascape change leading to a negative opinion of an area culminating in reduced visitor numbers. |
| Baseline conditions | Baseline shows low density of tourism and recreation assets in the vicinity of the onshore substation.<br>Baseline shows 10 bathing water beaches along the Suffolk coast and 10 viewpoints where the offshore wind turbines may be visible for 26.1% to 33% of the year during periods of very high visibility.<br>Baseline conditions also show that the majority of visitors do not hold a negative opinion of wind turbines and their presence does not change their behaviour. |
| Sensitivity of receptors | Recreational assets in the vicinity of onshore substation are considered to have low sensitivity and tourism businesses are considered to be have medium sensitivity to change.<br>Assets along the Suffolk coast are highly interconnected with other tourism businesses but well established within the Suffolk Coast AONB and would therefore have medium sensitivity to change. |
| Size of change | Onshore there is expected to be significant change to the landscape but that these views would be limited to the outskirts of surrounding communities.<br>Offshore there is also expected to be significant change to the seascape that would only be viewed from 10 locations along the shore and could only be viewed during high visibility 26.1% to 33% of the year.<br>Surveys show that visitors would not change their behaviour due to these changes in landscape and therefore the change in visitor numbers is expected to be negligible. |
| Inter-relationship | The impact is reliant upon onshore and coastal visitors having a strong aversion to the presence of the onshore substations and wind turbines respectively. Surveys show that this is not likely for both groups. |
| Duration, frequency, reversibility and timing of effect | The effect would be continuous for at least several decades. |

| Factor | Consideration |
|---|---|
| Policy context | National and regional policy require an assessment of impacts on the tourism industry. |
| Consultation responses | Impacts to tourism are of particular concern to Suffolk Coastal Council. |
| Mitigation | Mitigation of seascape and landscape effects are discussed in ***Chapter 28 Seascape, Landscape and Visual Amenity*** and ***Chapter 29 Landscape and Visual Impact***. As visitor numbers are not expected to change, no further mitigation is required. |

### 30.6.3 Potential Impacts during Decommissioning

267. No decision has been made regarding the final decommissioning policy for the onshore infrastructure as it is recognised that industry best practice, rules and legislation change over time. However, the onshore substation will likely be removed and be reused or recycled. It is expected that the onshore cables will be removed and recycled, with the transition bays and cable ducts (where used) left *in situ*. The detail and scope of the decommissioning works will be determined by the relevant legislation and guidance at the time of decommissioning and agreed with the regulator. A decommissioning plan will be provided. As such, for the purposes of a worst case scenario, impacts no greater than those identified for the construction phase are expected for the decommissioning phase.

## 30.7 Cumulative Impacts

### 30.7.1 Cumulative Impact with proposed East Anglia TWO Project

268. The East Anglia TWO offshore windfarm project (the proposed East Anglia TWO project) is also in the pre-application stage. The proposed East Anglia TWO project will have a separate DCO application but is working to the same programme of submission as the proposed East Anglia ONE North project. The two projects will share the same landfall and cable route and the two onshore substations will be co-located and feed into the same National Grid substation.

269. The proposed East Anglia ONE North project CIA will therefore initially consider the cumulative impact with only the East Anglia TWO project.

270. The CIA considers the proposed East Anglia ONE North project and the proposed East Anglia TWO project under two construction scenarios:

- Scenario 1 - the proposed East Anglia ONE North project and proposed East Anglia TWO project are built simultaneously; and
- Scenario 2 - the proposed East Anglia ONE North project and the proposed East Anglia TWO project are built with a construction gap.

271. Depending on the impact, scenario 1 or scenario 2 will be considered the realistic worst case scenario and applied in the CIA and will be stated as such.

272. The assessment in ***section 30.6*** shows that the impacts considered are generally characterised as follows:

- Employment is characterised by the volume of employment, whether it is continuous or sporadic, the wage level, and the overall duration; and
- Tourism impacts are characterised by the residual significance of determinants (such as noise, vibration, dust, or visual impacts), the location of tourism assets, and the opinion of visitors.

### 30.7.1.1 Scenario 1

273. ***Table 30.81*** presents the realistic worst case parameters of both projects constructed simultaneously.

**Table 30.81 Scenario 1 Realistic Worst Case Assumptions**

| Impact | Parameter | Notes |
|---|---|---|
| **Construction** | | |
| Onshore | Size of employment opportunity.<br>Residual magnitude of determinants.<br>Duration of construction phase. | Onshore construction for both projects would occur concurrently. Assuming the duration remains the same the number of employees would increase to an average of 300 FTE per year but the construction period would remain at three years, with two years intensive construction and one year commissioning. Peak employment would be at the same point but would increase to 367 staff.<br>It is assumed that the residual magnitude of determinants would be the same as a single project. |
| Offshore | Size of employment opportunity.<br>Duration of construction phase. | If all offshore infrastructure was installed during one construction phase the number of employees would double. If built in sequence the duration of employment and determinants would double. |
| **Operation** | | |
| Onshore | Size of employment opportunity.<br>Duration of operation phase | The number of staff needed to maintain a windfarm is a function of the number of turbines. Therefore, twice as many turbines would create more employment. It is assumed this would double but efficiencies of scale may reduce this. It is assumed that the duration would be at least 25 years.<br>Two onshore substations would be constructed and would have a significant impact on landscape character. However, this could only be viewed from a finite number of locations and there is a low density of tourism and recreation assets within these locations. |

