



Dudgeon and Sheringham Shoal Offshore Wind Farm Extensions

Preliminary Environmental Information Report

Volume 1

Chapter 29 - Socio-Economics and Tourism

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Glossary of Acronyms

A&E	Accident and Emergency
AI	Artificial Intelligence
AONB	Area of Outstanding Natural Beauty
B&B	Bed and Breakfast
BRES	Business Register and Employment Survey
CCG	Clinical Commissioning Group
CfD	Contracts for Difference
CIA	Cumulative Impact Assessment
CORE	Centres for Offshore Renewable Engineering
DCO	Development Consent Order
DECC	Department of Energy and Climate Change
DEP	Dudgeon Extension Project
EEA	European Economic Area
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
ES	Environmental Statement
EZ	Enterprise Zone
FTE	Full-Time Equivalent
GP	General Practitioner
GVA	Gross Value Added
HUDU	Healthy Urban Development Unit
IMD	Index of Multiple Deprivation
IPMP	In-Principle Monitoring Plan
km	Kilometres
LEP	Local Enterprise Partnership
LIS	Local Industrial Strategy
LSOA	Lower Super Output Area
MPS	Marine Policy Statement
MW	Megawatts
NPS	National Policy Statements
NSIP	Nationally Significant Infrastructure Project
O&M	Operations and Maintenance

ONS	Office for National Statistics
PEIR	Preliminary Environmental Information Report
PRoW	Public Rights of Way
SEP	Sheringham Shoal Extension Project
SIC	Standard Industrial Classification
SSSI	Sites of Specific Scientific Interest
TTWA	Travel to Work Area
UK	United Kingdom
UNWTO	United Nations World Tourism Organization
WTP	Wind Turbine Generator
ZTV	Zone of Theoretical Visibility

Glossary of Terms

The Applicant	Equinor New Energy Limited
Development Consent Order (DCO)	An order made under the Planning Act 2008 granting development consent for one or more Nationally Significant Infrastructure Project(s) (NSIP).
DCO boundary	Final application boundary based on a 45-60m wide onshore cable corridor, one substation location and landfall within which the onshore infrastructure will be located.
Direct Employment and Gross Value Added	Employment and Gross Value Added which is associated with the first round of capital expenditure i.e. the direct spend with prime contractors in each impact area.
Dudgeon Offshore Wind Farm Extension site	The Dudgeon Offshore Wind Farm Extension offshore wind farm boundary.
The Dudgeon Offshore Wind Farm Extension Project (DEP)	The Dudgeon Offshore Wind Farm Extension site as well as all onshore and offshore infrastructure.
EIA Directive	European Union Directive 85/337/EEC, as amended by Directives 97/11/EC, 2003/35/EC and 2009/31/EC and then codified by Directive 2011/92/EU of 13 December 2011 (as amended in 2014 by Directive 2014/52/EU).
Environmental Impact Assessment (EIA)	A statutory process by which certain planned projects must be assessed before a formal decision to proceed can be made. It involves the collection and consideration of environmental information, which fulfils the assessment requirements of the EIA Directive and EIA Regulations, including the publication of an Environmental Statement.
Ex-ante research	Ex-ante research is conducted prior to the implementation of a project.
Ex-post research	Ex-post research is conducted after the implementation of a project.
Full-Time Equivalent Jobs (FTE Jobs)	The total number of jobs after converting jobs with less than full-time hours and jobs with more than full-time hours into full-time hour jobs. Full-time hours are assumed to be 37.5 hours per week (e.g. a job with 20 hours per week would be 0.5 Full-Time Equivalent jobs).
Gross Value Added (GVA)	The measure of the value of goods and services produced in an area, industry or sector of an economy. At the level of a firm, it is broadly equivalent to employment costs plus a measure of profit.

Indirect Employment and Gross Value Added	Employment and Gross Value Added which is associated with the suppliers of companies that supply goods and services as part of the supply chain of DEP and SEP.
Landfall	The point at the coastline at which the offshore export cables are brought onshore, connecting to the onshore cables at the transition joint bay above mean high water
Local Enterprise Partnership (LEP)	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.
Location Quotient (LQ)	The proportion of employment in a sector/industry in the East Anglia study area divided by that of the UK.
Mitigation	A term used interchangeably with Commitment(s) by Rampion 2. Mitigation measures (Commitments) are embedded within the assessment at the relevant point in the EIA (e.g. at Scoping or PEIR).
Onshore cable corridor	The area between the landfall and the onshore substation sites, within which the onshore cable circuits will be installed along with other temporary works for construction.
Onshore scoping area	An area that encompasses all planned onshore infrastructure and allows sufficient room for receptor identification and environmental surveys. This will be refined following further site selection and consultation.
Onshore substation sites	Parcels of land within onshore substation zones A and B, identified as the most suitable location for development of the onshore substation. Two sites have been identified for further assessment within the PEIR.
Onshore substation zone	Parcels of land within the wider onshore substation search area identified as suitable for development of the onshore substation. Two substation zones (A and B) have been identified as having the greatest potential to accommodate the onshore substation.
PEIR boundary	The area subject to survey and preliminary impact assessment to inform the PEIR, including all permanent and temporary works for DEP and SEP. The PEIR boundary will be refined down to the final DCO boundary ahead of the application for development consent.
Sheringham Shoal Offshore Wind Farm Extension site	Sheringham Shoal Offshore Wind Farm Extension offshore wind farm boundary.
The Sheringham Shoal Offshore Wind Farm	The Sheringham Shoal Offshore Wind Farm Extension site as well as all onshore and offshore infrastructure.

Extension Project (SEP)	
Study area	Area where potential impacts from the project could occur, as defined for each individual EIA topic.

29 SOCIO-ECONOMICS AND TOURISM

29.1 Introduction

1. This chapter of the Preliminary Environmental Information Report (PEIR) considers the potential impacts of the Dudgeon Offshore Wind Farm Extension Project (DEP) and Sheringham Shoal Offshore Wind Farm Extension Project (SEP) on socio-economics and tourism economy. The chapter provides an overview of the existing environment for the proposed onshore and offshore development areas, followed by an assessment of the potential impacts and associated mitigation for the construction, operation, and decommissioning phases of DEP and SEP.
2. This chapter has been written by Hatch, with the assessment undertaken with specific reference to the relevant legislation and guidance, of which the primary sources are the National Policy Statements (NPS) for energy infrastructure. Details of these and the methodology used for the Environmental Impact Assessment (EIA) and Cumulative Impact Assessment (CIA) are presented in [Section 29.4](#).
3. The assessment should be read in conjunction with following linked chapters:
 - [Chapter 21 Land Use, Agriculture and Recreation](#);
 - [Chapter 23 Onshore Archaeology and Cultural Heritage](#);
 - [Chapter 24 Air Quality](#);
 - [Chapter 25 Noise and Vibration](#);
 - [Chapter 26 Traffic and Transport](#);
 - [Chapter 27 Seascape and Visual](#); and
 - [Chapter 28 Landscape and Visual](#).
4. Additional information to support the socio-economics and tourism assessment is presented in [Volume 3](#):
 - [Appendix 29.1 Socio-Economics Construction Costs and Sourcing Assumptions Note](#);
 - [Appendix 29.2 Socio-Economics and Tourism Technical Baseline](#); and
 - [Appendix 29.3 Socio-Economics Impact Assessment](#).

29.2 Consultation

5. The preparation of this PEIR has drawn on insight included within the Scoping Opinion (The Planning Inspectorate, 2019).

Table 29-1: Consultation responses.

Consultee	Date/ Document	Comment	Project Response
The Planning Inspectorate	Scoping Opinion 2019	There is no text within the Scoping Report to support an assessment of a change in demographics due to	Change in demographics is considered for all phases of DEP and SEP. See Section 29.6

Consultee	Date/ Document	Comment	Project Response
		<p>in-migration for just the operational phase. The Inspectorate considers that the highest potential for a change in demographics would likely be during construction.</p>	
<p>The Planning Inspectorate</p>	<p>Scoping Opinion 2019</p>	<p>The ES should quantify the anticipated number of onshore and offshore employment opportunities generated for all phases of the Proposed Development.</p>	<p>The assessment quantifies the anticipated number of jobs supported as part of construction, operations and maintenance (O&M) in Sections 29.6.2.2 and 29.6.3.2 respectively. Job numbers for the decommissioning phase are not typically quantified within socio-economic assessments as these would be highly uncertain due to limited experience in the decommissioning of offshore wind farms nationally, and the fact that activities will take place in three decades' time from now. That said, the impact generated by decommissioning will be of a similar nature, albeit lower than that supported during construction.</p>

Consultee	Date/ Document	Comment	Project Response
The Planning Inspectorate	Scoping Opinion 2019	The Scoping Report notes that there is no set of recognised standards for assessing socio-economic impacts and that the Environmental Statement (ES) will present a qualitative assessment. The methodology should be set out within the ES.	The approach to the assessment is set out in detail in Section 29.4 below.

29.3 Scope

29.3.1 Study Area

6. The main study area for the socio-economics assessment is based on the aggregation of Suffolk and Norfolk counties (corresponding with the New Anglia Local Enterprise Partnership (LEP) area) henceforth referred to as the East Anglia study area. This is due to the location of DEP and SEP and overall scale of the impacts DEP and SEP will generate. Furthermore, although the exact location for both construction and operation and maintenance ports are currently unknown, it is highly likely that these will consist of one of the major ports within the East Anglia study area.
7. A national study area, consisting of the United Kingdom (UK) has also been identified in order to assess the economic and employment effects which could arise at this spatial scale by DEP and SEP. Both study areas are shown in **Figure 29.1**.
8. The study area used to assess the visual impacts of the offshore infrastructure on tourism activity is based on the zone of theoretical visibility (ZTV). The ZTV is based on a blade tip height of 330 metres, as set out in **Chapter 27 Seascape and Visual** and **Chapter 28 Landscape and Visual**.
9. The study area used in the assessment of the impacts associated with onshore infrastructure on tourism activity is based on a 60km corridor (shown in **Figure 29.2**) covering a 200-metre buffer from the proposed onshore cable corridor (including landfall at Weybourne, and the proposed connection to the National Grid at Norwich Main Substation). The assessment splits the PEIR boundary into the following areas:
 - Landfall;
 - Onshore from landfall to the eastern edge of Weybourne;
 - Main onshore cable corridor from the edge of Weybourne to substation; and
 - Area around onshore substation sites for connection to National Grid (at Norwich Main Substation).

29.3.2 Realistic Worst-Case Scenario

29.3.2.1 General Approach

10. The final design of DEP and SEP will be confirmed through detailed engineering design studies that will be undertaken post-consent to enable the commencement of construction. In order to provide a precautionary but robust impact assessment at this stage of the development process, realistic worst-case scenarios have been defined in terms of the potential effects that may arise. This approach to EIA, referred to as the Rochdale Envelope, is common practice for developments of this nature, as set out in Planning Inspectorate Advice Note Nine (2018). The Rochdale Envelope for a project outlines the realistic worst-case scenario for each individual impact, so that it can be reasonably assumed that all lesser options will have less impact. Further details are provided in [Chapter 6 EIA Methodology](#).
11. The realistic worst-case scenarios for the socio-economics and tourism assessment are summarised in [Table 29-2](#). These are based on the parameters of DEP and SEP described in [Chapter 5 Project Description](#), which provides further details regarding specific activities and their durations.
12. In addition to the design parameters set out in [Table 29-2](#) below, consideration is also given to how DEP and SEP will be built out as described in [Section 29.3.2.2 to 29.3.2.4](#) below. This accounts for the fact that whilst DEP and SEP are the subject of one DCO application, it is possible that either one or both projects will be developed, and if both are developed, that construction may be undertaken either concurrently or sequentially.

Table 29-2: Realistic Worst-Case Scenarios.

Impact	Parameter	Notes and Rationale
Construction		
Direct and indirect employment creation (East Anglia and UK study areas)	Scenarios are used to assess the likely potential range of geographic sourcing assumptions. For these receptors, the use of a construction and O&M port elsewhere in the UK study area (i.e. outside of the East Anglia study area) represents the realistic worst-case scenario.	The use of supply chain sourcing scenarios allows for an assessment of both maximum and minimum positive impacts that could be supported by DEP and SEP at both the East Anglia study area and national (i.e. UK) levels.
Direct and indirect gross value added (GVA) creation (East Anglia and UK study areas)		

Impact	Parameter	Notes and Rationale
Change in demographics	The local-port scenario, for all phases of development, will generate highest realistic worst-case scenario. This is due to the scenario supporting higher levels of employment in the East Anglia study area, of which a proportion will be migrant workers who will locate locally on a temporary basis. These non-home-based workers typically locate within a 60-minute travel to work catchment from the port.	Draws on the cost and sourcing assumptions set out above to generate estimate of labour requirements. Demographic changes will reflect labour market catchments and functional geographies.
Loss of/ disruption to local infrastructure	The local-port sourcing scenario will generate the largest demand/ impact on local infrastructure.	Impacts on local infrastructure are anticipated to be temporary throughout construction period.

Impact	Parameter	Notes and Rationale
<p>Impact on tourism economy around the landfall location</p>	<p>Construction work to install landfall infrastructure may be needed intermittently. Under the worst-case scenario this activity is assumed to take place over the peak tourism period.</p> <p>Construction of landfall is normally performed over two years. The first year is used to perform the drilling and establish the pull-in and jointing area. Approximately 5 months is required for this work. In the second year the cable pull-in, jointing and completion of construction work is performed, approximately 6 months is required for this work. For sequential projects two independent installation sequences, each involving two years, will be required.</p> <p>Several construction compounds including a main construction compound will be in place whilst the construction work is taking place.</p> <p>The worst-case scenario assumes that DEP and SEP are delivered sequentially, which means two five-month periods followed by two six-month periods in the following year in total.</p>	<p>Whilst it is not anticipated that work will be continuous, the worst-case scenario assumes that restrictions associated with landfall construction will remain in place continuously, and that this occurs over the peak tourism season. This would entail the largest disruption/ impact to tourism activity.</p>
<p>Impact on tourism economy along onshore cable corridor</p>	<p>An onshore cable corridor 60km by up to 45m needed for a single project. If both DEP and SEP are built together, the width of this corridor would be up to 60m.</p> <p>This includes provision for both cable installation activities and space for machinery in which to operate.</p> <p>If only one project is developed or DEP and SEP are developed</p>	<p>It is assumed that construction takes place throughout peak tourism season, therefore having the largest-possible impact on the volume and value of tourism economy.</p>

Impact	Parameter	Notes and Rationale
	<p>concurrently, construction activity is anticipated to span four years per project. However, if the projects are constructed sequentially then the first project built is assumed to be constructed in four years and the second project built is assumed to be constructed in three years (with up to a one-year gap between construction phases). Onshore construction will progress in 1km sections, with a construction presence in each 1km section for up to 4 weeks. Construction may be carried out by up to ten teams along the onshore export cable route at the same time.</p>	
Operation		
<p>Direct and indirect employment creation (East Anglia and UK study areas)</p>	<p>It is assumed that all direct O&M labour is sourced from within the area the O&M port is located in, and that this port is located within the East Anglia study area.</p>	
<p>Direct and indirect GVA creation (East Anglia and UK study areas)</p>	<p>However, it is also possible that the O&M port is located outside the East Anglia study area.</p>	
<p>Tourism economy - maintenance or repair activity to onshore cable</p>	<p>If a cable is damaged, excavation activities will be required to get access for repairing the cable. This will generate discrete noise and/ or visual disturbance for limited periods of time.</p>	<p>Cable repairs are not expected to be necessary, however provision has to be made for this possibility under the realistic worst-case scenario.</p>
<p>Tourism economy – visual impacts of</p>	<p>Under the worst-case scenario it is assumed that up to 30 turbines each 330m in height will be installed as part of the two projects (17 for DEP and 13 for</p>	

Impact	Parameter	Notes and Rationale
offshore infrastructure	SEP), with the closest being located 16.1km from shore.	
Decommissioning		
<p>Detailed plans for the approach (i.e. method) to the decommissioning of DEP and SEP are still being developed. More detail will be provided in due course, however, the following assumptions have been used to guide the assessment of the decommissioning phase for DEP and SEP:</p> <ul style="list-style-type: none"> • Approach to decommissioning will be in reverse to construction; • Turbines will be removed in a reverse to construction methodology; • Hazardous materials will be removed or contained prior to removal from site; • The same number and type of offshore vessels (as per construction) will be used throughout decommissioning; • Turbines’ transmission piece and foundations will be removed; • Offshore cables may be left in situ or removed depending on available information at the time of decommissioning; and • Onshore cables can be recovered from ducts if ducted. <p>It is therefore assumed that the decommissioning activities of the DEP and SEP are anticipated to be similar to, but no worse than the impacts identified during the construction phase.</p>		

29.3.2.2 Construction Scenarios

13. The following principles set out the framework for how DEP and SEP may be constructed:
- DEP and SEP may be constructed at the same time, or at different times;
 - If built at the same time both projects could be constructed in four years;
 - If built at different times, either project could be built first;
 - If built at different times the first project would require a four-year period of construction, the second project a three-year period of construction;
 - If built at different times, the duration of the gap between end of onshore construction of the first project, and the start of onshore construction of the second project may vary from 0 to 1 year;
 - Assuming maximum construction periods, and taking the above into account, the maximum period over which the construction of both projects could take place is 7 years; and
 - The earliest construction start date is 2024 and the latest is 2028.

14. In order to determine which construction scenario presents the realistic worst case for each receptor and impact, the assessment considers both maximum duration effects and maximum peak effects, in addition to each project being developed in isolation, drawing out any differences between each of the two projects.
15. The three construction scenarios considered by the socio-economic and tourism assessment are therefore:
 - Construct DEP or SEP in isolation;
 - Construct DEP and SEP concurrently – reflecting the maximum peak effects; and
 - Construct one project followed by the other with a gap of up to 1 year (sequential) – reflecting the maximum duration of effects.
16. Any differences between DEP and SEP, or differences that could result from the manner in which the first and the second project are built (concurrent or sequential and the length of any gap) are identified and discussed where relevant in the impact assessment section of this chapter (**Section 29.6**). For each potential impact, only the worst-case construction scenario for DEP and SEP is presented, i.e. either concurrent or sequential. The justification for what constitutes the worst case is provided, where necessary, in **Section 29.6**.

29.3.2.3 Operational Scenarios

17. Operational scenarios are described in detail in **Chapter 5 Project Description**. The assessment considers the following three scenarios:
 - Only DEP is in operation;
 - Only SEP is in operation; and
 - DEP and SEP operating at the same time, with a gap of up to 3 years between each project commencing operation.
18. The operational lifetime of each project is expected to be 35 years.

29.3.2.4 Decommissioning Scenarios

19. Decommissioning scenarios are described in detail in **Chapter 5 Project Description**. Decommissioning arrangements will be agreed through the submission of a Decommissioning Plan prior to construction, however for the purpose of this assessment it is assumed that decommissioning of DEP and SEP could be conducted separately, or at the same time.

29.3.3 Summary of Mitigation Embedded in the Design

20. This section outlines the embedded mitigation relevant to the socio-economics and tourism assessment, which have been incorporated into the design of both DEP and SEP (see **Table 29-4**). Where additional mitigation measures are proposed, these are detailed in the impact assessment (**Section 29.6**).
21. For the purposes of socio-economic assessment, many of the receptors relate to potential positive impacts (such as employment and GVA), and as such no embedded mitigation measures are included. That being said, the Applicant will seek to work with local partners and stakeholders to (whenever possible) maximise the benefits generated for local communities.

