



Rampion Offshore Wind Farm



ES Section 12 – Seascape, Landscape & Visual Impact Assessment

RSK Environmental Ltd

Document 6.1.12

December 2012

APFP Regulation 5(2)(a)

Revision A

E.ON Climate & Renewables UK Rampion Offshore Wind Limited

CONTENTS

12	SEASCAPE, LANDSCAPE AND VISUAL IMPACT	12-1
12.1	Introduction	12-1
12.2	Legislation and Policy Context	12-1
12.3	Assessment Methodology.....	12-9
12.4	Environmental Baseline	12-38
12.5	Assessment of Predicted Effects.....	12-57
12.6	Combined Onshore/Offshore Effects	12-85
12.7	Cumulative Effects	12-86
12.8	Mitigation Measures.....	12-91
12.9	Residual Effects	12-92
12.10	Conclusions	12-92
12.11	Monitoring	12-94
12.12	References	12-94

Tables

Table 12.1:	Scoping Response Summary	12-12
Table 12.2:	Seascape/Landscape Character Sensitivity	12-25
Table 12.3:	Visibility Data Sources	12-31
Table 12.4:	Visual Receptor Sensitivity.....	12-32
Table 12.5:	Definition of Magnitude of Seascape, Landscape and Visual Change	12-36
Table 12.6:	Significance of Seascape, Landscape and Visual Effects	12-37
Table 12.7:	Seascape and Landscape Character Context	12-41
Table 12.8:	Representative Viewpoints	12-51
Table 12.9:	Atmospheric Visibility Assessment	12-54
Table 12.10:	Wind farm design features and their influence on the Rochdale Envelope for Seascape, Landscape and Visual Sensitivities	12-58
Table 12.11:	Seascape and Landscape Effects on Designated Assets	12-61
Table 12.12:	Sensitivity of Beachy Head to Selsey Bill Offshore Waters.....	12-64
Table 12.13:	Effects on Surrounding Seascape and Landscape Character Areas.....	12-66

Figures

Figure 12.1: Site Location

Figure 12.2a: Seascape and Landscape Designations (Western area)

Figure 12.2b: Seascape and Landscape Designations (Eastern area)

Figure 12.3a: Landscape Character Context (Western area)

Figure 12.3b: Landscape Character Context (Eastern area)

Figure 12.4: Assessment Seascape and Landscape Character Context

Figure 12.5: Topographical Context

Figure 12.6: Zone of Theoretical Visibility (Hub at 124m) – 100 Turbine Layout

Figure 12.7: Zone of Theoretical Visibility (Tip at 210m) – 100 Turbine Layout

Figure 12.8: Zone of Theoretical Visibility (Hub at 116m) – 195 Turbine Layout

Figure 12.9: Zone of Theoretical Visibility (Tip at 180m) – 195 Turbine Layout

Figure 12.10: Cumulative Development Locations

Figure 12.11: Cumulative Wind Farm Zone of Theoretical Visibility and Viewpoints – Shepham

Figure 12.12: Cumulative Wind Farm Zone of Theoretical Visibility and Viewpoints – Glyndebourne

Figure 12.13: Viewpoint Locations and Atmospheric Visibility

Figure 12.14: Viewpoint 1: Beachy Head Cliff Top

Figure 12.15: Viewpoint 2: Birling Gap Cliff Top (a, b, c and d)

Figure 12.16: Viewpoint 3: Birling Gap Beach (a and b)

Figure 12.17: Viewpoint 4: Seven Sisters Country Park Cliff Top (a, b and c)

Figure 12.18: Viewpoint 5: Seven Sisters Country Park Cuckmere Haven (a and b)

Figure 12.19: Viewpoint 6: Seaford Head Cliff Top (a and b)

Figure 12.20: Viewpoint 7: Seaford Sea Front Promenade (a and b)

Figure 12.21: Viewpoint 8: Newhaven Coastguard Cliff Top

Figure 12.22: Viewpoint 9: Peacehaven Cliff Top

Figure 12.23: Viewpoint 10: Beacon Hill, Rottingdean

Figure 12.24: Viewpoint 11: Brighton Parade (a, b and c)

Figure 12.25: Viewpoint 12: Brighton Sea Front Promenade (a and b)

