

East Anglia TWO Offshore Windfarm

Appendix 28.2

Seascape Assessment

Preliminary Environmental Information
Volume 3

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Revision Summary

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Appendix 28.2 is supported by the tables listed below.

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Table A28.1	Seascape Character Types

Glossary of Acronyms

AONB	Area of Outstanding Natural Beauty
km	Kilometre
LNR	Local Nature Reserve
SCT	Seascape Character Types
SLVIA	Seascape and Landscape Visual Impact Assessment
SPA	Special Protection Area
ZTV	Zone of Theoretical Visibility

Glossary of Terminology

Applicant	East Anglia TWO Limited.
Development area	The area comprising the Indicative Onshore Development Area and the Offshore Development Area
East Anglia TWO project	The proposed project consisting of up to 75 wind turbines, up to four offshore electrical platforms, up to one offshore construction, operation and maintenance platform, inter-array cables, platform link cables, up to one operational meteorological mast, up to two offshore export cables, fibre optic cables, landfall infrastructure, onshore cables and ducts, onshore substation, and National Grid infrastructure.
East Anglia TWO windfarm site	The offshore area within which wind turbines and offshore platforms will be located.
Horizontal directional drilling (HDD)	A method of cable installation where the cable is drilled beneath a feature without the need for trenching.
Inter-array cables	Offshore cables which link the wind turbines to each other and the offshore electrical platforms.
Landfall	The area (from Mean Low Water Springs) where the offshore export cables would make contact with land, and connect to the onshore cables.
Monitoring buoys	Buoys to monitor in situ condition within the windfarm, for example wave and metocean conditions.
Offshore cable corridor	This is the area which will contain the offshore export cable between offshore electrical platforms and landfall jointing bay.
Offshore development area	The East Anglia TWO windfarm site and offshore cable corridor (up to Mean High Water Springs).
Offshore electrical infrastructure	The transmission assets required to export generated electricity to shore. This includes inter-array cables from the wind turbines to the offshore electrical platforms, offshore electrical platforms, platform link cables and export cables from the offshore electrical platforms to the landfall.
Offshore electrical platform	A fixed structure located within the windfarm area, containing electrical equipment to aggregate the power from the wind turbines and convert it into a more suitable form for export to shore.
Offshore export cables	The cables which would bring electricity from the offshore electrical platforms to the landfall.
Offshore infrastructure	All of the offshore infrastructure including wind turbines, platforms, and cables.
Construction, operation and maintenance platform	A fixed structure required for construction, operation and maintenance personnel and activities.
Offshore platform	A collective term for the offshore construction, operation and maintenance platform and the offshore electrical platforms.
Platform link cable	An electrical cable which links one or more offshore platforms.
Safety zones	A marine area declared for the purposes of safety around a renewable energy installation or works / construction area under the Energy Act 2004.
Scour protection	Protective materials to avoid sediment being eroded away from the base of the foundations as a result of the flow of water.

28.2 Seascape Assessment

28.1 Introduction

1. A preliminary assessment of the seascape character types (SCTs) in the study area has been undertaken using zone of theoretical visibility (ZTV) analysis (**Figure 28.15**) and site survey. This preliminary assessment is presented in **Table A28.1** below, which identifies the SCTs that have the potential to undergo significant effects as a result of the proposed East Anglia TWO project and require to be assessed in full; and those that do not have potential to undergo potential significant effects that can be scoped out of further assessment.

Table A28.1 Seascape Character Types (SCTs)

Seascape Character Type		Distance from the East Anglia TWO Windfarm Site	Theoretical Visibility of East Anglia TWO	Actual Visibility of East Anglia TWO	Preliminary Assessment
Suffolk, South Norfolk and North Essex Seascape Character Assessment					
SCT 01	Inland Navigable Waters	59.4km	Located outside EA2 Seascape and Landscape Visual Impact Assessment (SLVIA) study area	Located outside EA2 SLVIA study area	No potential for significant effects - scoped out of further assessment.
SCT 02	International Ports and Approaches	52.2km	Located outside EA2 SLVIA study area	Located outside EA2 SLVIA study area	No potential for significant effects - scoped out of further assessment.
SCT 03	Nearshore Waters	25.7km	Widespread areas of SCT has high theoretical visibility (41-48 turbines)	Affords open sea views with no screening.	Potential for significant effects that require further assessment.
SCT 04	Developed Nearshore Waters	25.6km	Widespread areas of SCT has high theoretical visibility (41-48 turbines)	Affords open sea views with no screening.	Potential for significant effects that require further assessment.
SCT 05	Coastal Waters	12.4km	Widespread areas of SCT has high theoretical visibility (41-48 turbines)	Affords open sea views with no screening.	Potential for significant effects that require further assessment.
SCT 06	Offshore Waters	The East Anglia TWO windfarm site is located within this SCT.	Widespread areas of SCT has high theoretical visibility (41-48 turbines)	Affords open sea views with no screening.	Potential for significant effects that require further assessment.

