



Galloper Wind Farm Project
Environmental Statement – Chapter 24: Land Use, Tourism and
Recreation
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Galloper Wind Farm Limited

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24 LAND USE, TOURISM AND RECREATION

24.1 Introduction

24.1.1 This Chapter of the Environmental Statement (ES) assesses the potential impacts of the proposed Galloper Wind Farm (GWF) project on the human environment by addressing the implications on land use, tourism, and recreation. This assessment includes both positive and negative impacts for the construction, operation, and decommissioning phases of the development.

24.1.2 Other potential impacts upon the local community are captured within, **Chapter 20 Seascape, Landscape and Visual Character, Chapter 25 Traffic and Transport, Chapter 26 Noise, Chapter 27 Air Quality and Chapter 28 Electric and Magnetic Fields.**

24.1.3 The potential socio-economics impacts associated with GWF are considered separately in **Chapter 21 Socio-Economics.**

24.1.4 The potential impacts upon recreational sailing and cruising are considered within **Chapter 16 Shipping and Navigation.**

24.2 Guidance and Consultation

Legislation, policy and guidance

24.2.1 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 Infrastructure (EN-3) (DECC, 2011b); and
- NPS for Electricity Network Infrastructure (EN-5) (DECC, 2011c).

24.2.2 The specific assessment requirements for land use, tourism and recreation, as detailed within the NPSs, are repeated in the following paragraphs. 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. In all other cases the requirements suggested within the NPSs have been applied to this assessment.

Land use and recreation

24.2.3 The assessment of land use impacts is considered within Sections 5.10.5 to 5.10.12 of EN-1, which states that: *“The ES should identify existing and proposed land uses near the project, any effects of replacing an existing development or use of the site with the proposed project or preventing a*

development or use on a neighbouring site from continuing. Applicants should also assess any effects of precluding a new development or use proposed in the development plan”.

The existing land uses and land use policies for the area are shown on **Figure 24.1** and assessed within **Sections 24.6** and **24.7**.

- 24.2.4 *“Applicants will need to consult the local community on their proposals to build on open space, sports or recreational buildings and land. Taking account of the consultations, applicants should consider providing new or additional open space including green infrastructure, sport or recreation facilities, to substitute for any losses as a result of their proposal. Applicants should use any up-to-date local authority assessment or, if there is none, provide an independent assessment to show whether the existing open space, sports and recreational buildings and land is surplus to requirements”.*

The proposed onshore development is not located on existing or proposed open space, sports or recreational land and will therefore have no impact in this respect.

- 24.2.5 *“During any pre-application discussions with the applicant the LPA should identify any concerns it has about the impacts of the application on land use, having regard to the development plan and relevant applications and including, where relevant, whether it agrees with any independent assessment that the land is surplus to requirements”.*

The existing land uses and land use policies within the development plan are shown on **Figure 24.1** and assessed within **Sections 24.6** and **24.7**.

- 24.2.6 *“Applicants should seek to minimise impacts on the best and most versatile agricultural land (defined as land in grades 1, 2 and 3a of the Agricultural Land Classification) and preferably use land in areas of poorer quality (grades 3b, 4 and 5) except where this would be inconsistent with other sustainability considerations. Applicants should also identify any effects and seek to minimise impacts on soil quality taking into account any mitigation measures proposed. For developments on previously developed land, applicants should ensure that they have considered the risk posed by land contamination”.*

The proposed development is located on agricultural land of grade 4. Details are provided in **Section 24.4** and assessed in **Section 24.6** and **24.7**.

- 24.2.7 *“Applicants should safeguard any mineral resources on the proposed site as far as possible, taking into account the long-term potential of the land use after any future decommissioning has taken place”.*

The onshore development is not located on any identified mineral resources shown in the Suffolk County Council Minerals Specific Site Allocation Development Plan (SCC, 2009) and is not considered further within this

chapter. The effects of the offshore development on mineral resources are considered in **Chapter 18**.

- 24.2.8 *“The general policies controlling development in the countryside apply with equal force in Green Belts but there is, in addition, a general presumption against inappropriate development within them. Such development should not be approved except in very special circumstances. Applicants should therefore determine whether their proposal, or any part of it, is within an established Green Belt and if it is, whether their proposal may be inappropriate development within the meaning of Green Belt policy”.*

The onshore development is not located within green belt land shown in the Suffolk Coastal Local Plan (SCDC, 2006) and is not considered further within this chapter.

- 24.2.9 *“However, infilling or redevelopment of major developed sites in the Green Belt, if identified as such by the local planning authority, may be suitable for energy infrastructure. It may help to secure jobs and prosperity without further prejudicing the Green Belt or offer the opportunity for environmental improvement. Applicants should refer to relevant criteria on such developments in Green Belts”.*

The onshore development is not located within green belt land shown in the Suffolk Coastal Local Plan (SCDC, 2006) and is not considered further within this chapter.

- 24.2.10 *An applicant may be able to demonstrate that a particular type of energy infrastructure, such as an underground pipeline, which, in Green Belt policy terms, may be considered as an “engineering operation” rather than a building is not in the circumstances of the application inappropriate development. It may also be possible for an applicant to show that the physical characteristics of a proposed overhead line development or wind farm are such that it has no adverse effects which conflict with the fundamental purposes of Green Belt designation.*

The onshore development is not located within green belt land shown in the Suffolk Coastal Local Plan (SCDC, 2006) and is not considered further within this chapter.

- 24.2.11 EN-3 and EN-5 do not specifically consider land use, tourism or recreation impacts.

- 24.2.12 In addition to the other national, regional, county and district policy and planning guidance outlined within **Chapter 2 Project Need, Policy Framework and Guidance** and **Chapter 3 Legislative and Planning Context**, the land use, tourism and recreation assessment was undertaken with reference to the following legislation, policy and guidance documents:

[The Marine and Coastal Access Act 2009](#)

- 24.2.13 The Marine and Coastal Access Act 2009 aims to improve public access to, and enjoyment of, the English coastline by identifying a coastal route and creating a margin that is available for access around the coast of England.
- 24.2.14 The Marine and Coastal Access Act 2009 also amends the Countryside and Rights of Way (CRoW) Act 2000 to ensure that a two-metre wide strip of land on either side of the new route, all land seaward of the route, and any of the classic coastal land types such as dunes and cliffs to the landward side of the route would normally be accessible to the public. At the time of writing only six coastlines have had a formal coastal route identified under the Marine and Coastal Access Act. These six coastlines do not include any of the Suffolk coast. The methodology proposed for identifying the coastal route states that: “*Where there is an existing route along the coast which meets the criteria set out in the Scheme, we are likely to recommend that the existing route be adopted as the English coastal route*” (Natural England, 2009a). Further to this the Natural England audit of coastal paths undertaken in 2008-2009, indicates that the coastal paths around the Sizewell area are currently in a satisfactory and legally secure condition (Natural England, 2009b). Therefore, it is reasonable to assume that the Suffolk Coast and Heaths Long Distance Path will eventually be adopted as part of the English coastal route under the Marine and Coastal Access Act. Within this assessment the Suffolk Coast and Heaths Long Distance Path has been treated as a Public Right of Way (PRoW).

The Countryside and Rights of Way (CRoW) Act 2000

- 24.2.15 Part I of the CRoW Act is intended to give greater freedom for people to explore open countryside. It contains provisions to introduce a new statutory right of access for open-air recreation to mountain, moor, heath, down and registered common land. The nearest area of registered common land is Sizewell Common. In addition there are a number of pathways associated with Aldringham Walks (south of Sizewell Gap) that provide access to areas of open land, including Sizewell Common.
- 24.2.16 Part II of the Act contains provisions designed to reform and improve rights of way. It introduces measures for the strategic review, planning and reporting of improvements to rights of way. There is also provision for occupiers of any land to temporarily divert a footpath or bridleway which passes over that land where works are likely to cause danger to users of the right of way.

The Wildlife and Countryside Act 1981

- 24.2.17 The Wildlife and Countryside Act primarily relates to nature conservation, which is considered further in **Chapter 23 Terrestrial Ecology**. The Act also includes enactment for making and confirmation of certain orders creating, extinguishing or diverting footpaths and bridleways. Furthermore the requirements for publishing new footpaths are specified alongside signposting for byways. The GWF development does not include any proposals to create, extinguish or divert a PRow.

Other planning policy

- 24.2.18 NPS EN-1 states in paragraph 4.1.5 that “*Other matters that the IPC may consider important and relevant to its decision-making may include Development Plan Documents or other documents in the Local Development Framework. In the event of a conflict between these or any other documents and an NPS, the NPS prevails for the purposes of IPC decision making given the national significance of the infrastructure*”.
- 24.2.19 At a local level the Suffolk Coastal Local Development Framework (LDF), Reviewed Core & Strategy Development Policies (November, 2010) is relevant to the above. This document comprises the “saved” policies from the Suffolk Structure Plan 2001 and from the Suffolk Coastal Local Plan)..
- 24.2.20 The Suffolk Coastal Local Development Framework Draft Core Strategy and Strategy Development Policies (November, 2010), includes Strategic Policy SP8 Tourism, which primarily relates to tourism related development but does state that “*Tourism is an important element of the district economy.*”.
- 24.2.21 Regarding the protection of recreational areas Strategic Policy SP16 Sport and Play states “*The appropriate provision, protection and enhancement of formal and informal sport and recreation facilities for all sectors of the community will be supported, particularly where shortfalls in local provision can be addressed and it accords with local requirements*”.
- 24.2.22 Regarding the protection of the countryside the supporting text for Strategic Policy SP29 The Countryside states that: “*The strategy and approach is very much one which seeks to secure a viable and prosperous rural economy as a key element in maintaining the quality of the built and natural environment of the district.*”
- 24.2.23 The saved policies from the Suffolk Coastal Local Plan (SCDC, 2006) includes Policy AP122 Sizewell Gap and states: “*The District Council will seek to improve and enhance the appearance of the Sizewell Gap area, as shown on the Proposals Map, for the benefit of residents and tourists.*” (This location is presented on **Figure 24.1**).

Consultation

- 24.2.24 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 24.1** 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.
- 24.2.25 Further consultation was undertaken through statutory 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. **Table 24.1** summarises issues that were highlighted during consultation.
- 24.2.26 Full details of responses received are presented in the IPC Scoping Opinion report (IPC, 2010) and the Consultation Report that accompanies this application.