22. Other potential mitigation measures that could be embedded as part of the design are included in **Table 29-3** below.

Table 29-3: Embedded Mitigation Measures

Parameter	'Mitigation Measures Embedded into the Design of DEP and SEP
General	
Site selection	<p>The project has undertaken extensive site selection process which has involved incorporating socio-economic and tourism-related considerations with design requirements, for example:</p> <ul style="list-style-type: none"> • Wherever possible, avoid proximity to residential dwellings; • Wherever possible, avoid proximity to historic and/ or other culturally significant assets; • Wherever possible, minimise impacts to local residents in relation to access to services and road use (including footpath closure); and • Wherever possible, minimise impacts to local businesses. <p>Chapter 4 Site Selection & Assessment of Alternatives provides more detail on how the above considerations have been applied through the site selection process.</p>

29.4 Impact Assessment Methodology

29.4.1 Policy, Legislation and Guidance

29.4.1.1 National Policy Statements

23. The assessment of potential impacts upon socio-economics and tourism is undertaken with specific reference to the relevant National Policy Statements (NPS). These are the principal decision-making documents for Nationally Significant Infrastructure Projects (NSIPs). Those relevant to DEP and SEP are:
- Overarching NPS for Energy (EN-1) (Department of Energy and Climate Change (DECC) 2011a);
 - NPS for Renewable Energy Infrastructure (EN-3) (DECC 2011b); and
 - NPS for Electricity Networks Infrastructure (EN-5) (DECC 2011c).
24. For socio-economics and tourism, there is very limited guidance on the methods to be used when assessing the effects of major infrastructure projects (such as DEP and SEP) on national and local economies. **Table 29-4** below provides an overview of the requirements set out in NPS for Energy (EN-1), together with an indication of the section of the PEIR chapter where each is addressed.
25. Additionally, the socio-economics and tourism assessment draws on the principles of the approach to economic appraisal of major projects as set out in HM Treasury's (2018) The Green Book.

Table 29-4: NPS Assessment Requirements.

NPS Requirement	NPS Reference	Section Reference
EN-1 NPS for Energy (EN-1)		
Where the project is likely to have socio-economic impacts at local or regional levels, the applicant should undertake and include in their application an assessment of these impacts as part of the ES.	EN-1 paragraph 5.12.2	The socio-economic impacts of SEP and DEP that have been scoped into the assessment have been assessed for both East Anglia and the UK study areas, and are set out in Section 29.6 .
The assessment should consider all relevant socio-economic impacts which may include the creation of jobs and training opportunities.	EN-1 paragraph 5.12.3	The effects DEP and SEP activity on employment are explored in Section 29.6.2 for construction-related jobs, and Section 29.6.3 for O&M-related jobs. The effects on decommissioning-related jobs are considered in Section 29.6.4 .
The assessment should consider all relevant socio-economic impacts, including the provision of additional local services and improvements to local infrastructure including the provision of educational and visitor facilities	EN-1 paragraph 5.12.3	The effects of the additional demand for local services and improvements to local infrastructure are explored in Sections 29.6.2, 29.6.3 and 29.6.4 .
The assessment should consider the effects on tourism	EN-1 paragraph 5.12.3	The effects on the tourism economy of both onshore and offshore infrastructure are considered in Sections 29.6.2, 29.6.3 and 29.6.4 .
The assessment should consider the impact of changing influx of workers during the different construction, operation and decommissioning phases of the energy infrastructure	EN-1 paragraph 5.12.3	The effects of changing influx of workers are considered in Section 29.6.2 for construction, Section 29.6.3 for operation and Section 29.6.4 for decommissioning.
The assessment should consider cumulative effects	EN-1 paragraph 5.12.3	Cumulative effects of DEP and SEP are considered in Section 29.7 .

NPS Requirement	NPS Reference	Section Reference
<p>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.</p>	<p>EN-1 paragraph 5.12.4</p>	<p>The existing socio-economic conditions are outlined in Section 29.5. The existing local policy context has been considered for the assessment of socio-economics within Section 29.4.1 of this assessment and Appendix 29.2 Socio-Economics and Tourism Technical Baseline.</p>
<p>The inter-relationships of socio-economic impacts with other impacts should also be considered.</p>	<p>EN-1 paragraph 5.12.5</p>	<p>The inter-relationships between socio-economics and other aspects of the assessment (including landscape and visuals, transport and traffic, noise, recreation and land use) are considered in Section 29.8.</p>

29.4.1.2 Other Policy/ Guidance

26. In addition to the NPS, there are a number of pieces of legislation, policy and guidance applicable to the assessment of socio-economics and tourism. A summary of the key national policy considerations outside of NPS is provided in **Table 29-5** below.

Table 29-5: Additional Relevant National and/ or Local Policy

Policy Consideration	Relevance to Socio-Economic and Tourism Assessment
National Policy	
UK Industrial Strategy	<p>Sets out the government’s vision for the UK economy, with the strategy’s underlying motivation ‘to create an economy that boosts the productivity and earning power throughout the UK’. The Industrial Strategy identifies five foundations, including investment in digital, transport, housing, low carbon and other infrastructure. Identifies clean growth as one of the main opportunities for the UK economy to take advantage of, through the ‘development, manufacture and use of low carbon technologies, systems and services’. Offshore wind is one of the areas where the UK has world-leading capabilities. The Industrial Strategy aims to maximise the share of global markets taken up by UK businesses in the sector.</p>
Clean Growth Strategy	<p>Connected to the UK Industrial Strategy, the Clean Growth Strategy seeks to ensure that economic growth goes hand in hand with greater protection for the natural environment. Within this is a commitment to help businesses and entrepreneurs seize opportunities of a low carbon economy, and specifically offshore wind. Under its ambition to deliver clean, smart and flexible power the Clean Growth Strategy seeks to deliver a diverse electricity system that supplies homes and businesses with secure, affordable and clean power. The Strategy seeks to deliver this through the development of low carbon sources of electricity (including renewables) and acknowledges that the UK is well-placed to benefit and become one of the most advanced economies for smart energy and technologies.</p>
Offshore Wind: Sector Deal	<p>The Offshore Wind Sector Deal commits to help the industry raise the productivity and competitiveness of UK companies to ensure the UK continues to play a leading role as the global market grows in the decades to 2050. Key commitments include:</p> <ul style="list-style-type: none"> • Increasing UK Content to 60% of value associated with offshore wind farm activity by 2030; • £250 million industry investment in building a stronger UK supply chain to support productivity and increase competitiveness; • Provide forward visibility of future Contracts for Difference (CfD) rounds with support of up to £557 million; • Increasing exports fivefold to £2.6 billion by 2030; and • Increasing the representation of women in the offshore wind workforce to at least a third by 2030.

Policy Consideration	Relevance to Socio-Economic and Tourism Assessment
<p>Tourism: Sector Deal</p>	<p>Builds on the UK Industrial Strategy by creating a framework which positions the tourism industry to take advantage of new markets whilst also leveraging initiatives designed to deliver the Strategy’s Grand Challenges relating to the data-driven economy (i.e. artificial intelligence (AI)), clean growth and ageing society.</p> <p>The Tourism Sector Deal sets out an ambitious agenda that will deliver increases in productivity and investment that will benefit local economies across the country. It introduces the concept of Tourism Zones, bringing together businesses and local organisations to establish a co-ordinated strategy for growth and sustaining visitor numbers throughout the off-season.</p> <p>By 2025, the Tourism Sector Deal aims to:</p> <ul style="list-style-type: none"> • More than double the size of the industry nationally to £268 billion; • Grow employment in the sector to 3.8 million; and • Deliver a 1% increase in productivity worth £12 billion to the national economy.
<p>National Planning Policy Framework (NPPF)</p>	<p>Emphasises that one of the overarching objectives of the planning system is to contribute to the achievement of sustainable development. This includes backing the transition to a low carbon economy.</p> <p>In paragraph 148, NPPF explains that the planning system should support the transition to a low carbon future, and states that the planning system should shape places in ways that contribute to radical reductions in greenhouse gas emissions, minimise vulnerability and provide resilience to the impacts of climate change, whilst also supporting the delivery of renewable and low carbon energy and associated infrastructure.</p>
<p>UK Marine Policy Statement (MPS)</p>	<p>The MPS states that properly planned developments in the marine area can provide both environmental and social benefits, whilst also driving economic development, providing opportunities for investment and generating export and tax revenues. This includes the ‘obvious’ social and economic benefits from such an increase in network capacity, most notably the facilitation of offshore renewable energy.</p>
<p>Local Policy</p>	
<p>New Anglia LEP Strategic Economic Plan</p>	<p>The New Anglia LEP’s Strategic Economic Plan identifies the offshore energy sector as a key growth opportunity area over the next decade. It highlights that New Anglia (consisting of Norfolk and Suffolk) is well placed to capitalise on market growth in the renewable sector with the ports of Lowestoft and Great Yarmouth, together forming one of six Centres for Offshore Renewable Engineering (CORE).</p>

Policy Consideration	Relevance to Socio-Economic and Tourism Assessment
	<p>The Strategic Economic Plan identifies several targets for East Anglia between 2012 and 2026, including:</p> <ul style="list-style-type: none"> • The delivery of 95,000 additional jobs; • The creation of 10,000 new businesses; • Improvements to productivity by narrowing the gap in GVA per head with the UK average (from 7.8% in 2012); and • Delivering 117,000 new homes. <p>To support this, the LEP has established two Enterprise Zones (EZ) (Beacon Park and South Denes) in Great Yarmouth borough, is intended to support the development of the offshore energy sector and economic growth, with a long-term vision to accommodate 150-200 businesses, directly creating 9,000 new jobs by 2025 and a further 4,500 indirectly through supply chain investment.</p>
<p>Economic Strategy for Norfolk & Suffolk</p>	<p>The Economic Strategy for Norfolk & Suffolk outlines the future economic growth ambitions for Norfolk and Suffolk up to 2036. The strategy is based on New Anglia's LEPs Strategic Economic Plan. The headline vision going forward is, by 2036, to achieve the following ambitions:</p> <ul style="list-style-type: none"> • 40,000 new homes; • 88,000 net new jobs; • 300,000 new businesses; • Increase GVA per hour to £39; • Increasing the proportion of the population with NVQ3+ to 66%; and • increase the weekly median wage to £200. <p>In addition, the strategy identified the ambition to have a higher proportion of people engaged in the labour market than is seen nationally, as well £17.5 billion of growth in the economy (in real terms).</p> <p>Within the economic strategy the Norfolk and Suffolk Energy Coast, which is branded as part of the East of England Energy Zone, is identified as a priority place, with the offshore wind industry a major component of the energy offering. The energy sector and offshore wind are recognised as important components of Norfolk and Suffolk's economy going forward.</p>
<p>Suffolk and Norfolk Local Industrial Strategy (LIS)</p>	<p>Builds on the government's Industrial Strategy, and reflects on the opportunities and needs of the area's growing economy, and how it will respond to a fast-changing world. Clean growth sites at the heart of the LIS which argues that the area's strengths in energy generation present major opportunities for Norfolk and Suffolk. The LIS identifies several actions to support the ambitions set out in the Strategic Economic Plan (see above) as well as clean growth, including:</p>

Policy Consideration	Relevance to Socio-Economic and Tourism Assessment
	<ul style="list-style-type: none"> • The development of an ambitious research and innovation programme that seeks to build on existing clean energy research strengths; and • The enhancement of the capacity and capability of Norfolk and Suffolk’s ports with a series of projects to attract and capture investment in offshore wind operations, as well as manufacturing and construction.
<p>Joint Core Strategy for Broadland, Norwich and South Norfolk</p>	<p>Outlines the ambition to ensure more energy is sourced from renewable sources (including offshore), with the following identified as being pertinent to the socio-economics and tourism assessment:</p> <ul style="list-style-type: none"> • Policy 3: Energy and water - aims to minimise reliance on non-renewable energy sources and maximise the use of low carbon sources; • Policy 5: The economy - states that <i>‘the local economy will be developed in a sustainable way to support jobs and economic growth in both urban and rural locations’</i>. • Policy 21: Implementations of proposals in the Broadland part of the Norwich Policy Area – states that the Broadland District Council will <i>‘work proactively with applicants jointly to find solutions [and] secure development that improves economic, social and environmental conditions in the area’</i>.
<p>North Norfolk Core Strategy</p>	<p>Sees an increasing role for renewable energy generation (including offshore wind).</p> <ul style="list-style-type: none"> • Core Aim 2 - focusses on mitigating and adapting the effects of climate change by encouraging renewable energy production. • Policy EN7 - states that renewable energy proposals will be supported, and that for large-scale projects proposals should seek to deliver economic, social, environmental and/ or community benefits of a reasonable scale to the local area.
<p>Great Yarmouth Core Strategy</p>	<p>Acknowledges that Great Yarmouth’s coastline along the North Sea shapes the nature of its economy, which is in part driven by the offshore wind sector, its port and tourism. The Borough’s two EZ (at Beacon Park and South Denes) are expected to play a vital role in attracting new businesses into the area, whilst also growing the energy sector and creating local employment.</p>

Policy Consideration	Relevance to Socio-Economic and Tourism Assessment
East Suffolk Local Plan	Acknowledges that East Suffolk has huge potential for growth associated with the development of offshore wind farms, defining the area in and around the Outer Harbour as the PowerPark. Policy WLP2.2 states that land at PowerPark is to be allocated for employment development and port-related uses (associated and ancillary uses necessary to support the offshore energy and engineering sectors will also be permitted).

29.4.2 Data and Information Sources

27. Other sources that have been used to inform the assessment are listed in **Table 29-6**.

Table 29-6: Other available data and information sources.

Data set / source	Spatial coverage	Year (released)	Notes / Relevance
Office for National Statistics (ONS) GVA (balanced approach)	The UK study area, the East Anglia study area and Local Authority Districts within East Anglia	2019	Receptors = Direct economic benefit and Impact on volume and value of tourism economy Indicator = GVA
ONS, UK Business Count	The UK study area, the East Anglia study area and Local Authority Districts within East Anglia	2019	Receptor = Direct economic benefit Indicator = Offshore wind supply chain
ONS, Business Register and Employment Survey	The UK study area, the East Anglia study area and Local Authority Districts within East Anglia	2019	Receptor = Increased employment and Impact on volume and value of tourism economy Indicators = Total employment and industry breakdown

Data set / source	Spatial coverage	Year (released)	Notes / Relevance
ONS, Mid-Year Population Estimates	The UK study area, the East Anglia study area and Local Authority Districts within East Anglia	2019	<p>Receptor = Change in demographics</p> <p>Indicator = Population estimates and Working age population</p>
ONS, 2018-based Sub-National Population Projections	The UK study area, the East Anglia study area and Local Authority Districts within East Anglia	2018	<p>Receptor = Change in demographics</p> <p>Indicator = Population projections</p>
ONS, Annual Population Survey	The UK study area, the East Anglia study area and Local Authority Districts within East Anglia	2020	<p>Receptor = Change in demographics</p> <p>Indicators = Economic activity, Employment rate, Unemployment, Occupational breakdown and Skills</p>
ONS, Claimant Count	The UK and East Anglia study areas	2020	<p>Receptor = Change in demographics</p> <p>Indicator = Claimant count</p>
ONS, English Indices of Deprivation	Neighbourhoods (Lower Super Output Areas) aggregated to the England, the East Anglia study areas and Local Authority Districts within East Anglia levels	2019	<p>Receptor = Change in demographics</p> <p>Indicator = Quality of life</p>

Data set / source	Spatial coverage	Year (released)	Notes / Relevance
Norfolk County Council, Infrastructure Delivery Plan, 2017-2027	Norfolk	2017	<p>Receptor = Loss of / disruption to local infrastructure</p> <p>Indicator = key infrastructure</p>
MHCLG, Local Authority Housing Data	The UK and East Anglia study areas and Local Authority Districts within East Anglia	2019	<p>Receptor = Loss of / disruption to local infrastructure</p> <p>Indicator = Housing</p>
<p>Norfolk County Council, Strategic Infrastructure Delivery Plan, 2019</p> <p>Babergh and Mid-Suffolk, Infrastructure Delivery Plan, 2019-2036</p> <p>St Edmundsbury, Infrastructure Delivery Plan, 2010</p>	Norfolk, Babergh and Mid-Suffolk and St Edmundsbury	n/a	<p>Receptor = Loss of / disruption to local infrastructure</p> <p>Indicator = key infrastructure</p>
NHS, General Practice Workforce	Norfolk and Suffolk Clinical Commissioning Groups (CCG)	2020	<p>Receptor = Pressure on local health infrastructure</p> <p>Indicator = GP registrations</p>
NHS, A&E Attendances and Emergency Admissions – monthly statistics	Norfolk and Suffolk CCGs	2020	<p>Receptor = Pressure on local health infrastructure</p> <p>Indicator = A&E facilities</p>
Destination Research, Economic Impact of Tourism for Norfolk	Norfolk	2008-18	<p>Receptor = Impact on volume and value of tourism economy</p> <p>Indicator = Economic impact of tourism</p>

Data set / source	Spatial coverage	Year (released)	Notes / Relevance
Destination Research, Economic Impact of Tourism for North Norfolk	North Norfolk	2016-18	Receptor = Impact on volume and value of tourism economy Indicator = Economic impact of tourism
Visit Britain, GB Day Visits Survey	The East Anglia study area	2018	Receptor = Impact on volume and value of tourism economy Indicator = Economic impact of tourism
Visit Britain, GB Tourism Survey	The East Anglia study area	2018	Receptor = Impact on volume and value of tourism economy Indicator = Economic impact of tourism
Larkin Gowen, East Anglia Tourism Business Survey	The East Anglia study area	2019	Receptor = Impact on volume and value of tourism economy
Visit Norfolk, Tourism Confidence Monitor	Norfolk	2018	Receptor = Impact on volume and value of tourism economy Indicator = Tourism confidence

29.4.3 Impact Assessment Methodology

28. **Chapter 6 EIA Methodology** provides a summary of the general impact assessment methodology applied to DEP and SEP. The following sections confirm the methodology used to assess the potential impacts on socio-economics and tourism in the defined study areas.

29.4.3.1 Definitions

29. For each effect, the assessment identifies receptors sensitive to an impact and implements a systematic approach to understanding the impact pathways and the level of impacts on given receptors.

30. The sensitivity of each receptor is evaluated as either high, medium, low or negligible based on the baseline position and its performance against benchmark areas, together with consideration of the importance of the receptor in policy terms. **Table 29-7** below provides more detail on the approach that is adopted in defining receptor sensitivity.

Table 29-7: Definition of sensitivity for socio-economics and tourism receptors

Sensitivity	Definition
High	The receptor is of high sensitivity where it is identified as a policy priority (as a result of economic potential and/ or need). There is evidence of major socio-economic challenges and/ or opportunities for the receptor within the study area.
Medium	The receptor is of medium sensitivity where it is not identified as a policy priority (as a result of economic potential and/ or need). There is however evidence of considerable socio-economic challenges and/ or opportunities for the receptor within the study area.
Low	The receptor is of low sensitivity where it is not identified as a policy priority (as a result of economic potential and/ or need). There is evidence that the receptor is resilient within the study area.
Negligible	The receptor is of negligible sensitivity when it is not identified as a policy priority. There is evidence of good overall performance for the receptor and/ or no challenges within the study area.

31. The magnitude of change (or impact) on the receptor will be determined by considering the estimated variation from the baseline conditions once measures aimed at mitigating any adverse impacts are taken into consideration. The criteria used for the assessment of magnitude will be evaluated as either high, medium, low or negligible, and are set out in more detail below.
32. **Table 29-8** below sets out the criteria used for assessing the magnitude of impact related to economic and employment receptors. Please note that the ranges set out in the table below are based on professional judgement, and are informed by experience from other, similar projects.

