NORTH FALLS

Offshore Wind Farm

PRELIMINARY ENVIRONMENTAL INFORMATION REPORT

Chapter 29 Offshore Seascape, Landscape and Visual Impact Assessment

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Glossary of Acronyms

AONB	Area of Outstanding Natural Beauty
CAA	Civil Aviation Authority
CSLVIA	Cumulative Seascape, Landscape and Visual Impact Assessment
DCO	Development Consent Order
EIA	Environmental Impact Assessment
ES	Environmental Statement
LAT	Lowest Astronomical Tide
LCT	Landscape Character Type
MCA	Marine Character Area
MMO	Marine Management Organisation
NFOW	North Falls Offshore Wind Farm Ltd
NPS	National Policy Statement
NSIP	Nationally Significant Infrastructure Project
PEIR	Preliminary Environmental Information Report
SCZ	Seascape Character Zone
SLVIA	Seascape, Landscape and Visual Impact Assessment
WTG	Wind Turbine Generators
ZTV	Zone of Theoretical Visibility

Glossary of Terminology

Array areas	The two distinct offshore wind farm areas (comprising the 'northern array area' and 'southern array area') which together comprise the North Falls offshore wind farm.
Offshore Above-sea Development	Visible (above sea level) offshore project components. This includes the proposed wind turbines generators and offshore substation platforms.
Offshore cable corridor	The corridor of the seabed from array areas to the landfall within which the offshore export cables will be located.
Offshore export cables	The cables which bring electricity from the array areas to the landfall.
Offshore substation platform(s)	Fixed structure(s) located within the array areas, containing electrical equipment to aggregate the power from the wind turbine generators and convert it into a more suitable voltage for export to shore via offshore export cables.
The Applicant	North Falls Offshore Wind Farm Limited (NFOW)
The Project or 'North Falls'	North Falls Offshore Wind Farm, including all onshore and offshore infrastructure.
Wind turbine generator (WTG)	Power generating device that is driven by the kinetic energy of the wind

29 Offshore SLVIA

29.1 Introduction

1. This chapter of the Preliminary Environmental Information Report (PEIR) evaluates the effects of the offshore project components of the proposed North Falls Offshore Wind Farm (hereafter 'North Falls' or 'the Project) on the seascape, landscape and visual resource. For the purposes of the Seascape, Landscape and Visual Impact Assessment (SLVIA) this chapter focuses on effects associated with the visible (above sea level) offshore project components. This includes the proposed wind turbines generators (WTG) and offshore substation platforms in the array areas (hereafter referred to as the Offshore Above-sea Development).
2. The SLVIA considers works seaward of mean high water springs (MHWS), however there will be no above sea level infrastructure in the offshore cable corridor, or above ground infrastructure in the intertidal zone. Therefore operational effects of offshore cables are not discussed further in this chapter. Landfall works above MHWS are covered in the onshore LVIA (Chapter 30, Volume I).
3. This assessment was undertaken by chartered landscape architects at LUC.
4. This chapter of the PEIR is supported by Appendix 29.1 – Seascape, Landscape and Visual Impact Assessment (SLVIA) and Visualisation Methodology (Volume III).
5. Volume II of the PEIR contains the PEIR Figures.

29.2 Consultation

6. Consultation for this PEIR topic was undertaken with the organisations shown in Table 29.1 below.

Table 29.1 Consultation responses

Consultee	Date/ Document	Comment	Response/ where addressed in the PEIR
SLVIA Topic Group	SLVIA Topic Group Meeting July 2021	Method Feedback from Suffolk County Council and East Suffolk County Council states that the proposed method set out in memo 004023237-01 dated 18/06/21 is broadly acceptable, however it is anticipated that these comments should inform modifications to the approach proposed and may be subject to further discussion and agreement between the parties.	Modifications to method set out in response to scoping opinion, see below.
Planning Inspectorate	Scoping Opinion (August 2021)	Construction Impacts *"The Scoping Report states that the impacts during the temporary*	Construction phase impacts of offshore infrastructure have been

Consultee	Date/ Document	Comment	Response/ where addressed in the PEIR
		construction phase of the offshore infrastructure will never be greater than the operational effects of the completed wind farm and as such, proposes that offshore construction effects are scoped out of the seascape, landscape and visual impact assessment (SLVIA). Based on the lack of information to support this assertion and given that the construction period is expected to last at least 5 years during which time there is potential for impacts arising from presence of construction activity and partially complete WTGs that could detract from the character of the landscape, the Inspectorate does not agree that construction phase impacts of offshore infrastructure can be scoped out of the assessment."	considered in the assessment. Refer to Section 29.6.1
Planning Inspectorate	Scoping Opinion (August 2021)	Non-coastal landscapes *"The Scoping Report states that the presence of the offshore wind farm is unlikely to significantly impact the key characteristics of non-coastal landscapes, therefore changes to landscape character in relation to the offshore wind farm will be scoped out of the SLVIA. The Inspectorate considers that the offshore components have potential to impact onshore landscape character, for example features of the Greater Thames Estuary and Northern Thames Basin, which include low-lying coastal landscape where extensive open spaces are dominated by the sky. The Inspectorate does not agree that potential impacts of offshore infrastructure during operation can be scoped out of the assessment."*	Potential impacts of offshore infrastructure during operation have been considered for non-coastal landscape, where significant effects on landscape character are considered likely. Refer to Section 29.6.2.2
Planning Inspectorate	Scoping Opinion (August 2021)	Decommissioning Impacts *"The Scoping Report states that the presence of activity and partially dismantled structures during the temporary decommissioning phase has the potential to impact seascape, coastal and landscape character,*	Decommissioning phase impacts of offshore infrastructure have been considered in the assessment. Refer to Section 29.6.3

Consultee	Date/ Document	Comment	Response/ where addressed in the PEIR
		designated landscapes and visual receptors but impacts will never be greater than during construction or operation phases considered in the SLVIA, and proposes to scope these out. The Inspectorate does not agree that these impacts during decommissioning can be scoped out of the assessment as insufficient evidence has been provided to support the assertion that no significant effects are likely to occur."	
Planning Inspectorate	Scoping Opinion (August 2021)	Cumulative Impacts "*The Scoping Report suggests at Table 4.2 that cumulative impacts from offshore construction and decommissioning of the Proposed Development are proposed to be scoped out. No information is presented as a basis for this proposal. On a similar basis as that set out at ID 5.11.1 and 5.11.4 of this Scoping Opinion, the Inspectorate has insufficient evidence to conclude that this matter would not give to significant effects. In addition, the Inspectorate is aware that there are a number of other projects, including NSIPs such as East Anglia ONE North and TWO Wind Farms, Five Estuaries Offshore Wind Farm and Sizewell C, located within the likely study area for the Proposed Development, which have the potential for overlapping construction programmes and possible combined effects. The Inspectorate therefore does not agree to scope this matter out of the ES*."	Cumulative impacts have been considered in Section 29.8. Given the number of offshore schemes at various stages (operational, consented and proposed) and number of alternative scenarios if construction and decommissioning stage are factored in, a worst case scenario which all operational, consented and proposed schemes are present, has been considered.
Planning Inspectorate	Scoping Opinion (August 2021)	Study Area *"The Inspectorate considers that due to the potential maximum height of the WTGs, their proximity to designated seascapes, landscapes (including Suffolk Coast and Heaths, Dedham Vale and Kent Downs AONBs) and other highly graded cultural heritage assets (e.g. Dengie Peninsula), the low-lying nature of the*	The study area for the SLVIA has been increased to 60km, and this has been agreed through follow on consultation (SLVIA Topic Group Meeting – 7th December 2022).

Consultee	Date/ Document	Comment	Response/ where addressed in the PEIR
		coastline, and the presence of existing and proposed offshore wind farms, there is potential for the offshore components of the Proposed Development to give rise to likely significant effects, including cumulative effects, to landscape and visual receptors beyond the proposed study area of 50km radius around the array areas. On that basis, the Inspectorate considers that the study area for impacts from the array areas should be determined relevant to the extent of the impacts and the potential for significant effects. This may result in a study area beyond the 50km specified and the Applicant should make effort to agree this with relevant consultation bodies. The selection of the study area should be informed by the Zone of Theoretical Visibility (ZTV)."	
Planning Inspectorate	Scoping Opinion (August 2021)	Seascape Character Zones The 'seascape character zones' (SCZ) identified as being of relevance to the Proposed Development's wind farm and surrounding area should be clearly justified and explained in the ES.	The regional scale Marine Character Areas (MCA) have been used as the baseline for the seascape assessment. These MCA cover the full extents of the SLVIA study area and are of a scale which is more relevant to the scale of the development proposed.
Planning Inspectorate	Scoping Opinion (August 2021)	Data Sources *"The ES should demonstrate how the consultation with the MMO, the Suffolk Coast and Heaths AONB Board and other relevant consultation bodies has informed the approach taken in researching the data needed for the assessment of seascape, landscape and visual aspects. In addition to the data sources listed at paragraph 722, the Inspectorate considers that the following data sources should be used to inform the description of baseline conditions: Natural Beauty and Special Qualities of the Suffolk Coast and Heaths AONB (2016), Development in the setting of the Suffolk Coast and Heaths AONB (2015), The*	Details on post scoping consultation is provided in this table. Additional baseline data sources have also been considered.

Consultee	Date/ Document	Comment	Response/ where addressed in the PEIR
		Designation History of the Suffolk Coast and Heaths AONB and the Landscape Character of the Essex Coast (2002).”	
Planning Inspectorate	Scoping Opinion (August 2021)	SLVIA Viewpoints *“The Applicant should make effort to consult and agree with consultation bodies over the proposed SLVIA assessment viewpoints including Natural England and the relevant local authorities. In addition to those listed in Table 4.1, the Inspectorate considers that the following locations should also be selected for viewpoints as places that contribute towards the character of the coastal landscape and which attract visual receptors: the end of Southwold pier, Gun Hill in Southwold, Dunwich Coastguard cottages, Sizewell Beach, the cliffs above Thorpeness, Felixstowe seafront gardens, Walton pier and Naze tower. A viewpoint further north at Covehithe should be included to enable an assessment of potential cumulative effects to Suffolk Coast and Heaths AONB from the existing and proposed offshore wind farms. In addition, the Inspectorate considers that there is potential for sequential visual effects to users of the Suffolk / England Coast Path, including in combination with other projects, and these effects should be assessed.”*	Details on post scoping consultation is provided in this table. Sequential effects from the Suffolk / England Coast Path have been considered in this assessment.
Planning Inspectorate	Scoping Opinion (August 2021)	Cumulative Impacts *“The Scoping Report states that potential landscape and visual effects due to interactions with consented and proposed (as yet unbuilt wind farms) will be considered in the cumulative assessment and is likely to include the proposed East Anglia TWO Offshore Wind Farm, approximately 30km to the north of NFOW, and the planned Five Estuaries Offshore Wind Farm to the east. The Inspectorate considers that East Anglia ONE North Wind Farm should also be scoped into the*	Cumulative impacts have been considered in Section 29.8 The cumulative assessment considers all operational, consented and proposed schemes are present across the 60km LVIA study area.

Consultee	Date/ Document	Comment	Response/ where addressed in the PEIR
		assessment on the basis that the turbine array is likely to be viewed in combination with the Proposed Development from the Suffolk Coast and Heaths AONB. The ES should explain how the cumulative assessment has included all relevant developments that may have cumulative effects on seascape, landscape and visual effects and how these have been assessed."	
Planning Inspectorate	Scoping Opinion (August 2021)	Viewpoints and Photography *"The Scoping Report states that the visual baseline will be recorded in terms of the different groups of people who may experience views of the offshore wind farm and onshore components, the places where they will be affected and the nature of their views and visual amenity. The ES should explain in detail how the visual baseline has been established including how the Applicant consulted on this with relevant consultation bodies. The Applicant should give careful consideration to the timing of baseline photography, in terms of the time of day and season, in order to ensure that the ES presents an accurate representation of the likely effects, e.g. the WTGs are likely to be most visible in the late afternoon/ evening and high visibility days occur in certain periods of the year that coincide with peak visitor period."*	Representative assessment viewpoints have been agreed through post scoping consultation, further detail is provided below. Baseline photography has been carried out at suitable times of day in relation to suns path (generally in the afternoon/ evening) and in good conditions.
Planning Inspectorate	Scoping Opinion (August 2021)	Viewpoint Types *"The Inspectorate considers that, in addition to representative viewpoints, illustrative and specific viewpoints will be required to understand the impacts of the Proposed Development and fully assess its effects."*	Representative assessment viewpoints (including illustrative and specific) have been agreed through post scoping consultation, further detail is provided below.
Planning Inspectorate	Scoping Opinion (August 2021)	Effects on AONB *"The Inspectorate considers that in addition to the assessment of landscape and visual effects, the SLVIA will need to consider impacts to the Natural Beauty and Special*	Impacts to the Natural Beauty and Special Qualities of the Suffolk Coast and Heaths Area of Outstanding Natural Beauty (AONB) are considered in Section 29.6

Consultee	Date/ Document	Comment	Response/ where addressed in the PEIR
		Qualities of the Suffolk Coast and Heaths AONB, as these form part of the purposes of the designation."	
	Scoping Opinion (August 2021)	Mitigation *"If mitigation is proposed for any likely significant effects this should be set out in detail in the ES and it should clearly set out how this mitigation will be secured."*	Mitigation measures are described in Section 29.3.3
Planning Inspectorate	Scoping Opinion (August 2021)	Further Guidance *"The Technical Guidance Note (TGN) 02-21 'Assessing the Value of Landscapes outside National Designations' has recently been published and should be used within the assessment."*	This guidance has been referred to in the assessment.
SLVIA Topic Group Meeting	SLVIA Topic Group Meeting – 7th December 2022	Viewpoints 60km study area confirmed. • Martello tower is similar location to Clacton-on-Sea viewpoint. Clacton will give a more open viewpoint as it is closer and has more sensitive receptors, therefore Clacton-on-Sea has been selected over Martello tower. Dusk photography will be included at Clacton-on-Sea; • Frinton-on-Sea has been added as this was identified through other consultation by NFOW (not scoping); • The Naze was proposed in the scoping report; Naze Tower and Walton Pier were requested in the scoping opinion. These are tightly clustered and so it is proposed that Naze Tower is selected; • Felixstowe and Landguard Fort are very close and so it is proposed that Landguard Fort is selected; • Felixstowe Seafront Garden - included following scoping opinion. Will include dusk photography; • Pulhamite Cliffs and Bawdsey are very close and so it is proposed that Pulhamite Cliffs is selected; • Shingle Street included as requested by Natural England;	Viewpoint assessment included in Section 29.5.4.3

Consultee	Date/ Document	Comment	Response/ where addressed in the PEIR
		• Orford Castle - retained from scoping report; • Orford Ness - retained from scoping report; • Aldeburgh retained from scoping report - will include dusk photography; • Cliffs above Thorpeness - included following scoping opinion • Coastal Path between Thorpeness and Sizewell - sequential wireframe view from coastline to be included as requested by Natural England; • Sizewell Beach - included following scoping opinion; • Dunwich Coastguard Cottages - included following scoping opinion; • Southwold included in scoping report; Gunhill and Southwold Pier were requested in the scoping opinion - propose to use Southwold Pier as this is most frequented and closest to the array areas; • Covehithe - included following scoping opinion.	

29.3 Scope

29.3.1 Study area

7. The SLVIA study area is defined as a 60km radius around the proposed array areas, and includes parts of the outer Thames estuary, Suffolk, Essex and Kent. This has been agreed through post scoping consultation with stakeholders (refer to Table 29.1 for further detail).

8. The location of the study area is shown on Figure 29.1.1 (Volume II). The consideration of seascape, landscape and visual effects, including cumulative effects, on particular receptors is dealt with in the sections which follow, with specific reference to the distance within which the potential for significant effects is considered likely for both seascape, landscape and visual receptors.

9. To consider cumulative effects of the Offshore Above-sea Development in relation to other schemes in the study area, other plans and projects within 60km of the proposed array areas have been included for the purposes of modelling and detailed assessment, as agreed with stakeholders. The cumulative assessment focuses on operational interactions between the Offshore Above-sea Development and other offshore wind farms (consented and proposed).

Cumulative interactions with other offshore activity, such as additional vessels associated with certain industries, is unlikely to be significant, due to the transient nature of these activities. Cumulative interactions with onshore projects, including onshore wind turbines and wind farms, is also unlikely to lead to significant interactions. This is due to the different landscape context and distance of the array areas from the shoreline.

10. A Zone of Theoretical Visibility (ZTV) map was generated, illustrating areas from where the proposed array areas may be visible in the Study Area. The ZTV was based on bare earth topography and therefore does not take account of potential screening by vegetation or buildings. The ZTV is used as a tool for understanding where significant visual effects may occur. Receptors which are outside the ZTV will not have visibility of the Offshore Above-sea Development and are not considered further in this SLVIA. The ZTV to maximum blade tip height (401m above Lowest Astronomical Tide (LAT)) is shown at A3 scale on Figure 29.1.2a and A1 scale on Figure 29.1.2b (Volume II). The ZTV to maximum hub height (232.5m above LAT) is shown at A3 scale on Figure 29.1.3a and A1 scale on Figure 29.1.3b (Volume II).

29.3.2 Realistic worst case scenario

11. The SLVIA is based on the Rochdale Envelope, described in Chapter 5 Project Description (Volume I). In compliance with the Environmental Impact Assessment (EIA) regulations, the likely significant effects of a realistic 'worst case' scenario are assessed and illustrated in the SLVIA so that it can be safely assumed that all other scenarios within the design envelope will have less impact.

29.3.2.1 Wind Turbine Generators (WTG):

12. For the purposes of the assessment and visualisations, the array area is based on a scheme of 40 WTGs with turbines up to 401m above LAT to tip height (397m above MHWS), and with a maximum rotor diameter of 337m. While the proposed development could be based on 72 smaller WTGs (314m above LAT to tip height), for assessment purposes the smaller number of larger turbines will result in longer distance visibility due to the larger scale of the turbines and therefore this is judged to be the worst case scenario.

29.3.2.2 Offshore Substation Platforms:

13. Offshore substation platforms are fixed structures, located within the array areas, containing electrical equipment to aggregate the power from the WTGs and convert it into a more suitable voltage for export to shore via offshore export cables. The worst case for the SLVIA assumes two offshore substation platforms, each of which will have topside dimensions of 80x46m, and height 65m above LAT, at indicative locations, which represent the closest points to shore within the array areas turbine rows.

29.3.2.3 WTG lighting

14. The WTG and visible offshore components will be lit in accordance with the International Association of Lighthouse authorities (IALA) standards and the Civil Aviation Authority (CAA) requirements. As such, there is potential for North Falls to be visible at night. The following worst-case assumptions have been made with regard to lighting:

- Permanent aviation lighting on all WTGs. This will be mounted on the top of the nacelles (i.e. at hub height). The lighting will be off during hours of daylight. When on, during hours of darkness, the lighting will be red in colour and up to 2,000 Candela (Cd). The lighting will be dimmable to 200 Cd when visibility is greater than 5km. The lighting will have a synchronised flashing morse "W" pattern. The lighting intensity will reduce at and below the horizontal. There will be 360° visibility compatible with Night Vision Imaging Systems (NVIS). For the purposes of the dusk visualisations, red lighting on all turbines has been shown at both 2000Cd and 200Cd.
- Helihoist light: Low intensity green 200 Cd light. Off, unless the turbine is being prepared for helicopter approach. For the purposes of the visualisations this lighting has not been modelled as it is low intensity and generally turned off, so that visibility (and therefore significant visual effects) is unlikely.

15. Visual effects associated with lighting have been considered from a select number of viewpoints, as detailed in Table 29.6.

29.3.3 Summary of embedded mitigation

16. To ensure the assessment is future proofed, it has been based on the maximum sized turbines predicted by the project engineering team to be available at the time of construction. This aims to permit flexibility to enable the Project to maximise the energy generation capacity, in accordance with national targets to develop 50GW of offshore wind by 2030 (see Chapter 3 Need for the Project, Volume I). This approach is supported by the National Policy Statement (NPS) for Renewable Energy Infrastructure (EN-3) (DECC, 2011; BEIS, 2021) which states:

    "*Neither the design nor scale of individual wind turbines can be changed without significantly affecting the electricity generating output of the wind turbines. Therefore, the IPC [now the Secretary of State] should expect it to be unlikely that mitigation in the form of reduction in scale will be feasible. However, the layout of the turbines should be designed appropriately to minimise harm, taking into account other constraints such as ecological effects, safety reasons or engineering and design parameters.*"

17. The final design of North Falls will be confirmed through detailed engineering design studies that will be undertaken post-consent based on the findings of pre-construction surveys.

29.4 Assessment methodology

29.4.1 Legislation, guidance and policy

29.4.1.1 National Policy Statements

18. The assessment of likely significant effects upon seascape, landscape and visual amenity has been made with specific reference to the relevant National Policy Statements (NPS). These are the principal decision making documents for Nationally Significant Infrastructure Projects (NSIPs). Those relevant to the Project are:

- Overarching NPS for Energy (EN-1) (Department of Energy and Climate Change (DECC) 2011a);
- NPS for Renewable Energy Infrastructure (EN-3) (DECC 2011b);
- Draft Overarching NPS for Energy (EN-1) (Department of Business, Energy and Industrial Strategy (BEIS, 2021a); and
- Draft NPS for Renewable Energy Infrastructure (EN-3) (BEIS 2021b).

19. The specific assessment requirements for seascape, landscape and visual, as detailed in the NPS, are summarised in Table 29.2 together with an indication of the section of the PEIR chapter where each is addressed.