Table 24.1 Summary of consultation and issues

Date	Consultee	Summary of issue	How was the issue addressed
August 2010	IPC (Scoping Opinion)	Impacts of the proposed development on tourism and recreation should be fully addressed and cross reference to the section on socio-economics.	The impacts of the proposed development on tourism and recreation are addressed in this chapter (see sections 24.6 and 24.7)
August 2010	Norfolk County Council (Scoping Opinion)	The ES/EIA will need to address the impact of the wind farm on tourism, including tourism occurring in neighbouring counties, which may be affected if the natural landscape is altered sufficiently.	There is very limited potential for the wind farm to be seen from neighbouring counties. This is addressed within Chapter 20 .
August 2010	Leiston-cum-Sizewell Town Council (Scoping Opinion)	Can particular attention be paid to the very local area around the substation site and how the works affect the enjoyment of the Leiston	The very local area is presented within Section 24.4, refer specifically to

Date	Consultee	Summary of issue	How was the issue addressed
		and Sizewell residents?	Figures 24.1 and 24.2 and Tables 24.14 and 24.15. Potential impacts are discussed in Section 24.6.
July 2011	Mid Suffolk District Council (Section 42)	<p>Tourism is a significant contributor to the rural economy of Mid Suffolk which often features as a stop over or destination for tourists visiting the eastern region and the value of turbines as tourist attractions in their own right is acknowledged.</p> <p>MSDC acknowledge that they would expect GWF to have no significant adverse impact on tourism within the MSDC area.</p>	The potential contribution of wind farms to tourism is noted within the assessment; however, it has not been possible to quantify this potentially positive impact.
July 2011	Suffolk Coastal District Council (Section 42)	Concern that the tourism figures quoted for Norfolk, Suffolk and Essex are not accurate and should be updated by reference to the report by East of England Tourism “Economic Impact of Tourism Suffolk – 2009”.	The tourism figures utilised in this ES are sourced from the same dataset that the East of England Tourism report uses (the UK Tourism Survey) and should therefore provide similar accuracy.

24.3 Methodology

Study area

- 24.3.1 The onshore development footprint (as shown in **Figure 1.3**) encompasses the GWF substation (comprising the GWF compound and transmission compound), sealing end compounds, associated laydown areas and access tracks. It also includes the footprint of the cable corridor above Mean Low Water Springs (MLWS) to the GWF substation including the onshore transition bays, underground cabling between the GWF substation and the sealing end compounds and interconnecting cabling with existing National Grid cables.
- 24.3.2 The offshore development footprint (as shown in **Figure 1.2**) encompasses the GWF site, export cable corridor and surrounding seabed up to MLWS.

Land use

- 24.3.3 The study area for land use includes the onshore development footprint described above and any adjacent areas of land that may potentially be impacted by the proposed development (see **Figure 24.1**).

Tourism

- 24.3.4 The tourism study area encompasses local tourist attractions within 5km of the onshore development footprint (see **Figure 24.2**). These attractions are considered in the context of the value of tourism in the regional economy.
- 24.3.5 The value of offshore wind farms as a potential tourist attraction is noted; however, it has not been possible to quantify the value of this to areas where the offshore development may be visible. As such, a study area for the offshore development has not been identified.

Recreation

- 24.3.6 The onshore study area for recreation consists of the village of Sizewell, the onshore development footprint and adjacent areas of land used for leisure interests (see **Figure 24.3**).
- 24.3.7 The offshore study area includes the offshore development footprint as described earlier. Impacts upon offshore recreation, outside of the immediate works footprint, are not anticipated.
- 24.3.8 Recreational sailing and cruising are considered separately in **Chapter 16 Shipping and Navigation**.

Characterisation of existing environment

- 24.3.9 Characterisation of the existing environment has been informed through a desk based study of available data, information from the consultation process, and a number of site visits to the area. The following sources of information have been used:

- UK Tourism Survey (www.visitengland.com);
- Ordnance Survey (OS) 1:50,000 scale mapping;

- OS 1:25,000 scale mapping;
- Coastal Access: Natural England's Approved Scheme; and
- Suffolk County Council website (www.suffolk.gov.uk).

Assessment of impacts

Land use

Receptor sensitivity

24.3.10 The sensitivity of the land use receptor has been considered based on the criteria provided within **Table 24.2**.

Table 24.2 Definition of terms relating to the sensitivity for different land uses

Sensitivity	Definition
High	Land where development is restricted based on existing or proposed land use, such as land critical to the construction or operation of nationally important infrastructure and land within existing residential areas and public access areas.
Medium	Land that development should avoid unless there is no viable alternative, e.g. agricultural land in grades 1, 2 and 3a of the Agricultural Land Classification (ALC), and land adjacent to existing residential areas and public access areas
Low	Land where development is acceptable providing that local concerns / planning requirements are fully considered, e.g. agricultural land in grades 3b, 4 and 5 of the ALC, commercial woodland, previously developed land (brownfield sites).

24.3.11 The magnitude of the predicted impacts is quantified based on the criteria provided within **Table 24.3**.

Table 24.3 Definition of terms relating to the magnitude for land use

Magnitude	Definition
High	Permanent change of an identified land use
Medium	Temporary change of an identified land use
Low	Temporary disturbance to an identified land use
Negligible	Works in excess of 250m from the identified land use

Tourism

- 24.3.12 Tourism considers those attractions within 5km of the onshore development. The potential for increased tourism associated with the offshore wind farm as a tourist attraction is acknowledged but has not been assessed herein. The impact of GWF upon tourism is based on the following receptor sensitivities and impact magnitude.

Receptor sensitivity

- 24.3.13 The sensitivity of the tourism receptor has been considered based on the criteria provided within **Table 24.4**.

Table 24.4 Definition of terms relating to the sensitivity for different tourist attractions

Sensitivity	Definition
High	Recognised popular tourist destinations, e.g. such as Aldeburgh, Southwold and Minsmere.
Medium	Sites identified as important for future tourism such as Leiston and Felixstowe (as identified in the SCDC core strategy (SCDC, 2010)). Other attractions, e.g. parks and gardens and historic sites.
Low	Sites of relevance to tourism but not a tourist attraction in their own right, e.g. local beaches
Negligible	Sites with limited or no tourism attraction.

Impact magnitude

- 24.3.14 The magnitude of the predicted impacts is quantified based on the criteria provided within **Table 24.5**.

Table 24.5 Definition of terms relating to the magnitude for different tourist attractions

Magnitude	Definition
High	Permanent disruption to a known tourist attraction.
Medium	Temporary disruption to a known tourist attraction, e.g. increased traffic congestion on roads serving the attraction
Low	Works are visible from the tourist attraction but there are no direct impacts,
Negligible	Works within 5km of a tourist attraction, but unlikely to directly or indirectly affect the attraction

Recreation

24.3.15 Onshore recreation in the area principally relates to the network of public and permissive footpaths and bridleways. Offshore recreation principally relates to angling and diving (offshore sailing and yachting is considered separately in **Chapter 16**).

Receptor sensitivity

24.3.16 The sensitivity of the receptor has been considered based on the criteria provided within **Table 24.6**.

Table 24.6 Definition of terms relating to the sensitivity for different recreational features

Sensitivity	Definition
High	Feature of national value such as National Trails or paths, e.g. Suffolk Coast and Heaths Long Distance Path and Sandlings Walk.
Medium	Feature of regional value, such as bridleways, public footpaths and cycle ways, e.g. Sandy Lane, Aldringham Walks and Sizewell Gap.
Low	Feature of local value, e.g. local permissive pathways, and open access land.

Impact magnitude

24.3.17 The magnitude of the predicted impacts is quantified based on the criteria provided within **Table 24.7**.

Table 24.7 Definition of terms relating to the magnitude for different recreational features

Magnitude	Definition
High	Permanent closure of a PRoW or permanent reduction in amenity value
Medium	Temporary closure of a PRoW or temporary reduction in amenity value (works within 100m of PRoW)
Low	Temporary diversion of a PRoW or temporary reduction in amenity value (works within between 100m and 250m of PRoW)
None	No direct impact to PRoW and no amenity loss (works in excess of 250m)

Impact significance

24.3.18 Following the identification of receptor sensitivity and impact magnitude, it is possible to calculate the significance of the impact following the criteria in **Table 24.8**.

Table 24.8 Significance of an impact resulting from each combination of receptor sensitivity and the magnitude of the effect upon it

Value / Sensitivity	Magnitude				
	High	Medium	Low	Negligible	No change
High	Major	Moderate	Minor	Minor	Neutral
Medium	Moderate	Minor	Minor	Negligible	Neutral
Low	Minor	Minor	Negligible	Negligible	Neutral
Negligible	Minor	Negligible	Negligible	Neutral	Neutral