Table 29-8: Criteria for assessing magnitude of impact related to economic and employment receptors

Magnitude	Negligible	Low	Medium	High
GVA Impacts	<0.1%	0.1% -0.5%	0.5% - 1%	>1%
Employment Impacts	<0.5%	0.5% - 1%	1% - 2%	>2%

33. For all other receptors (including change in demographics due to in-migration, loss of and/ or disruption to local infrastructure, disturbance to social and community infrastructure, pressure on local health infrastructure, and the impacts of both onshore and offshore infrastructure on tourism activity), the assessment of magnitude of impact draws on the approach set out in **Table 29-9** below.

Table 29-9: Definition of magnitude for other socio-economics and tourism receptors

Magnitude	Definition
High	Proposals will cause a large change to the scale and/or quality of the receptor when compared with existing socio-economic baseline conditions.
Medium	Proposals will cause a moderate change to the scale and/or quality of receptor when compared with the existing socio-economic baseline conditions.
Low	Proposals will cause slight change to the quality and/ or integrity of the receptor when compared with existing socio-economic conditions.
Negligible	Proposals will cause no discernible change to the baseline socio-economic conditions.

29.4.3.2 Significance of Effect

34. In basic terms, the potential significance of an effect is a function of the sensitivity of the receptor and the magnitude of the impact (see **Chapter 6 EIA Methodology** for further details). The determination of significance is therefore guided by the use of an impact significance matrix, as shown in **Table 29-10**.

Table 29-10: Impact significance matrix

		Negative Magnitude				Beneficial Magnitude			
		High	Medium	Low	Negligible	Negligible	Low	Medium	High
Sensitivity	High	Major	Major	Moderate	Minor	Minor	Moderate	Major	Major
	Medium	Major	Moderate	Minor	Minor	Minor	Minor	Moderate	Major
	Low	Moderate	Minor	Minor	Negligible	Negligible	Minor	Minor	Moderate
	Negligible	Minor	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Minor

35. Definitions of each level of significance are provided in **Table 29-11** below. Potential effects identified as major or moderate within the assessment are regarded as significant in terms of the EIA regulations.
36. Where possible, appropriate mitigation has been identified in consultation with the regulatory authorities and relevant stakeholders. The aim of mitigation measures is

to avoid and/ or reduce the overall impact in order to determine a residual impact upon a given receptor.

Table 29-11: Definition of impact significance

Significance	Definition
Major	Very large or large change in receptor condition, 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.

29.4.4 Cumulative Impact Assessment Methodology

37. The CIA considers other plans, projects and activities that may impact cumulatively with DEP and SEP. As part of this process, the assessment considers which of the residual impacts assessed for DEP and/ or SEP on their own have the potential to contribute to a cumulative impact, the data and information available to inform the cumulative assessment and the resulting confidence in any assessment that is undertaken. **Chapter 6 EIA Methodology** provides further details of the general framework and approach to the CIA.
38. For socio-economics and tourism these activities include changes to the growth of the economy and specific sectors, local demographics, impacts on local, social and health infrastructure, and the impact on the volume and value of the tourism economy.

29.4.5 Transboundary Impact Assessment Methodology

39. The transboundary assessment considers the potential for transboundary effects to occur on the relevant socio-economics and tourism receptors as a result of DEP and SEP (i.e. either those that might arise within the Exclusive Economic Zone (EEZ) of European Economic Area (EEA) states or arising on the interests of EEA states e.g. a non-UK fishing vessel). **Chapter 6 EIA Methodology** provides further details of the general framework and approach to the assessment of transboundary effects.

40. For socio-economics and tourism, the potential for transboundary effects has been identified in relation to the potential impact upon the economies of other states within the EEA. This may arise through the purchase of project components, equipment and the sourcing of labour from companies based outside the UK. Under Regulation 32 part 6(a) of the 2017 regulations, the Secretary of State must consult with any EEA state concerned regarding the potential significant effects of the development on the environment of that EEA state, and the measures envisaged to reduce or eliminate such effects. However, the sourcing of materials and labour from other EEA states is assumed to provide beneficial effects in the economies of such states, and as such the consideration of “*measures envisaged to reduce or eliminate such effects*” is not relevant within the context of transboundary impacts.
41. The location of the offshore infrastructure means that it will not be visible from other EEA countries. The onshore elements of DEP and SEP are entirely present within the UK shores, and as such there is no potential for significant transboundary effects (either beneficial or adverse) on other EEA states.
42. Given the above, transboundary impacts associated with socio-economics and tourism are not considered further.

29.4.6 Assumptions and Limitations

43. The most up to date information available has been used in the preparation of the baseline for the existing socio-economics and tourism environments. However, there is often a lag in the publishing of national datasets, meaning there is the possibility that some information may not be up to date. This is especially relevant for data highlighting the overall impact of the COVID-19 pandemic on unemployment estimates. However, where available emerging estimates (such as monthly claimant count figures) are included within the assessment. In other instances, employment data published by the ONS usually has a one to two-year lag but is still the best data for employment available. These data limitations are not likely to have a material effect on the predictability or accuracy of the impact assessment in this instance.
44. Since January 2013, the number of people claiming Job Seeker’s Allowance and Universal Credit have been combined. The new dataset combining Universal Credit and Job Seeker’s Allowance means that it is no longer possible to get an accurate indication of the number of people seeking work in occupations related to construction and operational phases of offshore wind farm developments. This has implications for the level of quantitative analysis which can be undertaken in the baseline section and subsequent assessment.
45. There are challenges with disaggregating GVA data by sector to measure the impact of SEP and DEP in the context of the renewable energy sector. The data is available by broad Standard Industrial Classification (SIC) code level, which does not lend itself to defining a renewable energy sector, especially below national geographical level. This means that the assessment of GVA impacts is undertaken against a whole economy baseline. Quantitative definitions of magnitude are adjusted accordingly for GVA receptors to reflect the breadth of the measure.

46. When submitted, the DCO application will not include development activities at potential construction ports. Where necessary, these will be subject to separate consent(s) such as planning permission or a Harbour Revision Order. The Applicant is currently considering ports suitable for the construction base for the offshore elements of the project, both within the UK and elsewhere. East Anglia-based ports such as King's Lynn, Great Yarmouth, Lowestoft and Felixstowe are being considered to support construction activity, however other ports outside of the study area may also be suitable for the construction phase of DEP and SEP. Port selection (either single or multiple) will be dependent upon receipt of a consent, a CfD award and on the findings of further technical studies and commercial negotiations.
47. For the socio-economics assessment, it is assumed that the O&M port will be located within the East Anglia study area as these are in close proximity to all elements of DEP and SEP (and are also the location of the O&M base for the existing Sheringham Shoal and Dudgeon wind farms).
48. At this stage the total generation capacity of DEP and SEP is yet to be determined. This will depend on the number of turbines installed and their generation capacity. However, the working assumption is that together, DEP and SEP will double the overall generation capacity of the existing Dudgeon and Sheringham Shoal offshore wind farms, bringing total overall generation capacity to over 1,400 MW. The following assessment is therefore based on the assumption that DEP will have a maximum generation capacity of 448MW, whilst SEP will have a maximum generation capacity of 338MW.
49. It is noted that any change in assumptions with regards to maximum generating capacity by DEP and SEP will be reflected in the updated assessment at the ES stage.
50. The chapter considers a UK study area to enable the national significance of socio-economic effects to be assessed. It should be noted that the effects of DEP and SEP within the context of the UK study area appear low. However, these have been included in the assessment to demonstrate the absolute scale of potential effects for the UK study area. Where data is not available at a UK level (namely the ONS Business Register and Employment Survey (BRES, 2018)), Great Britain is used as an alternative measure.
51. **Section 29.3.2.2** above provides an overview of the potential construction scenarios that could be implemented. Under each scenario it is assumed that each wind farm's construction lasts four-years, and is likely to see peaks and troughs in activity related to specific onshore and offshore aspects of DEP and SEP. At this stage, it is not possible to robustly model the scale of workforce requirements at different points in time, and as such, the assessment of socio-economic effects assumes a uniform level of annual employment across all years (total employment divided by the construction period). Although there are likely to be peaks and troughs throughout the period, this provides a reasonable estimate of workforce requirements and enables a robust assessment of effects to be undertaken.

52. There is limited availability of tourism data at the district and other local levels. For example, tourism data has a limited timeseries, often the data is presented on a yearly basis and this may not account for the in-year highs and lows due to the seasonal nature of tourism. In addition, the data on activities of tourists, length of visit, nature of accommodation etc is limited at the local level and typically lacks robustness.
53. The figures calculated in this report are based on SIC codes defined by the United Nations World Tourism Organization (UNWTO) for tourism industries (UNWTO, 2020). This definition is broader than the definition of the accommodation and food services sector. Such data faces the same issues as the employment data mentioned above but is the best data available.
54. It is methodologically challenging to identify the impact of energy infrastructure on the tourism economy, as there are several other influences which can be more significant in influencing both long and short-term patterns. For instance, this includes weather, the availability of cheap flights to overseas destination, changes in preferences and changes to the local offer.
55. There is a tendency for the literature examining the impact of energy infrastructure to be dominated by ex-ante assessments. The evidence is also dominated by opinion poll evidence which is often general rather than scheme-specific. There is limited ex-post evidence on the impact of onshore and offshore energy and related infrastructure on tourism economies. Additionally, there is no comparison of ex-ante and ex-post evidence for specific wind farms.

29.5 Existing Environment

29.5.1 Socio-Economics Baseline

56. The baseline conditions are assessed for the East Anglia study area (identified as the local study area), which is benchmarked against the UK study area (which forms the national study area). For some indicators it is not possible to obtain like for like data for the whole of the UK study area and therefore Great Britain is used as a substitute.
57. This section provides a summary of baseline conditions which are most relevant to the assessment, with a more detailed baseline analysis provided in the [Appendix 29.2 Socio-Economics and Tourism Technical Baseline](#).

29.5.1.1 Labour Market Indicators

58. At 3.4% the unemployment rate in the East Anglia study area is lower when compared with the UK's average of 4.0%. There are currently 26,000 unemployed residents across East Anglia and as of April 2020, there were 42,200 claimants seeking employment opportunities.

29.5.1.2 Employment

59. The East Anglia study area provides around 692,000 employee jobs which equates to an estimated 568,000 full-time equivalent jobs (FTE).

60. Since 2009, the East Anglia study area economy grew by around 58,800 FTE jobs, with the annual change in job numbers largely following the national trend. However, data for 2017-18 shows that as a whole, East Anglia has experienced a decline in employment for the first time since 2010-11, with an overall decline of 0.2% (compared with +0.8% nationally). This is largely the result of a decline of 0.8% in employment numbers in Norfolk between 2017-18.

29.5.1.3 Gross Value Added and Earnings

61. The East Anglia study area contributed £37.7 billion in GVA to the UK economy in 2018 which accounts for around 2% of the UK's total GVA output. GVA per head of population is around £22,700 in East Anglia, which is 21% below the UK average of £28,700.

29.5.1.4 Deprivation

62. According to the 2019 Index of Multiple Deprivation (IMD) from the ONS, the East Anglia study area has a relatively low number of areas with the highest levels of deprivation nationally. Only 6% of neighbourhood areas (identified as Lower Super Output Areas (LSOA)) within East Anglia are amongst the highest (i.e. 10%) most deprived areas nationally. This average hides higher levels of deprivation in Norwich and Great Yarmouth which have 25% and 20% respectively of their neighbourhoods within the 10% most deprived areas nationally.

29.5.2 Tourism Baseline

63. The study area for the tourism baseline assessment is based on the Norfolk County Council administrative boundary, with the rationale being that the onshore cable corridor for both DEP and SEP going through this area.
64. This section provides a summary of baseline conditions which are most relevant to the assessment, with a more detailed baseline analysis provided in [Appendix 29.2 Socio-Economics and Tourism Technical Baseline Report](#).

29.5.2.1 Tourism Economy

65. Tourism supports an estimated 53,000 FTE jobs across the East Anglia study, representing around a tenth of all employment locally. This is slightly higher than the national average (of 9%). Within Norfolk, Great Yarmouth (with 5,300 FTE jobs) and North Norfolk (with 4,400 FTE jobs) have relatively high levels of concentrations of employment in tourism (with location quotients of 2.0 and 1.9 respectively).
66. Data on volume and value of tourism in Norfolk shows that in 2018 there were 50.9 million visits, injecting around £2.37 billion of visitor expenditure into the local economy. The majority of trips to Norfolk (i.e. 47.8 million or 94%) are day visits, together injecting around £1.59 billion into the local economy. Whilst overnight visits represent only 6% of total visits to Norfolk, in 2018 these led to an overall injection of £740 million (or around 31% of total visitor expenditure).

67. Since 2008, the overall number of visits to Norfolk increased by around 21.5 million visits (or +73%), whilst the overall visitor injection increased by £685 million (or +41%). Whilst the number of day visits increased substantially (from 25.5 million to 47.8 million or +88%), the number of overnight visits declined by almost a quarter from 4.0 million to 3.1 million. On average, it is estimated that each visit (i.e. day and overnight) to Norfolk in 2018 generated an injection of £46.60, compared with £57.20 per visit in 2018.
68. Analysis into overnight visits reveals that, in 2018 Norfolk holiday visits made up the largest share of overnight visitors (around 2.2 million visits) generating the largest share of overnight visitor expenditure (of £540 million or around 75% of all overnight tourism expenditure in 2018).

29.5.2.2 Tourism Business Confidence

69. Visit England produces Business Confidence data on a quarterly basis. The latest (Visit England, 2019), pre Covid-19 survey shows that the vast majority of visitor attraction and accommodation businesses are at least fairly confident, with more than a quarter of all respondents stating they are very confident about the future.
70. However, the unprecedented impacts of the COVID-19 pandemic and subsequent lockdown measures implemented to reduce its spread has significantly impacted business confidence levels. An online tourism business survey for the East of England conducted by Destination Research (2020) revealed that many tourism businesses are expecting to achieve a lower turnover for 2020-21. Around four out of every five businesses closed temporarily and many of their staff furloughed under the Coronavirus Job Retention Scheme.

29.5.2.3 Nature of the Tourism Offer in Norfolk

71. Many visitors visit Norfolk for leisure purposes, with the main reasons to visit being, history/ heritage, nature/ wildlife watching and walking/ hiking. The most popular area to visit for leisure is Great Yarmouth. People often visit for a one-week holiday or longer (45% of survey respondents (Insight Track, 2019)).
72. The natural environment appears to be the most 'visited' amenity in Norfolk with the coastal beaches and countryside the top two from the prompted list. Shopping is also a major draw; with outdoor attractions and museums/ historic sites/ buildings also popular. Walking is the most popular activity with half of survey respondents engaging in this activity.
73. Norfolk has a number of attractions each attracting over 100,000 visitors per year. The most popular of these is Banham Zoo in Breckland which brings in over 200,000 visitors per year, followed by Norwich Castle Museum and Art Gallery (199,500 visitors), Blickling Hall, Gardens and Park (191,000 visitors) and Wroxham Barns (190,000 visitors). Please note that this analysis is based on attractions that keep track of visitor numbers. There are several other (potentially more) popular attractions (such as the Broads, coastal towns and the Norfolk Coast Area of Outstanding Natural Beauty (AONB)) which do not keep record of visitor numbers (Visit Britain, 2018).

29.5.2.4 Nature of Accommodation

74. Visitors staying in Norfolk are more likely to visit between May and September, with bed and breakfast (B&B) and/ or guesthouses being the most popular choice of accommodation. Hotels (chain or independent) are also popular (Insight Track, 2019).

29.5.2.5 Assets in North Norfolk, Broadland and South Norfolk

75. Many visitors to the area, particularly North Norfolk District visit to enjoy the Norfolk Coast AONB, its beaches, coastal birdlife, the Broads and the character and tranquillity of the open countryside. North Norfolk District's many seaside towns contain several attractions and act as a focus for visitors and accommodation, particularly around Cromer and Sheringham. In particular, Sheringham attracts visitors throughout the year (i.e. on day trips, short breaks and/ or longer stays) and has a range of accommodation options ranging from high quality hotels to budget and self-catering accommodation.
76. The North Norfolk Core Strategy identifies four asset zones of relevance to the visitor economy in the district which include:
- Resorts and hinterlands – Cromer, Sheringham and Mundesley;
 - Rural – Fakenham, North Walsham and Stalham;
 - The Broads and their setting; and
 - Coastal – Wells-next-the-Sea.
77. The Norfolk Broads National Park is Britain's largest protected wetland and an important tourist attraction for activities such as wildlife spotting, boating and scenic walks.

29.5.2.6 Tourism Activity in Proximity to Landfall and the Cable Corridor

78. DEP and SEP are anticipated to make landfall close to Weybourne, which is a small village with a population of just over 500 residents. The landfall area is characterised by a shingle beach, called Weybourne Beach, which although being less suitable for bathers is popular with anglers and dog walkers. The beach has a car park and is easily accessible to the public. To the east of the car park there is a sea cliff that runs along the coast. Old Coastguard Cottages sit on the top of the sea cliff. To the west of the car park is the Kelling beach wreck area which is a sea fishing venue and home to the Weybourne Atmospheric Observatory. The Norfolk Coast Path stretches along the coastline and on top of the cliff.
79. Resources within 1 km of the proposed landfall location include:
- Norfolk / England Coastal Path - Part of the new National Trail around the English Coast. The section from Sea Palling to Weybourne can be accessed from the car park on Beach Lane in Weybourne. Norfolk Coastal Path has many visitors with around 47,000 visitors in January and peaking at 64,000 visitors in August.
 - North Norfolk's Deep History Coast - A 22-mile stretch of coastline between Weybourne and Cart Gap which has revealed important archaeological finds including the oldest and largest fossilised mammoth skeleton ever found in the UK.

- Muckleburgh Hill - A significant 21-hectare remnant heathland falling within the North Norfolk AONB, lying less than a kilometre from the coast, within proximity to several Sites of Special Scientific Interest (SSSI).
- The Muckleburgh Military Collection - Sited on the former Royal Artillery Anti-Aircraft training camp at Weybourne. It has the UK's largest privately owned collection of tanks, armoured cars and other military vehicles used in wars across the globe and attracts 38,000 visitors per year.
- Foxhills Campsite - Campsite with 20 large pitches and open space.

80. The onshore cable corridor follows a north-south direction, passing through and/ or within close proximity of Weybourne, Baconsthorpe, Cawston, Attlebridge, Hethersett, Ketteringham and on to the two onshore substation site options close to the existing Norwich Main Substation.

81. In addition to the resources mentioned above, resources within 1km of the onshore cable corridor are shown within the **Appendix 29.2 Socio-Economics and Tourism Technical Baseline**.

29.5.2.7 *Tourism Perceptions of Wind farms*

82. There is a limited body of evidence relating to the extent to which offshore wind farms impact upon tourism. The primary research base can be divided into three broad groups focussing on ex-ante research, ex-post research and wider research.

83. **Appendix 29.2 Socio-Economics and Tourism Technical Baseline** presents a detailed review of various research papers and studies that have analysed the impact of offshore wind farms on tourism and visitors to areas from which said wind farms are visible. The evidence suggests that offshore wind farm developments generate very limited or no lasting negative impacts on tourist and recreational users during the construction and operational phases. It is possible to generate positive benefits in the short term through the additional demand for accommodation and food and drink

29.5.2.8 *Visibility of the Offshore Infrastructure*

84. The ZTV of the offshore wind turbines associated with SEP and DEP stretches inland into Norfolk, making DEP and SEP visible from various locations along the Norfolk coast. A full list of resources within the ZTV is presented in the **Appendix 29.2 Socio-Economics and Tourism Technical Baseline**.