Table 29.2 NPS assessment requirements

NPS Requirement	NPS Reference	PEIR Reference
EN-1 Overarching NPS for Energy		
"The landscape and visual assessment should include reference to any landscape character assessment and associated studies as a means of assessing landscape impacts relevant to the proposed project. The applicant's assessment should also take account of any relevant policies based on these assessments in local development documents in England and local development plans in Wales."	Paragraph 5.9.5 (refer to Paragraph 5.10.5 of Draft NPS)	Baseline landscape character and seascape assessments referenced in Section 29.5. Relevant local development documents, referred to in the assessment, as listed in Paragraph 21).
"….For seascapes, applicants should consult the Seascape Character Assessment and the Marine Plan Seascape Character Assessments, and any successors to them."	Paragraph 5.10.5 of Draft NPS, continued.	Baseline landscape character and seascape assessments referenced in Section 29.5.
"The applicant's assessment should include the effects during construction of the project and the effects of the completed development and its operation on landscape components and landscape character."	Paragraph 5.9.6 (refer to Paragraph 5.10.6 of Draft NPS)	Refer to Section 29.6.1 for construction effects and Section 29.6.2 for operational effects.
"The assessment should include the visibility and conspicuousness of the project during construction and of the presence and operation of the project and potential impacts on views and visual amenity…"	Paragraph 5.9.7 (refer to Paragraph 5.10.7 of Draft NPS)	Refer to Section 29.6.1 for construction effects and Section 29.6.2 for operational effects.
"Landscape effects depend on the existing character of the local landscape, its current quality, how highly it is valued and its capacity to accommodate change. All of these factors need to be considered in judging the impact of a project on landscape. Virtually all nationally significant energy infrastructure projects will have effects on the landscape. Projects need to be designed carefully, taking account of the potential impact on the landscape. Having regard to siting, operational and other relevant constraints the aim should be to minimise harm to the landscape, providing reasonable mitigation where possible and appropriate."	Paragraph 5.9.8 (refer to Paragraph 5.10.9 of Draft NPS)	Refer to Section 29.3.3 for information on mitigation.
"The duty to have regard to the purposes of nationally designated areas also applies when considering applications for projects outside the boundaries of these areas which may have impacts within them. The aim should be to avoid compromising the purposes of	Paragraph 5.9.12 and 13 (refer to Paragraph 5.10.14	Refer to Section 29.6 for assessment of effects on the Suffolk

NPS Requirement	NPS Reference	PEIR Reference
designation and such projects should be designed sensitively given the various siting, operational, and other relevant constraints. This should include projects in England which may have impacts on National Scenic Areas in Scotland. The fact that a proposed project will be visible from within a designated area should not in itself be a reason for refusing consent."	and 15 of Draft NPS)	Coast and Heaths AONB.
"The IPC [now the Planning Inspectorate/ Secretary of State] should consider whether the project has been designed carefully, taking account of environmental effects on the landscape and siting, operational and other relevant constraints, to minimise harm to the landscape, including by reasonable mitigation."	Paragraph 5.9.17 (refer to Paragraph 5.10.19 of Draft NPS)	Refer to Section 29.3.3 for information on mitigation.
"Within a defined site, adverse landscape and visual effects may be minimised through appropriate siting of infrastructure within that site, design including colours and materials, and landscaping schemes, depending on the size and type of the proposed project. Materials and designs of buildings should always be given careful consideration."	Paragraph 5.9.22 (refer to Paragraph 5.10.24 of Draft NPS)	Refer to Section 29.3.3 for information on mitigation.
EN-3 for Renewable Energy Infrastructure		
"Proposals for renewable energy infrastructure should demonstrate good design in respect of landscape and visual amenity, and in the design of the project to mitigate impacts such as noise and effects on ecology."	Paragraph 2.4.2 (refer to same paragraph for Draft NPS)	Refer to Section 29.3.3 for information on mitigation.
Relevant guidance should be followed including, but not limited to seascape character assessments and marine plan seascape character assessments (e.g., northeast marine plan). Some applications for offshore wind farms that are submitted to the Secretary of State will be proposed at distances that mean that a project would not be visible from the shore. In these instances, the Secretary of State is likely to be able to conclude that an SLVIA will not be required."	Paragraph 2.35.3 of Draft NPS EN-3	Baseline seascape assessments referenced in Section 29.5.

29.4.1.2 Other legislation, policy and guidance

20. Further to the NPS described above, the following policy and guidance have been considered in carrying out this assessment:

- East Suffolk Council (adopted 2020). Suffolk Coastal Local Plan;
- Tendring District Council (2013-2033). Local Plan;
- Thanet District Council (adopted 2020). Local Plan;
- Planning Inspectorate (2018). Advice Note Nine: Rochdale Envelope;
- Landscape Institute and IEMA (2013). Guidelines for Landscape and Visual Impact Assessment, 3rd Edition (GLVIA3);
- LDA Design (2016). Natural Beauty and Special Qualities of the Suffolk Coast and Heaths AONB;
- Suffolk Coasts and Heath AONB Partnership (2015). Development in the setting of the Suffolk Coast and Heaths AONB;
- Natural England (2012). An Approach to Seascape Character Assessment;

- Natural England (2014). An Approach to Landscape Character Assessment;
- Landscape Institute (2021). Assessing the Value of Landscapes outside National Designations, The Technical Guidance Note (TGN) 02-21;
- NatureScot (2021). Assessing the cumulative impact of onshore wind energy developments[1];
- Landscape Institute (2019). Visual representation of Development Proposals, Technical Guidance Note 06/19; and
- Scottish Natural Heritage (SNH, now NatureScot) (2017) Visual Representation of Wind Farms, Guidance (Version 2.2)[1].

29.4.2 Data sources

29.4.2.1 Site specific

21. To provide site specific and up to date information on which to base the impact assessment, a site characterisation survey and visits to viewpoints was carried out between November 2021 and July 2022.

29.4.2.2 Other available sources

22. The following information sources have been referred to in carrying out this assessment:

- White Consultants (2020). Suffolk Seascape Sensitivity to Offshore Wind Farms. Suffolk County Council and Suffolk Coast and Heaths AONB Partnership;
- Marine Management Organisation (MMO) (2018). Seascape Character Assessment for the South East Inshore marine plan area;
- MMO (2012). Seascape character area assessment East Inshore and East Offshore marine plan area;
- Natural England (2014). National Character Area Profiles;
- Suffolk Coast and Heaths AONB. Suffolk Coast and Heaths Area of Outstanding Natural Beauty Management Plan 2018 -2023;
- Land Use Consultants (2001). Tendring District Landscape Character Assessment. Prepared for Tendring District Council;
- Alison Farmer Associates (2018). Suffolk Coastal Landscape Character Assessment. Suffolk Coastal District Council;
- LUC (2017). Thanet District Council Landscape Character Assessment;
- Ordnance Survey (OS) maps at a range of scales;
- OS digital terrain model (DTM) datasets; and

[1] The SNH / NatureScot guidance documents provide industry standard best practice guidance for assessing the cumulative effect of wind farms and preparing wind farm visualisations, which can also be applied to projects based in England.

- Aerial and street-level photography available online.

29.4.2 Impact assessment methodology

23. The significance of the potential effects of the Offshore Above-sea Development has been determined by professional consideration of the sensitivity of the receptor and the magnitude of the potential impact. The methodology is in accordance with the guidance set out in Guidelines for Landscape and Visual Impact Assessment (3rd Edition), and as such slightly differs to the approach taken by other topic specialists as presented in the PEIR.

29.4.2.1 Sensitivity of receptors

24. The sensitivity of the baseline conditions, including the importance of environmental features across the study area or the sensitivity of potentially affected receptors, has been assessed in line with best practice guidance, legislation, statutory designations and professional judgement.

25. Judgements regarding the sensitivity of seascape, landscape or visual receptors require consideration of both the susceptibility of the receptor to the type of development proposed and the value attached to the seascape, landscape or visual resource. Judgements have been recorded as high, medium or low. Detailed information about the approach to assessment of sensitivity is provided in Appendix 29.1 (Volume III).

29.4.2.2 Magnitude of impact

26. The magnitude of potential impacts (magnitude of change) has been identified through consideration of the degree of change to baseline conditions predicted as a result of the Offshore Above-sea Development, the duration and reversibility of an impact. This professional judgement has been made in line with best practice guidance.

27. Judgements regarding the magnitude of seascape, landscape or visual change have been recorded as high, medium, low or negligible and combine an assessment of the scale and geographical extent of the seascape, landscape or visual impact, its duration and reversibility. Detailed information about the approach to assessment of magnitude is provided in Appendix 29.1 (Volume III).

29.4.2.3 Significance of effect

28. The sensitivity of the seascape, landscape or visual receptor and the magnitude of the predicted impacts (magnitude of change) has been used as a guide, informed by professional judgement, to predict the significance of the likely effects.

29. Appendix 29.1 (Volume III) provides full details of the criteria considered in judging the identified aspects of sensitivity (susceptibility and value) and magnitude of change (scale, geographical extent, duration and reversibility), and the grades used to describe each.

30. Although a numerical or formal weighting system has not been applied, consideration of the relative importance of each aspect has been made to feed into the overall decision. Effect significance has been identified as negligible,

minor, moderate or major, where moderate and major effects are considered significant in the context of the EIA Regulations.

31. This determination requires the application of professional judgement and experience to take on board the many different variables which need to be considered, and which are given different weight according to site-specific and location-specific considerations in every instance. Judgements have been made on a case by case basis, guided by the principles set out in Figure 1.1 in Appendix 29.1 (Volume III).

32. In terms of the direction of effects (positive or adverse) there is a wide spectrum of opinion with regard to wind energy development. Taking a precautionary stance, effects are assumed to be adverse, unless stated otherwise.

29.4.3 Cumulative effects assessment methodology

33. The Cumulative SLVIA (CSLVIA) considers the potential effects of the addition of a proposed development, against a landscape baseline that includes offshore wind farms that may or may not be present in the landscape in the future, i.e. schemes that are consented but not yet built, and/or undetermined planning applications. The developments included in each scenario are assumed to be present in the landscape for the purposes of the CSLVIA. The cumulative assessment focuses on operational interactions between the Offshore Above-sea Development and other offshore wind farms (consented and proposed). Cumulative interactions with other offshore activity, such as additional vessels associated with certain industries, is unlikely to be significant, due to the transient nature of these activities. Cumulative interactions with onshore projects, including onshore wind turbines and wind farms, are also unlikely to lead to significant interactions. This is due to the different landscape context and distance of the Offshore Above-sea Development from the shoreline.

34. The methodology for the CSLVIA follows that of the SLVIA, which considers the introduction of a proposed development to a baseline which includes wind farms that were operational or under construction at the time of the site specific baseline data collection (refer to Table 29.6). The scale of cumulative change considers aspects such as:

- The pattern and arrangement of developments in the seascape/ landscape or view, e.g. developments seen in one direction or part of the view (combined views), or seen in different directions (successive views in which the viewer must turn) or developments seen sequentially along a route;
- The relationship between the scale of the wind farms, including turbine size and number, and if wind farms appear balanced in views in terms of their composition, or at odds with one another; and
- The distances between developments, how they relate to each other and their distances from the viewer.

29.4.3.1 Significance of cumulative effects

35. As for a SLVIA, judging the significance of cumulative landscape and visual effects requires consideration of the sensitivity and the magnitude of impact (magnitude of change) on those receptors. Appendix 29.1 (Volume III) provides further detail.

29.4.4 Transboundary effects assessment methodology

36. The transboundary assessment considers the potential for transboundary effects to occur as a result of North Falls; either those that might arise within the Exclusive Economic Zone (EEZ) of European Economic Area (EEA) states or arising on the interests of EEA states. Chapter 6 EIA Methodology (Volume I) provides further details of the general framework and approach to the assessment of transboundary effects.

37. For SLVIA, no potential for transboundary effects have been identified in the scoping report (North Falls, 2021) or scoping opinion (Planning Inspectorate, 2021) and are therefore not considered further in this chapter.

29.4.5 Assumptions and limitations

38. No substantial information gaps have been identified during the preparation of baseline information or undertaking of the assessment, and it is considered that there is sufficient information to enable an informed decision to be taken in relation to the identification and assessment of likely significant effects on seascape, landscape, views and visual amenity.

39. With regard to offshore wind farms considered in the CSLVIA, certain cumulative offshore wind farm data has been sourced from publicly accessible locations including project scoping/ environmental report plans and from the open infrastructure website. Layouts are approximate, and any discernible slight discrepancies between cumulative wirelines and baseline photography are not sufficient to alter the reliability of the images or result in material changes.

40. The Met Office was not able to provide data on the frequency of visibility conditions. However, the assessment is based on a worst case scenario which assumes conditions of ‘very good’ to ‘excellent’ atmospheric visibility. In reality, variable weather conditions will alter (reduce) the level of visibility.

29.5 Existing environment

29.5.1 Seascape character

41. The seascape of the proposed array areas, and of the outer Thames estuary in which it lies, is characterised by human activity including offshore wind farms and shipping. Nevertheless, the seascape provides an open backdrop for seaward views from sections of the low-lying Essex, Suffolk and Kent coasts.

42. Seascape character is defined at a regional scale in the seascape assessments published by the MMO. The array areas will be within the East Anglian Shipping Waters MCA, in the East Inshore and East Offshore Marine Plan Area (MMO, 2012). The southern parts of the SLVIA study area are covered by the South East Inshore Marine Plan Area (MMO, 2018). MCAs across the SLVIA study area are mapped on Figure 29.1.4a-b (Volume II).

43. The key characteristics of the East Anglian Shipping Waters MCA, as defined in the East Inshore and East Offshore Marine Plan Area (MMO, 2012), are as follows:

- *"Dense concentration of shipping activity.*

- *Consistently deep water between 20 and 50 metres.*
- *Designated shipping routes.*
- *Visually unified and expansive open water character with few surface features.*
- *Extensive offshore commercial activities such as fishing and dredging.*
- *Large military practice area.*
- *Windfarm developments and gas fields.*
- *Important archaeological features present."*

44. Seascape character and sensitivity is defined more locally for the array areas and surrounding area in the Suffolk Seascape Sensitivity to Offshore Wind Farms report (White Consultants, 2020). This identifies seascape character zones (SCZ) and assesses their sensitivity.

45. The northern components of the operational Galloper and Greater Gabbard Wind Farms are within 'SCZ03 Greater Gabbard Environs', and the majority of the northern array area would be within this same zone.

46. The southern array area, along with the southern components of the operational Galloper and Greater Gabbard Wind Farms, fall into 'SCZ08 East Anglia Outer Offshore', with some turbines in the 'SCZ02 Suffolk Heritage Coast Offshore-South'.

47. This finer grain seascape character assessment has been referred to, to help understand seascape susceptibility. Effects on SCZs are not separately assessed.

48. Consideration of the key characteristics; influence of existing operational wind farms; and potential relationship with the Offshore Above-sea Development, are used as means of identifying which MCA require further assessment, and which MCA can be scoped out because they are unlikely to experience significant effects arising from the Offshore Above-sea Development. Details are provided in Table 29.3 below, with MCA to be included shown in bold.

Table 29.3 Marine Character Areas

MCA	Approximate Distance	Considerations to determine if MCA carried forward for detailed assessment
East Anglian Shipping Waters (MCA04)	Within	**Yes – the Offshore Above-sea Development is located in this MCA.**
Suffolk Coastal Waters (MCA 10)	12km	**Yes – the Offshore Above-sea Development is located to the east of the MCA. This MCA separates the coastal edge from the offshore waters in which the Offshore Above-sea Development is located.**
Goodwin Sands and North Dover Strait (MCA 11)	37km	No – at this distance, effects on seascape character are unlikely to be significant. Thanet Offshore Wind Farm is located between this MCA and the Offshore Above-sea Development, and influences seascape character.
Eastern English Channel Approaches (MCA 15)	30km	No – at this distance, effects on seascape character are less likely to be significant. In addition, Thanet Offshore Wind Farm is located between this MCA and the Offshore Above-sea Development, and influences seascape character.

MCA	Approximate Distance	Considerations to determine if MCA carried forward for detailed assessment
Swale, Kentish Flats and Margate Sands (MCA 16)	35km	No – at this distance, effects on seascape character are unlikely to be significant. In addition, Kentish Flats Offshore Wind Farm influences the seascape character. Thanet Offshore Wind Farm and London Array are located between this MCA and the Offshore Above-sea Development, and also influence seascape character.
Thanet Shipping Waters (MCA 17)	18km	No – Thanet Offshore Wind Farm is located in this MCA, and influences seascape character. The Offshore Above-sea Development is located over 15km to the north and will be seen in the context of outward sea based views, which have been altered by offshore wind farm development.
Essex and South Suffolk Estuaries and Coastal Waters (MCA 19)	28km	No – Gunfleet Sands Offshore Wind Farm is located in this MCA, and influences seascape character. The Offshore Above-sea Development is located beyond 25km to the north-east and will be seen in the context of outward sea based views, which have been altered by offshore wind farm development.
Thames Approaches (MCA 20)	11km	No – London Array is located in this MCA, and influences seascape character. The Offshore Above-sea Development is located beyond 10km to the north-east and will be seen in the context of outward sea based views which have been altered by offshore wind farm development.

29.5.2 Onshore landscape character

49. This section provides a description of landscape character (including constituent landscape elements), drawing on published studies, supplemented with project specific research and field work where relevant.

50. The coastline to the west of the array areas, as far north as Harwich, is part of the Greater Thames Estuary (81) National Character Area (NCA) (Natural England, 2014a). This is a "*predominantly flat, low-lying coastal landscape where extensive open spaces are dominated by the sky, and the pervasive presence of water and numerous coastal estuaries extend the maritime influence far inland*". Behind this coastal NCA is the Northern Thames Basin (111) NCA (Natural England, 2014b), described as "*a diverse area which extends from Hertfordshire in the west to the Essex coast in the east",* including the "*predominantly arable area of the Essex heathlands, with areas of urbanisation mixed in throughout."*

51. North of Harwich, the Study Area includes part of the Suffolk Coast and Heaths (82) NCA, whose "distinctive landscape character is a product of its underlying geology, shaped by the effects of the sea and the interactions of people. It is mainly flat or gently rolling […] wildlife habitats and landscape features lie in an intimate mosaic, providing great diversity in a small area."

52. NCA across the SLVIA Study Area are mapped on Figure 29.1.4a-b (Volume II).

53. There are various country and district level landscape character assessments across the counties of Suffolk, Essex and Kent which have been used to inform the baseline of the SLVIA Study Area. These are shown on Figure 29.1.5a-b (Volume II) and include:

- Suffolk County Council (2008/2011). Suffolk County Council Landscape Character Assessment;
- LUC (2001). Tendring District Landscape Character Assessment;
- LUC (2017). Thanet District Council Landscape Character Assessment;
- LUC (2020). Canterbury Landscape Character and Biodiversity Appraisal; and
- Chris Blandford Associates (2005). Colchester Borough Landscape Character Assessment.

54. Consideration of the key characteristics; influence of existing operational wind farms; and potential relationship with the Offshore Above-sea Development is used as a means of identifying which landscape character areas (LCA) or landscape character types (LCT) require further assessment, and which can be scoped out because they are unlikely to experience significant effects arising from the Offshore Above-sea Development.

55. As the Offshore Above-sea Development is an offshore wind farm, there will be no direct effects on landscape character. Where effects do occur, this will typically be in relation to perceptual landscape characteristics. For those landscapes with a strong relationship with the sea, changes in these perceptual characteristics may give rise to significant effects.

56. In the interests of providing a focused landscape character assessment, each of the county/district level landscape character assessments has been reviewed in detail. Where LCA/LCT fall inside the 60km SLVIA Study Area; have theoretical visibility (as indicated by Figure 29.1.5b, Volume II); and have perceptual characteristics in which the relationship/influence of the sea is a key component, this is identified in the Table 29.4 below. This information, alongside the overall viewing distance to the Offshore Above-sea Development, has been used to determine which LCA/LCT have been carried forward for further assessment.

Table 29.4 Landscape Character Areas/Types

LCA/ LCT	Key characteristics in which the relationship/ influence of the sea is a key component and notes on further assessment
Suffolk County Council Landscape Character Assessment	
Plateau Claylands	There are no key characteristics for this LCT in which the relationship/ influence of the sea is recognised. This LCT is not carried forward for further assessment.
Coastal dunes and shingle ridges	• "Vast, open, uncluttered landscape" This LCT is located within approximately 23km of the Offshore Above-sea Development and has key characteristics in which the relationship/ influence of the sea is recognised. **This LCT is carried forward for further assessment.**
Coastal levels	• *"The views are generally open and wide, and there is usually a profound sense of exposure, enhanced when the sea or a wide estuary is close at hand. On the inland side the rising land, and the trees on it, tend to confine the views."* This LCT is located within approximately 24km of the Offshore Above-sea Development and has key characteristics in which the relationship/ influence of the sea is recognised. **This LCT is carried forward for further assessment.**

LCA/ LCT	Key characteristics in which the relationship/ influence of the sea is a key component and notes on further assessment
Estate sandlands	There are no key characteristics for this LCT in which the relationship/ influence of the sea is recognised. This LCT is not carried forward for further assessment.
Wooded fens	There are no key characteristics for this LCT in which the relationship/ influence of the sea is recognised. This LCT is not carried forward for further assessment.
Open coastal fens	There are no key characteristics for this LCT in which the relationship/ influence of the sea is recognised. This LCT is not carried forward for further assessment.
Saltmarsh and inter-tidal flats	• *"Often these landscapes form a fringing element to the upland or costal grazing marsh, however in the larger areas of mud on the flats, such as Holbrook Bay, a powerful sense of isolation and wildness can be found."* This LCT is located within approximately 23km of the Offshore Above-sea Development and has key characteristics in which the relationship/ influence of the sea is recognised. **This LCT is carried forward for further assessment.**
Rolling estate farmlands	There are no key characteristics for this LCT in which the relationship/ influence of the sea is recognised. This LCT is not carried forward for further assessment.
Tendring District Landscape Character Assessment	
1 – Open estuarine/ coastal marsh	1C – Colne Point Marshes • *"Open coastal landscape at the mouth of the Colne Estuary.* • *Remote landscape with limited access from land."* 1D – Hamford Water Marshes • *"A cluster of boat masts at Titchmarsh Marina is a feature of the open skyline.* • *Long views across the estuarine basin from the surrounding sea walls."* 1E – Stour Estuary Marshes • *"Tidal estuary of the River Stour forming a dynamic landscape setting to the Suffolk Coast and Heaths AONB to the north.* • *Influenced by large scale shipping and activity surrounding Harwich International Port.* • *Dramatic views across the estuary to the Suffolk coast."* Whilst this LCT displays key characteristics in which the relationship/ influence of the sea is a component, due to distance (over 38km) effects on landscape character are unlikely to be significant. This LCT is not carried forward for further assessment.
2 – Drained estuarine/ coastal marsh	2B – St Osyth Drained Marshes • *"Exposed coast with a series of groynes and breakwaters to help keep sandy beaches from eroding into the sea.* • *Expansive coastal views."* 2C – Holland Haven • *"A golf course is the only built development resulting in a remote, tranquil character.* • *Long views over the landscape from the coastal sea wall and from Great Holland."* 2D – Hamford Drained Marshes and Islands • *"Expansive landscape of alluvial grasslands intercepted by reed-lines drainage ditches and scattered patches of low lying scrub."* 2E – Parkeston Drained Marshes • *"Dockside cranes at the container terminal at Parkeston dominate the skyline."*

LCA/ LCT	Key characteristics in which the relationship/ influence of the sea is a key component and notes on further assessment
	Whilst this LCT displays key characteristics in which the relationship/ influence of the sea is a component, due to distance (over 38km) effects on landscape character are unlikely to be significant. This LCT is not carried forward for further assessment.
3 – Coastal slopes	3A – Hamford Coastal Slopes 3C – St Osyth Coastal Slopes 3D – Holland Coastal Slopes There are no key characteristics for this LCT in which the relationship/ influence of the sea is recognised. This LCT is not carried forward for further assessment.
4 – Coastal ridges and peninsulas	4A – The Oakley Ridge 4B – The Naze Peninsula • *"Exposed to the North Sea where wave action and slippage is causing the Naze to erode at a rapid rate."* 4D - St Osyth Coastal Ridge • *"Open, windswept landscape with little vegetation cover and views to the coast."* Whilst this LCT displays key characteristics in which the relationship/ influence of the sea is a component, due to distance (over 38km) effects on landscape character are unlikely to be significant. This LCT is not carried forward for further assessment.
Thanet District Council Landscape Character Assessment	
F – Undeveloped Coast	F2 – Foreness Point and North Foreland • *"Long unrestricted views across the Thames Estuary and North Sea from the cliff tops and beaches, Thanet wind farm, traffic on the shipping lanes of the Channel and North Sea.* • *Strong rural, coastal character and sense of exposure along the cliffs despite proximity of adjacent urban areas."* F3 – Minnis Bay • *"Extensive views across the Thames Estuary, North Sea and adjacent marshes.* • *An exposed coast open to the full force of winds and tides from the North Sea.* • *Offshore windfarms form focal features on the skyline and combined with shipping create a busy dynamic seascape."* Whilst this LCT displays key characteristics in which the relationship/ influence of the sea is a component, due to distance (over 40km) effects on landscape character are unlikely to be significant. This LCT is not carried forward for further assessment.
G – Developed Coast	G2 – North Thanet Coast • *"Long unrestricted views across the Thames Estuary and North Sea from the cliff tops and beaches, with inland views restricted by urban development.* • *Experience of stunning sunsets over the sea as depicted in Turner's paintings from this part of the coast, and commemorated in the Turner Contemporary Gallery at Margate.* • *Offshore views to numerous wind farms, traffic on the shipping lanes and ships sheltering on the Margate Roads before joining the shipping lanes of the Channel and North Sea."* Whilst this LCT displays key characteristics in which the relationship/ influence of the sea is a component, due to distance (over 40km) effects on landscape character are unlikely to be significant. This LCT is not carried forward for further assessment.