| Impact | Parameter | Notes |
|---|---|---|
| Offshore | Location of offshore windfarm. | Both windfarms visible from shore and both onshore substations visible from land. However, both windfarms would only be visible during days that have very good visibility and it is expected that this would only be 26.1% to 33% of the year from certain seafront and coastal locations. Furthermore, evidence shows that tourism visitors do not have strong opinions about the presence of offshore windfarms. |
| **Decommissioning** | | |
| No decision has been made regarding the final decommissioning policy for the onshore infrastructure as it is recognised that industry best practice, rules and legislation change over time. However, the onshore substation will likely be removed and be reused or recycled. It is expected that the onshore cables will be removed and recycled, with the transition bays and cable ducts (where used) left *in situ*. The detail and scope of the decommissioning works will be determined by the relevant legislation and guidance at the time of decommissioning and agreed with the regulator. A decommissioning plan will be provided. As such, for the purposes of a worst case scenario, impacts no greater than those identified for the construction phase are expected for the decommissioning phase. | | |

### 30.7.1.2 Scenario 2

274. Scenario 2, and ***Table 30.82***, represents the realistic worst case scenario in the eventuality that the proposed East Anglia ONE North project and proposed East Anglia TWO project are built with a construction gap.

**Table 30.82 Scenario 2 Realistic Worst Case Assumptions**

| Impact | Parameter | Notes |
|---|---|---|
| **Construction** | | |
| Onshore | Size of employment opportunity.<br>Residual magnitude of determinants.<br>Duration of construction phase. | Onshore construction would occur sequentially with a gap between them. The employment for each project would be the same as for the proposed East Anglia ONE North project alone but the duration would double. It is assumed that the residual magnitude of determinants would be the same as a single project. |
| Offshore | Size of employment opportunity.<br>Duration of construction phase. | Turbines would be built in sequence so the duration of employment and determinants would double but there would be a gap between the projects. |
| **Operation** | | |
| As per scenario 1 | | |
| **Decommissioning** | | |
| As per scenario 1 | | |

### 30.7.1.3 Summary

275. ***Table 30.83*** provides a summary of which of the two scenarios detailed above will be the realistic worst case in terms of impacts to socio-economics, tourism and recreation.

**Table 30.83 Cumulative impacts for the proposed East Anglia ONE North and TWO**

| Impact No. | Title | Notes | Scenario used |
|---|---|---|---|
| **Construction Impacts** | | | |
| 1a | Onshore construction employment | Building both projects concurrently would create a larger demand for labour that would put a larger demand on the local and regional labour market. | 1 |
| 1b | Offshore construction employment | Assuming that offshore construction would be undertaken concurrently, a larger demand for labour would put a larger demand on the local and regional labour market. | 1 |
| 2 | Tourism employment | A larger demand for labour would increase the number of non-residential workers and increase the demand for accommodation. | 1 |
| 3 | Tourism and recreation disturbance | A longer duration of construction would be more of a disturbance to visitors than a short duration and have a greater chance to interact with more projects, assuming similar levels of residual impacts of determinants. | 2 |
| **Operation Impacts** | | | |
| 1 | Long term employment | It is assumed that the two projects would be operated independently because it is plausible that they would be operated by different companies. Therefore, the employment opportunity would double under bother scenarios. | n/a |
| 2 | Long term tourism | Same under both scenarios. | n/a |

276. ***Table 30.84*** provides a summary of how these changes would affect the potential impacts assessed in ***section 30.6***. With regards the definitions set out in ***section 30.4.4*** impacts relating to employment 1a, 1b to 2 would have the same cumulative impacts as assessed in ***section 30.6***.

**Table 30.84 Summary of Changes for Potential Cumulative Impacts**

| Impact No. | Impact | Size of change | Receptor size | Cumulative magnitude | Cumulative significance |
|---|---|---|---|---|---|
| **Construction impacts** | | | | | |
| 1a | Onshore construction employment | Total annual regional employment: | 54,610 regionally | Low - 0.89% compared to regional labour market | Moderate beneficial |

| Impact No. | Impact | Size of change | Receptor size | Cumulative magnitude | Cumulative significance |
|---|---|---|---|---|---|
| | | Direct + Indirect + Induced = 490 FTE average per year | | | |
| 1b | Offshore construction employment | Approximately double single project = 400 FTE | 54,610 regionally | Low – 0.73% compared to regional labour market | Moderate beneficial |
| 2 | Tourism employment | Peak employment is 367 people. Assume 60% non-residential. | 2,107 beds | Realistic WCS is 70% of available rooms taken by workers. | Major beneficial |
| 3 | Tourism and recreation disturbance | Noise, emissions, dust and water/groundwater pollution would all have negligible impact.<br>Landscape and visual impact would be unchanged from that assessed in ***section 30.6.***<br>Residual impacts resulting in the increased Traffic and Transport demands of Scenario 1 would remain negligible to minor adverse as discussed under ***section 30.6.*** | Low density tourism and recreational assets in vicinity of proposed onshore development area of low to medium sensitivity. | Low to negligible | Negligible |
| **Operation impacts** | | | | | |
| 1 | Long term employment | Approximately double single project = 1000 FTE | 54,610 regionally | Large - 1.83% compared to regional labour market | Major beneficial |
| 2 | Long Term Tourism | Impacts would remain the same as those for the proposed East Anglia ONE North project alone. | | | |

### 30.7.2 Cumulative Impact Assessment with Other Developments

277. The assessment of cumulative impacts has been undertaken here as a two-stage process. Firstly, all impacts considered in ***section 30.6*** have been assessed for the potential for temporal and spatial overlap with other projects. Potential cumulative impacts are set out in ***Table 30.85***.

