Outer Dowsing Offshore Wind

Preliminary Environmental Information Report

Volume 1, Chapter 29: Socio-Economics, Recreation and Tourism

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OUTER DOWSING OFFSHORE WIND

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Abbreviations

Acronym	Expanded name
AIS	Automatic Identifier System
AONB	Area of outstanding natural beauty
BEIS	Department for Business, Energy and Industrial Strategy (now the Department for Energy Security and Net Zero (DESNEZ))
CEFAS	Centre for Environment, Fisheries & Aquaculture Science
CIA	Cumulative Impact Assessment
DESNZ	Department for Energy Security and Net Zero, formerly Department of Business, Energy and Industrial Strategy (BEIS), which was previously Department of Energy & Climate Change (DECC).
DNPS	Draft National Policy Statement
EIA	Environmental Impact Assessment
EMS	European marine site
ES	Environmental Statement
FTE	Full Time Employment
GDP	Gross Domestic Product
GP	General Practitioner
GVA	Gross value added
GW	Gigawatts
HEY	Hull and East Yorkshire
ICB	Integrated Care Board
IDC	Inter-disciplinary check
LTRA	Local tourism and recreation area
LEA	Local economic area
LEP	Local Enterprise Partnership
MDS	Maximum Design Scenario
MCA	Maritime and Coastguard Agency
MGN	Marine Guidance Note
MPA	Marine Protected Area
MW	Megawatts
NHS	National Health Service
NPS	National Policy Statement
NVQ	National Vocational Qualification
O&M	Operation and Maintenance
ODOW	Outer Dowsing Offshore Wind, trading name of GT R4 Limited
OFTO	Offshore Transmission Owner
ONS	Office for National Statistics
OnSS	Onshore Substation
ORCP	Offshore Reactive Compensation Platform
OSS	Offshore Substation
OWF	Offshore Wind Farm
PEIR	Preliminary Environmental Information Report
RYA	Royal Yachting Association

Acronym	Expanded name
SAC	Special Area of Conservation
SME	Small and Medium Enterprises
SPA	Special Protection Area
TCE	The Crown Estate
UK	United Kingdom

Terminology

Term	Definition
Array area	The area offshore within the PEIR Boundary within which the generating stations (including wind turbine generators (WTG) and inter array cables), offshore accommodation platforms, offshore transformer substations and associated cabling are positioned.
Baseline	The status of the environment at the time of assessment without the development in place.
Cumulative effects	The combined effect of the Project acting cumulatively with the effects of a number of different projects, on the same single receptor/resource.
Cumulative impact	Impacts that result from changes caused by other past, present or reasonably foreseeable actions, together with the Project.
Development and Construction Phase	The period of the Project that covers all initial project development, design, consenting, manufacturing, construction and commissioning of the Project.
Effect	Term used to express the consequences of an impact. The significance of an effect is determined by correlating the magnitude of an impact with the sensitivity of a receptor, in accordance with defined significance criteria.
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 Environmental Impact Assessment (EIA) Regulations, including the publication of an Environmental Statement (ES).
Environmental Statement (ES)	The suite of documents that detail the processes and results of the Environmental Impact Assessment (EIA).
Impact	An impact to the receiving environment is defined as any change to its baseline condition, either adverse or beneficial.
Maximum Design Scenario	The maximum design parameters of the combined project assets that result in the greatest potential for change in relation to each impact assessed.
Offshore Export Cable Corridor (ECC)	The Offshore Export Cable Corridor (Offshore ECC) is the area within the Preliminary Environmental Information Report (PEIR) Boundary within which the export cable running from the array to landfall will be situated.

Term	Definition
Onshore Export Cable Corridor (ECC)	The Onshore Export Cable Corridor (Onshore ECC) is the area within which the export cable running from the landfall to the onshore substation will be situated.
Onshore substation (OnSS)	The Project's onshore substation, containing electrical equipment to enable connection to the National Grid
Onshore Infrastructure	The combined name for all onshore infrastructure associated with the Project from landfall to grid connection.
Outer Dowsing Offshore Wind (ODOW)	The Project.
Preliminary Environmental Information Report (PEIR)	The PEIR is written in the style of a draft Environmental Statement (ES) and provides information to support and inform the statutory consultation process in the pre-application phase. Following that consultation, the PEIR documentation will be updated into the Project's ES that will accompany the application for the Development Consent Order (DCO).
PEIR Boundary	The PEIR Boundary is outlined in Figure 3.1 of Volume 1, Chapter 3: Project Description and comprises the extent of the land and/or seabed for which the PEIR assessments are based upon.
Pre-construction and post-construction	The phases of the Project before and after construction takes place.
Receptor	A distinct part of the environment on which effects could occur and can be the subject of specific assessments. Examples of receptors include species (or groups) of animals or plants, people (often categorised further such as 'residential' or those using areas for amenity or recreation), watercourses etc.
study area	Area(s) within which environmental impact may occur – to be defined on a receptor-by-receptor basis by the relevant technical specialist.
The Project	Outer Dowsing Offshore Wind including proposed onshore and offshore infrastructure.
Transboundary impacts	Transboundary effects arise when impacts from the development within one European Economic Area (EEA) state affects the environment of another EEA state(s).

29 Socio-Economics, Tourism and Recreation

29.1 Introduction

29.1.1 This chapter of the Preliminary Environmental Information Report (PEIR) presents the results to date of the Environmental Impact Assessment (EIA) process for the potential impacts of Outer Dowsing Offshore Wind ("the Project") on Socio-Economics, Tourism and Recreation.

29.1.2 GT R4 Limited ("the Applicant") is proposing to develop the Project. The Project will be located approximately 54km from the Lincolnshire coastline in the southern North Sea. The Project will include both offshore and onshore infrastructure including an offshore generating station (windfarm), export cables to landfall, onshore cables, and connection to the electricity transmission network, and ancillary and associated development (see Volume 1, Chapter 3: Project Description for full details).

29.1.3 This chapter should be read alongside the following chapters:

- Volume 1, Chapter 14: Commercial Fisheries;
- Volume 1, Chapter 15: Shipping and Navigation;
- Volume 1, Chapter 17: Seascape, Landscape and Visual;
- Volume 1, Chapter 18: Infrastructure and Other Marine Users;
- Volume 1, Chapter 25: Land Use;
- Volume 1, Chapter 26: Noise and Vibration;
- Volume 1, Chapter 27: Traffic and Transport; and
- Volume 1 Chapter 28: Landscape and Visual Assessment.

29.1.4 Additional information to support the socio-economics, tourism and recreation assessment includes a methodological statement on the approach followed to estimate the economic benefits from the Project.

29.2 Statutory and Policy Context

29.2.1 The assessment of potential impacts on socio-economics, tourism and recreation has been made 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 the Project are:

- Overarching NPS for Energy (EN-1) (Department of Energy and Climate Change (DECC) 2011a); and
- NPS for Renewable Energy Infrastructure (EN-3) (DECC 2011b).

29.2.2 The specific assessment requirements for socio-economics, tourism and recreation, as detailed in the NPS, are summarised in Table 29.1 together with an indication of the section of the PEIR chapter where each is addressed.

29.2.3 The NPSs provide the main policy tests in relation to the Project. The NPSs are currently being revised and draft versions were published for consultation in 2023. In addition to the current NPS, the draft NPSs have therefore also been reviewed in Table 29.1 to determine the emerging expectations and changes from previous iterations of the NPSs. This includes the Draft Overarching NPS EN-1 (DESNZ, 2023a), Draft NPS EN-3 (DESNZ, 2023b) and Draft NPS EN-5 (DESNZ, 2023c). Draft policies are included in the table where they differ from the extant policy. Table 29.1 includes sections of the draft versions of the NPS (EN-1 and EN-3) in which relevant additional NPS requirements that are not presented within the current NPS (EN-1 and EN-3) have been included. Minor wording changes within the draft version which do not materially influence the NPS (EN-1 and EN-3) requirements have not been reflected in Table 29.1.

Table 29.1 Legislation and policy context

Legislation and policy context	Key provisions	Section where comment addressed
Overarching National Policy Statement for Energy (NPS EN-1) (2011)	Paragraph 5.12.2 of NPS EN-1 advised 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.	Throughout this chapter the impacts on socio-economics and tourism from the construction, operations and decommissioning of the Project are considered.
Overarching National Policy Statement for Energy (NPS EN-1) (2011)	Paragraph 5.12.3 NPS EN-1 advises the assessment should include the creation of jobs and training opportunities.	Impacts on employment are considered in Section 29.7.
Overarching National Policy Statement for Energy (NPS EN-1) (2011)	Paragraph 5.12.2 of NPS EN-1 advises that 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.	Throughout this chapter the impacts on socio-economics and tourism from the construction, operations and decommissioning of the Project are considered.
Overarching National Policy Statement for Energy (NPS EN-1) (2011)	Paragraph 5.12.3 of NPS EN-1 advises that the assessment should include the creation of jobs and training opportunities.	Impacts on employment are considered in Section 29.7.
Overarching National Policy Statement for Energy (NPS EN-1) (201	Paragraph 5.12.3 of NPS EN-1 advises that the assessment should include the provision of additional local services and improvements to local infrastructure, including the	Impacts on local services and social infrastructure, such as schools and health services are considered in Section 29.7

Legislation and policy context	Key provisions	Section where comment addressed
	provision of educational and visitor facilities.	
National Policy Statement for Renewable Energy (NPS EN-1) (2011)	Paragraph 5.12.3 of NPS EN-1 advises that the assessment should include effects on tourism.	Effects on tourism are considered in Section 29.7.
Overarching National Policy Statement for Energy (NPS EN-1) (2011)	Paragraph 5.12.3 of NPS EN-1 advises that the assessment should include the impact of a changing influx of workers during the different construction, operation and decommissioning phases of the energy infrastructure.	Impacts on demographics from the influx of workers and their implications are considered in Section 29.7.
Overarching National Policy Statement for Energy (NPS EN-1) (2011)	Paragraph 5.12.3 of NPS EN-1 advises that the assessment should include cumulative effects.	Cumulative effects are considered in Section 29.8.
Overarching National Policy Statement for Energy (NPS EN-1) (2011)	Paragraph 5.12.4 of NPS EN-1 advises that applicants should describe the existing socio-economic conditions in the areas surrounding the Project and should also refer to how the development's socio-economic impacts correlate with local planning policies.	A baseline of existing socio-economic conditions and tourism activity is provided in section 29.3.
Overarching National Policy Statement for Energy (NPS EN-1) (2011)	Paragraph 5.12.5 of NPS EN-1 advises that consideration should be given to any impacts that are linked to socio-economic impacts.	Links with other impacts are considered throughout this Chapter.
National Policy Statement for Renewable Energy Infrastructure (NPS EN-3) (2011)	Paragraph 2.6.160 and 2.6.158 of NPS EN-3 advises that the consideration should be given to potential economic impacts on recreational and commercial users of the sea.	The economic impacts of recreational users of the sea are considered in Section 29.7. The economic impacts of potential commercial users of the sea are considered in Chapter 12: Infrastructure and Other Marine Users
Draft National Policy Statement for Energy (DNPS EN-1)	Paragraph 5.13.3 of DNPS EN-1 strongly advises that Applicants engage with relevant local authorities	The feedback from the consultation programme and members of the Expert Topic Groups, including relevant

Legislation and policy context	Key provisions	Section where comment addressed
	during the early stages of the project development to gain a better understanding of local or regional issues and opportunities	local authorities, is outline in Section 29.3.
Draft National Policy Statement for Energy (DNPS EN-1)	Paragraph 5.13.4 of DNPS EN-1 advises that Applicants may wish to provide information on the sustainability of the jobs created, including where they will help to develop the skills needed for the United Kingdom's (UK) transition to Net Zero.	Sustainability of jobs is considered alongside the impact on employment from the Project in Section 29.7.
Draft National Policy Statement for Energy (DNPS EN-1)	Paragraph 5.13.4 of DNPS EN-1 advises that the assessment should consider the contribution to the development of low-carbon industries at the local and regional level as well as nationally.	The contribution to the development of low-carbon industries in each of the study areas is considered in Section 1.8.
Draft National Policy Statement for Energy (DNPS EN-1)	Paragraph 5.13.4 of DNPS EN-1 advises that the assessment should consider any indirect beneficial impacts for the region hosting the infrastructure, in particular in relation to use of local support services and supply chains.	The impacts on Gross Value Added (GVA) and employment include indirect/supply chain impacts, as considered in Section 29.7.
Draft National Policy Statement for Energy (DNPS EN-1)	Paragraph 5.13.6 of DNPS EN-1 advises that Applicants are encouraged, where possible, to ensure local suppliers are considered in any supply chain.	The Applicant will develop a Procurement Strategy that will consider the role of local suppliers and contribution to skills development. This is not included in the PEIR.
Draft National Policy Statement for Energy (DNPS EN-1)	Paragraph 5.13.4 of DNPS EN-1 advises that Applicants consider any effects local services and infrastructure, including the provision of educational and visitor facilities.	Effects on local services and social infrastructure, such as schools and health services are considered in Section 29.7

Legislation and policy context	Key provisions	Section where comment addressed
Draft National Policy Statement for Energy (DNPS EN-1)	Paragraph 5.13.4 of DNPS EN-1 advises that Applicants consider any effects on tourism.	Effects on tourism are considered in Section 29.7.
Draft National Policy Statement for Energy (DNPS EN-1)	Paragraph 5.13.4 of DNPS EN-1 advises that Applicants if development consent were to be granted to for a number of projects within a region and these were developed in a similar timeframe, there could be some short-term negative effects, for example a potential shortage of construction workers to meet the needs of other industries and major projects within the region	Cumulative effects are considered in Section 29.8.
Draft National Policy Statement for Energy (DNPS EN-1)	Paragraph 5.13.7 of DNPS EN-1 advises that Applicants should also consider developing accommodation strategies where appropriate, especially during construction and decommissioning phases, that would include for the need to provide temporary accommodation for construction workers if required.	Potential impacts om accommodation demand are considered in Section 29.7 during the construction phase.

29.3 Consultation

29.3.1 Consultation is a key part of the Development Consent Order (DCO) application process. Consultation regarding Socio-Economics, Tourism and Recreation has been conducted through the Evidence Plan Process (EPP) Expert Technical Group (ETG) meetings and the EIA scoping process. An overview of the Project consultation process is presented within Volume 1, Chapter 6: Consultation.

29.3.2 The primary issue raised in the Inspectorate's Scoping Opinion relating to socioeconomic issues concerned the inclusion of effects during the decommissioning phase, including the economic impacts and the assessment of demographic and service demand impacts.

29.3.3 A summary of the key issues raised during consultation to date, specific to Socio-Economics, Tourism and Recreation, is outlined in Table 29.2 below, together with how these issues have been considered in the production of this PEIR.

Table 29.2 Consultation Responses

Date	Comment	Where addressed in the PEIR
09/09/22 Scoping Opinion	The Planning Inspectorate stated that the ES [Environmental Statement] should include an assessment of demographics and service demands during decommissioning, unless a robust justification be provided to demonstrate this is not required.	Comment addressed in Section 29.7
09/09/2022 Scoping Opinion	The Planning Inspectorate stated that the ES should assess impacts during the decommissioning phase or provide appropriate justification as to why this assessment is not required.	Comment addressed from Section 29.7.
09/09/2022 Scoping Opinion	The Planning Inspectorate agrees that transboundary effects during all phases can be scoped out, given the spatial extent of effects related to economic and supply chain assessments.	Transboundary effects have been Scoped Out of the assessment for all phases.
09/09/2022 Scoping Opinion	The Planning Inspectorate agrees that demographic and service demand impacts, including long term housing/accommodation, can be scoped out during the Operations and Maintenance (O&M) phase.	Demographic and Service Demand effects have been Scoped Out of the assessment for the O&M Phase.
25/01/2023 Expert Technical Group	Queries on whether in the contracts awarded there will be support for training and apprentices	Procurement Strategy is being developed outside the Scope of the PEIR.

29.4 Baseline Environment

Defining the Study Areas

Onshore

29.4.1 The sensitivity and magnitude of socio-economic impacts are influenced by the size of the receptors that experience these effects. The magnitude of any impact is measured relative to the size of the receptor, therefore it is important to gain an understanding of impact at as local a level as possible.

29.4.2 The onshore study areas for the assessment of effects on employment and economy onshore have been defined in line with the guidance on identification of 'local areas' for the offshore developments published by the Scottish Government (Scottish Government, 2022). Although this guidance will not apply in England, the principles for identifying the areas are universal and can be applied anywhere. The core principle of this guidance is that the 'local areas' identified should be specific to the socio-economic impact identified. Therefore, the study areas used for the assessment of economic impacts, such as employment and Gross Value Added (GVA) generated, are different from those used to assess the impacts on tourism and recreational assets.

29.4.3 The Local Economic Area has been defined based on the potential key locations of economic activity associated with the construction, operation and decommissioning of the Project. The economic impacts will occur across a wider area than the area of the onshore export cable route and onshore substation site (OnSS). It will also be centred around other areas such as the potential ports used for construction and operations. Therefore, the economic impacts have been quantified across three onshore study areas. The Local Economic Area is defined as the combined geographies of the Greater Lincolnshire Local Enterprise Partnership (LEP) and the Hull and East Yorkshire LEP areas. This area includes all the potential sites for onshore infrastructure construction and the possible location of the key port locations in the UK. The Regional Area is defined as the combined English regions of Yorkshire and the Humber and East Midlands. The economic impacts will also be assessed at the level of the UK.

29.4.4 The Local Tourism and Recreation Area is defined based on the potential key locations of activities that could have an impact on tourism and recreation assets. For tourism and recreation, the onshore study area is a reduced one and has been focused on the local administrative areas that contain the onshore scoping boundary. These are the local authority areas of:

- Boston Borough Council;
- East Lindsey District Council; and
- South Holland District Council.

29.4.5 These are the three areas which constitute the Local Tourism and Recreation Area (LTRA).

29.4.6 At this stage it is not possible to identify specific locations that will support the offshore construction of the Project. Support locations for offshore construction and operation will depend on commercial decisions to be made at a later date, which in turn will be influenced by several economic, technological and other factors.

29.4.7 The socio-economic baseline covers the four study areas below that are appropriate for the offshore activities and either of onshore cable route and substation options, that will be determined by outcomes of the Offshore Transmission Network Review and grid connection offer (see Volume 1, Chapter 4: Site Selection and Consideration of Alternatives). The four study areas are:

- The LTRA – defined as the combined local authority areas of South Holland, East Lindsey and Boston.
- The LEA – defined as the combined LEPs of Greater Lincolnshire and Hull and East Yorkshire;
- The Regional Area – defined as the combined regions of England of Yorkshire and the Humber and the East Midlands; and
- The UK.

Marine Recreation Study Area

29.4.8 The offshore recreation study area has been defined as the Project's offshore export cable corridor (ECC), the offshore array and a 15km buffer around these, as shown in Figure 29.2. Recreational activity such as recreational sailing and boating, recreational angling, scuba diving and other / general recreational activities are described within this study area.

Data Sources

29.4.9 The baseline environment for the study areas identified, is described below, and covers:

- The Strategic Context;
- The Socio-economic baseline;
- Onshore Tourism and Recreation baseline; and
- Marine Recreation assets.

