East Anglia ONE North Offshore Windfarm

Appendix 28.4

Visual Assessment

Preliminary Environmental Information
Volume 3
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Glossary of Acronyms

AONB	Area of Outstanding Natural Beauty
cd	Candela
ETG	Expert Topic Group
LCT	Landscape Character Type
NCNR	National Cycle Network Route
OS	Ordnance Survey
RCNR	Regional Cycle Network Route
SAR	Search and Rescue
SLVIA	Seascape and Landscape Visual Impact Assessment
ZTV	Zone of Theoretical Visibility

Glossary of Terminology

Applicant	East Anglia ONE North Limited.
East Anglia ONE North project	The proposed project consisting of up to 67 wind turbines, up to four offshore electrical platforms, up to one 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 ONE North windfarm site	The offshore area within which wind turbines and offshore platforms will be located.
Construction, operation and maintenance platform	A fixed structure required for construction, operation and maintenance personnel and activities.
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, these cables will include fibre optic cables.
Landfall	The area (from Mean Low Water Springs) where the offshore export cables would make contact with land, and connect to the onshore cables.
Met mast	An offshore structure which contains metrological instruments used for wind data acquisition.
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 ONE North 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, these cables will include fibre optic cables.
Offshore infrastructure	All of the offshore infrastructure including wind turbines, platforms, and cables.
Offshore platform	A collective term for the construction, operation and maintenance platform and the offshore electrical platforms.
Platform link cable	Electrical cable which links one or more offshore platforms, these cables will include fibre optic cables.
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.

28.4 Visual Assessment

28.1 Potential Impacts during Construction, Operation and Decommissioning

1. A preliminary assessment of the visual receptors and viewpoints in the study area has been undertaken using Zone of Theoretical Visibility (ZTV) analysis (***Figure 28.19***) and site survey, to identify which of the visual receptors and viewpoints are likely to be affected by the East Anglia ONE North windfarm site. This preliminary assessment is presented in ***Table A28.1***-***Table A28.4*** below, which identify the visual receptors and viewpoints that have the potential to undergo significant effects as a result of the East Anglia ONE North windfarm site and are required to be assessed in full; and those that do not have potential to undergo significant effects that can be scoped out of further assessment.

28.1.1 Preliminary Assessment – Viewpoints

2. A preliminary assessment of the agreed representative viewpoints (***Figure 28.5***) within the study area is presented in ***Table A28.1***. Consultations with the Expert Topic Group (ETG) (consisting of representatives from Suffolk County Council, Suffolk Coastal District Council, Waveney District Council, Great Yarmouth Borough Council, the Broads National Park, Suffolk Coast and Heaths Area of Outstanding Natural Beauty (AONB) unit, Natural England and Historic England) have been ongoing and the agreement of viewpoint locations for use in the Seascape and Landscape Visual Impact Assessment (SLVIA) has been reached following consideration of their combined feedback.

Table A28.1 Preliminary Assessment of Viewpoints

Viewpoint		Distance from the East Anglia ONE North windfarm site	Wind turbines visible	Horizontal angle occupied by the offshore windfarm site	Preliminary Assessment
Representative viewpoints* **(*viewpoint numbering is consistent between East Anglia ONE North and East Anglia TWO SLVIAs)**					
Suffolk					
1	Lowestoft	38.8	42	16.9°	Potential for significant effects that require further assessment.
2	Kessingland Beach	39.7	42	16.2°	Potential for significant effects that require further assessment.

Viewpoint		Distance from the East Anglia ONE North windfarm site	Wind turbines visible	Horizontal angle occupied by the offshore windfarm site	Preliminary Assessment
3	Covehithe	41.6	42	16.1°	Potential for significant effects that require further assessment.
4	Southwold	43.9	42	15.6°	Potential for significant effects that require further assessment.
5	Gun Hill, Southwold	44.4	42	15.5°	Potential for significant effects that require further assessment.
6	Walberswick	45.6	38	15.1°	Potential for significant effects that require further assessment.
7	Dunwich	48.8	42	14.3°	Potential for significant effects that require further assessment.
8	Dunwich Heath & Beach (Coastguard cottages)	50.2	42	13.9°	No potential for significant effects - scoped out of further assessment due to the narrower horizontal angle occupied by the offshore windfarm site, level of screening of the wind wind turbines behind sea skyline, long distance of the viewpoint (over 50km) and low likelihood of visibility at this distance.
9	Minsmere Nature Reserve	50.9	42	13.8°	
10	Sizewell Beach	52.4	42	13.5°	
11	Suffolk Coastal Path, between Thorpeness and Sizewell	53.0	42	13.3°	
12	Thorpeness	53.9	42	13.0°	
13	Aldeburgh	55.8	42	12.6°	
Norfolk					
19	Hopton-on-sea	40.9	42	17.3°	Potential for significant effects that require further assessment.
20	Gorleston-on-sea	42.7	42	17.2°	Potential for significant effects that require further assessment.
21	Great Yarmouth, South Beach	44.0	42	17.3°	No potential for significant effects - scoped out of further assessment due to the narrower horizontal angle occupied by the

Viewpoint		Distance from the East Anglia ONE North windfarm site	Wind turbines visible	Horizontal angle occupied by the offshore windfarm site	Preliminary Assessment
					offshore windfarm site, level of screening of the wind wind turbines behind sea skyline, long distance of the viewpoint (over 40km).
22	Caister-on-sea	46.4	42	16.9°	No potential for significant effects - scoped out of further assessment due to the narrower horizontal angle occupied by the offshore windfarm site, level of screening of the wind wind turbines behind sea skyline, long distance of the viewpoint (over 45km) and the position of the wind turbines beyond those of Scroby Sands.
Illustrative viewpoints					
A	Southwold Common	44.6	42	0°	Illustrative viewpoints chosen specifically to demonstrate a particular effect or issue; appropriate visualisation produced, but written analysis of the impacts not required for LVIA.
B	Ness Point, Lowestoft	37.87	42	17.5°	
C	Corton Holiday Village	37.3	42	17.5°	
D	Southwold Pier	43.7	42	15.7°	

28.1.2 Preliminary Assessment – Settlements

3. A preliminary assessment of the principal settlement receptors within the study area is presented in ***Table A28.2***.

Table A28.2 Preliminary Assessment of Settlements*

Visual receptor	Distance from the East Anglia ONE North windfarm site	Theoretical visibility of the East Anglia ONE North windfarm site	Actual visibility of the East Anglia ONE North windfarm site	Preliminary Assessment
Suffolk				
Southwold	42.3km	Widespread area of settlement has high theoretical visibility (36-42 wind turbines).	Coastal location affords open views from seafront locations. Views from areas of settlement	Potential for significant effects that

Visual receptor	Distance from the East Anglia ONE North windfarm site	Theoretical visibility of the East Anglia ONE North windfarm site	Actual visibility of the East Anglia ONE North windfarm site	Preliminary Assessment
			set-back from the immediate seafront are often screened by buildings and vegetation within the urban area.	require further assessment.
Beccles	47.9km	Limited area of settlement has low theoretical visibility (1-7 wind turbines). Majority of settlement as no theoretical visibility with only small areas having maximum visibility of 36-42 wind turbines.	Inland location, substantial intervening screening by vegetation and urban area.	No potential for significant effects - scoped out of further assessment.
Kessingland	37.7km	Widespread area of settlement has high theoretical visibility (36-42 wind turbines).	Coastal location affords open views from seafront locations. Views from areas of settlement set-back from the immediate seafront are often screened by buildings and vegetation within the urban area.	Potential for significant effects that require further assessment.
Lowestoft	36.3km	Widespread area of settlement has high theoretical visibility (36-42 wind turbines).	Coastal location affords open views from seafront locations. Views from areas of settlement set-back from the immediate seafront are often screened by buildings and vegetation within the urban area.	Potential for significant effects that require further assessment.
Norfolk				
Great Yarmouth	40.9km	Widespread area of settlement has high theoretical visibility (36-42 wind turbines).	Coastal location affords open views from seafront locations. Views from areas of settlement set-back from the immediate seafront are often screened by buildings and vegetation within the urban area. Settlement located at	No potential for significant effects - scoped out of further assessment.

Visual receptor	Distance from the East Anglia ONE North windfarm site	Theoretical visibility of the East Anglia ONE North windfarm site	Actual visibility of the East Anglia ONE North windfarm site	Preliminary Assessment
			long distance and has extensive developed coastline with commercial/industrial influences. Aspect and key orientation of views from settlement remains to open sea.	
Gorleston-on-Sea	40.1km	Widespread area of settlement has high theoretical visibility (36-42 wind turbines).	Coastal location affords open views from seafront locations. Views from areas of settlement set-back from the immediate seafront are often screened by buildings and vegetation within the urban area. Aspect and key orientation of views from settlement remains to open sea.	No potential for significant effects - scoped out of further assessment.
Bradwell	42.9km	Majority of settlement has no low theoretical visibility (1-7 wind turbines), with limited areas of higher theoretical visibility (36-42 wind turbines).	Inland location, substantial intervening screening by vegetation and urban area.	No potential for significant effects - scoped out of further assessment.
Caister-on-Sea	44.6km	Widespread area of LCT has low to high theoretical visibility (1-42 wind turbines).	Coastal location affords open views from seafront locations. Views from areas of settlement set-back from the immediate seafront are often screened by buildings and vegetation within the urban area. Settlement located at long distance.	No potential for significant effects - scoped out of further assessment.
*****Settlements based on OS Urban Region Data				

28.1.3 Preliminary Assessment –Transport Routes

4. A preliminary assessment of the main transport routes within the study area is presented in ***Table A28.3***.

Table A28.3 Preliminary Assessment of Main Transport Routes

Visual receptor	Distance from the East Anglia ONE North windfarm site	Theoretical visibility of the East Anglia ONE North windfarm site	Actual visibility of the East Anglia ONE North	Preliminary Assessment
Suffolk				
A1144	36.8km	Long section of road has high theoretical visibility (36-42 wind turbines).	Views entirely screened by urban areas of Lowestoft, through which the route passes.	No potential for significant effects - scoped out of further assessment.
A1117	38.4km	Partial sections of road have high theoretical visibility (36-42 wind turbines) while partial sections have low theoretical visibility (1-7 wind turbines) or no visibility.	Views entirely screened by urban areas of Lowestoft, through which the route passes.	No potential for significant effects - scoped out of further assessment.
A146	39.5km	Partial sections of road have high theoretical visibility (36-42 wind turbines) while partial sections have low theoretical visibility (1-7 wind turbines) or no visibility.	Road passes through inland areas, with substantial screening provided by intervening vegetation and urban areas/development.	No potential for significant effects - scoped out of further assessment.
A1145	38.8km	Partial sections of road have high theoretical visibility (36-42 wind turbines) while partial sections have low theoretical visibility (1-7 wind turbines) or no visibility.	Views entirely screened by urban areas of Lowestoft, through which the route passes.	No potential for significant effects - scoped out of further assessment.
A12	36.4km	Partial sections of road have high theoretical visibility (36-42 wind turbines) while partial sections have low theoretical	Road passes through inland areas, with substantial screening provided by intervening	No potential for significant effects - scoped out of further assessment.

Visual receptor	Distance from the East Anglia ONE North windfarm site	Theoretical visibility of the East Anglia ONE North windfarm site	Actual visibility of the East Anglia ONE North	Preliminary Assessment
		visibility (1-7 wind turbines) or no visibility.	vegetation and urban areas/development.	
A145	47.7km	Partial sections of road have high theoretical visibility (36-42 wind turbines) while partial sections have low theoretical visibility (1-7 wind turbines) or no visibility.	Road passes through inland areas, with substantial screening provided by intervening vegetation and urban areas/development.	No potential for significant effects - scoped out of further assessment.
A1095	42.4km	Partial sections of road have high theoretical visibility (36-42 wind turbines) while partial sections have low theoretical visibility (1-7 wind turbines) or no visibility.	Road passes through inland areas, with substantial screening provided by intervening vegetation and urban areas/development.	No potential for significant effects - scoped out of further assessment.
Lowestoft to Ipswich rail line	36.6km	Partial sections of railway line have high theoretical visibility (36-42 wind turbines) while partial sections have low theoretical visibility (1-7 wind turbines) or no visibility.	Railway line passes through inland areas, with substantial screening provided by intervening vegetation and urban areas/development.	No potential for significant effects - scoped out of further assessment.
Lowestoft to Norwich rail line	36.6km	Railway line has low theoretical visibility (1-7 or 8-14 wind turbines).	Railway line passes through inland areas, with substantial screening provided by intervening vegetation and urban areas/development.	No potential for significant effects - scoped out of further assessment.
Norfolk				
A149	43.5km	Partial sections of road have high theoretical visibility (36-42 wind turbines) while partial sections have low theoretical visibility (1-7 wind	Road passes through inland or urban areas, with substantial screening provided by intervening	No potential for significant effects - scoped out of further assessment.