28.2 Impacts during Construction, Operation and Decommissioning – Technical Assessment

2. A detailed technical assessment of the seascape effects of the construction and operation of the offshore infrastructure is set out in the following sections which address seascape character types (SCT). This describes, in full technical detail, the likely significant effects of the construction and operation of the offshore infrastructure on each SCT, assessing those SCTs that were identified in the preliminary assessment in **Table A28.1** as having potential to be significantly affected

28.2.1 SCT 03: Nearshore Waters

SCT 03: Nearshore Waters			
Designations:	Coastal edge is within Suffolk Heritage Coast and adjacent to Suffolk Coast and Heaths Area of Outstanding Natural Beauty (AONB).	Viewpoints:	Viewpoints 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 15, 16, 18
Baseline Description			
<p>Extends along the coastline between Old Felixstowe and Lowestoft (Figure 28.10). It occupies the shallower coastal waters associated with the largely rural Suffolk coastline. The landward extent of the SCT is broadly defined by the Low Water Mark. Its seaward extent is between 5 and 8 kilometres (km) from the shoreline.</p> <p>Key characteristics:</p> <ul style="list-style-type: none"> • Sheltered or moderately sheltered coastal waters, adjacent to long curving bays backed by shingle beaches, low vegetated dunes and in places low crumbling cliffs and occasional relatively small, coastal settlements. • Sea floor underlain by complex superficial sediments largely masking underlying bedrock. • Shallow waters up to approximately 20m deep with sand bank systems parallel to the coastline in places. • Active length of coast with a fluctuating patchwork of erosion and accretion with relatively low rates of change. • Dynamic nature of coastline illustrated by events in history such as the inundation of coastal settlements by storm surges and creation of shingle features by longshore drift resulting from steady movement of sediment. • Strategically important coastline with numerous fortifications still visible including Napoleonic and Second World War structures and Cold War military establishments. • Relatively undeveloped coastline and foreshore. Absence of coast road and widespread development imparts a rural character to the terrestrial hinterland. • Sailing and water-sports activity throughout, albeit centred on the towns and approaches to navigable rivers. • The coast contains fisheries for many species. Commercial fishing activity is relatively intense along the coast. Activity includes potting, netting and recreational angling occurs from shore or 			

from vessels. Beached fishing boats are characteristic, along with small independent fish sales outlets along the coast.

- Popular tourist area, notably for walking and nature watching. Small number of popular visitor destinations and tourist towns located along the coast.
- Coastline and sea have strong associations with writers, painters and composers.
- Strong visual relationship with the coastline. Occasional coastal towns and large-scale developments including energy and military infrastructure evident in some views act as orientation points/navigation aids.
- Expansive views offshore encompass largely undeveloped seascape, but offshore shipping and windfarms visible in adjacent seascape character types.



Value

Medium-high

- Suffolk Heritage Coast and the Area of Outstanding Natural Beauty (AONB) provide a strong indication of the scenic qualities of the coastal strip, however the majority of the seascape within this SCT is not designated for its scenic value.
- Interaction of terrestrial, coastal and offshore areas important for biodiversity, evidenced by designations along the coast and offshore, and frequency of sites managed for nature conservation.
- Relatively widespread seascape character covering band of sea between low water mark and 5-8km offshore along the majority of the Suffolk coastline within the study area between Kessingland and Bawdsey.
- The SCT has notable recreational value as the focus for recreational sailing, water sports and visitor activity at the coast, including informal seaside recreation and bathing in these nearshore waters.
- The scenic quality and interest of all stretches of the SCT is influenced by the simplicity of the main elements (shingle beach/sea/sky) and the dynamic qualities of the seascape that are evident to the coast.
- Scenic qualities are varied and not always consistent across different areas of the SCT. In close proximity to Lowestoft, Kessingland and Aldeburgh, scenic qualities are influenced by the presence of seafront developments and busy waters with recreational sailing activities. Areas of the SCT around Covehithe, Dunwich, Minsmere Haven and Orford Ness have more natural/remote scenic qualities.
- The scenic qualities of the Walberswick to Thorpeness section of the SCT are influenced by the presence of Sizewell Nuclear Power Station. Areas to the south of the SCT around Aldeburgh Bay and Hollesley Bay are more influenced by the presence of existing offshore wind farms (Galloper and Greater Gabbard) than areas to the north of the SCT.