29.5.3 **Climate Change and Natural Trends**

85. Under a moderate climate change scenario, the health of the wider population may be adversely affected by increased risk of overheating and other heat-related illnesses, drought as well as decreased water and food security. This would be partially offset against a reduced risk of cold weather-related illness during winter, particularly in vulnerable groups such as the elderly. As such, health infrastructure within the local area could expect to see increased levels of demand, with potentially increasing ill-health, along with an ageing population.

86. That said, the changes in demography in addition to the loss of/ disruption to local and social infrastructure brought about as a result of DEP and SEP could be expected to be small in magnitude and of no implications when considered in relation to climate change and natural trends.

87. Furthermore, changes in climate are likely to impact on overall volume and value of the tourism economy. However, at this stage it is not clear whether these impacts would be adverse or beneficial.
88. As such, within the context of socio-economics and tourism, it is believed that climate factors have little or no influence on the socio-economic and tourism receptors assessed here. This needs to be considered within the overall magnitude of impact created, which for the operation phase (assumed to be 35-years) will be minimal, and which need to be weighed against the long-term environmental benefits.

29.6 Potential Impacts

29.6.1 Scenarios

29.6.1.1 Development Scenarios

89. There are five potential development scenarios which are captured in the construction and operation of DEP and SEP either in isolation, concurrently and/ or sequentially:
- Only DEP is constructed in isolation;
 - Only SEP is constructed in isolation;
 - DEP and SEP are constructed concurrently;
 - DEP is constructed first followed by the construction of SEP; and
 - SEP is constructed first followed by the construction of DEP.
90. The sequential scenarios are combined and presented as a range (low to high) in the following assessment.

29.6.1.2 Construction Port Based Scenarios

91. The assessment has considered two potential scenarios for the location of the construction port for DEP and SEP, including:
- Local port – the port is located with the East Anglia study area; and
 - UK-based port – the port is located within the UK study area, but outside of the East Anglia study area.

29.6.1.3 Cost Savings

92. The assessment has also tested the implications of potential cost savings occurring as a result of concurrent construction of DEP and SEP. More detail about potential savings and efficiencies that could be achieved as a result of parallel construction is set out in the **Appendix 29.1 Socio-Economics Construction Costs and Sourcing Assumptions Note**. This is presented alongside a non-cost savings scenario to show the breadth of potential impacts generated, whilst also reflecting upon the uncertainty about local sourcing and overall construction costs.

29.6.2 Potential Impacts during Construction

93. This section lists the potential impacts resulting from the construction stage of DEP and SEP. The impacts are then assessed against the relevant baseline indicators for their significance.

29.6.2.1 Impact 1: Direct Economic Benefit

94. **Table 29-12** below summarises the potential annual economic activity (measured as GVA) that could be generated during the construction phase of DEP and SEP.

Table 29-12: Potential Economic Impacts Generated During Construction

Study Area	Port Based Scenario	Development Scenario	Total GVA Per Annum (£ million)	Total GVA (£ million)
East Anglia	Local port	DEP in isolation	£14.2	£56.9
		SEP in isolation	£10.0	£40.2
		Parallel construction – with no cost savings	£24.3	£97.1
		Parallel construction – with cost savings	£23.1	£85.1
		Sequential construction, DEP then SEP	£14.2 then £13.4	£97.1
		Sequential construction, SEP then DEP	£10.0 then £19.0	£97.1
	UK-based port	DEP in isolation	£1.9	£7.6
		SEP in isolation	£1.4	£5.7
		Parallel construction – with no cost savings	£3.3	£13.4
		Parallel construction – with cost savings	£3.0	£12.1
		Sequential construction, DEP then SEP	£1.9 then £1.9	£13.4
		Sequential construction, SEP then DEP	£1.4 then £2.5	£13.4
United Kingdom	Local port or UK-based port	DEP in isolation	£55.5	£222.0
		SEP in isolation	£40.1	£160.3
		Parallel construction – with no cost savings	£95.6	£382.2

Study Area	Port Based Scenario	Development Scenario	Total GVA Per Annum (£ million)	Total GVA (£ million)
		Parallel construction – with cost savings	£85.1	£340.4
		Sequential construction, DEP then SEP	£55.5 then £53.4	£382.2
		Sequential construction, SEP then DEP	£40.1 then £74.0	£382.2

29.6.2.1.1 *DEP or SEP in Isolation*

95. Based on a maximum generation capacity of 448MW, it is estimated that the construction of DEP would see an annual contribution (in GVA) over a four-year construction period of around £55.5 million to the UK economy. The contribution to the East Anglia study area economy is estimated to range from £1.9 million if the port is located in the UK study area but outside of the East Anglia study area, to £14.2 million if the port is based in the East Anglia study area.
96. Based on a maximum generation capacity of 338MW, it is estimated that the construction of SEP would see an annual (GVA) contribution each year over a four-year construction period of around £40.1 million on the UK economy. The contribution to the East Anglia study area economy is estimated to range from £1.4 million if the port is based in the UK study area but outside the East Anglia study area, to £10.0 million if the port is based in the East Anglia study area.

29.6.2.1.2 *DEP and SEP Built Concurrently*

97. With a total generation capacity of up to 786MW, and the assumption there are no cost savings resulting from parallel construction, the concurrent construction of DEP and SEP is estimated to see an annual contribution of around £95.6 million GVA to the UK economy each year over a four-year construction period. The benefit to the East Anglia study area economy is estimated to range from £3.3 million GVA per annum if the port is based in the UK study area but outside the East Anglia study area, to £24.3 million GVA per annum if the port is based in the East Anglia study area.
98. Assuming there are cost savings resulting from parallel construction, the concurrent construction of DEP and SEP is estimated to generate an annual contribution of £85.1 million GVA to the UK economy each year of construction. The benefit to the East Anglia study area economy is estimated to range from £3.0 million GVA per annum if the port is based in the UK study area but outside the East Anglia study area, to £21.3 million GVA per annum if the port is based in the East Anglia study area.

29.6.2.1.3 *DEP and SEP Built Sequentially*

99. At this stage it is not known which of DEP and SEP would proceed to construction first.

100. Should SEP be built first, it is estimated to contribute £40.1 million GVA each year over a four-year construction period, with a further £74.0 million GVA each year, over the three years when DEP is built.
101. At the East Anglia study area level, a UK-based port outside the East Anglia study area would see an estimated £1.4 million GVA per annum from the construction of SEP followed by £2.5 million GVA per annum for the construction of DEP. On other hand, should the construction port be based in the East Anglia study area, the area's economy would see an estimated £10.0 million GVA per annum from the construction of SEP followed by £19.0 million GVA per annum from the construction of DEP.
102. Should DEP be built first, it is estimated to contribute £55.5 million GVA each year over a four-year construction period, with a further £53.4 million GVA each year, over the three years when SEP is built.
103. At the East Anglia study area level, a UK-based port outside the East Anglia study area would see an estimated £1.9 million GVA per annum from the construction of DEP followed by £1.9 million GVA per annum for the construction of SEP. On other hand, should the construction port be based in the East Anglia study area, the area's economy would see an estimated £14.2 million GVA per annum from the construction of DEP followed by £13.4 million GVA per annum from the construction of SEP.

29.6.2.1.4 *Magnitude of Effect*

104. The largest benefit to the East Anglia study area economy would be in the local port, concurrent construction scenario with no cost savings. This would produce a total GVA contribution of £24.3 million per annum. The baseline analysis indicates that the East Anglia study area economy has a baseline of £37.7 billion GVA. The largest estimated annual benefit to the East Anglia study area economy would therefore generate an increase of 0.06% over and above the current baseline. On this basis, the magnitude of effect in the context of the East Anglia study area is therefore assessed as negligible under maximum impact scenario. All other scenarios are anticipated to generate a lower output, and so are also assessed as negligible.
105. The largest estimated annual contribution to the UK economy would also result from a concurrent construction scenario with no cost savings. This would produce an estimated total GVA benefit of £95.6 million per annum. It is estimated that the largest potential annual benefit to the UK economy would represent an increase of under 0.01% to the UK economy. On this basis, the magnitude of effect on the UK economy is assessed as negligible for the maximum impact scenario and all other scenarios.

29.6.2.1.5 *Sensitivity of the Receptor*

106. Generating economic activity is identified as a policy priority within New Anglia LEP's Strategic Economic Plan. Furthermore, GVA per head in the East Anglia study area is significantly lower than the UK average, evidencing a major socio-economic challenge.
107. On this basis, the sensitivity of the receptor is therefore assessed as high.

29.6.2.1.6 Significance of Impact

108. With the sensitivity of the receptor assessed as high and the magnitude of effect assessed as negligible at both the East Anglia study area and UK levels, the significance of impact is therefore assessed as **minor beneficial**. This is not considered to be significant in EIA terms.
109. It is assumed the impact(s) of increased economic activity during the construction phase is temporary and short-term and irreversible in nature.

29.6.2.2 Impact 2: Increased Employment

110. **Table 29-13** below summarises the potential annual employment benefits during the construction phase over a range of port based and development scenarios for the East Anglia study area and UK study areas. The approach to deriving economic impacts (i.e. in terms of jobs supported as well as GVA created) as a result of the various scenarios assessed draws on the cost and sourcing assumptions used (please see **Appendix 29.1 Socio-Economic Construction Costs and Sourcing Assumptions Note**) and the analysis presented in **Appendix 29.3 Socio-Economics Impact Assessment**.

Table 29-13 Potential Employment Impacts During Construction

Study Area	Port Based Scenario	Development Scenario	Employment Per Annum (FTEs)	
UK	Local port	DEP is constructed in isolation	270	
		SEP is constructed in isolation	190	
		Parallel construction – with no cost savings	460	
		Parallel construction – with cost savings	400	
		Sequential construction DEP then SEP	270 then 250	
		Sequential construction SEP then DEP	190 then 360	
			DEP is constructed in isolation	40
			SEP is constructed in isolation	30
			Parallel construction – with no cost savings	70
			Parallel construction – with cost savings	60

Study Area	Port Based Scenario	Development Scenario	Employment Per Annum (FTEs)
		Sequential construction DEP then SEP	40 then 40
		Sequential construction SEP then DEP	30 then 50
	Local Port or UK-based port	DEP is constructed in isolation	1,000
		SEP is constructed in isolation	730
		Parallel construction – with no cost savings	1,730
		Parallel construction – with cost savings	1,540
		Sequential construction DEP then SEP	1,000 then 970
		Sequential construction SEP then DEP	730 then 1,340

29.6.2.2.1 DEP or SEP in Isolation

- 111. Based on a maximum generation capacity of 448MW, the construction of DEP in isolation is estimated to generate demand for around 1,000 FTE jobs per annum across the UK economy. At the East Anglia study area level, the employment benefit is estimated to range from 40 FTE jobs if the construction port is based in the UK study area but outside the East Anglia study area, to 270 FTE jobs if the construction port is based in the East Anglia study area.
- 112. Based on a maximum generation capacity of 338MW, the construction of SEP in isolation is estimated to generate demand for around 730 FTE jobs across the UK economy. At the East Anglia level, the employment benefit is estimated to range from 30 FTE jobs if the construction port is based in the UK study area but outside the East Anglia study area, to 190 FTE jobs if the construction port is based in the East Anglia study area.

29.6.2.2.2 DEP and SEP Built Concurrently

- 113. With a total generation capacity of up to 786MW, and the assumption there are no cost savings resulting from parallel construction, the concurrent construction of DEP and SEP is estimated to generate demand for 1,730 FTE jobs each year at the UK level. The benefit to the East Anglia economy is estimated to range from 70 FTE jobs if the construction port is based in the UK study area but outside the East Anglia study area, to 460 FTE jobs if the construction port is based in the East Anglia study area.

114. Assuming there are cost savings resulting from parallel construction, the concurrent construction of DEP and SEP is estimated to generate demand for 1,540 FTE jobs each year at the UK level. The benefit on the East Anglia economy is estimated to range from 60 FTE jobs if the construction port is based in the UK study area but outside the East Anglia study area, to 400 FTE jobs if the port is based in the East Anglia study area.

29.6.2.2.3 *DEP and SEP Built Sequentially*

115. As set out above, at this stage it is not known which of the two projects would proceed to construction first.
116. Should SEP be built first, it is estimated that demand for employment will be around 730 FTE jobs per annum nationally for a four-year construction period, followed by the demand for 1,340 FTE jobs per annum during the three year construction period of DEP.
117. At the East Anglia level if SEP is built first, a UK-based port would see an estimated 30 FTE jobs supported by the construction of SEP, increasing to 50 FTE jobs throughout the construction of DEP. On the other hand, should the construction port be based in the East Anglia study area, the demand for employment is estimated to be 180 FTE jobs per annum during the construction of SEP, increasing to 360 FTE jobs per annum throughout the construction of DEP.
118. Should DEP be built first, it is estimated that demand for employment will be around 1,000 FTE jobs per annum nationally for a four year construction period, followed by the demand for 970 FTE jobs per annum during the three year construction period of SEP.
119. At the East Anglia level if DEP is built first, a UK-based port would see an estimated 40 FTE jobs supported by the construction of DEP, then 40 FTE jobs throughout the construction of SEP. On the other hand, should the construction port be based in the East Anglia study area, the demand for employment is estimated to be 270 FTE jobs during the construction of DEP, decreasing to 250 FTE jobs throughout the construction of SEP.

29.6.2.2.4 *Magnitude of Effect*

120. The largest annual benefit to the UK economy is anticipated from the concurrent construction scenario, with no savings. This would produce a total employment benefit of up to 1,730 FTE jobs. This impact is estimated to represent less than 0.01% of the UK's current baseline. On this basis, the magnitude of effect at the UK level is therefore assessed as negligible for the maximum impact scenario.
121. The largest annual benefit to the East Anglia economy is estimated to result from a concurrent construction scenario, with no savings. This would support an estimated total employment benefit of up to 460 FTE jobs annually during the construction period. The largest annual benefit on jobs at the East Anglia level would therefore represent 0.08% of the area's employment baseline. On this basis, the magnitude of effect is therefore assessed as negligible under the maximum impact scenario.

29.6.2.2.5 *Sensitivity of the Receptor*

122. Job creation is identified as a policy priority within New Anglia LEP's Strategic Economic Plan. This is especially relevant within the contexts of relatively high economic inactivity rates in the East Anglia study area. As such, the sensitivity of the receptor is therefore assessed as high.

29.6.2.2.6 *Significance of Impact*

123. With the sensitivity of the receptor assessed as high and the magnitude of effect assessed as negligible at both the UK and East Anglia levels, the significance of impact of DEP and SEP is therefore assessed as **minor beneficial**. This is not considered to be significant in EIA terms.
124. It is assumed the employment impact supported during the construction phase are temporary, short-term and irreversible in nature.

29.6.2.3 *Impact 3: Change in Demographics*

125. Of the scenarios assessed, concurrent construction with an East Anglia-based port has the greatest potential to result in changes to demographics within the local study area. Overall, it is estimated that of the 1,730 FTE jobs nationally, around 1,280 FTE jobs are expected to be based elsewhere within the UK study area (i.e. outside the East Anglia study area).
126. The majority of these non-East Anglia-based jobs will support the development and project management phase, and/ or manufacturing of the turbine and balance of plant components. However, around 410 FTE jobs per annum will be required to support the construction, installation and commissioning of the onshore infrastructure, and a further 260 FTE jobs per annum required for the construction, installation and commissioning of the offshore infrastructure. Together, this adds up to 670 (FTE) non-East Anglia-based jobs per annum being required to support both the onshore and offshore construction, installation and commissioning elements of DEP and SEP.
127. For energy projects of this nature, the typical working assumption is for home-based workers to be drawn from within a 90-minute travel to work area (TTWA), whilst non-home-based workers typically find accommodation within a 60-minute TTWA catchment. As such, it is assumed that the 670 non-East Anglia-based workers are likely to choose to locate close to the construction port and/ or somewhere within close proximity to onshore construction along the cable corridor.
128. The demand for accommodation by non-home-based workers is therefore likely to be driven by port selection, and whether accommodation vessels will be used to house offshore construction workers. At this stage, this level of detail is not available.
129. Under the worst-case scenario, it is assumed that half of all (i.e. 330) non-East Anglia-based workers would require accommodation within the study area, thereby impacting upon its demography.

29.6.2.3.1 *Magnitude of Effect*

130. There are currently 1.66 million people living in the East Anglia study area, 977,000 of whom make up the core working age population (i.e. aged 16 to 64). Under the realistic worst-case scenario outlined above, the parallel construction of DEP and SEP would see around 330 non-East Anglia-based workers involved in construction, installation and commissioning activities of both offshore and onshore infrastructure.

131. Should the identified non-East Anglia-based workers be required to temporarily move to the study area during the construction period, it is estimated that this would represent around 0.02% of the area's total population, and 0.4% of East Anglia's core working age population. Please note that this estimate is based on the assumption that half of all non-East Anglia-based workers will require accommodation within the study area. In reality, the number of in-migrants to the East Anglia study area could vary from that outlined above. Furthermore, please note that at this stage it is not known whether any of the offshore infrastructure-related workers would be accommodated offshore as the Projects' Accommodation Strategy is still being developed.
132. On this basis, the magnitude of effect is therefore assessed as negligible at the East Anglia scale, as the number of workers involved is relatively small when considered within the local context. Furthermore, any in-migration required to support either offshore and/ or onshore construction activity would be temporary, with the majority of workers being based either within close proximity to the selected construction port and/ or the onshore cable corridor.

29.6.2.3.2 *Sensitivity of the Receptor*

133. Overall, the East Anglia study area has a rapidly ageing population, with a lower proportion of core working aged residents when compared with the national average, which partially results from the loss of younger workers to other areas of the country. As such, the local demographic receptor is assessed as being of medium sensitivity.

29.6.2.3.3 *Significance of the effect*

134. With the sensitivity of the receptor assessed as medium and the magnitude of effect assessed as negligible, the significance of impact of DEP and SEP is therefore assessed as **minor adverse**. This is not considered to be significant in EIA terms.
135. It is assumed the impact of increased in-migration on demographic change during construction is temporary, short-term and reversible in nature.

29.6.2.4 **Impact 4: Loss of/ Disruption to Local Infrastructure**

29.6.2.4.1 *Magnitude of Effect*

136. Whilst some temporary disruption to local infrastructure will occur, in particular in proximity to where construction activity is taking place, advanced notices and alternative routes will be provided. Under the worst-case scenario it is assumed that construction at landfall takes five-months per project (for both individual and/ or concurrent construction) and that the construction of the onshore corridor progresses in 1km segments each taking up to four weeks.
137. Overall, it is not anticipated that the construction of DEP and SEP will lead to any major loss and/ or disruption to local infrastructure. However, there is a possibility that construction activity may result in the upgrading of local infrastructure facilities (e.g. the upgrading of public rights of way (PRoW), port infrastructure, specific road junctions, etc.). At this stage it is too early in the design process to determine the level of impact/ intervention required.

138. The assessment of traffic and transport during construction is assessed in **Chapter 26 Traffic and Transport**. Overall, the assessment does not identify any significant (i.e. major and/ or moderate) impacts pedestrian and cycling amenities, road safety, and delays associated with capacity, highway constraints and road closures.