Visual receptor	Distance from the East Anglia ONE North windfarm site	Theoretical visibility of the East Anglia ONE North windfarm site	Actual visibility of the East Anglia ONE North	Preliminary Assessment
		turbines) or no visibility.	vegetation and urban areas/development.	
A1064	47.5km	Partial sections of road have high theoretical visibility (36-42 wind turbines) while partial sections have low theoretical visibility (1-7 wind turbines) or no visibility.	Road passes through inland or urban areas, with substantial screening provided by intervening vegetation and urban areas/development.	No potential for significant effects - scoped out of further assessment.
A1243	41.6km	Partial sections of road have high theoretical visibility (36-42 wind turbines) while partial sections have low theoretical visibility (1-7 wind turbines) or no visibility.	Views entirely screened by urban areas of Lowestoft, through which the route passes.	No potential for significant effects - scoped out of further assessment.
A47	44km	Road generally has low theoretical visibility generally (1-7 wind turbines) but some areas with higher levels (36-42).	Road passes through inland areas, with substantial screening provided by intervening vegetation and urban areas/development.	No potential for significant effects - scoped out of further assessment.
A12	40km	Road primarily has low theoretical visibility (1-7 wind turbines) of no theoretical visibility, with short sections of higher theoretical visibility (36-42 wind turbines).	Road passes through inland areas, with substantial screening provided by intervening vegetation and urban areas/development.	No potential for significant effects - scoped out of further assessment.
A143	42.2km	Partial sections of road have high theoretical visibility (36-42 wind turbines) while partial sections have low theoretical visibility (1-7 wind turbines) or no visibility.	Road passes through inland or urban areas, with substantial screening provided by intervening vegetation and urban areas/development.	No potential for significant effects - scoped out of further assessment.

Visual receptor	Distance from the East Anglia ONE North windfarm site	Theoretical visibility of the East Anglia ONE North windfarm site	Actual visibility of the East Anglia ONE North	Preliminary Assessment
Great Yarmouth to Norwich rail line	43.7km	Railway line has low theoretical visibility (1-7 wind turbines).	Railway line passes through inland areas, with substantial screening provided by intervening vegetation and urban areas/development.	No potential for significant effects - scoped out of further assessment.

28.1.4 Preliminary Assessment – Recreational Routes

5. A preliminary assessment of the main recreational routes within the study area is presented in ***Table A28.4***.

Table A28.4 Preliminary Assessment of Main Recreational Routes

Visual receptor	Distance from the East Anglia ONE North windfarm site	Theoretical visibility of the East Anglia ONE North windfarm site	Actual visibility of the East Anglia ONE North windfarm site	Preliminary Assessment
Suffolk				
Suffolk Coastal Path	36.7km	Partial sections of Suffolk Coastal Path have high theoretical visibility (36-42 wind turbines) while partial sections have low theoretical visibility (1-7 wind turbines) or no visibility. The section of the route that lies to the south of Southwold is at a distances of over 45 km from EA1N and runs largely inland between Southwold and Viewpoint 8, Dunwich Heath & Beach (Coastguard cottages) where it continues at distances of greater than 50km from EA1N.	Intermittent/ sequential visibility, varying depending on the position of the path relative to the coastal edge, elevation and extent of intervening vegetation screening. Sections following the coastal edge often afford high visibility, but views are also often screened from these sections by shingle features and dunes systems next to the Suffolk Coastal Path. Sections of the Suffolk Coastal Path often extend inland, where it generally affords limited or no visibility, due to intervening forests and vegetation.	Potential for significant effects that require further assessment to the north of Southwold. The section of the route to the south of Southwold no potential for significant effects - scoped out of further assessment.
England Coast Path	39.2km	Majority of England Coast Path between	England Coast Path, between Lowestoft and	No potential for significant

Visual receptor	Distance from the East Anglia ONE North windfarm site	Theoretical visibility of the East Anglia ONE North windfarm site	Actual visibility of the East Anglia ONE North windfarm site	Preliminary Assessment
		Lowestoft and Hopton-on-Sea has low theoretical visibility (1-7 wind turbines or no visibility. Partial sections have high theoretical visibility (36-42 wind turbines).	Hopton-on-Sea passes through coastal/ areas that are substantially influenced by developed coast.	effects - scoped out of further assessment.
National Cycle Network Route 1	39.4km	Partial sections of NCNR 1 have high theoretical visibility (36-42 wind turbines) while partial sections have low theoretical visibility (1-7 wind turbines) or no visibility.	NCNR 1 passes through inland areas, with substantial screening provided by intervening vegetation and urban areas/development.	No potential for significant effects - scoped out of further assessment.
National Cycle Network Route 517	36.7km	Majority of NCNR 517 has low theoretical visibility (1-7 wind turbines or no visibility. Partial sections have high theoretical visibility (36-42 wind turbines).	NCNR 517 passes through coastal/ areas that are substantially influenced by developed coast.	No potential for significant effects - scoped out of further assessment.
Regional Cycle Network Route 31	41.9km	Partial sections of RCNR 31 have high theoretical visibility (36-42 wind turbines) while partial sections have low theoretical visibility (1-7 wind turbines) or no visibility.	RCNR 31 passes through inland areas, with substantial screening provided by intervening vegetation and urban areas/development.	No potential for significant effects - scoped out of further assessment.
Regional Cycle Network Route 42	47.1km	Partial sections of RCNR 41 have high theoretical visibility (36-42 wind turbines) while partial sections have low theoretical visibility (1-7 wind turbines) or no visibility.	RCNR 41 passes through inland areas, with substantial screening provided by intervening vegetation and urban areas/ development.	No potential for significant effects - scoped out of further assessment.

Visual receptor	Distance from the East Anglia ONE North windfarm site	Theoretical visibility of the East Anglia ONE North windfarm site	Actual visibility of the East Anglia ONE North windfarm site	Preliminary Assessment
Norfolk				
England Coastal Path	39.2km	Partial sections of England Coastal Path between Hopton-on-Sea and Great Yarmouth have high theoretical visibility (36-42 wind turbines) while partial sections have low theoretical visibility (1-7 wind turbines) or no visibility.	England Coastal Path between Hopton-on-Sea and Great Yarmouth passes through coastal/ areas, which are substantially influenced by developed coast.	No potential for significant effects - scoped out of further assessment.
National Cycle Network Route 517	36.7km	Partial sections of NCNR 517 have high theoretical visibility (36-42 wind turbines) while partial sections have low theoretical visibility (1-7 wind turbines) or no visibility.	NCNR 1 passes through coastal/ areas, which are substantially influenced by developed coast.	No potential for significant effects - scoped out of further assessment.
Regional Cycle Network Route 30	43.5km	Majority of RCNR 31 has low theoretical visibility (1-7 wind turbines) or no theoretical visibility. Partial sections have high theoretical visibility (36-42 wind turbines).	RCNR 30 passes through inland areas, with substantial screening provided by intervening vegetation and urban areas/development.	No potential for significant effects - scoped out of further assessment.

28.2 Potential Impacts during Construction, Operation and Decommissioning – Technical Assessment

6. A detailed technical assessment of the visual effects of the construction and operation of the offshore infrastructure is set out in the remaining technical assessment section of this appendix. This describes, in full technical detail, the likely significant effects of the East Anglia ONE North windfarm site on each visual receptor and viewpoint, assessing those that were identified in the preliminary assessment in ***Table A28.1***- ***Table A28.4*** as having potential to be significantly affected.

7. Representative viewpoints have been agreed with the SLVIA ETG for all of the principal settlement receptors along the Suffolk and Norfolk coasts in the study area. The visual effects of the construction and operation of the offshore infrastructure on residents of these settlements are therefore assessed alongside each representative viewpoint assessment in ***Chapter 28 SLVIA section 28.2.1***.

8. A full technical assessment of the effects of the construction and operation of the offshore infrastructure on users of the Suffolk Coastal Path is provided separately in ***Appendix 28.5***.

28.2.1 Viewpoint Assessment

Viewpoint 1: Lowestoft – Visual Assessment				
Designations:	South Lowestoft Conservation Area	Grid reference:	E: 654451	N: 291813
		Elevation:	2.5m	
Landscape Character Type (LCT)/Seascape Character Type (SCT):	LCT 25 Urban and overlooks SCT04 Developed Nearshore Waters.	View direction:	99°	
		Nearest proposed wind turbine:	38.8km	
Receptors:	Viewpoint is representative of views experienced by beach users; walkers and cyclists using the Suffolk Coastal Path/esplanade; residents of Lowestoft seafront; tourist visitors to the seafront; people engaged in 'formal' recreational amusements at Claremont Pier and people sitting/viewing from seafront benches.			
Baseline description (existing view is shown in ***Figure 28.25b - 28.25c***)				
• **Panoramic view extending north along Lowestoft seafront and esplanade, to take in Claremont Pier, Lowestoft beach and open expanse of the North Sea to the east.** • **The view takes in the traditional beach resort of Lowestoft seafront and formalised recreational facilities, with sandy beach busy with beach users/bathers in sunny weather, pier/amusements, pleasure gardens and wide esplanade with footpath and cycle path, lighting, viewing shelters and seafront benches.** • **Victorian 4-5 storey townhouses and villas are aligned along the seafront in linear street plan laid out parallel to the shore, facing out to sea, many of which are in use as hotels.** • **Restaurants, leisure uses and car parking sit adjacent to seafront pleasure gardens along the esplanade.** • **Sandy beach backed by beach huts, affording active leisure use of the beach for bathing and beach play.** • **Busy seascape, with the presence of yachts and recreational sailing boats in nearshore waters being integral to the view. Large commercial vessels form point features on the distant skyline.** • **Views east formed by the presence of sandy beach and the North Sea. Inherent simplicity of sea views have been changed by the extended development at the seafront and the busy beach/nearshore waters.** • **Industrial and commercial premises are present in view around the harbour to the north, where Lowestoft Ness Point wind wind turbine is also visible over Claremont Pier.** • **Although there is theoretical visibility of the blade tips of Galloper and Greater Gabbard Offshore Windfarms, they are scarcely visible and have a negligible influence on the view due to their long distance offshore and limited amount of the blade tips visible.**				
Value		Medium		
• **The viewpoint is not located within, nor does it overlook, a nationally designated landscape, but is located in a conservation area and on the Suffolk Coastal Path, which have recognised heritage/recreational value.** • **Although it is not a specific viewpoint, as such, there are many facilities provided to aid enjoyment of the sea view, including benches and viewing shelters oriented to the sea.**				

- **The view 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.**
- **Value also derives from the formal planning and development of the seaside resort, with buildings, pleasure gardens and promenades all aligned along the seafront to respond to the sea views.**

Sensitivity to change: ***Combination of the value of the view and the susceptibility of each visual receptor***

Receptor	Susceptibility to change	Sensitivity to change
Beach users (Lowestoft Beach):	Medium	Medium
Walkers and cyclists (Suffolk Coastal Path):	Medium-high	Medium-high
Residents of Lowestoft seafront:	High	Medium-high
Visitors engaged in recreational amusements:	Low	Low
People sitting/viewing from seafront benches:	High	Medium-high
Recreational boaters (Lowestoft Marina)	Medium	Medium

Magnitude of change (predicted view is shown in ***Figure 28.25e***):

Geographic extent:	Long distance

The East Anglia ONE North windfarm site will be visible at long-distance, at a distance of approximately 38.8km to closest wind turbine and is located to the east-south-east of the viewpoint. The view of the East Anglia ONE North windfarm site is representative of views from the seafront of the South Beach area of Lowestoft. Views from the North Beach/Ness Point area are shown in Illustrative Viewpoint B (Ness Point) (***Figure 28.43***).