29.4.10 The study areas that are covered by each element of the baseline environment are outlined in Table 29.3.

Table 29.3: Coverage of the baseline environment by study area

	Marine Recreation Area	LTRA	LEA	Regional Area	UK
Strategic Context	-	-	Yes	Yes	Yes
Socio-economic baseline	-	Yes	Yes	Yes	Yes
Onshore Tourism and Recreation baseline	-	Yes	-	-	-
Marine Recreation Area	Yes	-	-	-	-

29.4.11 The sources of information used to generate this baseline are described in Table 29.4.

Table 29.4: Key sources of information for Socio-economics, Tourism and Recreation

Source	Summary	Spatial Coverage of Source/Relevance by Study Area
Strategic		
Humber Local Enterprise Partnership (LEP) (2020) Humber Local Energy Strategy	Review of the Humber Strategic Economic Plan July 2016 and Strategic Economic Plan 2014-2020 provide an overview of the main demographic, economic and employment characteristics of the Study Area	LEA
Hull and East Yorkshire Local Enterprise Partnership (HEY LEP) (2021) Economic Growth and Workforce	Review of the HEY LEP Economic Growth and Workforce Wellbeing Strategy to provide an overview of the main economic, demographic and employment characteristics of the Study Area	LEA

Source	Summary	Spatial Coverage of Source/Relevance by Study Area
Wellbeing Strategy 2021-26		
Greater Lincolnshire LEP (2021) Local Industrial Strategy	Review of the Greater Lincolnshire LEP 2021 Local Industrial Strategy setting out the growth opportunities in manufacturing and engineering in the area and the area's existing business base for offshore wind manufacturing	LEA
UK Government (2020a) UK Offshore Wind Sector Deal	Review of the UK Government's 2020 Offshore Wind Sector Deal supporting the development of offshore wind in the UK and the target for 2030	UK
Socio-economic		
Interweave Healthcare (2021), How many hospitals in the UK?	Information on the number of hospitals by region.	LEA
National Records of Scotland (2020), Population Projections for Scottish Areas (2018-based)	Information on projected population by 2043 and future demographic structure in Scotland	UK
NISRA (2021), 2018-Based Population Projections: Principal Projection	Information on projected population by 2043 and future demographic structure in Northern Ireland	UK
Northern Ireland Department of Finance (2022), Housing Stock by Local Government District 2008-2022	Information on the total supply of housing in Northern Ireland	UK

Source	Summary	Spatial Coverage of Source/Relevance by Study Area
ONS (2021a) Population Estimates	Demographic data including trends	LTRA, LEA, Regional Area, UK
ONS (2021b), Population Projections, 2019-2043	Demographic projections covering the next 20 years	LTRA, LEA, Regional Area, UK
ONS (2021c), Annual Population Survey	Data on current and previous labour market conditions, including economic activity, qualifications and occupations, and households with dependent children	LTRA, LEA, Regional Area, UK
ONS (2021d), Annual Survey of Hours and Earnings	Data on current and previous work-based income distribution and hours worked	LTRA, LEA, Regional Area, UK
ONS (2021e) Business Register and Employment Survey	Current and previous levels of employment activity by sector and employment type – e.g., full and part time employment	LTRA, LEA, Regional Area, UK
ONS (2021f), House Price Data: Quarterly Tables	Data on current and previous real estate markets, including sale values and number of sales	LTRA, LEA, Regional Area, UK
ONS (2021h) Subnational estimates of dwellings by Tenure, England	Data on current and previous residential dwellings by type and ownership	LTRA, LEA, Regional Area, UK
Scottish Government (2022), Housing statistics: Stock by tenure	Information on the housing stock in Scotland	UK
Stats Wales (2020), Dwelling stock estimates by local authority and tenure.	Information on the housing stock in Wales	UK
UK Government (2021), Education and Training Statistics for the UK	Information on school numbers and pupil teacher ratios by UK region.	Regional Area, UK

Source	Summary	Spatial Coverage of Source/Relevance by Study Area
UK Parliament (2022), Local authority data: housing supply	Information on the housing stock in England	LTRA, LEA, Regional Area, UK
Onshore Recreation and Tourism		
Aitchison (2004) Fullabrook Wind Farm proposal, North Devon - evidence gathering of the impact of windfarms on visitor numbers and tourist experience	Study of the impact of windfarms on the tourism economy of North Devon	LTRA
BiGGAR Economics (2021), Wind Farms & Tourism Trends in Scotland: Evidence from 44 Wind Farms	Study of the impact of windfarms on the tourism economy of Scotland	LTRA
BiGGAR Economics (2020), East Anglia ONE North and East Anglia TWO Offshore Wind Farms: Tourism Impact Review	Study of the impact on tourism of two offshore windfarms near the Suffolk Coast Area	LTRA
BVA BDRV (2021) Visitor Attraction Trends in England 2020 Full Report	Data from the Survey of Visits to Visitor Attractions, which provides a comprehensive England-wide analysis of trends plus visitor data for individual attractions	LTRA, Regional Area, UK
Glasgow Caledonian University/Moffat Centre (2008), The Economic	Study of the impact of windfarms on the tourism economy of Scotland.	LTRA

Source	Summary	Spatial Coverage of Source/Relevance by Study Area
Impacts of Wind Farms on Scottish Tourism		
Kantar TNS (2020), Great Britain Day Visitor Survey 2019 Annual Report	Data on current and previous trends in domestic day visitor tourism, including area visited, main reasons for visiting and expenditure per trip	LTRA, Regional Area, UK
Kantar (2020), The Great Britain Tourist Survey, 2019 Annual Report	Data on current and previous trends in domestic overnight visitor tourism, including area visited, main reasons for visiting and expenditure per trip	LTRA, Regional Area, UK
NFO (2003), Investigation into the potential impact of wind farms on tourism in Wales	Study of tourism perceptions in Wales	LTRA
NISRA (2020), Northern Ireland Annual Tourism Statistics 2019	Information on the volume of tourism and spending levels of tourists in Northern Ireland	UK
Northumbria University (2014), Evaluation of the impacts of onshore wind farms on tourism	Study of the impact of windfarms on the tourism economy of Northumberland	LTRA
Online searches	Identification of tourism and recreational assets within the LTRA	LTRA
Regeneris and The Tourism Company (2014), Study into the Potential Economic Impact of Wind Farms and Associated Grid Infrastructure on	Study of the impact of windfarms on the tourism economy of Wales	LTRA

Source	Summary	Spatial Coverage of Source/Relevance by Study Area
the Welsh Tourism Sector		
Marine Recreation		
RYA Coastal Atlas (2021)	Marine recreation sailing and boating locations and intensity	Marine Recreation Area
MMO Mapping recreational sea anglers in English waters (MMO1163 2020)	Recreational angling	Marine Recreation Area
Seasearch scuba diving (2021)	Scuba dive records	Marine Recreation Area
MMO High Priority Non-Licensable Activities in MPAs (MMO1243 2021)	General marine recreation activities, differentiated by multiple types	Marine Recreation Area

Existing Environment

Strategic Context

Humber Local Energy Strategy

29.4.12 Published in 2020, the Humber Local Energy Strategy (Humber Local Enterprise Partnership, 2019) outlines two key objectives for the region:

- To ensure the Humber region plays a leading role in the UK's decarbonisation efforts by making targeted interventions to reduce emissions in the electricity, heat and transport sectors; and
- To foster clean energy growth by supporting public and private sector investments in novel low carbon technologies to take advantage of the opportunities presented by the emerging low carbon economy.

29.4.13 The strategy highlights the Humber's pivotal role in the transition from fossil fuels to renewables, with the natural resources of the area already supporting the world's biggest offshore windfarm located 75 miles off the coast. The document emphasises, that while the offshore wind sector already plays a significant role in the economy of the Humber, taking advantage of the possible benefits of the sector requires support by business-friendly policies and investment from local municipalities and central government. The strategy outlines four activities for the LEP with the aim of supporting the expansion of the offshore wind cluster and maintaining the Humber as a key national hub for offshore wind manufacture and operations:

- To facilitate skill development, job security and creation through the existing supply chain, higher education and training providers;

- To build on existing capabilities, competencies, and infrastructure to ensure the offshore wind ecosystem becomes more efficient;
- To undertake campaigns aimed at attracting new inward investment into the sector and investment in innovation; and
- To offer services and expertise to other regions in the UK and internationally.

29.4.14 The Project has the potential to support the development of the sector in the Humber, expanding the offshore wind cluster and building on the region's expertise in the sector.

Greater Lincolnshire LEP Local Industrial Strategy

29.4.15 In January 2021, Greater Lincolnshire LEP published a draft Local Industrial Strategy (Greater Lincolnshire LEP, 2021) which sets out the opportunities for growth within the LEP area and how the LEP plans to maximise the benefits of these opportunities. The strategy highlights the region's established and emerging clusters in agri-food, ports, logistics and defence, and energy and new fuels, which present opportunities for Greater Lincolnshire to build on the area's manufacturing and engineering base.

29.4.16 The strategy highlights that, as a result of the existing offshore wind clusters in proximity to the area, offshore wind manufacturing, installation, O&M businesses now have established businesses in the region, enabling the expansion of the offshore wind sector in the area to continue to support the creation of local sustainable jobs and the development of the local economy. Offshore wind developments are creating sustainable jobs in the area and supporting the local economy as the offshore wind sector grows.

29.4.17 The strategy particularly highlights the opportunities the offshore wind sector presents for Greater Grimsby, which currently has low wages and productivity, as well as high unemployment and challenges retaining businesses and skilled workers in the area. The strategy highlights how the development of the offshore wind sector could support the economic development through establishing offshore wind O&M businesses in the area.

29.4.18 The Project has the potential to contribute to the expansion of the offshore wind sector in proximity to Greater Lincolnshire by creating sustainable job opportunities in sectors which are firmly established in the area, such as offshore wind manufacturing, installation, O&M, and in doing so, continue to develop the economic contribution the sector has already made to local areas of Lincolnshire.

Hull and East Yorkshire Economic Strategy

29.4.19 In 2021 Hull and East Yorkshire LEP (HEY LEP) published its Economic Growth and Workforce Wellbeing Strategy for 2021 to 2026 (HEY LEP, 2021). The strategy considers some of the challenges that the region has faced regarding the impact of the Covid-19 pandemic and the implications of the UK leaving the EU on the maritime and trading activities. This strategy outlines four priorities for the area, namely:

- A productive and innovative economy;
- A Net Zero, clean growth economy;
- Skilled, healthy and inclusive economy; and
- Attractive, competitive and resilient locations.

29.4.20 Offshore wind is discussed as an important development sector throughout the strategy. This includes:

- The sector is discussed within the UK context, in particular the Sixth Carbon Budget, which highlights the connecting of economic and environmental policy;
- The reputation and skills that already exist in the area as a result of the development of offshore wind to date are considered a strength of the area, with opportunities to export both goods and services to a growing global market;
- Innovation in the offshore wind sector, particularly during the O&M phase, is being driven by developments in the area, including the Aura Innovation Centre and the wider conglomeration of offshore O&M facilities in the area; and
- The location of the Humber and its ports are a comparative advantage for the development of both manufacturing facilities and further installation activity as the whole southern North Sea is within easy reach.

29.4.21 The economic opportunities from the development of the offshore wind sector, and the wider Net Zero ambitions, are considered to be critical for the economic future of the area. To support this, the LEP will be progressing actions within the skills and employment strategies and the industrial cluster plan so that organisation and individuals are able to benefit from these opportunities.

UK Offshore Wind Sector Deal

29.4.22 The Offshore Wind Sector Deal (UK Government, 2020a), updated by the UK government in 2020, sets out the government's aim to support the development of offshore wind energy generation in the UK, making the sector a significant part of a low-cost, low-carbon flexible grid system. The deal also emphasises how UK companies can benefit from the opportunities presented by the expansion of the offshore wind sector, enhancing the competitiveness of UK firms internationally and sustaining the UK's role as a global leader in offshore wind generation.

29.4.23 The deal highlights that some estimates suggest that offshore wind installed capacity globally will grow by 17% annually from 22GW to 154GW in 2030, which could mean the UK contributing up to 30GW of generating capacity. This ambition has since been revised in the British Energy Security Strategy (UK Government, 2022), which outlined an ambition for achieving 50GW of offshore wind generating capacity by 2030. The government aims to reach this capacity in a sustainable, timely way, and commits to working with the offshore wind sector and wider stakeholders to deliver the expansion of the sector, addressing strategic deployment issues, transmission issues and environmental impacts. Reaching this level of capacity could support up to 27,000 jobs in the UK, while the sector will work with government, existing institutions, and universities to increase job mobility between energy sectors, increase apprenticeship opportunities and coordinate local efforts, further developing the benefits to the UK economy.

29.4.24 The deal emphasises the Humber as a majorly significant region to the development of the sector in the UK, as the region already supports a windfarm cluster with a pre-existing manufacturing base, enabling economies of scale and increased productivity which could drive innovation and improve competitiveness in the sector.

29.4.25 The Project would contribute to the expansion of the offshore wind sector in the UK, developing the goal of reaching 50GW of generating capacity by 2030. The Project has the potential to also contribute to the development of the offshore wind sector in the Humber, supporting the region's existing expertise and developing competitiveness in the sectors supported by offshore wind.

Socio-Economic Baseline

29.4.26 This section outlines the key properties of the socio-economic receptors that can be used to inform any assessment of their sensitivity, to put any impacts into context and to understand the magnitude of these impacts. In this way, the baseline supports the assessment of the significance of the potential socio-economic impacts that have been scoped into the assessment.

29.4.27 The analysis draws on the latest available data. The majority of these data sources are published annually and therefore this baseline, and subsequent assessments of significance, is relevant at the time of writing and will continue to be updated throughout the process of preparing the Environmental Statement to accompany the DCO application.

Population

29.4.28 In 2020, the LTRA had a total population of 0.3 million, accounting for 3.0% of the population of the regional area (Yorkshire, Humber and the East Midlands). Of the population of the LTRA, 56.8% were aged between 16 and 64. This proportion was below the share for the age group across both the regional area (62.0%) and the UK as a whole (62.4%).

29.4.29 People aged under 16 accounted for 16.9% of the population of the LTRA, lower than the regional area (18.8%) and the UK (19.0%).

29.4.30 The LEA, comprised of the Hull and East Yorkshire LEP area and the Greater Lincolnshire LEP area, had a total population of 1.7 million. Of the population of this area, 59.7% were aged between 16 and 64, lower than in both the regional area and the UK as a whole. People aged under 16 accounted for 17.8% of the population, while people aged 65 and over accounted for 22.5%. Similar to the LTRA, the lower than average share of the working age population suggests that the local areas may lack opportunities for workers.

Table 29.5 Population, 2020

	LTRA	LEA	Regional Area	UK
Total	308,700	1,700,700	10,392,000	67,081,200
0-15	16.9%	17.8%	18.8%	19.0%
16-64	56.8%	59.7%	62.0%	62.4%
65+	26.3%	22.5%	19.2%	18.6%

Source: ONS (2021a), Population Estimates 2020

Population Projections

29.4.31 The Office for National Statistics (ONS) also produces population projections based on recent trends in demographics, migration, fertility and mortality. In 2018, the population of the LTRA was 304,087. It is estimated that the total population of the area will increase by 16.6% to 354,605 in 2043. This projected increase is higher than that of the LEA, where it is expected that the population will increase by 7.2% by 2043, from 1,687,918 to 1,808,942. The projected increase in the population of the LTRA is also higher than that of the regional area (10.7%), as well as the UK as a whole (9.2%), while the projected rate of increase of the LEA is lower than both the regional area and the UK as a whole.

29.4.32 The proportion of residents in the LTRA aged 16-64 is projected to decrease over time, with the share of working age population falling from 57.2% in 2018 to 53.0% in 2043. The LEA is projected to experience a similar trend in the share of the working age population, falling from 60.2% to 55.4%. The fall in the share of working age population is also projected to occur in both the regional area (from 62.2% to 58.6%) and the UK as a whole (57.2% to 53.0%).

29.4.33 In addition to decreasing as a percentage, the number of working age people is expected to decrease in the LEA over this time period. In 2043, it is projected that the number of working age people will be 1,002,900. This represents a decrease of 12,700 people from 2018, equivalent to 500 people each year.

29.4.34 Over the same period, the share of the LTRA population accounted for by people aged 65+ is projected to increase, from 26.0% to 32.0%. Similarly, the share of this demographic in the LEA is projected to increase from 22.0% and 28.7%. The shares of the population accounted for by people aged over 64 in both local areas in 2043 are projected to be higher than that of the regional area (24.2%). By 2043, the share of people aged 65 and over in the UK (32.0%) is projected to be consistent with the LTRA, but higher than that of the LEA.

Table 29.6 Population Projections, 2018 - 2043

	LTRA		LEA		Regional Area		UK	
	2018	2043	2018	2043	2018	2043	2018	2043
Total (thousands)	304	355	1,688	1,809	10,284	11,381	66,436	72,563
0-15	16.8%	15.0%	17.8%	15.8%	18.9%	17.3%	16.8%	15.0%
16-64	57.2%	53.0%	60.2%	55.4%	62.2%	58.6%	57.2%	53.0%
65+	26.0%	32.0%	22.0%	28.7%	18.9%	24.2%	26.0%	32.0%

Source: ONS (2021b), Population Projections, 2019-2043

Economic Activity

29.4.35 The LTRA has a less active labour market than the UK as a whole. In particular, the economic activity rate (a measure of those who are either in work or looking for work) is 6% lower than the UK as a whole and the unemployment rate is 2% higher. The median level of pay is £4,000 less than the national average and the number of jobs in the area has not grown as fast as the UK average.

29.4.36 The LEA also has a lower rate of economic activity than the UK as a whole, however the difference is less than 2% and the unemployment rate is lower. The median level of pay is less than the national average but is similar to the wider region. The number of jobs in the area has grown at 60% of the rate of the wider UK since 2010.

Table 29.7 Economic Indicators, 2020

	LTRA	LEA	Regional Area	UK
Economically Active %	72.4%	76.5%	77.7%	78.3%
Unemployment Rate	6.8%	3.6%	5.1%	4.8%
Median Annual Gross Wage (resident)*	£27,184	£28,468	£29,111	£31,285
Jobs Growth (2010 – 2020)	8.7%	7.6%	9.8%	13.5%

*Source: Source: ONS (2021c), Annual Population Survey 2020. *ONS (2021d), Annual Survey of Hours and Earnings – resident analysis, data for 2021.*

Industrial Structure

29.4.37 The relative distribution of employment by sector in each of the study areas gives an indication of the strengths, weaknesses and any structural dependencies within these economies.

29.4.38 The focus of the assessment in the LTRA is on the tourism economy and any impacts on individual tourism and recreation assets. The sectors which are of particular relevance to this assessment are those linked to the tourism economy, including:

- Accommodation and food service activities;
- Arts, entertainment and recreation; and
- Wholesale and retail trade.

29.4.39 These sectors all employed a greater share of the workforce in the LTRA than the UK average. As with the wider UK economy, the wholesale and retail trade employed the largest number of people in the LTRA, accounting for 17.6% of employment. Accommodation and food service activities employed 8.6% of the workforce in the LTRA, which is 1.5% more than the UK average. The level of employment in the arts, entertainment and recreation was also higher but the difference was less than 1%.

29.4.40 In the LEA, the focus of the assessment is the ability of the area to benefit from supply chain opportunities that would be presented by the Project. The sectors which are of particular relevance to this assessment are those linked to the offshore wind sector, including:

- Construction;
- Manufacturing;
- Professional, scientific and technical services; and
- Transportation and Storage.

29.4.41 The LEA has particular strengths in the manufacturing sector, which employs twice as big a share of the workforce in this area than the UK average. The construction sector accounted for 5.5% of employment, which was similar to the UK average. The professional, scientific and technical activities sector is less represented within the LEA and accounts for 4.7% of the workforce compared to 8.8% across the UK as a whole.

Table 29.8 Industrial Structure, 2020

	LTRA	LEA	Regional Area	UK
Wholesale and retail trade; repair of motor vehicles and motorcycles	17.6%	15.9%	15.5%	14.7%
Manufacturing	13.7%	14.6%	11.4%	7.7%
Human health and social work activities	11.4%	13.7%	13.1%	13.2%
Education	6.4%	8.4%	9.0%	8.6%
Administrative and support service activities	10.1%	8.2%	8.2%	8.6%
Accommodation and food service activities	8.6%	6.5%	6.3%	7.1%
Construction	4.3%	5.5%	5.0%	4.9%
Transportation and storage	5.8%	5.0%	6.1%	5.0%
Professional, scientific and technical activities	2.8%	4.7%	6.9%	8.8%
Public administration and defence; compulsory social security	2.0%	4.0%	4.1%	4.4%
Agriculture, forestry and fishing	9.0%	3.8%	1.8%	1.6%
Arts, entertainment and recreation	2.9%	2.5%	2.5%	2.3%
Information and communication	0.8%	1.8%	2.8%	4.3%
Real estate activities	1.6%	1.7%	2.0%	1.9%
Other service activities	1.5%	1.6%	1.7%	2.0%
Water supply; sewerage, waste management and remediation activities	0.6%	1.0%	0.7%	0.7%
Financial and insurance activities	0.6%	0.8%	2.3%	3.4%
Electricity, gas, steam and air conditioning supply	0.1%	0.3%	0.5%	0.4%
Mining and quarrying	0.1%	0.1%	0.1%	0.2%
Total Jobs	122,000	702,000	4,575,000	30,546,000

Source: ONS (2021e), Business Register and Employment Survey 2020

GVA

29.4.42 The ONS produce estimates for the LEP areas, which make up the LEA. The latest publication estimated that in 2020, the LEA generated £15.8 billion GVA. This is 26% higher than in 2010 when the economy of the LEA generated £12.5 billion GVA. The economy of the LEA has grown slower than both the wider Regional Area, which grew by 31% in this decade and the wider UK which grew by 34%.

Table 29.9: GVA (Balanced) at current prices (£bn)

	LEA	Regional Area	UK
2010	12.5	182.7	1,452.6
2020	15.8	238.5	1,949.6
Change (2010 – 2020)	26%	31%	34%

Source: ONS (2022e), Regional gross domestic product (GPD) enterprise regions reference tables

Qualifications

29.4.43 The distribution of qualifications within an economy is an indicator of the overall human capital of the area. Individuals with higher levels of qualification are more likely to get paid more and find employment quicker if they become unemployed.

29.4.44 The level of qualifications in the LTRA was considerably lower than the UK average. Residents of the LTRA were almost twice as likely to have no formal qualifications (13.1%) than the UK average (6.8%). Similarly, the proportion of residents who had qualifications of NVQ4 or above, equivalent to a higher education qualification, was almost half in the LTRA (22.8%) compared to the UK as a whole.

29.4.45 The level of qualifications in the LEA was also lower than the UK average, but this difference is less stark. The proportion of residents with no qualifications was 9.1% and those with an NVQ4 or above equivalent qualification was 31.7%.