**Table 30.85 Potential Cumulative Impacts**

| Impact | Potential for Cumulative Impact | Rationale |
|---|---|---|
| **Construction** | | |
| Impact 1a: Onshore Construction Employment | Yes | Onshore construction employment can have a cumulative impact with other developments that require similar skills in a similar period. Generally, this impact would be positive as employment and expenditure benefits people. However, if there is likely to be a significant increase in employment non-residential staff will be required that may lead to further impacts. |
| Impact 1b: Offshore Construction Employment | No | Although there are several offshore windfarms either in development or under construction off the coast of Suffolk and Norfolk. It is unlikely that all of these would be constructed in the same period and more likely that they would be constructed sequentially. This would lead to a continuous employment pipeline for offshore construction staff and long-term job security which would be a major benefit to the region. |
| Impact 2: Tourism Employment | Yes | If several projects increase demand for non-residential staff these people will require accommodation. This may have a beneficial impact of increasing demand in the local accommodation market. How this increase in demand is managed by projects will determine if this would reduce availability for tourists. |
| Impact 3: Tourism and Recreation Disturbance | Yes | If projects are construction has a temporal overlap it is possible that multiple determinants will affect tourism visitors and recreational users of the local area. |
| **Operation** | | |
| Impact 1: Long Term Employment | Yes | Some types of infrastructure require operational staff. The construction of multiple projects could lead to significant cumulative benefit by increasing demand for long term employment. |
| Impact 2: Long Term Tourism | No | Evidence shows that the development of renewable energy infrastructure does not have a detrimental impact on the tourism industry. Therefore, it is not considered to have a cumulative long-term effect on tourism. |
| **Decommissioning** | | |
| No decision has been made regarding the final decommissioning policy for the onshore infrastructure as it is recognised that industry best practice, rules and legislation change over time. However, the onshore substation will likely be removed and be reused or recycled. It is expected that the onshore cables will be removed and recycled, with the transition bays and cable ducts (where used) left *in situ*. The detail and scope of the decommissioning works will be determined by the relevant legislation and guidance at the time of decommissioning and agreed with the regulator. A decommissioning plan will be provided. As such, for the purposes of a worst case scenario, impacts | | |

| Impact | Potential for Cumulative Impact | Rationale |
|---|---|---|
| no greater than those identified for the construction phase are expected for the decommissioning phase. | | |

278. The second stage of the CIA is an assessment of whether there is spatial overlap between the extent of potential effects of the onshore infrastructure and the potential effects of other projects scoped into the CIA upon the same receptors. To identify whether this may occur, the potential nature and extent of effects arising from all projects scoped into the CIA have been identified and any overlaps between these and the effects identified in ***section 30.6***. Where there is an overlap, an assessment of the cumulative magnitude of effect is provided.

279. Following a review of projects for which construction has the potential to overlap temporally or spatially with the proposed East Anglia ONE North project (and the proposed East Anglia TWO project), one developments has been scoped into the CIA for all impacts and three offshore wind developments have been scoped in for employment impacts only.

280. ***Table 30.86*** provides detail regarding those projects for construction. For operational impacts (long term employment) several of the in-development projects in the region would contribute, as discussed below.

281. The full list of projects for consideration will be updated following PEIR and agreed in consultation with local authorities. The remainder of the section details the nature of the cumulative impacts against all those receptors scoped in for cumulative assessment.

**Table 30.86 Summary of Projects Considered for Tourism, Recreation and Socio-Economics**

| Project | Status | Development period | [12]Distance from East Anglia ONE North proposed onshore development area (km) | Project definition | Level of information available | Included in CIA | Rationale |
|---|---|---|---|---|---|---|---|
| Sizewell C New Nuclear Power Station | Scoping Opinion Adopted by Secretary of State (SoS) on 02.06.2014 | Uncertain | 0.49km | Full Scoping Report Available: https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010012/EN010012-000103-Sizewell%20C%20EIA%20Scoping%20Report_Main%20text.pdf | Tier 5[13] | Yes | Only for onshore employment as limited data available for tourism disturbances. |
| **Projects considered for cumulative offshore construction employment only** | | | | | | | |
| Norfolk Vanguard | Application submitted | 2022 onwards for offshore construction | Potential to be served from Great Yarmouth | Full Environmental Statement Available: https://infrastructure.planninginspectorate.gov.uk/projects/eastern/norfolk-vanguard/ | Tier 4[14] | No | Offshore construction unlikely to overlap. |
| Norfolk Boreas | PEIR submitted | 2025 for offshore construction | | PEIR available at: https://infrastructure.planninginspectorate.gov.uk/projects/eastern/norfolk-boreas/ | Tier 4[15] | Yes | Potential for offshore construction to overlap and potential for |