Sensitivity to change: *Combination of the value and susceptibility of the SCT*

Susceptibility	Medium
<ul style="list-style-type: none"> SCT has the potential to be influenced by the construction and operation of the offshore infrastructure due to its exposure to the offshore waters in which it is located. There is no concealment/screening of views out to sea and the offshore waters, with just the long distance (25.7km) between this SCT and the proposed East Anglia TWO windfarm site reducing its susceptibility. Addition of elements forming the East Anglia TWO windfarm site in offshore waters outside the SCT, have the potential to alter the perceived character of the nearshore waters, particularly the expansive views across the nearshore waters offshore and its largely undeveloped seascape character. Some of the aesthetic and perceptual aspects of its seascape character are susceptible to change, such as the perceived remoteness and tranquillity evident in some areas of the SCT, however the turbines may also relate rationally to the exposure and bleakness of some areas and to the existing energy generation influences which influence its baseline character. The experience of the seascape is influenced by activities that have changed its inherent character, such as commercial shipping vessels and traffic out to sea, however this nearshore SCT tends to be more influenced by the coastal character than the more distant seaward character (which reduces its susceptibility). 	
Sensitivity	Medium-high
<p>The Nearshore Waters SCT has a medium-high value. It forms part of the seascape of the Suffolk Heritage Coast and the immediate seascape setting to the Suffolk Coast and Heaths AONB, however the majority of the seascape within this SCT is not designated for its scenic value. Its special qualities focus on the simplicity of its main elements (shingle beach/sea/sky), the natural qualities of the vegetated dune/shingle and low cliffs habitats along its coastline; its relative remoteness/inaccessibility along some stretches and traditional seaside influences of other stretches; the unique character of Orford Ness and the dynamic qualities of the seascape where it meets the coast. The seascape is valued for water-based recreation and is the focus of seaside visitor activity at the coast. The SCT is also assessed as having a medium susceptibility to changes arising from the construction and operation of the offshore infrastructure. The addition of the East Anglia TWO windfarm site in offshore waters beyond the SCT has potential to alter the perceived character of the SCT and some of its aesthetic/perceptual characteristics, however other aspects of its character are capable of accommodating changes associated with the features of the development.</p>	
Magnitude of change	
Geographic extent	Regional
<p>Geographically, the area of the SCT that may experience change as a result of visibility of the construction and operation of the offshore infrastructure is confined to the band of nearshore waters along the coast, however this SCT extends along the majority of the Suffolk coastline in the study area, so there is potential for changes to occur over a regional extent. The ZTV (Figure 28.15) shows that there will be high theoretical visibility of 41-48 turbines from almost the entirety of this SCT at distances of between 25.7km and 50km from the East Anglia TWO windfarm site. The closest areas of the SCT, between Kessingland and Orfordness, will be most likely to experience change than the more distant areas of the SCT between Orfordness and Bawdsey.</p>	
Size/scale of change (construction, operation and decommissioning):	
Area A: Kessingland to Orfordness	Medium-low
<ul style="list-style-type: none"> No changes to seascape characteristics which are not part of the perceived character, such as the complex superficial sediments masking underlying bedrock; sand bank systems parallel to the coastline; erosion and accretion and dynamic nature of coastline. No changes to other seascape characteristics that are part of the perceived character, such as the visible fortifications and military establishments. 	

- The construction and operation of the offshore infrastructure is likely to add development influence in the offshore backdrop to the relatively undeveloped coastline and foreshore.
- Recreational sailing and commercial fishing activities will still be prevalent in nearshore waters, but their role as foci may diminish slightly in the context of the array of wind turbines in the offshore backdrop.
- The construction and operation of the offshore infrastructure will result in the addition of elements on the sea skyline which will partially alter the visual relationship of the seascape with the coastline, resulting in partial loss of open sea skyline in the backdrop of offshore waters; appearing as an additional element in the simple sea/sky composition and forming a further focal point of orientation.
- Interruption of expansive/limitless views offshore with the addition of further development offshore.
- The construction and operation of the offshore infrastructure will form an increase in wind energy influence but will not be an uncharacteristic feature due to the existing Galloper and Greater Gabbard wind farms in adjacent seascape character types.
- Vertical elements of the wind turbines contrast with the low/horizontal emphasis of the long curving bays, low vegetated dunes and low cliffs.

Area B: Orfordness to Bawdsey

Low

- While there is potential for the construction and operation of the offshore infrastructure to result in some of the changes described above for the Kessingland to Orfordness area, changes to existing seascape characteristics are notably reduced over the area of SCT between Orfordness and Bawdsey. The magnitude of change is assessed as low, primarily due to the longer distances between the SCT and the East Anglia TWO windfarm site, which results in turbines becoming increasingly hidden behind the skyline and therefore having less prominence as an additional element, being less of a focal point and lower contrast with the horizontal emphasis of the seascape. The construction and operation of the offshore infrastructure will also introduce elements that are already characteristic in the backdrop from this area of the SCT, in the form of Galloper and Greater Gabbard windfarms, which have more influence as characteristic features in the offshore waters from this SCT (and less influence on the northern parts of SCT).

Significance of effect

Geographic area of SCT	Significance of effect (construction and decommissioning)	Significance of effect (operation)
Area A: Kessingland to Orfordness	Significant , short-term, temporary	Significant , long-term, reversible
Area B: Orfordness to Bawdsey	Not significant , short-term, temporary	Not significant , long-term, reversible