139. On this basis, the overall magnitude of effect is therefore assessed as low.

29.6.2.4.2 *Sensitivity of the Receptor*

140. The policy review indicates that investment in infrastructure is a key priority at all levels of government, starting from central government which identifies it as one of five foundations of productivity that will enable the country to achieve the vision set out in the Industrial Strategy (HM Government, 2017).

141. Infrastructure is a policy priority within the East Anglia study area, with the local road network (particularly the A14), local ports, in addition to major employment sites and EZ playing a key role in facilitating economic growth. On this basis, the sensitivity of the receptor is therefore assessed as medium.

29.6.2.4.3 *Significance of the effect*

142. With the sensitivity of the receptor assessed as medium and the magnitude of effect assessed as low, the significance of impact of DEP and SEP is therefore assessed as **minor adverse**. This is not considered to be significant in EIA terms.

143. It is assumed that the loss of/ disruption to local infrastructure during the construction phase is temporary, short-term and reversible in nature.

29.6.2.5 **Impact 5: Disturbance to Social, Community and Healthcare Infrastructure**

144. Of the scenarios considered, the concurrent construction of DEP and SEP with an East Anglia-based port has the largest potential to result in disturbances to social and community infrastructure whilst also leading to added pressure on local health infrastructure. The analysis above indicates that the construction, installation and commissioning of both offshore and onshore infrastructure has the potential to see around 330 non-East Anglia-based workers temporarily moving to the area. This has the potential to place additional demand on social and community infrastructure.

145. The extra demand could manifest itself in a number of ways, including increased pressure on housing and/ or local accommodation, and education facilities (for workers' families), in addition to increased demand on leisure and recreational facilities as a result of the in-migrant workforce which may restrict access for local residents given the current limited supply.

146. The impact of construction activity on air quality for residential properties, schools, hospital and care homes in close proximity (defined as 200m) of roads taking more than 100 heavy goods vehicle (HGV) movements per day is assessed **Chapter 24 Air Quality**, and is found to be not significant. Furthermore, **Chapter 24 Air Quality** has also considered the impact of human receptors located within 350m of the onshore project area, both in terms of dust soiling and human health. Overall, the assessment has identified low to medium risk, but no significant impacts either.

147. Using benchmark estimates of 1,800 patient registrations per one FTE GP (developed by the London Healthy Urban Development Unit (HUDU), 2019), it is estimated that the additional 330 non-East Anglia-based workers would generate demand for 0.2 FTE GP within the study area. Given the temporary nature of the impacts associated with construction, it is not anticipated that many of the non-East Anglia-based workers would require the services of local GPs. Furthermore, it is expected that a basic form of on-site medical support would be available to both onshore and offshore construction workers through the arrangements in place for health, safety and welfare should the need arise.

29.6.2.5.1 *Magnitude of Effect*

148. Whilst some disruption to local social and community infrastructure may occur and some added pressure placed on local health infrastructure, the overall level of disruption is anticipated to be minimal. On this basis, the magnitude of effect is therefore assessed as low within the context of the East Anglia study area.

29.6.2.5.2 *Sensitivity of the Receptor*

149. Whilst there is uncertainty about the location of the construction port, a significant proportion of construction activity could be expected to take place within North Norfolk district, given that the landfall will occur within the district's boundary. The overall position with regards to social and community infrastructure as well as health facilities in North Norfolk is set out in more detail within the **Appendix 29.2 Socio-Economics and Tourism Technical Baseline**. This indicates that whilst some challenges with regards to capacity might exist locally (e.g. on the need for additional green infrastructure, and additional leisure facilities), the overall provision of local social and community infrastructure is mostly adequate.

150. Health infrastructure is a key asset everywhere but is likely to play an even bigger role in areas that are experiencing an ageing population (as in the case within the East Anglia study area). Furthermore, the baseline analysis indicates that whilst a high proportion of A&E patients are seen within the House of Commons' recommended four-hour target, primary health care provision (i.e. GPs) across the East Anglia study area is close to being over-stretched (with an average of 1,894 registered patients per FTE GP). That said, data for the North Norfolk CCG indicates that at the local level, some capacity to absorb additional demand may be available (with an overall average of 1,578 registered patients per FTE GP against a maximum benchmark of 1,800 patients per FTE GP).

151. On this basis, the sensitivity of the receptor is therefore assessed as medium.

29.6.2.5.3 *Significance of the effect*

152. With the sensitivity of the receptor assessed as high and the magnitude of effect assessed as low, the significance of impact of DEP and SEP is therefore assessed as **minor adverse**. This is not considered to be significant in EIA terms.

153. It is assumed that the impacts of construction activity on social, community and health infrastructure are temporary, short-term and reversible in nature.

29.6.2.6 Impact 6: Visual Impact of Offshore Infrastructure on Volume and Value of Tourism Activity

29.6.2.6.1 Visual Impacts of Offshore Infrastructure in the Context of the Baseline Indicator

154. Under the realistic worst-case scenario, it is assumed that DEP and SEP will consist of up to 30, 26MW wind turbine generators, each with a maximum height of 330m, the closest being located 16.1km from shore.
155. The analysis in **Chapter 28 Seascape, Landscape and Visual** indicates that under the realistic worst-case scenario the construction of DEP and SEP would be potentially visible from across the north Norfolk coast. Whilst DEP and SEP will both be visible from across a wide area along the north Norfolk coast, the distance of the two wind farms from shore and the fact that they are within parts of the seascape that is already influenced by the existing wind farms in the North Sea (including Dowsing, Lincs, Lynn, Race Bank, Triton Knoll, Sheringham Shoal and Dudgeon), the scale of the effects that would arise from the addition of DEP and/ or SEP would be less than if the existing wind farms were not already present. This is particularly relevant in the assessment of the visual impact of offshore infrastructure on the volume and value of tourism in East Anglia.
156. The analysis presented in **Chapter 28 Seascape, Landscape and Visual** has identified the following impacts:
 - The greatest effects that would arise from the construction of DEP and SEP (in isolation and/ or together) would occur along the northern extent of the north Norfolk coast, especially the settlements of Cromer and Sheringham. The assessment has identified a moderate/ major adverse impact.
 - When considering recreational routes, **Chapter 28 Seascape, Landscape and Visual** found that effects due to SEP and DEP would only occur along specific sections of Peddars Way, the Norfolk Coast Path and England Coast Path that run along the north Norfolk coast. The assessment found that the greatest scale of visual effects would occur to a section closest to the wind farm sites along approximately 1km of coastline in the vicinity of Sheringham and Cromer, resulting in a moderate/ major adverse impact.
 - The seascape, landscape and visual assessment identified that wind farm sites would also effects views from land (within the Norfolk Coast AONB) to sea (outside the AONB). These views are already influenced by existing offshore wind farms, with the impact assessed as having moderate adverse significance.
157. The baseline analysis undertaken as part of the socio-economics assessment indicates that there is a limited research examining the relationship between the visual impacts of offshore wind farms and their construction upon tourism activity and the associated visitor economy. The evidence presented in **Appendix 29.2 Socio-Economics and Tourism Technical Baseline** indicates that:

- Whilst there is potential for some visitors to be discouraged from making future visits to an area affected by a wind farm development, this is usually balanced (and in some cases exceeded) by visitors reporting that they will visit more frequently.
- The research also points out that visitors and tourism-related businesses recognise the potential for positive impacts associated with extra expenditure within the sector and local economy arising from the construction activity, or in some cases the additional interest in the seeing of the development and its construction.
- Finally, the research also focusses on measuring opinions of what the impacts on the visitor economy could be prior to implementation of the scheme. However, ex-post research suggests that even where there have been negative effects, these often occur in the form of displaced tourism with visitors diverting to neighbouring areas.

158. There are a complex range of factors which explain the attitudes of visitors to wind farm development and the consequences upon visitors' behaviour. The research, however, does not suggest that the extent to which tourists are attracted to an area by the quality of the landscape is important in determining visitors' reactions to wind farm developments. In addition, the analysis presented in **Appendix 29.2 Socio-Economics and Tourism Technical Baseline** states that visitors and tourism-related businesses usually recognise the potential for positive impacts associated with the extra expenditure in the sector, and the local economy, arising from construction activity.

29.6.2.6.2 *Magnitude of Effect*

159. Overall, the research indicates that the offshore construction associated with a wind farm development will not have a significant effect on the overall volume and value of tourism activity, and in most instances visitors do not expect their behaviour to be influenced (either positively or negatively) by the presence of the offshore construction related to wind farm developments.

160. Data on the volume and value of tourism activity in Norfolk during the construction of the (now operational) Dudgeon offshore wind farm (i.e. between 2015 and 2017) shows that following a slight dip from pre-construction figures (43.0 million visits in 2014, to 42.7 million visits in 2015), the number of visits increased to over 50.9 million in 2018, contributing £2.37 billion to the regional economy. Furthermore, employment in tourism increased from 27,500 FTE jobs in 2015 to 29,000 FTE jobs in 2018.

161. On this basis, the magnitude of effect is therefore assessed as negligible.

29.6.2.6.3 *Sensitivity of the Receptor*

162. The baseline analysis indicates that, as of 2018 there were 50.9 million visitors to Norfolk, of which 9.6 million were to North Norfolk district. A large number of the visitors to North Norfolk are attracted to the area's natural assets (including The Broads AONB) along the North Norfolk coast, and as far north as Spurn Point. These assets, and others listed within the **Appendix 29.2 Socio-Economics and Tourism Technical Baseline** are important to local communities and visitors alike.

163. On this basis, the sensitivity of the receptor is assessed as high.

29.6.2.6.4 *Significance of Impact*

164. With the sensitivity of the receptor assessed as high and the magnitude of effect assessed as negligible, the significance of impact of DEP and SEP on the receptor is therefore assessed as **minor adverse**. This is not considered to be significant in EIA terms.

165. It is assumed the visual impacts on tourism activity associated with offshore construction are temporary, short-term and reversible in nature.

29.6.2.7 **Impact 7: Impact of Onshore Construction on Volume and Value of Tourism Activity**

29.6.2.7.1 *Tourism Volume and Value Impact in the Context of the Baseline Indicator*

166. The construction of DEP and SEP has the potential to negatively impact upon assets that are of value to tourism activity in Norfolk, primarily on areas that are within close proximity of the onshore cable corridor.

167. Installation of the onshore export cables may have a negative impact on walking and cycling routes, coastal paths, holiday parks and/ or other tourism-related assets, although this is likely to be mitigated by appropriate measures where required.

168. **Chapter 28 Landscape and Visual Impact Assessment** considers the potential impacts of DEP and SEP on landscape and visual resources, including the area around landfall, the onshore corridor and area around the onshore substation. The assessment found that the effects arising as a consequence of construction of DEP and SEP Would be short-term, temporary and reversible in nature, and that the landscape features would be reinstated following completion of construction activities. On the other hand, the principal visual effects associated with the onshore substation would occur during the 35-year operational lifetime of DEP and SEP.

169. The assessment presented in has **Chapter 28 Landscape and Visual Impact Assessment** considered visual and landscape receptors which are of relevance to the assessment of the impact of construction on the volume and value of tourism activity in Norfolk. These include:

- Settlements – The assessment has included a total of 34 settlements in the assessment of effects on visual receptors and finds that those closest to the cable corridor will experience the greatest effects, whilst those more distant will experience effects of a lesser magnitude. The assessment finds that views of construction activity would tend to be limited to the periphery of these settlements, on sides closest to the cable corridor, and would often be partially obscured by buildings and vegetation. Overall, the assessment found that the impact would range from moderate adverse (i.e. significant) to minimal adverse (i.e. not significant).

- Recreational routes (including long distance walking routes and national and regional cycle routes) – **Chapter 28 Landscape and Visual Impact Assessment** found that the overall impacts on visual receptors using recreational routes would be of limited spatial extent, up to large-scale during peak construction works. When looking at the impact on users of the Coast Path, the assessment identified an impact of moderate adverse significance. The same level of significance (i.e. moderate adverse) was identified for users of other long distance walking routes, whilst the impact on users or cycle routes was of slight significance (albeit adverse).
- Local roads and PRow – The assessment found that impacts on users of local roads and PRows would occur as a result of construction activities being seen by users of these routes, with the greatest impacts being experienced where the onshore cable corridor intersects routes using open trench techniques, and PRow may be temporarily diverted for short distances. Overall, the impact of construction activity is anticipated to range from moderate-slight to moderate significance and adverse.
- Norfolk Coast AONB – Overall, the construction of the onshore cable corridor (including landfall) would have very little impact on the Norfolk Coast AONB, and will have limited potential to undermine the qualities its natural beauty, resulting in impact of slight significance (albeit adverse).
- Onshore substation – The principal effects arising from the onshore substation site are likely to occur during the 35-year operational lifetime of DEP and SEP, and are reversible. **Chapter 28 Landscape and Visual Impact Assessment** found that the greatest effects on both landscape and visual receptors would be no greater than those experienced during operations (i.e. of moderate adverse significance and major adverse significance respectively).

29.6.2.7.2 *Magnitude of Effect*

170. For ease of assessment the various assets within proximity of the onshore cable corridor (identified in **Appendix 29.2 Socio-Economics and Tourism Technical Baseline Report**) have been grouped into the following four categories. Furthermore, the magnitude of effect is likely to vary depending on both location of assets in addition to the level of project-related activity.

- Landfall – low;
- Onshore from landfall to the edge of Weybourne – low;
- Main onshore cable corridor from the edge of Weybourne to substation – negligible.
- Area around substation for connection to National Grid (at Norwich Main Substation) – medium.

29.6.2.7.3 *Sensitivity of the Receptor*

171. **Section 29.6.2.6.3** above indicates that in 2018 there were 50.9 million visitors to Norfolk, of which 9.6 million were visitors to North Norfolk district. The **Appendix 29.2 Socio-Economics and Tourism Technical Baseline** identifies the various assets located within proximity of the onshore cable corridor.
172. On this basis, it is assumed that the sensitivity of the receptor varies depending on the location of the receptor, as set out below:
- Landfall – The north Norfolk coast plays a major role in attracting visitors to the study area, who in turn contribute to the volume and value of the tourism economy. On this basis, the sensitivity of the receptor in and around landfall is therefore assessed as high.
 - Onshore from landfall to the eastern edge of Weybourne – Similarly, the area onshore from landfall to the eastern edge of Weybourne plays a key role, and contributes greatly towards the volume and value of the tourism economy in North Norfolk. As such, the sensitivity of the receptor located onshore from landfall to the eastern edge of Weybourne is therefore assessed as high.
 - Main onshore cable corridor from the edge of Weybourne to substation – The **Socio-Economics and Tourism Technical Baseline** identifies several assets located within close proximity of the onshore cable corridor, which despite playing a role and contributing to the area’s tourism economy, attract substantially fewer visitors relative to the North Norfolk coastline (including Weybourne). On this basis, the sensitivity of the receptor along the main onshore cable corridor is therefore assessed as medium.
 - Area around the onshore substation for connection to the National Grid (at Norwich Main Substation) – The area around the substation is already characterised by activity related to energy generation, with very limited tourism-related activity. As such, the sensitivity of the receptor in proximity to the proposed substation is therefore assessed as low.

29.6.2.7.4 *Significance of Impact*

173. Based on the analysis above, the significance of impact may vary depending on the section of the onshore cable corridor considered.
- Landfall – With the sensitivity of the receptor assessed as high and the magnitude of effect low, the significance of impact of construction at landfall is assessed as **moderate adverse**.
 - Onshore from landfall to the eastern edge of Weybourne – With the sensitivity of the receptor assessed as high and the magnitude of effect low, the significance of impact of construction from landfall to the eastern edge of Weybourne is assessed as **moderate adverse**.

- Main onshore cable corridor from the edge of Weybourne to substation – With the sensitivity of the receptor assessed as medium and the magnitude of effect negligible, the **significance of impact** of construction along the onshore cable corridor is assessed as **minor adverse**.
- Area around substation for connection to the National Grid (at Norwich Main Substation) – With the sensitivity of the receptor assessed as low and the magnitude of effect medium, the **significance of impact** of construction around the onshore substation is therefore assessed as **minor adverse**.

174. The analysis above indicates that the impact of onshore construction on the volume and value of tourism activity is anticipated to range from negligible to moderate adverse, with the significant impacts (i.e. moderate adverse) being concentrated within proximity of landfall and the settlement of Weybourne). With the implementation of the embedded mitigation measures proposed (such as diversion routes, scheduling of works, use of acoustic barriers) will minimise the overall impact on the volume and value of tourism activity during construction.

175. Evidence of visitor numbers, employment and the overall value of construction activity during the construction of the Dudgeon Offshore Wind Farm between 2015 and 2017 indicates that the impact of construction activity on the overall volume and value of tourism activity is likely to be limited and localised. It is assumed the visual impacts on tourism activity associated with the construction of onshore infrastructure are temporary, short-term and reversible in nature.

29.6.3 Potential Impacts during Operation

29.6.3.1 Impact 1: Direct Economic Benefit

176. **Table 29-14** below summarises the potential GVA impacts generated each year during the operational phase of DEP and SEP. The assessment considers the direct economic benefit of DEP and SEP in line with the scenarios outlined in **Section 29.3.2.3** above for the East Anglia and UK study areas.

Table 29-14 Potential GVA Impacts During Operation

Study Area	Development Scenario	GVA Per Annum once operational (£ million)
East Anglia	DEP is constructed in isolation	£7.9
	SEP is constructed in isolation	£7.3
	Parallel/ sequential construction	£15.2
UK	DEP is constructed in isolation	£15.4

	SEP is constructed in isolation	£12.7
	Parallel/ sequential construction	£28.1

29.6.3.1.1 DEP or SEP in Isolation

- 177. The delivery of DEP in isolation is estimated to generate an annual GVA impact of £15.4 million at the UK level, of which £7.9 million is captured within the East Anglia economy.
- 178. In comparison, the sole delivery of SEP is estimated to generate an annual GVA impact of £12.7 million nationally, of which £7.3 million is captured by the East Anglia economy.

29.6.3.1.2 DEP and SEP Both in Operation

- 179. DEP and SEP together are estimated to generate an annual GVA contribution of around £28.1 million nationally, of which £15.2 million is captured by the East Anglia economy.

29.6.3.1.3 Magnitude of Effect

- 180. The analysis above shows that the largest annual contribution to the UK economy is generated when DEP and SEP are in operation (i.e. either from concurrent or sequential construction). At £28.1 million GVA per annum, this benefit is estimated to represent an increase of less than 0.01% of the total value of the UK’s economy. On this basis, the magnitude of effect is therefore assessed as negligible at the national level.
- 181. At the East Anglia level, the largest economic contribution will also be generated by concurrent operations (i.e. from concurrent or sequential construction). At £15.2 million GVA per annum, the contribution generated by DEP and SEP (once operational) is estimated to represent an increase of 0.04% over the current baseline. On this basis, the magnitude of effect at the East Anglia level is therefore assessed as negligible.

29.6.3.1.4 Sensitivity of the Receptor

- 182. Generating economic activity is identified as a policy priority within the New Anglia LEP’s Strategic Economic Plan. Furthermore, the baseline analysis indicates that GVA per head is significantly lower in East Anglia study area when compared with the UK average, evidencing a major socio-economic challenge.
- 183. As such, the sensitivity of the receptor is assessed as high.

29.6.3.1.5 Significance of Impact

- 184. With the sensitivity of the receptor assessed as high, and the largest potential benefit assessed as negligible in magnitude at both UK and East Anglia levels, the significance of impact of DEP and SEP is therefore assessed as **minor beneficial**. This is not considered to be significant in EIA terms.