[12] Shortest distance between the considered project and East Anglia ONE North – unless specified otherwise
[13] Based on criteria outlined in ***section 5.7.2*** of ***Chapter 5 EIA Methodology***
[14] Based on criteria outlined in ***section 5.7.2*** of ***Chapter 5 EIA Methodology***
[15] Based on criteria outlined in ***section 5.7.2*** of ***Chapter 5 EIA Methodology***

| Project | Status | Development period | [12]Distance from East Anglia ONE North proposed onshore development area (km) | Project definition | Level of information available | Included in CIA | Rationale |
|---|---|---|---|---|---|---|---|
| | | | | | | | similar location of marshalling port location. |
| Hornsea Project 3 | Application submitted | Unknown but potentially 2022 onwards | Unlikely to be served from Great Yarmouth due to more northerly location | Full Environmental Statement Available: https://infrastructure.planninginspectorate.gov.uk/projects/eastern/hornsea-project-three-offshore-wind-farm/ | Tier 3[16] | No | Offshore construction unlikely to overlap and unlikely to be supply from similar marshalling port location. |

[16] Based on criteria outlined in ***section 5.7.2*** of ***Chapter 5 EIA Methodology***

#### 30.7.2.1 Cumulative Impacts during Construction

282. Cumulative impacts with Sizewell C New Nuclear Power Station have been assessed using publicly available information from the following sources:

- Sizewell C New Nuclear Power Station Scoping Report available from the National Infrastructure Planning website (EDF Energy 2014); and
- Sizewell C New Nuclear Power Station Stage 2 Pre-Application Consultation available from their Project Website (EDF Energy 2016). Section 5 focusses on Socio-Economic effects.

##### 30.7.2.1.1 Impact 1a: Onshore Construction Employment

###### *30.7.2.1.1.1 Potential Labour Market*

283. The labour market would be as described in ***section 30.6.1.1.1.*** It is assumed that there would be 16,545 skilled personnel available locally and 54,610 skilled personnel available regionally.

284. Paragraph 5.4.18 of Section 5 of the Stage 2 Consultation document (EDF Energy 2016) states that EDF Energy assume their residential workforce would be prepared to commute for 90 minutes. This provides a residential catchment that covers the main urban areas of both Norfolk and Suffolk. Therefore, employment demand will be compared to the regional labour market in NALEP area.

###### *30.7.2.1.1.2 Magnitude*

285. At time of writing, information on the FTE employment generated by Sizewell C New Nuclear Power Station during construction is not available. Section 5 of the Stage 2 Consultation document (EDF Energy 2016) provides an indication of the workforce required. Paragraph 5.4.4 (Page 44) of that document states that there would be around 5,600 construction workers anticipated at peak.

286. Figure 5.5 (Page 44) provides a labour curve but without durations. This shows that during peak employment there is a demand for 700 civil construction staff. Whereas, at this point employment is dominated by approximately 3,100 mechanical and electrical staff.

287. The peak in civil construction staff is early in the construction process. At this point total employment is 4,500. The demand for civil construction staff is 3,000 but the demand for mechanical and electrical staff is 200.

288. ***Plate 30.22*** shows that peak employment for the proposed East Anglia ONE North and the proposed East Anglia TWO projects would be during the fourth quarter of year one. Peak employment would be 367 staff. Of these 293 are estimated to be civil construction installing various sections of the cable route, whereas 74 are

estimated to be mechanical and electrical installing electrical infrastructure. As the majority of the proposed project's peak employment is in civil construction, this will be compared with the peak in civil construction for Sizewell C New Nuclear Power Station.

289. Using Table 5.4 and taking estimates from Figure 5.5 of Section 5 of the Stage 2 Consultation document (EDF Energy 2016), ***Table 30.87*** has been estimated to show employment demand during peak civil construction. This shows local civil construction demand is expected to peak at 1,500 staff and local employment demand is expected to peak at 1,990 staff.

**Table 30.87 High Level Estimate of Workforce During Peak Civil Construction**

| Skills breakdown for Sizewell C | High level skills breakdown during peak construction | | Estimated employment demand during peak civil construction | |
|---|---|---|---|---|
| | Residential | Non-Residential | Residential | Non-Residential |
| Civil | 50% | 50% | 1500 | 1500 |
| M&E | 30% | 70% | 60 | 140 |
| Operational | 100% | 0% | 0 | 0 |
| Staff and management | 15% | 85% | 160 | 940 |
| Site services | 90% | 10% | 270 | 30 |
| All | 36% | 64% | 1990 | 2610 |

290. If the peak civil construction period for the proposed East Anglia ONE North, East Anglia TWO, and Sizewell C New Nuclear Power Station all coincided then the peak demand for staff would be 1,990 staff. This purposefully assumed that all of the employment for the proposed East Anglia ONE North and for the proposed East Anglia TWO projects would be sourced regionally to make an absolute realistic worst case scenario.

291. ***Table 30.88*** indicates that this would have a high magnitude impact on the regional labour market due to an increase in demand of 4.32% of the labour that is regionally available.

292. However, it should be noted that this is not an assessment of continuous employment during this period because that information is not publicly available for Sizewell C New Nuclear Power Station. Furthermore, the duration of the peak employment period is not known but overall employment is assumed to be

measured in decades. Similarly, no attempt has been made to calculate the indirect or induced employment. However, this would be similarly high.