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

- **Lateral spread of the East Anglia ONE North windfarm site will occupy approximately 17° of the field of view, which is a relatively limited portion of the wider 180° sea view available.**
- **Towers and rotors of the closest wind turbines particularly those at northern end of the East Anglia ONE North windfarm site) will be visible above the skyline, while more distant wind turbines appear more recessive, with lower towers and rotor blades partially behind the horizon.**
- **Vertical height of the wind turbines will be relatively small / moderate in scale, due to their long distance offshore and the large scale of the seascape in the view.**
- **The East Anglia ONE North windfarm site will be located directly out to sea in views from the east-south-easterly aligned beach and seafront.**
- **Wind turbines in the southern parts of the East Anglia ONE North windfarm site appear less dense / more spaced out than those to the north which will have a more clustered / denser appearance.**
- **Although there are notable amounts of visual movement in the view, the movement of rotor blades on an otherwise relatively still horizon, will introduce further complexity and visual movement to the view.**

- **Large vessels on the horizon will have reduced prominence/role as focal points when subsumed within the East Anglia ONE North windfarm site, while also providing a scale reference.**
- **The wind turbines within the East Anglia ONE North windfarm site will add a new element layer to the composition of the view, which is currently a relatively simply composed view of sand, sea and sky layers.**
- **Although there is theoretical visibility of the blade tips of Galloper and Greater Gabbard Offshore Windfarms, they are scarcely visible and have a negligible influence on the view due to their long distance offshore and limited amount of the blade tips visible.**

Significance of effect

Receptor	Significance of effect (construction and decommissioning)	Significance of effect (operation)
Beach users (Lowestoft Beach):	Not significant, short-term, temporary	Not significant, long-term, reversible
Walkers and cyclists (Suffolk Coastal Path):	Not significant, short-term, temporary	Not significant, long-term, reversible
Residents of Lowestoft seafront:	Not significant, short-term, temporary	Not significant, long-term, reversible
People engaged in recreational amusements:	Not significant, short-term, temporary	Not significant, long-term, reversible
People sitting/viewing from seafront benches:	Not significant, short-term, temporary	Not significant, long-term, reversible
Recreational boaters (Lowestoft Marina)	Not significant, short-term, temporary	Not significant, long-term, reversible

Likelihood of effect:

Very good or excellent visibility required for the East Anglia ONE North windfarm site to be visible at 38.8km. Visibility at or beyond this distance occurs approximately 26% of the time, over 10-year period 2007-2017 from Weybourne and 15% of the time from Shoeburyness (Met Office Visibility Data).

Assessment of night-time visual effects (Viewpoint 1 Lowestoft)

Baseline description:

- **The existing night time view from Lowestoft is well lit along the urban seafront in Lowestoft, with housing and hotel lighting, street lighting and lighting of the esplanade along the seafront. Claremont Pier is also lit at night, including buildings and navigational markers on the pier itself.**
- **The open seascape beyond includes occasional visible night-time lighting of cardinal buoys, boats in nearshore waters and distant lights of commercial vessels and rigs form point features on the skyline, which are characteristic in night-time views.**
- **Night-time lighting of Greater Gabbard and Galloper Offshore Windfarms was not observed to be visible.**

Magnitude of change (night-time) (***Figure 28.25f***):	Low

- **The predicted night time view from Viewpoint 1 in Lowestoft is shown in the night-time photomontage representation in *Figure 28.25f*. The red, medium intensity lights on the**

nacelle of the perimeter WTGs of the East Anglia ONE North windfarm site will be visible above the sea skyline in very good to excellent visibility and will introduce new lighting into a section of the view that currently has some visible lighting as part of the baseline. • **All aviation warning lights will flash synchronously throughout the East Anglia ONE North windfarm site and will be able to be switched on and off by means of twilight switches.** • **Aviation warning lights will allow for reduction in lighting intensity at and below the horizontal, when visibility from every wind turbine is more than 5km. The night-time photomontage representation in *Figure 28.25f* assumes full lighting intensity of the 2000 cd warning lights in very good to excellent visibility conditions, as a worst-case (and is therefore likely to over-represent the likely visibility of aviation warning lighting experienced in reality).** • **Marine navigational lights fitted at the platform level (approximately 10m above sea level) on significant peripheral structures will not be visible in the view, as they will be hidden behind the skyline at 38.8km from the viewpoint by the curvature of the earth.** • **Search and rescue (SAR) lighting (200cd) of each non-periphery wind turbine will only be lit when conducting SAR operations in and around the East Anglia ONE North windfarm site and are not expected to be visible at 38.8km. Other low intensity lights, such as for helicopter winching (green hoist lamp) and for illumination of signage (5cd) will not be visible.** • **The yellow lighting of the construction operation and maintenance platform will be visible at night.**	
Significance of effects (night-time):	
Construction and decommissioning:	Not significant, short-term, temporary
Operation:	Not significant, long-term, reversible
Assessment of effects on residents of wider Lowestoft settlement	
Representative viewpoints:	Viewpoint 1 Lowestoft (***Figure 28.25***)
Illustrative viewpoints:	Viewpoint B Ness Point (***Figure 28.43***)
Sensitivity to change:	
Residents of Lowestoft:	High
Magnitude of change	
Theoretical visibility from Lowestoft is illustrated in the detailed ZTV in ***Figure 28.25a***. The ZTV shows that a widespread area of the settlement has high theoretical visibility, of 36-42 wind turbines, however from areas of Lowestoft that are set-back from the immediate seafront, views of the East Anglia ONE North windfarm site are generally screened by intervening buildings and vegetation within the built-up urban areas of Lowestoft. The ZTV shows theoretical visibility dropping to low visibility **(**1-7 wind turbines**)** in the lower lying urban areas of the quayside and inner harbour alongside Lake Lothing and Oulton Broad, and from the southern parts of Lowestoft around Kirkley and areas between Pakefield and Carlton Colville. Views of the East Anglia ONE North windfarm site are generally restricted to the immediate seafront locations of Lowestoft with clear views of the sea, extending along the coastal edge of the settlement between Gunton, Lowestoft Ness (Illustrative Viewpoint B), Lowestoft harbour, South Beach/Kirkley area (Viewpoint 1) and Pakefield/Pakefield Cliffs. The Lowestoft Ness and Lowestoft Harbour areas are not residential areas, generally consisting industrial/commercial/harbour land uses, leaving the main residential areas that may experience change as the Gunton area to the north of Lowestoft (Area A); the South Beach/Kirkley area (Area B) and the Pakefield/Pakefield Cliffs area (Area C). The magnitude of change arising as a	

result of the construction and operation of the offshore infrastructure on these areas of Lowestoft is assessed as follows.		
Geographic area of Lowestoft:	Magnitude of change (construction, operation and decommissioning):	
Area A: Gunton area to the north of Lowestoft	Generally low. Views of the East Anglia ONE North windfarm site are restricted to Gunton Cliff, in oblique views to the south-east across Lowesoft Harbour/Ness Point. Views from residential areas of Gunton to the west/inland of Gunton Cliff (e.g. areas between Corton Road and Yarmouth Road) are screened by intervening buildings.	
Area B: South Beach/Kirkley area	Generally medium-low. Views of the East Anglia ONE North windfarm site are limited to residences along Marine Parade and Kirkley Cliff Road that are aligned along the seafront in linear street plan laid out parallel to the shore, facing out to sea. Wide open, undeveloped sea remains prominent characteristic of views.	
Area C: Pakefield/Pakefield Cliffs area (e.g. Pakefield Road, Pakefield Street)	Generally medium-low. Views of the East Anglia ONE North windfarm site are limited to residences at the seaward end of the residential street which are perpendicular to the coast (such as Pakefield Road, Pakefield Street, All Saints Road).	
Area D: Quayside/inner harbour along Lake Lothing and Oulton Broad	Generally negligible. Low-lying areas with low theoretical visibility (1-7 wind turbines) and views screened by intervening buildings and vegetation within the built-up urban areas of Lowestoft.	
Area E: Urban areas of Lowestoft set-back from coast, including Kirkley, Pakefield and Carlton Colville	Generally negligible. Views of the East Anglia ONE North windfarm site are generally screened from these areas of Lowestoft that are set back from the coast, by intervening buildings and vegetation within the built-up urban areas of Lowestoft.	
Significance of effect		
Receptor	Significance of effect (construction and decommissioning)	Significance of effect (operation)
Residents of Lowestoft:	Not significant, short-term, temporary	Not significant, long-term, reversible
Likelihood of effect:		
Very good or excellent visibility required for the East Anglia ONE North windfarm site to be visible to residents of Lowestoft at 38.8km. Visibility at or beyond this distance occurs approximately 26% of the time, over 10-year period 2007-2017 from Weybourne and 15% of the time from Shoeburyness (Met Office Visibility Data).		

Viewpoint 2: Kessingland Beach – Visual Assessment				
Designations:	None	Grid reference:	E: 653618	N: 285844
		Elevation:	6.3m	
LCT/SCT:	Edge of LCT 25 Urban and LCT5 Coastal Dunes and Shingle Ridges. Overlooks SCT03 Nearshore Waters	View direction:	92°	
		Nearest proposed wind turbine:	39.7km	
Receptors:	Viewpoint is representative of views experienced by beach users; walkers using the Suffolk Coastal Path/promenade; and residents of Kessingland seafront.			

Baseline description (existing view is shown in ***Figure 28.26b – 28.26c***)

- **Panoramic view extending north to Ness Point and east/south-east across open expanse of the North Sea.**
- **Simply composed view of shingle, sea and sky layers.**
- **The foreground is occupied by the shingle and marram grass of Kessingland Beach SSSI, which forms a distinctive landcover with a 'natural' appearance that contributes to a sense of remoteness and contrast from the immediate urban context of Kessingland.**
- **Railings, colourful signage and engineered features in the foreground, together with busy restaurants/cafes and modern housing, form somewhat discordant features in the setting of the SSSI.**
- **Large vessels form focal features on the sea skyline and the presence of recreational sailing and fishing boats in the nearshore waters are integral to the view. Buoys are scattered features in the water.**
- **The wider view to the north extends to take in the developed coastline of Lowestoft, with urban areas, tall buildings, commercial development and cranes at Lowestoft Harbour characterising this part of the view.**
- **The Lowestoft Ness Point wind turbine is visible and forms a vertical focal feature in the view north.**
- **Although there is theoretical visibility of the blade tips of Galloper and Greater Gabbard Offshore Windfarms, they are scarcely visible and have a negligible influence on the view due to their long distance offshore and limited amount of the blade tips visible.**

Value	Medium

- **The viewpoint is not located within a scenic landscape designation, but it does overlook Kessingland Beach SSSI and is on the Suffolk Coastal Path, which have recognised conservation and recreational value.**
- **Although it is not a specific viewpoint, as such, there are many facilities provided to aid enjoyment of the sea view, including benches, viewing shelters and telescope oriented to the sea.**
- **The view displays a perception of natural qualities associated with the shingle and marram grass habitat of the SSSI, with the interest in the view arising from the juxtaposition of this habitat within an urban setting and the open, expansive seascape of the North Sea beyond.**

Sensitivity to change: Combination of the value of the view and the susceptibility of each visual receptor		
Receptor	Susceptibility to change	Sensitivity to change
Beach users (Kessingland Beach):	Medium	Medium
Walkers (Suffolk Coastal Path/promenade):	Medium-high	Medium-high
Residents of Kessingland seafront:	High	Medium-high
Magnitude of change (predicted view is shown in ***Figure 28.26e***):		
Geographic extent:	Long distance	
The East Anglia ONE North windfarm site will be visible at long-distance, at a distance of approximately 39.7km to closest wind turbine and is located to the east of the viewpoint. The view is representative of views of the East Anglia ONE North windfarm site from Kessingland Beach, the Suffolk Coastal Path passing Kessingland and the seafront areas of Kessingland.		
Size/scale of change (construction, operation and decommissioning):	Medium-Low	

- **Lateral spread of the East Anglia ONE North windfarm site will occupy approximately 16° of the field of view, which is a relatively limited portion of the wider 180° sea view available, but is indicative of an increasing horizontal spread moving south along the coast from Lowestoft.**
- **The wind turbines within the East Anglia ONE North windfarm site will add a new large-scale offshore windfarm element to the composition of the view, which is currently a relatively simply composed view of shingle, sea and sky layers.**
- **Towers and rotors of the closest wind turbines particularly those at northern end of the East Anglia ONE North windfarm site) will be visible above the skyline, while more distant wind turbines appear more recessive, with lower towers and rotor blades behind the horizon.**
- **Vertical height of the wind turbines will be relatively small / moderate in scale, due to their long distance offshore and the large scale of the seascape in the view. The height of the wind turbines appears smaller in height than the Lowestoft Ness Point wind turbine.**
- **Wind turbines in the northern and southern parts of the East Anglia ONE North windfarm site appear less dense / more spaced out than those to the centre which will have a more clustered / denser appearance.**
- **The movement of rotor blades on an otherwise relatively still horizon, will introduce further complexity and visual movement to the view.**
- **The technological appearance of the wind turbines is likely to contrast with the perceived naturalness of the SSSI in the foreground, however their appearance will relate rationally to the visual exposure and large scale.**
- **Large vessels on the horizon will have reduced prominence/role as focal points when subsumed within the East Anglia ONE North windfarm site, while also providing a scale reference.**
- **The East Anglia ONE North windfarm site will be located directly out to sea in views from the easterly aligned beach and seafront.**

Significance of effect

Receptor	Significance of effect (construction and decommissioning):	Significance of effect (operation):
Beach users (Kessingland Beach):	Not significant, short-term, temporary	Not significant, long-term, reversible
Walkers (Suffolk Coastal Path/promenade):	Not significant, short-term, temporary	Not significant, long-term, reversible
Residents of Kessingland seafront:	Not significant, short-term, temporary	Not significant, long-term, reversible

Likelihood of effect

Very good or excellent visibility required for the East Anglia ONE North windfarm site to be visible at 39.7km. Visibility at or beyond this distance occurs approximately 26% of the time, over 10-year period 2007-2017 from Weybourne and 15% of the time from Shoeburyness (Met Office Visibility Data).