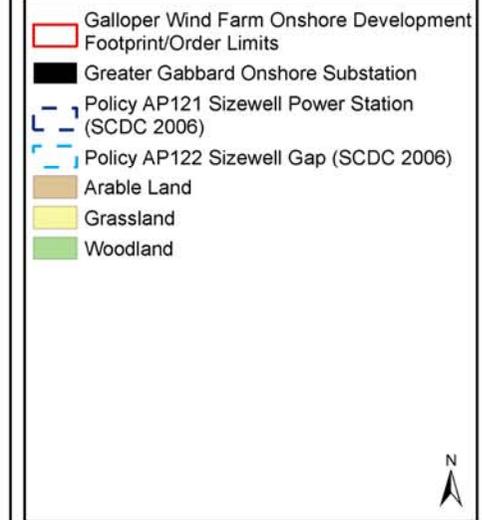
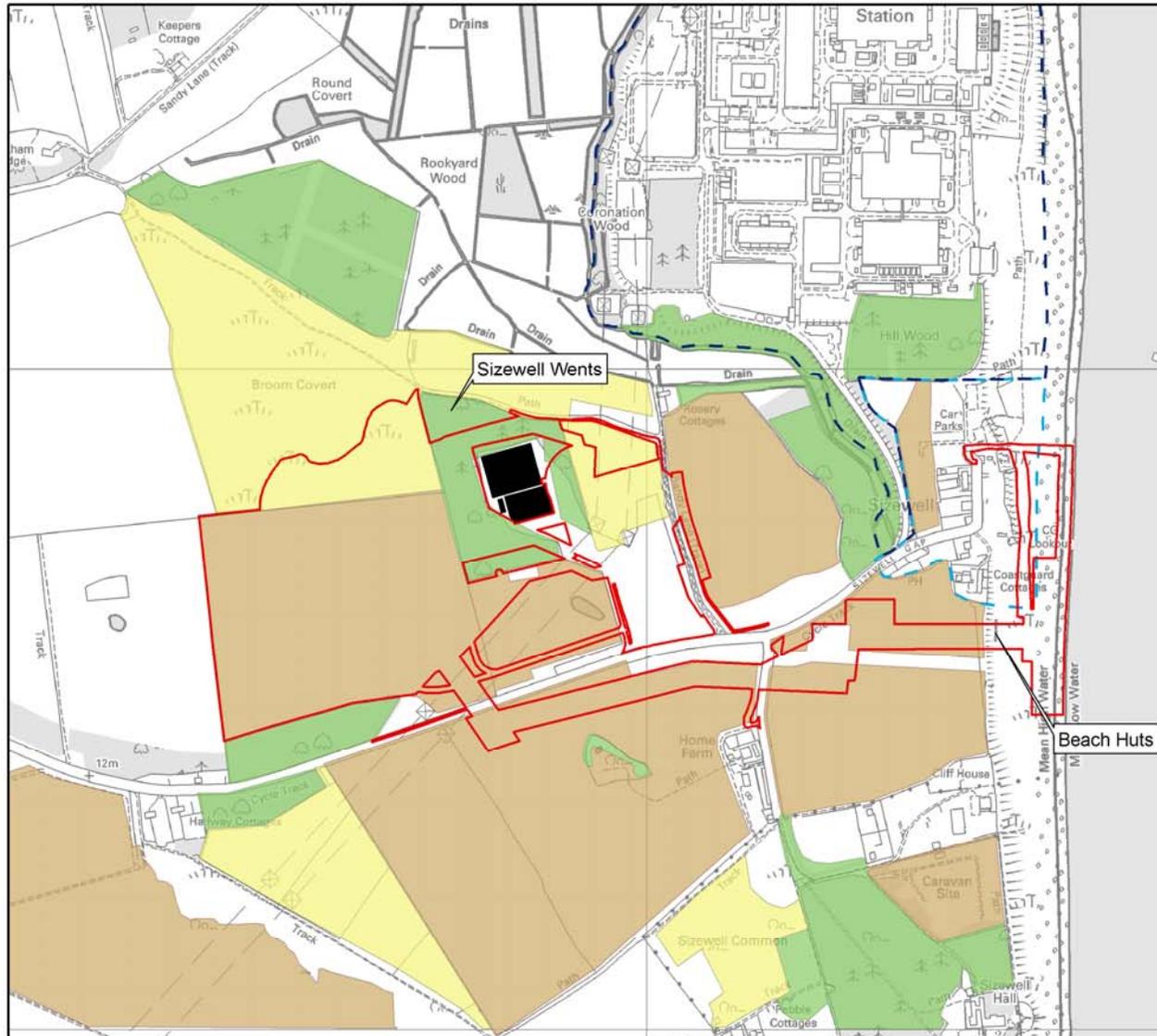
Note: Shaded cells (red to yellow) indicate impacts of some or serious concern

24.4 Existing Environment

Land use

- 24.4.1 The existing use of the proposed onshore development footprint and surrounding area is shown in **Figure 24.1**.
- 24.4.2 The buried export cables from the offshore wind farm will come ashore at Sizewell Beach, south of the Sizewell Nuclear Power Station complex and Sizewell village. The onshore cable corridor then proceeds in a westward direction for a distance of approximately 75m underneath the beach area and dune system, passing partly under a block of beach huts. The route continues westward through an arable field to the proposed transition bays area and then proceeding west and then north through arable fields until reaching the proposed GWF substation.
- 24.4.3 The proposed GWF substation is located to the north of Sizewell Gap, and sits predominantly on arable land but also partially within a small block of woodland (Sizewell Wents) and an area of grassland used for grazing (Broom Covert). Sizewell Wents is also the location of the recently constructed Greater Gabbard Offshore Wind Farm (GGOWF) onshore electrical connection (constructed between 2009 and 2011). The cable corridors from the proposed GWF substation will connect to the existing overhead lines and underground 132kV transmission cables passing through arable fields and Sizewell Wents.

Within the Suffolk Coastal Local Plan (SCDC, 2006) there are land use proposals associated with Sizewell Power Station (existing land use) and part of Sizewell Gap (enhancement for visitors and tourists). These are also shown on **Figure 24.1**.



Galloper Wind Farm	
Figure 24.1	
Land use	
Drawing Number: GWF_428_R4	Rev: 4
Date: 01/11/11	Created: LW Checked: JA
Scale: 1:10,000	Page: A4
Datum: OSGB36	Projection: British National Grid

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Arable

- 24.4.4 The Agricultural Land Classification (ALC) provides a method for assessing the quality of farmland to enable informed choices to be made about its future use within the planning system. The ALC system classifies land into five grades, 1 being excellent and 5 being very poor. The agricultural land in the study area is classified as Grade 4, which indicates a poor quality of land.
- 24.4.5 The onshore permanent development footprint includes up to approximately 6ha of arable land. The temporary development footprint includes approximately 13.6ha¹ of arable land (refer to **Tables 24.9** and **24.10** for details). The arable land within the development footprint is assessed as a land use of low sensitivity.

Grassland

- 24.4.6 The proposed GWF substation sits partially within a small area of grassland used for grazing livestock (Broom Covert). This grassland represents a habitat type that is common along coastal areas within Suffolk. Broom Covert is identified as lowland heath within the Sizewell Estates Land Management Plan (ADAS, 2006) with a long-term aim to be restored to heathland. However, at present this area does not support heathland and there is no active management of the site other than ongoing grazing from livestock.
- 24.4.7 The onshore permanent development footprint includes approximately 2.2ha of this grassland (refer to **Tables 24.9** and **24.10** for details). The grassland within the development footprint is assessed as a land use of low sensitivity.

Woodland

- 24.4.8 The proposed GWF substation sits partially within a small area of woodland (Sizewell Wents). The onshore permanent and temporary development footprint includes approximately 1.7ha of woodland. The temporary and permanent footprints are combined in this instance as both will result in total removal of the trees present. Refer to **Tables 24.9** and **24.10** for details. The woodland within the development footprint is assessed as a land use of low sensitivity.

Beach / dune

- 24.4.9 The proposed GWF onshore cable corridor passes through an area of shingle beach and dune. None of these areas fall within the permanent above ground development footprint. The onshore temporary development footprint includes approximately 3.1ha of beach / dune. Refer to **Tables 24.9** and **24.10** for details. The beach / dune within the development footprint is assessed as medium sensitivity.

¹ Part of the screening landform will ultimately be returned to arable land use and is captured within this temporary land take.

Sizewell nuclear power stations

24.4.10 The Sizewell nuclear power stations (Sizewell A and B) are located approximately 500m north-east of the proposed GWF substation. In addition to Sizewell A and B the power station site is also the location of the consented (but not yet constructed) Sizewell B Dry Fuel Store and a new nuclear development (Sizewell C) is proposed to the north of Sizewell B. None of the proposed temporary or permanent land take directly affects any of the assets associated with Sizewell A and B. The nuclear power stations are assessed as a land use of high sensitivity.

GGOWF onshore electrical connection

24.4.11 The GGOWF onshore electrical connection is located immediately to the east of the proposed GWF substation, within the interior of Sizewell Wents. The GWF onshore cable corridor (between the landfall and the GWF substation) is also located close to the GGOWF cable corridor and run parallel to one another for much of their length. The GWF cable corridor will pass over the GGOWF cable corridor within the arable land to the south of Sizewell Gap and east of the transition bays. In addition, a twin 400kV overhead power line runs north-east to south-west through this area. Two electricity towers are located immediately to the east of Sizewell Wents. Refer to **Figure 24.1**. The GGOWF onshore electrical connection is assessed as a land use of high sensitivity.

Table 24.9 Temporary and permanent areas required for the onshore development footprint

Development element	Maximum total area	Existing land use (approximate area)
<i>Permanent footprint</i>		
Substation	3.1ha	Arable (2.3ha), woodland (0.7ha), grassland (0.1ha)
Sealing end compounds	0.2ha	Woodland (0.01ha); arable (0.1ha)
GWF transition bays	0.1ha	Arable (0.1ha)
New permanent access roads, turning area and drainage reserve	0.5ha	Woodland (0.1ha), arable (0.4ha)
Screening landform	4.3ha	Grassland (1.2ha); arable (0.25ha); woodland (0.2ha); hedgerow (220m)
Security area around substation	0.4ha	Grassland (0.05ha), arable (0.25ha), woodland (0.1ha)
<i>Total</i>	8.6ha	
<i>Temporary footprint</i>		
Beach compound and access restrictions	2ha	Dune / shingle (2ha)

Development element	Maximum total area	Existing land use (approximate area)
Beach access	1.1ha	Dune / shingle (1.1ha)
Cable corridor inland of beach/dune to GWF substation (working corridor including transition bays)	4.4ha	Arable (4.4ha); hedgerow (160m)
400kV cable corridor between transmission compound and sealing end compounds	0.7ha	Woodland (0.35ha*); grassland (0.3ha); arable (0.05ha)
132kV cable corridor between transmission compound and joint with existing Leiston A 132kV cables	0.8ha	Woodland (0.05ha*); arable (0.75ha)
Substation and sealing end compounds temporary laydown areas (excluding land already covered within cable corridor)	8.2ha	Arable (7.1ha**); grassland (1ha); woodland (0.1ha*)
Screening landform (areas returned to existing land use)	1.9ha	Arable (0.9ha); grassland (1ha)
Access roads and service reserves	0.4ha	Arable (0.4ha)
Total	19.5ha	

* These are captured as permanent losses in **Table 24.10**

** 0.9ha of this arable area may be used to extend the screening landform. However, it will still be returned to arable use during the operation of GWF

Table 24.10 Temporary and permanent changes in land use anticipated as part of the onshore development footprint

Development element	Total area
<i>Permanent losses</i>	
Shingle / dune	0ha
Grassland	1.35ha
Woodland	1.7ha
Arable	6.05ha
Hedgerow	220m

Development element	Total area
<i>Temporary disturbance</i>	
Shingle / dune	3.1ha
Grassland	2.3ha
Woodland	n/a
Arable	15.05ha
Hedgerow	160m

Tourism

Context

- 24.4.12 Tourism is important at a regional (East of England) level and local level (Suffolk). The East of England covers the counties of Essex, Hertfordshire, Bedfordshire, Cambridgeshire, Norfolk and Suffolk. Tourism data for specific areas within the East of England has been taken from the Great Britain Tourism Survey; however area data is only available up to 2004 and with average values for tourist visits provided between 2006 and 2009. Regional data comparing the East of England to other regions is available up to 2006 (again taken from the Great Britain Tourism Survey), but only an average value between 2006 and 2009 is provided.
- 24.4.13 The East of England Region has seen a decline in domestic tourism between 2002 and 2009 (an approximate 25% decline from 14.5 million visitors to 10.8 million). Most of the East of England areas show some decline in domestic tourism over this period; however, Suffolk is the only area to show an increase between 2002 and 2009 (an approximate 35% increase from 1.4 million visitors to 1.9 million). These trends are shown in **Table 24.11**.