28.2.2 SCT 04: Developed Nearshore Waters

SCT 04: Developed Nearshore Waters			
Designations:	Suffolk Heritage Coast and adjacent to the Suffolk Coast and Heaths AONB	Viewpoints:	Viewpoints 1, 19, 20, 21, 22
Baseline Description			
<p>Extends along the coastline from Lowestoft in the south, past Winterton-on Sea and into Norfolk beyond the study area (Figure 28.10). It occupies the shallow coastal waters associated with the largely developed stretch of the coast extending north from Lowestoft. The landward extent of the SCT is broadly defined by the Low Water Mark. Its seaward extent is between 5 and 8km from the shoreline.</p> <p>Key characteristics:</p> <ul style="list-style-type: none"> • Moderately sheltered coastal waters with a relatively low tidal range and shallow waters up to approximately 20 metres deep. • Sea floor underlain by superficial sediments largely masking bedrock. • Extensive submerged sandbanks parallel to the coast. • Shape of coastline characterised by relatively long, very shallow coastal bays and headlands. • Much of the coast is erosional and significant stretches of sea defences, including concrete sea walls, rock revetments and groins projecting into the sea, are characteristic of the foreshore in many places. • Largely developed coastline with settlements, holiday parks and leisure developments linked by a coastal road landward of sandy and shingle beaches, low vegetated dunes and in places low crumbling cliffs. • Historic ports and modern man-made harbours adjacent to river mouths protected by substantial sea walls and rock revetments. Rivers canalised and dredged to maintain access to riverside berths. • Busy port approaches used by a range of commercial vessels with numerous buoys and beacons to mark safe passage. • Commercial fishing activity is relatively intense along the coastal strip and in the vicinity of fishing ports. Strong associations with herring fishing industry. • Popular for recreational sailing, particularly approaches to rivers, leading to inland quays and harbours. • Coastal areas and major towns are particularly busy in summer, with numerous caravan and holiday parks and other leisure facilities located adjacent to the coast and linked by coastal road. • Extensive linear coastal geometry creating long sweeping views along the coastline and out to sea. • Expanses of extensive sand flats and dune systems create a semi natural character juxtaposed to a relatively developed coastal fringe, with frequent views to shipping, built development, major port infrastructure, wind turbines and sea defences. 			



Value	Medium-low
<ul style="list-style-type: none"> The Developed Nearshore Waters SCT do not form part of a landscape designated for its scenic value. Nearshore waters are recognised for their wildlife importance through a Special Protection Area (SPA) designation and occasional coastal areas are recognised through local nature reserve (LNR) designation. Relatively widespread character covering band of sea between low water mark and 5-8km offshore along north Suffolk and south Norfolk part of the study area coastline between Lowestoft and Caister-on-Sea. The SCT has notable recreational value as the focus for recreational sailing, water sports and visitor activity at the coast, including informal seaside recreation and bathing in these nearshore waters. The scenic quality and interest of all stretches of the SCT are influenced by developed coastline with settlements, holiday parks, leisure developments, busy commercial harbours and fishing/shipping. The seascape displays traditional 'beach resort' qualities and interest arising from the interaction of the open, expansive seascape with development and the activities of people at the seafront and nearshore waters The scenic qualities of the SCT are also influenced by existing wind energy developments in nearshore waters – Scroby Sands Windfarm off Caister-on-Sea; and the single wind turbine at Ness Point, Lowestoft. 	
Sensitivity to change: <i>Combination of the value and susceptibility of the SCT</i>	
Susceptibility	Medium-low
<ul style="list-style-type: none"> SCT has the potential to be influenced by the construction and operation of the offshore infrastructure, particularly at its southern end, due to its exposure to the offshore waters in which it is located. There is no concealment/screening of views out to sea and the offshore waters, with just the long distance (26 - 50km) between this SCT and the East Anglia TWO windfarm site reducing its susceptibility. The construction and operation of the offshore infrastructure in offshore waters outside the SCT has the potential to alter the perceived character of the nearshore waters, particularly the expansive views across the nearshore waters offshore. These views are however, substantially influenced by existing development features including prominent wind turbines in the nearshore waters. Some of the aesthetic and perceptual aspects of its seascape character are susceptible to change, such as the its long sweeping views and semi-natural character influences, however the 	