Table 29.10: Qualifications, 2021

	LTRA	LEA	Regional Area	UK
None	13.1%	9.1%	7.7%	6.8%
NVQ1+	77.9%	84.9%	86.5%	87.4%
NVQ2+	66.5%	72.4%	75.6%	78.1%
NVQ3+	42.1%	52.0%	57.1%	61.4%
NVQ4+	22.8%	31.7%	37.0%	43.5%

Source: ONS (2022f), Annual Population Survey 2021

Housing

29.4.46 The affordability and availability of housing in an economy contribute to its sensitivity to change and ability to accommodate new people.

29.4.47 Housing in the LEA is more affordable in both absolute and relative terms compared the UK average. The average house price in the LEA in March 2021 was £191,300, which is 28% lower than the average across the UK. The average house price was 5.9 times the average annual gross income in the LEA compared to 7.0 times greater across the UK.

29.4.48 House prices have increased across all study areas between 2016 and 2021. The rate of change in the LEA is slightly greater than the UK as a whole and in line with the wider region, which also experienced a 29% increase in house prices in that time.

29.4.49 There were over three quarters of a million homes within the LEA and 4.5 million across the Regional Area.

Table 29.11 House Price Values and Changes, March 2016 - March 2021

	March 2016	March 2021	Change	Number of Units*
LTRA	£147,200	£189,700	29%	139,000
LEA	£148,700	£191,300	29%	775,000
Regional Area	£152,500	£196,750	29%	4,544,000
UK	£210,000	£267,500	27%	28,203,000

*Source: ONS (2022g), House Price Statistics for Small Areas in England and Wales, *ONS (2021h) Subnational estimates of dwellings by Tenure*

Table 29.12: Housing affordability, 2021

	LTRA	LEA	Regional Area	UK
Average House Price/Average Annual Gross Income	6.2	5.9	5.8	7.0

*Source: ONS (2022g), House Price Statistics for Small Areas. *ONS (2021d), Annual Survey of Hours and Earnings – resident analysis 2021.*

Pupil Teacher Ratios

29.4.50 As a measure of class size and existing provision, the analysis considers the pupil per teacher ratio. In the Regional Area, there were 19 pupils for every teacher, slightly more than across the UK where there were approximately 17 pupils per teacher.

29.4.51 There were 22 pupils per teacher in primary education in the Regional Area, similar to the UK (21 pupils per teacher). There were 17 pupils per teacher in secondary education in the Regional Area, compared to 16 pupils per teacher across the UK.

29.4.52 Within nursery education, the pupil per teacher ratio was 33, considerably lower than the average across the UK of 64 pupils per nursery teacher.

29.4.53 Alternative educational institutions, such as pupil referral united, had a ratio of 21 pupils per teacher in the Regional Area, significantly more than across the UK where similar institutions had a ratio of seven pupils per teacher.

Table 29.13: Pupil Teacher Ratios, 2021

	Regional Area	UK
Nursery	33	64
Primary	22	21
Secondary	17	16
Other	21	7
Total	**19**	**17**

Source: UK Government (2021), Education and Training Statistics for the UK.

Healthcare Provision

29.4.54 The LEA forms part of the area that is covered by the National Health Service (NHS) Lincolnshire Integrated Care Board (ICB)[1] and the NHS Humber and North Yorkshire ICB[2], which was formed in July 2022. These ICBs are responsible for the provision of health and social care services across these regions.

29.4.55 As of September 2022, there were 456 Full Time Employment (FTE) General Practitioners (GP) across the NHS Lincolnshire ICB, with 810,000 patients registered at these GP practices. The number of patients per GP was 1,774. In the same time period there were 1,047 FTE GPs within the NHS Humber and 1.8 million patients registered with these GP practices. The number of patients per GP was 1,699. Across both ICBs the average number of patients per GP was 1,722.

29.4.56 Across the NHS boards of England, the average number of patients per GP was 1,724 for the same time period.

Table 29.14: Patients per GP, September 2022

	LEA (Combined ICBs)	Regional Area	England
Patients per GP	1,722	1,631	1,724

Source: NHS Digital (2022), General Practice Workforce, 30 September 2022

Summary of Socio-economic Baseline

29.4.57 The economy of the LEA is well balanced but has not performed as well as the wider UK economy recently. The level of employment growth has been lower in the LEA and it is projected that the number of working age people in the area will decrease in coming decades. The levels of qualification and pay are both lower in the LEA, however it does have economic assets which are relevant to the development of the Project. The manufacturing sector is particularly strong in the LEA and there is a concerted effort to ensure that the benefits of the offshore wind sector are realised in the area.

29.4.58 The social and community assets within the LEA, specifically housing, education and healthcare facilities, experience similar demands to those across the wider UK. Housing is more affordable and prices have broadly moved in line with recent trends in the UK market. The number of patients per GP and pupils per teacher in the LEA is also in line with the UK average.

Onshore Tourism and Recreation Baseline

29.4.59 The Onshore Tourism and Recreation baseline section identifies the scale and key attractions of the tourism economy within the LTRA defined above. In total, there were approximately 16 million tourism trips within the LTRA, with a total associated spend of £706 million.

[1] The NHS Lincolnshire ICB covers the Borough of Boston, District of East Lindsey, City of Lincoln, District of North Kesteven, District of South Holland, District of South Kesteven, District of West Lindsey

[2] The NHS Humber and North Yorkshire ICB covers the District of East Riding of Yorkshire, District of Hambleton, Borough of Harrogate, City of Kingston-upon-Hull, Borough of North East Lincolnshire, Borough of North Lincolnshire, District of Richmondshire, District of Ryedale, Borough of Scarborough, District of Selby, City of York

Visits and Spend of Tourists

29.4.60 A range of statistics are available on visitor numbers and visitor spend for the study areas, including from the Great Britain Day Visitor Survey, the Great Britain Tourism Survey and the international passenger survey, which produce tourist visit and spending numbers averaged over a 3-year period (2017 – 2019).

29.4.61 Figure estimates show that in 2019 there were a total of 16 million visits to the LTRA, with visitors spending a total of £674 million in the local economy. This represented approximately 6% of all visitors and 5% of total tourist spending in the Regional Area that year. The LTRA accounts for 3% of the population of the Regional Area and therefore this would suggest that there were twice as many visits per person in the LTRA than in the wider regional area.

29.4.62 Day visitors accounted for 90% of all visitors to the LTRA, followed by domestic overnight visitors (9%), with international overnight visitors accounting for less than 1% of all visits to the area. While day visitors spend the most in the LTRA (£416 million), the largest spend per trip came from international overnight visitors (£379 per trip), followed by domestic overnight visitors (£160 per trip) and domestic day visitors (£29 per trip).

29.4.63 In 2019, there were 269 million visitors to the Regional Area, accounting for approximately 14% of the total two billion visits to the UK. The total tourist spending in the Regional Area was £14 billion, equivalent to 13% of the £111 billion spent by tourists across the UK in 2019. As with the local areas, domestic visitors accounted for the highest shares of both visits (93%) and spending (72%) in the Regional Area. Similarly, the spend per trip of tourists to the Regional Area was highest amongst international visitors (£367 per trip), compared to day visitors (£40 per trip) and domestic overnight visitors (£167 per trip).

29.4.64 Trends across the UK were similar, with domestic day visitors accounting for 91% of visits and 53% of spending. Spend per trip was also highest amongst international overnight visitors (£644 per trip), followed by domestic overnight visitors (£197 per trip) and domestic day visitors (£33 per trip).

Table 29.15 Visits and Spending, 2019

	LTRA	Regional Area	UK
Visits (million)			
Day Visitors	14	249	1,795
Domestic Overnight	1	17	124
International Overnight	0	3	43
Total Visits	16	269	1,962
Spend (£ million)			
Day Visitors	416	9,988	58,623
Domestic Overnight	237	2,843	24,368
International Overnight	22	1,101	27,920
Total Spend	674	13,932	110,911

Source: Kantar TNS (2021) Great British Day Visitor Survey; Kantar TNS (2021) Great British Tourism Survey; NISRA (2020), Northern Ireland Annual Tourism Statistics 2019. Note: Totals may not sum due to rounding.

Geographic Distribution of Tourism Activity within the LTRA

29.4.65 The tourism economy within the LTRA was more highly concentrated in some areas, in particular around Skegness. The cluster of tourism assets to the north of Skegness, such as Butlins and Fantasy Island Theme Park, drove significant tourism activity in the area. In particular, this supported 2,500 jobs in bars, restaurants, hotels and other accommodation providers. This was equivalent to 25% of all of the employment in these sectors across the LTRA.

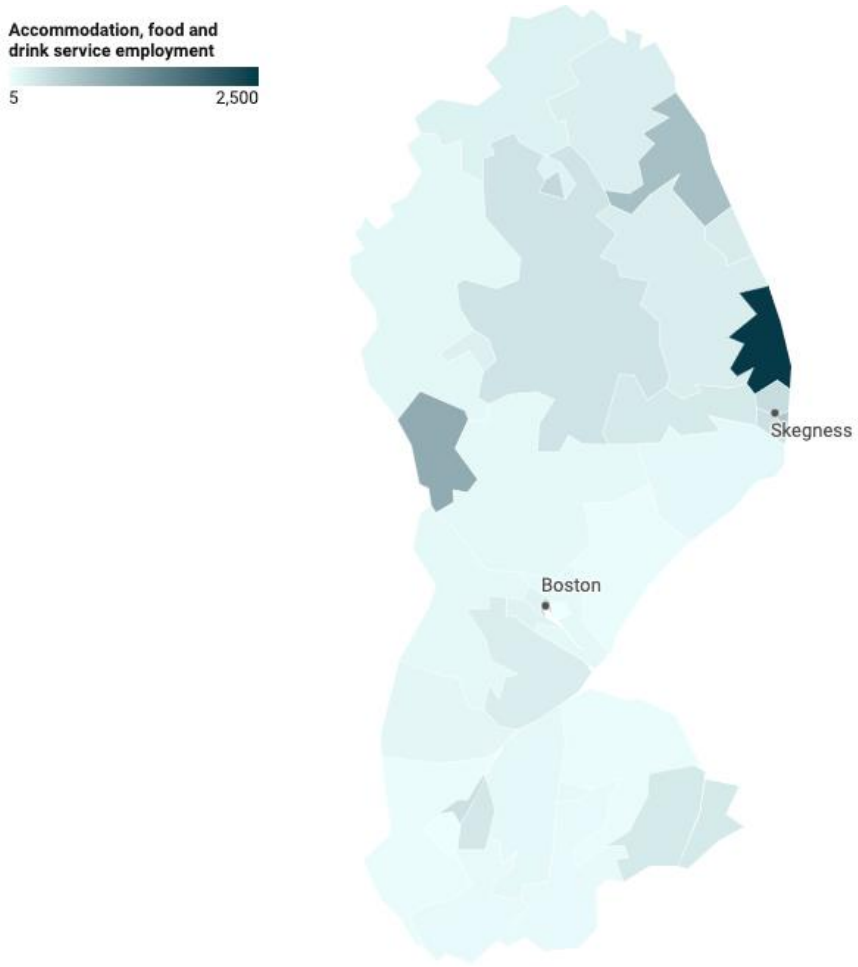


Figure 29.1: Distribution of accommodation, food and drink service employment within the LTRA

Source: ONS (2021e), Business Register and Employment Survey 2020

29.4.66 The sector has grown faster within the LTRA than across the wider UK economy. Between 2015 and 2021, the level of employment in the accommodation, food and drink service employment sector in the LTRA grew by 21%. Across the UK during the same time period, employment grew by 9%.

Regional Attractions

29.4.67 Data on visits to regional attractions, both paid and free, are published each year by Visit England through the Annual Survey of Visits to Visitor Attractions. This identified the top 20 paid and free attractions in both Yorkshire and the Humber and the East Midlands. In addition, using a web search, additional attractions in the LTRA were identified.

29.4.68 The top paid and free attractions in both the three local authorities of South Holland, East Lindsey and Boston are provided in Table 29.16 below.

Table 29.16: Greater Lincolnshire and the Humber Tourist Attractions Key Attractions in Tourism Study Area

Attraction	Description
Gunby Hall	Listed historical house and clocktower
Skegness	Seaside town in the East Lindsey District of Lincolnshire which includes a wider variety of tourism attractions and assets, including the Fantasy Island Theme Park and Butlins
Skegness Natureland Seal Sanctuary	Centre which rescues and rehabilitates orphaned and injured seal pups
The Lincolnshire Wolds	Area of countryside designated as an Area of Outstanding Natural Beauty in 1973, with woodland, grassland and abandoned chalk pit
The Parrot Zoo	Animal park that displays parrots across 15 acres of gardens
Lincolnshire Wolds Railway	A railway attraction, which received an average of 14,000 visitors annual between 2017 and 2019.
Louth Museum	A local museum in the town of Louth, which received an average of 2,000 visitors annual between 2017 and 2019.
Tattershall Castle	A moated 15th Century castle run by the National Trust, which received an average of 39,000 visitors annual between 2017 and 2019.
Macmillan Way	The Macmillan Way is a long-distance walking route that overs 290 miles and uses existing footpaths bridleways and byways. It is used for sponsored walks, with funds raised donated to Macmillan Cancer Support

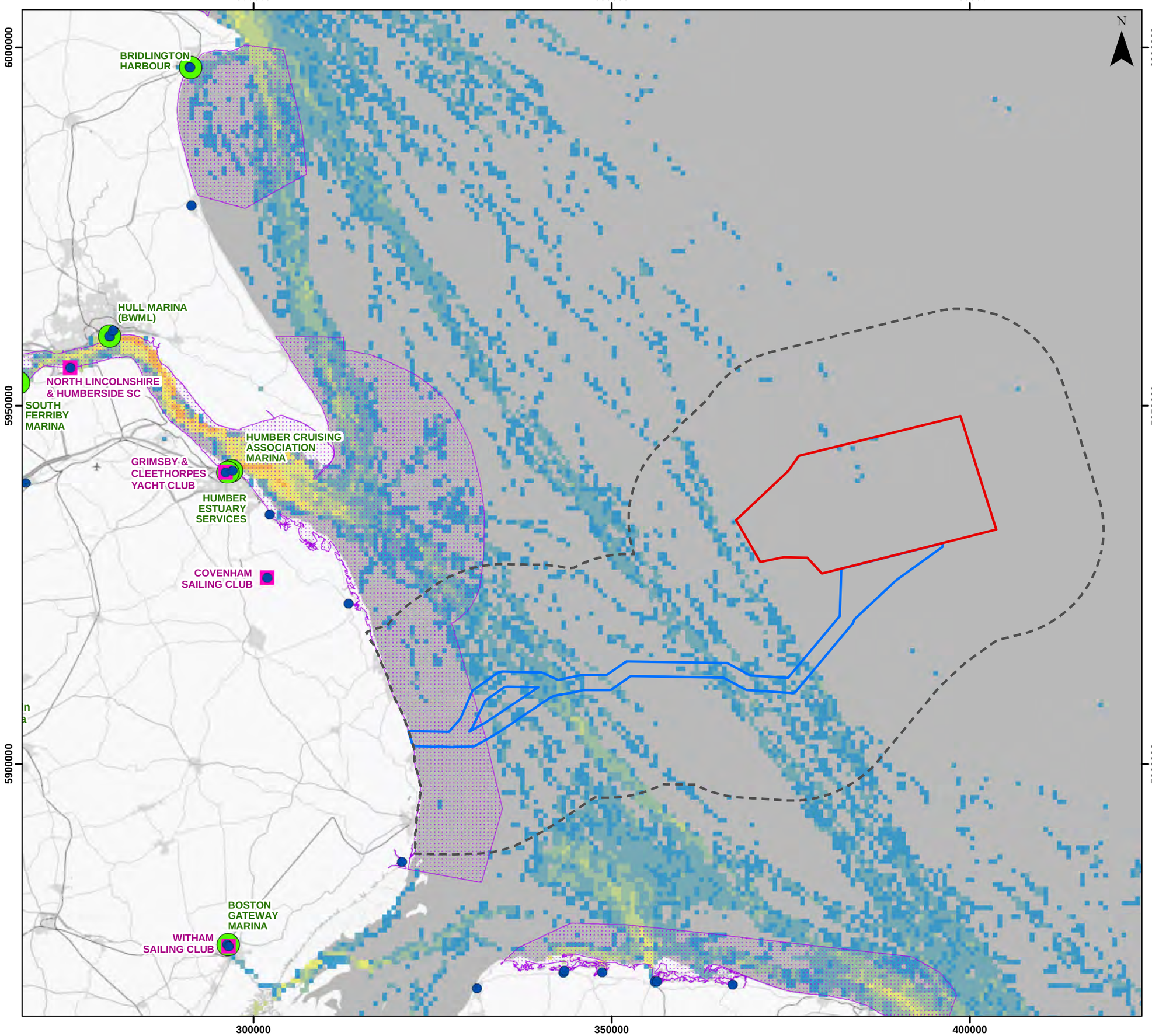
Source: Visit Lincoln (2021), Visit Lincoln Expands into Greater Lincolnshire, Planetware (2021), 12 Top-Rate Tourist Attractions in Hull, TripAdvisor (2021), Things to Do in East Riding of Yorkshire. Visit England (2021) Annual Survey of Visits to Visitor Attractions Full Listing

Marine Recreational Baseline

Marine Recreational Activities: Boating

29.4.69 The marine recreational baseline is outlined for the Marine Recreation Study Area, which is shown in Figure 29.2. As for most of the northeast coast, there is very little recreational boating within the Marine Recreation Study Area.

29.4.70 The main marinas were in the Humber estuary, at Grimsby and Hull. In addition, there are Royal Yachting Association (RYA) training centres and clubs also around the Humber and along the North Norfolk coast. These locations also related broadly to the vessel usage heatmap, which represents Automatic Identifier System (AIS) recreational vessel data and is provided by the RYA Coastal Atlas (2021). The highest usage in the Humber estuary with activity extending south to the mouth of the Wash and the North Norfolk coast. These focus points lead to bands of routes concentrated on Scarborough to the Humber and the Humber to north Norfolk. There was also a light usage route Scarborough to Northeast Norfolk. Vessel usage was reported to be generally low in this region due to the lack of suitable weather and therefore vessel safety (Sea Search Northeast Coast Coordinator, pers. comms).



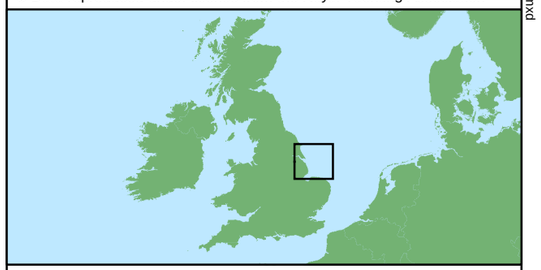
Legend

- Array Area
- Offshore Export Cable Corridor
- Study Area (15km)
- RYA Club
- RYA Training Centre
- Marina
- General Boating Area

Vessel usage (summer 2014 and 2017) implied by Automatic Identification System intensity

- Low
- High

RYA, Marinas, Offshore Routes, Boating Areas and AIS Intensity



Coordinate System: WGS 1984 UTM Zone 31N

0 10 20 km

Scale: 1:500,000

Preliminary Environmental Information Report

Marine Sailing and Boating

Figure 29.2

OUTER DOWSING OFFSHORE WIND

Date: 01/06/2023
Produced By: BPHB
Revision: 0.1

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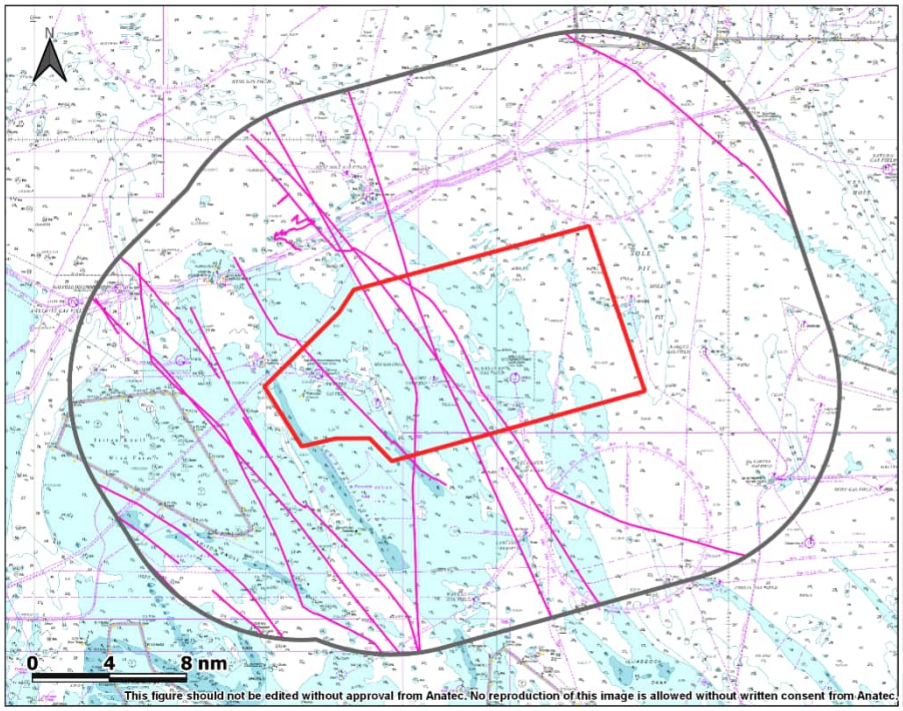
29.4.71 The long-term analysis of vessel movements within the array area, presented in Volume 5, Appendix 9.1: Navigational Risk Assessment, identified that there was an average of one unique recreational vessel movement per day. This is the busiest time in the year for recreational sailing and accounted for 79% of all recreational across the year. The majority of the recreational vessels were on transit through the study area to the west and these routes are shown in Figure 29.3.