Table 24.11 Number of UK residents tourist trips² 2002-2009 (Regional and Area data)

Area	2002	2003	2004	2005	2006	2006-2009 (average)
Number of tourist trips visiting (millions)						
East of England	14.5	11.8	10	12.7	10.7	10.8
Essex	2.9	2.6	2.4	-	-	2.9
Suffolk	1.4	1.8	1.4	-	-	1.9
Norfolk	4.5	3.4	3	-	-	3.2
Cambridgeshire	2.8	1.5	1.5	-	-	2.0
Bedfordshire	1.0	1.1	0.6	-	-	0.9
Hertfordshire	2.1	1.6	1.2	-	-	1.8

Source: UK Tourism Survey

- 24.4.14 Estimated tourist spend has increased between 2002 and 2009 (28% increase) across the region, after a drop between 2002 and 2006. However, Suffolk shows a relatively larger increase over this time (107% increase), which is clearly a function of the increased number of visitors and provides further evidence that Suffolk's tourism is growing compared with other areas in the region. These trends are shown in **Table 24.12**.

² A tourist trip is taken to be any journey away from home, to that area/region, lasting one or more nights, for one person.

Table 24.12 Tourist spend in the region 2002-2009 (Regional and Area data)

	2002	2003	2004	2005	2006	2006-2009 (average)
Tourist spend per region/area (£millions)						
East of England	1,704	1,654	1,641	1,854	1,278	2,188
Essex	276	240	324	-	-	429
Suffolk	163	314	242	-	-	339
Norfolk	616	540	547	-	-	593
Cambridgeshire	332	188	238	-	-	376
Bedfordshire	107	175	106	-	-	144
Hertfordshire	210	198	138	-	-	307

Source: UK Tourism Survey

Tourism features within the study area

- 24.4.15 Tourism is an important element of the Suffolk district economy (SCDC, 2010). Areas that have been identified within the Suffolk Coastal Core Strategy as important for tourism include: Aldeburgh, Felixstowe, Leiston, Woodbridge, and the Suffolk coast itself. The coast of Suffolk stretches nearly 50 miles from Felixstowe (in the south) to Lowestoft (in the north), and much of it is designated as an Area of Outstanding Natural Beauty (AONB). Orford Ness and Minsmere also attract significant numbers of visitors to Suffolk.
- 24.4.16 Minsmere Nature Reserve is the most popular of the nearest onshore tourist attractions. The reserve is located approximately 3.5km to the north of the proposed substation. Recent tourist numbers are presented in **Table 24.13**.

Table 24.13 Visitor numbers to Minsmere Nature Reserve

Year	Number of visitors
2007	155,118
2008	100,593
2009	91,386

Source: VisitEngland (2009)

24.4.17 Tourist features within the study area are listed in **Table 24.14** along with their associated sensitivity. These features are also shown on **Figure 24.2**.

Table 24.14 Key tourist features in the study area (within 5km of the onshore development)

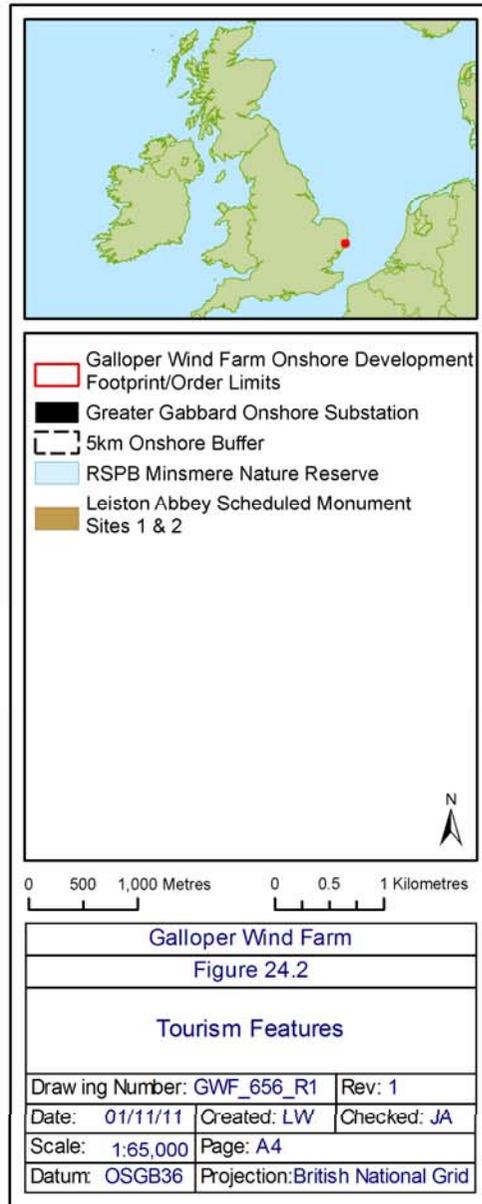
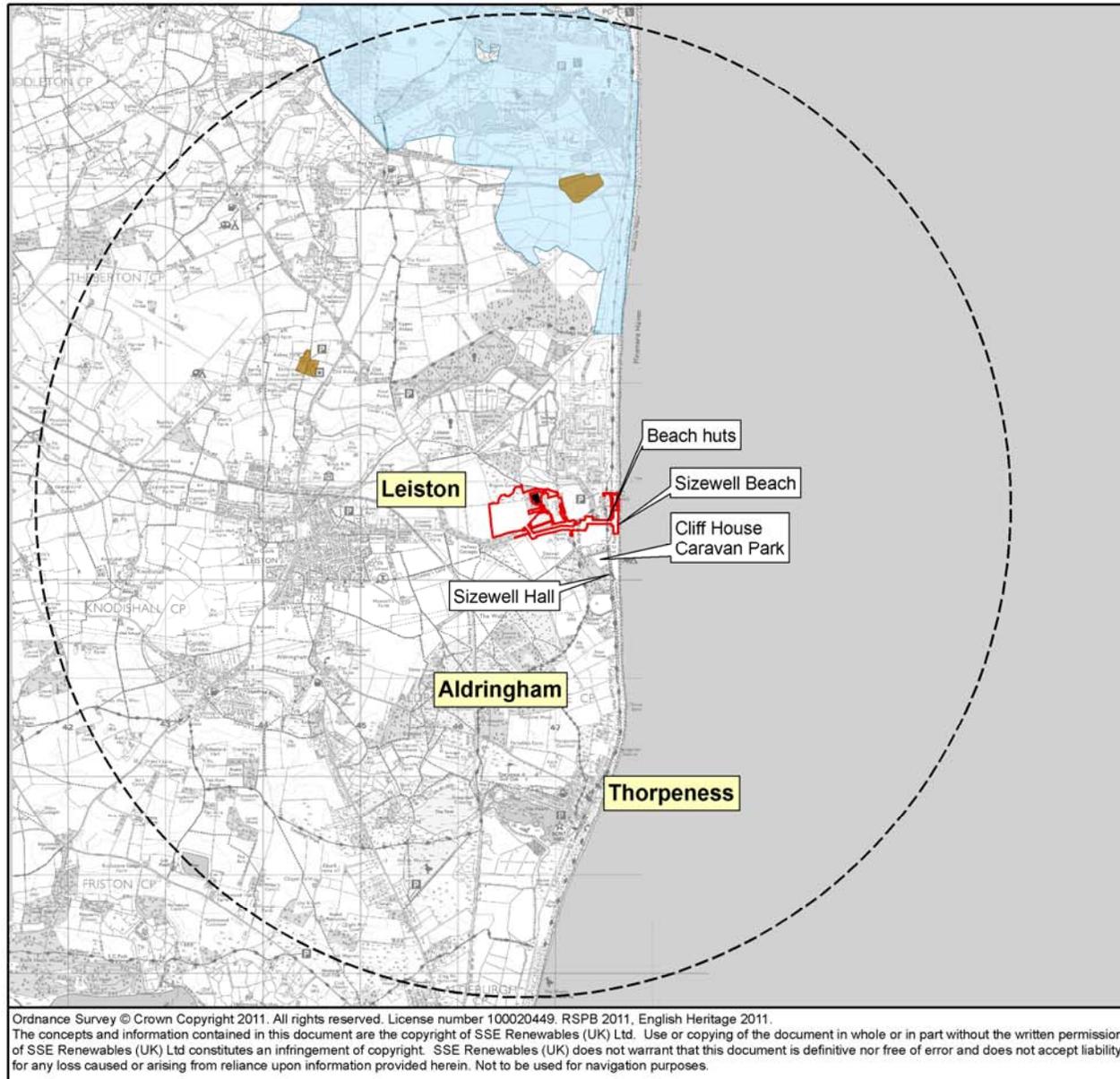
Type	Key tourist features	Sensitivity
Nature Reserves	Minsmere RSPB Nature Reserve	High
Coastal towns and villages	Thorpeness, Aldringham and Leiston	Medium
Historic sites	Leiston Abbey Scheduled Monument.	Medium
Caravan and camping sites	Cliff House Caravan Park and Sizewell Hall Christian Conference and Camp Site.	Low
Local beaches	Sizewell beach	Low