<p>turbines will relate rationally to the exposure and to the existing energy generation influences which influence its baseline character.</p> <ul style="list-style-type: none"> The experience of the seascape is influenced by activities that have changed its inherent character, such as relatively intense commercial fishing activity using fishing ports and larger shipping vessel traffic out to sea. 	
Sensitivity	Medium-low
<p>The Developed Nearshore Waters SCT has a medium-low value, which is not recognised through scenic landscape designation and its inherent characteristics/scenic qualities have been influenced by extensive development along the coastline (settlements, holiday parks, leisure developments, busy commercial harbours), commercial activities in nearshore/coastal waters (fishing/shipping) and wind energy development (Scroby Sands/Ness Point Lowestoft). The SCT is also assessed as having a medium-low susceptibility to changes arising from the construction and operation of the offshore infrastructure. The addition of the East Anglia TWO windfarm site in offshore waters beyond the SCT has potential to alter the perceived character of the SCT and some of its aesthetic/perceptual characteristics, however its character is largely capable of accommodating changes associated with the features of the development. The coastal edges have a semi natural character juxtaposed to a relatively developed coastal fringe, with shipping, built development, major port infrastructure and wind turbines, characteristics which have a relatively lower sensitivity to change than areas of nearshore waters to the south of the study area.</p>	
Magnitude of change	
Geographic extent:	Regional
<p>Geographically, the area of the SCT that may experience change as a result of visibility of the construction and operation of the offshore infrastructure is confined to the band of nearshore waters along the coast, between Lowestoft and Caister-on-Sea, however this SCT extends along the majority of the north Suffolk and south Norfolk coastline in the study area, so there is potential for changes to occur over a regional extent. The ZTV (Figure 28.15) shows that there will be high theoretical visibility of 41-48 turbines from almost the entirety of this SCT at distances of between 26km and 50km from the East Anglia TWO windfarm site. The closest areas of the SCT, near Lowestoft, will be most likely to experience change than the more distant areas of the SCT between Great Yarmouth and Caister-on-Sea.</p>	
Size/scale of change (construction, operation and decommissioning)	
Area A: Lowestoft area	Medium-low
<ul style="list-style-type: none"> No changes to seascape characteristics which are not part of perceived character, such as the shallow water, superficial sediments largely masking bedrock and extensive submerged sandbanks parallel to the coast. Shape of coastline formed by relatively long, shallow coastal bays and headlands allows long-distance but oblique views south-east to the East Anglia TWO windfarm site. The East Anglia TWO windfarm site is located at long distance outside the SCT and is likely to result in a relatively medium-low scale of change as an additional windfarm element on the sea skyline, which will partially alter the visual relationship of the seascape with the coastline, resulting in partial loss of open sea skyline in the backdrop of offshore waters. Additional of the East Anglia TWO windfarm site in the offshore backdrop will occur in the context of the relatively developed coastline and foreshore, with shipping, built development, major port infrastructure and wind turbines, and thereby forms a relatively smaller change to the existing pattern of influential elements. Recreational sailing and commercial fishing activities will still be prevalent in nearshore waters, but their role as foci may diminish slightly in the context of the array of wind turbines in the offshore backdrop. 	
Area B: South Norfolk area (Caister-on-Sea to Hopton-on-Sea)	Low

- While there is potential for the construction and operation of the offshore infrastructure to result in some of the changes described above for the Lowestoft area, changes to existing seascape characteristics are notably reduced over the area of SCT in South Norfolk, between Caister-on-sea and Nopton-on-Sea. The magnitude of change is assessed as low, primarily due to the longer distances between the SCT and the East Anglia TWO windfarm site, which results in turbines becoming increasingly hidden behind the skyline and oblique to the orientation of the SCT coastline, and therefore having less prominence as an additional element, being less of a focal point and lower contrast with the horizontal emphasis of the seascape. The influence of the existing Scroby Sands Windfarm in the nearshore waters of this area of the SCT is also more notable, and in this context, the changes arising from the construction and operation of the offshore infrastructure appear notably diminished and offshore in comparison.

Significance of effect

Geographic area of SCT	Significance of effect (construction and decommissioning)	Significance of effect (operation)
Area A: Lowestoft area	Not significant , short-term, temporary	Not significant , long-term, reversible
Area B: South Norfolk area (Caister-on-Sea to Hopton-on-Sea)	Not significant , short-term, temporary	Not significant , long-term, reversible

28.2.3 SCT 05: Coastal Waters

SCT 05: Coastal Waters			
Designations:	Adjacent to Suffolk Heritage Coast. Offshore from Suffolk Coast and Heaths AONB.	Viewpoints:	Middle distance coastal waters visible offshore from all viewpoints
Baseline Description			
<p>The Coastal Waters SCT marks a transition between the Nearshore Waters SCT and Developed Nearshore Waters SCT and Offshore Waters SCT which lie further out to sea (Figure 28.10). It is located approximately 8km from the coast, extending approximately 18km out to sea, along the full north to south extents of the study area.</p> <p>Key characteristics:</p> <ul style="list-style-type: none">• Open expanse of sea marking transition between the shallower nearshore waters and areas further offshore.• Simple bathymetry ranging between 20 and 30m in depth.• Seabed is characterised by relatively undisturbed sediments, including those laid down by ancient river channels prior to the formation of the North Sea.• Several established commercial shipping routes, predominantly travelling parallel to the coastline to and from major coastal ports, and east to west, to and from continental Europe.• Large vessels often seen on the horizon in views from the coastline. Other activity includes vessels travelling to and from aggregates dredging areas and associated with the transit of plant and supplies for wind farm construction, operation and maintenance activities.• Relatively high concentration of non-designated wrecks.• Busy fishing waters. Commercial fishing activity includes potting, netting and flatfish beam trawling.• Visually unified and extensive open water character in views offshore and to coastline, which is seen as extensive low horizon.• Views to offshore windfarms located beyond the seaward limits of the SCT.			
			
Value		Medium-low	
<ul style="list-style-type: none">• Reefs and sandbanks form important habitats with large areas designated for biodiversity value.			

- Coastal Waters are not subject to scenic designation and are not widely recognised for their aesthetic value, however they do form part of the wider offshore seascape setting to the Suffolk Coast and Heaths AONB.
- Relatively widespread seascape character covering band of sea 8 – 18km from the coast, extending along the full north to south extents of the study area between Kessingland and Bawdsey.
- The SCT has busy fishing waters, with limited recreational value, with the focus for sailing being in adjacent nearshore waters.
- The scenic quality and interest of the SCT is influenced by the simplicity of the main elements (sea and sky).
- Seascape with some consistent, well-defined attributes, visually unified and extensive open water character, however its inherent qualities have been changed through commercial shipping and fishing, maintenance vessels for travelling to and from dredging areas and offshore windfarms.
- The scenic qualities of the SCT are influenced by existing wind energy developments (Gallopier and Greater Gabbard) in the adjacent offshore Waters SCT which form a backdrop, particularly to the southern areas of the SCT between Orford Ness and Bawdsey.