185. It is assumed the impact of increased economic activity generated as a result of the operational phase of DEP and SEP is permanent, long-term and irreversible in nature.

29.6.3.2 Impact 2: Increased Employment

186. **Table 29-15** below summarises the potential employment benefits supported during the operational phase of DEP and SEP. The assessment considers the direct economic benefit of DEP and SEP in line with the scenarios outlined in **Section 29.3.2.3** above for both East Anglia and UK study areas.

Table 29-15 Potential Employment Impacts During Operation

Study Area	Development Scenario	Total Employment Per Annum once operational (FTEs)
East Anglia	DEP is constructed in isolation	60
	SEP is constructed in isolation	60
	Parallel/ sequential construction	120
UK	DEP is constructed in isolation	150
	SEP is constructed in isolation	120
	Parallel/ sequential construction	270

29.6.3.2.1 DEP or SEP in Isolation

187. The delivery of DEP in isolation is estimated to support around 150 FTE jobs nationally, of which 60 FTE jobs are anticipated to be in the East Anglia study area.

188. In comparison, the sole delivery of SEP is estimated to support around 120 FTE jobs nationally, of which 60 FTE jobs are anticipated to be in the East Anglia study area.

29.6.3.2.2 DEP and SEP Both in Operation

189. It is estimated that when both are in operation DEP and SEP will support an estimated 270 FTE jobs nationally over their 35-year operational phase. Of these, around 120 FTE jobs are estimated to be based in the East Anglia study area.

29.6.3.2.3 Magnitude of Effect

190. The analysis above shows that the largest number of jobs supported nationally will be when both DEP and SEP are in operation. At 270 FTE jobs, the total number of jobs supported by DEP and SEP is estimated to represent significantly less than 0.01% of the current employment base nationally. On this basis, the magnitude of effect in the context of the UK study area is therefore assessed as negligible.

191. Similarly, at the East Anglia level, the largest number of jobs supported is also estimated to result from DEP and SEP being in operation (i.e. either following concurrent or sequential construction). At 120 FTE jobs, the total number of jobs supported by DEP and SEP at the East Anglia level, is estimated to represent around 0.02% of the study area's current baseline. On this basis, the magnitude of effect is therefore assessed as negligible at the East Anglia level.

29.6.3.2.4 *Sensitivity of the Receptor*

192. Job creation, and especially more jobs within the renewable sector is identified as a policy priority within the New Anglia LEP's Strategic Economic Plan, and as such the sensitivity of the receptor is therefore assessed as high.

29.6.3.2.5 *Significance of Impact*

193. With the sensitivity of the receptor assessed as high, and the largest-possible contribution to job creation assessed as negligible in magnitude at both UK and East Anglia levels, the significance of impact of DEP and SEP is therefore assessed as **minor beneficial**. This is not considered to be significant in EIA terms.

194. It is assumed the impact of increased employment during the operational phase of DEP and SEP is permanent, long-term and irreversible in nature.

29.6.3.3 *Impact 3: Change in Demographics*

195. Both DEP and SEP together will generate around 120 FTE jobs supported in the East Anglia study area during operation. Of these, around 40 FTE will be directly linked O&M and are likely to be based at the O&M port. The rest (i.e. around 80 FTE jobs) will be supported elsewhere within the DEP and SEP supply chain throughout the East Anglia study area.

196. Based on experience from elsewhere, it is therefore assumed that around half of all jobs supported as a result of operation by DEP and SEP will be taken up by in-migrant workers to the East Anglia study area.

29.6.3.3.1 *Magnitude of Effect*

197. The baseline analysis indicates that there are currently 1.66 million people living in the East Anglia study area, 977,000 of whom make up the core working age population (i.e. aged 16 to 64). Assuming a maximum impact scenario where both DEP and SEP are in operation and half of all jobs supported in the East Anglia study area (i.e. around 40 FTE jobs) are taken up by in-migrant workers who relocate to the area, this would represent an increase of less than 0.01% over the current baseline (both in terms of total population and core working age population).

198. On this basis, the magnitude of effect is therefore assessed as negligible at the East Anglia level.

29.6.3.3.2 *Sensitivity of the Receptor*

199. The East Anglia study area has a rapidly ageing population, with a lower proportion of core working aged residents when compared with the national average. This results partly from the loss of younger workers to other areas of the country. As such, the sensitivity of the local demographic receptor is therefore assessed as medium.

29.6.3.3.3 *Significance of Impact*

200. With the sensitivity of the receptor assessed as medium and the magnitude of effect assessed as negligible, the significance of impact of DEP and SEP is therefore assessed as **minor adverse**. This is not considered to be significant in EIA terms.
201. It is assumed that the impact of increased in-migration during the operational phase is permanent, long-term and irreversible in nature.

29.6.3.4 *Impact 4 Loss of/ Disruption to Local Infrastructure*

29.6.3.4.1 *Magnitude of Effect*

202. Overall, it is not anticipated that the operation of DEP and SEP will result in any major loss of and/ or disruption to local infrastructure. Where repairs are required, the disruption will be localised and temporary. Whenever this is required advanced notices will be provided (if possible) and arrangements made to reduce disruption (e.g. alternative routes, and temporary traffic lights).
203. The assessment of traffic and transport (see **Chapter 26 Transport and Traffic**) does not identify any operational impacts associated with DEP and SEP, as has the assessment of air quality (see **Chapter 24 Air Quality**).
204. On this basis, the magnitude of effect is therefore assessed as negligible.

29.6.3.4.2 *Sensitivity of the Receptor*

205. The assessment of the receptor's sensitivity to operation activity is based on both the current socio-economic and local policy contexts. As set out in **Section 29.6.2.4.2** above, local infrastructure is identified as a key priority at all levels of government. At the East Anglia context, local infrastructure (including the road network, local ports and major employment sites and EZs) are identified as playing a key role in facilitating economic growth. On this basis, the sensitivity of the receptor is therefore assessed as medium.

29.6.3.4.3 *Significance of Impact*

206. With the sensitivity of the receptor assessed as medium and the magnitude of effect assessed as negligible, the significance of impact of DEP and SEP is therefore assessed as **minor adverse**. This is not considered to be significant in EIA terms.
207. It is assumed the loss of/ disruption to local infrastructure during the operational phase will be temporary, short-term and reversible in nature.

29.6.3.5 *Impact 5: Disturbance to Social, Community and Health Infrastructure*

29.6.3.5.1 *Social and Community and Health Impacts in Context of Baseline indicator*

208. DEP and SEP operating together has the largest potential to result in disturbances to social and community infrastructure whilst also leading to added pressure on local health infrastructure.

209. The analysis above indicates that the annual operation of DEP and SEP is estimated to support around 120 FTE jobs within the East Anglia study area, 40 FTE jobs of which will be directly involved in operation activity (and based at the projects' O&M port). Under the worst-case scenario, it is assumed that half of all jobs supported as a result of DEP and SEP will be taken up by in-migrant workers to the East Anglia study area.
210. The extra demand placed by the in-migrants could manifest itself in several ways, including increased pressure on housing and/ or local accommodation and on education facilities (i.e. for workers' families), in addition to increased demand on leisure and recreational facilities. Ultimately, this has the potential to restrict access for local residents, especially where current social and community infrastructure assets may already be under pressure.
211. The additional residents to the area may also result in increased pressure on local health care facilities. Based on accepted benchmarks (of 1,800 patients per one FTE GP), under the worst-case scenario, it is assumed that the additional demand will amount to less than 0.1 FTE GP. Furthermore, it should be noted that the demand is likely to spread across a wide area across the East Anglia study area.

29.6.3.5.2 *Magnitude of Effect*

212. Whilst some disruption to local social and community infrastructure may occur and some added pressure placed on local health infrastructure, the overall level of disruption is anticipated to be minimal. On this basis, the magnitude of effect is therefore assessed to be negligible within the context of the East Anglia study area.

29.6.3.5.3 *Sensitivity of the Receptor*

213. The overall position with regards to social, community and health infrastructure in the East Anglia study area and Norfolk is set out in more detail within the **Appendix 29.2 Socio-Economics and Tourism Technical Baseline**. This indicates that whilst some challenges with regards to capacity might exist locally (e.g. on the need for additional green infrastructure, and additional leisure facilities), the overall provision of local social and community infrastructure is mostly adequate.
214. On this basis, the sensitivity of the receptor is therefore assessed as medium.

29.6.3.5.4 *Significance of Impact*

215. With the sensitivity of the receptor assessed as medium and the magnitude of effect assessed as negligible, the significance of impact of DEP and SEP is therefore assessed as **negligible**. This is not considered to be significant in EIA terms.
216. It is assumed the impacts on social, community and health infrastructure as a result of DEP and SEP operation will be permanent, long-term and irreversible in nature.

29.6.3.6 *Impact 6: Visual Impact of Offshore Infrastructure on Volume and Value of Tourism Activity*

29.6.3.6.1 *Magnitude of Effect*

217. Under the worst-case scenario, it is assumed that DEP and SEP will consist of 30, 26MW wind turbine generators, each with a maximum height of 330m, the closest being located 16.1km from shore. It is assumed that both wind farms will be operational for 35-years.

218. The analysis undertaken by the **Chapter 27 Seascape, Landscape and Visual** indicates that under the realistic worst-case scenario DEP and SEP will be visible from a number of locations along the north Norfolk coast. Whilst DEP and SEP will be visible from across a wide area, the distance of the two wind farms from shore means that even on clear days, the DEP and SEP wind turbines would be a very small addition on the horizon.
219. As outlined above (see **Section 29.6.2.6**), the research indicates the offshore infrastructure associated with wind farm development will not have a significant effect on the overall volume and value of tourism activity in most circumstances, and that in most instances visitors do not expect their behaviour to be influenced (either positively or negatively) by the presence of the offshore infrastructure related to wind farm developments.
220. The analysis of the visual impact of the offshore infrastructure on the volume and value of tourism activity in East Anglia outlined above (see **Section 29.6.2.6**) is of relevance here. Whilst it is acknowledged that operational wind farms might have consequences upon visitors' behaviour, the presence of wind farms is rarely the primary reason why visitors would choose to visit (or not visit) the area.
221. Evidence on the volume and value of tourism activity in Norfolk following construction of the Dudgeon offshore wind farm suggests that both visitor numbers and total employment in tourism increased between 2014 and 2018 respectively (by 18% and 5% respectively).
222. On this basis, the magnitude of effect is therefore assessed as negligible.

29.6.3.6.2 *Sensitivity of the Receptor*

223. The baseline analysis indicates that, as of 2018 there were 50.9 million visitors to Norfolk, 9.6 million of whom were to North Norfolk district. A large number of the visitors to North Norfolk are attracted to the area's natural assets (including The Broads AONB) along the North Norfolk coast, and as far north as Spurn Point. These assets, and others listed within the **Appendix 29.2 Socio-Economics and Tourism Technical Baseline Report** are important to local communities and visitors alike.
224. Overall, the study area has a high concentration of important and quality landscapes which (whilst not particularly diversified) are very popular with ramblers and nature enthusiasts.
225. On this basis, the sensitivity of the receptor is assessed as high.

29.6.3.6.3 *Significance of Impact*

226. With the sensitivity of the receptor assessed as high and the magnitude of effect assessed as negligible, the significance of impact of DEP and SEP is therefore assessed as **minor adverse**. This is not considered to be significant in EIA terms.
227. It is assumed the visual impact of offshore infrastructure on the volume and value of the tourism economy will be permanent, long-term, and irreversible in nature.

29.6.3.7 Impact 7: Impact of Onshore Infrastructure on Volume and Value of Tourism Activity

29.6.3.7.1 Magnitude of Effect

228. The day-to-day operation of DEP and SEP is not anticipated to impact upon onshore tourism activity. There may, however, be requirement for inspections and/ or routine maintenance along various areas of the onshore cable corridor. Where this is required, this is likely to result in minor localised disturbances that are significantly less than those experienced throughout construction activity.
229. For ease of assessment the various assets within proximity of the cable corridor (identified in **Appendix 29.2 Socio-Economics and Tourism Technical Baseline**) have been grouped into the four categories identified in the assessment of the DEP and SEP construction phase (see **Section 29.6.2.7.2** and paragraph 170 above). In the assessment of the onshore infrastructure from landfall to the end of the onshore corridor (but excluding the area around the substation), the magnitude of effect is anticipated to be negligible as in all instances (with the exception where the cable corridor goes through woodland/ is located under trees), original conditions are to be reinstated. The assessment presented in **Chapter 28 Landscape and Visual Impact Assessment** found that the effects arising from either onshore substation site would range from large scale from within the sites themselves to medium and small scale within the zone of visual influence, with the impact being of moderate adverse significance.
230. On this basis of the analysis outlined above, the magnitude of effect is therefore assessed as negligible for the onshore corridor (including landfall), but high for the area around the onshore substation.

29.6.3.7.2 Sensitivity of the Receptor

231. Tourism activity plays a major role within the Norfolk and particularly the North Norfolk economy. The year 2018 saw 50.9 million visitors to Norfolk, 9.6 million of whom were visitors to North Norfolk district. A large number of the visitors to North Norfolk are attracted to the area's natural assets (including The Broads AONB) along the North Norfolk coast. The **Appendix 29.2 Socio-Economics and Tourism Technical Baseline Report** identifies various assets located within proximity of the onshore cable corridor, and which are likely to be affected by DEP and SEP operations.
232. As outlined in the assessment of the receptor during construction, the sensitivity of the receptor is expected to vary depending on the location of the assets considered. The assessment of sensitivity is based upon both policy as well as socio-economic context, as follows:
- Landfall – Sensitivity is assessed as high.
 - Onshore from landfall to the eastern edge of Weybourne – Sensitivity is assessed as high.
 - Main onshore cable corridor from the edge of Weybourne to substation – Sensitivity is assessed as medium.
 - Area around substation for connection to the National Grid (at Norwich Main Substation) – Sensitivity is assessed as low.

29.6.3.7.3 Significance of Impact

233. Based on the analysis above, the significance of impact of DEP and SEP may vary depending on the section of the onshore cable corridor considered.
- Landfall – With the sensitivity of the receptor assessed as high and the magnitude of effect negligible, the significance of impact of DEP and SEP at landfall is therefore assessed as **minor adverse**.
 - Onshore from landfall to the eastern edge of Weybourne – With the sensitivity of the receptor assessed as high and the magnitude of effect negligible, the significance of impact of DEP and SEP from landfall to the eastern edge of Weybourne is assessed as **minor adverse**.
 - Main onshore cable corridor from the edge of Weybourne to substation – With the sensitivity of the receptor assessed as medium and the magnitude of effect negligible, the significance of impact of the operations phase along the onshore is therefore assessed as **minor adverse**.
 - Area around substation for connection to the National Grid (at Norwich Main Substation) – With the sensitivity of the receptor assessed as low and the magnitude of impact high, the effect of DEP and SEP on the receptor around the onshore substation is therefore assessed as **moderate adverse**.
234. The analysis above indicates that during operation only the area around the onshore substation will experience a significant impact.
235. It is assumed the visual impact of onshore infrastructure on the volume and value of the tourism economy will be temporary, short-term, and irreversible in nature.

29.6.4 Potential Impacts during Decommissioning

236. The impacts of the decommissioning phase of DEP and SEP is assessed in line with the methodology outlined above. Whilst details plans for the proposed approach to decommissioning are still being developed, the following assumptions have been used to guide the assessment of the decommissioning phase of DEP and SEP:
- Approach to decommissioning will be in reverse to construction;
 - Turbines will be removed in a reverse to construction methodology;
 - Hazardous materials will be removed or contained prior to removal from site;
 - The same number and type of offshore vessels (as per construction) will be used throughout decommissioning;
 - Turbines' transmission piece and foundations will be removed;
 - Offshore cables may be left in situ or removed depending on available information at the time of decommissioning; and
 - Onshore cables can be recovered from ducts if ducted.

237. There is, however, considerable uncertainty with the costs that are likely to be associated with the decommissioning phase of DEP and SEP. Nationally, there are very few examples of recently decommissioned projects. This means that the assessment has been unable to generate accurate cost and sourcing assumptions to allow for a detailed assessment.
238. As such, the assessment of the decommissioning phase of DEP and SEP is based on a high-level assessment of the potential effects on the various receptors identified as part of the socio-economics and tourism assessment.
239. In principle, it is assumed that the magnitude of effect of all impacts considered will mirror (but likely to be lower than) the effect relating to the construction phase. Similarly, the sensitivity of the receptor is based on the current policy context and socio-economic conditions, as per the assessment of both construction and operational phases. On this basis, the impact of the decommissioning phase of DEP and SEP is assessed as set out in **Table 29-16** below.

Table 29-16 Impacts of decommissioning phase of DEP and SEP

Impact	Magnitude	Sensitivity	Significance of Impact	Study Area	Nature of Impact
1. Direct economic benefit	Negligible	High	Minor Beneficial	UK East Anglia	Temporary Short-term Irreversible
2. Increased employment	Negligible	High	Minor Beneficial	UK East Anglia	Temporary Short-term Irreversible
3. Change in demographics	Negligible	Medium	Minor adverse	East Anglia	Temporary Short-term Reversible
4. Loss of/disruption to local infrastructure	Low	Medium	Minor Adverse	East Anglia	Temporary Short-term Reversible
5. Disturbance to social, community & health infrastructure	Low	Medium	Minor Adverse	East Anglia	Temporary Short-term Reversible
6. Visual impact of offshore decommissioning on volume and value of tourism activity	Negligible	High	Minor Adverse	Norfolk	Temporary Short-term Reversible

Impact	Magnitude	Sensitivity	Significance of Impact	Study Area	Nature of Impact
7.Impact of onshore decommissioning on volume and value of tourism activity	Landfall – Low Onshore from landfall to edge of Weybourne – Low Onshore corridor – Negligible Around substation – Medium	Landfall – high Onshore to edge of Weybourne – High Onshore corridor – Medium Around substation – Low	Up to Moderate Adverse (at landfall and onshore from landfall to edge of Weybourne)	Norfolk	Temporary Short-term Reversible

240. As identified in **Table 29-16** above, none of the impacts assessed for the decommissioning phase of DEP and SEP have a significance that is greater than minor adverse, which means that none of the impact are of significant in EIA terms.

29.7 Cumulative Impacts.

29.7.1 Identification of Potential Cumulative Impacts.

241. The first step in the cumulative assessment is the identification of which residual impacts assessed for DEP and/or SEP on their own have the potential for a cumulative impact with other plans, projects and activities (described as ‘impact screening’). This information is set out in **Table 29-17** below, together with a consideration of the confidence in the data that is available to inform a detailed assessment and the associated rationale. Only potential impacts assessed in **Section 29.6** as negligible or above are included in the CIA (i.e. those assessed as ‘no impact’ are not taken forward as there is no potential for them to contribute to a cumulative impact).

242. **Table 29-17** concludes that in relation to socio-economics and tourism, all receptors considered as part of the assessment have potential to be generate cumulative impacts at the local and sub-regional levels.

Table 29-17 Potential Cumulative Impacts (impact screening)

Impact	Potential for Cumulative Impact	Data Confidence	Rationale
Construction			
Direct economic benefit	Yes	High	Multiple construction projects over a sustained period could increase economic contribution to local, sub-regional and national economies. Scope to enhance local supply chains and hence benefit.
Increased employment	Yes	High	An ongoing succession of construction projects could provide confidence in the construction market and drive investment. Scope to enhance local supply chains and hence benefit
Change in demographics	Yes	Medium	An ongoing succession of construction projects could have an impact on local demographics, altering overall structure and influence community cohesion.
Loss of/ disruption to local infrastructure	Yes	High	An ongoing succession of construction projects could result in the loss of and/ or major disruption to local infrastructure affect the study area's economic performance.
Disturbance to social, community and health infrastructure	Yes	Medium	Increased population at the local level may add increased pressure on the provision of social, community and health infrastructure locally.
Visual impact of offshore infrastructure on volume and value of tourism activity	Yes	Medium	Ongoing offshore construction may impact tourism activity within the study area, and its overall volume and value. There is limited evidence of cumulative visuals impacts of offshore wind farms having a negative effect on local tourism economies.