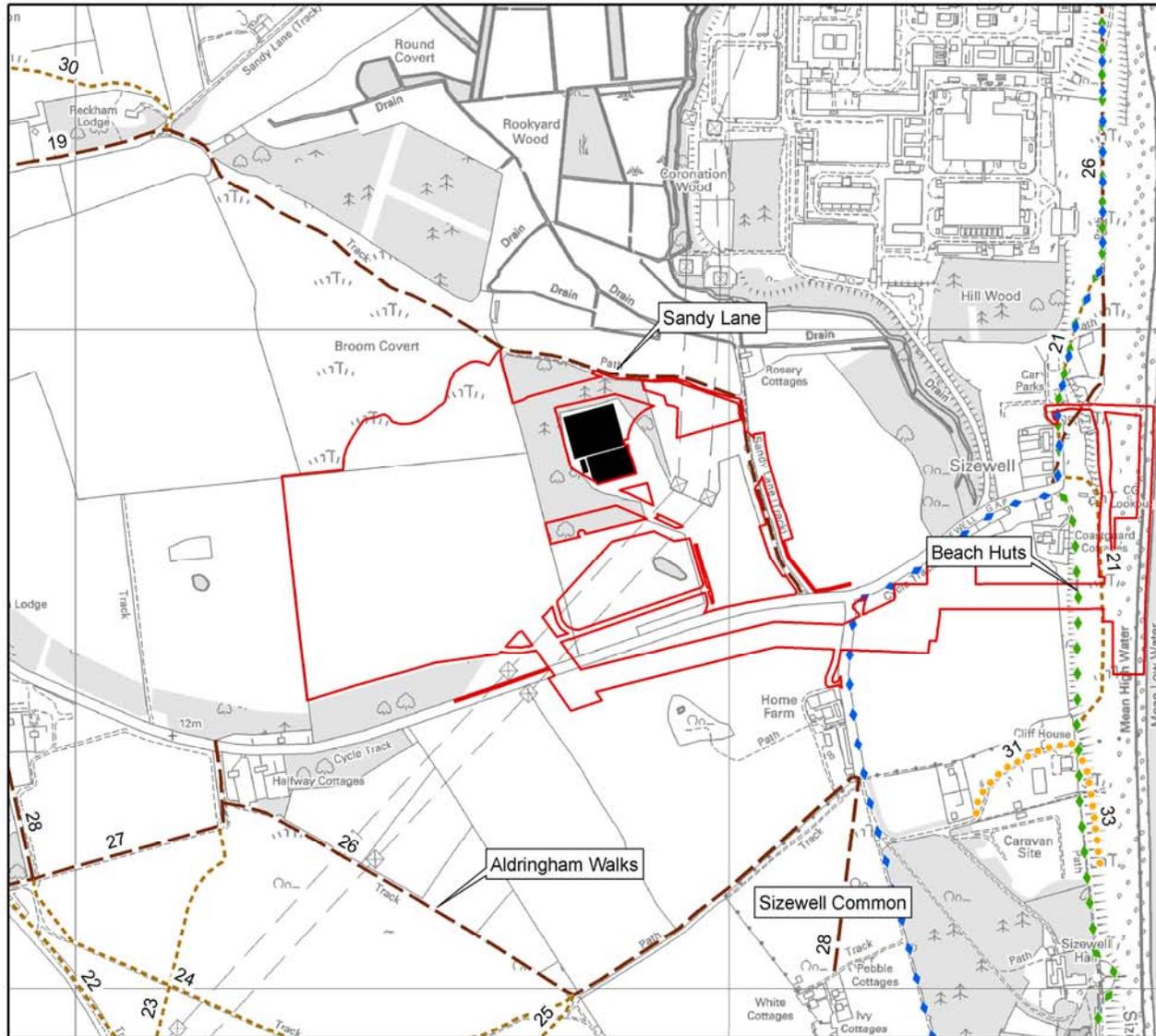
Land based recreation

24.4.18 Recreation is generally informal within the study area with access provided by the foreshore / beach and a network of public and permissive footpaths and bridleways (shown on **Figure 24.3**). There is public access to the foreshore to the south of the existing power stations; an area that also contains a public car park and beach café. A number of small lanes and tracks also bisect this area. The Suffolk Coast and Heaths Path runs along the Heritage Coast in this area and is a long distance walk between Felixstowe and Lowestoft; it is also expected that this path will be adopted as part of the English coastal route under the Marine and Coastal Access Act. Leiston FP21 (a PRow) is located along part of the long distance walk within the area proposed for the cable landfall. Further south is the Cliff House Camping and Caravan Park. To the north is Minsmere Nature Reserve, an RSPB reserve which attracts large numbers of visitors every year.

24.4.19 A great number of walkers and bird watchers access this part of the Suffolk coast, which increases pressure for footpath improvement, signposts and car park provision. The car park adjacent to the beach cafe provides direct access to the coastal footpaths and the beach, which are popular areas for walkers. A local interest group (Sandlings Safer Cycling Campaign) has also established a network of segregated cycle routes in and around Sizewell. Sizewell Gap forms part of this route providing further recreational access to Sizewell Beach.

24.4.20 There are several PRowS, which include footpaths and bridleways within the study area (see **Figure 24.3**). A PRow (19 on **Figure 24.3**) runs to the north of the site, along the route of Sandy Lane. This bridleway then heads north along Lovers Lane.





Galloper Wind Farm Onshore Development Footprint/Order Limits
 Greater Gabbard Onshore Substation
Public Rights of Way
◆ Sandlings Walk
◆ Suffolk Coast & Heaths Path
- - - Bridleway
- - - Footpath
- - - Unidentified



Galloper Wind Farm	
Figure 24.3	
Recreation features	
Drawing Number: GWF_415_R7	Rev: 7
Date: 03/11/11	Created: LW Checked: JA
Scale: 1:10,000	Page: A4
Datum: OSGB36	Projection: British National Grid

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24.4.21 A number of other routes are present in the study area including circular walks, long distance paths, and bridle / cycle routes, which provide an extensive network of public access across heathland, scrub and woodland. These routes include:

- Suffolk Coast and Heath Long Distance Path – a 50 mile path that follows rights of way and permissive paths along the Suffolk Heritage Coast between Felixstowe and Lowestoft;
- Sandlings Walk - a 60-mile walk between the eastern fringes of Ipswich and Southwold;
- A permissive path policy on Leiston Common. This pathway runs east to west to the north of Sizewell Wents;
- Permissive footpaths through Kenton Woods further to the north beyond Sizewell Marshes;
- Sizewell Circular Walk – a circular route between Sizewell and Minsmere
- Aldringham Walks - a circular walk located to the south and west of Halfway Cottages.

24.4.22 There are a number of recreational features within the study area. These are summarised in **Table 24.15** and their associated sensitivity is provided. These features are also shown on **Figure 24.3**.

Table 24.15 Key recreation features

Type	Key recreation features	Sensitivity
National Trails	Suffolk Coast and Heaths Long Distance Path, Sandlings Walk	High
Other PRowS	Sandy Lane, Aldringham Walks	Medium
Permissive pathways (not PRow)	Kenton and Goose Hills, Sizewell Circular Walk, and Sizewell Common	Low
Beach	Sizewell Beach - Including main public access point at Sizewell Beach car park. A public house and café are situated near to the car park. Wooden walkways also provide access for walkers to the beach across dune areas.	Low

Water based recreation

24.4.23 The impacts upon recreational sailing and cruising are considered within **Chapter 16 Shipping and Navigation**.

Recreational angling

- 24.4.24 The Inner Gabbard, Outer Gabbard and The Galloper sandbanks are visited by recreational angling charter parties on a regular basis and a charter boat runs from Southwold approximately 15km north of Sizewell. Lowestoft, Orford Beach, and Aldeburgh are also popular fishing destinations in Suffolk. A small number of recreational fishing boats also launch from Sizewell beach. The main attraction of the area for anglers is bass, which are attracted to the surf on the edges and tops of the sand banks.
- 24.4.25 As these charters are run from local towns and therefore support the local communities, the study area is considered to be of low sensitivity for angling.

Diving

- 24.4.26 Diving activities around the study area appear to be relatively infrequent. This is due to the distance required to travel from the shore to the site, and that the sand banks provide limited interest to divers. There are also infrequent numbers of reports to the Receiver of Wreck, implying that wrecks in the area are also considered to be of limited interest to divers.
- 24.4.27 The study area is therefore considered to be of low sensitivity for diving activities.

24.5 Assessment of Impacts - Worst Case Definition

- 24.5.1 Flexibility within the GWF substation applies to equipment / building location and the finished floor level, and flexibility within the sealing end compounds is restricted to the exact location of the equipment within the defined sealing end compound envelope. Since this assessment considers the impact of the entire footprint of these elements this flexibility is not relevant to the land use, tourism and recreation assessment.
- 24.5.2 Flexibility within the cable corridor permits the permanent works to lie within a defined overall extent of the temporary works. Since this assessment considers the impact of the entire temporary works, and there is no distinction between that temporary or permanent nature, the flexibility is not relevant to this assessment.
- 24.5.3 Within the offshore development there is flexibility in the arrangement of the wind generating turbines. Since this assessment considers the impact of the entire offshore development footprint this flexibility is not relevant to the offshore recreation assessment.
- 24.5.4 Full details on the range of flexibility being considered by GWFL are provided in **Chapter 5 Project Details**. For the purpose of this assessment the proposed onshore development footprint is as presented in **Figure 1.3**.

24.6 Assessment of Impacts during Construction

Impact on land use

24.6.1 The potential permanent and temporary changes in land use are shown on **Figure 24.1** and are also quantified within **Tables 24.9** and **24.10**.

Arable

24.6.2 The proposed GWF substation will result in the temporary and permanent loss of up to approximately 19.65ha of arable land classified as Grade 4, which indicates a poor quality of land.

24.6.3 During the installation of the cable system, disruption to agricultural land (the land itself and drainage systems), and also impacts on agricultural activities will also occur. The main period of disruption relates to the cable trench excavation, cable/duct laying and the reinstatement phase of the works. These works will prevent farmers from using any of the land within the working cable corridor for the duration of the cable laying works. It is therefore likely that there will be an impact upon crop production prior to and following the construction phase, depending on the timing of the works.

24.6.4 Prior to this there will also be a period of site preparation, which is also expected to disrupt agricultural activity. Other disruption may be experienced during the establishment of the site construction compounds, and from the use of shared access points on the road network where construction vehicles and agricultural vehicles share the same access route.

24.6.5 The majority of land within the cable corridor will be reinstated, following the completion of construction, allowing existing agricultural activities to resume (with some restrictions on depth of working). Target burial depth for the cables will be approximately 1m which is well below typical ploughing depths (typically up to 30cm). Some areas, such as the transition bays and sealing end compounds will require permanent fencing and represent permanent land use changes. Consultation with landowners and tenants will be ongoing during the site planning and construction stage in order to further minimise any impacts.

24.6.6 Given that the receptor is considered to be of low sensitivity and the magnitude of the impact is considered to be high, the impact upon agricultural land use is expected to be of **minor adverse significance** during construction.

Mitigation and residual impacts

24.6.7 A range of mitigation measures will be employed during the GWF construction phase and will include the following:

- Full and continued consultation with landowners and tenant farmers during the site planning and construction phase;

- Appropriate compensation relating to loss of income on agricultural land during construction;
- Provision of contact details to landowners and tenants in case of issues or questions;
- Considerate use of shared access points in agreement with landowner and tenants;
- Storage and protection of topsoil and subsoil during construction phase; and
- Reinstatement of field drains and drainage systems where necessary.