**Table 30.88 Magnitude of Peak Construction Employment**

| Element | Peak regional direct employment |
|---|---|
| Employment at peak of civil construction period for Sizewell C | 1990 |
| Peak employment of Proposed East Anglia projects | 367 |
| Peak combined employment | 2,357 |
| Labour market | 54,610 |
| Size of change | 4.32% |
| Definition | High |

#### *30.7.2.1.1.3 Likelihood of Effect*

293. For this peak effect to occur then both the proposed East Anglia ONE North and TWO projects peak employment and Sizewell C New Nuclear Power Station peak construction would need to occur concurrently. At time of writing, it is not known if this would interact exactly but it is likely that if all projects were consented then Sizewell C New Nuclear Power Station would significantly increase local demand during the same period that the proposed East Anglia ONE North and TWO projects would be constructed.

294. Of the increase in demand, the proposed East Anglia ONE North and TWO projects contribute 15.57% of the demand. If the proposed projects were not to be developed then Sizewell C would still increase demand by 3.64% which is still a high magnitude. Therefore, meeting demand and ensuring regional people benefit would be reliant upon working with industry and training organisations.

295. As described in ***section 30.3.3.1***, SPR developed a skills strategy as part of the East Anglia ONE project. This has subsequently been maintained as part of the East Anglia THREE project and will be continued as part of the proposed East Anglia ONE North and TWO projects. This includes a gap analysis and stakeholder engagement to take account of the increased regional demand.

#### *30.7.2.1.1.4 Significance*

296. Based on the above assessment and the matrix in ***Table 30.16*** the significance of the onshore construction impact is assessed as having **major beneficial** significance for the local and regional labour market, as summarised in ***Table 30.89***.

**Table 30.89 Significance of Cumulative Onshore Employment**

| Factor | Consideration |
|---|---|
| Type of impact pathway | Impact is generated through local and regional employment. |
| Baseline conditions | Baseline conditions suggest that there is a significant labour market but perhaps the qualification levels need to be supported to gain maximum benefit from this opportunity. |
| Likelihood of effect | It is plausible that onshore construction of the proposed East Anglia ONE North and TWO projects and Sizewell C would be undertaken concurrently but it is not known if the peak employment period for both projects would occur at the same time. |
| Magnitude of change | The magnitude of the change is assessed to be high. This is based on a comparison of peak employment as an indicator of the ratio of full time employment between the projects. |
| Inter-relationship | The impact would be broadly positive as induced expenditure would be significant but there is also the possibility of market distortion due to the increased demand for staff. How this is managed would be reliant on the management practices of the Sizewell C project as that generates approx. 85% of the increased peak demand. |
| Duration, frequency, reversibility and timing of effect | The duration of the construction of Sizewell C is not known but it is expected to be in order of decades. This would be a long-term effect that would significantly reduce during operation and the demand for construction staff would virtually stop after the main construction period. |
| Policy context | Development of a diverse energy mix is a key strategy of the UK Government. |
| Consultation responses | Consultation responses support the opportunity for employment but concern is shown about how the cumulative impacts with Sizewell C will be managed. |
| Enhancement | Employment opportunities will be matched by a Skills Strategy that builds on the experience of East Anglia ONE and East Anglia Three projects and includes consultation with the Sizewell C project. |

#### 30.7.2.1.2 Impact 1b: Offshore Construction Employment

297. Sizewell C New Nuclear Power Station does not include offshore construction. Therefore, there will not be a cumulative effect.

298. ***Table 30.86*** shows that only Norfolk Boreas is considered with regards potential for cumulative employment impact. The socioeconomic assessment for Norfolk Boreas estimates that there will be employment opportunity for between 425 and 481 FTE jobs. In combination with the 200 FTE jobs estimated in ***section 30.6.1.1.2*** this would lead to 625 to 681 FTE employment opportunities cumulatively.

299. Assuming the same regional labour market size of 54,610 people this would lead to a demand of 1.25%. Using the definitions in ***Table 30.13*** this would be a medium magnitude impact individually.

300. However, it should be noted that these are not the only two offshore wind projects being constructed in Suffolk and Norfolk. East Anglia ONE, East Anglia THREE and Norfolk Vanguard would all precede these projects. Therefore, it is likely that the supply chain would have developed by the point of construction with a labour market that could supply appropriately skilled people. Although various Hornsea zone projects are likely to be constructed in a similar period it is also plausible that these would be served from ports further to the north.

301. Thus, the pipeline of employment would be long term leading to secondary economic benefits including investor confidence, incentives to permanently locate, regional expenditure (including investments such as house purchases) and clustering of supply chain businesses. These aspects would increase impact magnitude to high, using the factors in ***Table 30.14***.

302. Considering the work that both SPR (***section 30.3.3***) and Vattenfall Wind Power Ltd (as discussed in the assessments for Norfolk Vanguard and Norfolk Boreas) are undertaking to develop a regional supply chain and promote careers, it is highly likely that the potential would be realised and this would be a positive impact. A high magnitude impact of high likelihood would provide a **major beneficial impact significance** for the economy for the NALEP area.

#### 30.7.2.1.3 Impact 2: Tourism Employment

303. The scale of the Sizewell C New Nuclear Power Station construction indicates that it is likely that a significant proportion of staff would be non-residential and require accommodation. EDF Energy estimate that 3,600 of the 5,600 (Para. 5.8.2, Page 55, EDF Energy 2016) workers during peak construction would require accommodation of some description.

304. This could lead to beneficial impacts due to increased expenditure locally but could also displace bed spaces for tourism visitors. Section 5.12 of the Sizewell C New Nuclear Power Station Stage 2 Pre-Application Consultation report (EDF Energy 2016) outlines the strategies that are being developed to maximise benefits and these will be consulted as part of the planning process. Therefore, only impacts on accommodation capacity will be considered cumulatively because enough data is currently available to undertake an assessment.