LCA/ LCT	Key characteristics in which the relationship/ influence of the sea is a key component and notes on further assessment
Canterbury Landscape Character Assessment and Biodiversity Appraisal	
A – Open coastal edge	A1 – Beltinge Coast • *"Extensive sea views west and north-west to Sheppey and Essex and east along the coast to landmark Reculver Towers.* • *Views out to sea include offshore windfarms and historic Maunsell Forts.* • *An exposed coastal landscape, with a strong connection to the sea, and associated sense of relative remoteness."* A2 – Swalecliffe Coast • *"Open coastline with shingle beach and extensive mudflats uncovered at low tide. The shingle spit at Long Rock is a key feature.* • *Coastal and sea views to Sheppey, Essex, the Kentish Flats Wind Farm and along the coast to Whitstable and Herne Bay."* Whilst this LCT displays key characteristics in which the relationship/ influence of the sea is a component, due to distance (over 50km) effects on landscape character are unlikely to be significant. This LCT is not carried forward for further assessment.
B – Coastal and inland marshes	B4 – Reculver Coastal Marshes • *"A remote and isolated landscape."* Whilst this LCT displays key characteristics in which the relationship/ influence of the sea as a component, due to distance (over 50km) effects on landscape character are unlikely to be significant. This LCT is not carried forward for further assessment.
C – Coastal hinterland	C1 – Chestfield Gap and Green Hill C5 – Hillborogh Arable Farmlands Due to distance (over 50km from the Offshore Above-sea Development) and lack of key characteristics in which the relationship with the sea is a key factor, effects on landscape character are unlikely to be significant. This LCT is not carried forward for further assessment.
Colchester District Council Landscape Character Assessment	
C – Estuarine marsh/ mudflats	C3 – West Mersea Estuarine Marsh/ Mudflats • *"Inter-tidal landscape, is constantly washed by the sea which provides movement.* • *Sense of remoteness and tranquillity.* • *Wide, open panoramic views across the Blackwater estuary, with sea and sky dominant on the horizon."* Whilst this LCT displays key characteristics in which the relationship/ influence of the sea is a component, due to distance (over 50km) effects on landscape character are unlikely to be significant. This LCT is not carried forward for further assessment.

29.5.3 Landscape designations

57. The Suffolk coast to the north-west of the proposed array areas is part of the Suffolk Coast and Heaths AONB and Suffolk Heritage Coast. These designations extend from Felixstowe north towards Lowestoft (refer to Figure 29.1.6a-b, Volume II).

58. The special qualities of the AONB are set out in the AONB Management Plan (Suffolk Coast and Heaths AONB 2018) and include the landscape and scenic qualities of the area, and its relative wildness. A detailed assessment of effects

on the landscape and scenic qualities of the Suffolk Coast and Heaths AONB is provided. Effects on the Suffolk Heritage Coast are considered in more detail in the Cultural Heritage Assessment, refer to Chapter 25 (Volume I).

59. There are no relevant local landscape designations in East Suffolk, Tendring or Thanet which require detailed assessment.

29.5.4 Visual amenity

60. This section identifies the extent of potential visibility of the Offshore Above-sea Development and identifies visual receptors who may be affected, and which are assessed as part of the SLVIA. This section also introduces the viewpoints that are used as representative points from which to assess effects on visual receptors (people) and particular views, including reasons for their selection.

29.5.4.1 Analysis of visibility of the development

61. Figures 29.1.2a-b and 29.1.3a-b (Volume II) shows the theoretical visibility of the Offshore Above-sea Development to maximum wind turbine blade tip height (401m) and hub height (232.5m) respectively.

62. The ZTV indicates that across the Study Area theoretical visibility of the Offshore Above-sea Development is widespread offshore, as would be expected from the open water. Visibility is also widespread along the coastal edge, across the SLVIA Study Area, with some notable areas of visual shadow to the coastal edge south of Ramsgate and north of Lowestoft. In terms of inland areas, the pattern of visibility is more fragmented, and actual visibility will likely be much reduced from more inland flatter coastal areas where vegetation and buildings will combine to reduce visibility.

63. The coastline north of Felixstowe, within the AONB, is generally undeveloped, with smaller settlements such as Aldeburgh and limited tourism development. The low-lying coast has sand and shingle beaches, and the notable expanse of Orford Ness, a long shingle spit hosting defence installations. Estuaries and creeks extend inland, with a mix of pasture, arable and remnant heath between.

64. Between the Thames estuary and Felixstowe, the Essex coastline is more developed, including the seaside towns of Felixstowe, Harwich, Frinton-on Sea and Clacton-on-Sea. These towns have popular seafronts, promenades, piers and beaches, from which sea views are a key element of the experience. Between these settlements are more rural or undeveloped coasts, including the creeks and islands of Hamford Water National Nature Reserve, and the headland of The Naze. Public footpaths and cycleways give access to these more rural locations.

65. South of the Thames estuary, in Kent, seaside towns along the northern coastline include Herne Bay, Westgate-on-Sea and Margate. These towns offer coastal views north and north-east towards the wind farm area.

29.5.4.2 Key visual receptors

66. Potential visual receptors include:

- Residents, including views from isolated coastal properties and coastal settlements;
- Road users (including tourists);

- Those engaged in recreational activities (e.g. walkers using coastal paths, cyclists and recreational users of the coastline); and
- People at their place of work, including agricultural workers.

29.5.4.3 Selection of viewpoints for assessment

67. This section sets out the viewpoints that are used to represent and assess the visual effects of the Offshore Above-sea Development. The viewpoint list is a representative selection of locations agreed with the statutory consultees; it is not an exhaustive list of locations from which the Offshore Above-sea Development will be visible.

68. A total of 17 viewpoints (of which 16 have been provided as photomontage visualisations and one as a wireline only visualisation) were selected across the 60km Study Area through desk study, site work and discussions with statutory consultees. These viewpoints are all publicly accessible as advocated by GLVIA3 and include:

- Locations selected to represent the experience of different types of receptor;
- Locations at different distances to provide a representative range of viewing angles and distances (i.e. shorter to longer distance views);
- Locations which illustrate key cumulative interactions with other existing, consented and/or proposed wind farms (either in combination or succession);
- Locations which represent a range of viewing experiences (i.e. static views and points along sequential routes);
- Specific viewpoints selected because they represent promoted views or viewpoints within the landscape; and
- Illustrative viewpoints chosen specifically to demonstrate a particular visual effect or specific issue (which could include restricted visibility in particular locations or effects from coastal settlements).

69. The viewpoints are listed in Table 29.5 and shown alongside the blade tip height ZTV on Figure 29.1.2 (Volume II). Certain viewpoints have also been selected to help understand effects associated with turbine lighting, as outlined in the table below.

Table 29.5 SLVIA assessment viewpoints

Viewpoint	Location	Grid Reference	Reason for selection
1	Covehithe	652337E 281100N	Inspectorate request. Included as main SLVIA assessment viewpoint to consider residential receptors from this small coastal settlement, and recreational users of the coast in this area.
2	Southwold Pier	651350E 276621N	Inspectorate and East Suffolk Council request. Included to represent tourism and residential receptors in this coastal settlement. Note: this viewpoint also represents views from Gunhill in Southwold, as this was requested by the Planning Inspectorate but excluded as equivalent to Southwold Pier.

Viewpoint	Location	Grid Reference	Reason for selection
3	Dunwich Coastguard Cottages	647769E 267687N	Inspectorate and East Suffolk Council request. Included as main SLVIA assessment viewpoint to represent residential receptors, and recreational receptors using the coast in this area.
4	Sizewell Beach	647602E 262883N	Inspectorate and East Suffolk Council request. Included as main SLVIA assessment viewpoint to represent recreational receptors of the coast in this area.
5	Cliffs above Thorpeness	647580E 260335N	Inspectorate and East Suffolk Council request. Included as main SLVIA assessment viewpoint to represent recreational receptors of the coast in this area.
6	Aldeburgh	646522E 256453N	Included as main SLVIA and night-time assessment viewpoint to consider effects on the coastal settlement.
7	Orford Castle	641966E 249816N	Included as main SLVIA assessment viewpoint to consider effects on recreational receptors visiting the castle. Also representative of slightly inland views from the settlement of Orford.
8	Orford Ness	644551E 248769N	Included as main SLVIA assessment viewpoint to consider effects on recreational receptors visiting the lighthouse and surrounding coastline.
9	Shingle Street	636652E 242526N	Natural England request. Included as main SLVIA assessment viewpoint to consider residential receptors from this small coastal settlement, and recreational users of the coast in this area.
10	Pulhamite Cliffs (Bawdsey Manor)	633373E 237651N	Natural England and East Suffolk Council Request. Included as main SLVIA assessment viewpoint to consider effects on visitors to Bawdsey Manor, and recreational users of the coast in this area.
11	Felixstowe Seafront Gardens	630540E 234432N	Inspectorate and East Suffolk Council request. Included as main SLVIA and night-time assessment viewpoint to consider effects on the coastal settlement, and recreational users of the seafront gardens.
12	Landguard Fort	628580E 231878N	East Suffolk Council Request. Include as main LVIA assessment viewpoint to represent effects on recreational receptors at this costal heritage feature.
13	Naze Tower	626531E 223524N	Inspectorate and Essex County Council request. Included as main SLVIA assessment viewpoint to consider effects on recreational receptors visiting the tower. Note: this viewpoint also represents views from Walton Pier, as this was requested by the Planning Inspectorate but excluded as equivalent to Naze Tower.

Viewpoint	Location	Grid Reference	Reason for selection
14	Frinton-on-Sea	623636E 219029N	Included as main SLVIA assessment viewpoint to consider effects for recreational users of the coast (and residential receptors) in Frinton on Sea. Similar views can be experienced from Frinton Golf Club.
15	Clacton-on-Sea	617880E 214223N	Included as main SLVIA and night-time assessment viewpoint to consider effects on the coastal settlement.
16	North Foreland	639238E 171118N	Included as main SLVIA and night-time assessment viewpoint to consider effects on the coastal settlement of North Foreland and Margate.
Wireline Only Visualisations			
17	Coastal Path between Thorpeness and Sizewell	647624E 261190N	Natural England Request. Included as indicative (wireline only) viewpoint to help understand sequential effects from this coastal route.

29.5.4.4 Routes

70. Visibility from a route is not uniform along its entire length. This is because views of the surrounding seascape/ landscape change as one moves along the route depending on the surrounding topography, buildings, structures, tree cover and vegetation along the route.

71. As requested through the scoping opinion, sequential effects from the Suffolk / England Coast Path have been considered in this assessment. Theoretical visibility of the Offshore Above-sea Development from this route is illustrated on Figure 29.1.2 (Volume II).

29.5.5 Other offshore wind farm development

29.5.5.1 Existing offshore wind farm development

72. There are a number of operational wind farms located across the Study Area, as shown on Figure 29.1.8 (Volume II). Operational wind farms, as listed in Table 29.6 below, are included as part of the baseline for the SLVIA and considered as part of the primary SLVIA assessment.

Table 29.6 Existing offshore wind farm developments

Approximate Distance (km)	Name	Status	Number of WTG	Blade Tip Height (m)
Adjacent	Greater Gabbard	Operational	140	131
Adjacent	Galloper	Operational	56	180.5
20km	London Array - Phase 1	Operational	175	147
Within 30km	Thanet	Operational	100	115
Within 40km	Gunfleet Sands - Phase 1 and 2	Operational	48	129

Approximate Distance (km)	Name	Status	Number of WTG	Blade Tip Height (m)
Within 50km	Gunfleet Sands - Phase 3 Demonstration Project	Operational	2	144
Within 60km	Kentish Flats	Operational	30	115
Within 60km	Kentish Flats Extension	Operational	16	139.6
40km	East Anglia One	Operational	102	167

29.5.6 Future trends in baseline conditions and cumulative effects assessment

73. There are a number of consented and proposed projects, including onshore projects, across the 60km SLVIA study area. In the absence of the Project being developed, it is likely that consented offshore wind farms will become operational and certain proposed offshore wind farms may also become operational. Chapter 30 (Volume I) considers the cumulative interactions between the onshore components of the North Falls Project, and onshore consented and proposed projects. For the offshore components of the North Falls Project, the cumulative assessment focuses on offshore wind farms. It is these types of projects which are more likely to result in significant cumulative interactions. Consented offshore wind farms and offshore wind farms currently in the planning system are considered as part of the assessment of potential future cumulative effects (in a theoretical future baseline) and included in the CSLVIA.

74. In accordance with SNH (now NatureScot) guidance, the scope for the assessment of cumulative landscape and visual effects includes consented wind farms and wind farm proposals within a 60km radius search area from the Offshore Above-sea Development. As noted above, only offshore wind farms are being considered.

75. The assessment of effects focuses on developments that are likely to give rise to significant cumulative effects, and concentrates on the relationship between the Offshore Above-sea Development with consented and proposed offshore wind farm developments (i.e. developments which have submitted a request for EIA screening and/or scoping; developments with a valid application; or awaiting determination following appeal/public inquiry; see Table 29.7).

76. There are a small number of onshore wind farms in the study area. However, these tend to be located at more inland locations, offset west from the coastal edge. The potential for significant cumulative interactions between these schemes and the Offshore Above-sea Development is judged to be limited. As such, the cumulative assessment focused on the relationship with other offshore wind farms, across the SLVIA Study Area.

77. A cut-off date of 31 December 2022 was applied for the inclusion of developments within the cumulative assessment (see Table 29.7 below).

Table 29.7 Offshore wind farm developments (consented and proposed)

Distance (km)[2]	Name	Status	Number of WTG	Blade Tip Height (m)
Consented (included in cumulative assessment)				
Within 40km	East Anglia One North	Consented	40	282
Within 20km	East Anglia Two	Consented	60	282
Proposed (included in cumulative assessment)				
Within 5km	Five Estuaries	Pre Application Note: in March 2023 the PEIR for this scheme was submitted. The offshore wind farm layout is based on a maximum turbine height of up to 420m, above MHWS, with 41 No. turbines. Whilst there are differences between the PEIR layout and the scoping layout (as considered in this chapters cumulative assessment) the difference is not likely to result in different findings, as reported in the cumulative assessment of this chapter. The updated boundary will be used in the final North Falls SLVIA cumulative assessment, to be submitted with the Development Consent Order (DCO) application.	47	397 (above MHWS)

78. It should be noted that the cumulative situation is constantly evolving, and there may be changes to the status or list of wind energy developments considered between carrying out the assessment and the determination of the application. Unless there are substantial changes to proposals that will materially alter the pattern of cumulative development (such as the addition of a large offshore wind

[2] Approximate distance between the centre point of the Offshore Development and the centre point of the wind energy development listed.

farm located close to the Offshore Above-sea Development), it is considered that the cumulative assessment undertaken will remain relevant.

79. Given the varied status, and therefore certainty, associated with un-built wind farms across the Study Area the CSLVIA is structured so as to report on two potential development scenarios:

- Scenario 1: Higher level of certainty: the addition of the Offshore Above-sea development to a baseline with operational, under construction and consented wind farms; and
- Scenario 2: Lower level of certainty: the addition of the Offshore Above-sea development to a baseline with operational, under construction and consented wind farms, and undetermined proposals (including the pre application Five Estuaries).

80. The CSLVIA has focused on the assessment of 'additional' cumulative effects, i.e. the effect of adding the Offshore Above-sea Development to a baseline of other built wind farms. Where the additional effect is found to be not significant, the effect experienced by the receptor would remain the same as in the primary assessment of the North Falls Project.

81. Where 'total' cumulative effects (i.e. assessment which considers the effects if all current, past and future proposals are deemed present, including the North Falls Project) are considered to be significant, then reference is also made to these.

82. Combined ZTVs (refer to Figures 29.1.9a-b, Volume II) for other wind farms have been prepared to show where ZTVs overlap and where cumulative views may occur. This includes combined views – two wind farms seen at the same time in a similar direction; and successive views - two wind farms seen from the same location but in different directions (the viewer must turn round to view the different wind farms). The ZTVs also indicate where developments may be seen sequentially along a route.

29.6 Assessment of significance

83. The assessment of seascape, landscape and visual effects (including cumulative) follows the methodology presented in this chapter and detailed in Appendix 29.1 (Volume III), and is based upon the project description outlined in Chapter 5 (Volume I). The seascape assessment reports on construction, operational and decommissioning effects separately.

29.6.1 Potential effects during construction

29.6.1.1 Effects on seascape during construction

84. The majority of seascape effects which will occur during the construction phase will be short-term, largely reversible and transient, limited to the array areas and offshore cable corridor along with vessel movements outside the Project boundaries and near the landfall. The main exception to this is construction of the proposed turbines. However, seascape effects arising from the presence of partially constructed turbines will be comparable to the operational effects (although arguably to a lesser degree as construction-related effects will be of

a shorter duration and transient in nature). Therefore, effects arising from the introduction of partially constructed turbines are not anticipated to be greater than operational effects, discussed below. Construction effects are not therefore considered separately, and it can be assumed that the assessed operational effects would also occur during the latter stages of the construction phase.

29.6.1.2 Effects on landscape during construction

85. The majority of effects on onshore landscape character during the construction phase will be short-term and reversible, limited to the influence of more or less distant views of construction work taking place within the array areas and offshore cable corridor. Effects on landscape character arising from the presence of construction works and partially constructed turbines will be comparable to the operational effects (although arguably to a lesser degree as construction-related effects will be of a shorter duration and transient in nature). Therefore, effects arising from the introduction of partially constructed turbines are not anticipated to be greater than operational effects, discussed below. Construction stage effects are not assessed separately, and it can be assumed that the assessed operational effects would also occur during the latter stages of the construction phase.

29.6.1.3 Visual impacts during construction

86. The majority of visual effects which will occur during the construction phase will be short-term and reversible, limited to the array area and offshore cable. The main exception to this is construction of the proposed turbines. However, visual effects arising from the presence of partially constructed turbines will be comparable to the operational effects (although arguably to a lesser degree as construction-related effects will be of a shorter duration and transient in nature). Therefore, effects arising from the introduction of partially constructed turbines are not anticipated to be greater than operational effects, discussed below. Construction effects are not separately assessed, and it can be assumed that the assessed operational effects would also occur during the latter stages of the construction phase.

29.6.2 Potential effects during operation and maintenance

29.6.2.1 Effects on seascape during operation and maintenance

87. This section describes the operational effects resulting from the Offshore Above-sea Development on the MCA, which have been identified as requiring detailed consideration in Table 29.3. Further information on key characteristics of each MCA is provided for each receptor below.

88. All operational effects are considered to be long-term, reversible and adverse unless stated otherwise.

89. Interactions with operational offshore wind farms (refer to Section 29.5.5) are considered in the primary assessment, when arriving at overall judgements on seascape effects.

90. The cumulative assessment considers the consented and proposed offshore wind farms listed in Table 29.7, in terms of the scenarios described at paragraph 79.

Table 29.8 East Anglian Shipping Waters Marine Character Area

Receptor	East Anglian Shipping Waters Marine Character Area (MCA)
Baseline Description	The key characteristics of the East Anglian Shipping Waters MCA, as identified in the Seascape Character Area Assessment East Inshore and Offshore Marine Plan Area (MMO, 2012), are as follows: • *"Dense concentration of shipping activity.* • *Consistently deep water between 20 and 50 metres.* • *Designated shipping routes.* • *Visually unified and expansive open water character with few surface features.* • *Extensive offshore commercial activities such as fishing and dredging.* • *Large military practice area.* • *Windfarm developments and gas fields.* • *Important archaeological features present."*
Sensitivity	The Suffolk Seascape Sensitivity to Offshore Wind Farms (White Consultants, 2020) report identifies the following seascape character zones in/ near edges of this marine character area: • SCZ01 – Suffolk and Heritage Coast Inshore – South; • SCZ02 - Suffolk and Heritage Coast Offshore – South; • SCZ03 – Greater Gabbard Environs; • SCZ04 - Suffolk and Heritage Coast Inshore – North; • SCZ05 - Suffolk and Heritage Coast Offshore – North; • SCZ08 – Outer Offshore. The sensitivity of these SCZ ranges between high/ medium-high nearer the coastal edge, to medium-low for offshore waters further east. The overall susceptibility of the East Anglian Shipping Waters is judged to be medium. In terms of value, there are no designations across the MCA. The MCA provides a distant seascape setting in views east from the Suffolk Coast and Heaths AONB, which increases value. The overall sensitivity is judged to be medium.
Magnitude of Change	The Offshore Above-sea Development is located in this MCA. Due to the open nature of sea based views, the ZTV (refer to Figure 29.1.4b, Volume II) indicates widespread visibility across the MCA. The Offshore Above-sea Development is located in a seascape where existing offshore wind farms (including Galloper, Greater Gabbard and East Anglia One) influence seascape character. The Offshore Above-sea Development will extend the influence of offshore wind farms introducing larger turbines to the north of Greater Gabbard (through the introduction of the northern array area of 7 turbines) and the south of Galloper Wind Farm (through the introduction of the southern array area of 33 turbines). This will further alter the '*expansive open water character*', across parts of the MCA. This is judged to result in large to medium scale of change within 30km, which reduces with distance. From areas of the MCA beyond 30km, the increased viewing distance will result in the Offshore Above-sea Development having a smaller influence on seascape character. These effects will intensify and extend the effects of offshore wind farms across East Anglian Shipping Waters MCA to the north, west and south of the existing Galloper and Greater Gabbard offshore wind farms, within 30km. The existing Galloper and Greater Gabbard offshore wind farms have altered the character of the MCA to the east of the Offshore Above-sea Development, and this is recognised in the key characteristics of the MCA.