24.6.8 During the construction phase approximately 19.65ha of arable land will be disturbed; however, 13.6ha of this total will be reinstated upon completion of the construction phase. As such a potentially high magnitude effect will be reduced to medium.

24.6.9 As landowners will be compensated for any temporary loss of income as a result of the construction of the proposed substation and cable corridor, the magnitude of the impact will further reduce to low. As such, a **negligible residual impact** is anticipated following the implementation of these mitigation measures.

Grassland

24.6.10 The construction of the GWF substation, cable corridor and associated infrastructure will result in the permanent and temporary loss of 2.2ha of grassland (Broom Covert) of an overall area approximately 12ha in size. The footprint of the development located within Broom Covert is the proposed screening landform that will include woodland and grassland habitats. As such, this is felt to represent a temporary change in land use during construction and will be returned to habitats consistent with the long-term plans for heathland restoration. As such an impact of medium magnitude is predicted.

24.6.11 Given that the receptor is considered to be of low sensitivity and the magnitude of the impact is considered to be medium, the impact upon grassland land use will be of **minor adverse significance** during construction.

Mitigation and residual impacts

24.6.12 The proposed screening landform includes 1ha of Broom Covert that will be returned to grassland. An additional 1ha of fringing grassland and scrub habitats will be created outside of the core woodland planting on the new landform. The vegetation associated with the screening landform will comprise native tree and heathland / grassland species. This will reduce the magnitude of the impact over time, as the vegetation matures. However, this still represents a temporary change in land use during construction and

remains an effect of medium magnitude. As such, a **minor adverse residual impact** will remain.

Woodland

- 24.6.13 The construction of the GWF substation, cable corridor and associated infrastructure will result in the permanent loss of 1.7ha of woodland, which represents approximately 50% of the Sizewell Wents woodland block. As such, the magnitude of the impact is assessed as high.
- 24.6.14 Given that the receptor is considered to be of low sensitivity and the magnitude of the impact is considered to be high, the impact upon woodland land use will be of **minor adverse significance** during construction.

Mitigation and residual impacts

- 24.6.15 The screening landform (approximately 6.2ha in total, including areas that will be returned to their previous land use) will include approximately 1.6ha of core woodland planting and 1.3ha of woodland edge and grassland habitats. This new area of woodland planting will eventually offset the tree losses over time as the vegetation matures. However, this mitigation will not be realised during construction and a **minor adverse residual impact** will remain.

Beach / dune

- 24.6.16 The cable landfall and onshore cable corridor includes approximately 2ha of beach / dune. Temporary access will also be required across beach / dune area for works vehicles during cable pulling operations; however, no excavation is proposed within the dune habitats. The activities will be temporary in nature (less than five months in total) and represent a short-term disturbance, and an effect of low magnitude. Given that beach / dune is assessed as a land use of medium sensitivity, an impact of **minor adverse significance** is predicted during construction.

Mitigation and residual impacts

- 24.6.17 Directional drilling will be used between the cable landfall and the transition bays located within arable land further inland. As such, the majority of the 2ha associated with the cable corridor in this area will not result in any disturbance to the beach / dune area. In addition:
- Where access is required across the sensitive dune habitats (to the drilling reception site and cable landfall works area) temporary gridded matting, or similar, will be placed along access routes (where located within the sensitive dune habitats) to minimise disturbance from vehicles;
 - Works will be supervised by an Environmental Clerk of Works (ECW) and liaison with key stakeholders will be maintained throughout the construction phase; and

- Areas temporarily affected by works will be restored to at least their original condition through planting, smoothing of tracks, and/or natural regeneration.

24.6.18 Implementation of the outlined mitigation will ensure that disturbance of this area is kept to a minimum and the magnitude of the effect will be reduced to negligible. As such, a **negligible residual impact** is predicted upon the beach / dune land use during construction.

Other energy infrastructure

24.6.19 The Sizewell nuclear power stations (Sizewell A and B and the recently consented dry fuel store) are located approximately 500m north-east of the proposed GWF substation. None of the existing (or consented) nuclear power station infrastructure falls within areas of GWF temporary or permanent land take.

24.6.20 The GGOWF onshore electrical connection is located immediately to the east of the proposed GWF substation, within the interior of Sizewell Wents. The GWF onshore cable corridor also runs parallel to the GGOWF cable corridor for much of its length and crosses over the GGOWF cable in the arable field to the south of Sizewell Gap. The construction methodology will be developed to minimise disturbance to the existing onshore electrical connection (including the cable corridor). This represents an effect of negligible magnitude.

24.6.21 Overall, an impact of **negligible significance** is predicted upon existing GGOWF infrastructure, and **no impact** is predicted upon the Sizewell power station infrastructure as a result of the construction of GWF.

Impact on tourism

Tourist destinations of high sensitivity

24.6.22 Minsmere Nature Reserve is located approximately 3.5km to the north of the proposed substation. The onshore development will not be visible from the reserve and any impacts are limited to the potential for construction traffic increasing congestion or delays on links to these tourist destinations. As detailed within **Chapter 25**, construction traffic will be limited to an agreed construction traffic route (between the A12 and Sizewell) and will not result in any delays at the priority junctions identified along that route. The magnitude of any construction activity on the reserve is considered to be **negligible** and the impact is also considered to be of **negligible significance** during construction.

Tourist destinations of medium sensitivity

24.6.23 Thorpeness, Leiston and Aldringham are all within 3km of the onshore development footprint. As the onshore development will not be visible from

any of these tourist destinations and no other effects are predicted, **no impacts** upon these tourist destinations are predicted during construction.

Tourist destinations of low sensitivity

- 24.6.24 The GWF landfall and part of the onshore cable corridor will be located on Sizewell Beach. The works are also located within 200m of the nearest caravan park (Cliff House Park) and construction activity will be visible throughout the cable corridor works.
- 24.6.25 Construction activity on the beach has the potential to lead to short-term temporary disruptions associated with construction vehicles / plant accessing the beach area. The temporary works on the beach (cable corridor works and drilling operations) are expected to last no more than a total of five months during the construction phase of the project. Periods of activity will be spread through the construction phase, not a continuous five month period. Disruption to users of the beach will be limited to a potential delay of 5-10 minutes at a crossing control point to ensure that construction vehicles and beach users are kept apart. A section of the beach at the cable landfall works and beach anchor areas will have temporary access restrictions during cable operations. However, access along the beach will still be possible through the upper parts of the shingle area and through the dunes. This is assessed as a low magnitude effect. Given that this is a receptor of low sensitivity this represents an impact of **negligible significance**.
- 24.6.26 Mitigation measures for impacts to the coastal PRow are proposed later in this section. Implementation of those mitigation measures will ensure that the impacts remains as **negligible**.

Impact on recreation

National Trails

- 24.6.27 The cable corridor crosses two long distance walks (the Suffolk Coast and Heaths Long Distance Walk and Sandlings Walk). The Suffolk Coast and Heaths Long Distance Walk is also expected to be adopted as part of the English coastal route under the Marine and Coastal Access Act. PRow FP21 is also located along the coast landward of the beach working area.
- 24.6.28 The proposed construction methodology is for directional drilling to occur under these footpaths (refer to **Chapter 5 Project Details**). In order to drill beneath the foreshore habitats there will be some short-term construction activity on the beach, which will require some parts of the foreshore to be fenced off from public access. There will also be some public access restrictions on the beach during cable landfall operations. The foreshore works are expected to last a total, non-continuous period, of approximately five months. The majority of the foreshore areas will still be accessible to the public during these construction periods.

- 24.6.29 Vehicular access along the foreshore, for construction vehicles, could potentially result in damage to the surface and condition of the foreshore footpath (where construction vehicles require access between the Sizewell Beach car park and the foreshore construction site).
- 24.6.30 The disruption to these coastal paths will be relatively short-term (approximately five months in total). However, as the works will not result in the obstruction of these PRowS, and be limited to temporary disruption for vehicles to access the foreshore, the magnitude of the impact upon users of the local footpaths is considered to be low.
- 24.6.31 Given that these national trails are considered to be of high sensitivity and the magnitude of the impact is considered to be low, the impact upon these receptors will be of **short-term minor significance** during construction.
- 24.6.32 Noise disturbance associated with the directional drilling exercise, is discussed separately in **Chapter 26 Noise** and the inter-relationships of these impacts is considered in **Chapter 29 Inter-relationships**.

Mitigation and residual impacts

- 24.6.33 A range of mitigation measures will be employed during GWF construction and will include the following:
- Where directional drilling works take place on the foreshore the construction footprint will be fenced from the public in such a way that users of the coastal paths do not experience any severance to access along the foreshore. This will be in agreement with the Rights of Way officer at the Local Planning Authority;
 - During brief periods where vehicles need to access the foreshore this will be undertaken with additional supervising banksmen to ensure the safety of other users of the coastal footpath;
 - Where construction vehicles require access along the foreshore, a temporary protective surface will be laid down (e.g. geotextile matting) to ensure the potential for damage to the footpath during construction is minimised with any residual damage subsequently repaired;
 - Residents groups will be contacted (in writing) in advance of the proposed works. This information will include a timetable of works, a schedule of working hours, the extent of the works, and a contact names, address and telephone number in case of complaint or query;
 - An information board will be displayed at the site containing the same information as detailed above; and
 - Any PRowS disturbed by working areas will be re-instated to their pre-construction condition upon completion of the works.

24.6.34 The proposed mitigation will avoid damage and minimise severance to a number of local footpaths. As such, the magnitude of the impact will be reduced to negligible, and a **negligible residual impact** is anticipated.

Other Public Rights of Way

24.6.35 The proposed substation construction will be located within 10m of a bridleway along Sandy Lane (Footpath 19). The works will not lead to any actual severance of the route, but there may be short-term management restrictions should any activities pose a danger to users of that route, e.g. tree felling close to the footpath. This potential temporary disruption to Footpath 19 represents an effect of low magnitude.

24.6.36 Given that PRowS are considered to be of medium sensitivity and the magnitude of the impact is considered to be low, the impact upon these receptors will be of **short-term minor adverse significance** during construction.

24.6.37 No other PRowS are located within 250m of the proposed works.

Mitigation and residual impacts

24.6.38 A range of mitigation measures will be employed during GWF construction and will include the following:

- Residents groups will be contacted in advance of the proposed works. This information will include a timetable of works, a schedule of working hours, the extent of the works, and a contact names, address and telephone number in case of complaint or query;
- An information board will be displayed at the site containing the same information as detailed above; and
- Any PRowS disturbed by working areas will be re-instated to their pre-construction condition upon completion of the works.