Figure 12.26: Viewpoint 13: Shoreham/A259 Coastal Road

Figure 12.27: Viewpoint 14: Worthing Sea Front Promenade (a and b)

Figure 12.28: Viewpoint 15: Littlehampton Sea Front Promenade

Figure 12.29: Viewpoint 16: Bognor Regis Sea Front Promenade (a and b)

Figure 12.30: Viewpoint 17: Pagham Beach

Figure 12.31: Viewpoint 18: Selsey Sea Front Promenade

Figure 12.32: Viewpoint 19: Willingdon Hill

Figure 12.33: Viewpoint 20: Firle Beacon (a and b)

Figure 12.34: Viewpoint 21: Saxon Down

Figure 12.35: Viewpoint 22: Hollingbury Golf Course

Figure 12.36: Viewpoint 23: Ditchling Beacon Ridge

Figure 12.37: Viewpoint 24: Devil's Dyke (a and b)

Figure 12.38: Viewpoint 25: Upper Beeding

Figure 12.39: Viewpoint 26: Cissbury Ring (a and b)

Figure 12.40: Viewpoint 27: Highdown Hill (a and b)

Figure 12.41: Viewpoint 28: Springhead Hill

Figure 12.42: Viewpoint 29: Bignor Hill

Figure 12.43: Viewpoint 30: Newhaven to Dieppe Ferry (looking away from land)

Figure 12.44: Viewpoint 31: Newhaven to Dieppe Ferry (looking towards land) (a and b)

Figure 12.45: Cumulative Viewpoint 19: Willingdon Hill (a and b)

Figure 12.46: Cumulative Viewpoint 20: Firle Beacon (a, b and c)

Figure 12.47: Cumulative Viewpoint 21: Saxon Down (a and b)

Figure 12.48: Wireline Comparison of Turbine Height/Plan Layout Variables (a and b)

Figure 12.49: Wireline Comparison of Scheme Layout Variables (a and b)

Figure 12.50: Turbine Layout Options

12 SEASCAPE, LANDSCAPE AND VISUAL IMPACT

12.1 Introduction

- 12.1.1 This section of the Environmental Statement (ES) reports the findings of the Seascape, Landscape and Visual Impact Assessment (SLVIA) and Cumulative Seascape and Landscape Visual Impact Assessment (CSLVIA) for the offshore elements of the Rampion Offshore Wind Farm (the Project).
- 12.1.2 This section outlines the seascape, landscape and visual baseline conditions at and surrounding the Offshore Project site; the potential for mitigation within the design of the proposed development; and the level of the likely effects on seascape character, landscape character and visual amenity.
- 12.1.3 In acknowledgement of the capacity for the proposals to affect both sea and land, reference to "seascape" and "landscape" allows for distinction to be made where the overlap of these two influences requires definition (whilst at times the inter association between the two may equally involve some merging of terminology and context references).
- 12.1.4 The Offshore Project comprises an arrangement of turbines within the application boundary indicated in Figure 12.1. The assessment considers the potential for a range of turbine numbers and height scenarios within the 'Rochdale Envelope' for the Offshore Project (see Section 5 – EIA Methodology). The potential development scenarios are highlighted in Section 12.5.3. Within the range of development options, the worst case scenario has necessarily been identified as the basis for assessment, against which the relative difference of alternatives has been compared.
- 12.1.5 This assessment is to be read in conjunction with Section 26 - Onshore Landscape and Visual Impact Assessment. Cross reference is made to land based aspects of the development where relevant, to facilitate an understanding of the overall development effects.

12.2 Legislation and Policy Context

- 12.2.1 A summary of relevant legislation and planning policy is contained in Section 4 - Planning Policy Context. The key aspects of legislation and policy of relevance to seascape, landscape and visual considerations are listed below.
- 12.2.2 **Overarching National Policy Statement for Energy (EN-1) July 2011:** reinforces best practice principles with regard to the assessment of landscape and visual impact including acknowledgement of the relative value afforded by national and local designations.
- 12.2.3 Sections 5.9.5 – 5.9.7 of EN-1 states that *"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.

12.2.4 *"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.*

12.2.5 *"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. This should include light pollution effects, including on local amenity, and nature conservation."*

12.2.6 Sections 5.9.12 – 5.9.13 of EN-1 state that *"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 designation and such projects should be designed sensitively given the various siting, operational, and other relevant constraints. The fact that a proposed project will be visible from within a designated area should not in itself be a reason for refusing consent."*

12.2.7 **National Planning Policy Statement for Renewable Energy Infrastructure (EN-3) July 2011:** acknowledges the inherent landscape and visual effects of wind farm development and relates the importance of layout design in minimising effects on landscape and visual amenity.