Legend

Array Area

Shipping and Navigation Study Area

Vessel Type

Recreational

anatec

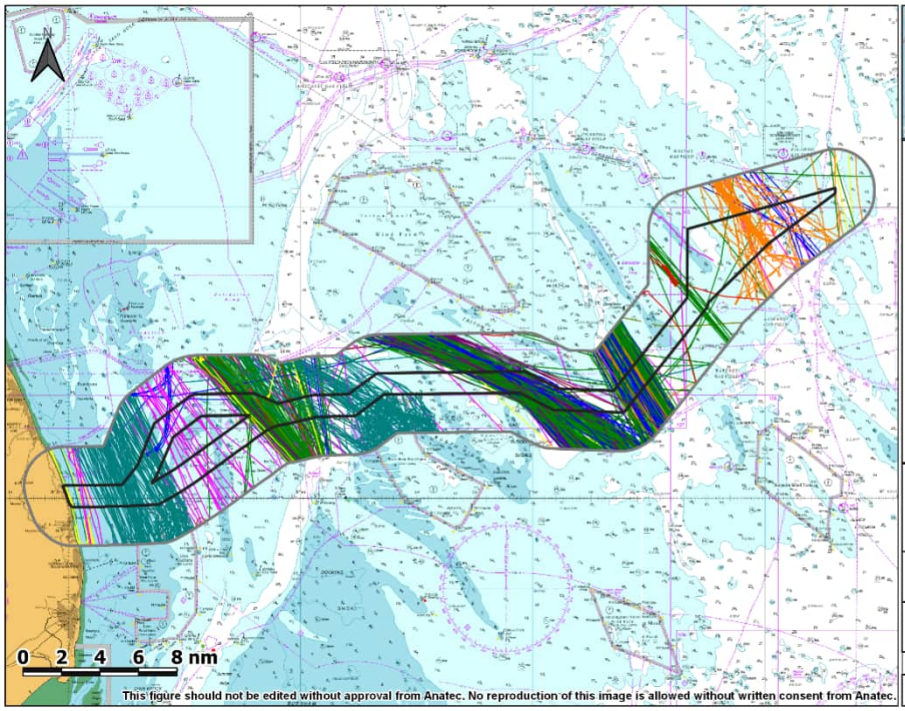
Project:
Outer Dowsing Offshore Wind Navigational Risk Assessment

Figure Title:
14 Day AIS and Radar Recreational Vessel Data(Summer 2022)

Date: 16/12/2022	Drawn: RR	Checked: AF

Coordinate System: WGS 84 / World Mercator

29.4.72 Similarly, recreational vessels also transit across the offshore export cable corridor. Analysis of AIS found that in a 14-day period in August 2022 there was an average of 55 vessels per day which cross the offshore export cable corridor. Less than 10% of these vessels were recreational. The majority of the recreational vessel movements were in the west of the offshore export cable corridor, closer to shore. The routes of the recreational vehicles are shown in pink in Figure 29.4.



Legend

ECC

ECC Study Area

Vessel Type

- Fishing
- Military
- Dredging/Underwater Ops
- Tug
- Passenger
- Cargo
- Tanker
- Other
- Recreational
- Oil and Gas
- Wind Farm

anatec

Project:
Outer Dowsing Offshore Wind Navigational Risk Assessment

Figure Title:
Vessel Traffic Data by Vessel Type (Summer 2022)

Date: 16/12/2022	Drawn: HT	Checked: AF

Coordinate System: WGS 84 / World Mercator

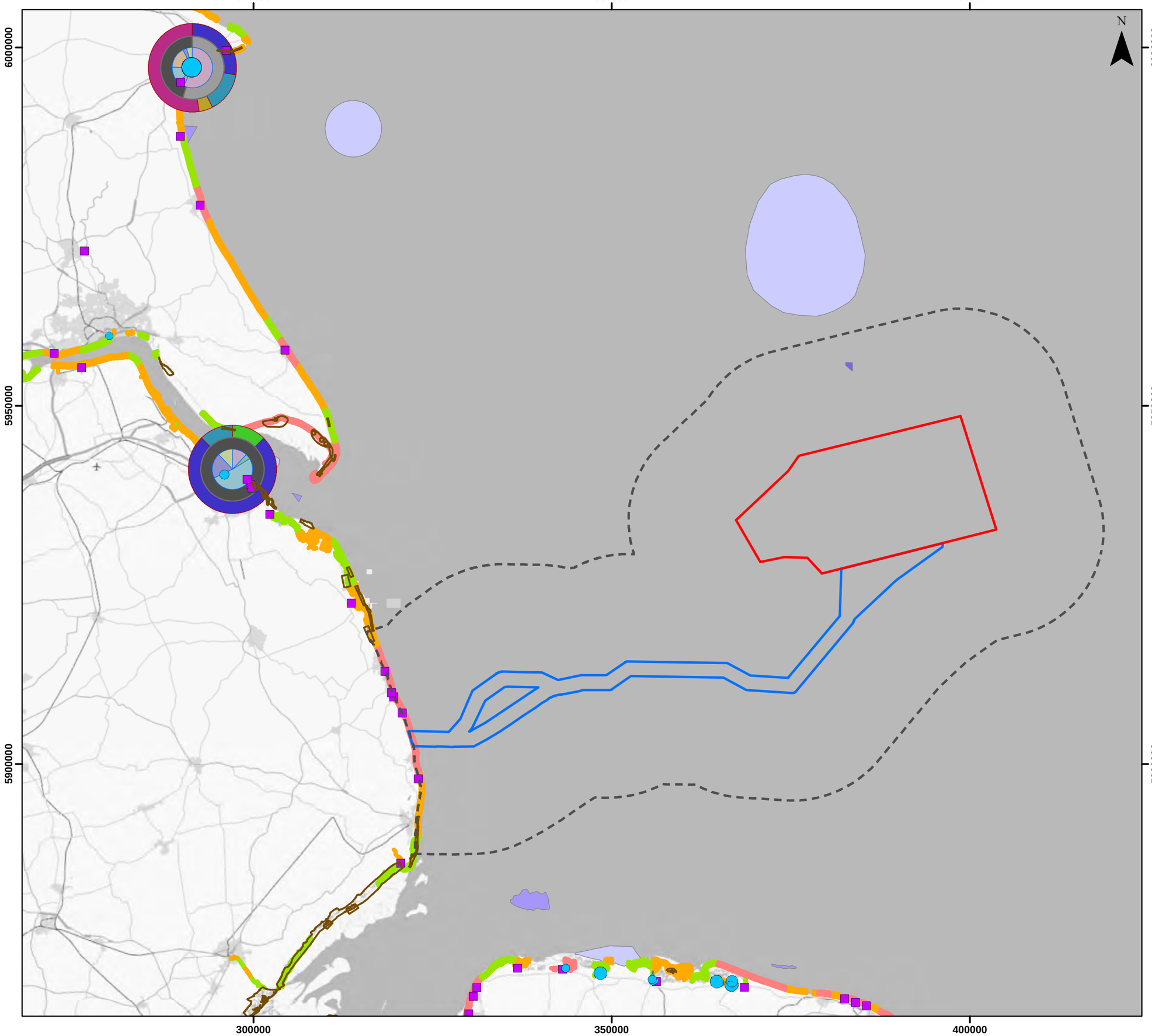
Marine Recreational Activities: Angling

29.4.73 Across England, the Centre for Environment, Fisheries & Aquaculture Science (Cefas) estimated that there were 375,000 sea anglers in 2019 and in 2017 this activity supported 16,300 jobs across the UK (Cefas, 2021). Recreational fishing, in terms of both shore and sea angling, has recently been characterised throughout English waters (MMO, 2020), as shown in Figure 29.5. Whilst this data was proxy and indicative, informed by selective surveys, data collection, online searches and other sources, it provides the first complete coverage to date and is the best source to inform the baseline of angling activities. The majority of UK recreational fishing was angling and so was the predominant data source for this section.

29.4.74 Sea angling operated out of Bridlington (north), Grimsby (Humber Estuary) and the North Norfolk Coast, where boats are moored, as well as a number of slipways throughout the area (mostly south of the Humber). Whilst there were few fishing grounds delineated in the study area, these were of low to medium intensity of use, to the north and south, but were not directly within the offshore ECC or array area. The chartered fishing boat data aggregated for Bridlington shows that trips were mainly targeting wrecks, ground and rough areas, with species caught mainly cod, bass and flatfish. Similarly for Grimsby, chartered fishing boat data aggregated were mainly targeting ground, rough and estuary areas, with species caught mainly skate / ray and bream. Most of the chartered boats out of Grimsby carried out trips up to 60-days a year. In Bridlington chartered boats carried out trips less frequently, between 20 to 60-days.

29.4.75 Shore based angling was also shown to take place along much of the study area's shoreline, only excepting parts of the Humber. Activity was mostly of medium intensity to the north of the Humber, with more stretches of high intensity to the south.

29.4.76 Lastly, there were pockets of shoreline where bait collection takes place, though information was only available within Marine Protected Areas (MPAs) as produced separately in a survey and data collection-based project on non-licensable activities (MMO, 2021). Bait collections took place predominantly along the Humber estuary shoreline and a short distance to the south, as well as the western shoreline of the Wash.



Legend

- Array Area
- Offshore Export Cable Corridor
- Study Area (15km)
- Bait collection
- Slipways

Angling boats on moorings, harbours & marinas

- 1
- 5
- 10

Angling trips per km2

- < 20%
- 20% - 40%
- 40% - 60%
- 60% - 80%
- > 80%

Shore angling activity

- Low
- Medium
- High

Charter boat species captured

- cod
- bass
- skate ray
- flatfish
- bream
- sport shark

Charter boat angler trips per year

- three
- twenty
- sixty

Grounds favoured by charter boats

- banks
- estuary
- ground
- rough
- shark
- wreck

Datasets obtained from Marine Management Organisation, MMO1163, Year 2020

Coordinate System: WGS 1984 UTM Zone 31N

0 10 20 km

Scale: 1:500,000

Preliminary Environmental Information Report

Marine Recreational Angling

Figure 29.5

OUTER DOWSING OFFSHORE WIND

Date: 01/06/2023
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Revision: 0.1

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Document Path: G:\GIS\GIS_Projects\0152 Outer Dowsing EIA\GIS\Figures\PEIR\Socio Economic\ODOW_0152_SE_Fig29.5_Recreational_Angling_v1.mxd

Marine Recreational Activities: Scuba Diving

29.4.77 Unlike many parts of England's coast, little scuba diving takes place in the study area (Sea Search Northeast Coast Coordinator, pers. comms). This is reflected by nature conservation diving reports at specific locations over multiple years (Seasearch, 2021: full coverage data), though these are carried out by volunteers in their personal leisure time and may provide an initial proxy for general diving areas. There are only 11 areas where Seasearch diving is shown to take place in the Marine Recreation Study Area, all within the last year.

29.4.78 Additional data on scuba diving, recently mapped in MPAs only, informed by stakeholder engagement (MMO 2021), do show some additional diving locations in the southern part of the marine recreation study area. These are located within the Inner Dowsing, Race Bank and North Ridge Special Area of Conservation (SAC), which includes approximately 20 dive sites, and Wash and North Norfolk Coast SAC, which includes three dive sites.

29.4.79 Diving from vessels is reported to be low in this region due to the lack of suitable weather and therefore vessel safety (Seasearch Northeast Coast Coordinator, pers. comms).

275000 300000 325000 350000 375000 400000

5975000 5950000 5925000 5900000 5875000 5850000

N

Hornsea
Beverley
Cottingham
Kingston upon Hull
Hedon
Withernsea
Immingham
M180
Cleethorpes
Market Rasen
Louth
Mablethorpe
Wragby
Horncastle
Woodhall Spa
Spilsby
Skegness
Sleaford
Heckington
Boston
Holbeach
Spalding
Long Sutton
Bourne
King's Lynn
Fakenham
Holt
Sheringham
North Walsham
Aylsham
Reepham
Stalham

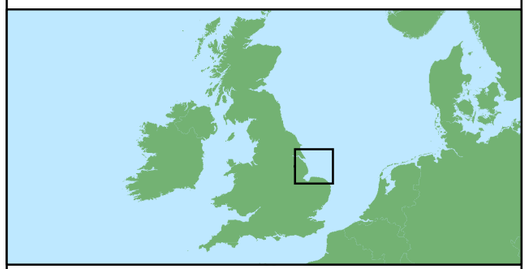
Humber Estuary EMS
Gibraltar Point SPA
The Wash SAC
North Norfolk Coast SAC

Legend

- Array Area
- Offshore Export Cable Corridor
- Study Area (15km)
- Designations
- General Recreation (MMO 2019; 2021)
- Estimated scuba diving areas (MMO 2021)

Recorded Dives by Year (Seasearch)

- 2014
- 2015
- 2016
- 2017
- 2018
- 2019
- 2020



Coordinate System: WGS 1984 UTM Zone 31N

0 10 20 km

Scale: 1:500,000

Preliminary Environmental Information Report

Scuba Diving and General Marine Recreation Activities

Figure 29.7

OUTER DOWSING OFFSHORE WIND

Date: 26/05/2023
Produced By: BPHB
Revision: 0.1

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Marine Recreational Activities: Other General Activities

29.4.80 Other marine recreation activities that take place across the study area, but with data restricted to within MPAs, is shown in Table 29.17 (MMO 2021; MMO 2019), informed primarily by stakeholder consultation.

Tourism and Recreation Summary

29.4.81 The tourism economy is important to the LTRA. It attracts twice as many visitors per person than the UK average and the tourism sector employs a greater share of the workforce. The Butlins and Fantasy Island Theme Park at Skegness are the primary attractions that bring people to the area and account for the largest concentrations of tourism employment in the area. Marine recreation is not one of the key drivers of the tourism economy in the LTRA.

29.4.82 The marine recreation in the area is less developed and concentrated than other parts of the UK, primarily as a result of the sea conditions.

Table 29.17 Summary of general marine recreation activities within MPAs

MPA	General Recreational Activity*
Humber Estuary EMS coastline (north and south nearshore coastline)	Swimming / snorkelling
Humber Estuary EMS coastline (south nearshore coastline out to <1.5km offshore)	Gliding (unpowered)
Humber Estuary EMS coastline (south coastline)	Motorsports
Humber Estuary European Marine Site (EMS), Gibraltar Point SPA, North Norfolk Coast SAC, Wash SAC (nearshore coastal)	Access, bait collection, beach recreation, board sports, drone use, land boarding, paddle sports, watersports (towed and untowed), wildlife watching from land.
Humber Estuary European Marine Site (EMS), Gibraltar Point SPA, North Norfolk Coast SAC, Wash SAC (coastline out to <5km offshore)	Aircraft (powered), jet skis

29.5 Basis of Assessment

Realistic Worst-Case Scenario

29.5.1 At this stage the of Project the parameters for the design and approach have not been concluded. In line with the Rochdale Envelope approach, it is therefore necessary to consider a Maximum Design Scenario (MDS) that presents the maximum design parameters of the combined project assets that result in the greatest potential for change in relation to each impact assessed.

29.5.2 The MDS for the socio-economics, tourism and recreation assessment are summarised in Table 29.18 and is based on information and the parameters outlined in Volume 1, Chapter 3: Project Description. This MDS is used as a basis for the 'realistic worst-case' assessment.

Table 29.18: Parameters of Maximum Design Scenario for Socio-economics, tourism and recreation

Potential Effect	Maximum adverse scenario assessed	Justification
Construction		
Economic impacts	Conservative assumptions are made with regards to the ability of businesses in each study area to deliver the contracts for the Project across all contract tiers. Specifically, it is assumed that there will not be a growth in overall UK content to meet the 60% target for UK content. The Project will include up to 93 WTGs, each with a capacity of 16 MW.	An economic impact model is used to estimate the GVA generated during the development and construction phase. The extent of benefits secured in each study area will depend on port choice and on the ability of local businesses to secure contracts.
Tourism sector impacts	Tourism sector impacts are determined by potentially significant effects on the key drivers of the tourism economy in the LTRA. These drivers will be either tourism or recreation assets. Tourism and recreation Impacts are determined by significant environmental effects identified in other chapters, therefore the design parameters that deter-mine these impacts will vary de-pending on which environmental effect, such as visual impact, is driving the impacts on tourism and recreation assets.	Impacts are dependent on significant impacts identified in these chapters.
Tourism and recreational assets impacts	Tourism and recreation Impacts are determined by significant environmental effects identified in other chapters, therefore the design parameters that deter-mine these impacts will vary de-pending on which environmental effect, such as	Impacts are dependent on significant impacts identified in these chapters.

Potential Effect	Maximum adverse scenario assessed	Justification
	visual impact, is driving the impacts on tourism and recreation assets.	
Social and community asset impacts	Conservative assumptions are made with regards to the ability of businesses in each study area to deliver the contracts for the Project. The construction period is assumed to be between 2027 and 2029.	An economic impact model is used to estimate the GVA generated during the development and construction phase. The extent of benefits secured in each study area will depend on port choice and on the ability of local businesses to secure contracts. A shortened construction timetable will increase the peak workforce required. This will increase the magnitude of any short term requirements on social and community assets.
Operation and Maintenance		
Economic impacts	Conservative assumptions are made with regards to the ability of businesses in each study area to deliver the contracts for the Project across all contract tiers. Specifically, it is assumed that there will not be a growth in overall UK content to meet the 60% target for UK content. The Project will include 93 WTGs, each with a capacity of 16 MW.	An economic impact model is used to estimate the GVA generated during the development and construction phase. The extent of benefits secured in each study area will depend on port choice and on the ability of local businesses to secure contracts.
Tourism sector impacts	Tourism sector impacts are determined by potentially significant effects on the key drivers of the tourism economy in the LTRA. These drivers will	Impacts are dependent on significant impacts identified in these chapters.

Potential Effect	Maximum adverse scenario assessed	Justification
	be either tourism or recreation assets. Tourism and recreation Impacts are determined by significant environmental effects identified in other chapters, therefore the design parameters that deter-mine these impacts will vary de-pending on which environmental effect, such as visual impact, is driving the impacts on tourism and recreation assets.	
Tourism and recreational assets impacts	Tourism and recreation Impacts are determined by significant environmental effects identified in other chapters, therefore the design parameters that deter-mine these impacts will vary de-pending on which environmental effect, such as visual impact, is driving the impacts on tourism and recreation assets.	Impacts are dependent on significant impacts identified in these chapters.
Social and community asset impacts	Conservative assumptions are made with regards to the ability of businesses in each study area to deliver the contracts for the Project.	An economic impact model is used to estimate the GVA generated during the operation and maintenance phase. The extent of benefits secured in each study area will depend on port choice and on the ability of local businesses to secure contracts.
Decommissioning		
Economic impacts	Conservative assumptions are made with regards to the ability of businesses in each study area to deliver the contracts for the Project across all contract tiers. Specifically, it is assumed that there will not	An economic impact model is used to estimate the GVA generated during the

Potential Effect	Maximum adverse scenario assessed	Justification
	be a growth in overall UK content to meet the 60% target for UK content. The Project will include 93 WTGs, each with a capacity of 16 MW.	development and construction phase. The extent of benefits secured in each study area will depend on port choice and on the ability of local businesses to secure contracts.
Tourism sector impacts	Tourism sector impacts are determined by potentially significant effects on the key drivers of the tourism economy in the LTRA. These drivers will be either tourism or recreation assets. Tourism and recreation Impacts are determined by significant environmental effects identified in other chapters, therefore the design parameters that deter-mine these impacts will vary de-pending on which environmental effect, such as visual impact, is driving the impacts on tourism and recreation assets.	Impacts are dependent on significant impacts identified in these chapters.
Tourism and recreational assets impacts	Tourism and recreation Impacts are determined by significant environmental effects identified in other chapters, therefore the design parameters that deter-mine these impacts will vary de-pending on which environmental effect, such as visual impact, is driving the impacts on tourism and recreation assets.	Impacts are dependent on significant impacts identified in these chapters.
Social and community asset impacts	Conservative assumptions are made with regards to the ability of businesses in each	An economic impact model is used to estimate the GVA

Potential Effect	Maximum adverse scenario assessed	Justification
	study area to deliver the contracts for the Project.	generated during the decommissioning phase. The extent of benefits secured in each study area will depend on port choice and on the ability of local businesses to secure contracts.

