



Galloper Wind Farm Project
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21 SOCIO-ECONOMICS

21.1 Introduction

21.1.1 This Chapter of the Environmental Statement (ES) assesses the potential socio-economic effects arising from the construction, operation and decommissioning phases of the proposed Galloper Wind Farm (GWF) project. It considers project expenditure and its effect on the local economy; it also considers direct employment (GWF construction and operational workers) and indirect employment (local services employing additional staff) associated with GWF and the effects on local employment.

21.1.2 Impacts upon tourism and recreation are considered separately in **Chapter 24 Land Use, Tourism and Recreation**.

21.2 Guidance and Consultation

21.2.1 National Policy Statements (NPS) provide the primary basis on which the Infrastructure Planning Commission (IPC) is required to make its decisions. In preparing this chapter the following NPS were reviewed:

- Overarching National Policy Statement (NPS) for Energy (EN-1) (DECC, 2011a);
- NPS for Renewable Energy (EN-3) (DECC, 2011b); and
- NPS for Electricity Network Infrastructure (EN-5) (DECC, 2011c).

21.2.2 The specific assessment requirements for socio-economics, as detailed within the NPSs, are repeated in the following paragraphs. The assessment requirements suggested within the NPSs have been applied to this assessment and where appropriate the specific sections of this Chapter that address the issues are indicated. Where any part of the NPS guidance has not been followed within this assessment, it is stated after the NPS text and a justification provided.

21.2.3 Sections 5.12.3 of the NPS EN-1 states that: "*The assessment should consider all relevant socio-economic impacts, which may include:*

- *The creation of jobs and training opportunities*
See **Sections 21.6, 21.7 and 21.10**;
- *The provision of additional local services and improvements to local infrastructure, including the provision of educational and visitor facilities*

Given the relatively small scale construction workforce (approximately 750 workers associated with the offshore works and 100 associated with the onshore works), and the small

number of operational jobs (approximately 50) the provision of additional local services and infrastructure has not been considered as part of this assessment;

- *Effects on tourism*

Tourism is considered within **Chapter 24 Land Use, Tourism and Recreation**;

- *The impact of a changing influx of workers during the different construction, operation and decommissioning phases of the energy infrastructure*

See **Sections 21.6, 21.7 and 21.8**; and

- *Cumulative effects – if development consent were to be granted for a number of projects within a region and these were developed in a similar timeframe”*

See **Sections 21.10**.

21.2.4 Sections 5.12.4 and 5.12.5 of NPS EN-1 state that: “*Applicants should describe the existing socio-economic conditions in the areas surrounding the proposed development and should also refer to how the development’s socio-economic impacts correlate with local planning policies. Socio-economic impacts may be linked to other impacts, for example the visual impact of a development may also have an impact on tourism and local businesses.*”

21.2.5 The socio-economic conditions in the surrounding area and the potential impacts are presented in **Section 21.4**. The potential visual impact of the development and its influence upon tourism and the relationship with local plan land use policies is considered within **Chapter 24 Land Use, Tourism and Recreation**.

21.2.6 NPS EN-3 and EN-5 do not specifically consider socio-economic effects.

21.2.7 NPS EN-1 notes that the IPC may also consider Development Plan Documents or other documents in the Local Development Framework. The NPS takes into account existing Planning Policy Statements (PPS) and Planning Policy Guidance (PPG). On this basis the following local, regional¹ and national policies were reviewed, but given less weight in their influence on the assessment process:

National policy

¹ Regional Strategies were revoked in May 2010. However, following legal challenge in November 2010 it was determined that the Secretary of State for Communities and Local Government was not entitled to use discretionary power to revoke regional strategies, and they remain in place. At the time of writing this ES it was considered appropriate to assume that regional policies should be considered within any development proposal, however this situation may evolve after the application is submitted, assuming the Localism Bill is enacted as intended by the government.

- Planning Policy Statement 22 – Renewable Energy (ODPM, 2004);
- The UK Renewable Energy Strategy (DECC, 2009a); and

Regional policy

- East of England Plan (Government Office for the East of England, 2008); and
- East of England Development Agency Regional Economic Strategy: Inventing our Future – Collective action for a sustainable economy (EEDA, 2008).

Local policy

- The Suffolk Coastal Local Development Framework Draft Core Strategy and Strategy Development Policies (Suffolk Coastal District Council, 2010); and
- Saved policies from: Suffolk Coastal Local Plan (Suffolk Coastal District Council, 2001); and

Planning Policy Statement 22 (PPS22) – Renewable Energy (ODPM, 2004)

- 21.2.8 PPS22 sets out the Government’s policies for renewable energy, which planning authorities should take into account when preparing local development documents and when taking planning decisions. This includes the wider environmental and economic benefits of renewable energy projects and demonstration of how any environmental, economic and social impacts have been minimised.

The UK Renewable Energy Strategy (DECC, 2009a)

- 21.2.9 The Renewable Energy Strategy recognises the need for the UK to radically increase its use of renewable energy. Driven by the need to combat climate change through the reduction of greenhouse gas emissions, to reduce dependence on foreign energy, and as a result of dwindling national oil and gas resources, the policy sets out the Government’s strategy for delivering ambitious renewable energy targets. The primary target is for 15% of the UK’s energy to be sourced from renewable energy by 2020. The strategy recognises the extensive resources of potential offshore wind generation as being one of the highest in Europe and details how this resource can be best utilised. It also recognises the potentially significant contribution a buoyant offshore wind industry would have upon the national economy in terms of jobs and economic growth.