Impact	Potential for Cumulative Impact	Data Confidence	Rationale
Impact of onshore infrastructure on volume and value of tourism activity	Yes	Medium	Similarly, an ongoing succession of onshore construction may impact tourism activity within the study area, and its overall volume and value.
Operation			
Direct economic benefit	Yes	High	Substantial long-term and permanent employment and economic benefits (both direct and indirect) may be supported as a result of operations supported by cumulative projects. A strategic approach to the delivery and operation of cumulative projects could lead to significant investment and development of the local supply chain. In addition, increased employment opportunities will lead to opportunities in up-skilling and re-skilling of the local labour market.
Increased employment	Yes	High	
Change in demographics	Yes	Medium	Due to the long-term and permanent nature of the jobs, there may be potential for long-term changes to the local population. The operations phase typically support far fewer jobs, and therefore have an overall lower impact. Furthermore, the potential for re-skilling and up-skilling from within the local labour market could reduce the overall need for in-migration to the study area.

Impact	Potential for Cumulative Impact	Data Confidence	Rationale
Loss of/ disruption to local infrastructure	Yes	High	Onshore infrastructure will (in most cases) be buried underground. Furthermore, most projects are designed to require no repair throughout their operational lifecycles. That said, where maintenance work is required, this is likely to be concentrated and temporary in nature. There is also potential for improvements in local infrastructure (e.g. port facilities) as a result of repeated or local strategic investment.
Disturbance to social, community and health infrastructure	Yes	Medium	The impact of onshore infrastructure on social, community and health infrastructure should be limited. That said, an increase in industrial infrastructure and (potential) demand for in-migrant workers may add pressure and/ or reduce access to social, community and health infrastructure for incumbent residents.
Visual impact of offshore infrastructure on volume and value of tourism activity	Yes	Medium	The operational phase of cumulative projects may impact tourism activity within the study area, and its overall volume and value. That said, there is little evidence suggesting either positive and/ or adverse impacts on overall volume and value of tourism activity associated with offshore infrastructure.

Impact	Potential for Cumulative Impact	Data Confidence	Rationale
Impact of onshore infrastructure on volume and value of tourism activity	Yes	Medium	The impact of onshore infrastructure of cumulative projects should be limited. That said, it may impact on tourism activity not only within close proximity of the infrastructure itself, but also across the wider area. However, an increase in industrial infrastructure could have a long-term impact on tourism activity, potentially affecting its attractiveness (both actual and/ or perceived).
Decommissioning			
<p>Detailed plans for the approach (i.e. method) to the decommissioning of DEP and SEP are still being developed. More detail about the decommissioning of DEP and SEP will be provided in due course, however, assumptions guiding the assessment of the decommissioning phase are outlined in Table 29-2 above. Detailed information about the decommissioning phase of the other cumulative projects identified varies.</p> <p>It has been assumed that overall, the detail to decommissioning will be determined by the relevant legislation and guidance at the time of decommissioning. That said, the cumulative impacts generated as a result of decommissioning activity are assumed to be the same, albeit lower than those identified during the construction stage.</p>			

29.7.2 Other Plans, Projects and Activities

243. The second step in the cumulative assessment is the identification of the other plans, projects and activities that may result in cumulative impacts for inclusion in the CIA (described as ‘project screening’). This information is set out in **Table 29-18** below, together with a consideration of the relevant details of each, including current status (e.g. under construction), planned construction period, closest distance to DEP & SEP, status of available data and rationale for including or excluding from the assessment.
244. The project screening has been informed by the development of a CIA Project List, of which more detail is found in **Chapter 6 EIA Methodology**, which forms an exhaustive list of plans, projects and activities in a very large study area relevant to DEP and SEP. The list has been appraised, based on the confidence in being able to undertake an assessment from the information and data available, enabling individual plans, projects and activities to be screened in or out.

Table 29-18: Summary of projects considered for the CIA in relation to socio-economics and tourism (project screening)

Project	Status	Construction Period	Closest Distance from the PEIR (km)	Included in the CIA (Y/N)	Rationale
Hornsea Project Three Offshore Wind Farm	DCO consented	2021-27	0	Y	The Hornsea Project Three Offshore Wind Farm's catchment is focussed around the East Anglia area, and therefore interacts with the assessment's local (i.e. East Anglia) study area. Whilst the Hornsea Project Three Offshore Wind Farm will make landfall along the North Norfolk coast, this project will not be visible from North Norfolk coast. There could be significant cumulative effects subject to the exact timing of construction of the two schemes.
East Anglia ONE Offshore Wind Farm	In Operation	Construction completed	Over 10km	Y	Whilst construction is completed, the East Anglia ONE Offshore Wind Farm is likely to interact with some of the receptors identified during the operational phase.
East Anglia ONE North Offshore Wind Farm	DCO examination	Scheduled for completion in 2020	Over 10km	Y	The East Anglia ONE North, East Anglia Two and East Anglia Three Offshore wind Farm projects' impact area is likely to overlap with the assessment's East Anglia study area on a number of the receptors considered.
East Anglia TWO Offshore Wind Farm	DCO examination	2024-27	Over 10km	Y	

Project	Status	Construction Period	Closest Distance from the PEIR (km)	Included in the CIA (Y/N)	Rationale
East Anglia THREE Offshore Wind Farm	DCO Consented	2020-25	Over 10km	Y	
Norfolk Vanguard Offshore Wind Farm	DCO Consented ¹	2022-24	0	Y	The Norfolk Vanguard Offshore Wind Farm's impact area is likely to overlap with the assessment's East Anglia study area on a number of receptors. Furthermore, the onshore cable corridor will cut across the onshore cable corridor for both DEP and SEP.
Norfolk Boreas Offshore Wind Farm	DCO Examination	2024-27	0	Y	The Norfolk Boreas Offshore Wind Farm's impact area is likely to overlap with the assessment's East Anglia study area on a number of the receptors considered.

¹ Following completion of this CIA, the ruling of a Judicial Review brought against the Secretary of State for Business Energy and Industrial Strategy's (BEIS) decision to award a DCO for NV has been handed down. The decision to grant the order has been submitted to the Secretary of State for redetermination. BEIS will be considering its options, namely appeal or redetermination. Until such time as this process reached a conclusion it has been decided to maintain the NV/ NB cumulative assessment for stakeholder review.

Project	Status	Construction Period	Closest Distance from the PEIR (km)	Included in the CIA (Y/N)	Rationale
Solar farm and associated infrastructure north of Cawston	Final Decision	n/a	0	N	Scoping opinion for proposed development determines that there will be no significant impacts on socio-economics. The Local Planning Authority has adopted the opinion that the proposed solar farm is not EIA development as defined in the 2017 Regulations. The scale of the proposed solar farm (23.1MW) will support very little (temporary) employment throughout construction, and virtually nothing during its operations phase.
Expansion of Luton Airport	Pre-application DCO	2023-26	Over 10km	N	The Luton Airport expansion project's impact area does not interact with the assessment's East Anglia study area for any of the receptors.
Sunnica Energy Farm	Pre-application DCO	2022-25	Over 10km	N	Whilst the Sunnica Energy Farm is located in East Anglia, it does not interact with the onshore cable corridor, and is therefore excluded from the CIA.
Sizewell C Nuclear Power Station	DCO examination	2022-34	Over 10km	Ye	Sizewell C Nuclear Power Station may interact with some receptors included in the assessment, in particular in-migration of (non-home-based) workers who typically locate themselves within a 60-minute catchment area. This reaches as far north as Lowestoft.

Project	Status	Construction Period	Closest Distance from the PEIR (km)	Included in the CIA (Y/N)	Rationale
Bramford to Twinstead Overhead Line	Pre-application DCO	n/a	Over 10km	N	The construction of the Bramford to Twinstead Overhead Line does not overlap with the study area used in the assessment. Furthermore, the project is currently on-hold until connection of Sizewell C to the national grid is required (in the late-2020s). The construction of the Bramford to Twinstead Overhead Line has potential to not overlap with construction of DEP and SEP.
Bradwell B Nuclear Power Station	Pre-application DCO	n/a	Over 10km	No	The construction of Bradwell B Nuclear Power Station impact area does not overlap with the study area used in the assessment. Furthermore, given the early stages for this project (Stage 1 consultation undertaken in 2020), there is a possibility that construction does not overlap.
Dualling of A47 between North Tuddenham and Easton	Pre-examination DCO	2021-24	0	No	The dualling of the A47 project cuts across the onshore cable corridor of DEP and SEP and will impact on a number of the receptors included in the assessment. However it is excluded from CIA because construction period does not overlap, and its impacts once operational will be positive.

Project	Status	Construction Period	Closest Distance from the PEIR (km)	Included in the CIA (Y/N)	Rationale
Galloper Offshore Wind Farm	In Operation	n/a	Over 10km	No	The operations base for the Galloper Offshore Wind Farm is located outside the assessment's study area, and as such is not anticipated to interact with DEP and SEP during either of their construction and/ or operational phases.
Nautilus Interconnector	Pre-application DCO	2024-28	Over 10km	No	The Nautilus Interconnector project's impact area is not anticipated to interact with the assessment's East Anglia study area on any of the receptors considered.
TiGRE Project 1	Pre-application DCO	n/a	n/a	No	Very little information is available at this stage, and TiGRE Project 1 is therefore excluded from CIA.
Affordable housing development (IB/18/0570)	Advice Given	n/a	0	No	The proposal is for ten affordable dwellings. Whilst the proposal falls within the PEIR boundary, the impact on socio-economics and tourism is anticipated to be negligible.

29.7.3 Assessment of Cumulative Impacts

245. Having established the residual impacts from DEP and/or SEP with the potential for a cumulative impact, along with the other relevant plans, projects and activities, the following sections provide an assessment of the level of impact that may arise. This assessment draws on the economic impact assessment methods set out in The Green Book (HM Treasury, 2020) and the approach outlined in **Chapter 6 EIA Methodology**.

29.7.3.1 Cumulative Impact 1a: Direct Economic Benefit of Construction

246. **Table 29-18** shows that of the eight projects identified for the CIA, only Hornsea Project Three, East Anglia TWO, Norfolk Boreas, and Sizewell C have potential to overlap with the construction of DEP and SEP (starting in 2025).

247. Of the projects listed above, only the Hornsea Project Three socio-economic assessment considered the direct economic benefit of construction to the local economy. The assessment identified the project as having minor beneficial impact on the receptor (i.e. the New Anglia LEP's economy).

248. Whilst none of the other assessments (either at pre-examination and/ or DCO examination stage) considered the direct economic benefit (i.e. in terms of GVA) associated with construction activity, they have all considered the projects' impact on direct and indirect employment, which can in turn be used to benchmark the impact on direct economic benefit. The following section sets out the key findings from these assessments which are then used to inform their cumulative impact with DEP and SEP.

- Based on the methodology used for the socio-economics assessment of Norfolk Boreas, its EIA found a major beneficial impact on direct job creation, and minor beneficial impact on indirect job creation at the regional level.
- The tourism, recreation and socio-economics assessment of East Anglia TWO identified a moderate beneficial impact of both onshore and offshore construction on the local, regional and national labour markets.
- The socio-economics assessment of Sizewell C found that at peak construction, the project has potential to support around 7,800 jobs (including home-based, as well as non-home-based workers). Overall, the assessment found a moderate beneficial impact on the labour market (including home-based recruitment) within the project's 90-minute catchment (extending from Colchester in the south, to Bury St Edmunds in the west and Norwich in the north). It should be noted that only part of the Sizewell C 90-minute catchment overlaps with the East Anglia study area of the assessment.

249. Given that the impact on the economy is not considered by all assessments, it is not possible to quantify this in terms of GVA output created throughout the construction period.

250. Furthermore, it should be noted that construction activity at Sizewell C will not persist at the levels identified above throughout the whole construction period. This is likely to build reaching around 7,000 jobs for a four-year period around peak construction.

251. Based on the assessment of the projects' impacts on the economy (where available) and employment activity, and the fact that most of the jobs supported by construction activity (particularly on nuclear new build projects) include high skilled employment, and high productivity sectors, the overall magnitude of effect created cumulatively by these projects and DEP and SEP is anticipated to be high. However, given the variance in on-site jobs at Sizewell C, this assessment should be considered as an upper limit.
252. With the sensitivity of the receptor assessed as high at the East Anglia study area, and a magnitude of effect assessed as medium, the cumulative impact of the projects identified alongside DEP and SEP on the receptor at construction is therefore assessed as major beneficial, which is considered to be significant in EIA terms.
253. It is assumed that the cumulative impact of increased economic activity resulting from construction of the identified schemes is temporary, short-term and irreversible in nature.

29.7.3.2 Cumulative Impact 1b: Direct Economic Benefit of Operations Phase

254. The operational phase of DEP and SEP will overlap with the operational phase of several projects identified in **Table 29-18** above. As per the assessment of the direct economic benefit during construction, only the assessment of the Hornsea Project Three considered the direct economic benefit of its operations. This assessment assessed two scenarios (i.e. a low and high scenario) and identified a maximum impact of minor beneficial.
255. None of the other projects identified have considered the direct economic benefit of operations in their assessment. Once more, the CIA of the projects' direct economic benefit resulting from their respective operations phase uses the assessment on local, regional and national employment as a benchmark.
- The socio-economics assessment of East Anglia ONE North and East Anglia TWO identifies a major beneficial effect on local employment of the operations phase. The socio-economics assessment of East Anglia ONE is not publicly available, however given its size (714MW) and location relative to East Anglia ONE North (800MW), this is assumed to be major beneficial as well. In addition, the impact of East Anglia THREE (1,400MW) is assumed to be similar.
 - The socio-economics assessment of Norfolk Vanguard identified a minor beneficial impact of operations on regional employment, whilst the assessment of Norfolk Boreas identified a minor/ moderate beneficial impact.
 - The socio-economics assessment of Sizewell C found that once it reaches steady state operations, Sizewell C has potential to support around 900 workers of which 700 are expected to be permanent staff and 200 contractors. Contractor support would increase by approximately 1,000 workers during each unit's refuelling/ maintenance outages (scheduled every 18-months).
256. Based on the assessment of the projects' impacts on operational economic impact and employment activity, the overall magnitude of effect created cumulatively by these projects and DEP and SEP is anticipated to be medium. This is primarily driven by employment at Sizewell C, which will more than double every 18-months or so.

257. With the sensitivity of the receptor assessed as high, and the magnitude of effect on O&M employment assessed as medium, the cumulative impact on the receptor is therefore assessed as major beneficial, which is considered to be significant in EIA terms.
258. It is assumed that the impact of increased economic activity generated as a result of the schemes identified is permanent, long-term and irreversible in nature.

29.7.3.3 Cumulative Impact 2a: Increased Employment at Construction

259. **Section 29.7.3.1** above indicates that construction of DEP and SEP is likely to overlap only with the construction of the Hornsea Project Three, East Anglia TWO, Norfolk Boreas and Sizewell C projects. A review of the projects' assessment on the impact of construction on employment is outlined in para. 248 above, and ranges from minor to major beneficial. Based on this, the magnitude of effect is therefore assessed as high at the East Anglia level.
260. With the sensitivity of the receptor assessed as high, and the magnitude of effect assessed as high, the impact on the receptor is therefore assessed major beneficial. This is considered to be significant in EIA terms.
261. It is assumed that the cumulative impact of increased employment resulting from construction of the identified schemes is temporary, short-term and irreversible in nature.

29.7.3.4 Cumulative Impact 2b: Increased Employment during Operations Phase

262. The cumulative impact of O&M employment across all projects considered as part of the CIA is anticipated to be driven by the Sizewell C project. Once fully operational, Sizewell C is anticipated to support around 900 jobs, to which a further 1,000 temporary jobs will be added every 18-months to support refuelling and/ or maintenance activity. To this, several direct jobs supported by offshore wind farm projects need to be added, and which are likely to add up to a few hundred jobs (but fewer than the direct jobs supported at Sizewell C).
263. On this basis, the overall magnitude of effect on employment during the projects' operational phase is therefore assessed as low.
264. With the sensitivity of the receptor assessed as high, and the magnitude of effect assessed as low, the impact on the receptor is therefore assessed as moderate beneficial. This is considered to be significant in EIA terms.
265. It is assumed that the impact of increased employment supported as a result of the schemes identified is permanent, long-term and irreversible in nature.

29.7.3.5 Cumulative Impact 3a: Change in Demographics during Construction

266. Very few of the assessments reviewed as part of the CIA have considered the impact of change in demographics during construction. Based on the assessment of DEP and SEP, the magnitude of impact during the construction of East Anglia TWO and Norfolk Boreas could be expected to be negligible to low. Temporary (i.e. in-migrant) workers are likely to settle within close proximity of the selected construction port(s) and the onshore cable corridors.

267. The assessment of Sizewell C found that of the 7,800 on-site jobs during construction, around 2,400 are likely to be taken up by home-based workers. The remaining 5,400 workers are anticipated to be non-home-based. The project's Accommodation Strategy set out that around 3,000 bedspaces could be made available in a bespoke worker campus and/ or caravan park located close to site. Ultimately this means that around 2,400 construction workers on the Sizewell C project will be required to be based either within formal (e.g. hotels and B&Bs) or latent (e.g. people's spare bedrooms) accommodation. Traditionally, non-home-based workers locate themselves within a 60-minute catchment of the site, which in the case of the Sizewell C project, this corresponds roughly with the Suffolk county boundary.
268. Given the scale of the non-home-based workforce that is likely to locate within the East Anglia study area, the magnitude of effect on the receptor is therefore assessed as medium.
269. With the sensitivity of the receptor assessed as medium, and the magnitude of impact assessed as medium, the effect of the projects identified as part of the CIA is therefore assessed as moderate adverse, which is considered to be significant in EIA terms.
270. It is assumed that the change in demographics resulting from construction of the identified schemes is temporary, short-term and reversible in nature.

29.7.3.6 Cumulative Impact 3a: Change in Demographics during Operations Phase

271. Once operational, the overall level of employment supported by the projects identified as part of the CIA is anticipated to be substantially lower than that supported during their respective construction phases. Almost all assessments reviewed (with the exception of the socio-economic assessment of Sizewell C) exclude the assessment of the projects' impact on demographics during the operational phase.
272. However, given the nature of the operational phase, the magnitude of impact for all offshore wind farm projects considered (i.e. Hornsea Project Three, East Anglia ONE, East Anglia ONE North, East Anglia TWO, East Anglia THREE, Norfolk Vanguard and Norfolk Boreas) is anticipated to be negligible in nature.
273. Similarly, the socio-economics assessment of Sizewell C found that operation of the power station will have a negligible impact on community cohesion and integration at all levels assessed (i.e. including the project's 90-minute catchment area).
274. On this basis, the overall magnitude of effect on the receptor is therefore assessed as being negligible to low at the East Anglia level.
275. With the sensitivity of the receptor assessed as medium and the magnitude of effect assessed as negligible to low, the cumulative impact of the projects considered (including DEP and SEP) is therefore assessed as negligible to minor adverse. This is not considered to be significant in EIA terms.
276. It is assumed that the change in demographics as a result of the operation of the schemes identified is permanent, long-term and irreversible in nature.