##### *30.7.2.1.3.1 Receptor*

305. Figure 5.1 (Page 36) in Section 5 of the Sizewell C New Nuclear Power Station Stage 2 Pre-Application Consultation report (EDF Energy, 2016) considers the

following four receptors for workers at Sizewell C. Figure 5.8 (Page 60, EDF Energy 2016) indicates the spread of staff per accommodation type:

- Accommodation campus – 2,400 staff;
- Private rented sector – 360 staff;
- Wider housing market – 470 staff; and
- Tourism accommodation sector – 360 staff.

306. ***Section 30.6.1.3*** indicates that it is expected that the non-residential staff of the proposed East Anglia ONE North and TWO projects would predominantly use tourism accommodation. Therefore, only this sector will be considered for cumulative assessment.

307. ***Table 30.41*** shows that there are 126 businesses within a 45-minute drive of the proposed projects that provide 2,107 rooms.

308. Table 5.11 (Page 65, EDF Energy 2016) shows that EDF Energy expect workers to use tourist accommodation in Aldeburgh, Saxmundham, Yoxford, Leiston, Walberswick and Wenhaston, and Snape. In this area, EDF Energy estimate that there are 2,201 beds available. This broadly correlates with the distribution of workers assessed for the proposed East Anglia ONE North and East Anglia TWO projects.

309. It is not known if peak construction would coincide with peak tourism season therefore the range of rooms available shown in ***Table 30.64*** will be used for assessment.

##### *30.7.2.1.3.2 Magnitude*

310. If the peak employment for the proposed East Anglia ONE North and TWO projects coincides with the peak employment for Sizewell C New Nuclear Power Station then the following demand would be created in the tourism accommodation sector locally:

- 360 staff from Sizewell C New Nuclear Power Station; and
- 64% of a peak employment (367 staff) would be 235 staff; giving
- A combined demand for 595 bed spaces at peak construction.

311. ***Table 30.90*** shows the effect of the increased demand on the local tourism accommodation availability. This assumes that at peak tourist season 80% of rooms will be taken and 20% will be available. Whereas in the low season it is assumed that 40% of rooms are taken and 60% are available.

**Table 30.90 Proportion of Rooms Potentially used if Peak Construction Coincides**

| | Proportion available | 20% | 40% | 60% |
|---|---|---|---|---|
| **Peak staff** | **No. rooms** | **421** | **843** | **1,264** |
| **595** | | 141% | 71% | 47% |

312. The magnitude of change is shown in ***Table 30.91*** and characterised in ***Table 30.92*** using the definitions in ***Table 30.13*** and ***Table 30.14*** respectively.

**Table 30.91 Size of Change in Accommodation Availability**

| Element | Room displacement |
|---|---|
| Magnitude | 595 peak staff |
| Receptor | 421 to 1,264 rooms available |
| Size of change | If peak construction is in the low season then 47% of available accommodation would be used.<br>If peak construction is in high then demand would exceed available bed spaces by 41%. |
| Definition | High |

**Table 30.92 Characterisation of Magnitude**

| Characteristic of magnitude | Description |
|---|---|
| Size of change | The cumulative demand for accommodation would create a large change in demand compared to the rooms available. If it occurs in high season the demand will exceed the supply by 41%. But a more realistic scenario is that it would occur when 40% of beds are available leading to demand for 71% of available beds. |
| Duration | Peak construction for the proposed projects is not expected to last for longer than 2 to 3 months but the duration of peak construction at Sizewell C is not known. It is expected to be significantly longer. |
| Frequency | Peak construction is only expected to occur once but in general there will be a constant demand for accommodation. |
| Timing | Timing is not known at present. An absolute worst case scenario would assume that peak construction and peak tourist season would interact but a more realistic worst case scenario would assume that the peak construction periods would fall somewhere between low and peak season. |
| Magnitude | This would be a high magnitude impact on the local accommodation sector. It is plausible that in a realistic worst case the increased demand compared to a static supply would lead to an increase in accommodation costs. Although this would be beneficial for local businesses it may displace tourism visitors that may have a longer-term effect on the tourist economy. |

#### 30.7.2.1.3.3 *Significance*

313. Based on the above assessment and the matrix in ***Table 30.16*** the significance of the onshore construction impact is assessed as having **major beneficial significance** for the local tourism accommodation market, as summarised in ***Table 30.94***.

**Table 30.93 Significance of Cumulative Onshore Employment**

| Factor | Consideration |
|---|---|
| Type of impact pathway | Non-residential staff requiring accommodation and reducing availability for tourism visitors. |
| Baseline conditions | Baseline conditions show that there is a significant and growing tourism sector locally with a significant number of rooms available within a 45-minute drive of the proposed onshore development area. |
| Likelihood of effect | It is unknown if the effect would occur during peak of off peak season or whether the two peak construction periods would coincide. Therefore, the absolute worst case is possible but implausible. |
| Magnitude of change | If a midseason scenario is assumed then a high magnitude impact would occur. |
| Inter-relationship | This is not reliant upon any other factors. |
| Duration, frequency, reversibility and timing of effect | Although only cumulative peak demand has been assessed here the actual demand for accommodation would be constant throughout the construction phase. |
| Policy context | National and regional policy require projects to consider their impact on tourism. |
| Consultation responses | Impacts to tourism are a particular concern of Suffolk Coastal District Council |
| Mitigation | Sizewell C has proposed the development of a worker campus to relieve pressure on local accommodation and this has led to a small proportion of their peak construction staff requiring accommodation in the tourism sector. SPR and EDF Energy are in communication to understand each other’s programme and plan accordingly. |