The Regional Economic Strategy: Inventing our Future – Collective Action for a Sustainable Economy (EEDA, 2008)

21.2.10 The East of England Development Agency Regional Economic Strategy (RES) aims to ensure the future well-being and success of all people in the East of England. It sets a long-term vision for the development of the economy in the East of England for the next 20 years, and details the actions required. The strategy recognises that the development of offshore wind creates valuable research and development opportunities in the East of England region. It also seeks to maintain the East of England's position among the English regions as the leading renewable energy producer to 2031 and beyond. Like the East of England plan, the RES also sets out ambitious targets for renewable energy generation.

The Suffolk Coastal Local Plan First Iteration (SCDC, 2001)

21.2.11 Although the Local Plan will be replaced by the Council's Local Development Framework at some point in the future, a large number of policies from the Local Plan were saved to ensure continuing planning policy coverage. These policies included AP98 Renewable Energy, which encourages development of renewable schemes within the district.

The Suffolk Coastal Local Development Framework Draft Core Strategy and Strategy Development Policies (SCDC, 2010)

21.2.12 The Core Strategy & Development Management Policies set out the way that the District will grow over the next 20 years. It details what types of developments will be acceptable and includes planning policies to control what can and cannot be built and the location of these developments. The Core Strategy encourages renewable energy schemes within the District and also highlights the need to improve the local economy.

Consultation

21.2.13 As part of ongoing consultation, key stakeholders were invited to respond to a scoping document produced as part of the EIA process (GWFL, 2010). **Table 21.1** summarises issues that were highlighted by the consultees in the IPC Scoping Opinion (IPC, 2010) and indicates which sections of the assessment address each issue.

21.2.14 Further consultation was undertaken through formal Section 42 consultation under the Planning Act 2008 (see **Chapter 7 Consultation**) via the submission of a Preliminary Environmental Report (PER). Community consultation under Section 47 has also been carried out in parallel with the Section 42 statutory consultation. The process for community consultation is set out in a Statement of Community Consultation (SoCC) (see **Chapter 7**). **Table 21.1** also summarises issues that were highlighted throughout the consultation period.

21.2.15 Full details of responses received are presented in the IPC Scoping Opinion report (IPC, 2010) and the Consultation Report that accompanies the Development Consent Order (DCO) for this application.

Table 21.1 Summary of consultation and issues

Date	Consultee	Summary of issue	Section where addressed
August 2010	IPC (Scoping Opinion)	Information should be provided on worker accommodation and include an assessment of the potential impacts of the influx of workers. The cumulative impact of workers on nearby major projects should also be assessed.	The influx of construction workers is considered in Section 21.6 and cumulative impacts are considered in Section 21.10
August 2010	IPC (Scoping Opinion)	The ES should consider both direct and indirect employment impacts. Therefore, the potential impacts during the operational phase should consider local employment generally and not only the work associated directly with the proposed wind farm.	These are considered in Sections 21.6 and 21.7
August 2010	Norfolk County Council (Scoping Opinion)	It would be helpful if the ES/EIA could provide accurate figures of those likely to be employed both during construction and once the Wind Farm is fully operational. There should also be a statement as to whether the labour would be sourced from local firms or if expertise would need to be imported to the region.	Table 21.12 and further details provided in Section 21.6
August 2010	East of England Development Agency (Scoping Opinion)	The EIA should provide commentary on how it will contribute to the region's economic ambitions for employment and maximising the benefits of the environmental goods and services markets. At the same time, it should comment on how it impacts on targets for CO ₂ reductions and renewable energy.	The region's economic ambitions are considered within Sections 21.6 and 21.7 CO ₂ targets are considered within Chapter 2 Project Need

Date	Consultee	Summary of issue	Section where addressed
August 2010	Leiston-cum-Sizewell Town Council (Scoping Opinion)	Effects on local amenity and economy during the construction of the substation should be considered	Local amenity is considered within Chapter 24. Local economic impacts are considered within Section 21.6
July 2011	East of England Development Agency (Section 42)	<p>EEDA considers that, given the scale of the proposed development the environmental statement should identify the wider socio-economic benefits and costs.</p> <p>The East of England has a strong skills base for energy technologies. The proposal should include details of its relationship with research and development and supply chain opportunities within the East of England.</p> <p>EEDA would wish to ensure that the development will not affect shipping lines to the regions ports.</p>	<p>Indirect employment and expenditure is considered within Section 21.6.</p> <p>The supply chain is considered within Section 21.6</p> <p>The potential effects on shipping lines is considered in Chapter 17</p>

21.3 Methodology

Study area

- 21.3.1 For the purposes of establishing the socio-economic baseline for the project; the local area has been defined as Suffolk Coastal District or the county of Suffolk (depending on the data available) which has been compared to data relating to the East of England region.

Characterisation of existing environment

21.3.2 Information on the existing socio-economic environment has been collated through data and literature review including the following sources:

- Nomis – Official labour market statistics²;
- Neighbourhood Statistics – Office for National Statistics³;
- East England Development Agency (EEDA) Regional Economic Strategy;
- Suffolk Coastal Local Development Framework; and
- Insight East – Suffolk Economic Profile

Assessment of impacts

21.3.3 As detailed earlier, NPS EN-1 identifies that the assessment of socio-economic impacts should consider:

- The creation of jobs and training opportunities;
- The provision of additional local services;
- Effects on tourism;
- The impact of workers; and
- Cumulative effects.