Assessment of night-time visual effects (Viewpoint 2 Kessingland Beach)

Baseline description:

- **The existing night time view from Kessingland is well lit along the seafront in Kessingland, with housing and street lighting. The glare of lights from houses, flats and the port of Lowestoft is prominent in the view north along the coast. In this direction, the red aviation light of the Ness Point wind turbine is visible on its nacelle.**
- **The open seascape includes numerous visible night-time lighting sources, including cardinal buoys, boats in nearshore waters and a frequent scattering of distant lights of commercial vessels and rigs on the skyline, which are characteristic in night-time views.**
- **Night-time lighting of Greater Gabbard and Galloper Offshore Windfarms was not observed to be visible.**

Magnitude of change (night-time) (***Figure 28.26f):***	Low

- **The predicted night time view from Viewpoint 2 in Kessingland is shown in the night-time photomontage representation in *Figure 28.26f*. The red, medium intensity lights on the nacelle of the perimeter WTGs of the East Anglia ONE North windfarm site will be visible above the sea skyline in very good to excellent visibility and will introduce new lighting into a section of the view that currently has some visible lighting as part of the baseline.**
- **All aviation warning lights will flash synchronously throughout the East Anglia ONE North windfarm site and will be able to be switched on and off by means of twilight switches.**
- **Aviation warning lights will allow for reduction in lighting intensity at and below the horizontal, when visibility from every wind turbine is more than 5km. The night-time photomontage representation in *Figure 28.26f* assumes full lighting intensity of the 2000 cd warning lights in very good to excellent visibility conditions, as a worst-case (and is therefore likely to over-represent the likely visibility of aviation warning lighting experienced in reality).**
- **Marine navigational lights fitted at the platform level (approximately 10m above sea level) on significant peripheral structures will not be visible in the view, as they will be hidden behind the skyline at 39.7km from the viewpoint by the curvature of the earth.**
- **Search and rescue (SAR) lighting (200cd) of each non-periphery wind turbine will only be lit when conducting SAR operations in and around the East Anglia ONE North windfarm site and are not expected to be visible at 39.7km. Other low intensity lights, such as for**

helicopter winching (green hoist lamp) and for illumination of signage (5cd) will not be visible. • **The yellow lighting of the construction operation and maintenance platform will be visible at night.**		
Significance of effects (night-time):		
Construction and decommissioning:	Not significant, short-term, temporary	
Operation:	Not significant, long-term, reversible	
Assessment of effects on residents of wider Kessingland settlement		
Representative viewpoints:	Viewpoint 2 Kessingland	
Sensitivity to change:		
Residents of Kessingland:	Medium-high	
Magnitude of change:		
Theoretical visibility from Kessingland is illustrated in the detailed ZTV in ***Figure 28.26a***. The ZTV shows that a widespread area of the settlement has high theoretical visibility, of 36-42 wind turbines, however from areas of Kessingland that are set-back from the immediate seafront, views of the East Anglia ONE North windfarm site are generally screened by intervening buildings and vegetation within the built-up urban areas of Kessingland. Views of the East Anglia ONE North windfarm site are generally restricted to the immediate seafront locations of Kessingland Beach with clear views of the sea, extending along the coastal edge of the settlement between Kessingland Beach (Viewpoint 2) and Sea View Holiday Park. The ZTV shows theoretical visibility dropping to no visibility in a band of lower lying urban area of behind Kessingland Beach and Sea View Holiday Estate. The magnitude of change arising as a result of the East Anglia ONE North windfarm site on these areas of Kessingland is assessed as follows.		
Geographic area of Kessingland:	Magnitude of change (construction, operation and decommissioning):	
Area A: Sea front extending from Kessingland Beach to Alandale Park and Coastguard Lane	Generally medium-low. See above magnitude of change assessment for Viewpoint 2.	
Area B: Kessingland	Generally negligible. Areas of Kessingland that are set-back from the immediate seafront, views of the East Anglia ONE North windfarm site are screened by intervening buildings and vegetation within the built-up urban areas of Kessingland.	
Significance of effect:		
Receptor	Significance of effect (construction and decommissioning):	Significance of effect (operation):
Area A: Residents of Kessingland Beach (extending to Alandale Park and Coastguard Lane):	Not significant, short-term, temporary	Not significant, long-term, reversible
Area B: Residents of Kessingland:	Not significant, short-term, temporary	Not significant, long-term, reversible

Likelihood of effect:				
Very good or excellent visibility required for the East Anglia ONE North windfarm site to be visible to residents of Kessingland at 39.7km. Visibility at or beyond this distance occurs approximately 26% of the time, over 10-year period 2007-2017 from Weybourne and 15% of the time from Shoeburyness (Met Office Visibility Data).				
Viewpoint 3: Covehithe – Visual Assessment				
Designations:	Suffolk Coast and Heaths AONB. Heritage Coast. SSSI/SAC/SPA.	Grid reference:	E: 652370	N: 281104
		Elevation:	7.7m	
LCT/SCT:	Edge of LCT5 Coastal Dunes and Shingle Ridges LCT 29 Wooded Fens. Overlooks SCT03 Nearshore Waters.	View direction:	86°	
		Nearest proposed wind turbine:	41.6km	
Receptors:	Viewpoint is representative of views experienced by beach users who have walked along the footpath from Covehithe to the beach.			
Baseline description (existing view is shown in ***Figure 28.27b – 28.27c***)				
• **Panoramic view east/south-east across open expanse of the North Sea and south along the coastline to Southwold, where the view is curtailed by Southwold Pier. Views north along the coast restricted by headland formed at Benacre Ness.** • **Views offshore to the sea are simply composed and consist of layers of shingle, sea and sky which form a simple composition, with very few elements and a strong horizontal emphasis.** • **Vast, large-scale sea and skies, with perception of limitless expanse of sea stretching out into the distance in good weather/clear visibility.** • **Occasional large shipping vessels dot the horizon.** • **Large vessels form focal features on the sea skyline and fishing boats in the coastal waters are integral to the view. Recreational boats tend to be less frequent in this view than areas to the north at Lowestoft and south at Southwold.** • **Sandy beach extends south into the distance, back by low 'crumbling' cliffs and the wooded fen of Covehithe Broad and Eaton Wood. Relatively 'natural' and undeveloped setting contributes to a sense of remoteness and contrasts with beach resorts at Lowestoft and Southwold along the coast.** • **Southwold Pier, lighthouse and St Edmunds Church form focal points to the south.** • **Although there is theoretical visibility of the blade tips of Galloper and Greater Gabbard Offshore Windfarms, they are scarcely visible and have a negligible influence on the view due to their long distance offshore and limited amount of the blade tips visible.**				
Value	High			
• **The viewpoint is located within and overlooks the coastal edge of the Suffolk Coast and Heaths AONB and the narrow band of sea that is part of the Heritage Coast. It also overlooks SSSI/SAC/SPA designated landscapes which has recognised natural heritage value.** • **Although it is not a specific viewpoint, as such, and there are no facilities provided to aid enjoyment of the sea view, the view will only be experienced by people who have walked**				

along the footpath from Covehithe to the beach, specifically to experience the view and landscape setting of Covehithe beach. • **The view displays a perception of natural qualities associated with the habitats and visible geology of vegetated shingle features, saline lagoons, flood-plain fens and woodland of the Pakefield to Easton Bavents SSSI/Benacre NNR.** • **The scenic interest in the view arises from the juxtaposition and contrast of this 'natural' backdrop with the extensive sandy beach and expansive seascape of the North Sea beyond.**		
Sensitivity to change: ***Combination of the value of the view and the susceptibility of each visual receptor***		
Receptor	Susceptibility to change	Sensitivity to change
Beach users (who have walked along the footpath from Covehithe to the beach):	High	High
Magnitude of change (predicted view is shown in ***Figure 28.27e***):		
Geographic extent:	Long distance	
The East Anglia ONE North windfarm site will be visible at long-distance, at a distance of approximately 41.6km to closest wind turbine and is located to the east of the viewpoint. The view is representative of views of the East Anglia ONE North windfarm site from the Covehithe area and the dunes/shingle ridges extending between Easton Broad and Benacre Broad.		
Size/scale of change (construction, operation and decommissioning):	Low	
• **Lateral spread of the East Anglia ONE North windfarm site will occupy approximately 16° of the field of view. Although this would have the effect of adding wind turbine developed skyline to a relatively small proportion of the 180° sea view, open sea skyline would remain unaffected across the majority of the skyline to the north and south of the sea view.** • **The wind turbines within the East Anglia ONE North windfarm site will add a new large scale offshore windfarm element to the composition of the view, which is currently a relatively simply composed view of sandy beach, sea and sky layers with very limited influence from development.** • **Towers and rotors of all of the wind turbines will be visible above the skyline, with those to the north and west of the East Anglia ONE North windfarm site appearing more prominent than those which recede with distance to the east.** • **Vertical height of the wind turbines will be relatively small / moderate in scale, due to their long distance offshore and the large scale of the seascape in the view. The height of the wind turbines will be difficult to judge due to the general absence of scale indicators from which to compare the scale of the wind turbines.** • **Wind turbines in the southern parts of the East Anglia ONE North windfarm site appear less dense / more spaced out than those to the north which will have a more clustered / denser appearance. The physical gap in wind turbines is also noticeable in views from this direction.** • **The movement of rotor blades on an otherwise relatively still horizon, will introduce further complexity and visual movement to the view.** • **The technological appearance of the wind turbines is likely to contrast with the perceived natural qualities associated with the habitats and visible geology of the coastline, however their appearance will relate rationally to the visual exposure and large scale.**		

• **Large vessels on the horizon will have reduced prominence/role as focal points when subsumed within the East Anglia ONE North windfarm site, while also providing a scale reference.** • **The East Anglia ONE North windfarm site will be located fairly central to the main focus of the view from the easterly aligned beach.**		
Significance of effect		
Receptor	Significance of effect (construction and decommissioning)	Significance of effect (operation)
Beach users (who have walked along the footpath from Covehithe to the beach):	Notsignificant, short-term, temporary	Not significant, long-term, reversible
Likelihood of effect:		
Excellent visibility required for the East Anglia ONE North windfarm site to be visible at 41.6km. Visibility at or beyond this distance occurs approximately 20% of the time, over 10-year period 2007-2017 from Weybourne and 10% of the time from Shoeburyness (Met Office Visibility Data).		