Receptor	East Anglian Shipping Waters Marine Character Area (MCA)
	The overall magnitude of change will be high to medium (within 30km) and reducing with distance.
Effect significance	**Major reducing to moderate adverse, which is significant in EIA terms, effects are predicted on the offshore seascape character of the MCA to the north, west and south of the existing Galloper and Greater Gabbard offshore wind farms, within 30km.** Beyond this, effects are judged to fall below the threshold of significance.
Cumulative Effects	Under Scenario 1 East Anglia One North and East Anglia Two (both consented) will extend and intensify the influence of offshore wind turbines in this MCA to the north and south-west of East Anglia One. Under Scenario 2, and in addition to the impacts from East Anglia One North and East Anglia Two, Five Estuaries will extend and intensify the influence of offshore wind turbines in this MCA to the east of the Galloper and Greater Gabbard offshore cluster. Under both scenarios the Offshore Above-sea Development will extend and intensify the influence of offshore wind turbines in this MCA to the west of the Galloper and Greater Gabbard offshore cluster (both operational schemes considered in the assessment of primary seascape effects). Consented and proposed offshore wind farms will reduce gaps between, and intensify the effects of, offshore wind farm clusters across this MCA, to the north-east of the Galloper and Greater Gabbard offshore cluster. As the Offshore Above-sea Development is located to the west of this operational cluster (also considered in the primary assessment), the Offshore Above-sea Development will not result in any further coalescence between offshore schemes across this MCA. **As such, the additional cumulative scale of change will be small. Effects will reflect those as identified in the primary assessment (major reducing to moderate adverse effects are predicted on the offshore seascape character of the MCA to the north, west and south of the existing Galloper and Greater Gabbard offshore wind farms, within 30km).** **In terms of 'total' cumulative effects, these are predicted to be significant (major) for the East Anglia Shipping Waters MCA, particularly under scenario 2 and due to the number and geographical spread of offshore wind farms across this MCA. However, this would likely be the case even without the Offshore Above-sea Development in the cumulative picture.**

Table 29.9 Suffolk Coastal Waters MCA

Receptor	Suffolk Coastal Waters MCA
Baseline Description	The key characteristics of the Suffolk Coastal Waters, as identified in the Seascape Character Area Assessment East Inshore and Offshore Marine Plan Area (MMO, 2012), are as follows: • *"A rich mixture of unique coastal lowland landscapes some of which submerged.* • *Estuaries characterised by wildlife-rich salt-marsh and mudflat, with significant reclaimed freshwater marshes protected by earth-bank river walls.* • *Estuaries bustling with recreational water craft.* • *Low-lying coastline dominated by coastal processes and estuarine influences.* • *Characterised by a nationally significant concentration of vegetated shingle structures, soft cliffs and coastal lagoon habitats with open sloping beaches.* • *Colourful seafront town coastlines lined by brightly painted beach huts in some places.*

Receptor	Suffolk Coastal Waters MCA
	• *Dramatic and contrasting developments such as Sizewell nuclear power station, Orford Ness transmitting station and commercial port development at Felixstowe.* • *Historic military defence of the coastline, leaving a number of associated structures.* • *Large scale panoramic views of the seascape dominated by busy offshore North Sea shipping waters including static vessels.* • *Important archaeological features present.* • *A strong fishing heritage in terms of small fleets.* • *Rapidly eroding low clifflines and shrinking saltmarshes.* • *Long distance coastal footpath (Suffolk Coast Path)".*
Sensitivity	The Suffolk Seascape Sensitivity to Offshore Wind Farms (White Consultants, 2020) report identifies the following seascape character zones in/ near edges of this marine character area: • SCZ01 – Suffolk and Heritage Coast Inshore – South; and • SCZ04 - Suffolk and Heritage Coast Inshore – North. The sensitivity of these SCZ is high to high-medium. The overall susceptibility of the Suffolk Coastal Waters is judged to be medium-high. In terms of value, large sections of the coastal edge are designated as AONB and Heritage Coast, indicating a higher value. The overall sensitivity is judged to be high.
Magnitude of Change	The Offshore Above-sea Development is located to the east of this MCA. There will be no direct effects on the MCA. Due to the open nature of sea based views, the ZTV (refer to Figure 29.1.4b, Volume II) indicates widespread visibility across the MCA. The Offshore Above-sea Development is located in a seascape where existing offshore wind farms (including Galloper, Greater Gabbard and East Anglia One) influence outwards views and seascape character. The Offshore Above-sea Development will extend the influence of offshore wind farms introducing larger turbines to the north of Greater Gabbard (through the introduction of the northern array area of 7 turbines) and the south of Galloper Wind Farm (through the introduction of the southern array area of 33 turbines). This will further alter marine characteristics including: • *Low-lying coastline dominated by coastal processes and estuarine influences.* • *Large scale panoramic views of the seascape dominated by busy offshore North Sea shipping waters including static vessels.* As noted in the MCA description, 'dramatic and contrasting developments' are a feature of this MCA. As such, the Offshore Above-sea Development will add further 'dramatic and contrasting developments' into outward views from the MCA. This is judged to result in large to medium scale of change within 30km, which reduces with distance. These effects will intensify and extend the effects of offshore wind farms across Suffolk Coastal Waters to the west of the existing Galloper and Greater Gabbard offshore wind farms, within 30km, and along the coastal edge between Sizewell and Bawdsey Manor. The overall magnitude of change will be high to medium (within 30km), reducing with distance.

Receptor	Suffolk Coastal Waters MCA
Effect significance	**Major reducing to moderate adverse, which is significant in EIA terms, effects on seascape and coastal character are predicted across the MCA to the west of the existing Galloper and Greater Gabbard offshore wind farms, within 30km, and along the coastal edge between Sizewell and Bawdsey Manor.** Beyond this, effects are judged to fall below the threshold of significance.
Cumulative Effects	There are no consented or proposed offshore wind farms within this MCA. Under Scenario 1 East Anglia One North and East Anglia 2 (both consented) will extend and intensify the influence of offshore wind turbines seen in offshore waters in large scale views outside and to the east of this MCA. Under Scenario 2, and in addition to the impacts from East Anglia One North and East Anglia Two, Five Estuaries will extend and intensify the influence of offshore wind turbines seen in offshore waters in large scale views outside and to the east of this MCA. Under both scenarios the Offshore Above-sea Development will extend and intensify the influence of offshore wind turbines, seen in large scale views outside and to the east of this MCA. This will be seen in the context of a more developed seascape which includes Galloper, Greater Gabbard and East Anglia One Offshore Wind Farms (which have been considered in the primary seascape assessment for this MCA). Significant effects have been identified in the primary assessment from this MCA, and these will carry though into the cumulative assessment. In terms of 'additional' cumulative effects, offshore wind farms have already altered large scale and typically longer distance sea based views outside this MCA, and this is recognised in the key characteristics of this MCA. The intensity of offshore wind farms in views outside this MCA will increase under a future theoretical cumulative baseline, with further offshore wind farms seen beyond the closer proximity Galloper and Greater Gabbard offshore wind farms, in views outside the MCA. The Offshore Above-sea Development will continue to be seen in this context, of outward views which have been altered by offshore wind farms. **The 'additional' cumulative scale of change will be small. As such, effects on seascape character will be similar to those identified in the primary seascape assessment (major reducing to moderate adverse, within 30km, and not significant beyond this).** **In terms of 'total' cumulative effects, the potential for these to be significant (major to moderate adverse) particularly under scenario 2 and in clear weather conditions is recognised. This is due to the number and geographical spread of offshore wind farms visible to the east of this MCA. However, this would likely be the case even without the Offshore Above-sea Development in the cumulative picture.**

29.6.2.2 Effects on landscape during operation and maintenance

29.6.2.2.1 Operational effects on landscape character

91. This section describes the operational effects resulting from the Offshore Above-sea Development on Landscape Character Areas and Types (LCA/ LCT) which have been identified as requiring detailed consideration in Table 29.4.

92. All operational effects are considered to be long-term, reversible and adverse unless stated otherwise.

93. Interactions with operational and under-construction offshore wind farms are considered in the primary assessment, when arriving at overall judgements on landscape effects.

94. All landscape effects, including cumulative effects, will be indirect, as changes considered in this assessment all relate to offshore wind farms.

95. The cumulative assessment considers a worst case scenario in which all operational, consented and proposed offshore wind farms are present across the 60km SLVIA Study Area.

Table 29.10 Coastal dunes and shingle ridges

Receptor	Suffolk County Council Landscape Character Assessment Coastal dunes and shingle ridges
Baseline Description	This LCT occurs in long narrow strips along numerous locations of the coastal edge of Suffolk (refer to Figure 29.1.5a, Volume II). The key characteristics of the LCT, are as follows: • *"Flat or gently rolling landform of sand or shingle.* • *Low fragile vegetation.* • *Vast open uncluttered landscape.* • *Historic military structures.* • *Occasional large buildings in an empty landscape.* • *Occasional fishing huts and boats on the beach.* • *Only in short stretches is there the paraphernalia of intensive tourist activity, beach huts and piers."*
Sensitivity	This is quite an open and natural landscape, with only occasional buildings, indicating a higher susceptibility to the type of development proposed. Large parts of the coastal edge of Suffolk are designated as AONB and heritage coast, indicating a higher value. The overall sensitivity is judged to be high.
Magnitude of Change	There will be no direct effects on the LCT. The Offshore Above-sea Development is located in the offshore waters beyond 20km to the south-east. Effects on the LCT will be as a result of changes to certain perceptual qualities. The ZTV (refer to Figure 29.1.5b, Volume II) identifies widespread visibility along the coastal edge of Suffolk. Given the characteristically open nature of this landscape, actual visibility will closely reflect this. Changes to the key characteristics of the LCT will be as a result of changes to views looking outside of the LCT, out to sea or along the coast. When visible, the Offshore Above-sea Development will typically be seen in the context of large scale views, with expansive areas of sea and sky. It will be seen on and beyond the horizon of sea based views. On clear days, operational wind farms including East Anglia One, Greater Gabbard and Galloper are visible in seaward views from this landscape. The Offshore Above-sea Development will introduce further elements into the seascape setting of the coastal edge. This will further alter certain perceptual qualities of the landscape, including: • *"Vast open uncluttered landscape."* The magnitude of change on this key characteristic is judged to be medium, for areas within 30km of the Offshore Above-sea Development (along the coastal edge of the coastal dunes and shingle ridges between Sizewell Beach and Bawdsey Manor) and where this LCT occurs. Beyond this, and due to the increased viewing distance, the magnitude of change will reduce.

Receptor	Suffolk County Council Landscape Character Assessment Coastal dunes and shingle ridges
Effect significance	**Moderate adverse, which is significant in EIA terms, effects predicted on certain perceptual qualities of this LCT, where this LCT occurs along the coastal edge between Sizewell Beach and Bawdsey Manor (refer to Figure 29.1.5a-b, Volume II).** Beyond this, effects on landscape character are judged to fall below the threshold of significance.
Cumulative Effects	In open, sea based views from the coastal dunes and shingles ridges and on clear days, under Scenario 1 East Anglia One North and East Anglia Two (both consented) will extend and intensify the influence of offshore wind turbines seen in offshore waters in large scale and long distance views to the east, from the coastal edge. Under Scenario 2, and in addition to the impacts from East Anglia One North and East Anglia Two Five Estuaries will extend and intensify the influence of offshore wind turbines seen in offshore waters in large scale and long distance views to the east, from the coastal edge. Under both scenarios the Offshore Above-sea Development will extend and intensify the influence of offshore wind turbines, seen in large scale and long distance views to the east, from the coastal edge. Significant effects have been identified in the primary assessment from this LCT, and these will carry though into the cumulative assessment. In terms of 'additional' cumulative effects, offshore wind farms have already altered large scale and long distance sea based views from the coastal edge. The intensity of offshore wind farms in views from the coastal edge will increase under a future theoretical cumulative baseline. The Offshore Above-sea Development will be seen in this context. **The additional cumulative scale of change will be small. As such, effects on landscape character will be similar to those identified in the primary landscape assessment (moderate adverse, where this LCT occurs along coastal edge between Sizewell Beach and Bawdsey Manor).** **In terms of 'total' cumulative effects, the potential for these to be significant (moderate) particularly under scenario 2 and in clear weather conditions is recognised. This is due to the number and geographical spread of offshore wind farms in offshore views to the east of this LCT. However, this would likely be the case even without the Offshore Above-sea Development in the cumulative picture.**

Table 29.11 Coastal levels

Receptor	Suffolk County Council Landscape Character Assessment Coastal levels
Baseline Description	This LCT occurs in approximately seven locations along the coastal edge of Suffolk. It tends to be associated with points where rivers meet the coastline, with the LCT units extending inland to the west (refer to Figure 29.1.5a, Volume II). The key characteristics of this LCT mention no specific relationship with the sea. The more detailed character description states the following, with regard to the visual experience of the landscape. • *"The views are generally open and wide, and there is usually a profound sense of exposure, enhanced when the sea or a wide estuary is close at hand. On the inland side the rising land, and the trees on it, tend to confine the views."*
Sensitivity	This is varied landscape with more natural areas and areas where agriculture has a stronger influence of character. Small plantations and carr woodland influence the level of visibility inside and out of the LCT. Domestic buildings on the fringes of the landscape also influence character. This landscape is judged to be of medium-high susceptibility to the type of development proposed.

Receptor	Suffolk County Council Landscape Character Assessment Coastal levels
	Large parts of the coastal edge of Suffolk are designated as AONB and heritage coast, indicating a higher value. The overall sensitivity is judged to be high.
Magnitude of Change	There will be no direct effects on the LCT. The Offshore Above-sea Development is located in the offshore waters beyond 20km to the south-east. Effects on the LCT will be as a result of changes to certain perceptual qualities. The ZTV (refer to Figure 29.1.5b, Volume II) identifies widespread visibility along the coastal edge of Suffolk. Given the characteristically open nature of the coastal edge actual visibility will closely reflect this. From more inland areas of this LCT, the vegetation and more undulating nature of the terrain tend to confine views. Changes to the key characteristics of the LCT will be as a result of changes to views looking outside of the LCT, out to sea or along the coast. When visible, the Offshore Above-sea Development will typically be seen in the context of large scale views, with expansive areas of sea and sky. It will be seen on and beyond the horizon of sea based views. From the coastal edge of this landscape, and on clear days, operational wind farms including East Anglia One, Greater Gabbard and Galloper are visible in seaward views. The Offshore Above-sea Development will introduce further elements into the seascape setting of the coastal edge. This will further alter certain perceptual qualities of the landscape, including: *"…profound sense of exposure, enhanced when the sea or a wide estuary is close at hand landscape."* The magnitude of change on this characteristic is judged to be medium, for areas within 30km of the Offshore Above-sea Development (along the coastal edge of the coastal levels between Sizewell Beach and Bawdsey Manor) and where this LCT occurs. Beyond this, and due to the increased viewing distance, the magnitude of change will reduce.
Effect significance	**Moderate adverse, which is significant in EIA terms, effects predicted on certain perceptual qualities of this LCT, where this LCT occurs along the coastal edge between Sizewell Beach and Bawdsey Manor (refer to Figure 29.1.5, Volume II).** Beyond this, effects on landscape character are judged to fall below the threshold of significance.
Cumulative Effects	In open, sea based views from the coastal levels and on clear days, under Scenario 1 East Anglia One North and East Anglia Two (both consented) will extend and intensify the influence of offshore wind turbines seen in offshore waters in large scale and long distance views to the east, from the coastal edge. Under Scenario 2, and in addition to the impacts from East Anglia One North and East Anglia Two Five Estuaries will extend and intensify the influence of offshore wind turbines seen in offshore waters in large scale and long distance views to the east, from the coastal edge. Under both scenarios the Offshore Above-sea Development will extend and intensify the influence of offshore wind turbines, seen in large scale and long distance views to the east, from the coastal edge. Significant effects have been identified in the primary assessment from this LCT, and these will carry though into the cumulative assessment. In terms of 'additional' cumulative effects, offshore wind farms have already altered large scale and long distance sea based views from the coastal edge. The intensity of offshore wind farms in views from the coastal edge will increase under a future theoretical cumulative baseline. The Offshore Above-sea Development will be seen in this context. **The additional cumulative scale of change will be small. As such, effects on landscape character will be similar to those identified in**

Receptor	Suffolk County Council Landscape Character Assessment Coastal levels
	the primary landscape assessment (moderate adverse, where this LCT occurs along the coastal edge between Sizewell Beach and Bawdsey Manor). **In terms of 'total' cumulative effects, the potential for these to be significant (moderate) particularly under scenario 2 and in clear weather conditions is recognised. This is due to the number and geographical spread of offshore wind farms in offshore views to the east of this LCT. However, this would likely be the case even without the Offshore Above-sea Development in the cumulative picture.**

Table 29.12 Saltmarsh and inter-tidal flats

Receptor	Suffolk County Council Landscape Character Assessment Saltmarsh and inter-tidal flats
Baseline Description	This landscape occurs in areas nearer the coastal edge between Felixstowe and Aldeburgh (refer to Figure 29.1.5a, Volume II), and is associated with sections of the River Deben, Ore and Alde. The key characteristics of the LCT, are as follows: • *"Marine alluvium and some outcrops of clay, forming mud flat.* • *Inter-tidal flats dissected by creeks.* • *A few small areas of saltmarsh.* • *Wild unimproved land.* • *Unsettled landscape.* • *Powerful sense of isolation and wildness.* • *Integral to the setting of notable features.* • *Suffering from coastal squeeze and the associated erosion."*
Sensitivity	This is quite a natural landscape, displaying areas with wilder characteristics, indicating a higher susceptibility to the type of development proposed. Large parts of the coastal edge of Suffolk are designated as AONB and heritage coast, indicating a higher value. The overall sensitivity is judged to be high.
Magnitude of Change	There will be no direct effects on the LCT. The Offshore Above-sea Development is located in the offshore waters beyond 20km to the south-east. Effects on the LCT will be as a result of changes to certain perceptual qualities. The ZTV (refer to Figure 29.1.5b, Volume II) identifies widespread visibility along the coastal edge of Suffolk. Given the characteristically open nature of this landscape along the coastal edge, actual visibility will closely reflect this. From more inland areas along the River Deben, Ore and Alde, the terrain and vegetation typically combine to limit the availability of seaward views. Changes to the key characteristics of the LCT will be as a result of changes to views looking outside of the LCT, out to sea or along the coast. When visible, the Offshore Above-sea Development will typically be seen in the context of large scale coastal views, with expansive areas of sea and sky. It will be seen on and beyond the horizon of sea based views. On clear days, operational wind farms including East Anglia One, Greater Gabbard and Galloper are visible in seaward views from this landscape. The Offshore Above-sea Development will introduce further elements into the seascape setting of the coastal edge. This will further alter certain perceptual qualities of the landscape, including: • *"Powerful sense of isolation and wildness."*

Receptor	Suffolk County Council Landscape Character Assessment Saltmarsh and inter-tidal flats
	The magnitude of change on this key characteristic is judged to be medium, for areas within 30km of the Offshore Above-sea Development (along the coastal edge of the saltmarsh and intertidal flats between Sizewell Beach and Bawdsey Manor) and where this LCT occurs. Beyond this, and due to the increased viewing distance, the magnitude of change will reduce.
Effect significance	**Moderate adverse, which is significant in EIA terms, effects predicted on certain perceptual qualities of this LCT, where this LCT occurs along the coastal edge between Sizewell Beach and Bawdsey Manor (refer to Figure 29.1.5, Volume II).** Beyond this, effects on landscape character are judged to fall below the threshold of significance.
Cumulative Effects	In open, sea based views from the saltmarsh and intertidal flats and on clear days, under Scenario 1 East Anglia One North and East Anglia Two (both consented) will extend and intensify the influence of offshore wind turbines seen in offshore waters in large scale and long distance views to the east, from the coastal edge. Under Scenario 2, and in addition to the impacts from East Anglia One North and East Anglia Two Five Estuaries will extend and intensify the influence of offshore wind turbines seen in offshore waters in large scale and long distance views to the east, from the coastal edge. Under both scenarios the Offshore Above-sea Development will extend and intensify the influence of offshore wind turbines, seen in large scale and long distance views to the east, from the coastal edge. Significant effects have been identified in the primary assessment from this LCT, and these will carry though into the cumulative assessment. In terms of 'additional' cumulative effects, offshore wind farms have already altered large scale and long distance sea based views from the coastal edge. The intensity of offshore wind farms in views from the coastal edge will increase under a future theoretical cumulative baseline. The Offshore Above-sea Development will be seen in this context. **The additional cumulative scale of change will be small. As such, effects on landscape character will be similar to those identified in the primary landscape assessment (moderate adverse, where this LCT occurs along the coastal edge between Sizewell Beach and Bawdsey Manor).** **In terms of 'total' cumulative effects, the potential for these to be significant (moderate) particularly under scenario 2 and in clear weather conditions is recognised. This is due to the number and geographical spread of offshore wind farms in offshore views to the east of this LCT. However, this would likely be the case even without the Offshore Above-sea Development in the cumulative picture.**

29.6.2.2.2 Operational effects on designated landscapes

96. This section describes the implications of the Offshore Above-sea Development for the Suffolk Coast and Heaths AONB, with reference to the special qualities for which it is designated.