21.3.4 This assessment has been based on published studies which analyse the supply chain and the economic effects of wind farm developments. Key studies that have been referred to are:

- Offshore Wind Onshore Jobs – A New Industry for Britain (Greenpeace, 2004);
- Scroby Sands – Supply Chain Analysis, a report to Renewables East (Douglas-Westwood and ODE, 2005);
- POWER – Transnational Offshore Wind Supply Chain Study, (Douglas-Westwood, 2007);
- UK Offshore Wind: Moving Up a Gear (BWEA, 2007);
- Wind Energy in the UK: A BWEA State of the Industry Report (BWEA, 2008); and
- UK Offshore Energy Strategic Environmental Assessment (DECC, 2009b).

² <https://www.nomisweb.co.uk/reports/lmp/la/2038431858/report.aspx>

³ <http://www.neighbourhood.statistics.gov.uk/dissemination/>

Magnitude of the effect and impact significance

21.3.5 Socio-economic impacts do not have recognised standards. That is, there are no easily applicable ‘state of local society’ standards against which the predicted impacts of a development can be assessed. Whilst a reduction in local unemployment may be regarded as positive, and an increase in local crime as negative, there are no absolute standards. Views on the significance of economic impacts, such as the proportion and types of local employment on a project, are often political and arbitrary. Nevertheless it is sometimes possible to identify what might be termed threshold or step changes in the socio-economic profile of an area.

21.3.6 **Table 21.2** provides a guide for assessing impact magnitude. The percentage impact changes identified may appear to be rather low, but they need to be considered within the context of the local receptors and the overall change in the study area. As outlined, the scale of impact magnitude will vary according to the type of socio-economic impacts under consideration. The approach presented in **Table 21.2** differs from that presented in Chapter 4 EIA Methodology as the impacts are considered in terms of the actual known values for the local/regional economy rather than attempting to define receptor sensitivity.

Table 21.2 Magnitude and impact significance for socio-economic effects

Negligible Impact	Minor Impact	Moderate Impact	Major Impact
Local Expenditure and Wider Economic Impacts			
Change of less than $\pm 0.25\%$ on baseline expenditure levels in the local economy	Change of $\pm 0.25\text{-}1\%$ on baseline expenditure levels in the local economy	Change of $\pm 1\text{-}2\%$ on baseline expenditure levels in the local economy	Change of more than $\pm 2\%$ on baseline expenditure levels in local economy
Direct and Indirect Employment Impacts			
Change of less than $\pm 0.25\%$ on baseline employment levels in the local economy	Change of $\pm 0.25\text{-}1\%$ on baseline employment levels in the local economy	Change of $\pm 1\text{-}2\%$ on baseline employment levels in the local economy	Change of more than $\pm 2\%$ on baseline employment levels in local economy

21.4 Existing Environment

21.4.1 The existing socio-economic baseline for the assessment addresses the following considerations:

- Population and population change;
- Economic activity and wealth creation;
- Employment characteristics and change; and
- Unemployment.

Population

21.4.2 **Table 21.3** summarises the Suffolk and East of England populations.

Table 21.3 Population figures (2009)

Total resident populations		
	Suffolk Coastal District	East of England
All people	124,100	5,766,600
Males (all ages)	60,400	2,841,400
Females (all ages)	63,700	2,925,200
Children 0-15	22,100	1,091,600
Working age 16-64M / 59F	69,100	3,492,100
Older people 65M / 60F and over	32,900	1,182,900

Source: ONS mid-year population estimates.

21.4.3 The region's population grew by over 14% between 1981 and 2005, which is more than double the rate for the UK as a whole and second only to the South West. The 2009 population is estimated at 5.8 million, but further growth to 6 million by 2021 is likely under current trends.

21.4.4 In Suffolk Coastal District, the transport, storage and communications sector is the largest employment sector, closely followed by the wholesale and retail trade and repairs sector (Office of National Statistics website: accessed May 2011). The wholesale and retail trade and repairs sector is the biggest employment sector in the East of England. The retailing, real estate, renting and business activities sector and health and social work sector also feature high numbers of employment in the District. Manufacturing is the second largest sector of employment within the East of England region.

21.4.5 **Table 21.4** illustrates the number of people employed by industry type within the Suffolk Coastal District area and the East of England region.

Table 21.4 Employment by industry

Employment industry	Suffolk Coastal District		East of England	
	Total	%	Total	%
All People (aged 16-74 in employment)	52,327		2,579,378	
Agriculture, hunting and forestry	1,975	3.77	49,009	1.91
Fishing	43	0.08	637	0.02
Mining and quarrying	84	0.16	5,457	0.21
Manufacturing	5,025	9.6	373,155	14.46
Electricity, gas and water supply	992	1.9	16,223	0.63
Construction	3,279	6.27	196,461	7.61
Wholesale and retail trade, repairs	7,909	15.11	445,887	17.28
Hotels and restaurants	2,925	5.59	107,418	4.16
Transport, storage and communications	7,988	15.27	191,252	7.41
Financial intermediation	1,886	3.6	149,883	5.81
Real estate, renting and business activities	5,495	10.5	343,264	13.31
Public administration and defence, social security	2,757	5.27	133,066	5.16
Education	3,621	6.92	189,274	7.34
Health and social work	5,607	10.72	249,776	9.68
Other community, social and personal service activities	2,617	5.24	120,556	4.67
Private households with employed persons	109	0.21	2,466	0.09
Extra-territorial organisations and bodies	15	0.03	5,594	0.22

Source: 2001 Census & Office of National Statistics.