Sensitivity to change: *Combination of the value and susceptibility of the SCT*

Susceptibility	Medium
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- The East Anglia TWO windfarm site is located approximately 12km offshore from the Coastal Waters SCT.
- The closest areas of the SCT immediately to west of the East Anglia TWO windfarm site are more susceptible to changes (approximately offshore between Covehithe and Aldeburgh) as there is a direct association and exposure to changes. This susceptibility recedes with the distance to the north, beyond Lowestoft and south beyond Orford Ness.
- The existing Gallopier and Greater Gabbard windfarms form a key characteristic in the baseline character of the southern part of the SCT, forming a prominent feature in the perceived character of the SCT.
- The experience of the seascape is also much influenced by commercial shipping vessels and extensive commercial fishing activities.
- Windswept and exposed character with large scale and simple form, which provides rationale for wind energy influences and is likely to be able to accommodate changes associated with the construction and operation of the offshore infrastructure without fundamental changes to its existing character.
- Visibility from shoreline can be restricted and is dependent on weather conditions.

Sensitivity	Medium
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The Coastal Waters SCT has a medium-low value, which is not recognised through scenic landscape designation and its inherent characteristics/scenic qualities have been influenced by offshore development activities, particularly commercial fishing within the SCT, but also by the perceived influence of commercial shipping and wind energy development (Gallopier and Greater Gabbard) in the adjacent Offshore Waters SCT. The SCT is also assessed as having a medium susceptibility to changes arising from the construction and operation of the offshore infrastructure. The addition of the East Anglia TWO windfarm site 12km from these Coastal Waters (at its closest point) has potential to alter the perceived character of the SCT and some of its aesthetic/perceptual characteristics, however its character is largely capable of accommodating changes associated with the features of the development. The SCT have a large, expansive scale, simple form and an existing offshore windfarm characteristic, which is likely to be able to accommodate the changes associated with the construction and operation of the offshore infrastructure without fundamental changes to its existing character and have a medium sensitivity to change.

Magnitude of change	
Geographic extent:	Regional
Geographically, the area of the SCT that may experience change as a result of visibility of the construction and operation of the offshore infrastructure is confined to the band of Coastal Waters along the coast, however this SCT extends along the majority of the Suffolk coastline in the study area, so there is potential for changes to occur over a regional extent. The ZTV (Figure 28.15) shows that there will be high theoretical visibility of 41-48 turbines from almost the entirety of this SCT at distances of between 12km and 50km from the East Anglia TWO windfarm site. The closest areas of the SCT, approximately offshore between Covehithe and Aldeburgh, will be most likely to experience change than the more distant areas of the SCT to the north of Lowestoft and to the south of Orfordness.	
Size/scale of change (construction, operation and decommissioning)	
Area A: Coastal Waters offshore of Covehithe to Orfordness	Medium
<ul style="list-style-type: none"> No changes to seascape characteristics which are not part of perceived character, such as the simple bathymetry and relatively undisturbed sea bed sediments masking bedrock and submerged sandbanks. The East Anglia TWO windfarm site will be located in a seascape where the existing Galloper and Greater Gabbard windfarms have an influence on the baseline character. Changes to the character of the Offshore Waters SCT as a result of the construction and operation of the offshore infrastructure occur in the presence of these existing offshore windfarms, with the introduction of further elements that are characteristic in the receiving seascape. The addition of the East Anglia TWO windfarm site will consolidate the existing wind farm influence. The character of the SCT will be influenced by the addition of the East Anglia TWO windfarm site to the north of the existing Galloper and Greater Gabbard windfarms. The East Anglia TWO windfarm site will also extend the lateral spread of wind turbines to the north, thereby extending the horizontal effect of development in the seascape context and closing off some of the offshore views characteristic of these coastal waters. The construction and operation of the offshore infrastructure will result in changes to the open sea views from the SCT, introducing further tall vertical elements with moving rotors. This is a large-scale seascape, with open panoramas and an exposed windswept character. The wind turbines will appear to relate to these favourable conditions for wind energy generation. The construction and operation of the offshore infrastructure will result in some changes to the visually unified, expansive open character, partially interrupting the extensive open water character in views offshore, although large vessels, dredging activity, gas wells, vessels and offshore wind farms are already important points of orientation and scale. Partial visibility in these offshore waters, with views restricted and very dependent on weather conditions. 	
Area B: Coastal Waters offshore of south Norfolk (north of Lowestoft)	Medium-low to low
<ul style="list-style-type: none"> No changes to seascape characteristics which are not part of perceived character, such as the simple bathymetry and relatively undisturbed sea bed sediments masking bedrock and submerged sandbanks. The East Anglia windfarm site is located beyond the seaward limits of the SCT, with reduced scale and obliqueness to the coastal waters with increasing distance to the north. The East Anglia TWO windfarm site is located at distance outside this area of the SCT (between 15km – 50km) and is likely to result in a relatively medium-low to low scale of change as an additional windfarm element on the sea skyline, which will partially alter the visual relationship of 	