Embedded Mitigation

29.5.3 The Project will take a proactive approach to mitigation and enhancement measures to maximise the positive effects of the Project and minimise any negative effects that are identified. It is expected that the following mitigation and enhancement measures will be embedded by the Project.

Measures to Maximise Local Economic Benefit

29.5.4 The Project will consider:

- Proactively engaging with local economic development stakeholders and industry groups, including Grimsby Renewables Partnership and Team Humber Marine Alliance, to understand the capacity for local companies to be involved in the supply chain for the Project;
- Working with local economic development stakeholders to identify potential barriers to entry for this market and actively work towards removing these barriers, for example this could involve managing all contract opportunities generated by the Project in a manner that reduces the administrative burden on Small and Medium Enterprises (SMEs);
- Engaging at an early stage with education and training providers to identify potential skills gaps and opportunities for collaboration;
- Engaging with other developers in the area to improve opportunities for the local supply chain; and
- Including reporting requirements on the level of UK content as part of the tendering process for contracts.

Measures to Minimise Negative Impacts During Construction

29.5.5 Any negative socio-economic, tourism and recreational impacts associated with the construction of the Project will be a secondary effect of other identified environmental impacts, such as those identified in

- Traffic and Transport (Volume 3, Chapter 8);
- Landscape and Visual Assessment (Volume 3, Chapter 9); and

- Noise and Vibration (Volume 3, Chapter 7); and
- Shipping and Navigation (Volume 2, Chapter 9).

29.5.6 The Project shall develop and adhere to a Code of Construction Practice (CoCP) which shall identify potential negative environmental effects and identify specific measure to mitigate against these. An outline CoCP has been provided alongside this PEIR (document reference 8.1).

29.6 Assessment Methodology

Magnitude of Impacts

29.6.1 The overall approach to determining the magnitude of an impact is outlined in Volume 1, Chapter 5: EIA Methodology. This states that the magnitude of an effect is determined by assessing the following sorts of considerations:

- Spatial extent - the geographical area over which an impact occurs;
- Temporal extent - the duration over which the impact occurs;
- Frequency of occurrence - how often the impact occurs; and
- Severity - the degree of change relative to the baseline level.

29.6.2 The socio-economic, tourism and recreation impacts are considered over distinct study areas to capture the spatial extent of any impact. The magnitude and significance of any impact are then considered in relation to the baseline conditions within those study areas.

29.6.3 The frequency and temporal extent of any impact will be considered and those which occur over a short period of time will be described as temporary and those which occur over a longer period of time will be described as permanent.

29.6.4 The approach to determining the severity, and therefore magnitude, of any socio-economic impacts is outlined in this section for socio-economic and tourism impacts, including:

- Changes in economic activity;
- Tourism and recreation assets; and
- Demographic and service demand impacts.

29.6.5 Between 2000 and 2019, the average level of Gross Domestic Product (GDP) per capita growth in the UK was 1% per annum (IMF, 2022). Similarly, between 2000 and 2019 the number of jobs has grown by 1% per annum (ONS, 2022). The magnitude of any change in an economy should be considered within this context.

29.6.6 The magnitude of employment impacts should be considered in relation to the levels of economic activity within a study area. The magnitude should be relative to the number of people in employment, rather than the unemployed.

Table 29.19: Definitions of magnitude for economic impacts

Magnitude	General Economies
Major	An effect would be considered to have a high magnitude if it was equivalent to all of the typical economic growth per capita. Specifically, for each study area: ▪ Peak annual GVA impact is greater than, or equal to, 1% of the economy; or ▪ Peak employment supported is greater than, or equal to, 1% of the total number of jobs.
Moderate	An effect would be considered to have a medium magnitude if it was equivalent to half of the typical economic growth per capita. Specifically, for each study area: ▪ Peak annual GVA impact is greater than, or equal to, 0.5% of the economy; or ▪ Peak employment supported is greater than, or equal to, 0.5% of the total number of jobs.
Minor	An effect would be considered to have a low magnitude if it was equivalent to a quarter of the typical economic growth per capita. Specifically, for each study area: ▪ Peak annual GVA impact is greater than, or equal to, 0.25% of the economy; or ▪ Peak employment supported is greater than, or equal to, 0.25% of the total number of jobs.
Negligible	An effect would be considered to have a negligible magnitude if it was equivalent to less than a quarter of the typical economic growth per capita. Therefore, for each study area: ▪ Peak annual GVA impact is less than 0.25% of the economy; or ▪ Peak employment supported is less than 0.25% of the total number of jobs.

Magnitude of Sector Specific Economic Impacts

29.6.7 In addition to the change in the overall impact in the GVA or employment of an area, consideration should also be made for the sectors of the economy which are considered to contribute to the economic sensitivity of the area. For example, if there is a high level of concentration of employment in the tourism trade, particular attention should be given to the magnitude of change within these sectors. Similarly, sectors may contribute to the economy sensitivity of an area because of their relationship to the Project that is being developed. For example, if the Project is associated with offshore wind, then the construction, manufacturing and professional services sectors present in an area are likely to contribute towards its sensitivity.

29.6.8 The definitions of the magnitude of impacts within sectors are provided in Table 29.20.

Table 29.20: Definitions of magnitude for sector specific economic impacts

Magnitude	Sector Specific (including Tourism)
Major	An effect would be considered to have a high magnitude on a sector if the change within that sector was equivalent to all of the sector's share of typical economic growth per capita. Specifically, for each sector in a study area: ▪ Peak annual GVA impact within that sector is greater than, or equal to, 1% of the sector; or ▪ Peak employment supported by the sector is greater than, or equal to, 1% of the total number of jobs in that sector.
Moderate	An effect would be considered to have a medium magnitude on a sector if the change within that sector was equivalent to half of the sector's share of typical economic growth per capita. Specifically, for each sector in a study area: ▪ Peak annual GVA impact within that sector is greater than, or equal to, 0.5% of the sector; or ▪ Peak employment supported by the sector is greater than, or equal to, 0.5% of the total number of jobs in that sector.
Minor	An effect would be considered to have a low magnitude on a sector if the change within that sector was equivalent to a quarter of the sector's share of typical economic growth per capita. Specifically, for each sector in a study area: ▪ Peak annual GVA impact within that sector is greater than, or equal to, 0.25% of the sector; or ▪ Peak employment supported by the sector is greater than, or equal to, 0.25% of the total number of jobs in that sector.
Negligible	An effect would be considered to have a high magnitude on a sector if the change within that sector was equivalent to less than a quarter of the sector's share of typical economic growth per capita. Specifically, for each sector in a study area: ▪ Peak annual GVA impact within that sector is less than 0.25% of the sector; or ▪ Peak employment supported by the sector is less than 0.25% of the total number of jobs in that sector.

Magnitude of Tourism and Recreation Impacts

29.6.9 Impacts will occur on tourism and recreation receptors if they are sensitive to changes in environmental factors that will occur as a result of the Project and the receptor is considered to experience a significant impact as a result of changes to these environmental factors.

29.6.10 The impacts considered on tourism and recreation assets are changes to visitor or user behaviour and outcomes. Any environmental impact on these receptors shall therefore be assessed against how it will change behaviour compared to the current baseline of visitor or user behaviour of the receptor.

29.6.11 The definitions of the magnitude of impacts on tourism and recreation assets are provided in Table 29.21.

Table 29.21: Definitions of magnitude of tourism and recreation impacts

Magnitude	Tourism and Recreation Impacts
Major	The effect on a tourism and recreation asset would be considered to have a major magnitude if it is predicted to experience a major change of behaviour of visitors or users.
Moderate	The effect on a tourism and recreation asset would be considered to have a moderate magnitude if is predicted to experience a moderate change of behaviour of visitors or users.
Minor	The effect on a tourism and recreation asset would be considered to have a minor magnitude if is predicted to experience a minor change of behaviour of visitors or users.
Negligible	The effect on a tourism and recreation asset would be considered to have a negligible magnitude if is predicted to experience an undetectable change of behaviour of visitors or users.

Magnitude of Demographic and Service Demand Impacts

29.6.12 The magnitude of impacts on the social or community assets is dependent on the demographic changes that will occur in each of the study areas as a result of the Project.

29.6.13 The severity of any change in demographics is measured against the level of annual change that is typical in the study area that it serves. This will be in line with the change a community or social asset will accommodate in a year.

Table 29.22: Definitions of magnitude of social and community asset impacts

Magnitude	Social and Community Asset Impacts
Major	The effect on a social or community asset would be considered to have a major magnitude if the change in residual population was equivalent to 100% or more of the average annual growth rate for the study area.
Moderate	The effect on a social or community asset would be considered to have a moderate magnitude if the change in residual population was equivalent to between 50% and 100% of the average annual growth rate for the study area.
Minor	The effect on a social or community asset would be considered to have a minor magnitude if the change in residual population was equivalent to between 25% and 50% of the average annual growth rate for the study area.
Negligible	The effect on a social or community asset would be considered to have a negligible magnitude if the change in residual population was equivalent to less than 25% of the average annual growth rate for the study area.

Sensitivity of Receptors

29.6.14 The overall approach to determining the sensitivity of a receptor is outlined in Volume 1, Chapter 5. This states that the sensitivity of the receptor is determined by assessing the following sorts of considerations:

- Adaptability - the degree to which a receptor can avoid or adapt to an impact;
- Tolerance - the ability of a receptor to accommodate temporary or permanent change without a significant adverse impact;
- Reversibility and recoverability - the temporal scale over and extent to which a receptor will recover following an impact; and
- Value and importance - a measure of the receptor's importance in terms of its relative ecological, social or economic value or status.

29.6.15 This section discusses how this sensitivity has been applied to socio-economic and tourism receptors, including:

- Economies;
- Sectors;
- Tourism and recreation assets; and
- Community and social assets.

Sensitivity of Economies

29.6.16 The sensitivity of an economy is linked to how well it is able to absorb change. To consider the sensitivity of an economy, or a sector within that economy, it is necessary to consider both the resilience and agility of the economy. There are a number of factors that contribute to an assessment of resilience and agility, these include:

- The scale of the economy;
- The diversity of sectors in the economy;
- The level of economic activity;
- The level of skills and education; and
- The level of economic potential from utilising capital (natural, human, social, economic).

29.6.17 The **scale of an economy** is particularly in rural areas. An economy that is small in absolute terms may have less agility, particularly if the structure is well established. Demographic trends are also likely to be relevant.

29.6.18 The **diversity of the economy**, as defined by the spread of sectors, is a good indicator of resilience. If an economy is over reliant on one sector, then a shock that impacts on this sector could have a disproportionate impact on the economy as a whole.

29.6.19 The **economic activity rate in an economy**, particularly how this compares to the wider national economy and trends in this rate are an indicator of economic resilience. A declining, either in absolute or relative terms, economically active population could indicate that the economy has been less able to accommodate changes. Conversely, an economically active population that is growing at a faster rate than the national average could indicate a greater level of agility.

29.6.20 The **level of skill in an economy**, as described by the level of qualifications and occupation level, indicate the ability of the workforce to react to new employment opportunities or find new work if there is a loss of employment.

29.6.21 The economic potential of an economy is linked to the **natural, human, social and economic capital** that is available.

Table 29.23: Definitions of sensitivity for a socio-economics receptor

Sensitivity	Definition
Major	A highly (major) sensitive economy will not be able to absorb changes without fundamentally altering its present character or value. Factors that would contribute to an economy being considered of high sensitivity include: ▪ The economy is particularly reliant on a single sector; ▪ The number of jobs in the economy has been declining over multiple years; and ▪ The share of people with no qualifications is significantly above the average for the wider economy.
Moderate	A moderately sensitive economy has a moderate capacity to absorb changes without fundamentally altering its present character or value, however it would be less resilient than the wider economy. Factors that would contribute to an economy being considered of medium sensitivity include: ▪ The economy is particularly reliant on a small number of sectors; ▪ The number of jobs in the economy has grown less than the wider economy; and ▪ The share of people with no qualifications is above the average for the wider economy.
Minor	A low (minor) sensitive economy is tolerant to changes without fundamentally altering its present character or value. Factors that would contribute to an economy being considered of low sensitivity include: ▪ Most sectors of the economy are well represented; ▪ The number of jobs in the economy has grown in line with the wider economy; and ▪ The level of educational attainment is in line with the wider economy.
Negligible	An economy with negligible sensitivity is very agile and will be able to accommodate changes without affecting its character or overall value. Factors that would contribute to an economy having negligible sensitivity include: ▪ The economy is well balanced between sectors; ▪ The number of jobs in the economy has grown at a quicker rate than the wider UK economy; and ▪ The share of people with no qualifications is below average for the wider economy.

Sensitivity of the Tourism Economy

29.6.22 The assessment will consider the effect of the Project on the tourism economy. This will require an assessment of the sensitivity of the tourism sector in the study area. A tourism sector will be sensitive if there are only a few drivers of tourism of if there is a particular reliance on a particular type of visitor.

29.6.23 The assessment of sensitivity will also consider the nature of the effect and the key drivers of the tourism economy in each study area. As discussed in Table 29.25, different tourism and recreation assets will be sensitive to different environmental effects. Therefore, if key assets within the tourism sector are not sensitive to an environmental effect, this will reduce the sensitivity of the tourism economy to that effect. Similarly, if the key markets of the tourism sector in an area are sensitive to a particular environmental effect this will also contribute to the overall sensitivity of the tourism sector. Therefore, the overall sensitivity of the tourism sector is dependent on the sensitivity of the drivers of tourism in the area.

29.6.24 To assess the sensitivity of the tourism economy in each of the study areas it is necessary to consider:

- The type and number of drivers of tourism to the area;
- The sensitivity of key drivers of the tourism economy to the nature of the effect; and
- The types of visitors that are attracted to the area.

Table 29.24: Definitions of sensitivity for tourism sector

Sensitivity	Definition
Major	A highly (major) sensitive tourism sector will not be able to absorb changes without fundamentally altering its present character or value. Factors that would contribute to a tourism sector being considered of high sensitivity include: ▪ The tourism sector is particularly reliant on a one single attraction or market that is sensitive to the environmental effect; and ▪ The number of jobs in the tourism sector economy has been declining over multiple years.
Moderate	A moderately sensitive tourism sector has a moderate capacity absorb changes without fundamentally altering its present character or value. Factors that would contribute to a tourism sector being considered of medium sensitivity include: ▪ The tourism sector is particularly reliant on a small number of attractions or markets that are sensitive to the environmental effect; and ▪ The number of jobs in the tourism sector economy has grown at a slower rate than the wider tourism sector.
Minor	A low (minor) sensitive tourism sector will be able to absorb most changes without fundamentally altering its present character or value. Factors that would contribute to a tourism sector being considered of low sensitivity include: ▪ The assets and markets that drive the tourism economy are not sensitive to the environmental effect; and ▪ The number of jobs in the tourism sector economy has grown at a similar rate to wider tourism sector.
Negligible	A tourism sector with negligible sensitivity is very agile and will be able to accommodate changes without affecting its character or overall value. Factors that would contribute to a tourism sector being considered of negligible sensitivity include: ▪ There are a wide range of assets and markets that drive the tourism economy in the area; ▪ The number of jobs in the tourism sector economy has grown at a faster rate than the wider tourism sector.

29.6.25 This assessment will consider how the tourism sector contributes to wider economy of each study area and if it is a contributing factor to the sensitivity of the economy. This will consider factors including:

- The contribution of the tourism sector to the local economy, including;
  - Tourism employment as a proportion of total employment; and
  - The contribution of the tourism sector to the productivity of the wider economy;
- The contribution of the area to the tourism sector in the wider economy. This will consider;
  - The number of visitors to the area relative to the number of visitors to the wider area; and

- The presence of tourism attractions/receptors that are considered to be of national or regional importance.

29.6.26 The effect of the tourism sector on the economy of the study area will be considered as part of the economy impact analysis, if it is determined that the wider economy is sensitive to changes in the tourism sector.

Sensitivity of Tourism and Recreation Assets

29.6.27 The effect on the tourism and recreation assets is scoped into this assessment.

29.6.28 The sensitivity of a tourism or recreation asset is determined by how reactive visitors, or users, of this asset are to a change in the environment. The sensitivity may change depending on which environmental factor is being considered. For example, an asset may be highly sensitive to changes in traffic and transport activity but have negligible sensitivity to landscape and visual impacts.

29.6.29 The sensitivity of these assets will also depend on the ability of the asset to react to any change. Assets that provide a fixed offering, such as a monument or nature-based attraction will be, other things remaining equal, more sensitive to change.

Table 29.25: Definitions of sensitivity for tourism and recreation assets

Sensitivity	Definition
Major	A tourism or recreational asset with a high (major) sensitivity will not be able to tolerate or adapt to effects as these will result in a fundamental change in visitor behaviour. Factors that will contribute to a tourism or recreational asset being considered of high sensitivity include: ▪ Being dependent on a single environmental condition to attract or accommodate visitors and users; and ▪ Being unable to adapt or adjust in response to changes in visitor or user behaviour.
Moderate	A tourism or recreational asset with a moderate sensitivity will have limited capacity to tolerate or adapt to effects as these will result in a moderate change in visitor behaviour. Factors that will contribute to a tourism or recreational asset being considered of moderate sensitivity include: ▪ Being influenced by a single environmental condition to attract or accommodate visitors and users; and ▪ Have a limited ability to adapt or adjust in response to changes in visitor or user behaviour.
Minor	A tourism or recreational asset with a minor sensitivity will have the ability to tolerate or adapt to effects as these will result in an incidental change in visitor behaviour. Factors that will contribute to a tourism or recreational asset being considered of minor sensitivity include; ▪ Environmental conditions have a minor influence on the ability of the asset to attract or accommodate visitors and users; and ▪ Being able to adapt or adjust the assets in response to changes in visitor or user behaviour.
Negligible	A tourism or recreational asset with a negligible sensitivity will be resistant to changes in environmental factors. Factors that will contribute to a tourism or recreational asset being considered of negligible sensitivity include; ▪ Environmental conditions have a negligible influence on the ability of the asset to attract or accommodate visitors and users; and ▪ Having substantial ability to adapt or adjust the assets in response to changes in visitor or user behaviour.

Sensitivity of Community and Social Assets

29.6.30 The effect on the community and social assets is scoped into this assessment. This includes the demand for housing, health services and education services.

29.6.31 The adaptability and tolerance of the housing market to accommodate change in each study area is implied by the relative change in the price of housing stock compared to the wider economy. If prices have increased significantly more within a study area, this would suggest that the housing market has not been able to adapt to a change in demand.

29.6.32 In the long term, community and social assets will adapt to serve the communities they are in. Hospitals and education facilities are planned based on the demographic demands in a particular area. Therefore, these sensitivities are considered for short term impacts only and the long term sensitivities of these receptors will be negligible. As a result, the impacts on community and social assets are only considered during the development and construction phase.

29.6.33 The sensitivity of the public assets such as health services or schools will be dependent on the concentration of resources that are allocated to these assets. It is assumed that the ability of these assets to adapt to change will not vary by geography. Therefore, the key factor of sensitivity is tolerance to change. It is assumed that this is linked to the relative size of the community that is served by these assets. If a teacher or doctor has less students or patients than the national average, they are more likely to be able to tolerate changes, specifically increases, in these numbers. As a result, these assets will be less sensitive to change.

29.6.34 A summary of the definitions and contributing factors for the sensitivity of community and social assets are given in Table 29.26.

Table 29.26: Definitions of sensitivity for community and social assets

Sensitivity	Definition
Major	A community or social asset with major sensitivity will not be able to tolerate or adapt to impacts as these will result in a fundamental change in the ability of these assets to meet the needs of the community. Factors that will contribute to a community or social asset being considered of major sensitivity include: ▪ House prices have increased at a notably faster rate than the national average; ▪ The number of GPs per capita is much lower than the national average; and ▪ The number of pupils per teacher is much higher than the national average.
Moderate	A community or social asset with moderate sensitivity will have a limited capacity to tolerate or adapt to impacts as these will result in a moderate change in the ability of these assets to meet the needs of the community. Factors that will contribute to a community or social asset being considered of moderate sensitivity include: ▪ House prices have increased at a faster rate than the national average; ▪ The number of GPs per capita is lower than the national average; and ▪ The number of pupils per teacher is higher than the national average.
Minor	A community or social asset with minor sensitivity will be able to tolerate or adapt to impacts without a change in the ability of these assets to meet the needs of the community. Factors that will contribute to a community or social asset being considered of minor sensitivity include: ▪ House prices have increased at a similar rate than the national average; ▪ The number of GPs per capita is similar to than the national average; and ▪ The number of pupils per teacher is similar to the national average.
Negligible	A community or social asset with a negligible sensitivity will be resistant to change as they will have a greater capacity to tolerate changes than the wider country. Factors that will contribute to a community or social asset being considered of negligible sensitivity include: ▪ House prices have increased at a slower rate than the national average; ▪ The number of GPs per capita is higher than the national average; and ▪ The number of pupils per teacher is lower than the national average.