21.4.6 **Table 21.5** illustrates the number of people employed by profession within the Suffolk Coastal District area and the East of England region.

Table 21.5 Employment by profession

Occupation	Suffolk Coastal District (numbers)	Suffolk Coastal District (%)	East of England (%)
Managers and senior officials	10,600	17.2	17.3
Professional occupations	5,400	8.7	13.2
Associate professional and technical	8,100	13.2	14.4
Administrative and secretarial	6,000	9.8	11.1
Skilled trades occupations	8,000	12.9	10.8

Occupation	Suffolk Coastal District (numbers)	Suffolk Coastal District (%)	East of England (%)
Personal service occupations	4,800	7.8	7.7
Sales and customer service	5,300	8.6	7.2
Process plant and machine operatives	5,600	9.1	6.8
Elementary occupations	7,800	12.7	11.2

Source: 2001 Census & Office of National Statistics.

21.4.7 In a UK context, employment rates are high within the East of England region; of the working-age population 73.5% are in employment (April 2009 to March 2010). Suffolk Coastal District has a higher rate of employment at 77.2%. The post-retirement age workforce is an increasingly important source of employment growth. **Table 21.6** details the number of economically active, self employed and unemployed people in the district and region.

Table 21.6 Employment and unemployment

Type	Suffolk Coastal District (numbers)	Suffolk Coastal District (%)	East of England (%)
All people			
Economically active	58,100	83.9	78.9
In employment	62,900	77.2	73.5
Employees	52,900	66.3	63.1
Self employed	10,000	10.9	10.1
Unemployed (model-based)	3,100	4.7	6.6
Males			
Economically active	37,100	92.7	85.5
In employment	34,200	84.9	79.2
Employees	27,900	71.7	64.2
Self employed	6,200	13.2	14.8
Unemployed	Sample size too small	N/A	7.1
Females			
Economically active	31,000	75.7	72.3
In employment	28,700	70.0	67.8
Employees	25,000	61.3	62.0
Self employed	3,800	8.7	5.4

Type	Suffolk Coastal District (numbers)	Suffolk Coastal District (%)	East of England (%)
Unemployed	Sample size too small	N/A	6.1

Source: Nomis – Official labour market statistics (2010).

Education

- 21.4.8 At a regional level, the East of England’s skills profile compares favourably to the national average: in 2010, 27.6% of adults in the East of England were qualified to National Vocational Qualification (NVQ)⁴ level 4 and above, 52.5% were qualified to NVQ level 3 and above and 70.6% were qualified to NVQ level 2 and above. This compared to national averages of 29.9%, 49.9% and 65.4% respectively. **Table 21.7** sets out these figures.
- 21.4.9 The figures for Suffolk Coastal District are similar to those for the East of England, with a slightly higher percentage of people being educated to NVQ4 or above and larger percentages for the other NVQ categories.

Table 21.7 Educational qualifications and attainment

Qualification	Suffolk Coastal District (numbers)	Suffolk Coastal District (%)	East of England (%)	UK (%)
NVQ4 and above	21,000	27.6	27.3	29.9
NVQ3 and above	40,000	52.5	46.9	49.9
NVQ2 and above	53,900	70.6	64.2	65.4
NVQ1 and above	66,200	86.9	79.9	78.9
Other qualifications	5,400	7.1	8.8	8.8
No qualifications	4,600	6.0	11.3	12.3

Source: Nomis – Official labour market statistics (2010).

Earnings by residence

- 21.4.10 Weekly earnings in Suffolk District Council are, overall, slightly lower than the average for the East of England region. Weekly pay for males in full-time employment is fractionally higher than the average for males in the region, whilst women in full-time employment earn approximately 15% less than the average for women in the region, as detailed in **Table 21.8**.

⁴ National Vocational Qualifications are work based awards in England, Wales and Northern Ireland that are achieved through assessment and training. There are five levels of NVQ ranging from Level 1, which focuses on basic work activities, to Level 5 for senior management.

Table 21.8 Earnings by residence

	Suffolk Coastal District average (gross weekly pay)	East of England average (gross weekly pay)
Full-time workers	£ 494.20	£ 509.40
Male full-time workers	£ 569.70	£ 565.80
Female full-time workers	£ 364.70	£ 432.60

Source: Nomis – official labour market statistics (2010).

Suffolk economy

- 21.4.11 Suffolk Coastal District is largely rural in character, with much of its area designated as an Area of Outstanding Natural Beauty (AONB), which results in it being popular as a tourist destination. The extensive network of sites protected for nature conservation also makes a significant contribution to visitor numbers, particularly sites such as Minsmere Royal Society for the Protection of Birds (RSPB) Reserve to the north of Sizewell.
- 21.4.12 The economy is supported by a variety of transport links to and from the area. These include:
- Direct links to the motorway network via regional trunk roads such as the A14 and A12;
 - Rail services to London and the Midlands;
 - The Port of Felixstowe, the largest container port in the UK and the fourth largest in Europe; and
 - London Stansted airport, the closest major airport easily accessed via the A12 and A120. Norwich airport is also accessible via public transport and by road.
- 21.4.13 The District includes the towns of Aldeburgh, Felixstowe, Framlingham, Leiston, Saxmundham, and Woodbridge, with the nearest largest major urban centre outside of the District being Ipswich. Ipswich is also the regional centre for employment, shopping, leisure and social/health facilities.
- 21.4.14 Employment in Suffolk Coastal District is relatively widely spread, with numerous small firms, companies and employers in small towns such as Leiston, Woodbridge, Wickham Market, and outlying villages. Concentrations of employment occur in the larger towns, identified above, as well as at Sizewell Nuclear Power Station and the Ministry of Defence at Woodbridge, both of which make notable contributions to the local economy.