Table 29.13 Suffolk Coast and Heaths AONB

Receptor	Suffolk Coast and Heaths AONB
Baseline Description	The Suffolk Coast and Heaths Area of Outstanding Natural Beauty Management Plan 2018 -2023, identifies the following special qualities for the various landscape types across the AONB:

Receptor	Suffolk Coast and Heaths AONB
	"Sand dunes and shingle ridges • *Shingle features, some vegetated, notably Orford Ness* • *Short sections of crumbling soft cliffs – Dunwich, Covehithe, their landscape prominence and associated biodiversity and geodiversity through exposure of geological strata* • *Bodies of water (broads/saline lagoons) – Shingle Street, Benacre and Easton Broads* • *Sense of space, isolation and tranquillity, long-distance walking routes* • *Coastal towns and villages – Aldeburgh, Southwold, Walberswick, Dunwich* • *Beach huts and fishermen's huts* • *Distinctive built heritage in the landscape such as Martello towers and Cold War buildings on Orford Ness, which add a sense of history to the landscape* • *The iconic resort of Thorpeness, built as a bespoke holiday village in the early 1900s* • *Havergate Island in the Ore estuary, Suffolk's only island* ***Saltmarsh and intertidal flats*** • *Extensive areas of saltmarsh and mud flats* • *Navigation opportunities for small boats* • *Numerous boats on swinging moorings provide an attractive feature in the landscape* • *Open and extensive views* • *Specialist wildlife* • *Walking where estuary-side paths exist* ***Coastal Levels*** • *Extensive wet, grazing marshes* • *Large reedbeds* • *Ancient drainage and enclosure patterns* • *Open and extensive views* • *Specialist wildlife* • *Freshwater sources (well-points and reservoirs)* ***Open coastal and wooded fens*** • *Large reedbeds, with a strong sense of tranquillity* • *Flat open landscapes* • *An undeveloped nature to these areas* • *Freshwater habitats especially reedbeds and their associated wildlife* ***Valley meadowlands*** • *Small-scale undeveloped landscapes* • *Freshwater habitats especially reedbeds and their associated wildlife* ***Estate sandlands and rolling estate sandlands*** • *Rare lowland heath and its associated wildlife* • *Large skies, open vistas across heath/wooded mosaics* • *Distinctive field patterns and elm and pine hedges* • *Coniferous forest meeting multiple needs and a few iconic ancient woods* • *Good walking, cycling and riding opportunities* • *Glorious colour of red crag pits* • *Natural, unspoilt cliffs and beaches* ***Estate farmlands*** • *Spring cereal crops and their important wildlife* • *Large open views from the uplands down to the Orwell and Stour estuaries* • *Ancient woodlands, distinctive fi eld patterns and designed parkland landscapes with ancient trees* • *A particularly quiet and undisturbed part of the AONB (and project area)."*

Receptor	Suffolk Coast and Heaths AONB
Sensitivity	The AONB is a varied landscape, with areas of sand dunes and shingle ridges; saltmarsh and intertidal flats; coastal levels; open coastal and wooded fens; valley meadowlands; and estate sandlands and farmlands. The susceptibility of the various landscape types across the AONB, to offshore wind farm development, will vary. Susceptibility will be higher along the coastal edges and from open parts of the AONB where the relationship with the sea has a stronger influence on character. From areas of the AONB where woodland and hedgerows are more characteristic, the terrain is more varied, and the relationship with the sea is less strongly expressed, the susceptibility to offshore wind farm development will reduce. Given this is a nationally designated landscape, the value attached to it is high. Overall, the sensitivity of the Suffolk Coast and Heaths AONB is judged to be high.
Magnitude of Change	There will be no direct effects on the special qualities of the AONB. The Offshore Above-sea Development is located in the offshore waters beyond 20km to the south-east. Effects on the AONB will be as a result of changes to certain perceptual qualities. The ZTV (refer to Figure 29.1.6b, Volume II) identifies widespread visibility along the coastal edge of the AONB. Given the characteristically open nature of the coastal edge, actual visibility will closely reflect this. With distance from the coastal edge subtle undulations in the terrain result in a more fragmented pattern of theoretical visibility. This includes some larger areas of visual shadow to the north of the River Deben, south of the River Alde near Iken, north-west of Sizewell and west of Southwold. This includes areas of the AONB where woodland and hedgerows are more characteristic landscape features, which combined with the flatter/ gently undulating terrain, will further limit actual visibility. Changes to the special qualities of the AONB will be as a result of changes to views looking outside of the AONB, out to sea or along the coast. When visible, the Offshore Above-sea Development will typically be seen in the context of large scale views, with expansive areas of sea and sky. The Offshore Above-sea Development will not affect the immediate setting of the AONB. It will be seen on and beyond the horizon of sea based views. On clear days, operational wind farms including East Anglia One, Greater Gabbard and Galloper are visible in seaward views from the AONB. The Offshore Above-sea Development will introduce further wind turbines into the seascape setting of the coastal edges of the AONB. This will further alter certain perceptual special qualities, where the relationship with the sea is more strongly expressed, including: ***"Sand dunes and shingle ridges*** • *Sense of space, isolation and tranquillity…* ***Saltmarsh and intertidal flats*** • *Open and extensive views.* ***Coastal Levels*** • *Open and extensive views.* ***Open coastal and wooded fens*** • *Large reedbeds, with a strong sense of tranquillity.* • *An undeveloped nature to these areas.* ***Estate sandlands and rolling estate sandlands*** • *Natural, unspoilt cliffs and beaches.* The magnitude of change on the perceptual aspects of these special qualities is judged to be up to medium, for areas within 30km of the Offshore Above-sea Development and

Receptor	Suffolk Coast and Heaths AONB
	along the coastal edges of the AONB. Whilst there will be no direct effects on the 'large reedbeds', and beaches and cliffs will remain unspoilt, the offshore turbines will alter aspects such as the sense of space, isolation, tranquillity, undeveloped nature and naturalness. Open and expansive views will remain as such, however the proposed development will alter these views adding new vertical features into them. In areas beyond approximately 30km from the Offshore Above-sea Development, and due to the increased distance (and the reduced visibility from inland areas), the magnitude of change will reduce. It is also recognised that Sizewell Power Station forms a notably incongruent landscape feature on the coastal edge of the AONB within this area to the north, helping to somewhat contain landscape effects on the AONB in this direction. In the context of the overall AONB designation, this represents a reasonably limited geographical extent, along the coastal edge of the AONB between Sizewell Beach and Bawdsey Manor approximately. As noted above, and on clear days, operational wind farms including East Anglia One, Greater Gabbard and Galloper will also be visible. The Offshore Above-sea Development will be seen in the context of these offshore wind farms, with the northern turbine array area resulting in noticeably larger turbines closer to the coastal edge of the AONB. The Offshore Above-sea Development will intensify the effects associated with offshore wind farm development that influence certain perceptual special qualities of the AONB. This 'cluttered' seascape horizon is acknowledged in the baseline description of the AONB (AONB Natural Beauty and Special Indicators Report (Nov 2016)). As such, the Offshore Above-sea Development will be introducing turbines into the seascape setting of the AONB which has already been altered by offshore wind farm development.
Effect significance	**Moderate adverse, which is significant in EIA terms, effects are predicted on certain perceptual qualities, where the relationship with the sea is a stronger influence, along the coastal edge of the AONB and within 30km**. Beyond this, effects will fall below the threshold of significance. Whilst this is judged to result in significant effects on certain perceptual qualities of the AONB (along the coastal edge and within 30km) this is not judged to compromise the overall integrity of the AONB. There will be no direct effects on the special qualities of the AONB and large parts of the AONB will not be significantly affected. Furthermore, the perceptual qualities of the AONB which are affected will still be strongly expressed from wider parts of the AONB. Where effects are significant, operational offshore wind farm development has already altered the seascape setting of the AONB, and the Offshore Above-sea Development will be seen in this context.
Cumulative Effects	In terms of cumulative landscape effects on the AONB these will be indirect, as changes to the cumulative baseline considered in this assessment all relate to offshore wind farms. In open sea based views and on clear days, under Scenario 1 East Anglia One North and East Anglia Two (both consented) will extend and intensify the influence of offshore wind turbines seen in offshore waters in large scale and long distance views to the east, from the AONB. Under Scenario 2, Five Estuaries will extend and intensify the influence of offshore wind turbines seen in offshore waters in large scale and long distance views to the east, from the AONB. Under both scenarios the Offshore Above-sea Development will extend and intensify the influence of offshore wind turbines, seen in large scale and long distance views to the east, from the AONB.

Receptor	Suffolk Coast and Heaths AONB
	Offshore wind farms have already altered large scale and long distance sea based views from the AONB. The intensity of offshore wind farms in open and sea based views from the AONB will increase under a future theoretical cumulative baseline. The Offshore Above-sea Development will be seen in this context. **The additional cumulative scale of change will be small. As such, cumulative effects on the AONB will be similar to those identified in the primary assessment (moderate adverse effects are predicted on certain perceptual qualities, where the relationship with the sea is a stronger influence, along the coastal edge of the AONB and within 30km see above).** **The potential for significant total effects (moderate), particularly under scenario 2 and on clear days when East Anglia One North, East Anglia Two and Five Estuaries are visible, is also recognised. However, this would likely be the case even without the Offshore Above-sea Development in the cumulative picture.**

29.6.2.3 Visual impacts during operation and maintenance

97. This section describes the operational effects resulting from the Offshore Above-sea Development on representative viewpoints and routes which have been identified as requiring detailed consideration in Table 29.5. Further information on the baseline views for each receptor is provided below.

98. All operational effects are considered to be long-term, reversible and adverse unless stated otherwise. Accompanying visualisations for each assessment viewpoint are contained in Volume 2 of the PEIR, prepared in accordance with the methodology set out in Appendix 29.1 (Volume III).

99. Cumulative interactions with operational and under-construction offshore wind farms are considered in the primary assessment, when arriving at overall judgements on visual effects.

100. The cumulative assessment considers a worst case scenario in which all operational, consented and proposed schemes are present across the 60km SLVIA Study Area.

29.6.2.4 Visibility range

101. Met Office visibility data is mapped on Figure 29.1.7 (Volume II), in the context of the Offshore Above-sea Development. This is based on the following Met Office visibility definitions:

- <1km Very Poor Visibility;
- 1-4km Poor Visibility;
- 4-10km Moderate Visibility;
- 10-20km Good Visibility;
- 20-40km Very Good Visibility; and
- >40km Excellent Visibility.

102. Effects associated with aviation and safety lighting have also been considered from the following viewpoints, as agreed through consultation and to provide a representative spread of night time assessment viewpoints along the coastal edge:

- Viewpoint 6 – Aldeburgh;

- Viewpoint 11 – Felixstowe Seafront Gardens;
- Viewpoint 15 – Clacton on Sea: and
- Viewpoint 16 – North Foreland.

Table 29.14 Viewpoint 1

Receptor	Viewpoint 1 - Covehithe			
Grid Reference	652337E	281100N	Figure Number	29.2.1 (Volume II)
LCA/ LCT	Estate Sandlands LCT		Landscape Designation	Suffolk Coast and Heaths AONB and Suffolk Heritage Coast
Direction of View	South-east		Distance to nearest turbine	42.32km
Baseline Description	This viewpoint is located to the south-east of the small settlement of Covehithe, south of the point where Beach Road meets the coastline and near Covehithe Broads. It is representative of recreational users of the coastal edge. In seawards views to the east and south-east, the expansive open waters of the North Sea are visible. Existing offshore wind farms including Galloper and Greater Gabbard are visible on clear days. These form small features in the overall seaward view, seen above the horizon to the east and south-east. In views along the coastline to the north the dunes to the west of the beach are apparent. Woodland around the small settlement of Covehithe contributes to the near distance inland horizon and the square church tower in Covehithe is visible on the skyline. In views along the coastline to the south, inland waters associated with Covehithe Broads are apparent. Woodland on slightly higher ground south of the broads contributes to the middle distance inland horizon. Further south, along the coastal edge, settlement within Southwold is apparent.			
Sensitivity	Recreational users of the coastline are considered to be of medium susceptibility. The viewpoint is located in the Suffolk Coast and Heaths AONB and Suffolk Heritage Coast, indicating a higher value. On balance, taking account of the judgements of susceptibility and value, the overall sensitivity is judged to be medium-high.			
Magnitude of Change	The Offshore Above-sea Development will be seen at a distance of 42km. The hubs and blades of all 7 turbines in the northern array area of the Offshore Above-sea Development will be visible. There will be a notable gap between 4 turbines to the left (east) and 3 turbines to the right (west) of this northern array area. This array area will be seen in front of the distant turbine blades of Greater Gabbard and Galloper Offshore Wind Farms (just perceptible), extending the horizontal field of view influenced by turbines, to the south of this cluster. The difference in turbine scale between the proposed and existing turbines will be apparent, with turbines seen above the offshore horizon. The curvature of the earth will generally limit visibility of the southern turbine array area of the Offshore Above-sea Development, to turbine blades. The north to south aligned rows of turbines in this array area will be apparent, from this viewing angle. The turbines in the southern array area will be seen behind the northern array area, extending the horizontal field of view occupied by turbines to the south of distant turbines in Greater Gabbard and Galloper cluster. The difference in turbine scale between the proposed and existing turbines will be apparent, with turbines seen above the offshore horizon.			

Receptor	Viewpoint 1 - Covehithe
	The scale of change is judged to be small. The geographical extent of the change is judged to be medium. Similar views will be available from the coastline near Covehithe. The overall magnitude of change is judged to be low.
Effect significance	**Minor adverse, which is not significant in EIA terms.** At 42km, the Offshore Above-sea Development will only be visible in conditions of 'very good' to 'excellent' atmospheric visibility.
Cumulative Effects	Under scenario 1 East Anglia One North and East Anglia Two will introduce further offshore wind farms into the view, seen as two distinct clusters of turbines to the north (and in closer proximity to the viewpoint) of the Galloper and Greater Gabbard cluster. There will be gaps between these schemes and the Galloper and Greater Gabbard cluster. Under scenario 2 Five Estuaries will 'fill' the gap between the East Anglia Two and Galloper and Greater Gabbard cluster. When visible on clear days and under both scenarios, the Offshore Above-sea Development will be seen in front of and extend the influence of wind turbines to the south of the Galloper and Greater Gabbard Cluster. **In this context, where offshore wind farms occupy a wide horizontal field of sea based views, the additional cumulative scale of change will be small and effects will reflect those as identified in the primary assessment (minor adverse).** **Under scenario 2, the potential for significant 'total' cumulative visual effects (moderate) is also acknowledged. When visible on clear days, offshore wind farms will occupy a wide extent of the seaward horizon in views to the east and south-east. This would be the case without the Offshore Above-sea Development in the cumulative picture too. As such, the Offshore Above-sea Development is not judged to tip the balance towards total cumulative effects being significant.**

Table 29.15 Viewpoint 2

Receptor	Viewpoint 2 - Southwold Pier			
Grid Reference	651350E	276621N	Figure Number	29.2.2 (Volume II)
LCA/ LCT	Urban LCT		Landscape Designation	Suffolk Coast and Heaths AONB and Suffolk Heritage Coast
Direction of View	South-east		Distance to nearest turbine	38.55km
Baseline Description	This viewpoint is located on Southwold Pier, to the east of the settlement of Southwold. It is representative of recreational users of the pier. Similar views will be experienced by recreational users of the coastal edge/ residents with open seaward views, in the settlement. In seawards views to the east and south-east, the expansive open waters of the North Sea are visible. Existing offshore wind farms including Galloper and Greater Gabbard are visible on clear days. These form small features in the overall seaward view, seen above the horizon to the east and south-east. In views along the coastline to the north beach huts and properties on the northern edge of Southwold are apparent. In middle distance views further north woodland on the slightly higher ground south of Covehithe Broads contributes to the horizon. There are some smaller scale operational onshore turbines seen on the skyline.			

Receptor	Viewpoint 2 - Southwold Pier
	In views along the coastline to the south, large Victorian seafront properties sit on slightly higher ground above the beach which is lined by beach huts. Buildings in Sizewell Power Station and large scale steel tower overhead electricity lines linking into the power station are visible on the longer distance horizon, in views south.
Sensitivity	Recreational users of the pier/ coastline are considered to be of medium susceptibility. The viewpoint is located in the Suffolk Coast and Heaths AONB and Suffolk Heritage Coast, indicating a higher value. On balance, taking account of the judgements of susceptibility and value, the overall sensitivity is judged to be medium-high.
Magnitude of Change	The Offshore Above-sea Development will be seen at a distance of 39km. The hubs and blades of all 7 turbines in the northern array area of the Offshore Above-sea Development will be visible. There will be a notable gap between turbines to the left, right and centre of this northern array area. This array area will be seen in front of the distant turbine blades of the Greater Gabbard and Galloper Offshore Wind Farms (just perceptible), extending the horizontal field of view influenced by turbines, to the north of this existing cluster. The difference in turbine scale between the proposed and existing turbines will be apparent, with turbines seen above the offshore horizon. The curvature of the earth will generally limit visibility of the southern turbine array area of the Offshore Above-sea Development, to turbine blades. The north to south aligned rows of turbines in this array area will be apparent, from this viewing angle. The turbines in the southern array area will be seen behind the northern array area, extending the horizontal field of view occupied by turbines to the south of distant turbines in Greater Gabbard and Galloper cluster. The difference in turbine scale between the proposed and existing turbines will be apparent, with turbines seen above the offshore horizon. The scale of change is judged to be small. The geographical extent of the change is judged to be medium. Similar views will be available from the coastline near Southwold. The overall magnitude of change is judged to be low.
Effect significance	**Minor adverse, which is not significant in EIA terms.** At 39km, the Offshore Above-sea Development will only be visible in conditions of 'very good' to 'excellent' atmospheric visibility.
Cumulative Effects	Under scenario 1 East Anglia One North and East Anglia Two will introduce further offshore wind farms into the view, seen as two distinct clusters of turbines to the north (and in closer proximity to the viewpoint) of the Galloper and Greater Gabbard cluster. There will be gaps between these schemes and the Galloper and Greater Gabbard cluster. Under scenario 2 Five Estuaries will 'fill' the gap between the East Anglia Two and Galloper and Greater Gabbard cluster. When visible on clear days and under both scenarios, the Offshore Above-sea Development will be seen in front of and extend the influence of wind turbines to the south of the Galloper and Greater Gabbard Cluster. **In this context, where offshore wind farms occupy a wide horizontal field of sea based views, the additional cumulative scale of change will be small and effects will reflect those as identified in the primary assessment (minor adverse).** **Under scenario 2, the potential for significant 'total' cumulative visual effects (moderate) is also acknowledged. When visible on clear days, offshore wind farms will occupy a wide extent of the seaward horizon in views to the east and south-east. This would be the case without the Offshore Above-sea Development in the**

Receptor	Viewpoint 2 - Southwold Pier
	cumulative picture too. As such, the Offshore Above-sea Development is not judged to tip the balance towards total cumulative effects being significant.

Table 29.16 Viewpoint 3

Receptor	Viewpoint 3 - Dunwich Coastguard Cottage			
Grid Reference	647769E	267687N	Figure Number	29.2.3 (Volume II)
LCA/ LCT	Estate Sandlands LCT		Landscape Designation	Suffolk Coast and Heaths AONB and Suffolk Heritage Coast
Direction of View	South-east		Distance to nearest turbine	32.61km
Baseline Description	This viewpoint is located near a coastal car park and Dunwich Coastguard Cottages (a National Trust property). It is representative of recreational users of the coastal edge. In seawards views to the east and south-east, the expansive open waters of the North Sea are visible. Existing offshore wind farms including East Anglia One (just perceptible due to curvature of earth), Galloper and Greater Gabbard are visible on clear days. Whilst, due to viewing distance, the offshore turbines form small features, the wide horizontal field of view occupied by offshore turbines is apparent from this location. In views along the coastline to the north the dunes and woodland to the west of Dunwich Beach are apparent. In longer distance views settlement in Southwold is apparent on the coastline, with onshore wind turbines and the lighthouse contributing small scale vertical features on an otherwise very horizontal horizon. In views along the coastline to the south, marshes to the west of Dunwich Beach are visible. Buildings in Sizewell Power Station and large scale steel tower overhead electricity lines linking into the power station are visible on the middle distance horizon, in views south.			
Sensitivity	Recreational users of the coastline are considered to be of medium susceptibility. The viewpoint is located in the Suffolk Coast and Heaths AONB and Suffolk Heritage Coast, indicating a higher value. On balance, taking account of the judgements of susceptibility and value, the overall sensitivity is judged to be medium-high.			
Magnitude of Change	The Offshore Above-sea Development will be seen at a distance of 33km. The hubs and blades of all 7 turbines in the northern array area of the Offshore Above-sea Development will be visible. There will be a notable gap between turbines to the left, right and centre of this northern array area. This array area will be seen in front of the turbines in Greater Gabbard and Galloper Offshore Wind Farms. The difference in turbine scale between the proposed and existing turbines will be apparent, with turbines seen above the offshore horizon. The turbine hubs and blades of the majority of the southern array area will be visible in longer distance views to the south-east. The north to south aligned rows of turbines in this array area will be apparent, from this viewing angle. The turbines in the southern array area will be seen behind and to the south of the northern array area, extending the horizontal field of view occupied by turbines to the south of distant turbines in the Greater			

Receptor	Viewpoint 3 - Dunwich Coastguard Cottage
	Gabbard and Galloper cluster. The difference in turbine scale between the proposed and existing turbines will be apparent, with turbines seen above the offshore horizon. The scale of change is judged to be small. The geographical extent of the change is judged to be medium. Similar views will be available from the coastline near Dunwich. The overall magnitude of change is judged to be low.
Effect significance	**Minor adverse, which is not significant in EIA terms.** At 33km, the Offshore Above-sea Development will only be visible in conditions of 'very good' to 'excellent' atmospheric visibility.
Cumulative Effects	Under scenario 1 East Anglia One North and East Anglia Two will introduce further offshore wind farms into the view, seen either side of distant (and smaller) turbines in east Anglia One. There will be a gap between this larger wind farm cluster and the Galloper and Greater Gabbard cluster further south. Under scenario 2 Five Estuaries will 'fill' the gap between the larger East Anglia cluster and the Galloper and Greater Gabbard cluster. When visible on clear days and under both scenarios, the Offshore Above-sea Development will be seen in front of and extend the influence of wind turbines to the south of the Galloper and Greater Gabbard Cluster. **In this context, where offshore wind farms occupy a wide horizontal field of sea based views, the additional cumulative scale of change will be small and effects will reflect those as identified in the primary assessment (minor adverse).** **Under scenario 2, the potential for significant 'total' cumulative visual effects (moderate) is also acknowledged. When visible on clear days, offshore wind farms will occupy a wide extent of the seaward horizon in views to the east and south-east. This would be the case without the Offshore Above-sea Development in the cumulative picture too. As such, the Offshore Above-sea Development is not judged to tip the balance towards total cumulative effects being significant.**

Table 29.17 Viewpoint 4

Receptor	Viewpoint 4 - Sizewell Beach			
Grid Reference	647602E	262883N	Figure Number	29.2.4 (Volume II)
LCA/ LCT	Coastal Dunes and Shingle Ridges LCT		Landscape Designation	Suffolk Coast and Heaths AONB and Suffolk Heritage Coast
Direction of View	South-east		Distance to nearest turbine	29km
Baseline Description	This viewpoint is located on Sizewell Beach. There is a coastal car park at the small settlement of Sizewell, to the west. It is representative of recreational users of the coastal edge. In seawards views to the east and south-east, the expansive open waters of the North Sea are visible. Two disused platforms form notable offshore features in the foreground. Existing offshore wind farms including Galloper and Greater Gabbard are visible on clear days. Whilst, due to viewing distance, the offshore turbines form small features, the wide horizontal field of view occupied by offshore turbines is apparent from this location.			