### 30.7.2.2 Cumulative Impacts during Operation

#### 30.7.2.2.1 Impact 1: Long Term Employment

314. As discussed under ***section 30.7.2.1.2*** the proposed East Anglia ONE North and TWO projects are part of a pipeline of four offshore wind projects being constructed SPR, two offshore wind projects being constructed by Vattenfall Wind Power Ltd, one offshore wind project by Ørsted and a new nuclear facility by EDF Energy.

315. All stakeholders demonstrate clear evidence of working with local training institutions, county councils and the LEP. Individually these projects represent employment impacts of major beneficial significance due to the long duration of employment opportunity and clustering of projects around the Suffolk and Norfolk

coastline. This leads to employment opportunities in technology sectors that typically represent salary levels above the national average. The likelihood of effect is considered to be high and magnitude of effect is high. Cumulative long-term employment in the Suffolk and Norfolk energy sector therefore represents a major beneficial impact significance for people in the region.

#### 30.7.2.3 Cumulative Impacts during Decommissioning

316. The detail and scope of the decommissioning works for the proposed East Anglia ONE North project will be determined by the relevant legislation and guidance at the time of decommissioning and agreed with the regulator. A decommissioning plan will be provided. As such, cumulative impacts during the decommissioning stage are assumed to be no worse than those identified during the construction stage.

## 30.8 Inter-relationships

317. Inter-relationships address situations where a number of parameters, or ‘sources’, interact to affect a single receptor. Those sources that are considered to interact with receptors identified in this chapter are listed in ***Table 30.94***.

**Table 30.94 Chapter topic inter-relationships**

| Inter-relationship all Phases and Linked Chapter | Section where Addressed | Rationale |
|---|---|---|
| ***Chapter 8 Water and Sediment Quality*** | ***Table 30.68***<br><br>***Section 30.6.1.4.2*** | Potential for reduced water quality |
| ***Chapter 19 Air Quality*** | ***Table 30.68***<br>***Section 30.6.1.4.2*** | Potential for reduced air quality |
| ***Chapter 20 Water Resources and Flood Risk*** | ***Table 30.68***<br>***Section 30.6.1.4.2*** | Potential for reduced water quality |
| ***Chapter 25 Noise and Vibration*** | ***Table 30.68***<br>***Section 30.6.1.4.2*** | Potential for reduced noise |
| ***Chapter 26 Traffic and Transport*** | ***Section 30.3.3***<br><br>***Section 30.5.1.4***<br><br>***Table 30.68***<br>***Section 30.6.1.4.2*** | Potential for traffic delays |
| ***Chapter 29 Landscape and Visual Impact*** | ***Table 30.68***<br>***Section 30.6.1.4.2*** | Potential for visual impact |

## 30.9 Interactions

318. The impacts identified and assessed in this chapter have the potential to interact with each other, which could give rise to synergistic impacts as a result of that

interaction. The realistic worst case impacts assessed within the chapter take these interactions into account and for the impact assessments are considered conservative and robust. For clarity, the areas of interaction between impacts are presented in ***Table 30.95***, along with an indication as to whether the interaction may give rise to synergistic impacts.

319. There is a strong potential for the development of the proposed East Anglia ONE North project cumulatively with the wider development of the offshore wind sector in the NALEP area to lead to a gradual increase in population and in the socio-economic status of people due to (among other aspects) increased employment.

**Table 30.95 Interactions Between Impacts**

| Potential interaction between impacts | | | | |
|---|---|---|---|---|
| **Construction** | **1a Onshore construction employment** | **1b Offshore construction employment** | **2 Tourism employment** | **3 Tourism and recreation disturbance** |
| 1a Onshore construction employment | - | No | Yes | Yes |
| 1b Offshore construction employment | No | - | No | Yes |
| 2 Tourism employment | Yes | No | - | Yes |
| 3 Tourism and recreation disturbance | Yes | Yes | Yes | - |
| **Potential interaction between impacts** | | | | |
| **Operation** | **4 Long term employment** | | **5 Long term tourism** | |
| 1 Long term employment | - | | No | |
| 2 Long term tourism | No | | - | |
| **Decommissioning** | | | | |
| It is anticipated that interactions between decommissioning impacts will be similar in nature to those between construction stage impacts. | | | | |

## 30.10 Summary

320. Potential impacts for the proposed East Anglia ONE North project are summarised in ***Table 30.96*** as an individual project and cumulatively with the proposed East Anglia TWO project and other projects. This shows that local and regional populations have the potential to benefit through increased employment opportunities. Benefits are assessed for people working directly in the labour market that would supply the project, in associated sectors, and in the accommodation sector.

321. These benefits need to be weighed against any potential negative impacts that the proposed East Anglia ONE North project may cause. Assessment shows that implementing best available techniques (e.g. for noise and vibration or air quality impacts) would mitigate the determinants of impacts for recreational visitors within the vicinity of the proposed onshore development area.