the seascape with the offshore waters, resulting in partial loss of open sea skyline in the backdrop and changes to the extensive open water character in views offshore.		
<ul style="list-style-type: none">• Addition of the East Anglia TWO windfarm site in the offshore backdrop will occur in the context of shipping, offshore development and wind turbines, and thereby forms a relatively smaller change to the existing pattern of elements.• Commercial fishing activities will still be prevalent in Coastal Waters, but their role as foci may diminish slightly in the context of the array of wind turbines in the offshore backdrop.		
Area C: Coastal Waters offshore between Orfordness and Bawdsey	Low	
<ul style="list-style-type: none">• While there is potential for the construction and operation of the offshore infrastructure to result in some of the changes described for Area A, changes to existing seascape characteristics are notably reduced over the area of SCT between Orfordness and Bawdsey. The magnitude of change is assessed as low, primarily due to the longer distances between the SCT and the East Anglia TWO windfarm site, which results in turbines becoming increasingly hidden behind the skyline and therefore having less prominence as an additional element, being less of a focal point and lower contrast with the horizontal emphasis of the seascape. The construction and operation of the offshore infrastructure will also introduce elements that are already characteristic in the backdrop from this area of the SCT, in the form of Galloper and Greater Gabbard windfarms, which have more influence as characteristic features in the offshore waters from this SCT (and less influence on the northern parts of SCT).		
Significance of effect		
Geographic area of SCT	Significance of effect (construction and decommissioning)	Significance of effect (operation)
Area A: Coastal Waters offshore of Covehithe to Aldeburgh	Not significant, short-term, temporary	Not significant, long-term, reversible
Area B: Coastal Waters offshore of south Norfolk (north of Lowestoft)	Not significant, short-term, temporary	Not significant, long-term, reversible
Area C: Coastal Waters offshore between Orfordness and Bawdsey	Not significant, short-term, temporary	Not significant, long-term, reversible

28.2.4 SCT 06: Offshore Waters

SCT 06: Offshore Waters			
Designations:	Adjacent to Suffolk Heritage Coast. Offshore from Suffolk Coast and Heaths AONB.	Viewpoints:	Long distance offshore waters visible from all viewpoints
Baseline Description			
<p>The Offshore Waters SCT lies seaward of the Coastal Waters SCT at a distance of approximately 18km from the coastline, extending to the seaward extents of the study area (Figure 28.10).</p> <p>Key characteristics:</p> <ul style="list-style-type: none"> • Open expanse of sea with consistently deep waters, generally in excess of 30m becoming shallower towards landward limits of the SCT. • Seabed is characterised by undisturbed sediments with the bedrock rarely exposed on the seafloor. • Sediments include those laid down by ancient river channels prior to the formation of the North Sea. • There is potential in offshore sediments for evidence of Palaeolithic communities that occupied the area prior to the formation of the North Sea. • Busy shipping waters with several established commercial shipping routes, predominantly travelling to and from major coastal ports, and east - west across the area. Large-scale shipping vessels are visible on the skyline in views from the shore in periods of very good/excellent visibility. • Commercial shipping transiting the study area includes cargo vessels, passenger craft and tankers, in part managed by a major Traffic Separation Zone. • Commercial fishing activity from larger vessels. • Industrial activity includes dredging for aggregates and gas fields. • Existing offshore wind farms are located within this LCT (Greater Gabbard and Galloper) and form a characteristic element. • Large military practice area. • Visually unified, expansive open character with consistent panoramic horizons, over extensive tracts of sea. • Wild and isolated qualities, although views to large vessels, dredging activity, gas wells, vessels and offshore wind farms become important points of orientation and scale in an otherwise vast and featureless seascape. • Limited visibility to shoreline. Views restricted to major landmarks onshore from landward extents of the SCT, and very dependent on weather conditions. 			

	
Value	Low
<ul style="list-style-type: none"> Sandbanks form important habitats and areas designated (or proposed for designation) for their wildlife value. Offshore waters are not subject to scenic designation and are not widely recognised for their aesthetic value, however they do have strong cultural associations. These offshore waters separate the UK from continental Europe and are both historically and presently of value for shipping and trade. The waters have historically been strategically important waters, including major events such as World Wars. It is a seascape with consistent, well-defined and distinctive attributes, particularly its unified, expansive open character with some wild/isolated qualities, however the inherent seascape character has been notably changed by human activity in the form of existing offshore windfarms (Galloper and Greater Gabbard windfarms are both in this SCT), extensive commercial shipping, dredging activity and gas wells. 	
Sensitivity to change: <i>Combination of the value and susceptibility of the SCT</i>	
Susceptibility	Medium
<ul style="list-style-type: none"> The East Anglia TWO windfarm site is located within this Offshore Waters SCT. The areas of the SCA immediately around the East Anglia TWO windfarm site are more susceptible to changes, as there is a direct association and exposure to changes. This susceptibility recedes with the distance to the north and south, and offshore to the east. The existing Galloper and Greater Gabbard windfarms forms a key characteristic in the baseline character of the south part of the SCT, forming a prominent feature in the existing context. The experience of the seascape is also much influenced by commercial shipping vessels, commercial fishing and industrial activity including dredging for aggregates and gas fields. Windswept, exposed and remote character which provides a rationale for the wind energy influences. Offshore shipping waters with very large, expansive scale, simple form and an existing offshore windfarm characteristic, which is likely to be able to accommodate the changes associated with the construction and operation of the offshore infrastructure without fundamental changes to its existing character. Limited visibility of shoreline. Views restricted and very dependent on weather conditions. 	
Sensitivity	Medium-low
<p>The Offshore Waters SCT has a low value, which is not recognised through scenic landscape designation and its inherent characteristics/scenic qualities have been influenced by offshore development activities, commercial shipping and fishing and wind energy development (Galloper and Greater Gabbard). The SCT is also assessed as having a medium-low susceptibility to changes</p>	