Receptor	Viewpoint 4 - Sizewell Beach
	In views along the coastline to the north the dunes to the west of Sizewell Beach are apparent. Buildings in Sizewell Power Station form notable features seen on the horizon in the foreground. In longer distance views settlement in Southwold is apparent on the coastline, with onshore wind turbines and the lighthouse contributing small scale vertical features on an otherwise very horizontal horizon. In views along the coastline to the south, properties in the small settlement of Sizewell area apparent. The middle distance horizon is form by the rising dunes to the south of the settlement.
Sensitivity	Recreational users of the coastline are considered to be of medium susceptibility. The viewpoint is located in the Suffolk Coast and Heaths AONB and Suffolk Heritage Coast, indicating a higher value. On balance, taking account of the judgements of susceptibility and value, the overall sensitivity is judged to be medium-high.
Magnitude of Change	The Offshore Above-sea Development will be seen at a distance of 29km. The hubs and blades of all 7 turbines in the northern array area of the Offshore Above-sea Development will be visible. Three turbines to the north of this array area will be more tightly spaced, and the northern array area which will occupy a relatively large horizontal field of view given the small number of turbines in it. This array area will be seen in front of the turbines in the Greater Gabbard and Galloper Offshore Wind Farms. The difference in turbine scale between the proposed and existing turbines will be apparent, with turbines seen above the offshore horizon. The turbine hubs and blades of the majority of the southern array area will be visible in longer distance views to the south-east. From this viewing angle the north to south aligned rows of turbines will begin to overlap/ merge together. The turbines in the southern array area will be seen behind and south of the northern array area, extending the horizontal field of view occupied by turbines to the south of distant turbines in Greater Gabbard and Galloper cluster. The difference in turbine scale between the proposed and existing turbines will be apparent, with turbines seen above the offshore horizon. The scale of change is judged to be medium. The geographical extent of the change is judged to be medium. Similar views will be available from the coastline near Sizewell. The overall magnitude of change is judged to be medium.
Effect significance	**Moderate adverse, which is significant in EIA terms.** At 29km, the Offshore Above-sea Development will only be visible in conditions of 'very good' to 'excellent' atmospheric visibility.
Cumulative Effects	Under scenario 1 East Anglia One North and East Anglia Two will introduce further offshore wind farms into the view, seen as two distinct clusters of turbines to the north (and in closer proximity to the viewpoint) of the Galloper and Greater Gabbard cluster. There will be gaps between these schemes and the Galloper and Greater Gabbard cluster. Under scenario 2 Five Estuaries will 'fill' the gap between the East Anglia Two and Galloper and Greater Gabbard cluster. When visible on clear days and under both scenarios, the Offshore Above-sea Development will be seen in front of and extend the influence of wind turbines to the south of the Galloper and Greater Gabbard Cluster. Effects of this nature are identified in the primary assessment. **In this context, where offshore wind farms occupy a wide horizontal field of sea based views, the additional cumulative scale of change will be small and effects will reflect those as identified in the primary assessment (moderate adverse).**

Receptor	Viewpoint 4 - Sizewell Beach
	Under scenario 2, the potential for significant 'total' cumulative visual effects (moderate) is also acknowledged. When visible on clear days, offshore wind farms will occupy a wide extent of the seaward horizon in views to the east and south-east. This would be the case without the Offshore Above-sea Development in the cumulative picture too. As such, the Offshore Above-sea Development is not judged to tip the balance towards total cumulative effects being significant.

Table 29.18 Viewpoint 5

Receptor	Viewpoint 5 - Cliffs above Thorpeness			
Grid Reference	647580E	260335N	Figure Number	29.2.5 (Volume II)
LCA/ LCT	Coastal Dunes and Shingle Ridges LCT		Landscape Designation	Suffolk Coast and Heaths AONB and Suffolk Heritage Coast
Direction of View	South-east		Distance to nearest turbine	27.19km
Baseline Description	This viewpoint is located on a coastal path to the north of Thorpeness, and west of the cliffs above the beach. It is representative of recreational users of the cliff top footpath along the coastal edge. In seawards views to the east and south-east, the expansive open waters of the North Sea are visible. Existing offshore wind farms including East Anglia One (just perceptible due to curvature of the earth), Galloper and Greater Gabbard are visible on clear days. Whilst, due to viewing distance, the offshore turbines form small features, the wide horizontal field of view occupied by offshore turbines is apparent from this location. In views along the coastline to the north cliff top vegetation and the undulating terrain combine to foreshorten views. In views along the coastline to the south, properties on the northern edge of the small settlement of Thorpeness are apparent. Properties, vegetation and trees on the edge of the settlement combine to foreshorten views to the south.			
Sensitivity	Recreational users of the coastline are considered to be of medium susceptibility. The viewpoint is located in the Suffolk Coast and Heaths AONB and Suffolk Heritage Coast, indicating a higher value. On balance, taking account of the judgements of susceptibility and value, the overall sensitivity is judged to be medium-high.			
Magnitude of Change	The Offshore Above-sea Development will be seen at a distance of 27km. The hubs and blades of all 7 turbines in the northern array area of the Offshore Above-sea Development will be visible. Three turbines to the north of this array area will be more tightly grouped and the northern array area will occupy a relatively large horizontal field of view given the small number of turbines in it. This array area will be seen in front of the turbines in Greater Gabbard and Galloper Offshore Wind Farms. The difference in turbine scale between the proposed and existing turbines will be apparent, with turbines seen above the offshore horizon. The turbine hubs and blades of the majority of the southern array area will be visible in longer distance views to the south-east. From this viewing angle the north to south aligned rows of turbines will begin to overlap/ merge together. There will be a small number of outlying turbines to the north of this array area. The turbines in the southern array area will			

Receptor	Viewpoint 5 - Cliffs above Thorpeness
	be seen behind and to the south of the northern array area, extending the horizontal field of view occupied by turbines to the south of distant turbines in Greater Gabbard and Galloper cluster. The difference in turbine scale between the proposed and existing turbines will be apparent, with turbines seen above the offshore horizon. The scale of change is judged to be medium. The geographical extent of the change is judged to be medium. Similar views will be available from the clifftop path near Thorpeness and from the beach itself. The overall magnitude of change is judged to be medium.
Effect significance	**Moderate adverse, which is significant in EIA terms.** At 27km, the Offshore Above-sea Development will only be visible in conditions of 'very good' to 'excellent' atmospheric visibility.
Cumulative Effects	Under scenario 1 East Anglia One North and East Anglia Two will introduce further offshore wind farms into the view, seen either side of distant (and only just perceptible due to curvature of the earth) turbines in East Anglia One. There will be a gap between this larger wind farm cluster and the Galloper and Greater Gabbard cluster further south. Under scenario 2 Five Estuaries will reduce and partially infill the gap between the larger East Anglia cluster and the Galloper and Greater Gabbard cluster. When visible on clear days and under both scenarios, the Offshore Above-sea Development will be seen in front of and extend the influence of wind turbines to the south of the Galloper and Greater Gabbard Cluster. **Effects of this nature are recognised in the primary assessment. In this context, where offshore wind farms occupy a wide horizontal field of sea based views, the additional cumulative scale of change will be small and effects will reflect those as identified in the primary assessment (moderate adverse).** **Under scenario 2, the potential for significant 'total' cumulative visual effects (moderate) is also acknowledged. When visible on clear days, offshore wind farms will occupy a wide extent of the seaward horizon in views to the east and south-east. This would be the case without the Offshore Above-sea Development in the cumulative picture too. As such, the Offshore Above-sea Development is not judged to tip the balance towards total cumulative effects being significant.**

Table 29.19 Viewpoint 6

Receptor	Viewpoint 6 - Aldeburgh			
Grid Reference	646522E	256453N	Figure Number	29.2.6 (Volume II)
LCA/ LCT	Coastal Dunes and Shingle Ridges LCT		Landscape Designation	Suffolk Coast and Heaths AONB and Suffolk Heritage Coast
Direction of View	South-east		Distance to nearest turbine	25.5km
Baseline Description	This viewpoint is located on the promenade of the coastal settlement of Aldeburgh. It is representative of residents on the coastal edge of the settlement and recreational users of the promenade and beach. In seawards views to the east and south-east, the expansive open waters of the North Sea are visible. Existing offshore wind farms including Galloper and			

Receptor	Viewpoint 6 - Aldeburgh
	Greater Gabbard are visible on clear days. Whilst, due to viewing distance, the offshore turbines form small features, the wide horizontal field of view occupied by offshore turbines is apparent from this location. In views along the coastline to the north, built form in the settlement is apparent. This includes the distinctive square towered building on the North Lookout, which contains short distance views in this direction. In views along the coastline to the south, built form in the settlement is apparent. This includes the distinctive square towered building on the South Lookout, which contains short distance views in this direction.
Sensitivity	Residents are considered to be of high susceptibility. The viewpoint is located in the Suffolk Coast and Heaths AONB and Suffolk Heritage Coast, indicating a higher value. On balance, taking account of the judgements of susceptibility and value, the overall sensitivity is judged to be high.
Magnitude of Change	The Offshore Above-sea Development will be seen at a distance of 26km. The hubs and blades of all 7 turbines in the northern array area of the Offshore Above-sea Development will be visible. There will be some stacking of turbines to the north of this array area, which will occupy a relatively large horizontal field of view given the small number of turbines in it. This array area will be seen in front of the turbines of Greater Gabbard and Galloper Offshore Wind Farms. The difference in turbine scale between the proposed and existing turbines will be apparent, with turbines seen above the offshore horizon. The turbine hubs and blades of the majority of the southern array area will be visible in longer distance views to the south-east. From this viewing angle the north to south aligned rows of turbines will begin to overlap/ merge together. There will be a small number of outlying turbines to the north of this array area. The turbines in the southern array area will be seen behind and to the south of the northern array area, with a notable gap between the two array areas. The southern array area will extend the horizontal field of view occupied by turbines to the south of distant turbines in Greater Gabbard and Galloper cluster. The difference in turbine scale between the proposed and existing turbines will be apparent, with turbines seen above the offshore horizon. The scale of change is judged to be medium. The geographical extent of the change is judged to be medium. Similar views will be available along the coastal edge of the settlement of Aldeburgh. The overall magnitude of change is judged to be medium.
Effect significance	**Moderate adverse, which is significant in EIA terms.** At 26km, the Offshore Above-sea Development will only be visible in conditions of ‘very good’ to ‘excellent’ atmospheric visibility.
Cumulative Effects	Under scenario 1 East Anglia One North and East Anglia Two will introduce further offshore wind farms into the view, seen as two distinct clusters of turbines to the north (and in closer proximity to the viewpoint) of the Galloper and Greater Gabbard cluster. There will be gaps between these schemes and the Galloper and Greater Gabbard cluster. Under scenario 2 Five Estuaries will partially infill the gap between the larger East Anglia cluster and the Galloper and Greater Gabbard cluster.

Receptor	Viewpoint 6 - Aldeburgh
	When visible on clear days and under both scenarios, the Offshore Above-sea Development will be seen in front of and extend the influence of wind turbines to the south of the Galloper and Greater Gabbard Cluster. **Effects of this nature are recognised in the primary assessment. In this context, where offshore wind farms occupy a wide horizontal field of sea based views, the additional cumulative scale of change will be small and effects will reflect those as identified in the primary assessment (moderate adverse).** **Under scenario 2, the potential for significant 'total' cumulative visual effects (moderate) is also acknowledged. When visible on clear days, offshore wind farms will occupy a wide extent of the seaward horizon in views to the east and south-east. This would be the case without the Offshore Above-sea Development in the cumulative picture too. As such, the Offshore Above-sea Development is not judged to tip the balance towards total cumulative effects being significant.**
Visual Effects Associated with Lighting	Red aviation lighting on turbines in the northern and southern array area will be visible, seen at a distance of 26km. This would be seen in an offshore context which includes sources of light from marine infrastructure and offshore wind farms. **Under the 2000 candela maximum visibility scenario, and given the number and intensity of lights in the view, this is likely to result in a medium scale of change and significant visual effects.** However, under the more realistic 200 candela scenario (in which the lights are dimmed to 10 percent intensity in clear weather conditions, such as the photography has been shot in), the reduced intensity will result in a smaller scale of change and effects falling below the threshold of significance.

Table 29.20 Viewpoint 7

Receptor	Viewpoint 7 - Orford Castle			
Grid Reference	641966E	249816N	Figure Number	29.2.7 (Volume II)
LCA/ LCT	Edge of Coastal Levels LCT		Landscape Designation	Suffolk Coast and Heaths AONB and Suffolk Heritage Coast
Direction of View	South-east		Distance to nearest turbine	25.72km
Baseline Description	This viewpoint is located on an area of slightly raised ground, near Orford Castle. It is representative of recreational views experienced by people visiting this historic feature. At the time of photography it was not possible to enter the castle itself, which offers a higher viewing point. More elevated views from inside the castle will likely offer greater visibility in seaward views. In views to the south-east a break in foreground vegetation provides longer distance views over Orford Ness Nature Reserve, towards the North Sea. Existing offshore wind farms including Galloper and Greater Gabbard are visible on clear days. Whilst, due to viewing distance, the offshore turbines form small features, the wide horizontal field of view occupied by offshore turbines is apparent from this location.			

Receptor	Viewpoint 7 - Orford Castle
	In other viewing directions mature vegetation around the site of Orford Castle generally foreshortens the view. Breaks in this vegetation provided glimpses of properties in Orford Ness.
Sensitivity	Recreational visitors to the castle are considered to be of medium susceptibility. The viewpoint is located in the Suffolk Coast and Heaths AONB and Suffolk Heritage Coast, indicating a higher value. On balance, taking account of the judgements of susceptibility and value, the overall sensitivity is judged to be medium-high.
Magnitude of Change	The Offshore Above-sea Development will be seen at a distance of 26km. From this location foreground vegetation will screen views of the northern array area. The level of screening will change as people move around the area near the castle. The turbine hubs and blades of the southern array area will be visible in longer distance views to the south-east, between a gap in foreground vegetation (partially screened by intervening built form and vegetation). From this viewing angle the north to south aligned rows of turbines will begin to overlap/ merge together. There will be a small number of outlying turbines to the north of this array area. The southern array area will extend the horizontal field of view occupied by turbines to the south of distant turbines in Greater Gabbard and Galloper cluster (just perceptible). The difference in turbine scale between the proposed and existing turbines will be apparent, with turbines seen above the offshore horizon. The scale of change is judged to be medium-low. The geographical extent of the change is judged to be small, with inland views of this nature limited to the area of slightly higher ground around Orford Castle. The overall magnitude of change is judged to be medium-low.
Effect significance	**Minor adverse, which is not significant in EIA terms.** At 26km, the Offshore Above-sea Development will only be visible in conditions of 'very good' to 'excellent' atmospheric visibility.
Cumulative Effects	From this viewing location views of further consented and proposed offshore wind farms, considered in the cumulative assessment, are limited by intervening foreground vegetation and built form (as highlighted on Figure 29.2.7a and b, Volume II). As such, no significant cumulative visual effects are predicted. **The additional cumulative scale of change will be barely perceptible and effects will reflect those as identified in the primary assessment (minor adverse).**

Table 29.21 Viewpoint 8

Receptor	Viewpoint 8 - Orford Ness			
Grid Reference	644551E	248769N	Figure Number	29.2.8 (Volume II)
LCA/ LCT	Coastal Dunes and Shingle Ridges LCT		Landscape Designation	Suffolk Coast and Heaths AONB and Suffolk Heritage Coast
Direction of View	South-east		Distance to nearest turbine	22.96km

Receptor	Viewpoint 8 - Orford Ness
Baseline Description	This viewpoint is located in Orford Ness Nature Reserve. The reserve is managed by the National Trust and access is possible on certain days (published on NT website) with access via the ferry run by the trust. It is representative of recreational views experienced by people visiting the nature reserve. In seawards views to the east and south-east, the expansive open waters of the North Sea are visible, seen beyond the flat shingle expanse of the reserve. Existing offshore wind farms including Galloper and Greater Gabbard, and in the distance London Array and Gunfleet Sands, are visible on clear days. Whilst, due to viewing distance, the offshore turbines form small features, the wide horizontal field of view occupied by offshore turbines is apparent from this location. In views along the coastline to the north and south, the flat shingle expanse of the reserve characterises the views. Built features in the reserve including a wood clad wind mill and red brick structure provides notable points of contrast with the shingle expanse.
Sensitivity	Recreational visitors to the nature reserve are considered to be of medium susceptibility. The viewpoint is located in the Suffolk Coast and Heaths AONB and Suffolk Heritage Coast, indicating a higher value. On balance, taking account of the judgements of susceptibility and value, the overall sensitivity is judged to be medium-high.
Magnitude of Change	The Offshore Above-sea Development will be seen at a distance of 23km. The hubs and blades of all 7 turbines in the northern array area of the Offshore Above-sea Development will be visible. The turbines to the north of this array area, are more tightly gathered together. The northern array area will occupy a relatively large horizontal field of view given the small number of turbines in it. This array area will be seen in front of the turbines of Greater Gabbard and Galloper Offshore Wind Farms. The difference in turbine scale between the proposed and existing turbines will be apparent, with turbines seen above the offshore horizon. The turbine hubs and blades of the southern array area will be visible in longer distance views to the south-east. From this viewing angle the north to south aligned rows of turbines will begin to overlap/ merge together. There will be a small number of outlying turbines to the north of this array area. The turbines in the southern array area will be seen behind and to the south of the northern array area, with a notable gap between the two array areas. The southern array area will extend the horizontal field of view occupied by turbines to the south of distant turbines in Greater Gabbard and Galloper cluster. The difference in turbine scale between the proposed and existing turbines will be apparent, with turbines seen above the offshore horizon. The scale of change is judged to be medium. The geographical extent of the change is judged to be medium, with views of this nature available across the characteristically open nature reserve. The overall magnitude of change is judged to be medium.
Effect significance	**Moderate adverse, which is significant in EIA terms.** At 23km, the Offshore Above-sea Development will only be visible in conditions of ‘very good’ to ‘excellent’ atmospheric visibility.
Cumulative Effects	Under scenario 1 East Anglia One North and East Anglia Two will introduce further offshore wind farms into the view, likely to read as one cluster to the north of the Galloper and Greater Gabbard cluster. There will be a gap between these schemes and the Galloper and Greater Gabbard cluster.

Receptor	Viewpoint 8 - Orford Ness
	Under scenario 2 Five Estuaries will reduce the gap between the East Anglia cluster and the Galloper and Greater Gabbard cluster. When visible on clear days and under both scenarios, the Offshore Above-sea Development will be seen in front of and extend the influence of wind turbines to the south of the Galloper/ Greater Gabbard/ Five Estuaries cluster. A notable gap to London Array, further south, will remain. **Effects of this nature are recognised in the primary assessment. In this context, where offshore wind farms occupy a wide horizontal field of sea based views, the additional cumulative scale of change will be small and effects will reflect those as identified in the primary assessment (moderate adverse).** **Under scenario 2, the potential for significant 'total' cumulative visual effects (moderate) is also acknowledged. When visible on clear days, offshore wind farms will occupy a wide extent of the seaward horizon in views to the east and south-east. This would be the case without the Offshore Above-sea Development in the cumulative picture too. As such, the Offshore Above-sea Development is not judged to tip the balance towards total cumulative effects being significant.**

Table 29.22 Viewpoint 9

Receptor	Viewpoint 9 - Shingle Street			
Grid Reference	636652E	242526N	Figure Number	29.2.9 (Volume II)
LCA/ LCT	Coastal Dunes and Shingle Ridges LCT		Landscape Designation	Suffolk Coast and Heaths AONB and Suffolk Heritage Coast
Direction of View	East, south-east		Distance to nearest turbine	28.35km
Baseline Description	This viewpoint is located in the small coastal settlement of Shingle Street. It is representative of residential receptors in the village and recreational users of the coast in this area. In seawards views to the east and south-east, the expansive open waters of the North Sea are visible, seen beyond the flat shingle beach which is textured by a patchwork of low vegetation. Existing offshore wind farms including Galloper, Greater Gabbard, London Array and Gunfleet Sands are visible on clear days. Whilst, due to viewing distance, the offshore turbines form small features, the wide horizontal field of view occupied by offshore turbines is apparent from this location. Views along the coastline to the north are characterised by the flat expanse of shingle beach, with distant buildings at Orford Ness visible on the skyline beyond. To the south the blocky profile of a series of Martello Towers contrast with the flat shingle beach and coastline, with a band of woodland visible on the skyline beyond limiting longer distance views. To the west, views inland are largely contained by hedgerow trees and properties in Shingle Street, as well as the imposing barrel form of a Martello Tower.			
Sensitivity	Residential receptors in Shingle Street and recreational users of the coast in this area are considered to be of high to medium susceptibility. The viewpoint is located in the Suffolk Coast and Heaths AONB and Suffolk Heritage Coast, indicating a higher value. On balance, taking account of the judgements of susceptibility and value, the overall sensitivity is judged to be medium-high.			

Receptor	Viewpoint 9 - Shingle Street
Magnitude of Change	The Offshore Above-sea Development will be seen at a distance of 28km. The hubs and blades of all 7 turbines in the northern array area of the Offshore Above-sea Development will be visible. The turbines to the north of this array area, are more tightly gathered together. The northern array area will occupy a relatively large horizontal field of view given the small number of turbines in it. This array area will be seen in front of the turbines of Greater Gabbard and Galloper Offshore Wind Farms. The difference in turbine scale between the proposed and existing turbines will be apparent, with turbines seen above the offshore horizon. The turbine hubs and blades of the southern array area will be visible in longer distance views to the south-east. From this viewing angle the north to south aligned rows of turbines will begin to overlap/ merge together. There will be a small number of outlying turbines to the north of this array area. The turbines in the southern array area will be seen behind and to the south of the northern array area, with a notable gap between the two array areas. The southern array area will extend the horizontal field of view occupied by turbines to the south of distant turbines in Greater Gabbard and Galloper cluster. The difference in turbine scale between the proposed and existing turbines will be apparent, with turbines seen above the offshore horizon. The scale of change is judged to be medium. The geographical extent of the change is judged to be medium, with views of this nature available across the characteristically open nature reserve. The overall magnitude of change is judged to be medium.
Effect significance	**Moderate adverse, which is significant in EIA terms.** At 28km, the Offshore Above-sea Development will only be visible in conditions of 'very good' to 'excellent' atmospheric visibility.
Cumulative Effects	Under scenario 1 East Anglia Two will introduce a further offshore wind farm into the view, to the north of the Galloper and Greater Gabbard cluster. There will be a gap between this scheme and the Galloper and Greater Gabbard cluster. Under scenario 2 Five Estuaries will reduce the gap between East Anglia Two and the Galloper and Greater Gabbard cluster. When visible on clear days and under both scenarios, the Offshore Above-sea Development will be seen in front of and extend the influence of wind turbines to the south of the Galloper/ Greater Gabbard/ Five Estuaries cluster. A notable gap to London Array, further south, will remain. **Effects of this nature are recognised in the primary assessment. In this context, where offshore wind farms occupy a wide horizontal field of sea based views, the additional cumulative scale of change will be small and effects will reflect those as identified in the primary assessment (moderate adverse).** **Under scenario 2, the potential for significant 'total' cumulative visual effects (moderate) is also acknowledged. When visible on clear days, offshore wind farms will occupy a wide extent of the seaward horizon in views to the east and south-east. This would be the case without the Offshore Above-sea Development in the cumulative picture too. As such, the Offshore Above-sea Development is not judged to tip the balance towards total cumulative effects being significant.**

Table 29.23 Viewpoint 10

Receptor	Viewpoint 10 - Pulhamite Cliffs (Bawdsey Manor)			
Grid Reference	633373E	237651N	Figure Number	29.2.10 (Volume II)