322. Although there is potential for change to the seascape due to the construction and operation of wind turbines, studies suggest that their presence do not deter tourism visitors as they are shown to not have strong negative opinions about them. With regard to onshore, there is little evidence to suggest deterrence of visitors due to presence of electrical infrastructure.

323. Therefore, it can be concluded that the local and regional population stand to economically benefit from the development of the proposed East Anglia ONE North project.

**Table 30.96 Summary of Potential Impact to Tourism, Recreation and Socio-Economics**

| Potential Impact | Receptor | Sensitivity/ Likelihood | Magnitude | Significance | Likely Examples of Mitigation Measures | Residual Impact |
|---|---|---|---|---|---|---|
| **Construction** | | | | | | |
| Impact 1a: Onshore Construction Employment | Local and regional labour market | Likely | Low | Moderate | Supply Chain Plan | **Moderate Beneficial** |
| Impact 1b: Offshore Construction Employment | National and regional labour market | Likely | Low | Moderate | Supply Chain Plan | **Moderate Beneficial** |
| Impact 2: Tourism Enhancement | Local accommodation businesses and their employees | Highly likely | Low | Moderate | Timing of project to coincide with off peak season | **Major Beneficial** |
| Impact 3: Tourism and recreation Disturbance | Visitors to the area surrounding the project | Low | Low | Negligible significance | As described in assessment of determinants | **Negligible significance** |
| **Operation** | | | | | | |
| Impact 1: Long term employment | National and regional labour market | Highly likely | Moderate regionally | Major | Supply Chain Plan | **Major Beneficial** |
| Impact 2: Long term Tourism | Local and regional tourism industry | Low to medium sensitivity | Low change in visitor numbers or quality of experience | Minor | n/a | **Negligible** |
| **Decommissioning** | | | | | | |
| No decision has been made regarding the final decommissioning policy for the onshore infrastructure as it is recognised that industry best practice, rules and legislation change over time. However, the onshore substation will likely be removed and be reused or recycled. It is expected that the onshore cables will be | | | | | | |

| Potential Impact | Receptor | Sensitivity/ Likelihood | Magnitude | Significance | Likely Examples of Mitigation Measures | Residual Impact |
|---|---|---|---|---|---|---|
| removed and recycled, with the transition bays and cable ducts (where used) left *in situ*. The detail and scope of the decommissioning works will be determined by the relevant legislation and guidance at the time of decommissioning and agreed with the regulator. A decommissioning plan will be provided. As such, for the purposes of a worst case scenario, impacts no greater than those identified for the construction phase are expected for the decommissioning phase. | | | | | | |
| **Cumulative Construction Impacts with the proposed East Anglia ONE North project** | | | | | | |
| Impact 1a: Onshore Construction Employment | Local and regional labour market | Likely | Low | Moderate | Skills Strategy and MoU with SCC | **Moderate Beneficial** |
| Impact 1b: Offshore Construction Employment | National and regional labour market | Likely | Low | Moderate | Skills Strategy and MoU with SCC | **Moderate Beneficial** |
| Impact 2: Tourism Employment | Local accommodation businesses and their employees | Highly likely | Low | Moderate | n/a | **Major Beneficial** |
| Impact 3: Tourism and recreation Disturbance | Visitors to the area surrounding the project | Low | Low | Negligible significance | As described in assessment of determinants | **Negligible significance** |
| **Cumulative Operational Impacts with the proposed East Anglia ONE North project** | | | | | | |
| Impact 1: Long term employment | National and regional labour market | Highly likely | Major regionally | Major | Skills Strategy and MoU with SCC | **Major Beneficial** |

| Potential Impact | Receptor | Sensitivity/ Likelihood | Magnitude | Significance | Likely Examples of Mitigation Measures | Residual Impact |
|---|---|---|---|---|---|---|
| Impact 2: Long term Tourism | Local and regional tourism industry | Low to medium sensitivity | Low change in visitor numbers or quality of experience | Minor | n/a | **Negligible** |
| **Cumulative with other developments – Construction** | | | | | | |
| Impact 1a: Onshore Construction Employment | Local and regional labour market | Possible | High | Major | Skills Strategy and MoU with SCC | **Major Beneficial** |
| Impact 1b: Offshore Construction Employment | National and regional labour market | Likely | High | Major | Skills Strategy and MoU with SCC | **Moderate Beneficial** |
| Impact 2: Tourism Employment | Local accommodation businesses and their employees | Possible | High | Major | Cooperation with Sizewell C and consideration of accommodation strategy if necessary | **Major Beneficial** |
| **Cumulative with other developments – Operational** | | | | | | |
| Impact 1: Long term employment | National and regional labour market | Highly likely | Major regionally | Major | Skills Strategy and MoU with SCC | **Major Beneficial** |
| **Cumulative with other developments – Decommissioning** | | | | | | |
| No decision has been made regarding the final decommissioning policy for the onshore infrastructure as it is recognised that industry best practice, rules and legislation change over time. However, the onshore substation will likely be removed and be reused or recycled. It is expected that the onshore cables will be removed and recycled, with the transition bays and cable ducts (where used) left *in situ*. The detail and scope of the decommissioning works will be determined by the relevant legislation and guidance at the time of decommissioning and agreed with the regulator. A decommissioning plan will be provided. As such, for the purposes of a worst case scenario, impacts no greater than those identified for the construction phase are expected for the decommissioning phase. | | | | | | |

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