29.7.3.7 Cumulative Impact 4a: Loss of/ Disruption to Local Infrastructure during Construction

277. The cumulative impact of the various projects considered as part of the CIA on local infrastructure is likely to be limited only to where construction overlaps. Given the location of the Sizewell C project (almost 90km from DEP and SEP), and its location relative to DEP and SEP (as well as Hornsea Project Three, East Anglia TWO and Norfolk Boreas), it is not considered in the cumulative assessment on the loss of/ disruption to local infrastructure associated with construction activity.
278. The socio-economics assessments of Hornsea Project Three, the East Anglia TWO and Norfolk Boreas offshore wind farm projects do not consider the impacts the projects will have on the loss of and/ or disruption to local infrastructure during construction. However, based on the assessment of DEP and SEP, it is anticipated that the impact on local infrastructure will be localised and wherever possible minimised. In some cases, there is a possibility that the construction activity may result in the upgrading of local infrastructure facilities (e.g. port infrastructure and road junctions).
279. On this basis, the overall magnitude of the cumulative impact on the receptor is therefore assessed as low at the East Anglia level.
280. With the sensitivity of the receptor assessed as medium and the magnitude of effect assessed as low, the cumulative impact of the identified projects (including DEP and SEP) is therefore assessed as minor adverse. This is not considered to be significant in EIA terms.
281. It is assumed that the cumulative loss of/ disruption to local infrastructure resulting from construction of the identified schemes is temporary, short-term and reversible in nature.

29.7.3.8 Cumulative Impact 4b: Loss of/ Disruption to Local Infrastructure during Operations Phase

282. Overall, it is not anticipated that the operation of the projects identified as part of the CIA will result in any major loss of and/ or disruption to local infrastructure. Where repairs are required, the disruption will be localised and temporary. It is common practice that in such cases advanced notices are provided (unless the situation is an emergency), and arrangements made to reduce disruption (such as the widening of existing passing places, scheduling of works, implementation of Travel Plan, and other embedded mitigation measures).
283. On this basis, it is assumed that the overall magnitude of the cumulative impact on the receptor is therefore assessed as negligible at the East Anglia level.
284. With the sensitivity of the receptor assessed as medium and the magnitude of effect on the receptor assessed as negligible, the cumulative impact of the identified projects (including DEP and SEP) is therefore assessed as negligible, which is not considered to be significant in EIA terms.
285. It is assumed that the loss of/ disruption to local infrastructure as a result of operation of the schemes identified is permanent, short-term and reversible in nature.

29.7.3.9 Cumulative Impact 5a: Disturbance to Social, Community and Health Infrastructure during Construction

286. The impact of the proposed developments on social, community and health infrastructure is considered for Hornsea Project Three, Norfolk Boreas and Sizewell C projects. The socio-economics assessment for Norfolk Boreas identified a minor adverse impact on the receptor during construction. Whilst the receptor is not considered in the assessment of East Anglia TWO, the overall impact could be expected to be of a similar nature, albeit smaller in magnitude (based on the difference in generating capacity between the two projects). The Hornsea Project Three assessment identified a negligible impact on the receptor during construction.
287. The socio-economics assessment of Sizewell C went into further detail and assessed the project's impacts on various indicators that comprise the receptor (such as pre-school, primary school and secondary school capacity, the provision of social services, County Council-run services, sports facilities, District Council services, policing services in addition to fire and rescue services). Overall, the assessment identified a negligible impact at the Suffolk and/ or district level(s), but minor adverse impact at the ward level.
288. Whilst some disruption/ disturbance to social, community and health infrastructure could be expected, the impact is likely to be localised. Overall, the magnitude of the effect at the East Anglia level is therefore assessed as negligible.
289. With the sensitivity of the receptor assessed as medium, and the magnitude of effect assessed as negligible, the overall impact of the projects considered as part of the CIA (including DEP and SEP) during construction is therefore assessed as negligible. This is not considered to be significant in EIA terms.
290. It is assumed that the disturbance to social, community and health infrastructure resulting from construction of the identified schemes is temporary, short-term and reversible in nature.

29.7.3.10 Cumulative Impact 5b: Disturbance to Social, Community and Health Infrastructure during Operations Phase

291. The assessments for Hornsea Project Three, Norfolk Boreas and Sizewell C projects identify a negligible impact on social, community and health infrastructure during the projects' operational phase. As set out above, the impact of the East Anglia TWO project is anticipated to be of a similar nature to that identified for the East Anglia TWO project, albeit a lower magnitude (based on the difference in size between the two projects).
292. On this basis, the overall magnitude of the impact on social, community and health infrastructure during the projects' operational phase (i.e. including DEP and SEP) is therefore assessed as negligible.
293. With the sensitivity of the receptor assessed as medium, and the magnitude of impact assessed as negligible, the overall impact of the CIA projects (including DEP and SEP) is therefore assessed as negligible. This is not considered to be significant in EIA terms.
294. It is assumed that the disturbance to social, community and health infrastructure as a result of operation of the schemes identified is permanent, long-term and irreversible in nature.

29.7.3.11 Cumulative Impact 6a: Visual Impact of Offshore Construction on Volume and Value of Tourism Activity

295. In the case of the visual impact of offshore infrastructure on the volume and value of tourism activity, the CIA has considered only the construction of offshore wind farms (and has therefore excluded Sizewell C). Of the three offshore wind farms which may be built at the same time as DEP and SEP, only the East Anglia TWO project has considered the project's visual impact on tourism and recreation. The offshore construction of Hornsea Project Three is not expected to be visible from the North Norfolk Coast.
296. The assessment of East Anglia TWO found that the project's construction will have a negligible impact on the volume and value of tourism activity. This is in line with the evidence presented in this assessment, and as such the overall magnitude of the visual impact of offshore construction for all projects (including DEP and SEP) is therefore assessed as negligible.
297. With the sensitivity of the receptor assessed as high, and the magnitude of impact identified as negligible, the overall impact of the CIA projects (including DEP and SEP) is therefore assessed as negligible. This is not considered to be significant in EIA terms.
298. It is assumed that the visual impact of offshore infrastructure construction on the volume and value of tourism activity is temporary, short-term and reversible in nature.

29.7.3.12 Cumulative Impact 6b: Visual Impact of Offshore Infrastructure on Volume and Value of Tourism Activity during Operations Phase

299. The construction and operation of Hornsea Project Three, East Anglia TWO, Norfolk Boreas and DEP and SEP will see the addition of several wind turbine generators on the horizon. Of all CIA projects considered, the closest wind turbines to the Norfolk coast will be those from DEP and SEP.
300. Based on the assessment above, whilst the two projects will be visible from across a wide area, the distance of the two wind farms from shore means that even on clear days, their turbines would be a very small addition on the horizon. Given their distance to the Norfolk coast, none of the turbines from the East Anglia TWO, Norfolk Boreas and Hornsea Project Three wind farms will be visible.
301. On this basis, the magnitude of the visual impact of offshore infrastructure of all projects considered (including DEP and SEP) is therefore assessed as negligible.
302. With the sensitivity of the receptor assessed as high and the magnitude of impact assessed as negligible, the impact of all projects considered as part of the CIA (including DEP and SEP) on the volume and value of tourism activity when operational is therefore assessed as minor. This is not considered to be significant.
303. It is assumed that the visual impact of offshore infrastructure on the volume and value of tourism activity as a result of operation of the schemes identified is permanent, long-term and irreversible in nature.

29.7.3.13 Cumulative Impact 7a: Impact of Onshore Construction on Volume and Value of Tourism Activity

304. The cumulative impact of onshore construction considers the interaction of construction activity. Overall, the onshore construction of the projects considered has potential to negatively impact upon assets that are of value to tourism activity within Norfolk, in particular those located within close proximity of the various offshore wind farm onshore cable corridors proposed.
305. This includes adverse impacts on walking and cycling routes, coastal paths, holiday parks and/ or other tourism-related assets, which are (however) likely to be mitigated by appropriate measures where required. Furthermore, please note that the impact of onshore construction will vary depending on the location of the assets considered, their respective sensitivity and contribution to local tourism activity.
306. The East Anglia TWO assessment has identified an overall negligible impact on tourism and recreation activity as a result of the project's construction activity, whilst the assessment of Hornsea Project Three identified an overall minor adverse impact. The assessment of DEP and SEP found that magnitude of effect during construction will range from low (at landfall) to medium (for the area around the onshore substation).
307. On this basis the overall magnitude of effect of onshore construction on the volume and value of tourism as a result of all projects considered is assessed as low to medium.
308. The assessment of DEP and SEP indicates that the sensitivity of the receptor varies from high around landfall and Weybourne, which falls to medium along the onshore corridor and low around the onshore substation for connection to the National Grid. Similarly, the assessment of East Anglia TWO found that the overall sensitivity of the receptor ranges from low to medium. On this basis, the overall sensitivity of the receptor across the whole study area is assessed as medium.
309. With the sensitivity of the receptor assessed as medium, and the magnitude of effect assessed as low to medium, the impact of onshore construction on the volume and value of tourism activity is therefore assessed as minor to moderate adverse.
310. It is assumed that the impact of onshore construction activity of the identified schemes is temporary, short-term and reversible in nature.

29.7.3.14 Cumulative Impact 7b: Impact of Onshore Infrastructure on Volume and Value of Tourism Activity during Operations Phase

311. In general, the day-to-day operation of the CIA projects considered (including DEP and SEP) is not expected to impact upon onshore tourism activity. Whilst some local disturbance for inspections and routine maintenance may occur, the presence of onshore infrastructure will be of limited impact on tourism activity. Where this is required, best practice suggests that advanced warnings and alternatives routes will be implemented to reduce the overall impact.

- 312. In most cases, the pre-construction conditions along the onshore cable corridor routes will be reinstated once construction is completed and all projects are operational. The key divergence to this will be the onshore substations required to connect each project to the National Grid, however their overall impact on the volume and value of tourism activity is anticipated to be limited, primarily due to the lack of tourism receptors located in close proximity to the substations.
- 313. On this basis, the magnitude of effect generated by all projects considered (including DEP and SEP) is therefore assessed as negligible.
- 314. With the sensitivity of the receptor assessed as high and the magnitude of effect assessed as low, the cumulative impact of onshore infrastructure on the volume and value of tourism activity is therefore assessed as minor adverse, which is not considered to be significant in EIA terms.
- 315. It is assumed that the visual impact of onshore infrastructure as a result of operation of the schemes identified is permanent, long-term and irreversible in nature.

29.7.3.15 Cumulative Impacts during Decommissioning

- 316. At present there is very little information about the approach to decommissioning of the projects considered as part of the CIA. This is, in part due to the different life cycle of each project (e.g. the operational life of a nuclear power station is substantially longer, often twice that of traditional offshore wind farms). As such, there is considerable uncertainty associated with the CIA of decommissioning activity.
- 317. For most projects, a Decommissioning Plan for each project considered will be implemented at or following DCO stage. In some cases, this requires decommissioning and removal of the onshore cables, whilst in other cases cables will be just de-energised. Please note that 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.
- 318. As such, the cumulative impacts during the decommissioning phase are assumed to be similar in nature to those identified during construction, and likely to be of lower magnitude and therefore significance.

29.8 Inter-relationships

- 319. This section establishes the inter-relationships between socio-economics and tourism and other physical, environmental and human receptors. The objective is to identify where the accumulation of effects on a single receptor may result in the need for additional mitigation measures.
- 320. **Table 29-19** below summarises the inter-relationships that are considered of relevance to socio-economics and tourism, and identifies where these have been considered within this assessment.

Table 29-19: Inter-related effects between socio-economics and tourism receptors and other receptors assessed in other assessments.

Topic and description	Related chapter	Rationale	Where addressed in this chapter
Seascape, landscape and visual	Chapter 27	The visual impact of DEP and SEP (both onshore and offshore infrastructure) has potential to affect the area's tourism economy.	See Sections 29.6 and 29.7 of this assessment.
Traffic and transport	Chapter 26	Potential impacts on transport and traffic have potential to impact on the area's tourism economy and community infrastructure.	See Sections 29.6 and 29.7 of this assessment.
Noise and vibration	Chapter 25	Potential impacts related to noise and vibration have potential to impact on the area's tourism economy and community infrastructure.	See Sections 29.6 and 29.7 of this assessment.
Air quality	Chapter 24	Potential impacts related to air quality have potential to impact on the area's tourism economy and community infrastructure.	See Sections 29.6 and 29.7 of this assessment.

29.9 Interactions

321. The impacts identified and assessed in this chapter have the potential to interact with each other. The areas of potential interaction between impacts are presented in **Table 29-20**. This provides a screening tool for which impacts have the potential to interact.

322. **Table 29-21** provides an assessment for each receptor (or receptor group) as related to these impacts. Within

323. **Table** 29-21 the impacts are assessed relative to each development phase (i.e. construction, operation or decommissioning) to see if (for example) multiple construction impacts affecting the same receptor could increase the level of impact upon that receptor. Following this, a lifetime assessment is undertaken which considers the potential for impacts to affect receptors across all development phases.
324. The significance of each individual impact is determined by the sensitivity of the receptor and the magnitude of effect; the sensitivity is constant whereas the magnitude may differ. Therefore, when considering the potential for impacts to be additive it is the magnitude of effect which is important – the magnitudes of the different effects are combined upon the same sensitivity receptor.

Table 29-20: Interaction between impacts

Potential Interaction between Impacts							
Construction and Operation							
	Impact 1	Impact 2	Impact 3	Impact 4	Impact 5	Impact 6	Impact 7
Impact 1	-	Yes	No	No	No	Yes	Yes
Impact 2	Yes	-	No	No	Yes	No	No
Impact 3	No	No	-	No	Yes	No	No
Impact 4	No	No	No	-	No	No	No
Impact 5	No	Yes	Yes	No	-	No	No
Impact 6	Yes	No	No	No	No	-	Yes
Impact 7	Yes	No	No	No	No	Yes	-
Decommissioning							
It is anticipated that the impacts associated with decommissioning of DEP and SEP will be similar in nature to those identified for the construction phase of DEP and SEP.							

Table 29-21: Interaction between impacts – phase and lifetime assessment

Receptor	Highest significance level			Phase assessment	Lifetime assessment
	Construction	Operation	Decommissioning		
Direct economic benefit	Negligible	Negligible	Negligible	<p>No greater than individually assessed impact Investment will generate benefits at all levels of the economy (i.e. East Anglia and nationally)</p>	<p>No greater than individual assessed impact Under the concurrent operation scenario (i.e. either through concurrent or sequential operation) it is estimated that DEP and SEP generate around £450 million GVA at the East Anglia level, and up to £800 million GVA nationally.</p>
Increased employment	Negligible	Negligible	Negligible	<p>No greater than individually assessed impact Employment opportunities will create benefit at all levels (i.e. East Anglia and nationally)</p>	<p>No greater than individual assessed impact Although there will be benefits created at each stage, different groups will be employed at different stages. The bulk of the employment created/ supported will be during construction</p>

	Highest significance level				
					(and to a lesser extent at decommissioning).
Volume and value of tourism (onshore and offshore infrastructure)	Negligible	Negligible	Negligible	<p>No greater than individually assessed impact Impacts will be localised primarily to North Norfolk coast and along the onshore corridor.</p>	<p>No greater than individual assessed impact Most of the disturbance to the volume and value of tourism activity, is anticipated to occur at construction phase. The impacts of decommissioning will be of a similar, albeit lower nature (primarily due to the uncertainty of the approach to decommissioning). Lifetime effects at the onshore substation and National Grid infrastructure are unlikely to result in a change in visitor numbers and/ or quality of experience.</p>

29.10 Potential Monitoring Requirements

325. No monitoring requirement has been identified for socio-economics and tourism .

29.11 Assessment Summary

326. **Table 29-22** below presents a summary of the significance of impacts assessed within the socio-economics and tourism PEIR, any mitigation and the residual effects.

Table 29-22: Summary of potential impacts on socio-economics and tourism

Potential impact	Receptor	Sensitivity	Magnitude	Pre-mitigation impact	Mitigation measures proposed	Residual impact
Construction						
1. Direct economic benefit	Economy	High	Negligible (both UK and East Anglia)	Minor beneficial (both UK and East Anglia)	n/a	Minor beneficial (both UK and East Anglia)
2. Increased employment	Economy	High	Negligible (both UK and East Anglia)	Minor beneficial (both UK and East Anglia)	n/a	Minor beneficial (both UK and East Anglia)
3. Change in demographics	Population	Medium	Negligible	Minor adverse	n/a	Minor adverse
4. Loss of/ disruption to local infrastructure	Local infrastructure	Medium	Low	Minor adverse	Potential mitigation measures could include: <ul style="list-style-type: none"> • The widening of existing passing places • The use of escort vehicles for HGVs • Scheduling of works, • Travel Plan, and 	Negligible

Potential impact	Receptor	Sensitivity	Magnitude	Pre-mitigation impact	Mitigation measures proposed	Residual impact
					<ul style="list-style-type: none"> Car sharing 	
5. Disturbance to social, community and health infrastructure	Social, community and health infrastructure	Medium	Low	Minor adverse	n/a	Minor adverse
6. Visual impact of offshore infrastructure on volume and value of tourism activity	Tourism activity	High	Negligible	Minor adverse	n/a	Minor adverse
7. Impact of onshore construction on volume and value of tourism activity	Tourism activity	Landfall and onshore up to edge of Weybourne – High Onshore corridor – Medium Onshore substation – Low	Landfall and onshore up to edge of Weybourne – Low Onshore corridor – Negligible Onshore substation – Medium	Up to moderate adverse for Landfall and onshore up to edge of Weybourne	n/a	Up to moderate adverse for Landfall and onshore up to edge of Weybourne
Operation						

Potential impact	Receptor	Sensitivity	Magnitude	Pre-mitigation impact	Mitigation measures proposed	Residual impact
1. Direct economic benefit	Economy	High	Negligible (both UK and East Anglia)	Minor beneficial (both UK and East Anglia)	n/a	Minor beneficial (both UK and East Anglia)
2. Increased employment	Economy	High	Negligible (both UK and East Anglia)	Minor beneficial (both UK and East Anglia)	n/a	Minor beneficial (both UK and East Anglia)
3. Change in demographics	Population	Medium	Negligible	Minor adverse	n/a	Minor adverse
4. Loss of/ disruption to local infrastructure	Local infrastructure	Medium	Negligible	Minor adverse	n/a	Minor adverse
5. Disturbance to social, community and health infrastructure	Social, community and health infrastructure	Medium	Negligible	Minor adverse	n/a	Minor adverse
6. Visual impact of offshore infrastructure on volume and value of tourism activity	Tourism activity	High	Negligible	Minor adverse	n/a	Minor adverse

Potential impact	Receptor	Sensitivity	Magnitude	Pre-mitigation impact	Mitigation measures proposed	Residual impact
7. Impact of onshore construction on volume and value of tourism activity	Tourism activity	Landfall and onshore up to edge of Weybourne – High Onshore corridor – Medium Onshore substation – Low	Landfall and onshore up to edge of Weybourne – Negligible Onshore corridor – Negligible Onshore substation – High	Moderate adverse around onshore substation	n/a	Negligible/ Minor adverse
Decommissioning						
<p>Given the uncertainty associated with the approach to decommissioning and the position of the sector nationally and locally, it is not possible to undertake a detailed assessment of this phase. Decommissioning activities of DEP and SEP are anticipated to be similar to, but no worse than the impacts identified during the construction phase.</p>						

29.12References

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