21.4.15 Expenditure within Suffolk grew between 2000 and 2006 with Gross Value Added⁵ (GVA) increasing from approximately £80 billion to £110 billion across all industry sectors (Suffolk County Council, 2008); refer to **Table 21.9**. Since then there has been a slow down in the economy, however, data is not available at the local level for the period after 2006.

Table 21.9 Gross Value Added for Suffolk per sector (£ million)

	2000	2001	2002	2003	2004	2005	2006
Agriculture	243	234	235	259	286	186	202
Manufacturing	2,063	2,010	1,950	1,864	1,946	2,045	1,950
Construction	535	572	708	669	774	831	899
Distribution / transport	2,180	2,431	2,451	2,547	2,558	2,703	2,894
Business services	1,581	1,605	1,840	2,186	2,717	2,613	2,661
Public sector	1,745	1,816	1,929	2,153	2,462	2,464	2,596
Total GVA	8,347	8,668	9,114	9,678	10,743	10,843	11,202

Source: Office of National Statistics – reported within *Suffolk Trends* (Suffolk County Council, 2008).

21.4.16 The role of tourism in Suffolk is discussed within **Chapter 24 Land Use, Tourism and Recreation**.

Offshore renewables supply chain

21.4.17 The supply chain for offshore wind farm projects is fundamentally international in nature. A complete supply chain does not exist within the UK and, as such, much of procurement and supply is based in continental Europe, where a complete supply chain is available and at a greater state of advancement than potential UK based competition.

21.4.18 The wind turbine generator (WTG) supply chain is, however, expanding to meet demand and opportunities exist for new suppliers of equipment and services to enter the sector. Several of the leading WTG manufacturers are in the process of opening factories in the UK, for example in January 2011 Siemens announced that it would be opening a new factory in Hull, which is expected to employ 1,200 people with a reported investment of £80m.

21.4.19 Over the next 4-6 years, the majority of offshore wind farms being developed worldwide will be situated in countries bordering the North Sea; with Germany, Denmark, the Netherlands, and the UK all looking to develop around their respective coastlines. 95% of existing installed offshore wind capacity worldwide is around the coastline of these countries (Douglas-Westwood, 2007).

⁵ Gross Value Added is a measure of the value of goods and services produced in an area, industry or sector of an economy, and effectively represents expenditure within that part of the economy.

- 21.4.20 There is strong political pressure to develop offshore wind energy as quickly as possible to meet 2020 renewable energy targets. As such, generation companies across the EU are competing for limited supply chain resources.
- 21.4.21 A substantial number of UK companies currently involved in the offshore wind supply chain are based in the East of England, as a result of the number of offshore wind farms proposed along the east coast. The ports at Felixstowe and Lowestoft are already being used for wind farm survey and construction activities, Felixstowe being used for the construction of Kentish Flats and Lowestoft is now the operations base for the Greater Gabbard OWF. Great Yarmouth harbour has also been upgraded and is well placed to accommodate offshore construction vessels. Also, councils in Suffolk, Essex and Norfolk have signed an agreement to deliver a skills and jobs package which will allow the East of England to benefit from offshore wind farms in the area.

21.5 Assessment of Impacts – ‘Worst Case’ Definition

- 21.5.1 Full details on the range of flexibility being considered by Galloper Wind Farm Ltd are provided in **Chapter 5 Project Details**.
- 21.5.2 For the purpose of the socio-economic assessment, it has been assumed that a construction workforce of approximately 850 staff (including up to 100 staff for the onshore works) will be used for any of the range of options proposed within **Chapter 5**.
- 21.5.3 Project expenditure figures for the construction of GGWOF have been used as a proxy dataset for the expected spend associated with GWF. The offshore elements of GGWOF and GWF are similar in scale; however the proposed onshore elements of GWF cover a larger footprint than those for GGWOF and it is likely that there will actually be a larger level of expenditure in the local and regional economy to that reported in this Chapter. However, the smaller spend profile of GGWOF represents the worst case scenario for GWF.

21.6 Assessment of Impacts during Construction

Introduction

- 21.6.1 The construction of GWF may have an effect on the following elements of the local and/or regional economies:
- Expenditure – financial investment for a number of organisations who will be supplying services and goods necessary to the development and construction of the wind farm; and
 - Employment – direct development, construction and operations employment, and indirect employment further along the supply chain.