24.6.39 The proposed mitigation will minimise disruption to Footpath 19. As such, the magnitude of the impact will be reduced to negligible, and a **negligible residual impact** is anticipated.

Impact on offshore recreation

Angling

24.6.40 Angling charter parties regularly fish the Inner Gabbard, Outer Gabbard and The Galloper sandbanks. This activity will be prevented for the duration of the construction activities, due to the creation of navigational Safety Zones. Access is currently restricted to much of this area due to the construction of the Greater Gabbard Offshore Wind Farm, but following the completion of that exercise navigational Safety Zones will be reduced to 50m around each structure and access to much of this area will be reinstated.

- 24.6.41 There is only one known charter boat fishing these sandbanks, which is run out of Southwold (approximately 15km north of Sizewell) although it is not limited to fishing these sandbanks alone, in addition, there are a small number of fishing boats that launch from Sizewell beach. Orford beach and Aldeburgh also represent popular beach fishing destinations that are available in Suffolk.
- 24.6.42 The loss of angling opportunity along the Inner Gabbard, Outer Gabbard and the Galloper sandbanks represents an effect of low magnitude.
- 24.6.43 Given that the sensitivity of the receptor is considered to be low, then a **negligible impact** is anticipated upon angling during the construction of GWF.
- 24.6.44 During the cable landfall works beach anchors may restrict access to some parts of the foreshore. This may result in a small number of fishing boats having to launch further up the beach during these periods. This would represent a medium magnitude effect during the brief periods when beach anchors are in place. Given that the sensitivity of the receptor is low, then a **minor adverse impact** is anticipated to the fishing boats using Sizewell Beach during the cable landfall works.

Mitigation and residual impacts

- 24.6.45 A range of mitigation measures will be employed during GWF construction and will include the following:
- Fishermen will be contacted in advance of the proposed works. This information will include a timetable of works, a schedule of working hours, the extent of the works, and a contact names, address and telephone number in case of complaint or query; and
 - An information board will be displayed at the site containing the same information as detailed above.
- 24.6.46 The proposed mitigation will minimise disruption to this small number of fishing boats. As such, the magnitude of the impact will be reduced to low, and a **negligible residual impact** is anticipated.

Diving

- 24.6.47 During construction there will be temporary and localised impacts resulting from sediment disturbance, which may affect recreational diving activity and in particular, visibility in the water column during the construction phase. However, diving in the area of construction works will be restricted by the implementation of navigational Safety Zones. The potential for re-suspension of sediments and sediment dynamics during construction is described in **Chapter 9 Physical Environment**. Given the temporary and localised nature of these impacts and that diving is not popular in this area, the magnitude is considered to be low.

24.6.48 Given that the sensitivity of the receptor is considered to be low, then a **negligible impact** is anticipated upon diving during the construction of GWF.

Mitigation and residual impacts

24.6.49 A range of mitigation measures will be employed during GWF construction and will include the following:

- At all times the increased risk to navigation will be minimised by the measures outlined in **Chapter 16 Shipping and Navigation**, including Safety Zones and clear and easy access to Notices to Mariners, as appropriate; and
- Appropriate advance warnings to shipping will also be advertised in the local press.

24.6.50 The proposed mitigation will give all recreational boat users sufficient advance warning of any Safety Zones. As such, the magnitude of the impact is reduced to negligible, and a **negligible residual impact** is anticipated.

24.7 Assessment of Impacts during Operation

Impact on land use

Arable

24.7.1 The majority of the cable corridor footprint will return to agricultural use following construction. However, the footprint of the substation will result in a change of land use from “agricultural practices” to “facilitating energy supply”. The proposed substation and other onshore infrastructure will result in the permanent loss of up to approximately 6ha³ of arable land classified as Grade 4, which indicates a poor quality of land. The magnitude of the impact is considered to be high given that the land within the substation footprint will be permanently lost.

24.7.2 Given that the receptor is considered to be of low sensitivity and the magnitude of the impact is considered to be high, the impact upon affected landowners is considered to be of **minor adverse significance** during operation.

Mitigation and residual impacts

24.7.3 A range of mitigation measures will be employed and will include the following:

- Full and continued consultation with landowners and tenants during final site planning; and

³ The footprint of the screening landform includes additional areas of arable land; however, these areas will be returned to arable use during the operation of GWF and are not captured as permanent losses.

- Appropriate compensation relating to loss of income on agricultural land during operation.

24.7.4 As landowners will be compensated for any temporary and permanent changes in land use as a result of the construction of the proposed substation and cable corridor, the magnitude of the impact will be reduced to low. As such, a **negligible residual impact** is anticipated following the implementation of these mitigation measures.

Grassland

24.7.5 The GWF substation and associated cable corridor will result in the permanent change of 1.2ha⁴ of grassland (Broom Covert) to woodland, woodland edge and grassland / heathland habitats and represents an effect of high magnitude. Given that the receptor is considered to be of low sensitivity the impact of the change of land use of grassland in the area will be of **minor adverse significance** during operation.

Mitigation and residual impacts

24.7.6 A range of mitigation measures will be employed and will include the following:

- Where practicable, grassland impacted within the cable corridor will be replanted with species in keeping with the character of the area; and
- A grassland management plan will be implemented to ensure that the grassland is managed to best meet the long-term aims for heathland restoration.

24.7.7 The planting of new woodland edge/grassland habitats (1.3ha) will exceed the area to be removed once fully established. In addition the introduction of grassland species along the cable corridor will introduce a plant assemblage more in keeping with the local landscape character (lowland heathland). Following the implementation of these measures the magnitude will initially remain high, but as the habitats establish following planting this will reduce to low. As such, a **minor adverse residual impact** reducing to **negligible** over the subsequent years is expected following the implementation of these mitigation measures.

Woodland

24.7.8 The GWF substation and associated cable corridor will result in a permanent loss of 1.7ha of the 3.5ha of existing woodland. Given that this represents over 50% of the trees within Sizewell Wents, the magnitude of this impact is considered to be high.

⁴ 2.2ha of Broom Covert is located within the onshore development; however 1ha will be returned its previous land use.

24.7.9 Given that the receptor is considered to be of low sensitivity and the magnitude of the impact is considered to be high, the impact of the change of use of woodland in the area will be of **minor adverse significance** during operation.

Mitigation and residual impacts

24.7.10 A range of mitigation measures will be employed and will include the following:

- Native tree and woodland species will be planted within the proposed screening landform. These species will be in keeping with the character of the area; and
- A woodland management plan will be implemented to ensure that trees adequately establish over the following five years.

24.7.11 The planting of new areas of woodland (1.6ha of woodland and 1.3ha of woodland edge / grassland) within the proposed screening landform will exceed the area to be removed once fully established. Following the implementation of these measures the magnitude will initially remain high, but as the woodland establishes and matures over the subsequent years this will reduce to low. As such, a **minor adverse residual impact** reducing to **negligible** over the subsequent years is expected following the implementation of these mitigation measures.

Beach / dune

24.7.12 During operation there are not anticipated to be any activities within the beach / dune area. As such, **no impact** is predicted upon this land use during operation.

Other energy infrastructure

24.7.13 The Sizewell nuclear power stations (Sizewell A and B and the recently consented dry fuel store) are located approximately 500m north-east of the proposed GWF substation. The GWF permanent land take is not located within the existing nuclear power station infrastructure and therefore will have **no impact**.

24.7.14 Proposals for new nuclear expansion (Sizewell C) primarily include land to the north of Sizewell B (in excess of 1km from the GWF development boundary). Part of the Sizewell C nominated site area includes the arable field to the east of Sandy Lane (approximately 75m east of the sealing end compounds).

24.7.15 However, the only permanent works associated with GWF on this field is a 10m strip of new woodland to be planted towards the western boundary of the field to screen the proposed substation and sealing end compounds from the direction of Sizewell Village. Given the permanent nature of this change

it represents an effect of high magnitude. The sensitivity of the proposed Sizewell C is high for areas critical to its development. At this stage it is unknown what this field may be used for as part of the proposed Sizewell C development. Given that this field is some distance from the existing nuclear licensed area and that the trees will be located to the western end of the field, the sensitivity of the site has been assessed as medium. The overall impact on Sizewell C has therefore been assessed as **moderate adverse**. However, should this part of the field not be needed as part of the Sizewell C development then this impact would reduce to **negligible**.

- 24.7.16 The GGOWF onshore electrical connection is located immediately to the east of the proposed GWF substation, within the interior of Sizewell Wents. The GWF onshore cable corridor also runs parallel to the GGOWF cable corridor for much of its length and crosses over the GGOWF cable in the arable field to the south of Sizewell Gap. No expected effects have been identified on the existing GGOWF onshore electrical connection. As such, **no impact** is predicted.

Impact on tourism

- 24.7.17 The proposed GWF onshore above ground infrastructure is not located on or immediately adjacent to any of the identified tourist receptors. As such, there is not expected to be any impact on any tourism features identified within **Table 24.14**. Overall, **no impact** is expected to tourism receptors during the operation of the onshore electrical connection and offshore turbines.

Impact on onshore recreation

- 24.7.18 The proposed GWF onshore above ground infrastructure is not located on or immediately adjacent to any of the identified recreation receptors. As such, there is not expected to be any impact on any recreation features identified within **Table 24.15**. Overall, **no impact** is expected to onshore recreation receptors during the operation of the onshore electrical connection and offshore turbines.

Impact on offshore recreation

- 24.7.19 During operation of GWF some navigational restrictions for leisure craft are likely to continue in the immediate vicinity of the wind farm. This is likely to be applied in the form of Safety Zones around each fixed structure. However, the overall size of these restriction zones will be reduced (from 500m during construction to 50m during operation) allowing recreational vessels to pass through the wind farm site. As such, **no impact** is anticipated upon offshore recreation during the operation of GWF.