Viewpoint 4: Southwold – Visual Assessment				
Designations:	Suffolk Coast and Heaths AONB. Heritage Coast.	Grid reference:	E: 651072	N: 276454
		Elevation:	11.1m	
LCT/SCT:	LCT25 Urban and overlooks SCT03 Nearshore Waters.	View direction:	80°	
		Nearest proposed wind turbine:	43.9km	
Receptors:	Viewpoint is representative of views experienced by beach users; walkers and cyclists using the Suffolk Coastal Path/esplanade; residents of Southwold seafront; tourist visitors to the seafront; people engaged in 'formal' recreational amusements at Southwold Pier and people sitting/viewing from seafront benches.			

Baseline description (existing view is shown in ***Figure 28.28b – 28.28d***):

- **Panoramic view extending north along Southwold seafront and promenade, to take in Southwold Pier, Southwold beach and open expanses of the North Sea to the east.**
- **Long distance views north along the low wooded cliffs and sandy beaches are curtailed by the headland formed at Benacre Ness. Short distance view to the south enclosed by urban development on North Parade.**
- **The view takes in the traditional beach resort of Southwold seafront, with sandy beach busy with beach users/bathers in sunny weather, pier and promenade with lighting, viewing shelters and seafront benches.**
- **Victorian 3 storey townhouses are aligned along the seafront on North Parade, laid out parallel to the shore, facing out to sea, many of which are in use as guest houses.**
- **Car parking and benches sit adjacent to seafront gardens along the promenade.**
- **Sandy beach backed by beach huts, affording active leisure use of the beach for bathing and beach play.**
- **Busy seascape, with yachts and recreational sailing boats in nearshore waters, and fishing boats in offshore waters, being integral to the view. Large commercial vessels form point features on the distant skyline.**
- **Views east composed by the simplicity of the sandy beach and open sea. Inherent simplicity of sea views have been changed to some degree by the development at seafront and the busy beach/nearshore waters.**
- **Lowestoft Ness Point wind turbine is visible in the distance to the north.**
- **Although there is theoretical visibility of Galloper and Greater Gabbard Offshore Windfarms, they are just visible in very good/excellent visibility and have a limited influence on the view due to their long distance offshore.**

Value	High

- **The viewpoint is located within and overlooks the coastal edges of the Suffolk Coast and Heaths AONB and narrow band of sea that is part of the Heritage Coast.**
- **Although it is not a specific viewpoint, as such, there are many facilities provided to aid enjoyment of the sea view from this location, including benches and viewing shelters oriented to the sea.**
- **The view displays traditional 'beach resort' qualities and interest, while also having more 'natural' coastline extending north in the view. Visual interest is provided by the**

juxtaposition of the open, expansive seascape, the natural backdrop to the north, with seaside development and varied activities of people at the seafront and in nearshore waters.

- **The scenic quality of views from Southwold seafront are well known at a local level and are an important factor in attracting tourist visitors to this seaside town.**
- **Value of the views is also conveyed by planning and development of seaside development, with the pier, buildings, gardens and promenades all aligned along the seafront to respond to the sea views.**

Sensitivity to change: ***Combination of the value of the view and the susceptibility of each visual receptor***

Receptor	Susceptibility to change	Sensitivity to change
Beach users (Southwold Beach):	Medium-high	Medium-high
Walkers and cyclists (Suffolk Coastal Path):	Medium-high	Medium-high
Residents of Southwold seafront:	High	High
People engaged in recreational amusements:	Low	Low
People sitting/viewing from seafront benches:	High	High
Recreational boaters (Southwold Harbour):	Medium-low	Medium

Magnitude of change (predicted view is shown in ***Figure 28.28f***):

Geographic extent:	Long distance

The East Anglia ONE North windfarm site will be visible at long-distance, at a distance of approximately 43.9km to closest wind turbine and is located to the east-north-east of the viewpoint. The view is representative of views of the East Anglia ONE North windfarm site from the seafront of Southwold. Views from the Gun Hill area are shown in Viewpoint 5 (***Figure 28.29***); Southwold Common in illustrative Viewpoint A (***Figure 28.42***) and Southwold Pier in illustrative Viewpoint D (***Figure 28.45***).

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

- **Lateral spread of the East Anglia ONE North windfarm site will occupy approximately 15° of the field of view. This would have the effect of adding wind turbine developed skyline to a relatively small proportion of the 180° sea view and the open sea skyline would remain unaffected across the majority of the skyline to the north and south of the sea view.**
- **The wind turbines within the East Anglia ONE North windfarm site will add a new large-scale offshore windfarm element to the composition of the view, which is currently a relatively simply composed view of sandy beach, sea and sky layers.**
- **Towers and rotors of all of the wind turbines will be visible above the skyline, with those to the west of the East Anglia ONE North windfarm site appearing more prominent than those which recede with distance to the east.**
- **The vertical height of the wind turbines will be relatively moderate in scale, due to their long distance offshore and the large scale of the seascape in the view.**
- **There are some scale indicators from which to compare the scale of the wind turbines. The wind turbines (300 m high wind turbines at 43.9km) will appear marginally higher than the height of the Lowestoft Ness Point wind turbine (126 m high wind turbine visible at 17.5km to the north) and over twice as high as the vessel on the skyline in the view.**

- **Wind turbines in the southern parts of the East Anglia ONE North windfarm site appear less dense / more spaced out than those to the centre which will have a more clustered / denser appearance.**
- **The movement of rotor blades on an otherwise relatively still horizon, will introduce further complexity and visual movement to the view.**
- **The appearance of the wind turbines may contrast with the perceived qualities of the view, however their appearance relates rationally to the visual exposure, large scale and other wind turbines present in the view.**
- **Large vessels on the horizon will have reduced prominence/role as focal points when subsumed within the East Anglia ONE North windfarm site.**
- **The East Anglia ONE North windfarm site will be located slightly north of the main focus of the view from the easterly aligned seafront.**
- **The East Anglia ONE North windfarm site will be viewed in the context of the existing Galloper and Greater Gabbard Offshore Windfarms, representing a northerly extension and increase in visual prominence of the existing offshore windfarm element in the view, rather than an entirely new form of development.**

Significance of effect

Receptor	Significance of effect (construction and decommissioning)	Significance of effect (operation)
Beach users (Southwold Beach):	Not significant, short-term, temporary	Not significant, long-term, reversible
Walkers and cyclists (Suffolk Coastal Path):	Not significant, short-term, temporary	Not significant, long-term, reversible
Residents of Southwold seafront:	Not significant, short-term, temporary	Not significant, long-term, reversible
People engaged in recreational amusements:	Not significant, short-term, temporary	Not significant, long-term, reversible
People sitting/viewing from seafront benches:	Not significant, short-term, temporary	Not significant, long-term, reversible
Recreational boaters (Southwold Harbour):	Not significant, short-term, temporary	Not significant, long-term, reversible

Likelihood of effect

Excellent visibility required for the East Anglia ONE North windfarm site to be visible at 43.9km. Visibility at or beyond this distance occurs approximately 20% of the time, over 10-year period 2007-2017 from Weybourne and 10% of the time from Shoeburyness (Met Office Visibility Data).

Assessment of night-time visual effects (Viewpoint 4 Southwold)

Baseline description:

- **The existing night time view from Southwold is well lit along the seafront in Southwold, with housing and street lighting at the seafront. Southwold Pier is also lit at night, including buildings and navigational markers at the end of the pier.**
- **The open seascape includes numerous visible night-time lighting sources, including cardinal buoys, boats in nearshore waters and a frequent scattering of distant lights of commercial vessels and rigs on the skyline, which are characteristic in night-time views.**

• **The majority of the night-time lighting of Greater Gabbard and Galloper Offshore Windfarms was not observed to be visible, although two red lights visible on the distant skyline are considered likely to be aviation lights on the nacelles of either the Greater Gabbard or Galloper windfarm.**	
Magnitude of change (night-time) (*Figure 28.28g*):	Low
• **The predicted night time view from Viewpoint 4 in Southwold is shown in the night-time photomontage representation in *Figure 28.28g*. The red, medium intensity lights on the nacelle of the perimeter WTGs of the East Anglia ONE North windfarm site will be visible above the sea skyline in very good to excellent visibility and will introduce new lighting into a section of the view that currently has some visible lighting as part of the baseline.** • **All aviation warning lights will flash synchronously throughout the East Anglia ONE North windfarm site and will be able to be switched on and off by means of twilight switches.** • **Aviation warning lights will allow for reduction in lighting intensity at and below the horizontal, when visibility from every wind turbine is more than 5km. The night-time photomontage representation in *Figure 28.28g* assumes full lighting intensity of the 2000 cd warning lights in very good to excellent visibility conditions, as a worst-case (and is therefore likely to over-represent the likely visibility of aviation warning lighting experienced in reality).** • **Marine navigational lights fitted at the platform level (approximately 10m above sea level) on significant peripheral structures will not be visible in the view, as they will be hidden behind the skyline at 43.9km from the viewpoint by the curvature of the earth.** • **Search and rescue (SAR) lighting (200cd) of each non-periphery wind turbine will only be lit when conducting SAR operations in and around the East Anglia ONE North windfarm site and are not expected to be visible at 43.9km. Other low intensity lights, such as for helicopter winching (green hoist lamp) and for illumination of signage (5cd) will not be visible.** • **The yellow lighting of the construction operation and maintenance platform will be visible at night.**	
Significance of effects (night-time):	
Construction and decommissioning:	Not significant, short-term, temporary
Operation:	Not significant, long-term, reversible
Assessment of effects on residents of wider Southwold settlement	
Representative viewpoints:	Viewpoint 4 (Southwold) and Viewpoint 5 (Gun Hill)
Illustrative viewpoints:	Viewpoint A (Southwold Common) and Viewpoint D (Southwold Pier)
Sensitivity to change:	
Residents of Southwold:	High
Magnitude of change:	
Theoretical visibility from Southwold is illustrated in the detailed ZTV in ***Figure 28.28a***. The ZTV shows that a widespread area of the settlement has high theoretical visibility of 36-42 wind turbines, however from areas of Southwold that are set-back from the immediate seafront, views of the East Anglia ONE North windfarm site are generally screened by intervening buildings and vegetation within the built-up urban areas of Southwold. Views of the East Anglia ONE North windfarm site are generally restricted to the immediate seafront locations of Southwold with clear views of the sea,	

extending along the coastal edge of the settlement between Pier Avenue/Southwold Pier (Viewpoint D) along North Parade (Viewpoint 4) and its adjoining streets (such as Victoria Street, Dunwich Road and Chester Street) to Gun Hill (Viewpoint 5). The ZTV shows theoretical visibility dropping to areas with no visibility in a band of lower lying land along Buss Creek, between Reydon Marshes and Sole Bay; and in the area around Havenbeach Marshes/Ferry Road, where the intervening landform of shingle/dunes screen views of the East Anglia ONE North windfarm site. There is no visibility of the East Anglia ONE North windfarm site from Southwold Common (Illustrative Viewpoint A), due to the intervening urban areas of Southwold with screen views in the direction. Similarly, there is no visibility of the East Anglia ONE North windfarm site from Southwold town centre, including from High Street/Market Place or from the residential streets forming the northern part of Southwold between North Road and Victoria Street; or from residential areas to the south and west of High Street/Queen Street. The magnitude of change arising as a result of the East Anglia ONE North windfarm site on these areas of Southwold is assessed as follows.		
Geographic area of Southwold:	Magnitude of change (construction, operation and decommissioning):	
Area A: Immediate seafront along coastal edge of Southwold between Pier Avenue/Southwold Pier (Illustrative Viewpoint D) along North Parade (Viewpoint 4) to Gun Hill (Viewpoint 5).	Generally low. See above magnitude of change assessment for Viewpoint 4 and following Viewpoint 5.	
Area B: Southwold Common (Illustrative Viewpoint A)	Generally negligible. Views of the East Anglia ONE North windfarm site are screened from Southwold Common by intervening buildings within the built-up urban areas of Southwold.	
Area C: Southwold town centre, (including from High Street/Market Place)	Generally negligible. Views of the East Anglia ONE North windfarm site are screened from Southwold town centre by intervening buildings within the built-up urban areas of Southwold.	
Area D: North Southwold residential areas between North Road and Victoria Street	Generally negligible. Views of the East Anglia ONE North windfarm site are screened from northern parts of Southwold by intervening buildings within the built-up urban areas of Southwold.	
Area E: Residential areas to the south and west of High Street/Queen Street	Generally negligible. Views of the East Anglia ONE North windfarm site are screened from residential areas to the south and west of High Street/Queen Street by intervening buildings within the built-up urban areas of Southwold.	
Areas F: Ferry Road/Havenbeach Marshes	Generally negligible. Views of the East Anglia ONE North windfarm site are screened from Ferry Road by intervening landform of shingle/dunes.	
Significance of effect		
Receptor	Significance of effect (construction and decommissioning)	Significance of effect (operation)
Residents of immediate along coastal edge of Southwold between Pier Avenue/Southwold Pier	Not significant, short-term, temporary	Not significant, long-term, reversible

(Illustrative Viewpoint D) along North Parade (Viewpoint 4) to Gun Hill (Viewpoint 5)		
Residents of majority of Southwold including areas around Southwold Common, Southwold town centre, northern Southwold (between North Road and Victoria Street), areas to south and west of High Street/Queen Street; and Ferry Road.	Not significant, short-term, temporary	Not significant, long-term, reversible
Likelihood of effect:		
Very good or excellent visibility required for the East Anglia ONE North windfarm site to be visible to residents of Southwold at 43.9km. Visibility at or beyond this distance occurs approximately 20% of the time, over 10-year period 2007-2017 from Weybourne and 10% of the time from Shoeburyness (Met Office Visibility Data).		