Impact Significance

29.6.35 The interaction between a receptors sensitivity and its magnitude is considered as part of Table 29.27. As discussed in Volume 1, Chapter 5, “Major” and “Moderate” impacts are considered to be significant in EIA terms.

29.6.36 For example, if the magnitude of the impact is assessed as Major (negative/adverse) and the sensitivity of the receptor is assessed as Negligible, then the significance will be Minor - Not Significant (see Table 29.27) and therefore will not be considered significant in EIA terms.

Table 29.27: Matrix of Significance

		Magnitude of impact			
		Negligible	*Minor*	*Moderate*	*Major*
Sensitivity of receptor	*Negligible*	Negligible (Not significant)	Negligible (Not significant)	Minor (Not significant)	Minor (Not significant)
	Minor	Negligible (Not significant)	Minor (Not significant)	Minor (Not significant)	Moderate (Significant)
	Moderate	Minor (Not significant)	Minor (Not significant)	Moderate (Significant)	Major (Significant)
	Major	Minor (Not significant)	Moderate (Significant)	Major (Significant)	Major (Significant)

Assessment Methodology

Economic Assessment Methodology

29.6.37 The economic impacts considered are reported in terms of:

- GVA - this is a measure of economic value added by an organisation or industry and is typically estimated by subtracting the non-staff operational costs from the revenues of an organisation;
- Years of Employment - this is a measure of employment which is equivalent to one person being employed for an entire year and is typically used when considering short term employment impacts, such as those associated with the development and construction phase of the Project; and
- Jobs - this is a measure of employment which considers the headcount employment in an organisation or industry. This measure is used when considering long term impacts such as the jobs supported during the operational phase of the Project.

29.6.38 The economic impacts associated with the supply chain have been assessed in line with the approach considered in the UK Offshore Wind Sector Deal (UK Government, 2020a), the focus of the assessments will be the direct and indirect (supply chain) effects. In addition to this, the assessment has also considered the effects of staff spending and the economic impact that this subsequent increase in demand stimulates (the induced effect).

29.6.39 The offshore elements of the Project will include the construction and installation of new foundations and WTGs, the offshore substation and the construction and installation of new inter-array cables and export cabling. The onshore elements considered will include all of the onshore cable infrastructure, up to and including the onshore substation.

29.6.40 It is acknowledged that at the time of writing, the exact levels of expenditure are unknown by the Project. This expenditure is what shall drive the positive economic impacts. The socio-economic assessment shall therefore consider the MDS of the lowest, realistic levels of expenditure associated with the Project. This value may change between the production of the PEIR and the construction of the project to reflect any agreements reached between the Project and potential suppliers and any changes in the market that shall impact prices.

29.6.41 The analysis for the Project will cover the three stages of the Project, namely:

- The development and construction stage;
- The operational and maintenance stage; and
- The decommissioning stage.

29.6.42 The impacts during the development and construction phases are based on the expenditure that has occurred to date as well as the planned expenditure associated with these stages. In addition to the total impact over the period, the assessment considered the timings of impacts during this stage to understand the peaks and troughs of this activity.

29.6.43 The impacts during the operational phase for the Project are based on projected operational expenditure.

29.6.44 In instances where impacts are expected to occur over a number of years, such as the operational phase, a discount rate will be applied. This allows impacts that occur sooner to be valued more highly than impacts that occur in the future, a concept known as time preference. In this instance a discount rate of 3.5% will be chosen, which is in line with the UK Government's Green Book (UK Government, 2020b).

29.6.45 In addition to data provided by the Project and BiGGAR Economics previous experience, the sources that shall be used in this assessment will include:

- ONS (2021b) Business Register and Employment Survey;
- ONS (2022) Annual Business Survey;
- Offshore Wind Industry Council (2021) People Skills Survey 2021 - 2026;
- Offshore Wind Industry Council (2020) Collaborating for Growth: Strategies for Expanding the UK Offshore Wind Supply Chain;
- Oxford Brookes University (2020) Guidance on assessing the socio-economic impacts of offshore wind farms (OWFs);
- ORE Catapult (2020) Offshore Wind Operations and Maintenance a ¬£9 billion per year opportunity by 2030 for the UK to seize; and
- BVG Associates (2019) Guide to an Offshore Wind Farm.

Relevant Standards and Guidelines Adopted

29.6.46 The approach to EIA follows the general approach outlined in Volume 1, Chapter 5. In addition to the general approach and guidance outlined, the assessment of socio-economics, tourism and recreation will also comply with the following guidance and policy documents where they are specific to this topic:

- EN-1 Overarching National Policy Statement for Energy (2021); and
- EN-3 Overarching National Policy Statement for Renewable Energy Infrastructure (2021).

Tourism and Recreation Impact Assessment Methodology

The Relationship Between Offshore Windfarms and tourism

29.6.47 The relationship between wind developments (both onshore and offshore) and tourism activity has been the subject of several studies.

29.6.48 The visibility of WTGs to onshore tourists and recreational receptors has the potential to affect the amenity of an area. However, tourism perception research in rural Wales (NFO, 2003), North Devon (Aitchison, 2004), Scotland (Glasgow Caledonian University, 2008), and Northumberland (Northumbria University, 2014) show that the majority of people do not perceive windfarms negatively. Furthermore, economic studies of Wales (Regeneris and The Tourism Company, 2014) and Scotland (Biggar Economics, 2021a) demonstrate that windfarms have no measurable effect on the tourism economy.

29.6.49 With regards to offshore wind, an assessment carried out in 2020 (Biggar Economics, 2020b) of the impact of tourism and recreation associated with the East Anglia Two Offshore Wind Farm. The analysis considered visitor spending in the Suffolk Coast Area.

29.6.50 The analysis considered 16 areas, including two Areas of Outstanding Natural Beauty (AONB), to identify any relationship between offshore wind impacts and changes in visitor behaviour or spending during the construction period. The assessment found no notable impacts on tourism activity associated with offshore wind developments.

29.6.51 These assessments have found no general relationship between the development of wind energy projects and the performance of the tourism economy. Therefore, the assessment of the impact of the Project on the tourism economy and specific tourism and recreation assets considers the specific environmental impacts that these receptors will experience as a result and it will consider how these impacts will result in changes to visitor and user behaviour.

Factors Driving Tourism Activity

29.6.52 Based on existing evidence on tourism and the tourism economy, tourism activity is mostly driven by the following factors:

- The ability and willingness of tourists to travel;
- Economic performance (and so whether tourists have disposable income available for leisure trips);
- Exchange rates;

- The quality of the overall tourism product;
- The effectiveness of destination marketing; and
- The quality and value for money of the services offered by tourism businesses.

29.6.53 In addition, the attractiveness of individual tourism and recreation assets will depend on multiple factors, including those which could be impacted by the development, construction, operation and decommissioning of the Project. These impacts have been identified in other chapters of the PEIR.

29.6.54 The assessment of tourism impacts during the O&M of the Project will consider whether visitor attractions and the motivations for visiting them will be affected by significant impacts identified in other chapters of the PEIR.

29.7 Impact Assessment

Impact Receptors

29.7.1 The principal receptors with respect to socio-economics, tourism and recreation are economic activity (GVA and employment), population, accommodation supply, social infrastructure and tourism activity.

29.7.2 The specific features defined within these receptors as requiring further assessment are listed in Table 29.28.

Table 29.28: Socio-economics, tourism and recreation receptors relevant to the Project

Receptor group	Receptor	Relevant designated features
Economic	Economic Activity in the LEA	Employment, GVA, supply chain activity and development of low-carbon industry.
Economic	Economic Activity in the Regional Area	Employment, GVA, supply chain activity and development of low-carbon industry.
Economic	Economic Activity in the UK	Employment, GVA, supply chain activity and development of low-carbon industry.
Tourism and recreation	Tourism Activity in the LTRA	Employment and GVA in the tourism sector.
Social and Community Assets	Social and Community Assets in the LEA	Housing, education and healthcare assets

Economic Activity in the LEA

29.7.3 This receptor captures any changes in the level of employment and GVA within the LEA, including through supply chain activity. It also covers any contribution the Project could make towards the development of low-carbon industries.

29.7.4 The socio-economic baseline has identified that in the LEA:

- The role of the manufacturing sector, which is also important to the offshore wind industry, is much greater than in the UK as a whole;

- The level of educational attainment is lower than the wider economy, in particular the share of the population with no qualifications is higher than average; and
- The level of jobs growth in the LEA is lower than that of the UK as a whole.

29.7.5 The sensitivity of the economy of the LEA has therefore been assessed as Moderate, in line with the approach outlined in Table 29.23.

Economic Activity in the Regional Area

29.7.6 This receptor captures any changes in the level of employment and GVA within the Regional Area, including through supply chain activity. It also covers any contribution the Project could make towards the development of low-carbon industries.

29.7.7 The socio-economic baseline has identified that in the Regional Area:

- The distribution of sectors is broadly in line with the UK average;
- The level of educational attainment is marginally lower than the wider economy, in particular the share of the population with no qualifications is marginally higher than average; and
- The level of jobs growth in the Regional Area is lower than that of the UK as a whole.

29.7.8 The sensitivity of the economy of the Regional Area has therefore been assessed as Moderate, in line with the approach outlined in Table 29.23.

Economic Activity in the UK

29.7.9 This receptor captures any changes in the level of employment and GVA within the UK, including through supply chain activity. It also covers any contribution the Project could make towards the development of low-carbon industries.

29.7.10 The socio-economic baseline has identified that in the UK:

- The economy is well balanced between sectors; and
- Educational attainment and jobs growth are, by definition, in line with the UK average.

29.7.11 The sensitivity of the economy of the UK has therefore been assessed as Minor, in line with the approach outlined in Table 29.23.

Tourism Activity in the LTRA

29.7.12 This receptor captures any change in tourism spending with knock-on implications on the employment and GVA supported by tourism in the LTRA.

29.7.13 The socio-economic baseline has identified that in the LTRA the tourism economy:

- Is heavily dependent on the cluster of tourism assets around Skegness, specifically Butlins and Fantasy Island Theme Park; and
- Employment grew by significantly more than the UK average.

29.7.14 The approach outlined in Table 29.24 would therefore indicate that the tourism economy could have a high sensitivity to change, depending on the environmental effect that is considered. The sensitivity of the tourism economy in the LTRA will be dependent on the sensitivity of Butlins and Fantasy Island to the environmental effect.

Social and Community Assets

29.7.15 This receptor considers assets such as housing, education and health services within the LEA and how current users of these assets are affected by any new people moving to the LEA as a result of the Project.

29.7.16 The socio-economic baseline has identified that within the LEA:

- The value of house prices has increased at a similar rate to the UK as a whole,
- Across nursery, primary and secondary education, the pupil teacher ratio is similar to that of the UK as a whole; and
- The number of patients per GP is similar to that of England as a whole.

29.7.17 The approach outlined in Table 29.26 would therefore indicate that the sensitivity of these social and community assets is Minor.

Construction

Estimating Development and Construction Expenditure

29.7.18 The development and construction of the Project will generate economic impacts through the expenditure that will be required during its development and construction.

29.7.19 The economic impact assessment is based on a MDS, with a total of 93 WTGs each with a capacity of 16MW. This would result in a combined installed capacity of 1.5GW.

29.7.20 It is expected that a fixed offshore windfarm project in the UK would spend around £2.3 billion per GW installed (BVG Associates, 2019). It is therefore estimated that the development and construction of this project will require a capital investment of £3.5 billion. these figures are indicative, based on real values of similar projects.

29.7.21 The capital investment will be split between primary contract areas. The estimated distribution of this spend by contract area is shown in the table below.

Table 29.29: Construction and Development: Potential Expenditure by Category

	Value (£m)	Share
WTG	1,560	45%
Foundations	460	13%
Offshore Cable Installation	330	10%
Cable Supply	250	7%
Offshore Substation	240	7%
Financial/Insurance Costs	220	6%
Foundations Installation	190	6%
Development and Consenting	100	3%
Onshore Substation	80	2%
Enabling Infrastructure	10	<1%
Onshore Cable Installation	10	<1%
Total	**3,450**	**100%**

Note: BiGGAR Economics, Totals may not sum due to rounding.

Estimating Distribution of Expenditure

29.7.22 The economic impacts from the development and construction of the Project have been estimated for the LEA, the Regional Area and the UK.

29.7.23 As discussed in Section 29.4 of this chapter, the UK Offshore Wind Sector Deal (UK Government, 2020a) has the target that projects constructed in 2030 will achieve 60% of UK content during their lifetime. This includes the capital investment and the ongoing O&M expenditure. To meet this target, there will need to be significant investment in the manufacturing capabilities of the UK offshore wind supply chain.

29.7.24 In line with the worst-case scenario analysis, it has been assumed that Project will not achieve this target. Analysis (BVG Associates, 2021) has found that on average 48% of total spending for UK offshore wind projects is sourced domestically over the lifetime of a project. For the purposes of this analysis, it is assumed that the Project shall achieve the level of UK content that is typical of offshore wind projects in the UK that have been built to date. Over the lifetime of an offshore wind project, a greater share of the O&M expenditure is procured domestically. UK offshore wind projects have typically procured 19% of their development and construction spend domestically. The distribution of UK content by category is shown in Table 29.30. The distribution of contracts within the LEA and Regional Area are based on current industrial capabilities and the assumption that the primary construction port will be within the LEA.

Table 29.30: Construction and Development: Potential Expenditure by Category and Study Area

	LEA	Regional Area	UK*	Imports
WTG	7%	7%	7%	93%
Foundations	0%	0%	7%	85%
Offshore Cable Installation	3%	3%	7%	84%
Cable Supply	0%	0%	7%	51%
Offshore Substation	11%	11%	19%	59%
Financial/Insurance Costs	0%	0%	80%	0%
Foundations Installation	26%	26%	36%	64%
Development and Consenting	25%	25%	86%	18%
Onshore Substation	49%	64%	90%	10%
Enabling Infrastructure	100%	100%	100%	0%
Onshore Cable Installation	50%	50%	100%	0%
Total	**6%**	**8%**	**19%**	**100%**

*Note: BiGGAR Economics analysis. * BVG Associates*

29.7.25 In total, this would be equivalent to spending:

- £280 million in the LEA;
- £290 million in the Regional Area; and
- £660 million in the UK during the development and construction of the Project.

29.7.26 This increased turnover in these companies will support employment and generate GVA within these economies.

Increase in GVA

Description of Impact

29.7.27 The first round of expenditure and economic impact will occur within the developer organisation and through its directly procured contractors. For the purposes of the assessment both the developer and its directly procured contractors are considered as one group within the direct impact analysis. This expenditure will generate GVA within these companies, which is measured by the sum of the profits and staff costs that will be stimulated by this turnover.

29.7.28 The level of GVA that is supported by a given amount of turnover is dependent on the sector that the company is operating in. To estimate the direct GVA from each of the main contract categories, each contract was split into sub-contracts. Using industry-specific data on turnover and GVA from the Annual Business Statistics (ONS, 2021), turnover/GVA ratios were applied to each specific sub-contract in order to estimate GVA.

29.7.29 There would also be knock on effects in the supply chain as these directly procured companies purchase goods and services to support their activities. These effects are estimated by applying Type 1 (Indirect) GVA multipliers, which are sourced from the ONS (ONS, 2022), to the direct GVA impacts.

29.7.30 Those who are directly employed on the Project, or through the supply chain, will also have an impact on the economy through the spending of their salaries across the economy. This is the induced impact and it is calculated using the Type 2 multipliers, that are based on the Input – Output Tables produced by the ONS.

29.7.31 The ONS provide estimates of both the Type 1 (indirect) and Type 2 (induced) multipliers for the UK economy and these have been adjusted for the smaller economies where appropriate.

Magnitude

29.7.32 The magnitude of the economic impact from the expenditure during the development and construction phase has been estimated in line with the methodology outlined in Section 29.6 of this chapter. For the purposes of assessment, only the direct and indirect economic impacts are considered when determining the magnitude of the impact. These describe the economic activity required to realise the Project and are the focus of other economic assessments associated with offshore wind projects.

29.7.33 The induced impacts are quantified and presented for completeness but are not used in the assessment of magnitude.

29.7.34 As shown in Table 29.31, throughout the supply chain the development and construction of the Project is expected to generate a total:

- £165 million GVA in the LEA;
- £196 million GVA in the Regional Area; and
- £482 million GVA across the UK.

Table 29.31: Construction and Development: Total GVA

	LEA	Regional Area	UK
Direct GVA (£m)	110	115	262
Indirect GVA (£m)	55	81	220
Total GVA (£m)	**165**	**196**	**482**
Induced GVA (£m)	*42*	*53*	*214*
Total GVA Including Induced (£m)	*207*	*249*	*697*

Note: Totals may not sum due to rounding.

29.7.35 The majority of this economic activity will occur during the 3-year manufacturing and construction period. This is expected to peak in Q1 of 2028, when the direct and indirect economic impacts of project will support the annual equivalent of:

- £110 million GVA in the LEA;
- £130 million GVA in the Regional Area; and
- £230 million in the UK.

29.7.36 This would be equivalent to 0.7% of the current GVA in the LEA and less than 0.1% of the GVA of the UK.

29.7.37 In line with the approach described in Table 29.19, the magnitude of the effect on the economy of the LEA is considered to be Moderate, because it is equivalent to between 0.5% and 1% of the total GVA of the economy. For both the economy of the Regional Area and the UK, the effect is considered to be negligible as it is equivalent to less than 0.25% of the GVA of these economies.

Table 29.32: Construction and Development: Magnitude of GVA Impact

	LEA	Regional Area	UK
Peak GVA (£m)	110	130	230
Current GVA of Study Area (2020, £m)	15,800	238,500	1,949,600
Peak GVA as % Current GVA	0.7%	0.1%	<0.1%
Magnitude of Effect	**Moderate**	**Negligible**	**Negligible**

Sensitivity

29.7.38 In line with the approach outlined in Table 29.23 and the socio-economic baseline of each study area, the sensitivity of the economic receptors have been assessed as:

- The sensitivity of the economy of the LEA has been assessed as **Moderate**;
- The sensitivity of the economy of the Regional Area has been assessed as **Moderate**; and
- The sensitivity of the UK economy has been assessed as **Minor**.

Significance of Impact

29.7.39 Based on the assessments of sensitivity and magnitude, the effect of the construction and development of the Project on the economy of the LEA was assessed as **Moderate - Significant**. Its effect on the economy of the Regional Area was assessed as **Minor – Not Significant**. Its effect on the economy of the UK was assessed as **Negligible - Not Significant**.

Table 29.33: Construction and Development: Significance of GVA Impact

	LEA	Regional Area	UK
Sensitivity of Receptor	Moderate	Moderate	Minor
Magnitude of Impact	Moderate	Negligible	Negligible
Significance	**Moderate - Significant**	**Minor – Not Significant**	**Negligible – Not Significant**

Increase in Employment

Description of Impact

29.7.40 The construction of the Project will also result in the creation of temporary employment. The estimation of employment impacts relied on the same methodology and assumptions adopted to estimate the impact on GVA.

29.7.41 As the construction of the Project will generate short term employment, any impacts on employment are estimated in terms of 'years of employment'. This is a measure of temporary employment, whereby a job lasting for 18-months is to be interpreted as 1.5 years of employment.

Magnitude

29.7.42 Based on these assumptions, it was estimated that under a worst-case scenario the Project could result in the creation of:

- 2,180-years of employment in the LEA;
- 2,630-years of employment in the Regional Area; and
- 5,430-years of employment across the UK.

Table 29.34: Construction and Development: Total Employment (Years of Employment)

	LEA	Regional Area	UK
Direct Employment	1,390	1,460	2,800
Indirect Employment	790	1,170	2,630
Total Employment	**2,180**	**2,630**	**5,430**
Induced Employment	*570*	*710*	*2,290*
Total Employment Including Induced	*2,750*	*3,340*	*7,720*

Note: Totals may not sum due to rounding.

29.7.43 In addition to the direct and supply chain impacts considered above, the Project will support economic activity through the spending of those employed during its construction (induced impacts). These benefits could amount to an extra 570-years of employment in the LEA, 710-years of employment in the Regional Area and 2,290-years of employment across the UK.

29.7.44 The majority of this economic activity will occur during the 3-year manufacturing and construction period. This is expected to peak in Q1 of 2028, when the construction of the Project is expected to support:

- 1,480 jobs in the LEA;
- 1,790 jobs in the Regional Area; and
- 2,550 jobs across the UK.

29.7.45 In line with the approach described in Table 29.19, the magnitude of the effect on the economy of the LEA is considered to be **Negligible**, because it is equivalent to less than 0.25% of the total GVA of the economy. The magnitude of the impact is also considered to be **Negligible** for both the economy of the Regional Area and the UK, the effect is considered to be negligible as it is equivalent to less than 0.25% of the GVA of these economies.