arising from the construction and operation of the offshore infrastructure. The addition of the East Anglia TWO windfarm site within these offshore waters has potential to alter the perceived character of the SCT and some of its aesthetic/perceptual characteristics, however its character is largely capable of accommodating changes associated with the features of the development. The offshore shipping waters of this SCT have very large, expansive scale, simple form and an existing offshore windfarm characteristic, which is likely to be able to accommodate the changes associated with the construction and operation of the offshore infrastructure without fundamental changes to its existing character and have a relatively low sensitivity to change.

Magnitude of change

Geographic extent:	Regional
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Almost all of the Offshore Waters SCT will experience theoretical visibility of the East Anglia TWO windfarm site (**Figure 28.15**), however the closest areas of the SCT will experience most changes in the perceived character, where there is a direct association and exposure to the physical changes in the pattern of elements. There is potential for changes to occur over a wider regional extent due to the geographic spread of theoretical visibility extending across much of the offshore waters SCT in the study area. The ZTV (**Figure 28.15**) shows that there will be high theoretical visibility of 41-48 turbines from almost the entirety of this SCT at distances of between 26km and 50km from the proposed East Anglia TWO windfarm site. The ZTV shows that curvature of the earth begins to reduce visibility from the offshore waters on the outer areas of the 50km study area.

Size/scale of change (construction, operation and decommissioning):

Area A: Offshore Waters within 20km of the East Anglia TWO offshore windfarm site	Medium
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- No changes to seascape characteristics which are not part of perceived character, such as the deep waters, undisturbed sediments on the seafloor and Palaeolithic communities.
- The East Anglia TWO windfarm site will be located in a seascape where the existing Galloper and Greater Gabbard windfarms have a strong influence on the baseline character. Changes to the character of the Offshore Waters SCT as a result of the construction and operation of the offshore infrastructure occur in the presence of these existing offshore windfarms, with the introduction of further elements that are characteristic in the receiving seascape.
- The addition of the East Anglia TWO windfarm site will consolidate the existing wind farm influence. The character of the SCT will be influenced by the addition of the East Anglia TWO windfarm site to the north of the existing Galloper and Greater Gabbard windfarms.
- The East Anglia TWO windfarm site will also extend the lateral spread of wind turbines, thereby extending the horizontal effect of development in the seascape context.
- The construction and operation of the offshore infrastructure will result in changes to the open sea views from the SCT, introducing further tall vertical elements with moving rotors. This is a large-scale seascape, with open panoramas and an exposed windswept character. The wind turbines will appear to relate to these favourable conditions for wind energy generation.
- The construction and operation of the offshore infrastructure will result in some changes to the visually unified, expansive open character, partially interrupting the consistent panoramic horizons and providing further development influence which may reduce its wild/isolated qualities, although large vessels, dredging activity, gas wells, vessels and offshore wind farms are already important points of orientation and scale.
- Limited visibility in these offshore waters, with views restricted and very dependent on weather conditions.

Area B: Offshore Waters over 20km of the East Anglia TWO windfarm site	Medium-low to low
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- While there is potential for the construction and operation of the offshore infrastructure to result in some of the changes described above, changes to existing seascape characteristics of the Offshore Waters SCT are notably reduced with increasing distance. The magnitude of change is

assessed as medium-low to low decreasing with distance, primarily due to the longer distances between the SCT and the East Anglia TWO windfarm site, which results in turbines becoming increasingly hidden behind the skyline, and therefore having less prominence as an additional element, being less of a focal point and lower contrast with the horizontal emphasis of the seascape. The influence of the existing Galloper and Greater Gabbard Windfarms in the offshore waters to the south of the SCT is also more notable, and in this context, the changes arising from the construction and operation of the offshore infrastructure appear notably diminished in comparison to these elements in the foreground.

Significance of effect

Geographic area of SCT	Significance of effect (construction and decommissioning)	Significance of effect (operation)
Area A: Offshore Waters within 20km of the East Anglia TWO windfarm site	Not significant , short-term, temporary	Not significant , long-term, reversible
Area B: Offshore Waters over 20km of the East Anglia TWO windfarm site	Not significant , short-term, temporary	Not significant , long-term, reversible