Viewpoint 5: Gun Hill – Visual Assessment				
Designations:	Suffolk Coast and Heaths AONB. Heritage Coast.	Grid reference:	E: 650828	N: 275764
		Elevation:	9.8m	
LCT/SCT:	LCT25 Urban and overlooks SCT03 Nearshore Waters.	View direction:	80°	
		Nearest proposed wind turbine:	44.4km	
Receptors:	Viewpoint is representative of views experienced by beach users; walkers using the Suffolk Coastal Path through Gun Hill; residents of Southwold around Gun Hill/promenade; people engaged in informal recreation/sitting/viewing from seafront benches and greenspace at Gun Hill; and recreational boaters (Southwold Harbour).			
Baseline description (existing view is shown in ***Figure 28.29b – 28.29c***)				
• **Panoramic view extending south over Gun Hill Cliffs, the sandy beach and dunes of 'The Denes' and taking in open expanses of the North Sea to the east.** • **Long distance views south over Minsmere Haven to Sizewell Nuclear Power Station, backed by marshland and Dunwich Forest, curtailed by the headland formed at Thorpe Ness. Short distance view to the north enclosed by urban development within Southwold to north of Gun Hill.** • **The view takes in the beach below Gun Hill Cliff, with sandy beach busy with beach users/bathers in sunny weather, backed by colourful beach huts/kiosks and promenade with railing through Gun Hill.** • **Sandy beach is backed by beach huts, affording active leisure use of the beach for bathing and beach play.** • **Elements in the foreground at Gun Hill include six cliff-top cannons, flagpole, viewing benches and an octagonal pavilion, locally known as the Casino.** • **Views east are to the open sea and have few elements, composed by the simplicity of the sandy beach and open sea. The inherent simplicity of the sea view has been changed to some degree by the development at seafront and the busy beach/nearshore waters.** • **Several large detached 'marine villa' properties form the inland edge to Gun Hill and overlook the sea.** • **Often a busy seascape, with recreational sailing boats in nearshore waters, and fishing boats in offshore waters, being integral to the view. Large commercial vessels form point features on the distant skyline.** • **Sizewell Nuclear Power Station is visible on the coast to the south, the distinctive dome of Sizewell B and block massing of Sizewell A forming a focal feature. Electrical pylons extend from it across the inland skyline.** • **Galloper and Greater Gabbard Offshore Windfarms can be seen in very good/excellent visibility, but have a limited influence on the view due to their scale and long distance offshore.**				
Value:		High		
• **The viewpoint is located within and overlooks the coastal edges of the Suffolk Coast and Heaths AONB and narrow band of sea that is part of the Heritage Coast.**				

- **Although it is not a specific viewpoint, as such, there are many facilities provided to aid enjoyment of the sea view from this location, including benches and promenade oriented to the sea.**
- **Visual interest is provided by the juxtaposition of the open, expansive seascape, the 'natural' inland backdrop of dunes/marshland/forests to the south, with seaside development and varied activities of people at the seafront and in nearshore waters.**
- **The scenic quality and outlook from Gun Hill are well known at a local level and are an important factor in attracting tourist visitors to this seaside town.**
- **Value of the views is also conveyed by planning and orientation of buildings, public open space, promenades and beach huts, all aligned along the seafront to respond to the sea views.**

Sensitivity to change: Combination of the value of the view and the susceptibility of each visual receptor		
Receptor	Susceptibility to change	Sensitivity to change
Beach users (Gunhill Cliff/The Denes):	Medium-high	Medium-high
Walkers (Suffolk Coastal Path):	Medium-high	Medium-high
Residents around Gun Hill/promenade:	High	High
People sitting/viewing from seafront benches:	High	High
Recreational boaters (Southwold Harbour):	Medium-low	Medium

Magnitude of change (predicted view is shown in ***Figure 28.29e***):	
Geographic extent:	Long distance

The East Anglia ONE North windfarm site will be visible at long-distance, at a distance of approximately 44.4km to closest wind turbine and is located to the east of the viewpoint. The view is representative of views of the East Anglia ONE North windfarm site from the Gun Hill area of Southwold. Views from Southwold seafront (North Parade) are shown in Viewpoint 4 (***Figure 28.28***); Southwold Common in illustrative Viewpoint A (***Figure 28.42***) and Southwold Pier in illustrative Viewpoint D (***Figure 28.45***).

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

- **Lateral spread of the East Anglia ONE North windfarm site will occupy approximately 15° of the field of view. This would have the effect of adding wind turbine developed skyline to a relatively small proportion of the 180° sea view. Open sea skyline would remain unaffected across the majority of the skyline to the north and south of the sea view.**
- **The wind turbines within the East Anglia ONE North windfarm site will add a new large-scale offshore windfarm element to the composition of the view, which is currently a relatively simply composed view of sandy beach, sea and sky layers.**
- **Rotors and parts of the towers and rotors of all of the wind turbines will be visible above the skyline, with those to the west of the East Anglia ONE North windfarm site appearing more prominent than those which recede with distance to the east.**
- **The vertical height of the wind turbines will be relatively moderate in scale, due to their long distance offshore and the large scale of the seascape in the view.**
- **There are some scale indicators from which to compare the scale of the wind turbines. The wind turbines (300 m high wind turbines at 44.4km) will appear taller than the Galloper**

wind turbines (180.5 m high Galloper wind turbines visible at 42.1km) and the vessel on the skyline.

- **Wind turbines in the northern and southern parts of the East Anglia ONE North windfarm site appear less dense / more spaced out than those to the centre which will have a more clustered / denser appearance.**
- **The movement of rotor blades on an otherwise relatively still horizon, will introduce further complexity and visual movement to the view.**
- **The appearance of the wind turbines may contrast with the perceived qualities of the view, however their appearance relates rationally to the visual exposure, large scale and other wind turbines present in the view.**
- **Large vessels on the horizon will have reduced prominence/role as focal points when subsumed within the East Anglia ONE North windfarm site.**
- **The East Anglia ONE North windfarm site will be located slightly north of central to the main focus of the view from the easterly aligned seafront.**
- **The East Anglia ONE North windfarm site will be viewed in the context of the existing Galloper and Greater Gabbard Offshore Windfarms, representing a northerly windfarm and increase in visual prominence of the existing offshore windfarm element in the view, rather than an entirely new form of development.**

Significance of effect

Receptor	Significance of effect (construction and decommissioning)	Significance of effect (operation)
Beach users (Gunhill Cliff/The Denes):	Not significant, short-term, temporary	Not significant, long-term, reversible
Walkers (Suffolk Coastal Path):	Not significant, short-term, temporary	Not significant, long-term, reversible
Residents around Gun Hill/promenade:	Not significant, short-term, temporary	Not significant, long-term, reversible
People sitting/viewing from seafront benches:	Not significant, short-term, temporary	Not significant, long-term, reversible
Recreational boaters (Southwold Harbour):	Not significant, short-term, temporary	Not significant, long-term, reversible

Likelihood of effect

Excellent visibility required for the East Anglia ONE North windfarm site to be visible at 44.4km. Visibility at or beyond this distance occurs approximately 20% of the time, over 10-year period 2007-2017 from Weybourne and 10% of the time from Shoeburyness (Met Office Visibility Data).

Viewpoint 6: Walberswick – Visual Assessment				
Designations:	Suffolk Coast and Heaths AONB. Heritage Coast. Conservation Area.	Grid reference:	E: 649936	N: 274658
		Elevation:	3.9m	
LCT/SCT:	LCT08 Open Coastal Fens. Overlooks SCT03 Nearshore Waters.	View direction:	79°	
		Nearest proposed wind turbine:	45.6km	
Receptors:	Viewpoint is representative of views experienced by beach users; walkers using the Suffolk Coastal Path; residents of the coastal edges of Walbersick; and recreational boaters (Southwold Harbour).			

Baseline description (existing view is shown in ***Figure 28.30b – 28.30c***)

- **Estuary saltmarshes and mudflats along the Dunwich River and sand dunes of the flats define in the foreground landscape and provide a predominantly 'natural' setting.**
- **Perception of a natural, still, calm landscape, dotted with human influences such as sea defences, car parking and line of dark beach huts in the foreground and forming horizon line.**
- **Dune system is the prevailing influence in the view and prevents full views of the sea, which can be seen beyond the dunes as a think strip of sea skyline forming the horizon line in places.**
- **Long distance views south over Minsmere Haven to Sizewell Nuclear Power Station, backed by the marshland of Walberswick NNR and Dunwich Forest, curtailed by the headland formed at Thorpe Ness. Short distance view to the north enclosed by Southwold Harbour.**
- **Buildings, caravans and boats around Southwold harbour form a focal point in view north beyond the dunes.**
- **Flat horizontal emphasis of the landscape, with relatively few vertical elements, generally just consisting of masts of recreating sailing boats in the sea over the dunes, coming in and out of Southwold Harbour.**
- **Sizewell Nuclear Power Station is visible on the coast to the south, the distinctive dome of Sizewell B and block massing of Sizewell A forming a focal feature. Electrical pylons extend from it across the inland skyline.**
- **Theoretical visibility of Galloper and Greater Gabbard Offshore Windfarms, however in reality, they are screened from this viewpoint by intervening beach huts.**

Value:	Medium-high

- **The viewpoint is located within and overlooks the coastal edges of the Suffolk Coast and Heaths AONB and narrow band of sea that is part of the Heritage Coast. Overlooks SSSI/SAC/SPA designations to the south, which have recognised natural heritage value.**
- **It is not a specific viewpoint and there are no facilities provided to aid 'formal' enjoyment of the sea view (other than car parking areas which allow looking out) with the views to the sea being informal/incidental to the recreational use of the river, dunes and beach.**
- **The view displays a perception of natural qualities associated with the saltmarsh and dune habitats along the Dunwich River; and the SSSI/SAC/SPA marshland habitats to the south.**
- **The scenic interest in the view primarily arises from these perceived 'natural' qualities, in the setting of the expansive seascape of the North Sea beyond.**

Sensitivity to change: ***Combination of the value of the view and the susceptibility of each visual receptor***		
Receptor	Susceptibility to change	Sensitivity to change
Beach users (Walberswick Beach)	Medium-high	Medium-high
Walkers using the Suffolk Coastal Path	Medium-high	Medium-high
Residents of the coastal edges of Walbersick	High	High
Recreational boaters (Southwold Harbour)	Medium-low	Medium
Magnitude of change (predicted view is shown in ***Figure 28.30e***):		
Geographic extent:	Long distance	
The East Anglia ONE North windfarm site will be visible at long-distance, at a distance of approximately 45.6km to closest wind turbine and is located to the east of the viewpoint. The view is representative of views of the East Anglia ONE North windfarm site from the dunes and shingle beaches on the coastal side of Walberswick, around the mouth of the River Blyth, and areas of dunes and shingle beaches extending south to Corporation Marshes.		
Size/scale of change (construction, operation and decommissioning):	Low	