- 21.6.2 Potential effects (both positive and negative) upon tourism are discussed in **Chapter 24 Land Use, Tourism and Recreation**.
- 21.6.3 Where details for GWF are known these have been used within this assessment. Where data is not available for GWF, figures from the Greater Gabbard Offshore Wind Farm (GGOWF) project has been used as proxy data. Some of this data has been sourced from the GGOWF ES (Greater Gabbard Offshore Wind Ltd, 2005) and other data has been provided by Greater Gabbard Offshore Winds Ltd (GGOWL). As GWF is anticipated to be of a similar size and nature to the GGOWF project offshore, it has been assumed that the scale of offshore expenditure will also be similar. Onshore the scale of the electrical infrastructure for a 132/400kV substation is larger than for GGOWF; however using the reported expenditure for GGOWF is considered appropriate as this would represent the worst case scenario with regard to socio-economic impacts. Whilst the assessment uses figures from the GGOWF project to predict the magnitude of the expected socio-economic impacts of GWF, the actual values will inevitably be subject to change. **Table 21.10** summarises the sources of the datasets used within this assessment.

Table 21.10 Source of data used within this assessment

Dataset	Source
Direct project expenditure (Table 21.11)	GGOWL
Source of construction materials (Table 21.11)	GGOWL
Direct employment (Table 21.12)	GGOWF, 2005

Expenditure

- 21.6.4 GWF will be a substantial project with significant total capital costs. However, it is unlikely that large amounts of the capital spend will significantly contribute to the East of England economy as the supply chain is primarily based in mainland Europe.
- 21.6.5 **Table 21.11** provides details of approximate expected costs of materials needed for both the offshore and onshore construction works of the wind farm, and provides details of whether these may be sourced locally or from further afield. These figures are based on those for GGOWF and therefore some elements may be different. For example, a connection to adjacent overhead lines is proposed for the GWF scheme but did not comprise part of GGOWF. However, due to the similarities in size, the figures in **Table 21.11** are considered appropriate for use in relation to GWF.

- 21.6.6 Site preparation works, for offshore and onshore phases, will provide opportunities for contractors and materials supply to be sourced within Suffolk. These represent relatively small proportions of the total cost of materials and equipment for each phase (approximately 1% of the offshore costs, and 8% of the onshore costs). However, they still equate to approximately £8m expenditure in Suffolk for the offshore works and approximately £1m expenditure in Suffolk for the onshore works, based on the expenditure on GGOWF.
- 21.6.7 Overall expenditure in Suffolk for the offshore works is expected to be approximately £15m - £16m; and for the onshore works is expected to be approximately £3m - £4m based on GGOWF.
- 21.6.8 Expenditure in the wider East of England Region for the offshore works is expected to be approximately £8m; and for the onshore works would be anticipated to be approximately £5m based on GGOWF.
- 21.6.9 Expenditure on key elements of the wind farm, such as WTG, will result in further expenditure lower down the supply chain (e.g. 3rd and 4th tier suppliers) for component parts (such as bearings, gears, lubricants etc). As such, the direct expenditure is likely to 'recirculate', supporting indirect expenditure to other companies. This is known as a multiplier effect, and would have the potential to bring some minor benefits to the local or regional economies, although this is limited and is not possible to quantify, not least because the scale of this effect will be realised via a combination of uncertainties such as the number of new wind farms being developed through to construction in the UK (pipeline effect) and national market and labour force effects that may (or may not) attract companies to base their operations in the East of England.
- 21.6.10 **Table 21.11** indicates that less than 1% of the materials and equipment needed to install the towers, turbines and cable work could potentially be sourced from Suffolk or the East of England. The potential benefits from the component supply chain are therefore considered to be limited within the region based on GGOWF data.

Table 21.11 Offshore and onshore construction sources of materials and equipment (capital spend figures presented are for GGOWF)

	Total approximate cost of materials / equipment associated with this element of the build	Typical proportion of materials / equipment sourced in Suffolk	Typical proportion of materials / equipment sourced in East of England	Typical proportion of materials / equipment sourced outside of the East of England
Offshore construction				

	Total approximate cost of materials / equipment associated with this element of the build	Typical proportion of materials / equipment sourced in Suffolk	Typical proportion of materials / equipment sourced in East of England	Typical proportion of materials / equipment sourced outside of the East of England
Site prep and ongoing site establishment	£10m	80%	20%	<1%
Foundation work	£520m	0	0	100%
Installing towers and turbines	£110m	<1%	<1%	98%
Cabling	£170m	<1%	0	99%
Commissioning and project management	£50m	10%	10%	80%
Onshore construction				
Site prep	£1.5m – £2.0m	50%	20%	30%
Substation build	£20m	10%	20%	70%
Onshore cabling	£1.5m	10% - 15%	10% - 15%	70% - 80%
HDD works	£500k	10% - 15%	10% - 15%	70% - 80%

Source GGOWL (2010)

21.6.11 The extent to which expenditure is recycled geographically close to the primary development sites is dependent on the size of study area and how specialist the supply chain is. A greater multiplier could, therefore, be expected for the East of England as a whole rather than for just the Suffolk Coastal District economy. Although only a small proportion of the project expenditure will be expected in the Suffolk District, this would still equate to approximately £18m - £20m, based on GGOWF data. Total expenditure for Suffolk was approximately £110 billion in 2006 (refer to **Table 21.9**); an increase in expenditure of approximately £20m would represent an increase of 0.02% investment in the Suffolk area. Based on the criteria given in **Table 21.2** a **negligible effect** is predicted to the local economy from project expenditure.

Direct employment

21.6.12 A certain amount of the employment generated by the construction of a wind farm will inevitably be highly specialised and therefore not necessarily based in the East of England region or indeed within the United Kingdom. It is expected that a proportion of the workforce will be “imported” with specialists

travelling from outside the country and region, and locating themselves in the area during the construction period. Based on experience from previous offshore wind farm projects; this transient workforce will contribute to the local economy indirectly by typically occupying hotels and guest houses in the region.