Table 29.35: Construction and Development: Magnitude of Employment Impact

	LEA	Regional Area	UK
Peak Employment (Jobs)	1,480	1,790	2,550
Current Jobs	702,000	4,575,000	30,546,000
Peak Jobs as % Current Jobs	0.2%	<0.1%	<0.1%
Magnitude of Effect	**Negligible**	**Negligible**	**Negligible**

Sensitivity

29.7.46 The sensitivity of the economic receptors have been assessed as:

- The sensitivity of the economy of the LEA has been assessed as **Moderate**;
- The sensitivity of the economy of the Regional Area has been assessed as **Moderate**; and
- The sensitivity of the UK economy has been assessed as **Minor**.

Significance of Impact

29.7.47 Based on the assessments of sensitivity and magnitude, the effect of the construction and development of the Project on the economy of the LEA was assessed as **Negligible - Not Significant**. Its effect on the economy of the Regional Area was assessed as **Minor – Not Significant**. Its effect on the economy of the UK was assessed as **Negligible - Not Significant**.

Table 29.36: Construction and Development: Significance of GVA Impact

	LEA	Regional Area	UK
Sensitivity of Receptor	Moderate	Moderate	Minor
Magnitude of Impact	Negligible	Negligible	Negligible
Significance	**Negligible – Not Significant**	**Minor – Not Significant**	**Negligible – Not Significant**

Social and Community Asset Impacts

Description of Impact

29.7.48 The potential for a significant influx of transient workers having an impact of community and social assets has been scoped into this assessment. This assessment considers the potential impacts associated with a change in demand for housing, educational and healthcare facilities as a result of this workforce.

Magnitude

29.7.49 The potential change in demographics as a result of development and construction of the Project is linked to the number of jobs that are supported.

29.7.50 The distribution of economic activity during the development and construction of the Project is determined by the location of the directly contracted and supply chain companies. Changes to the use of and demand for social and community assets will be the result of new people moving to the area to work on these projects.

29.7.51 As shown in Table 29.6, it is expected that on average the population of the LEA is projected to grow by 4,840 per year between 2018 and 2043. The peak employment that will be supported in the LEA during the development and construction of the Project is estimated to be 1,480 jobs. This is equivalent to 36% of the projected annual population growth for the LEA.

29.7.52 The majority of the economic activity within the LEA will be focused around the activities of the construction port and on the construction of the onshore infrastructure, such as the cable route and substation. As discussed in section 29.3 of this chapter, the Humber Energy Strategy has identified the offshore wind sector as a long term opportunity for the area. This is based on a pipeline of offshore wind energy projects in the North Sea that will have demand for construction and manufacturing facilities in the Humber area. It would therefore be expected that the majority of the employment supported in the area will use a workforce that is based in the area.

29.7.53 If it was assumed that 25% of the workforce that was employed during the peak activity were new to the area, this would be equivalent to 8% of the average population growth. It would also be equivalent to 73% of the annual reduction in working aged people that is projected for the LEA. In line with the approach to determining the magnitude of social and community asset impacts outlined in Table 29.22, the magnitude of this impact has been assessed as **Negligible**.

Table 29.37: Construction and Development: Magnitude of Social and Community Asset Impacts

	LEA
Peak Population Increase	370
Average Population Increase (2018 – 2043)	4,840
Peak Population Increase as % Normal Population growth	8%
Magnitude of Effect	**Negligible**

Sensitivity

29.7.54 The sensitivity of the social and community assets in the LEA has been assessed as **Minor.**

Significance of Impact

29.7.55 Based on the assessments of sensitivity and magnitude, the effect of the construction and development of the Project on the social and community assets of the LEA was assessed as **Negligible - Not Significant**.

Table 29.38: Development and Construction: Significance of Social and Community Asset Impacts

	LEA
Sensitivity of Receptor	Minor
Magnitude of Impact	Negligible
Significance	**Negligible – Not Significant**

Tourism Economy Impact

Description of Impact

29.7.56 The changes in the surrounding environment brought about by the construction of the Project could at least in theory have an impact on the tourism economy of the LTRA.

29.7.57 The existence of changes in the surrounding environment, however, in and of themselves do not mean that changes to the tourism economy will occur. For there to be an impact on the tourism economy, each of the following conditions should be met:

- The offshore windfarm construction has some impact(s) on the area;
- Visitors, or potential visitors are aware of such impact(s);
- Visitors, or potential visitors, react by changing their behaviour. For example, by changing the length of stay, where they choose to visit or the activities that they undertake;
- The change in behaviour results in a change in their level of spending; and
- These changes in visitor spending result in a change in performance of the tourism sector, for example, a change in employment.

29.7.58 As set out within the baseline, evidence suggests that there is no relationship between offshore wind developments and the tourism economy. Furthermore, offshore windfarms or lack thereof are not considered as a key determinant of the tourism economy (key factors include tourism offer marketing, exchange rates and economic conditions).

29.7.59 However, it has been determined that the tourism economy in the LTRA has the potential to have a major sensitivity to environmental effects, if Butlins and the Fantasy Island Theme Park are sensitive to particular environmental effects.

Magnitude

29.7.60 The magnitude of the effect on the tourism economy will be assessed after consideration of other environmental factors identified elsewhere in the PEIR that will have a significant impact on Butlins and the Fantasy Island Theme Park.

29.7.61 The following draft chapters have been reviewed and no significant effects have been identified that impact on either Butlins or Fantasy Island Theme Park;

- Volume 2, Chapter 9: Shipping and Navigation;
- Volume 2, Chapter 12: Infrastructure and Other Marine Users;
- Volume 3, Chapter 6: Onshore Land Use;

- Volume 3, Chapter 7: Noise and Vibration;
- Volume 3, Chapter 8: Onshore Traffic and Transport; and
- Volume 3, Chapter 9: Landscape and Visual Assessment.

29.7.62 Potential significant effects have been identified in Volume 2, Chapter 17: Seascape, Landscape and Visual Impact Assessment. These cover the coastline between Donna Nook and Gibraltar Point. This includes Butlins and Fantasy Island Theme Park. These potential significant effects would be the result of visibility of the offshore reactive compensation platforms (ORCPs), located 7km from the coastline. This effect will occur during the construction, operation and decommissioning phases. Therefore, this assessment will also apply to each phase of the Project.

29.7.63 The visibility of the ORCPs would be in a similar line of sight to other offshore infrastructure, including Lincs Offshore Wind Farm and Race Bank Wind Farm. This visibility has not resulted in a noticeable change in visitor behaviour and 2023 is expected to be the busiest year for Butlins Skegness (Lincolnshire Live, 2023). Therefore, it is not expected that the visibility of the ORCPs would result in any change of visitor behaviour at Butlins or Fantasy Island Theme Park. Therefore, the magnitude of any change on the tourism economy of the LTRA has been assessed as **Negligible**.

Sensitivity

29.7.64 The only environmental factor that has a significant effect on Butlins or Fantasy Island Theme Park is Seascape, Landscape and Visual Impact. The focus of the attractions at these locations are the activities on offer and the beach side location. The seascape is one of the reasons for visiting these attractions, but it is not the primary reason. Experience of the performance of these attractions during the construction of other energy projects suggests that visitors are not highly sensitive to these impacts. The sensitivity of the tourism economy of the LTRA to environmental effects of the Project has therefore been assessed as **Minor.**

Significance of Impact

29.7.65 Based on the assessments of sensitivity and magnitude, the effect of the construction and development of the Project on the tourism economy of the LTRA was assessed as **Negligible (Not significant)**.

Table 29.39: Construction and Development: Significance of Tourism Economy Impacts

	LTRA
Sensitivity of Receptor	Minor
Magnitude of Impact	Negligible
Significance	**Negligible (Not Significant)**

Description of Impact

29.7.66 As with the tourism economy in general, for the construction of an offshore windfarm to have an impact on tourism assets, visitors to these assets must be aware of this construction activity and change their behaviour as a result.

29.7.67 The assessment has considered whether the construction of the Project would affect any of the tourism attractions identified in Section 29.4, including the marine recreation assets and the attractions identified in

.

Table 29.40: Significant Effects Identified on tourism and Recreation Assets

	Shipping and Navigation	SLVIA	LVIA	Traffic and Transport	Noise	Onshore Land Use
Marine Recreation	No	No	No	No	No	No
Gunby Hall	No	No	No	No	No	No
Skegness	No	Yes	No	No	No	No
Skegness Natureland Seal Sanctuary	No	No	No	No	No	No
Lincolnshire Wolds	No	No	No	No	No	No
The Parrot Zoo	No	No	No	No	No	No
Lincolnshire Wolds Railway	No	No	No	No	No	No
Louth Museum	No	No	No	No	No	No
Tattershall Castle	No	No	No	No	No	No
Macmillan Way	No	No	Yes	No	No	No

Note: BiGGAR Economics analysis. Totals may not sum due to rounding.

29.7.68 The significant effects identified as applicable to the construction, operation and decommissioning phases. Therefore, the assessment of effects on tourism and recreation assets applies to all three phases.

Magnitude

29.7.69 The assessment of other chapters, outlined in Table 29.40 has identified significant effects on two tourism and recreation assets, specifically;

- there is expected to be significant seascape effects along the coast including in Skegness, as a result of the construction and operation of the ORCP(s); and
- there is expected to be significant landscape and visual impact effects along part of the Macmillan Way if the Weston Marsh Connection Option is used for the grid connection.

29.7.70 The magnitude of the change in tourism and recreation behaviour shall be assessed separately for each receptor.

29.7.71 The magnitude of the change in tourism behaviour in Skegness as a result of the visibility of the ORCP(s) is discussed in Section 29.7.63. It is determined that the magnitude of the impact on visitor behaviour will be **Negligible**.

29.7.72 Two locations along the Macmillan Way are identified in Volume 3, Chapter 9: Landscape and Visual Assessment as having potentially significant impacts for walkers in the area. These are:

- Viewpoint 4: Macmillan Way at Ship Inn; and
- Viewpoint 5: Macmillan Way near Welland House Farm

29.7.73 For both locations the construction of the OnSS and its presence during the operational phase will be in contrast to the current local landscape, which is characterised by flat arable fields land and general agricultural buildings. At both locations the visibility of the OnSS will be for a short duration of the route. The visibility of the OnSS at these points is therefore expected to result in a minor change of behaviour of users. The magnitude of the impact has therefore been assessed as **Minor (negligible)**.

Sensitivity

29.7.74 The sensitivity of the tourism assets in Skegness to the visibility of the ORCP(s) is discussed in Section 29.7.63. It is determined that the sensitivity of these assets has been assessed as **Negligible**.

29.7.75 For recreational users of the Macmillan Way, the visual impact assessment states that walkers are more susceptible to such visual impacts as they have a heightened awareness of their surroundings. In addition to visual impacts, there are other factors which determine whether somebody will walk all of, or part of, the Macmillan Way route. These include raising money for charity and the health benefits of walking. The changes in landscape along part of the route are likely to have only a minor influence on the ability of the Macmillan Way to attract users and will have no influence in its ability to accommodate users. The sensitivity of the Macmillan Way is therefore assessed as being **Minor**.

Significance of Impact

29.7.76 Based on the assessments of sensitivity and magnitude, the effect of the construction, operation and decommissioning of the Project on tourism and recreation assets has been assessed as **Negligible – Not Significant** for tourism attractions in Skegness and **Minor – Not Significant** for the Macmillan Way.

Table 29.41: Significance of Tourism and Recreation Impacts

	Macmillan Way	Skegness Tourism Assets
Sensitivity of Receptor	Minor	Negligible
Magnitude of Impact	Minor	Negligible
Significance	**Minor – Not Significant**	**Negligible – Not Significant**

Operation

Estimating O&M Expenditure

29.7.77 The O&M of the Project will generate economic impacts through the expenditure that will be required throughout the lifetime of the project.

29.7.78 It is expected that a fixed offshore windfarm project in the UK would spend around £59 million per GW installed (BVG Associates, 2019) each year on O&M activities. Therefore, it is estimated that in an average year, £88 million will be spent on the O&M of the Project.

29.7.79 This expenditure will include logistics costs, operational management, grid charges and the maintenance and service of both the WTGs and the wider balance of plant. The largest component of this will be the costs associated with the maintenance and service of the WTGs. It is expected that this activity will increase over time. In a typical year, it is estimated that £76 million will be spend on the maintenance of the Project and £12 million will be spent on the operational costs.

29.7.80 Over the lifetime of the Project, it is expected that £3.1 billion will be spent on O&M costs.

Table 29.42: Operations and Maintenance: Potential Expenditure by Category

	Annual Spend per GW	Total Annual Spend	Lifetime Spend
Operations	£8m	£12 m	£414 m
Maintenance	£51m	£76 m	£2,655 m
Total	**£59m**	**£88 m**	**£3,070 m**

Note: BiGGAR Economics analysis. Totals may not sum due to rounding.

Estimating Distribution of Expenditure

29.7.81 The economic impacts from the development and construction of the Project have been estimated for the LEA, the Regional Area and the UK.

29.7.82 As discussed in Section 29.4 of this chapter, the UK Offshore Wind Sector Deal (UK Government, 2020a) has the target that projects constructed in 2030 will achieve 60% of UK content during their lifetime. The majority of the UK expenditure is expected to occur during the O&M stage.

29.7.83 In line with the worst-case scenario analysis, it has been assumed that Project will not achieve this target but shall achieve the level of UK content that is typical of offshore wind projects in the UK that have been built to date. Analysis by BVG Associates (BVG Associates, 2021) has found that on average 81% of total O&M spending for UK offshore wind projects is sourced domestically. The distribution of UK content by category is shown in Table 29.30. The distribution of contracts within the LEA and Regional Area are based on current industrial capabilities and the assumption that the primary O&M port will be within the LEA.

Table 29.43: Construction and Development: Potential Expenditure by Category and Study Area

	LEA	Regional Area	UK	Imports
Operations	35%	35%	98%	2%
Maintenance	50%	72%	79%	21%
Total	**48%**	**67%**	**81%**	**19%**

Note: BiGGAR Economics analysis . Totals may not sum due to rounding.

29.7.84 In total, this would be equivalent to an average annual spending of:

- £42 million in the LEA;
- £59 million in the Regional Area; and
- £71 million in the UK during the O&M phase of the Project.

29.7.85 This increased turnover in these companies will support employment and generate GVA within these economies.

Increase in GVA

Description of Impact

29.7.86 In a similar way as for the construction phase, economic activity during the O&M phase will lead to changes in GVA.

Magnitude

29.7.87 The magnitude of the economic impact from the expenditure during the O&M phase has been estimated in line with the methodology outlined in section 29.6 of this chapter. For the purposes of assessment, only the direct and indirect economic impacts are considered when determining the magnitude of the impact. These describe the economic activity required to realise the Project and are the focus of other economic assessments associated with offshore wind projects.

29.7.88 The induced impacts are quantified and presented for completeness but are not used in the assessment of magnitude.

29.7.89 As shown in Table 29.31, throughout the supply chain the O&M of the Project is expected to generate an annual total of:

- £24 million GVA in the LEA;
- £37 million GVA in the Regional Area; and
- £51 million GVA across the UK.

Table 29.44: O&M: Total GVA

	LEA	Regional Area	UK
Direct GVA (£m)	16	23	27
Indirect GVA (£m)	7	14	24
Total GVA (£m)	**24**	**37**	**51**
Induced GVA (£m)	*6*	*10*	*21*
Total GVA Including Induced (£m)	*30*	*47*	*73*

Note: Totals may not sum due to rounding.

29.7.90 In line with the approach described in Table 29.19, the magnitude of the effect on the economy of the LEA, Regional Area and the UK is considered to be **Negligible**, because it is equivalent to less than 0.25% of the total GVA of these economies.

Table 29.45: O&M: Magnitude of GVA Impact

	LEA	Regional Area	UK
GVA Impact (£m)	24	37	51
Current GVA of Study Area (2020, £m)	15,800	238,500	1,949,600
Peak GVA as % Current GVA	0.1%	<0.1%	<0.1%
Magnitude of Effect	**Negligible**	**Negligible**	**Negligible**

Sensitivity

29.7.91 The sensitivity of the economic receptors have been assessed as:

- The sensitivity of the economy of the LEA has been assessed as **Moderate**;
- The sensitivity of the economy of the Regional Area has been assessed as **Moderate**; and
- The sensitivity of the UK economy has been assessed as **Minor**.

Significance of Impact

29.7.92 Based on the assessments of sensitivity and magnitude, the effect of the O&M of the Project on the economy of the LEA was assessed as **Minor – Not Significant**. Its effect on the economy of the Regional Area was assessed as **Minor – Not Significant**. Its effect on the economy of the UK was assessed as **Negligible - Not Significant**.

Table 29.46: O&M: Significance of GVA Impact

	LEA	Regional Area	UK
Sensitivity of Receptor	Moderate	Moderate	Minor
Magnitude of Impact	Negligible	Negligible	Negligible
Significance	**Minor – Not Significant**	**Minor – Not Significant**	**Negligible – Not Significant**

Increase in Annual Employment

Description of Impact

29.7.93 The O&M of the Project will result in an increase in the turnover of those businesses supporting operational activities. Changes in turnover will support the jobs required to fulfil contracts.

29.7.94 The assessment of impacts on employment relies on the same assumptions that were adopted in the estimation of GVA impacts occurring during the O&M period.

Magnitude

29.7.95 The magnitude of the economic impact from the expenditure during the development and construction phase has been estimated in line with the methodology outlined in section 29.6 of this chapter. For the purposes of assessment, only the direct and indirect economic impacts are considered when determining the magnitude of the impact. These describe the economic activity required to realise the Project and are the focus of other economic assessments associated with offshore wind projects.

29.7.96 The induced impacts are quantified and presented for completeness but are not used in the assessment of magnitude.

29.7.97 As shown in Table 29.31, throughout the supply chain the O&M of the Project is expected to support a total of:

- 240 jobs in the LEA;
- 400 jobs in the Regional Area; and
- 560 jobs across the UK.

Table 29.47: O&M: Total jobs

	LEA	Regional Area	UK
Direct Jobs	160	230	280
Indirect Jobs	80	170	280
Total Jobs	**240**	**400**	**560**
Induced Jobs	*60*	*110*	*210*
Total Jobs Including Induced	*300*	*510*	*770*

Note: Totals may not sum due to rounding.

29.7.98 In line with the approach described in Table 29.19, the magnitude of the effect on the economy of the LEA is considered to be **Negligible**, because it is equivalent to less than 0.25% of the total employment in this area. Similarly, for both the economy of the Regional Area and the UK, the effect is considered to be **Negligible** as it is equivalent to less than 0.25% of the total number of jobs in these economies.

Table 29.48: O&M: Magnitude of Jobs Impact

	LEA	Regional Area	UK
Jobs Impact	240	400	560
Current total Jobs in Study Area	702,000	4,575,000	30,546,000
Peak GVA as % Current GVA	<0.1%	<0.1%	<0.1%
Magnitude of Effect	**Negligible**	**Negligible**	**Negligible**

Sensitivity

29.7.99 The sensitivity of the economic receptors have been assessed as:

- The sensitivity of the economy of the LEA has been assessed as **Moderate**;
- The sensitivity of the economy of the Regional Area has been assessed as **Moderate**; and
- The sensitivity of the UK economy has been assessed as **Minor**.

Significance of Impact

29.7.100 Based on the assessments of sensitivity and magnitude, the effect of the O&M of the Project on the economy of the LEA was assessed as **Minor – Not Significant**. Its effect on the economy of the Regional Area was assessed as **Minor – Not Significant**. Its effect on the economy of the UK was assessed as **Negligible - Not Significant**.

Table 29.49: O&M: Significance of Jobs Impact

	LEA	Regional Area	UK
Sensitivity of Receptor	Moderate	Moderate	Minor
Magnitude of Impact	Negligible	Negligible	Negligible
Significance	**Minor – Not Significant**	**Minor – Not Significant**	**Negligible – Not Significant**

Potential Impacts During Decommissioning

Economic Impacts

Description of impact

29.7.101 The decommissioning of the Project will also generate economic activity. The number of offshore wind developments that have undergone decommissioning to date is limited, therefore estimates of the costs and activities associated with decommissioning an offshore windfarm of this scale are based on projections, rather than experience.

29.7.102 It is projected that an offshore windfarm of this scale will require approximately £440 million of spend (based on current prices). This will require the removal of the WTGs, foundations, cables, and the substation. The split of decommissioning costs is outlined in Table 29.50 and the works will be completed by companies that are currently involved in the installation of these assets.

Table 29.50: Decommissioning: Potential Expenditure by Category

	Value (£m, 2022 Prices)	Share
WTG Decommissioning	60	13%
Foundation Decommissioning	100	23%
Cable Decommissioning	210	46%
Substation Decommissioning	70	17%
Decommissioning Port	<10	1%
Total Decommissioning Spend	**440**	**100%**

Note: BiGGAR Economics analysis. Totals may not sum due to rounding.

29.7.103 The operational life of the Project is expected to be approximately 35-years and therefore any decommissioning impacts is likely to occur in the 2060s. At this stage, there is the potential for significant supply chain development within the UK to meet the installation and decommissioning demands of the offshore wind sector. However, in line with a worst-case scenario approach it is assumed that the companies who undertake the decommissioning works will be based in the same geographic areas as those who complete the installation works during the development and construction phase.