- **Lateral spread of the East Anglia ONE North windfarm site will occupy approximately 15° of the field of view, forming a wind turbine developed skyline behind the dunes. The open sea skyline extending south beyond Minsmere Haven would remain unaffected.**
- **The wind turbines within the East Anglia ONE North windfarm site will add a new large-scale offshore windfarm element to the composition of the view, which is currently a relatively simply composed view of sand dunes and large skies.**
- **Rotors of the majority of wind turbines will be visible above the skyline with some to the north visible only as blade tips andthose south and west of the East Anglia ONE North windfarm site appearing more prominent than those which recede with distance to the east and become partially hidden behind the skyline.**
- **Vertical height of the wind turbines will be relatively moderate in scale, due to their long distance offshore and the large scale of the seascape in the view. The height of the wind turbines will be difficult to judge due to the general absence of scale indicators from which to compare the scale of the wind turbines.**
- **The foreground landscape provides a greater impression of depth and distance in the view, with the thin horizontal strip of sea having a more limited role as an element in the view (than if viewed from the beach).**
- **Wind turbines in the southern parts of the East Anglia ONE North windfarm site appear less dense / more spaced out than those to the centre which will have a more clustered / denser appearance.**
- **The movement of rotor blades on an otherwise relatively still horizon, will introduce further complexity and visual movement to the view.**
- **The technological appearance of the wind turbines is likely to contrast with the perceived natural qualities associated with the habitats in the foreground, however their appearance will relate rationally to the visual exposure and large scale.**
- **Large vessels on the horizon will have reduced prominence/role as focal points when subsumed within the East Anglia ONE North windfarm site, while also providing a scale reference.**

• **The East Anglia ONE North windfarm site will be located just north of central to the main focus of the view east across the Dunwich River.** • **The East Anglia ONE North windfarm site will be viewed in the context of the existing Galloper and Greater Gabbard Offshore Windfarms, representing a more northerly windfarm and increase in visual prominence of the existing offshore windfarm element in the view, rather than an entirely new form of development.**		
Significance of effect		
Receptor	Significance of effect (construction and decommissioning)	Significance of effect (operation)
Beach users (Walberswick Beach)	Not significant, short-term, temporary	Not significant, long-term, reversible
Walkers using the Suffolk Coastal Path	Not significant, short-term, temporary	Not significant, long-term, reversible
Residents of the coastal edges of Walbersick	Not significant, short-term, temporary	Not significant, long-term, reversible
Recreational boaters (Southwold Harbour)	Not significant, short-term, temporary	Not significant, long-term, reversible
Likelihood of effect		
Excellent visibility required for the East Anglia ONE North windfarm site to be visible at 45.6km. Visibility at or beyond this distance occurs approximately 15% of the time, over 10-year period 2007-2017 from Weybourne and 6% of the time from Shoeburyness (Met Office Visibility Data).		
Assessment of effects on residents of wider Walberswick settlement		
Representative viewpoints:	Viewpoint 6	
Sensitivity to change:		
Residents of Walberswick:	High	
Magnitude of change:		
Theoretical visibility from Walberswick is illustrated in the detailed ZTV in ***Figure 28.30a***. The ZTV shows that a widespread area of the settlement has high theoretical visibility of 36-42 wind turbines, however from areas of Walberswick that are set-back from the immediate seafront, views of the East Anglia ONE North windfarm site are generally screened by intervening buildings and vegetation within the built-up areas of the village. Views of the East Anglia ONE North windfarm site are restricted to limited areas of Walberswick on the eastern side of the village which are closest to the sea, such as form residential areas around Ferry Road. In general, views are substantially restricted from these areas due to the leafy wooded/vegetated grounds within the setting of these dwellings, but Viewpoint 6 provides a representative worst-case view. There will be no visibility of the East Anglia ONE North windfarm site from Walberswick Village Green and its adjacent streets; or from The Street (B1387) which is the main road extending from the village centre westwards out of the village; or from the residential streets which extend off this main road and form the main residential areas of Walberswick. The magnitude of change arising as a result of the East Anglia ONE North windfarm site on these areas of Walberswick is assessed as follows.		
Geographic area of Walberswick:	Size/scale of change (construction, operation and decommissioning):	
Area A: Ferry Road area on eastern edge of village	Low. See above magnitude of change assessment for Viewpoint 6.	

Area B: All other areas of Walberswick, including village green, The Street and adjoining residential areas	Negligible. Views of the East Anglia ONE North windfarm site are screened by intervening buildings and vegetation within the built-up areas of the Walberswick which extend westwards away from the coast along The Street and have limited/no visual relationship with the coast.	
Significance of effect		
Receptor	Significance of effect (construction and decommissioning)	Significance of effect (operation)
Residents of Ferry Road area on eastern edge of village:	Not significant, short-term, temporary	Not significant, long-term, reversible
Residents of all other areas of Walberswick	Not significant, short-term, temporary	Not significant, long-term, reversible

Viewpoint 7: Dunwich – Visual Assessment				
Designations:	Suffolk Coast and Heaths AONB. Heritage Coast. Conservation Area.	Grid reference:	E: 647961	N: 270777
		Elevation:	6.3m	
LCT/SCT:	Edge of LCT08 Open Coastal Fens and LCT05 Coastal Dunes and Shingle Ridges. Overlooks SCT03 Nearshore Waters.	View direction:	75°	
		Nearest proposed wind turbine:	48.8.0km	
Receptors:	Viewpoint is representative of views experienced by beach users at Dunwich Beach; visitors to the nearby National Trust café and Dingle Marshes RSPB reserve (NNR) and residents of the edges of Dunwich village.			

Baseline description (existing view is shown in *Figure 28.31b – 28.31c*)

- **Panoramic view east/south-east across open expanse of the North Sea and south along the coastline to Sizewell Nuclear Power Station, where the view is curtailed by Thorpe Ness. Views north extend along the coast to Southwold/Southwold Harbour.**
- **Views offshore to the sea are simply composed and consist of layers of shingle, sea and sky which form a simple composition, with very few elements and a strong horizontal emphasis.**
- **Vast, large-scale sea and skies, with perception of limitless expanse of sea stretching out into the distance in good weather/clear visibility.**
- **Large vessels form focal features on the sea skyline and fishing boats in the coastal waters are integral to the view. Recreational boats tend to be less frequent in this view than areas to the north at Southwold.**
- **Shingle beach extends south into the distance, back by low 'crumbling' cliffs and Dunwich Heath. Relatively 'natural' and undeveloped setting contributes to a sense of remoteness and contrasts with beach resorts at Lowestoft and Southwold along the coast.**
- **In the view north, Southwold lighthouse and St Edmunds Church form focal points on the headland. Sizewell Nuclear Power Station is visible on the coast to the south, the distinctive dome of Sizewell B and block massing of Sizewell A forming a focal feature, as do its intake and outfall structures in the nearshore waters.**
- **Galloper and Greater Gabbard Offshore Windfarms can be seen in very good/excellent visibility, but have a limited influence on the view due to their scale and long distance offshore.**

Value	Medium-high

- **The viewpoint is located within and overlooks the coastal edges of the Suffolk Coast and Heaths AONB and narrow band of sea that is part of the Heritage Coast. Overlooks SSSI/SAC/SPA designations to the north, which have recognised natural heritage value.**
- **It is not a specific viewpoint and there are no facilities provided to aid 'formal' enjoyment of the sea view, with the views to the sea being informal/incidental to the recreational use of the beach.**
- **The view displays a perception of natural qualities associated with the visible geology and habitats of Dunwich Cliffs extending south; and the SSSI/SAC/SPA marshland habitats to the north.**
- **The scenic interest in the view primarily arises from these perceived 'natural' qualities, in the setting of the expansive seascape of the North Sea beyond.**

Sensitivity to change: ***Combination of the value of the view and the susceptibility of each visual receptor***

Receptor	Susceptibility to change	Sensitivity to change
Beach users at Dunwich Beach:	Medium-high	Medium-high
Visitors to the nearby National Trust café:	Low	Medium-low
Dingle Marshes RSPB reserve (NNR):	Medium	Medium
Residents of the edges of Dunwich village:	High	High
Magnitude of change (predicted view is shown in ***Figure 28.31e***):		
Geographic extent:	Long distance	
The East Anglia ONE North windfarm site will be visible at long-distance, at a distance of approximately 48.8.1km to closest wind turbine and is located to the east-north-east of the viewpoint. The view is representative of views of the East Anglia ONE North windfarm site from the dunes and shingle beaches on the coastal side of Dunwich, around the mouth of the River Blyth, and areas of dunes and shingle beaches extending south along Dunwich Cliffs.		
Size/scale of change (construction, operation and decommissioning):	Low	

- **Lateral spread of the East Anglia ONE North windfarm site will occupy approximately 14° of the field of view. This would have the effect of adding wind turbine developed skyline to a relatively small proportion of the 180° sea view, open sea skyline would remain unaffected across the majority of the skyline to the north and south of the sea view.**
- **The wind turbines within the East Anglia ONE North windfarm site will add a new large-scale offshore windfarm element to the composition of the view, which is currently a relatively simply composed view of shingle beach, sea and sky layers with very limited influence from development.**
- **Rotors and hubs of the majority of wind turbines will be visible above the skyline, with those to the west of the East Anglia ONE North windfarm site appearing more prominent (with parts of their towers also visible) than those which recede with distance to the east and become partially hidden behind the skyline.**
- **Vertical height of the wind turbines will be relatively moderate in scale, due to their long distance offshore and the large scale of the seascape in the view. The height of the wind turbines will be difficult to judge due to the general absence of scale indicators with which to compare the scale of the wind turbines.**
- **The movement of rotor blades on an otherwise relatively still horizon, will introduce further complexity and visual movement to the view.**
- **The technological appearance of the wind turbines is likely to contrast with the perceived natural qualities associated with the habitats and visible geology of the coastline, however their appearance will relate rationally to the visual exposure and large scale.**
- **Large vessels on the horizon will have reduced prominence/role as focal points when subsumed within the East Anglia ONE North windfarm site, while also providing a scale reference.**
- **The East Anglia ONE North windfarm site will be located north of central to the main focus of the view from the easterly aligned beach.**
- **The East Anglia ONE North windfarm site will be viewed in the context of the existing Galloper and Greater Gabbard Offshore Windfarms, representing a more northerly windfarm and increase in visual prominence of the existing offshore windfarm element in the view, rather than an entirely new form of development.**

Significance of effect

Receptor	Significance of effect (construction and decommissioning)	Significance of effect (operation)
Beach users at Dunwich Beach:	Not significant, short-term, temporary	Not significant, long-term, reversible
Visitors to the nearby National Trust café:	Not significant, short-term, temporary	Not significant, long-term, reversible
Dingle Marshes RSPB reserve (NNR):	Not significant, short-term, temporary	Not significant, long-term, reversible
Residents of the edges of Dunwich village:	Not significant, short-term, temporary	Not significant, long-term, reversible
Likelihood of effect:		
Excellent visibility required for the East Anglia ONE North windfarm site to be visible at 48.8km. Visibility at or beyond this distance occurs approximately 15% of the time, over 10-year period 2007-2017 from Weybourne and 6% of the time from Shoeburyness (Met Office Visibility Data).		

Viewpoint 19: Hopton-on-Sea – Visual Assessment				
Designations:	None	Grid reference:	E: 653585	N: 299727
		Elevation:	9.1m	
LCT/SCT:	LCT 25 Urban and overlooks SCT04 Developed Nearshore Waters.	View direction:	108°	
		Nearest proposed wind turbine:	40.9km	
Receptors:	Viewpoint is representative of views experienced by beach users (Hopton-on-Sea); tourist visitors (e.g. Hopton Holiday Village); residents of the coastal edges of Hopton-on-Sea (e.g. Sea View Rise); and walkers using the England Coastal Path.			