- 21.6.13 **Table 21.12** provides the estimated breakdown of direct employment during construction for GWF, based on GGOWF employment figures.

Table 21.12 Breakdown of direct employment for GGOWF during construction (GGOWL, 2005)

Area	Estimated Direct Employment during Construction (% of total workforce)
East of England	340 (40%)
Rest of the UK	281 (33%)
Overseas	229 (27%)
Total	850

- 21.6.14 The GGOWF figures indicate that a large proportion of the employment will be available to the local and regional labour market. The local economy may benefit through the location of offshore specialist construction and other related staff, and through the provision of laydown areas for components such as turbine blades. Furthermore, construction of the wind farm will require a number of port-based and shipping services, which could be provided by ports and vessels based in the area, for example at Felixstowe or Great Yarmouth.
- 21.6.15 The potential number of people that will be employed in the East of England region during the construction of GWF is estimated to be 340, based on GGOWF data. The Regional Economic Strategy (EEDA, 2008) has a headline regional ambition to increase the amount of the working-age population in employment to 80% (representing an additional 424,000 people to be employed in the region) by 2031. However, given that these jobs will be limited to the construction phase only it is not expected that GWF construction staffing will significantly contribute to this long-term target, although the creation of a pipeline of offshore wind farm projects in the North Sea over the next 10 to 15 years has the potential to foster this ambition, for which GWF would play a facilitating role.
- 21.6.16 Compared to the numbers of people already employed in the region (approximately 2,500,000) the short-term creation of 340 new jobs represents 0.01% of current workforce in the East of England. Based on the criteria given in **Table 21.2** this represents an impact of **negligible significance** to direct employment in the region.

Indirect and induced employment

- 21.6.17 Indirect employment is generated through additional demand created by the primary construction businesses. In the case of GWF this will be in the form of providing construction materials for extending or creating new laydown areas, or through the provision of support services to the vessels being used for the offshore construction.
- 21.6.18 Whilst the level of employment created directly as a result of the project may be limited in terms of benefiting the local economy, there will be some provision of additional work for local organisations, for example through accommodating specialist construction workers, staff and consultants from client and contractor organisations (management teams). There will also be some minor employment opportunities associated with the onshore activities, such as cleaning staff etc.
- 21.6.19 Induced employment is generated by directly and indirectly employed people spending money as individuals. The extent to which this would occur, and that is attributable to the GWF development, is difficult to assess at this stage. However, as shown in **Table 21.11**, 60% of the construction workforce is expected to be sourced from outside of the East of England region, and may require accommodation within the region. This workforce will then be contributing to the regional economy during that period.
- 21.6.20 Through the lifetime of the project, the regional economy will benefit from spending whether it is linked directly or indirectly to the scheme. The estimated 500 workers that will be sourced from outside of the East of England is equivalent to 0.02% of the existing economically active population (approximately 2,500,000 in total) within the region. Based on the criteria given in **Table 21.2** this represents an impact of **negligible significance** to indirect employment within the region.

21.7 Assessment of Impacts during Operation

Employment

- 21.7.1 Maintenance will be required throughout the operational life of GWF. The technical work associated with this tends to be focussed offshore, although operations centres onshore will provide employment for the operations management and administrative functions, and will serve as a base for vessel operators. Based on the GGOWF project, it is anticipated that approximately 50 technicians will need to be based in the East of England to support the offshore activities. It is likely that an operational port would be chosen to service the wind farm, such as Felixstowe, Great Yarmouth, or Lowestoft where most of these workers will then be based; however no commitment can currently be made to any specific port. In the first year of operation full time service crews will be dealing with snagging issues and routine maintenance at the wind farm site. Thereafter, there will be maintenance and service programmes, for which teams of between 4 and 10 staff will be required. In addition to scheduled maintenance, unscheduled work such as repairs or component replacement (e.g. gearbox or transformer

replacement) would require much larger teams associated with the hire of a construction vessel periodically.

- 21.7.2 There will be a contribution to the revenue of hoteliers and bed and breakfasts, shops and restaurants. However, in the context of the economically active population in the region, this represents an effect of negligible magnitude. Therefore, in the context of the provision of further employment opportunities in the East of England, the significance of the impact is considered to be **negligible**.
- 21.7.3 During the operational phase, no staff will be based at the substation site which will be remotely monitored and controlled. However regular visits from small numbers of maintenance personnel will be made.
- 21.7.4 Due to the small scale nature of the operation of the onshore activities, the significance of the impact on employment opportunities within the region is considered to be **negligible**.

21.8 Assessment of Impacts during Decommissioning

- 21.8.1 At the end of the wind farm's operational life it is assumed that as a worst case scenario all the offshore GWF infrastructure will be removed. This operation will entail considerable expenditure and necessitate employment at similar levels, and with comparable experience and expertise, to that involved in the construction phase. However, it is not possible at this stage to determine the scale of economic effect for this operation. Therefore impacts are not anticipated to be any greater in respect of the beneficial impacts assessed in the construction phase.
- 21.8.2 The specific onshore decommissioning processes and activities will be subject to agreement from the relevant regulators at that time, but are expected to include:
- Export cables between the landfall and the substation site will be disconnected and left in situ;
 - Any equipment installed within the onshore transition bays will remain in situ, unless otherwise agreed with the relevant planning authority;
 - The above ground substation assets (comprising the GWF compound and the transmission compound) will be dismantled and removed from site;
 - The substation foundations will be removed to 1m below ground level; and
 - The landform will be retained.