29.7.104 Therefore, it is estimated that the UK will secure 19% of the contracts associated with the decommissioning of the Project, which is equivalent to contracts with a value of £86 million. It is assumed that all of these works will be completed within the LEA, where the decommissioning port will be based.

Table 29.51: Decommissioning: Distribution of Contracts

	LEA	Regional Area	UK
Value of Decommissioning Contracts (£m)	86	86	86
Split of Decommissioning Contract	19%	19%	19%

Note: Totals may not sum due to rounding.

Magnitude

29.7.105 As with the development and construction phase, this additional expenditure in installation and decommissioning companies will support employment and generate GVA within these companies and the wider supply chain. It is estimated that the total economic impact from this expenditure will support:

- 240-years of employment and generate £50 million GVA in the LEA;
- 270-years of employment and generate £55 million GVA in the Regional Area; and
- 340-years of employment and generate £69 million GVA across the UK.

29.7.106 It is assumed that the decommissioning work will last for two-years and therefore, at its peak the decommissioning of the Project will support 120 jobs in the LEA and 170 jobs across the UK.

Table 29.52: Decommissioning: Economic Impacts

	LEA	Regional Area	UK
Total Decommissioning Economic Impact			
Total GVA Impact (£m)	50	55	69
Total Jobs Impact (Years of Employment)	240	270	340
Peak Decommissioning Economic Impact			
Peak GVA Impact (£m)	25	28	34
Peak Jobs Impact (Jobs)	120	140	170

Note: Totals may not sum due to rounding.

29.7.107 In line with the guidance (UK Government, 2020b) on assessing long term economic impacts, the GVA impacts of the decommissioning activity has been discounted before assessing the magnitude of effect. The discounted peak values of GVA are shown in Table 29.53.

Table 29.53: Decommissioning: Discounted GVA Impacts

	LEA	Regional Area	UK
Peak GVA Impact (£m)	25	28	34
Peak GVA Impact Discounted (£m)	6	7	9

Note: Totals may not sum due to rounding.

29.7.108 In line with the approach in Table 29.19, the magnitude of the economic impacts is determined based on the change in GVA or employment, relative to the current GVA or employment levels. The value of GVA and the number of jobs in each of the study areas in the 2060s is not known and so current values are used to give an indicative measure of magnitude.

29.7.109 As shown in Table 29.54, the change in employment and GVA is equivalent to less than 0.1% of the current GVA and jobs in each of the study areas. The magnitude of all economic impacts during the decommissioning phase has therefore been assessed as **negligible**.

Table 29.54: Decommissioning: Magnitude of Economic (Employment and GVA) Impacts

	LEA	Regional Area	UK
Magnitude of employment impacts			
Peak Employment (Jobs)	120	140	170
Current Jobs	702,000	4,575,000	30,546,000
Peak Jobs as % Current Jobs	<0.1%	<0.1%	<0.1%
Magnitude of Effect	**Negligible**	**Negligible**	**Negligible**
Magnitude of GVA impacts			
Peak GVA Impact Discounted (£m)	6	7	9
Current GVA of Study Area (2020, £m)	15,800	238,500	1,949,600
Peak GVA as % Current GVA	<0.1%	<0.1%	<0.1%
Magnitude of Effect	**Negligible**	**Negligible**	**Negligible**

Sensitivity

29.7.110 The sensitivity of the economy within the LEA have been identified as **Moderate**, based on data to 2022. The relative performance of the economy of the LEA in the 2060s is not possible to predict. No changes have been made to the sensitivity of the economy of the LEA for the decommissioning period.

29.7.111 Similarly, the sensitivity of the economies of the Regional Area and the UK have been assessed as **Moderate** and **Minor** respectively.

Significance of Impact

29.7.112 Based on the assessments of sensitivity and magnitude, the effect of the decommissioning of the Project across each of the economic study areas was assessed as **Minor** - **Not Significant** for the LEA and Regional Area and **Negligible – Not Significant** for the UK.

Table 29.55: Decommissioning: Significance of Economic Assets Impacts

	LEA	Regional Area	UK
Sensitivity of Receptor	Moderate	Moderate	Minor
Magnitude of Impact	Negligible	Negligible	Negligible
Significance	**Minor – Not Significant**	**Minor – Not Significant**	**Negligible – Not Significant**

Social and Community Asset Impacts

Description of impact

29.7.113 As with the construction period, the potential for a significant influx of transient workers having an impact of community and social assets has been scoped into this assessment. This assessment considers the potential impacts associated with a change in demand for housing, educational and healthcare facilities as a result of this workforce.

Magnitude

29.7.114 it is expected that on average the population of the LEA is projected to grow by 4,840 per year between 2018 and 2043. The ONS does not publish population projections beyond the 2040s and therefore, it has been assumed that this growth will continue and form the basis of the assessment for the 2040s. The peak employment that will be supported in the LEA during the decommissioning of the Project is estimated to be 130 jobs. This is equivalent to 3% of the projected annual population growth for the LEA.

29.7.115 The majority of the economic activity within the LEA will be focused around the activities of the decommissioning port and on the decommissioning of offshore infrastructure, such as the WTGs. As discussed in section 29.3 of this chapter, the Humber Energy Strategy has identified the offshore wind sector as a long term opportunity for the area. This is based on a pipeline of offshore wind energy projects in the North Sea that will have demand for installation and decommissioning facilities in the Humber area. It would therefore be expected that the majority of the employment supported in the area will use a workforce that is based in the area.

29.7.116 If it was assumed that 25% of the workforce that was employed during the peak activity were new to the area, this would be equivalent to less than 1% of average annual population growth. In line with the approach to determining the magnitude of social and community asset impacts outlined in Table 29.22, the magnitude of this impact has been assessed as **Negligible**.

Table 29.56: Decommissioning: Magnitude of Social and Community Asset Impacts

	LEA
Peak Population Increase	33
Average Population Increase (2018 – 2043)	4,840
Peak Population Increase as % Normal Population growth	<1%
Magnitude of Effect	**Negligible**

Sensitivity

29.7.117 The sensitivity of the social and community assets within the LEA have been identified as **Minor**, based on data to 2022. The relative performance of the housing market, healthcare provision and education facilities in the LEA in the 2060s is not possible to predict. Over the long term, all of these assets, in theory, have a high level of adaptability and will adjust to meet the needs of the community in the LEA. For example, the allocation of public funding for healthcare and education is linked to the demographic needs of communities. No changes have been made to the sensitivity of the community and social assets within the LEA for the decommissioning period.

Significance of Impact

29.7.118 Based on the assessments of sensitivity and magnitude, the effect of the decommissioning of the Project on the social and community assets of the LEA was assessed as **Negligible - Not Significant**.

Table 29.57: Decommissioning: Significance of Social and Community Asset Impacts

	LEA
Sensitivity of Receptor	Minor
Magnitude of Impact	Negligible
Significance	**Negligible – Not Significant**

29.8 Cumulative Impacts

Identification of Potential Cumulative Impacts

29.8.1 This cumulative impact assessment for Socio-Economics, Recreation and Tourism has been undertaken in accordance with the methodology provided in Volume 1, Annex 5:1: Cumulative Impact Assessment Methodology.

29.8.2 In theory, the existence of developments close to the Project could have an impact upon socio-economics, tourism and recreation. Regarding impacts on socio-economics, the presence of multiple developments may contribute to the creation of economies of scale and the development of robust supply chains, including through the entry of new businesses or the expansion of existing ones.

29.8.3 The projects and plans selected as relevant to the assessment of impacts to Socio-Economics, Recreation and Tourism are based upon an initial screening exercise undertaken on a long list. Each project, plan or activity been considered and scoped in or out on the basis of effect-receptor pathway, data confidence and the temporal and spatial scales involved. For the purposes of assessing the impact of the Project in the region, the cumulative effect assessment technical note submitted through EIA Evidence Plan and forming Volume 1, Annex 5.1 of the PEIR screened in a number of projects and plans presented in Table 29.58.

Table 29.58: Projects considered within the Socio-Economics, Recreation and Tourism cumulative effect assessment

Development Type	Project	Status	Data confidence assessment/phase	Tier
Offshore Wind	Triton Knoll	Active/In Operation	High	Tier 1
Offshore Wind	Dudgeon Extension	Under Examination	High	Tier 1
Offshore Wind	Hornsea Project Two (HOW02)	Under Construction	High	Tier 1
Offshore Wind	Dudgeon	Active/In Operation	High	Tier 1
Offshore Wind	Hornsea Project One (HOW01)	Active/In Operation	High	Tier 1
Offshore Wind	Race Bank	Active/In Operation	High	Tier 1
Offshore Wind	Sheringham Shoal Extension	Under Examination	High	Tier 1
Offshore Wind	Sheringham Shoal	Active/In Operation	High	Tier 1
Offshore Wind	Hornsea Project Four (HOW04)	Under Review	High	Tier 1
Offshore Wind	Lincs	Active/In Operation	High	Tier 1
Offshore Wind	Humber Gateway	Active/In Operation	High	Tier 1
Offshore Wind	Inner Dowsing	Active/In Operation	High	Tier 1
Offshore Wind	Lynn	Active/In Operation	High	Tier 1
Offshore Wind	Hornsea Project Three (HOW03)	Consented	High	Tier 1
Offshore Wind	Westermost Rough	Active/In Operation	High	Tier 1
Offshore Wind	Norfolk Vanguard West	Consented	High	Tier 1
Offshore Wind	Norfolk Boreas	Consented	High	Tier 1

Development Type	Project	Status	Data confidence assessment/phase	Tier
Offshore Wind	Scroby Sands	Active/In Operation	High	Tier 1
Offshore Wind	Norfolk Vanguard East	Consented	High	Tier 1
Offshore Wind	Dogger Bank A	Under Construction	High	Tier 1
Offshore Wind	East Anglia THREE	Consented	High	Tier 1
Offshore Wind	Dogger Bank B	Under Construction	High	Tier 1
Offshore Wind	East Anglia ONE NORTH	Consented	High	Tier 1
Offshore Wind	Sofia	Under Construction	High	Tier 1
Offshore Wind	East Anglia TWO	Consented	High	Tier 1
Offshore Wind	East Anglia ONE	Active/In Operation	High	Tier 1
Offshore Wind	Dogger Bank C	Under Construction	High	Tier 1
Offshore Wind	North Falls	Pre-planning Application	High	Tier 1
Offshore Wind	Galloper	Active/In Operation	High	Tier 1
Offshore Wind	Greater Gabbard	Active/In Operation	High	Tier 1
Offshore Wind	Five Estuaries Offshore Wind Farm Limited	Pre-planning Application	High	Tier 1
Offshore Wind	Teesside	Active/In Operation	High	Tier 1
Solar Farm	Vicarage Drove Solar Farm	Consented	Medium	Tier 1
Energy from waste facility	Boston Alternative Energy Facility	Under Examination	Medium	Tier 1
Solar Farm	Heckington Fen Solar Park	Pre-planning Application	Medium	Tier 1
Solar Farm (and Battery Storage Energy System)	Temple Oaks Renewable Energy Park	Pre-planning Application	Medium	Tier 1

29.8.4 The first step in the assessment of cumulative impacts involves screening for potential impacts on which there may be cumulative implications. All the potential impacts considered in this assessment and the significance of which has been assessed at least as 'negligible - not significant' have been included in the table below.

Table 29.59: Cumulative MDS

Impact	Scenario	Justification
Construction		
Economic impacts	All Tier 1 Projects	Combined expenditure and employment supported by the construction of offshore and onshore elements of the listed projects. Multiple construction projects have the potential to lead to the attraction of investment and to strengthen local supply chains, with implications on the level of GVA supported by each project.
Tourism sector impacts	All Tier 1 Projects	The Project, in combination with other cumulative projects, have a cumulative environmental effect which has an impact on the key tourism assets in the LTRA. Multiple developments have the potential to have cumulative environmental impacts which may have an effect on tourism or recreation assets.
Tourism and recreational assets impacts	All Tier 1 Projects	The Project, in combination with other cumulative projects, have a cumulative environmental effect which has an impact on the key tourism assets in the LTRA. Multiple developments have the potential to have cumulative environmental impacts which may have an effect on tourism or recreation assets.
Social and community asset impacts	All Tier 1 Projects	Cumulative employment supported by the listed projects has an impact of greater magnitude on the housing, educational and health facilities in the LEA.
Operations		
Economic impacts	All Tier 1 Projects	Combined expenditure and employment supported by the O&M of

Impact	Scenario	Justification
		offshore and onshore elements of the listed projects. Multiple construction projects have the potential to lead to the attraction of investment and to strengthen local supply chains, with implications on the level of GVA supported by each project.
Tourism sector impacts	All Tier 1 Projects	The Project, in combination with other cumulative projects, have a cumulative environmental effect which has an impact on the key tourism assets in the LTRA. Multiple developments have the potential to have cumulative environmental impacts which may have an effect on tourism or recreation assets.
Tourism and recreational assets impacts	All Tier 1 Projects	The Project, in combination with other cumulative projects, have a cumulative environmental effect which has an impact on the key tourism assets in the LTRA. Multiple developments have the potential to have cumulative environmental impacts which may have an effect on tourism or recreation assets.
Social and community asset impacts	All Tier 1 Projects	Cumulative employment supported by the listed projects has an impact of greater magnitude on the housing, educational and health facilities in the LEA.

Cumulative Impact Assessment

29.8.5 At this stage of the assessment, it is not possible to quantify the potential magnitude of the cumulative impacts. Therefore, these effects are discussed qualitatively.

Cumulative Economic Impacts

29.8.6 The cumulative effect of the projects outlined in Table 29.58 will be a significant level of demand for services and goods to support the offshore wind energy sector, particularly within the LEA. This would include demand for port services, vessels, manufacturing facilities and skills. This demand will drive the investment required in the sector, in port facilities, manufacturing facilities and skills development.

29.8.7 Without the cumulative developments, there would be reduced chance of supply chain development in the LEA, Regional Area or the Wider UK. Without this development, the UK would be unlikely to meet the targets it has set for either the deployment of offshore wind, or the supply chain development that is outlined in Section 29.4. The cumulative impact of these developments is therefore to enable the supply chain to realise the beneficial impacts greater than those identified earlier in this Chapter.

Cumulative Tourism Impacts

29.8.8 The two environmental factors that have identified significant effects on tourism and recreation assets are:

- Volume 2, Chapter 17: Seascape, Landscape and Visual Impact; and
- Volume 3, Chapter 9: Landscape and Visual Assessment.

29.8.9 The potential for cumulative effects has been identified in Volume 2, Chapter 17: Seascape, Landscape and Visual Impact. This has the potential to increase the magnitude of the impact on tourism assets in Skegness and the neighbouring coastline. However, the sensitivity of these assets to changes in the Seascape has been assessed as negligible, based on previously constructed offshore wind projects in the area. Therefore, any cumulative tourism impacts are also likely to be negligible.

29.8.10 The cumulative assessment in Volume3, Chapter 9: Landscape and Visual Assessment states that none of the cumulative developments in the study area are considered to have the potential to contribute to significant cumulative landscape or visual effects. Therefore, there are no anticipated cumulative effects on tourism or recreation assets as a result of landscape and visual impacts.

Cumulative Social and Community Asset Impacts

29.8.11 The cumulative effect of the projects outlined in Table 29.58 will be a significant level of demand for services and goods to support the offshore wind energy sector, particularly within the LEA. The cumulative employment impacts would also generate cumulative demand for social and community assets.

29.8.12 Social and community assets respond to the long term needs of the communities that they serve. The cumulative employment would create long term opportunities for residents to move to or stay in the area. This would justify investment in assets, such as housing or schools, to meet the demands of these residents. These opportunities would also help to counteract working age depopulation pressures which are projected to affect the area and would contribute to the sustainability of these services. Therefore, the cumulative social and community asset impacts are likely to be beneficial.

29.8.13 In the short term, there is the potential that the cumulative effect of employment result in a greater share of the workforce in the Local Economic Area being new to the area. As shown in Table 29.60, over 75% of peak employees would need to be new to the area before the magnitude of the change would no longer be negligible.

Table 29.60: Magnitude of different shares of peak employees being new to the LEA

Share of peak employees new to the area	Number of peak employees new to the area	Share of annual population growth	Magnitude
25%	370	8%	Negligible
50%	740	15%	Negligible
75%	1,110	23%	Negligible
100%	7,480	31%	Minor

29.8.14 If the cumulative effect resulted in all peak workers being additional to the area, the significance of the effect would be Minor – not significant.

29.9 Inter-Relationships

29.9.1 The inter-related effects assessment considers likely significant effects from multiple impacts and activities from the construction, operation and decommissioning of the Project on the same receptor, or group of receptors.

29.9.2 The Socio-Economics, Recreation and Tourism assessment has considered potential effects arising from impacts identified in other chapters, including;

- Volume 2, Chapter 9: Shipping and Navigation;
- Volume 2, Chapter 12: Infrastructure and Other Marine Users;
- Volume 2, Chapter 17: Seascape, Landscape and Visual Impact Assessment;
- Volume 3, Chapter 6: Onshore Land Use;
- Volume 3, Chapter 7: Noise and Vibration;
- Volume 3, Chapter 8: Onshore Traffic and Transport; and
- Volume 3, Chapter 9: Landscape and Visual Assessment.

29.9.3 The effects on Socio-Economics., Recreation and Tourism are not anticipated to interact in such a way as to result in combined effects of greater significance on any other impact identified elsewhere in the PEIR.

29.10 Transboundary Effects

29.10.1 Transboundary effects have been scoped out of the assessment for Socio-Economics, Recreation and Tourism.

29.11 Conclusions

29.11.1 The assessment of socio-economic, tourism and recreation effects concludes that the Project will have significant, beneficial effects on the economy of the LEA during the development and construction.

29.11.2 The assessment has identified positive effects on the economy of the LEA, the Regional Area and the UK during both the O&M and decommissioning phases, however the magnitude of these impacts are negligible in EIA terms.

29.11.3 The assessment has identified no significant impacts on social and community assets.

29.11.4 Assessment of the impacts on the tourism economy and tourism and recreation assets will follow analysis of other chapters of the PEIR.

Table 29.61: Summary of effects for Socio-Economics, Recreation and Tourism

Impact	Effect	Additional Mitigation Measures	Residual Impact
Construction			
Economic Activity in the LEA (GVA)	Moderate (Significant)	N/A	Moderate (Significant)
Economic Activity in the LEA (Employment)	Moderate (Significant)	N/A	Moderate (Significant)
Economic Activity in the Regional Area (GVA)	Minor (Not Significant)	N/A	Minor (Not Significant)
Economic Activity in the Regional Area (Employment)	Minor (Not Significant)	N/A	Minor (Not Significant)
Economic Activity in the UK (GVA)	Negligible (Not Significant)	N/A	Negligible (Not Significant)
Economic Activity in the UK (Employment)	Negligible (Not Significant)	N/A	Negligible (Not Significant)
Social and Community Asset Impacts	Negligible (Not Significant)	N/A	Negligible (Not Significant)
Tourism Economy Impact in the LTRA	Negligible (Not Significant)	N/A	Negligible (Not Significant)
Tourism Assets in Skegness	Negligible (Not Significant)	N/A	Negligible (Not Significant)
Recreational Use of the Macmillan Way	Minor (Not Significant)	N/A	Minor (Not Significant)
Operation and Maintenance			
Economic Activity in the LEA (GVA)	Minor (Not Significant)	N/A	Minor (Not Significant)
Economic Activity in the LEA (Employment)	Minor (Not Significant)	N/A	Minor (Not Significant)
Economic Activity in the Regional Area (GVA)	Minor (Not Significant)	N/A	Minor (Not Significant)
Economic Activity in the Regional Area (Employment)	Minor (Not Significant)	N/A	Minor (Not Significant)
Economic Activity in the UK (GVA)	Negligible (Not Significant)	N/A	Negligible (Not Significant)
Economic Activity in the UK (Employment)	Negligible (Not Significant)	N/A	Negligible (Not Significant)

Impact	Effect	Additional Mitigation Measures	Residual Impact
Tourism Economy Impact in the LTRA	Negligible (Not Significant)	N/A	Negligible (Not Significant)
Tourism Assets in Skegness	Negligible (Not Significant)	N/A	Negligible (Not Significant)
Recreational Use of the Macmillan Way	Minor (Not Significant)	N/A	Minor (Not Significant)
Decommissioning			
Economic Activity in the LEA (GVA)	Minor (Not Significant)	N/A	Minor (Not Significant)
Economic Activity in the LEA (Employment)	Minor (Not Significant)	N/A	Minor (Not Significant)
Economic Activity in the Regional Area (GVA)	Minor (Not Significant)	N/A	Minor (Not Significant)
Economic Activity in the Regional Area (Employment)	Minor (Not Significant)	N/A	Minor (Not Significant)
Economic Activity in the UK (GVA)	Negligible (Not Significant)	N/A	Negligible (Not Significant)
Economic Activity in the UK (Employment)	Negligible (Not Significant)	N/A	Negligible (Not Significant)
Social and Community Asset Impacts	Negligible (Not Significant)	N/A	Negligible (Not Significant)

29.12 References

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