Receptor	Viewpoint 10 - Pulhamite Cliffs (Bawdsey Manor)		
LCA/ LCT	Rolling Estate Sandlands/ Coastal Levels LCT	Landscape Designation	Suffolk Coast and Heaths AONB and Suffolk Heritage Coast
Direction of View	East, south-east	Distance to nearest turbine	31.07km
Baseline Description	This viewpoint is located on shingle beach adjacent to Bawdsey Manor at the mouth of the River Deben. It is representative of views experienced by visitors to the Manor and recreational users of the coast in this area. In seawards views to the east and south-east, the expansive open waters of the North Sea are visible, seen beyond the flat shingle beach. Existing offshore wind farms including Galloper, Greater Gabbard, London Array and Gunfleet Sands are visible on clear days. Whilst, due to viewing distance, the offshore turbines form small features, the wide horizontal field of view occupied by offshore turbines is apparent from this location. Views along the coastline to the north-east are characterised by the western façade of Bawdsey Manor and surrounding woodland, which screens longer distance views of the coastline beyond. To the south-west, views are available across the mouth of the River Deben to properties at Felixstowe Ferry and two prominent Martello Towers. Longer distance views are contained by a wooded skyline in the medium distance. To the north-west longer distance views are focused inland up the River Deben, foregrounded by a number of small ships moored in the river mouth.		
Sensitivity	Visitors to Bawdsey Manor and recreational users of the coast in this area are considered to be of medium susceptibility. The viewpoint is located in the Suffolk Coast and Heaths AONB and Suffolk Heritage Coast, indicating a higher value. On balance, taking account of the judgements of susceptibility and value, the overall sensitivity is judged to be medium-high.		
Magnitude of Change	The Offshore Above-sea Development will be seen at a distance of 31km. The hubs and blades of all 7 turbines in the northern array area of the Offshore Above-sea Development will be visible. The northern array area will occupy a relatively large horizontal field of view given the small number of turbines in it. This array area will be seen in front of and extend the influence of turbines to the north of the Greater Gabbard and Galloper cluster. The difference in turbine scale between the proposed and existing turbines will be apparent, with turbines seen above the offshore horizon. The turbine hubs and blades of the southern array area will be visible in longer distance views to the south-east. From this viewing angle the turbines will appear relatively distinct and in sequence, though there will be some stacking/merging of turbines. The turbines in the southern array area will be seen behind and to the south of the northern array area, with a notable gap between the two array areas. The southern array area will extend the horizontal field of view occupied by turbines to the south of distant turbines in Greater Gabbard and Galloper cluster. The difference in turbine scale between the proposed and existing turbines will be apparent, with turbines seen above the offshore horizon. The scale of change is judged to be medium. The geographical extent of the change is judged to be medium, with views of this nature available from this characteristically open coastline. The overall magnitude of change is judged to be medium.		
Effect significance	**Moderate adverse, which is significant in EIA terms.**		

Receptor	Viewpoint 10 - Pulhamite Cliffs (Bawdsey Manor)
	At 31km, the Offshore Above-sea Development will only be visible in conditions of 'very good' to 'excellent' atmospheric visibility.
Cumulative Effects	Under scenario 1 East Anglia Two will extend the influence of offshore wind farms, to the north of the Galloper and Greater Gabbard cluster. Under scenario 2 Five Estuaries will intensify the effects of offshore wind farms in relation to this now larger cluster including Galloper, Greater Gabbard and East Anglia Two. When visible on clear days and under both scenarios, the Offshore Above-sea Development will be seen in front of and extend the influence of wind turbines to the south of this larger cluster. Turbines in the northern array area in particular, will read as larger turbines than those in the cluster behind. A notable gap to London Array, further south, will remain. **Effects of this nature are recognised in the primary assessment. In this context, where offshore wind farms occupy a wide horizontal field of sea based views, the additional cumulative scale of change will be small and effects will reflect those as identified in the primary assessment (moderate adverse).** **Under scenario 2, the potential for significant 'total' cumulative visual effects (moderate) is also acknowledged. When visible on clear days, offshore wind farms will occupy a wide extent of the seaward horizon in views to the east and south-east. This would be the case without the Offshore Above-sea Development in the cumulative picture too. As such, the Offshore Above-sea Development is not judged to tip the balance towards total cumulative effects being significant.**

Table 29.24 Viewpoint 11

Receptor	Viewpoint 11 - Felixstowe Seafront Gardens			
Grid Reference	630540E	234432N	Figure Number	29.2.11 (Volume II)
LCA/ LCT	Urban LCT/Coastal Dunes and Shingle Ridges LCT		Landscape Designation	None
Direction of View	East, south-east		Distance to nearest turbine	33.76km
Baseline Description	This viewpoint is located at the Seafront Gardens in Felixstowe. It represents views experienced by recreational users of the Seafront Gardens. In seawards views to the east and south-east, the expansive open waters of the North Sea are visible, seen beyond the narrow beach, groynes and rock armour. Existing offshore wind farms including Galloper, Greater Gabbard, London Array and Gunfleet Sands are visible on clear days. Whilst, due to viewing distance, the offshore turbines form small features, the wide horizontal field of view occupied by offshore turbines is apparent from this location. Views along the coastline to the north-east continue a short distance along the promenade. To the south-west medium distance views are available along the seafront to Felixstowe Pier and built forms in the south of the settlement. On the skyline above several tall cranes located at Felixstowe Port are prominent. To the west views are short distance and contained by the Seafront Gardens.			
Sensitivity	Recreational users of the Seafront Gardens are considered to be of medium susceptibility. The viewpoint is not located in any designated landscapes and is influenced by existing offshore and coastal infrastructure. It is considered to be of medium value.			

Receptor	Viewpoint 11 - Felixstowe Seafront Gardens
	On balance, taking account of the judgements of susceptibility and value, the overall sensitivity is judged to be medium.
Magnitude of Change	The Offshore Above-sea Development will be seen at a distance of 34km. The hubs and blades of all 7 turbines in the northern array area of the Offshore Above-sea Development will be visible. The turbines at the north of this array area will appear more tightly gathered together in comparison to the two outlying turbines to the south of the array area. The northern array area will occupy a relatively large horizontal field of view given the small number of turbines in it. This array area will be seen in front of the turbines of Greater Gabbard and Galloper Offshore Wind Farms. The difference in turbine scale between the proposed and existing turbines will be apparent, with turbines seen above the offshore horizon. The turbine hubs and blades of the southern array area will be visible in long distance views to the south-east. From this viewing angle there will be some stacking/merging of turbines. The turbines in the southern array area will be seen at a greater distance and to the south of the northern array area, with a notable gap between the two array areas. The southern array area will extend the horizontal field of view occupied by turbines to the south of distant turbines in Greater Gabbard and Galloper Offshore Wind Farms. The difference in turbine scale between the proposed and existing turbines will be apparent, with turbines seen above the offshore horizon. Due to the influence of existing offshore wind turbines; the viewing distance and as large parts of sea based views to the south will not be altered, the scale of change is judged to be small. The geographical extent of the change is judged to be medium, with views of this nature available along the seafront at Felixstowe The overall magnitude of change is judged to be medium-low.
Effect significance	**Minor adverse, which is not significant in EIA terms.** At 34km, the Offshore Above-sea Development will only be visible in conditions of 'very good' to 'excellent' atmospheric visibility.
Cumulative Effects	Under scenario 1 East Anglia Two will be just perceptible, on very clear days. Under scenario 2 Five Estuaries will intensify the effects of offshore wind farms in relation to Galloper and Greater Gabbard. When visible on clear days and under both scenarios, the Offshore Above-sea Development will be seen in front of and extend the influence of wind turbines to the south of the Galloper/ Greater Gabbard/ Five Estuaries cluster. The proposed turbines will read as larger turbines than those in the cluster behind. A notable gap to London Array, further south, will remain. Cumulative effects will be similar to those considered in the primary assessment. **The additional cumulative scale of change will be small and effects will reflect those as identified in the primary assessment (minor adverse).**
Visual Effects Associated with Lighting	Red aviation lighting on turbines in the northern and southern array area will be visible, seen at a distance of 34km. This would be seen in an offshore context which includes sources of light from marine infrastructure and offshore wind farms. Under both the 2000 and 200 candela scenarios, and given the viewing distance, a small scale of change and non significant effects are predicted. For the 200 candela scenario in particular (which represents the more realistic scenario in which the lights are dimmed to 10 percent intensity in clear weather conditions, such as the photography has been shot in), lighting on the offshore wind farm will be difficult to perceive at this viewing distance.

Table 29.25 Viewpoint 12

Receptor	Viewpoint 12 - Landguard Fort			
Grid Reference	628580E	231878N	Figure Number	29.2.12 (Volume II)
LCA/ LCT	Urban/ Coastal Dunes and Shingle Ridges LCT		Landscape Designation	None
Direction of View	East, south-east		Distance to nearest turbine	35.76km
Baseline Description	This viewpoint is located in Landguard Nature Reserve adjacent to Landguard Fort. It represents views experienced by visitors to the Nature Reserve and Landguard Fort and recreational users of the Suffolk Coast Path and NCR 51. In seawards views to the east and south-east, the expansive open waters of the North Sea are visible, seen beyond the vegetated shingle beach. Existing offshore wind farms including Galloper, Greater Gabbard, London Array and Gunfleet Sands are visible on clear days and shipping activity associated with the nearby Felixstowe Port is apparent. Whilst, due to viewing distance, the offshore turbines form small features, the wide horizontal field of view occupied by offshore turbines is apparent from this location. Views along the coastline to the north-east extend over the vegetated shingle beach to the eastern edge of Felixstowe. To the south-west longer distance views are available along the coastline to the coastal headland of The Naze, with Naze Tower and turbines at Gunfleet Sands Offshore Windfarm visible on the skyline. To the west and north-west views are contained by Landguard Fort and the large cranes and stacked shipping containers of Felixstowe Port.			
Sensitivity	Visitors to Landguard Fort/Nature Reserve and recreational users of the coastline in this area are considered to be of medium susceptibility. The viewpoint is not located in any designated landscapes and is influenced by existing offshore and coastal infrastructure. It is considered to be of medium value. On balance, taking account of the judgements of susceptibility and value, the overall sensitivity is judged to be medium.			
Magnitude of Change	The Offshore Above-sea Development will be seen at a distance of 36km. The hubs and blades of all 7 turbines in the northern array area of the Offshore Above-sea Development will be visible. The turbines at the north of this array area will appear more tightly gathered together in comparison to the two slightly outlying turbines at the south of the array area. The northern array area will occupy a relatively large horizontal field of view given the small number of turbines in it. This array area will be seen in front (and slightly extend the influence north) of the turbines of Greater Gabbard and Galloper Offshore Wind Farms. The difference in turbine scale between the proposed and existing turbines will be apparent, with turbines seen above the offshore horizon. The turbine hubs and blades of the southern array area will be visible in longer distance views to the south-east. From this viewing angle there will be some stacking/merging of turbines. The turbines in the southern array area will be seen at a greater distance and to the south of the northern array area, with a notable gap between the two array areas. The southern array area will extend the horizontal field of view occupied by turbines to the south of distant turbines in Greater Gabbard and			

Receptor	Viewpoint 12 - Landguard Fort
	Galloper Offshore Wind Farms. The difference in turbine scale between the proposed and existing turbines will be apparent, with turbines seen above the offshore horizon. Due to the influence of existing offshore wind turbines and viewing distance the scale of change is judged to be small. The geographical extent of the change is judged to be medium, with views of this nature available along the seafront at Felixstowe The overall magnitude of change is judged to be medium-low.
Effect significance	**Minor adverse, which is not significant in EIA terms.** At 36km, the Offshore Above-sea Development will only be visible in conditions of 'very good' to 'excellent' atmospheric visibility.
Cumulative Effects	Under scenario 1 East Anglia Two will be just perceptible, on very clear days. Under scenario 2 Five Estuaries will intensify the effects of offshore wind farms in relation to Galloper and Greater Gabbard. When visible on clear days and under both scenarios, the Offshore Above-sea Development will be seen in front of and extend the influence of wind turbines to the south of the Galloper/ Greater Gabbard/ Five Estuaries cluster. The proposed turbines will read as larger turbines than those in the cluster behind. A notable gap to London Array, further south, will remain. Cumulative effects will be similar to those considered in the primary assessment. **The additional cumulative scale of change will be small and effects will reflect those as identified in the primary assessment (minor adverse).**

Table 29.26 Viewpoint 13

Receptor	Viewpoint 13 - Naze Tower			
Grid Reference	626531E	223524N	Figure Number	29.2.13 (Volume II)
LCA/ LCT	Coastal Ridges and Peninsulas LCT		Landscape Designation	None
Direction of View	East, south-east		Distance to nearest turbine	38.65km
Baseline Description	This is viewpoint is located at the historic landmark of Naze Tower. It represents views experienced by recreational visitors to the Tower. In seawards views to the east and south-east, the expansive open waters of the North Sea are visible, seen beyond the grassy headland. Approximately 24km to the south-east London Array Offshore Windfarm is prominent on the skyline, occupying a wide horizontal field of view. Thanet Wind Farm is visible beyond this scheme. Approximately 39 – 45km to the east, the more distant turbines of Galloper and Greater Gabbard Offshore Windfarms are just discernible (on very clear days). Shipping activity is apparent with both recreational and commercial boats visible in the coastal waters. To the north long distance views are available beyond the headland to the settlement of Felixstowe, with several large cranes at the port particularly prominent. To the south and west, views are short distance, contained by hedgerow trees and built form adjacent to Naze Tower.			

Receptor	Viewpoint 13 - Naze Tower
Sensitivity	Visitors to Naze Tower are considered to be of medium susceptibility. The viewpoint is not located in any designated landscapes and is influenced by existing offshore and coastal infrastructure. It is considered to be of medium value. On balance, taking account of the judgements of susceptibility and value, the overall sensitivity is judged to be medium.
Magnitude of Change	The Offshore Above-sea Development will be seen at a distance of 39km. The hubs and blades of all 7 turbines in the northern array area of the Offshore Above-sea Development will be visible. There will be relatively even spacing between the turbines though the array area will be more concentrated at its centre. The southern turbines of this array area will be seen in front of turbines in the Greater Gabbard and Galloper Offshore Wind Farms, when visible on clear days. The difference in turbine scale between the proposed and existing turbines will be apparent, with turbines seen above the offshore horizon. The turbine hubs and blades of the southern array area will be visible to the south-east. From this viewing angle there will be some stacking/merging of turbines. The turbines in the southern array area will be to the south of the northern array area, with a notable gap between the two array areas. The southern array area will extend the horizontal field of view occupied by turbines to the south of distant turbines in Greater Gabbard and Galloper Offshore Wind Farms. The difference in turbine scale between the proposed and existing turbines will be apparent, with turbines seen above the offshore horizon. Due to the influence of existing offshore wind turbines and viewing distance the scale of change is judged to be small. The geographical extent of the change is judged to be medium, with views of this nature available along the coastline at Walton-on-the-Naze. The overall magnitude of change is judged to be medium-low.
Effect significance	**Minor adverse, which is not significant in EIA terms.** At 39km, the Offshore Above-sea Development will only be visible in conditions of 'very good' to 'excellent' atmospheric visibility.
Cumulative Effects	Under scenario 1 East Anglia Two will be just perceptible, on very clear days. Under scenario 2 Five Estuaries will intensify the effects of offshore wind farms in relation to Galloper and Greater Gabbard. When visible on clear days and under both scenarios, the Offshore Above-sea Development will be seen in front of and extend the influence of wind turbines to the south of the Galloper/ Greater Gabbard/ Five Estuaries cluster. The proposed turbines will read as larger turbines than those in the cluster behind. A notable gap to London Array and Thanet, further south, will remain. Cumulative effects will be similar to those considered in the primary assessment. **The additional cumulative scale of change will be small and effects will reflect those as identified in the primary assessment (minor adverse).**

Table 29.27 Viewpoint 14

Receptor	Viewpoint 14 - Frinton-on-Sea			
Grid Reference	623636E	219020N	Figure Number	29.2.14 (Volume II)

Receptor	Viewpoint 14 - Frinton-on-Sea		
LCA/ LCT	Clay Plateaux/ Coastal Slopes LCT	Landscape Designation	None
Direction of View	East, south-east	Distance to nearest turbine	40.77km
Baseline Description	This viewpoint is located on the promenade at Frinton-on-Sea. It represents views experienced by recreational users of the coast in this area and residential receptors at the eastern edge of the settlement. In seawards views to the east and south-east, the expansive open waters of the North Sea are visible, seen beyond the narrow sandy beach and groynes. Approximately 10km to the south-east the turbines of Gunfleet Sands Offshore Windfarm are prominent on the skyline. In combination with the visible, but more distant and smaller-scale turbines of London Array Offshore Windfarm, these existing developments occupy a wide horizontal field of view. Approximately 41 – 46km to the east, the more distant turbines of Galloper and Greater Gabbard Offshore Windfarms are just discernible (on very clear days). Views along the coastline to the north continue along the concrete promenade of Frinton-on-Sea to the wide horizontal profile of Walton Pier which is visible ion the skyline. The promenade is lined by rows of colourful huts and the beach below has multiple wooden groynes along its length. Views to the south-west and west are short distance, contained by beach huts along the promenade and built form and woodland at the eastern edge of Frinton-on-Sea.		
Sensitivity	Recreational users of the coast at Frinton-on-Sea are considered to be of medium susceptibility. Residential receptors at the eastern edge of the settlement are considered to be of high susceptibility. The viewpoint is not located in any designated landscapes and is influenced by existing offshore and coastal infrastructure. It is considered to be of medium value. On balance, taking account of the judgements of susceptibility and value, the overall sensitivity is judged to be medium.		
Magnitude of Change	The Offshore Above-sea Development will be seen at a distance of 41km. The hubs and blades of all 7 turbines in the northern array area of the Offshore Above-sea Development will be visible to the east. There will be relatively even spacing between the turbines though there will be some stacking at the centre of the array area. Though turbines to the south of this array area will be seen in front of turbines at Greater Gabbard and Galloper Offshore Wind Farms, these exiting schemes will be barely discernible. The turbine hubs and blades of the southern array area will be visible in views to the south-east. From this viewing angle the turbines rows will be clearly legible. The turbines in the southern array area will be to the south of the northern array area, with a notable gap between the two array areas. In combination with Gunfleet Sands and London Array the Offshore Above-sea Development will extend the horizontal field of view occupied by wind turbines from this viewpoint, with gaps between the various clusters of turbines. Due to the viewing distance and existing influence of Gunfleet Sands and London Array Offshore Windfarms, the scale of change is judged to be medium-small. The geographical extent of the change is judged to be medium, with views of this nature available along the coastline at Frinton-on-Sea. The overall magnitude of change is judged to be medium-low.		

Receptor	Viewpoint 14 - Frinton-on-Sea
Effect significance	**Minor adverse, which is not significant in EIA terms.** At 41km, the Offshore Above-sea Development will only be visible in conditions of 'very good' to 'excellent' atmospheric visibility.
Cumulative Effects	Under scenario 1 there will be no change as there is no visibility of wind farms considered under the scenario 1 assessment, from this viewpoint. Under scenario 2 Five Estuaries will intensify the effects of offshore wind farms in relation to Galloper and Greater Gabbard. When visible on clear days and under both scenarios, the Offshore Above-sea Development will be seen in front of and extend the influence of wind turbines to the south of the Galloper/ Greater Gabbard/ Five Estuaries cluster. The proposed turbines will read as larger turbines than those in the cluster behind. A notable gap to London Array, further south, will remain. Cumulative effects will be similar to those considered in the primary assessment. **The additional cumulative scale of change will be small and effects will reflect those as identified in the primary assessment (minor adverse).**

Table 29.28 Viewpoint 15

Receptor	Viewpoint 15 - Clacton-on-Sea			
Grid Reference	617880E	214223N	Figure Number	29.2.15 (Volume II)
LCA/ LCT	Coastal Ridges and Peninsulas LCT		Landscape Designation	None
Direction of View	East, north-east		Distance to nearest turbine	46.32km
Baseline Description	This viewpoint is located on the pier at Clacton-on-Sea. It represents views experienced by recreational users of the coastline in this area and residential receptors at the eastern edge of the settlement. In seawards views to the east and south-east, the expansive open waters of the North Sea are visible, seen beyond the pier boardwalk. Approximately 6.8km to the south-east the turbines of Gunfleet Sands Offshore Windfarm appear relatively proximate and large-scale on the skyline. Behind, the more distant turbines of London Array Offshore Windfarm (approximately 25km) are faintly visible and appear far smaller in scale than those of Gunfleet Sands. Views north-east and south-west along the coastline are characterised by built form at the eastern edge of Clacton-on-Sea, while nearby buildings on the pier contain views to the west.			
Sensitivity	Recreational users of the coast at Clacton-on-Sea are considered to be of medium susceptibility. Residential receptors at the eastern edge of the settlement are considered to be of high susceptibility. The viewpoint is not located in any designated landscapes and is influenced by existing offshore and coastal infrastructure. It is considered to be of medium value. On balance, taking account of the judgements of susceptibility and value, the overall sensitivity is judged to be medium.			
Magnitude of Change	The Offshore Above-sea Development will be seen at a distance of 46km.			

Receptor	Viewpoint 15 - Clacton-on-Sea
	The turbine hubs and blades of all 7 turbines in the northern array area of the Offshore Above-sea Development will be visible just above the horizon to the north-east. There will be relatively even spacing between the turbines though there will be some stacking at the centre of the array area. The turbine hubs and blades of the southern array area will be visible just above the horizon in views to the east, seen at a minimum distance of approximately 46km. The turbines in the southern array area will be to the south of the northern array area, with a notable gap between the two array areas. The Offshore Above-sea Development will introduce new wind turbine development in views to the north-east and east. There will be a slight gap between the Offshore Above-sea Development and operational offshore wind farms in the foreground. In combination with Gunfleet Sands and London Array the Offshore Above-sea Development will extend the horizontal field of view occupied by wind turbines from this viewpoint. Due to the viewing distance and existing influence of Gunfleet Sands and London Array Offshore Windfarms, the scale of change is judged to be small. The geographical extent of the change is judged to be medium, with views of this nature available along the coastline at Clacton-on-Sea. The overall magnitude of change is judged to be medium-low.
Effect significance	**Minor adverse, which is not significant in EIA terms.** At 46km, the Offshore Above-sea Development will only be visible in conditions of 'very good' to 'excellent' atmospheric visibility.
Cumulative Effects	Under scenario 1 there is no change as there is no visibility of wind farms considered under the scenario 1 assessment, from this viewpoint. Under scenario 2 there will be some very distant visibility of turbine blades in Five Estuaries. This will only be apparent on very clear days. The Offshore Above-sea Development will be seen in front of this scheme and cumulative effects will be similar to those considered in the primary assessment. **The additional cumulative scale of change will be small and effects will reflect those as identified in the primary assessment (minor adverse).**
Visual Effects Associated with Lighting	Red aviation lighting on turbines in the northern and southern array area will be visible, at a distance of 46km. This would be seen in an offshore context which includes sources of light from marine infrastructure and offshore wind farms. The photography from this location had to be shot just before 10pm, as the pier closes at this time. As such, and during summer months, dusk views from the pier itself will be unobtainable. Under both the 2000 and 200 candela scenarios, and given the viewing distance, a small scale of change and non significant effects are predicated. For the 200 candela scenario in particular (which represents the more realistic scenario in which the lights are dimmed to 10 percent intensity in clear weather conditions, such as the photography has been shot in), lighting on the offshore wind farm will be difficult to perceive at this viewing distance.