21.8.3 These activities are likely to require a similar workforce to that involved in the construction phase. Therefore impacts are assumed to be of a similar scale to those detailed for the construction phase, i.e. of **negligible significance**.

21.9 Inter-relationships

21.9.1 **Table 22.13** summarises those inter-relationships that are considered of relevance to socio-economics and, identifies where within the ES other topics have been considered.

21.9.2 **Chapter 29 Inter-relationships** provides a more detailed holistic overview of the potential impacts that may manifest themselves on the same receptors as well as socio-economic impacts.

Table 22.13 Socio-economics inter-relationships

Inter-relationship	Section where addressed	Linked Chapter
Influence of tourism and recreation upon the local socio-economic environment	Section 24.6 and 24.7	Chapter 24 Land use, tourism and recreation

21.10 Cumulative Impacts

21.10.1 Other onshore activities in the onshore study area include the GGOWF onshore electrical connection, Sizewell B Dry Fuel Store, proposed new nuclear development (Sizewell C) and the decommissioning of Sizewell A.

GGOWF onshore electrical connection

21.10.2 The construction of GGOWF will be completed in 2011/2012 and as such there will be no overlap with the construction phase for GWF. Therefore there will be no cumulative impact associated with the construction of GWF and the construction of GGOWF.

Sizewell B Dry Fuel Store

21.10.3 There are no reported socio-economic effects associated with Sizewell B Dry Fuel Store (BEG, 2010).

Sizewell C

21.10.4 This proposed development is expected to be located to the north of the existing Sizewell power station infrastructure and would be expected to have a significant construction workforce associated with it. Construction is not expected to begin on Sizewell C until approximately 2017 at the earliest. Should the GWF onshore construction works extend beyond 2017 there is the potential for a cumulative beneficial impact upon direct and indirect employment and project expenditure in the district and region. However, given the absence of any details of the Sizewell C proposals it is not possible

to undertake a quantitative assessment of this potential cumulative impact at this stage.

Sizewell A decommissioning

- 21.10.5 The Sizewell A decommissioning ES (British Nuclear Group, 2005) reports moderate to major adverse impacts upon direct employment in Suffolk due to Sizewell A ceasing operation and the operational workforce eventually reducing to zero. Given that GWF is controlled remotely, i.e. it has no permanent site based staff, it is not expected that the requirement for construction workers for GWF will in any way offset those job losses at Sizewell A. Therefore there are not anticipated to be any cumulative impacts with GWF.

Wind farms

- 21.10.6 A notable number of other offshore wind farms are proposed for the southern North Sea including Kentish Flats extension, East Anglia ONE Offshore Wind Farm, Dogger Bank and Hornsea Offshore Wind Farm. The pre-consent survey work for all these projects will require a significant supply chain of survey vessels and experienced crews.
- 21.10.7 Whilst detailed consideration of the effects of the proposed GWF project on the offshore wind supply chain and capital investment within the industry is beyond the scope of the EIA, the development, construction and operation of GWF will encourage the advancement of production capability in the industry, therefore supporting the development of future offshore wind farm projects and the national economy.
- 21.10.8 Whilst operating in a competitive market, new infrastructure required for one wind farm could be made available for other wind farms. This would have the effect of reducing the costs and timescales of future projects, enabling a more efficient development programme. Additionally, the continued expansion of the UK offshore wind industry should result in a more UK-focussed (in particular East of England) supply chain and pool of expertise.
- 21.10.9 Construction of GWF will support regional economic growth by providing demand for wind farm components, encouraging the development of productive capital and providing experience (developing human capital) for those employed in its development, construction and operation. The project will, therefore, contribute to the continued development of the offshore wind industry in the East of England.
- 21.10.10 The large number of offshore wind farms proposed in this region will require a supply chain of survey vessels and construction and decommissioning vessels (plus experienced crews).
- 21.10.11 Although the associated workforce figures for these other onshore and offshore projects are not quantified here, it is expected that the cumulative direct and indirect workforce numbers would potentially represent in excess

of 1% of the East of England workforce. Based on the criteria given in **Table 21.2** this would represent a **potential minor beneficial impact** to direct and indirect employment in the region during construction and decommissioning.

21.11 Monitoring

21.11.1 No specific monitoring for socio-economic impacts is proposed.

21.12 Summary

21.12.1 **Table 22.14** provides a summary of the predicted impacts associated with the construction, operation and decommissioning of GWF upon the district and regional socio-economic resource.

Table 22.14 Summary

Description of Impact	Impact	Potential Mitigation Measures	Residual impact
Construction Phase			
Increased expenditure in local economy	Negligible	n/a	Negligible
Increased direct local employment	Negligible	n/a	Negligible
Increased indirect local employment	Negligible	n/a	Negligible
Operation Phase			
Direct and indirect employment	Negligible	n/a	Negligible
Decommissioning Phase			
Decommissioning impacts	Potentially minor beneficial	n/a	n/a

21.12.2 With regard to cumulative socio-economic impacts, it has been identified that there is the potential for a minor beneficial cumulative impact to direct and

indirect employment associated with the number of wind farms and onshore development proposed in the region.

21.13 References

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