Baseline description (existing view is shown in *Figure 28.38b – 28.38c*)

- **Panoramic view extending north along Hopton seafront to Great Yarmouth to take in open expanses of the North Sea to the east and low cliffs to the south.**
- **Primarily a simple view offshore to the east, consisting of sea and sky which form a simple composition, with few elements out to sea and a strong horizontal emphasis. Large-scale sea and skies, with perception of limitless expanse of sea stretching out into the distance in good weather/clear visibility.**
- **To the north, the view extends across holiday parks/caravans at the coast and new sea defences along the low cliffs, to the urban areas of Great Yarmouth and its harbour.**
- **A number of vertical elements form landmarks in the view, particularly to north at Great Yarmouth harbour, including industrial buildings, cranes at the port, wind turbine towers and platforms under assembly for transport to the East Anglia ONE offshore windfarm.**
- **Scroby Sands Offshore Windfarm is visible 10.7km to the north just off Great Yarmouth harbour.**
- **The view takes in the seafront at Hopton-on-Sea, with sandy beach busy with beach users in sunny weather and people viewing the scene from seafront benches along the low cliffs.**
- **Busy seascape, with the presence of fishing boats, recreational sailing boats and larger vessels in nearshore waters being integral to the view. Large commercial vessels form point features both on the skyline.**
- **Views east formed by the presence of sandy beach and the North Sea. Inherent simplicity of sea views have been changed by the extended development at the seafront and the busy beach/nearshore waters.**
- **There is no visibility of Galloper and Greater Gabbard Offshore Windfarms.**

Value:	Medium

- **The viewpoint is not located within, nor does it overlook, a nationally designated landscape, but is located on the England Coastal Path, which has recognised recreational value.**
- **Although it is not a specific viewpoint, as such, there are facilities provided to aid enjoyment of the sea view, including benches oriented to the sea and seafront promenade.**
- **The view displays some traditional 'seaside' 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.**
- **Scenic qualities are influenced by notable development influences, including large scale industrial features, wind turbines/platforms at Great Yarmouth harbour, the existing Scroby Sands Windfarm and groynes/sea defences along the coastline.**

Sensitivity to change: Combination of the value of the view and the susceptibility of each visual receptor		
Receptor	Susceptibility to change	Sensitivity to change
Beach users (Hopton-on-Sea):	Medium	Medium
Tourist visitors (e.g. Hopton Holiday Village):	Medium-high	Medium-high
Residents of the coastal edges of Hopton-on-Sea (e.g. Sea View Rise):	High	Medium-high
Walkers using the England Coastal Path:	Medium-high	Medium
Magnitude of change (predicted view is shown in ***Figure 28.38e***):		
Geographic extent:	Long distance	
The East Anglia ONE North windfarm site will be visible at long-distance, at a distance of approximately 40.9km to the closest wind turbine and is located to the east-south-east of the viewpoint. The view is representative of views of the East Anglia ONE North windfarm site from the seafront at Hopton-on-Sea.		
Size/scale of change (construction, operation and decommissioning):	Low	

- **Lateral spread of the East Anglia ONE North windfarm site will occupy approximately 17° of the field of view, which is a relatively small portion of the wider 180° sea view available.**
- **Towers and rotors of the closest wind turbines (particularly those at the centre of the East Anglia ONE North windfarm site) will be visible above the skyline, but on the whole, the visibility of the wind turbines appears to be receding to the north, with towers and rotor blades hidden behind the horizon.**
- **Vertical height of the wind turbines will be relatively small in scale, due to their long distance offshore and the large scale of the seascape in the view. The wind turbines will appear smaller in height than the Scroby Sands wind turbines.**
- **The East Anglia ONE North windfarm site is located in part of the view that is oblique to the main view and will not form a central focus to the main view east.**
- **Wind turbines in the northern and southern parts of the East Anglia ONE North windfarm site appear less dense / more spaced out than those to the centre which will have a more clustered / denser appearance.**
- **Although there are notable amounts of visual movement in the view, the movement of rotor blades on an otherwise relatively still horizon, will introduce further complexity and visual movement to the view.**
- **Large vessels on the horizon will have reduced prominence/role as focal points when subsumed within the East Anglia ONE North windfarm site, while also providing a scale reference.**
- **The East Anglia ONE North windfarm site will be viewed in the context of a number of notable development influences in the baseline, including large scale industrial features, wind turbines/platforms at Great Yarmouth harbour and the existing Scroby Sands Windfarm.**

Significance of effect		
Receptor	Significance of effect (construction and decommissioning)	Significance of effect (operation)
Beach users (Hopton-on-Sea):	Not significant, short-term, temporary	Not significant, long-term, reversible

Tourist visitors (e.g. Hopton Holiday Village):	Not significant, short-term, temporary	Not significant, long-term, reversible
Residents of the coastal edges of Hopton-on-Sea (e.g. Sea View Rise):	Not significant, short-term, temporary	Not significant, long-term, reversible
Walkers using the England Coastal Path:	Not significant, short-term, temporary	Not significant, long-term, reversible
Likelihood of effect:		
Excellent visibility required for the East Anglia ONE North windfarm site to be visible at 40.9km. Visibility at or beyond this distance occurs approximately 20% of the time, over 10-year period 2007-2017 from Weybourne and 10% of the time from Shoeburyness (Met Office Visibility Data).		

Viewpoint 20: Gorleston-on-Sea – Visual Assessment				
Designations:	None	Grid reference:	E: 652912	N: 303337
		Elevation:	15.9m	
LCT/SCT:	LCT25 Urban and overlooks SCT04 Developed Nearshore Waters.	View direction:	111°	
		Nearest proposed wind turbine:	42.7km	
Receptors:	Viewpoint is representative of views experienced by beach users (Gorleston-on-Sea beach); tourist visitors to the seafront e.g. around Lower Esplanade/Marine Esplanade; people sitting/viewing from seafront benches/gardens; walkers using the England Coastal Path; cyclists using NCNR 517; residents of Gorleston-on-Seafront (e.g. Marine Parade); people engaged in active sports (e.g. Tennis/Basketball/Trim Trails); and people working at Gorleston Harbour and industrial estate.			

Baseline description (existing view is shown in *Figure 28.39b – 28.39c*)

- **Panoramic view extending north along Gorlseton-on-Sea seafront to take in open expanses of the North Sea to the east and low cliffs to the south.**
- **Primarily a simple view offshore to the east, consisting of sea and sky which form a simple composition, with few elements out to sea and a strong horizontal emphasis. Large-scale sea and skies, with perception of limitless expanse of sea stretching out into the distance in good weather/clear visibility.**
- **To the north, the view extends across Gorlseton-on-Sea seafront to the urban areas of Great Yarmouth and its harbour, which form the backdrop to the seafront. A number of large-scale built elements form landmarks, including industrial buildings, cranes, wind turbine towers and platforms under assembly, and the Scroby Sands Offshore Windfarm is visible (7.4km) just off Great Yarmouth harbour.**
- **The view takes in the traditional beach resort of Gorlseton-on-Sea seafront and formalised recreational facilities, with sandy beach busy with beach users/bathers in sunny weather, esplanade with footpath, lighting and seafront benches.**
- **View south extends along the coast to Lowestoft (Ness Point) where the Lowestoft Ness Point wind turbine is visible on the headland.**
- **Busy seascape, with the presence of fishing boats, recreational sailing boats and larger vessels in nearshore waters being integral to the view. Large commercial vessels form point features both on the skyline.**
- **Views east formed by the presence of sandy beach and the North Sea. Inherent simplicity of sea views have been changed by the extended development at the seafront and the busy beach/nearshore waters.**
- **There is no visibility of Galloper and Greater Gabbard Offshore Windfarms.**

Value:	Medium

- **The viewpoint is not located within, nor does it overlook, a nationally designated landscape, but is located on the England Coastal Path, which has recognised recreational value.**
- **Although it is not a specific viewpoint, as such, there are facilities provided to aid enjoyment of the sea view, including benches oriented to the sea and seafront promenade.**

- **The view displays some traditional 'seaside' 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.**
- **Scenic qualities are already influenced by notable development influences, including large scale industrial features, wind turbines/platforms at Great Yarmouth harbour and the existing Scroby Sands Windfarm.**

Sensitivity to change: Combination of the value of the view and the susceptibility of each visual receptor		
Receptor	Susceptibility to change	Sensitivity to change
Beach users (Gorleston-on-Sea beach):	Medium	Medium
Tourist visitors to the seafront e.g. around Lower Esplanade/Marine Esplanade:	Medium-high	Medium-high
People sitting/viewing from seafront benches/gardens:	Medium-high	Medium-high
Walkers using the England Coastal Path:	Medium-high	Medium-high
Cyclists using NCNR 517:	Medium	Medium
Residents of Gorleston-on-Seafront (e.g. Marine Parade):	High	Medium-high
People engaged in active sports (e.g. Tennis/Basketball/Trim Trails):	Low	Medium-low

Magnitude of change (predicted view is shown in ***Figure 28.39e***):	
Geographic extent:	Long distance
The East Anglia ONE North windfarm site will be visible at long-distance, at a distance of approximately 42.7km to the closest wind turbine and is located to the south-east of the viewpoint. The view is representative of views of the East Anglia ONE North windfarm site from the seafront at Gorleston-on-Sea.	
Size/scale of change (construction, operation and decommissioning):	Low

- **Lateral spread of the East Anglia ONE North windfarm site will occupy approximately 17° of the field of view, which is a relatively small portion of the wider 180° sea view available.**
- **Towers and rotors of the closest wind turbines particularly those on the east side of the East Anglia ONE North windfarm site) will be visible above the skyline, but on the whole, the visibility of the wind turbines appears to be receding to the south and north, with lower towers and rotor blades hidden behind the horizon.**
- **Vertical height of the wind turbines will be relatively small in scale, due to their long distance offshore and the large scale of the seascape in the view. The wind turbines will appear smaller in height than the Lowestoft Ness Point and Scroby Sands wind turbines.**
- **The East Anglia ONE North windfarm site is located in part of the view that is oblique to the main view and will not form a central focus to the main view east.**
- **Wind turbines in the northern and southern parts of the East Anglia ONE North windfarm site appear less dense / more spaced out than those to the centre which will have a more clustered appearance.**
- **Although there are notable amounts of visual movement in the view, the movement of rotor blades on an otherwise relatively still horizon, will introduce further complexity and visual movement to the view.**

• **Large vessels on the horizon will have reduced prominence/role as focal points when subsumed within the East Anglia ONE North windfarm site, while also providing a scale reference.** • **The East Anglia ONE North windfarm site will be viewed in the context of a number of notable development influences in the baseline, including large scale industrial features, wind turbines/platforms at Great Yarmouth harbour and the existing Scroby Sands Windfarm and Lowestoft Ness Point wind turbine.**		
Significance of effect		
Receptor	Significance of effect (construction and decommissioning)	Significance of effect (operation)
Beach users (Gorleston-on-Sea beach):	Not significant, short-term, temporary	Not significant, long-term, reversible
Tourist visitors to the seafront e.g. around Lower Esplanade/Marine Esplanade:	Not significant, short-term, temporary	Not significant, long-term, reversible
People sitting/viewing from seafront benches/gardens:	Not significant, short-term, temporary	Not significant, long-term, reversible
Walkers using the England Coastal Path:	Not significant, short-term, temporary	Not significant, long-term, reversible
Cyclists using NCNR 517:	Not significant, short-term, temporary	Not significant, long-term, reversible
Residents of Gorleston-on-Seafront (e.g. Marine Parade):	Not significant, short-term, temporary	Not significant, long-term, reversible
People engaged in active sports (e.g. Tennis/Basketball/Trim Trails):	Not significant, short-term, temporary	Not significant, long-term, reversible
Likelihood of effect		
Very good or excellent visibility required for the East Anglia ONE North windfarm site to be visible at 42.7km. Visibility at or beyond this distance occurs approximately 20% of the time, over 10-year period 2007-2017 from Weybourne and 10% of the time from Shoeburyness (Met Office Visibility Data).		

28.2.2 Settlements

9. Representative viewpoints have been agreed for all of the principal settlement receptors along the Suffolk and Norfolk coasts in the study area. The visual effects of the East Anglia ONE North windfarm site on residents of these settlements are therefore assessed as an additional assessment following each representative viewpoint assessment in the viewpoint assessment tables in ***section 28.2.1***, as follows:

    - Lowestoft – Viewpoint 1.
    - Kessingland – Viewpoint 2.
    - Southwold – Viewpoint 4.

28.2.3 Transport Routes

10. The preliminary assessment has identified that the East Anglia ONE North windfarm site will have no significant effects on main transport routes through the study area (main roads and railway lines). There is an absence of major coastal roads and rail routes, due to the estuaries and intermittent 'soft edged' coastal landscape, with lightly trafficked access routes across the AONB to the coastline from main routes further inland. This has contributed to the relatively undeveloped character of the Suffolk coast but also means that there are no major transport routes that will experience significant effects.

28.2.4 Recreational Routes

11. A full technical assessment of the effects of the East Anglia ONE North windfarm site on users of the northern section of the Suffolk Coastal Path is provided separately in ***Appendix 28.5***.