24.8 Assessment of Impacts during Decommissioning

- 24.8.1 When GWF is decommissioned it will adhere to any future or modified legislation relevant at that time. The specific onshore decommissioning processes are expected to include:
- Offshore: as a precautionary worst case scenario for the purposes of this assessment it is assumed that all GWF infrastructure will be removed;
 - Onshore: export cables between the landfall and the substation site will be disconnected and left in situ;
 - Onshore: any equipment installed within the onshore transition bays will remain in situ, unless otherwise agreed with the relevant planning authority;
 - Onshore: the above ground substation assets (comprising the GWF compound and the transmission compound) will be dismantled and removed from site;
 - Onshore: the substation foundations will be removed to 1m below ground level; and
 - Onshore: the landform will be retained.
- 24.8.2 Given the low magnitude of these effects and short duration of the associated activities, a **negligible impact** is anticipated upon land use.
- 24.8.3 Any impacts related to tourism would be limited to the potential for decommissioning traffic increasing congestion or delays on traffic links to tourist destinations. Decommissioning traffic will not result in the peak traffic levels considered during construction as there is no requirement for continuous concrete pours. Overall, the decommissioning of GWF is expected to have **no impact** on tourism.
- 24.8.4 As the export cables are intended to be left in situ between the landfall and the substation, there will be no impact upon the beach areas or on any of the national trails in the study area (Suffolk Coast and Heaths Long Distance Path and Sandlings Walk). As the cabling between the substation and the sealing end compounds will remain in situ the potential impact associated with construction upon users of the PRoW to the north of the substation (Sandy Lane) would be also avoided. Overall a **negligible impact** upon onshore recreation is expected in the study area during decommissioning.
- 24.8.5 The decommissioned project is expected to have **no impact** on offshore recreation in the area, and any navigational Safety Zone restrictions placed on recreational shipping will be completely removed upon completion of decommissioning activities.

24.9 Inter-relationships

24.9.1 **Table 24.16** summarises those inter-relationships that are considered of relevance to land use, tourism and recreation and, identifies where within the ES other topics have been considered.

24.9.2 **Chapter 28 Inter-relationships** provides a more detailed holistic overview of the potential impacts that may manifest on land use, tourism and recreation receptors.

Table 24.16 Land use, tourism and recreation inter-relationships

Inter-relationship	Section where addressed	Linked Chapter
Influence of recreational sailing and cruising with offshore recreation	Section 16.6	Chapter 16 Shipping and Navigation
Influence of traffic and transport upon local tourism and recreation	Section 24.6	Chapter 25 Traffic and transport
Influence of noise upon local recreation	Section 26.6	Chapter 26 Noise
Influence of air quality impacts upon local recreation	Section 27.6	Chapter 27 Air quality
Influence of socio-economic impacts upon local tourism and recreation	Section 21.6	Chapter 21 Socio-economics

24.10 Cumulative Impacts

24.10.1 The unmitigated impacts identified during the construction (**Section 24.6**) operation (**Section 24.7**) and decommissioning phases (**Section 24.8**) of GWF that have the potential to result in cumulative effects comprise:

Construction

- A minor adverse impact associated with a change in arable land use during construction;
- A minor adverse impact associated with a change in grassland use during construction;
- A minor adverse impact associated with a change in woodland use during construction;
- A minor adverse impact associated with temporary disturbance to beach / dune use during construction;

- A minor adverse impact associated with a potential short-term disturbance to national trails (Suffolk Coast and Heaths Long Distance Path and Sandlings Walk);
- A minor adverse impact associated a potential short-term disturbance to Sandy Lane (a PRow); and
- A minor adverse impact associated with the temporary loss of access for some of the fishing boats on Sizewell Beach.

Operation

- A minor adverse impact associated with a permanent change in land use for up to 6ha of arable land;
- A minor adverse impact associated with a permanent change in land use for 1.2ha of grassland; and
- A minor adverse impact associated with a permanent change in land use for 1.7ha of woodland.

Decommissioning

- 24.10.2 No impacts with effects above negligible are anticipated for the decommissioning phases of the project as per **Sections 24.7** therefore no cumulative impacts are anticipated during the decommissioning phase of GWF.
- 24.10.3 Other onshore activities in the 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.
- 24.10.4 No land use, tourism or recreation operation impacts were identified within the Sizewell B Dry Fuel Store ES (British Energy Generation Ltd, 2010) or within the Sizewell A Decommissioning ES (British Nuclear Group, 2005) for any phases of these projects. As such, no cumulative land use, tourism and recreation operational impacts are predicted between GWF and these developments.

GWF construction and other onshore activities

GGOWF onshore electrical connection

- 24.10.5 GGOWF has a similar landfall location and cable corridor to that of GWF. The construction of the onshore aspects of GGOWF are expected to be completed during 2012 at the latest. There is therefore no possibility of an overlap between the two construction phases, and as such there will be no cumulative impact associated with the construction of GWF.

Sizewell C

- 24.10.6 This proposed development is expected to be located to the north of the existing Sizewell power station infrastructure. Construction is not expected to begin on Sizewell C until approximately 2017 at the earliest. The GWF onshore construction works are not expected to extend beyond 2017. Given the absence of any details of the Sizewell C proposals it is not possible to undertake a quantitative assessment of this potential, but very unlikely, cumulative impact at this stage.

GWF operation and other onshore activities

GGOWF onshore electrical connection

- 24.10.7 GGOWF has a similar landfall location and cable corridor to that of GWF. No operational impacts were identified for tourism and recreation for GGOWF, and land use impacts (tree losses and change in arable land use) were assessed as insignificant for GGOWF (GGOWL, 2006). As such, no cumulative land use, tourism and recreation operational impacts are predicted between GWF and GGOWF.

Sizewell C

- 24.10.8 It is assumed that Sizewell C will be operational in 2045. The expected operational lifetime of Sizewell C is in excess of 60 years (DECC, 2010) and the earliest that it would begin decommissioning would be approximately 2080. The Sizewell C nominated site area includes areas of arable, woodland and grassland and would be expected to result in some permanent changes of those land uses. Without further details it is not possible to quantify this impact. However, there remains the potential for cumulative impacts upon grassland, woodland and arable land uses within the Sizewell Estate as a result of the operation of GWF and Sizewell C.

24.11 Monitoring

- 24.11.1 A tree management plan will be implemented to ensure that woodland screening adequately establishes in the five years following construction. The plan will include monitoring of the woodland and proposed interventions to ensure that the proposed woodland screening establishes effectively.
- 24.11.2 No other specific monitoring of land use, tourism and recreation impacts is proposed.

24.12 Summary

Table 24.17 Summary of the impact assessment for land use, tourism and recreation

Description of Impact	Impact	Mitigation Measure	Residual impact
Construction Phase			
Disruption to existing land use (arable)	Minor adverse	Appropriate compensation to landowners; and Considerate use of shared access points in agreement with landowner.	Negligible
Disruption to existing land use (grassland)	Minor adverse	Introduce appropriate heathland plant species with the areas identified for landscape screening.	Minor adverse
Disruption to existing land use (woodland)	Minor adverse	Introduce native tree species within the area identified for screening; and appropriate heathland plant species along this part of the cable corridor	Minor adverse
Disruption to existing land use (beach / dune)	Minor adverse	Where access is required across the beach / dune habitats temporary gridded matting, or similar, will be placed along all such access routes to minimise disturbance from vehicles; Works will be supervised by an ECW and liaison with the key stakeholder will be maintained throughout the construction phase; and Areas temporarily affected by works will be restored to at least their original condition through planting, smoothing of tracks, and/or natural regeneration.	Negligible
Disruption to existing land use (other energy infrastructure)	No impact to negligible	n/a	n/a
Disruption to tourism destinations of high sensitivity	Negligible	n/a	Negligible
Disruption to tourism destinations of medium sensitivity	No impact	n/a	n/a
Disruption to tourism	Negligible	Where access is required across	Negligible

Description of Impact	Impact	Mitigation Measure	Residual impact
destinations of low sensitivity		<p>the beach / dune habitats temporary gridded matting, or similar, will be placed along all such access routes to minimise disturbance from vehicles;</p> <p>Works will be supervised by an ECW and liaison with the key stakeholder will be maintained throughout the construction phase; and</p> <p>Areas temporarily affected by works will be restored to at least their original condition through planting, smoothing of tracks, and/or natural regeneration.</p>	
Reduced access to public rights of way (national trails)	Short-term minor adverse	<p>Where directional drilling works take place on the foreshore the construction footprint will be fenced from the public in such a location that users of the coastal paths do not experience any severance to access along the foreshore;</p> <p>During brief periods where vehicles need to access the foreshore this will be undertaken with additional supervising banksmen to ensure the safety of other users of the coastal footpath;</p> <p>Residents groups will be contacted (in writing) in advance of the proposed works. This information will include a timetable of works, a schedule of working hours, the extent of the works, and a contact names, address and telephone number in case of complaint or query; and</p> <p>An information board will be displayed at the site containing the same information as detailed above.</p>	Negligible
Reduced access to other public rights of way	Short-term minor adverse		Negligible
Disruption to angling	Negligible	n/a	n/a
Reduced access for fishing boats on Sizewell Beach	Minor adverse	Fishermen will be contacted in advance of the works with details of the programme.	Negligible
Disruption to diving	Negligible	n/a	n/a

Description of Impact	Impact	Mitigation Measure	Residual impact
Operation Phase			
Change in land use (arable)	Minor adverse	Appropriate compensation relating to loss of income on agricultural land during operation.	Negligible
Change in land use (grassland)	Minor adverse	Where practicable, areas of grassland impacted will be replanted with species in keeping with the character of the area; and A grassland management plan will be implemented to ensure that the grassland is managed to best meet the long-term aims for heathland restoration.	Minor adverse reducing to negligible over the subsequent years.
Change in land use (woodland)	Minor adverse	Native tree and woodland species will be planted within the proposed landscaping / screening landform; and A woodland management plan will be implemented to ensure that the woodland is managed to best meet the long-term aims for heathland restoration.	Minor adverse reducing to negligible over the subsequent years.
Change in land use (beach / dune)	No impact	n/a	n/a
Change in land use (other energy infrastructure – GGOWF, Sizewell A and B)	No impact	n/a	n/a
Change in land use (other energy infrastructure – Sizewell C)	Potential moderate adverse	Discussions / negotiations will continue with EDF to determine the potential use of the field adjacent to Sandy Lane in regard to the Sizewell C proposals.	Negligible
Disruption to tourism	No impact	n/a	n/a
Disruption to onshore recreation	No impact	n/a	n/a
Disruption to offshore recreation	No impact	n/a	n/a
Decommissioning Phase			
Disruption to land use, tourism and recreation from the decommissioning works	No impact to Negligible	n/a	n/a

- 24.12.1 No land use, tourism or recreation impacts, arising from other activities in the area during the construction and operation of GWF have been identified. However, the proposed new nuclear development (Sizewell C) is expected to result in permanent land changes for areas of woodland, grassland and arable. At this stage it is not possible to quantify the potential impacts associated with Sizewell C, but there remains the potential for cumulative impacts upon permanent changes in land use in this area.

24.13 References

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