Table 29.29 Viewpoint 16

Receptor	Viewpoint 16 - North Foreland			
Grid Reference	639238E	171118N	Figure Number	29.2.16 (Volume II)
LCA/ LCT	Forness Point and North Foreland LCA		Landscape Designation	None
Direction of View	North-east		Distance to nearest turbine	40.4km
Baseline Description	This viewpoint is located at a clifftop vantage point above Botany Bay at North Foreland in Kent. It represents views experienced by recreational users of the coast in this area and residential receptors at the seaward edge of the surrounding settlement. Shipping activity in the area is clearly apparent with several large vessels visible in the coastal waters. In seawards views to the north-east, the expansive open waters of the North Sea are visible, seen beyond chalk cliffs and an exposed rocky foreshore due to the low tide. Turbines at Thanet Offshore Windfarm are visible on the skyline, approximately 12km distant. Approximately 21km to the north wind turbines at the southern edge of London Array Offshore Windfarm are just perceptible on the skyline. Views along the coastline to the north-west and south are characterised by the grass-topped chalk cliffs that define this part of the coast and seaward facing properties at the eastern edge of North Foreland. To the west views are short distance, contained by built form in the settlement.			
Sensitivity	Recreational users of the coast at North Foreland are considered to be of medium susceptibility. Residential receptors at the eastern edge of the settlement are considered to be of high susceptibility. The viewpoint is not located in any designated landscapes and is influenced by existing offshore and coastal infrastructure and shipping activity. It is considered to be of medium value. On balance, taking account of the judgements of susceptibility and value, the overall sensitivity is judged to be medium.			
Magnitude of Change	The Offshore Above-sea Development will be seen at a distance of 40km. 3 turbine hubs and 7 turbine blades in the northern array area of the Offshore Above-sea Development will be visible just above the horizon to the north-east. The turbine hubs of the southern array area will be visible above the horizon in views to the north-east. From this viewing angle there will be some stacking at the north of the array area. There will be a gap between the two array areas, with the southern array area appearing far more clearly and extensively to the south of the distant northern array area. The Offshore Above-sea Development will introduce new wind turbine development in views to the north-east. In combination with Thanet and London Array Offshore Windfarms the Offshore Above-sea Development will extend the horizontal field of view occupied by wind turbines from this viewpoint. There will be notable gaps between the southern array areas and London Array (to the west) and Thanet (to the east). Due to the viewing distance and existing influence of Thanet and London Array Offshore Windfarms, the scale of change is judged to be medium-small. The geographical extent of the change is judged to be medium, with views of this nature available along the coastline at North Foreland and Margate.			

Receptor	Viewpoint 16 - North Foreland
	The overall magnitude of change is judged to be medium-low
Effect significance	**Minor adverse, which is not significant in EIA terms.** At 40km, the Offshore Above-sea Development will only be visible in conditions of 'very good' to 'excellent' atmospheric visibility.
Cumulative Effects	Under scenario 1 there is no change as there is no visibility of wind farms considered under the scenario 1 assessment, from this viewpoint. Under scenario 2 there will be some very distant visibility of turbine blades in Five Estuaries. This will only be apparent on very clear days. The Offshore Above-sea Development will be seen in front of this scheme and cumulative effects will be similar to those considered in the primary assessment. **The additional cumulative scale of change will be barely perceptible and effects will reflect those as identified in the primary assessment (minor adverse).**
Visual Effects Associated with Lighting	Red aviation lighting on turbines in the northern and southern array area will be visible, seen at a distance of 40km. This would be seen in an offshore context which includes sources of light from marine infrastructure and offshore wind farms. Under both the 2000 and 200 candela scenarios, and given the viewing distance, a small scale of change and non significant effects are predicated. For the 200 candela scenario in particular (which represents the more realistic scenario in which the lights are dimmed to 10 percent intensity in clear weather conditions, such as the photography has been shot in), lighting on the offshore wind farm will be difficult to perceive at this viewing distance.

29.6.2.5 Effects on routes

103. Visibility from a route is not uniform along its entire length. This is because views of the surrounding landscape change due to the landform, buildings, and vegetation cover as the viewer moves along the route. Sequential effects from the Suffolk Coastal Path, are set out below.

Table 29.30 Suffolk Coastal Path

Receptor	Suffolk Coastal Path		
Representative Viewpoints	• VP2 Southwold Pier • VP3 Dunwich Coastguard Cottages • VP4 Sizewell Beach • VP5 Cliffs above Thorpeness • VP9 Shingle Street • VP10 Pulhamite Cliffs (Bawdsey Manor) • VP11 Felixstowe Seafront Gardens	Figure Number (Volume II)	29.2.2 29.2.3 29.2.4 29.2.5 29.2.9 29.2.10 29.2.11 29.2.17

Receptor	Suffolk Coastal Path		
	• VP17 Coastal Path between Thorpeness and Sizewell		
Direction of View	East and south-east	Distance to nearest turbine	Within 30km, at its closest point.
Baseline Description	The Suffolk Coastal Path is a long distance trail (80km) which starts in Lowestoft and ends in Felixstowe (refer to Figure 29.1.2a, Volume II). The coastal path generally follows the coastal edge, from which expansive and long distance views over the North Sea, to the east, are a characteristic feature. In these views, and on days of clear weather, offshore operational wind farms including East Anglia, Greater Gabbard and Galloper are a feature of seaward views to the east and south-east. The are some locations where the coastal path deviates inland, including: • between Kessingland and Southwold and as it crosses the River Alde; • to the south of Aldeburgh; and • to the west of Orford Ness. With distance from the coastal edge the flat/ gently undulating terrain and vegetation cover tend to combine to limit seaward views. However, from large sections of the coastal path open seaward views are characteristic of the walking experience.		
Sensitivity	Recreational users of the Suffolk Coastal Path are considered to be of medium-high susceptibility. The Suffolk Coastal Path passes through the Suffolk Coast and Heaths AONB and Suffolk Heritage Coast, indicating a higher value. On balance, taking account of the judgements of susceptibility and value, the overall sensitivity is judged to be medium-high.		
Magnitude of Change	The ZTV (refer to Figure 29.1.2b, Volume II) indicates widespread theoretical visibility from the Suffolk Coastal Path. Where the path follows the open coastal edge, actual visibility will reflect this. From locations where the path deviates inland (including between Kessingland and Southwold and as it crosses the River Alde; to the south of Aldeburgh and to the west of Orford Ness) the ZTV pattern is more intermittent. Actual visibility will be further reduced by intervening vegetation cover. The following viewpoints (and levels of effect) are representative of views from the Suffolk Coastal Path: • VP2 Southwold Pier (Minor and Not Significant) • VP3 Dunwich Coastguard Cottages (Minor and Not Significant) • VP4 Sizewell Beach (Moderate and Significant) • VP5 Cliffs above Thorpeness (Moderate and Significant) • VP9 Shingle Street (Moderate and Significant) • VP10 Pulhamite Cliffs (Bawdsey Manor) (Moderate and Significant) • VP11 Felixstowe Seafront Gardens (Minor and Not Significant), this viewpoint is just south of southern extents of the path		

Receptor	Suffolk Coastal Path
	When visible, the Offshore Above-sea Development is generally seen in oblique seaward sequential views, in the context of the operational Greater Gabbard and Galloper Wind Farms. It will introduce a smaller northern array area and larger southern array area of turbines to these offshore wind farms. The relationship between the turbine array areas and the operational offshore wind farms will change, as walkers move along the route. The northern array will result in offshore wind turbines being closer to the shoreline and more visible. The difference in scale between the proposed and existing offshore wind turbines will be apparent. Significant visual effects have been identified from viewpoints 4, 5, 9 and 10. The wireline from the Coastal Path between Thorpeness and Sizewell (VP17) also indicates the potential for significant effects. These viewpoints are all located along the coastal edge within 30km of the Offshore Above-sea Development, between Sizewell Beach and Bawdsey Manor. From sections of the coastal path beyond 30km from the Offshore Above-sea Development/ sections of the coastal path which deviate inland (including sections of the route as it crosses the River Alde, to the south of Aldeburgh, and to the west of Orford Ness which are both within 30km) effects are judged to fall below the threshold of significance. This is due to the increased viewing distance or, in the case of more inland locations, more limited nature of seaward viewing opportunities.
Effect significance	**Moderate adverse, which is significant in EIA terms, effects are predicted where the Suffolk Coastal Path follows the coastal edge, between Sizewell Beach and Bawdsey Manor.** Beyond this, and for inland sections of the coastal path, effects are judged to fall below the threshold of significance.
Cumulative Effects	Under scenario 1 East Anglia One North and East Anglia Two will typically introduce further offshore wind farms into certain sequential views from the coastal path, to the north of the Galloper and Greater Gabbard cluster. Under scenario 2 Five Estuaries will either typically reduce the gap between the East Anglia cluster and the Galloper and Greater Gabbard cluster. As users of the coastal path move further south, this scheme will typically intensify the effects of offshore wind farms in relation the larger offshore wind farm cluster including Galloper, Greater Gabbard and East Anglia Two. When visible on clear days and under both scenarios, the Offshore Above-sea Development will be seen in front of and extend the influence of wind turbines in relation to these schemes. The relationship (and gaps between) the various schemes will change as walkers move along the coastal edge. **In this context, where offshore wind farms occupy a wide horizontal field of sea based views, effects of this nature are recognised in the primary assessment. The additional cumulative scale of change will be small and effects will reflect those as identified in the primary assessment (moderate adverse effects are predicted where the Suffolk Coastal Path follows the coastal edge, between Sizewell Beach and Bawdsey Manor).** **Under scenario 2, the potential for significant 'total' cumulative visual effects (moderate) is also acknowledged. When visible on clear days, offshore wind farms will occupy a wide extent of the seaward horizon in typically oblique and sequential views to the east and south-east. This would be the case without the Offshore Above-sea Development in the cumulative picture. As such, the Offshore Above-sea Development is not judged to tip the balance towards total cumulative effects being significant.**

29.6.3 Potential effects during decommissioning

104. Due to the similar nature of activities involved in both the construction and dismantling of a wind farm, seascape, landscape and visual effects no greater than those assessed for the operational stage will therefore continue through the 3 year decommissioning period.

29.7 Cumulative impacts

105. Cumulative interactions with consented and proposed offshore wind farms are considered in the cumulative assessment (see various assessments included at the end of each assessment table for the various seascape, landscape and visual receptors).

106. A summary is provided in Table 29.31.

Table 29.31 SLVIA Cumulative effects

Potential Impact	Receptor	Sensitivity	Magnitude of Additional Cumulative Change (Impact)	Additional Cumulative Effects (and Total, where significant)
Effects on Marine Character Areas	East Anglian Shipping Waters	Medium	Small	Significant effects are identified in the primary assessment (major). Cumulative effects will reflect these. 'Total' cumulative effects are predicted to be significant (major) for the East Anglia Shipping Waters MCA, particularly under scenario 2 and due to the number and geographical spread of offshore wind farms across this MCA. This would likely be the case even without the Offshore Above-sea Development in the cumulative picture.
Effects on Marine Character Areas	Suffolk Coastal Waters	High	Small	Significant effects are identified in the primary assessment (major to moderate). Cumulative effects will reflect these. The potential for significant total effects (major to moderate) is recognised, particularly under scenario 2 and on clear days when East Anglia One North, East Anglia Two and Five Estuaries are visible. This would likely be the case even without the Offshore Above-sea Development in the cumulative picture.
Effects on Onshore Landscape Character Areas	Coastal dunes and shingle ridges	High	Small	Significant effects are identified in the primary assessment (moderate). Cumulative effects will reflect these. The potential for significant total effects (moderate) is recognised, particularly under scenario 2 and on clear days when East Anglia One North, East Anglia Two and Five Estuaries are visible. This would likely be the case even without the Offshore Above-sea Development in the cumulative picture.
Effects on Onshore Landscape Character Areas	Coastal levels	High	Small	Significant effects are identified in the primary assessment (moderate). Cumulative effects will reflect these.
Effects on Onshore Landscape Character Areas	Saltmarsh and inter-tidal flats	High	Small	Significant effects are identified in the primary assessment (moderate). Cumulative effects will reflect these. The potential for significant total effects (moderate) is recognised, particularly under scenario 2 and on clear days when East Anglia One North, East Anglia Two and Five Estuaries are visible. This would likely be the case even without the Offshore Above-sea Development in the cumulative picture.

Potential Impact	Receptor	Sensitivity	Magnitude of Additional Cumulative Change (Impact)	Additional Cumulative Effects (and Total, where significant)
Effects on Landscape Designations	Suffolk Coast and Heaths Area of Outstanding Natural Beauty	High	Small	Significant effects are identified in the primary assessment (moderate). Cumulative effects will reflect these. The potential for significant total effects (moderate), particularly under scenario 2 and on clear days when East Anglia One North, East Anglia Two and Five Estuaries are visible, is recognised. This would likely be the case even without the Offshore Above-sea Development in the cumulative picture.
Effects on Views	Viewpoint 1 - Covehithe	Medium-high	Small	Additional cumulative effects will be minor, which is not significant in EIA terms. Particularly under scenario 2, the potential for significant 'total' cumulative visual effects (moderate), is acknowledged. This would be the case without the Offshore Above-sea Development in the cumulative picture.
Effects on Views	Viewpoint 2 - Southwold Pier	Medium-high	Small	Additional cumulative effects will be minor, which is not significant in EIA terms. Particularly under scenario 2, the potential for significant 'total' cumulative visual effects (moderate) is acknowledged. This would be the case without the Offshore Above-sea Development in the cumulative picture.
Effects on Views	Viewpoint 3 - Dunwich Coastguard Cottages	Medium-high	Small	Additional cumulative effects will be minor, which is not significant in EIA terms. Particularly under scenario 2, the potential for significant 'total' cumulative visual effects (moderate) is acknowledged. This would be the case without the Offshore Above-sea Development in the cumulative picture.
Effects on Views	Viewpoint 4 - Sizewell Beach	Medium-high	Small	Significant effects are identified in the primary assessment (moderate). Cumulative effects will reflect these. Particularly under scenario 2, the potential for significant 'total' cumulative visual effects (moderate) is acknowledged. This would be the case without the Offshore Above-sea Development in the cumulative picture.
Effects on Views	Viewpoint 5 - Cliffs above Thorpeness	Medium-high	Small	Significant effects are identified in the primary assessment (moderate). Cumulative effects will reflect these. Particularly under scenario 2, the potential for significant 'total' cumulative visual effects (moderate) is acknowledged. This would be the case without the Offshore Above-sea Development in the cumulative picture.

Potential Impact	Receptor	Sensitivity	Magnitude of Additional Cumulative Change (Impact)	Additional Cumulative Effects (and Total, where significant)
Effects on Views	Viewpoint 6 – Aldeburgh	High	Small	Significant effects are identified in the primary assessment (moderate). Cumulative effects will reflect these. Particularly under scenario 2, the potential for significant 'total' cumulative visual effects (moderate) is acknowledged. This would be the case without the Offshore Above-sea Development in the cumulative picture.
Effects on Views	Viewpoint 7 - Orford Castle	Medium-high	Barely perceptible	Additional cumulative effects will be minor, which is not significant in EIA terms
Effects on Views	Viewpoint 8 - Orford Ness	Medium-high	Small	Significant effects are identified in the primary assessment (moderate). Cumulative effects will reflect these. Particularly under scenario 2, the potential for significant 'total' cumulative visual effects (moderate) is acknowledged. This would be the case without the Offshore Above-sea Development in the cumulative picture.
Effects on Views	Viewpoint 9 – Shingle Street	Medium-high	Small	Significant effects are identified in the primary assessment (moderate). Cumulative effects will reflect these. Particularly under scenario 2, the potential for significant 'total' cumulative visual effects (moderate) is acknowledged. This would be the case without the Offshore Above-sea Development in the cumulative picture.
Effects on Views	Viewpoint 10 - Pulhamite Cliffs (Bawdsey Manor)	Medium-high	Small	Significant effects are identified in the primary assessment (moderate). Cumulative effects will reflect these. Particularly under scenario 2, the potential for significant 'total' cumulative visual effects (moderate) is acknowledged. This would be the case without the Offshore Above-sea Development in the cumulative picture.
Effects on Views	Viewpoint 11 - Felixstowe Seafront Gardens	Medium	Small	Additional cumulative effects will be minor, which is not significant in EIA terms.
Effects on Views	Viewpoint 12 - Landguard Fort	Medium	Small	Additional cumulative effects will be minor, which is not significant in EIA terms.

Potential Impact	Receptor	Sensitivity	Magnitude of Additional Cumulative Change (Impact)	Additional Cumulative Effects (and Total, where significant)
Effects on Views	Viewpoint 13 - Naze Tower	Medium	Small	Additional cumulative effects will be minor, which is not significant in EIA terms.
Effects on Views	Viewpoint 14 - Frinton on Sea	Medium	Small	Additional cumulative effects will be minor, which is not significant in EIA terms.
Effects on Views	Viewpoint 15 - Clacton on Sea	Medium	Small	Additional cumulative effects will be minor, which is not significant in EIA terms.
Effects on Views	Viewpoint 16 - North Foreland	Medium	Barely perceptible	Additional cumulative effects will be minor, which is not significant in EIA terms.
Effects on Routes	Suffolk Coastal Path	Medium-high	Small	Significant effects are identified from parts of the path in the primary assessment (moderate). Cumulative effects will reflect these. Particularly under scenario 2, the potential for significant 'total' cumulative visual effects (moderate) is acknowledged. This would be the case without the Offshore Above-sea Development in the cumulative picture.

29.8 Potential monitoring requirements

107. No monitoring requirements are identified in light of the conclusions of the SLVIA. Whilst significant landscape and visual effects have been identified, there are no landscape mitigation proposals, which require monitoring, which could lead to a reduction in landscape and visual effects.

29.9 Interactions

108. The effects identified and assessed in this chapter have the potential to interact with each other, which could give rise to synergistic effects as a result of that interaction. Potential interactions exist between seascape, landscape and visual receptors, and receptors as identified in the following other technical chapters, as set out in the table below.

Table 29.32 Chapter Topic Inter-relationships

Linked Chapter (Volume I)	Rationale	Section where addressed
Chapter 30 Landscape and visual impact assessment	Potential overlap between offshore and onshore seascape, landscape and visual effects, discussed further below.	Refer to seascape, landscape and visual receptors assessment in Section 29.6
Chapter 32 Tourism and recreation	Both chapters consider effects on recreational receptors.	Refer to visual receptors in Section 29.6.

109. With regard to interactions between landscape and visual effects identified in Chapter 30 LVIA (Volume I) and this chapter, visibility of the North Falls array area and the onshore substation or landfall, from a particular viewpoint or landscape receptor, may interact to produce a different, or greater effect on a receptor than when effects are considered in isolation.

110. During construction of the offshore turbines and the onshore export cable at the landfall (between Frinton-on-Sea and Clacton-on-Sea) there may be a short period where views associated with the construction of both project components will be available. However, this would be from a very localised area. Due to viewing distance (>30km) effects associated with the offshore turbines are judged to fall below the threshold of significance. Furthermore, these effects would be temporary and transitory in nature. As such, the potential for significant inter-relationship effects, during the construction (and decommissioning phase) phase, is unlikely.

111. During operation, and due to the location of the key visible components (offshore turbines/ offshore substation platforms and the onshore substation) the potential for combined and successive views is limited. For example, there are no SLVIA assessment viewpoints where inland views to the onshore substation zone are available. As such, there is no potential for significant inter-relationship effects during the operational phase.

29.10 Inter-relationships

112. The effects identified and assessed in this chapter have the potential to interrelate with each other. The areas of potential interrelationship are set out in the table below.

Table 29.33 Interactions between effects

Potential interactions between impacts				
Construction and Operation	Changes to landscape elements/ fabric	Changes to landscape/ seascape character	Changes to landscape designations	Changes to visual amenity
Changes to landscape elements/ fabric	-	N/a	N/a	N/a
Changes to landscape/seascape character	N/a	-	Yes	Yes
Changes to landscape designations	N/a	Yes	-	Yes
Changes to visual amenity	N/a	Yes	Yes	-

29.11 Summary

113. The following table provides a summary of the operational SLVIA findings. Landscape/ seascape and visual effects arising from the presence of partially constructed turbines will be comparable to the operational effects (although arguably to a lesser degree as construction-related effects will be of a shorter duration and transient in nature). Therefore, effects arising from the introduction of partially constructed turbines are not anticipated to be greater than operational effects, summarised below.

Table 29.34 SLVIA Summary findings (Operational Primary Assessment)

Potential impact	Receptor	Sensitivity	Magnitude of impact	Pre-mitigation effect	Additional mitigation measures	Residual effect
Effects on Marine Character Areas	East Anglian Shipping Waters	Medium	High to medium within 30km	Major	N/A	Major to moderate within 30km
	Suffolk Coastal Waters	High	High to medium within 30km	Major	N/A	Major to moderate within 30km
Effects on Onshore Landscape Character Areas	Coastal dunes and shingle ridges	High	Medium	Moderate	N/A	Moderate, where this LCT occurs within 30km
	Coastal levels	High	Medium	Moderate	N/A	Moderate, where this LCT occurs within 30km
	Saltmarsh and inter-tidal flats	High	Medium	Moderate	N/A	Moderate, where this LCT occurs within 30km
Effects on Landscape Designations	Suffolk Coast and Heaths Area of Outstanding Natural Beauty	High	Medium	Moderate	N/A	Moderate along the coastal edge within 30km
Effects on Views	Viewpoint 1 - Covehithe	Medium-high	Low	Minor	N/A	Minor
Effects on Views	Viewpoint 2 - Southwold Pier	Medium-high	Low	Minor	N/A	Minor
Effects on Views	Viewpoint 3 - Dunwich Coastguard Cottage	Medium-high	Low	Minor	N/A	Minor
Effects on Views	Viewpoint 4 - Sizewell Beach	Medium-high	Medium	Moderate	N/A	Moderate
Effects on Views	Viewpoint 5 - Cliffs above Thorpeness	Medium-high	Medium	Moderate	N/A	Moderate
Effects on Views	Viewpoint 6 - Aldeburgh	High	Medium	Moderate	N/A	Moderate
Effects on Views	Viewpoint 7 - Orford Castle	Medium-high	Medium-low	Minor	N/A	Minor

Potential impact	Receptor	Sensitivity	Magnitude of impact	Pre-mitigation effect	Additional mitigation measures	Residual effect
Effects on Views	Viewpoint 8 - Orford Ness	Medium-high	Medium	Moderate	N/A	Moderate
Effects on Views	Viewpoint 9 - Shingle Street	Medium-high	Medium	Moderate	N/A	Moderate
Effects on Views	Viewpoint 10 - Pulhamite Cliffs (Bawdsey Manor)	Medium-high	Medium	Moderate	N/A	Moderate
Effects on Views	Viewpoint 11 - Felixstowe Seafront Gardens	Medium	Medium-low	Minor	N/A	Minor
Effects on Views	Viewpoint 12 - Landguard Fort	Medium	Medium-low	Minor	N/A	Minor
Effects on Views	Viewpoint 13 - Naze Tower	Medium	Medium-low	Minor	N/A	Minor
Effects on Views	Viewpoint 14 - Frinton-on-Sea	Medium	Medium-low	Minor	N/A	Minor
Effects on Views	Viewpoint 15 - Clacton-on-Sea	Medium	Medium-low	Minor	N/A	Minor
Effects on Views	Viewpoint 16 - North Foreland	Medium	Medium-low	Minor	N/A	Minor
Effects on Routes	Suffolk Coastal Path	Medium-high	Medium	Moderate (where the Suffolk Coastal Path follows the coastal edge, between Sizewell Beach and Bawdsey Manor)	N/A	Moderate (where the Suffolk Coastal Path follows the coastal edge, between Sizewell Beach and Bawdsey Manor)

29.12 References

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