12.2.8 Section 2.6.203 states that:

12.2.9 *"Where necessary, assessment of the seascape should include an assessment of three principal considerations on the likely effect of offshore wind farms on the coast:*

- *Limit of visual perception from the coast;*
- *Individual characteristics of the coast which affect its capacity to absorb a development; and*
- *How people perceive and interact with the seascape".*

12.2.10 **The National Planning Policy Framework (March 2012)** sets out the Government's planning policies for England, but does not contain specific policies for nationally significant infrastructure projects for which particular considerations apply. The framework does however refer to the weight to be afforded to conserving landscape and scenic beauty in National Parks, which have the highest status of protection in relation to landscape and scenic beauty.

The framework also states that local planning authorities should maintain the character of undeveloped coast, particularly in areas defined as Heritage Coast.

- 12.2.11 **UK Marine Policy Statement (2011):** includes reference to the consideration of effects of activities and developments on the marine and coastal area and on the landscape and seascape. The document relates that there is no legal definition for seascape in the UK but that the European Landscape Convention (ELC) defines landscape as “an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors”. In the context of the document, references to seascape are taken as meaning landscapes with views of the coast or seas, and coasts and the adjacent marine environment with cultural, historical and archaeological links with each other.
- 12.2.12 The document goes on to advise that in considering the impact of an activity or development on seascape, the marine plan authority should take into account existing character and quality, how highly it is valued and its capacity to accommodate change specific to any development. For any development proposed within or relatively close to nationally designated areas the marine plan authority should have regard to the specific statutory purposes of the designated areas.

Regional Policy

- 12.2.13 Until the abolition of Regional Spatial Strategies (RSS), all RSSs form part of the ‘Development Plan’ to be taken into consideration when determining planning applications. Regional planning policy that is relevant to the proposed development consists of the adopted South East Regional Spatial Strategy 2006-2016 (SERSS).

- Policy NRM8 (Coastal Management)
- Policy NRM15 (Location of Renewable Energy Development)
- Policy C3 (Areas of Outstanding Natural Beauty)

County Policy

- 12.2.14 As the proposed development will be physically located outwith any county policy defined areas, only those policies with contextual associations have been highlighted with potential relevance to the proposals:

West Sussex Structure Plan 2001-2016 (adopted 2004)

- Policy CH1 (Character)
- Policy CH2 (Areas of Outstanding Natural Beauty)
- Policy CH4 (Conservation Areas and Historic Towns and Villages)

- Policy CH6 (Historic Parks and Gardens)
- Policy ERA3 (The Coast)
- Policy ERA7 (Energy Generation)

Local Policy

12.2.15 As the proposed development will be physically located out with any local policy defined areas, only those policies with contextual associations have been highlighted with potential relevance to the proposals:

Adur District Local Plan (adopted 1996) Saved Policies

- Policy AC2 (The Sussex Downs Area of Outstanding Natural Beauty)
- Policy AC3 (The Sussex Downs Area of Outstanding Natural Beauty)
- Policy AB16 (The Riverside Setting of Shoreham-By-Sea)

Chichester District Local Plan First Review (adopted 1999) Saved Policies

- Policy RE4 (Areas of Outstanding Natural Beauty – Sussex Downs Protection of Landscape and Character)
- Policy RE28 (Historic Parks and Gardens)

Horsham District Core Strategy (adopted 2007)

- Policy CP1 (Landscape & Townscape Character)

Horsham General Development Control Policies (adopted 2007)

- Policy DC8(b) (Renewable Energy and Climate Change)

Worthing District Core Strategy (adopted 2011)

- Policy 13 (The Natural Environment and Landscape Character)

The City of Brighton & Hove Local Plan (adopted 2005) Saved Policies

- Policy QD4 (Design – strategic impact)
- Policy NC7 (Sussex Downs Area of Outstanding Natural Beauty)
- Policy HE6 (Development within or affecting the setting of conservation areas)
- Policy HE11 (Historic parks and gardens)

- Policy HE12 (Scheduled ancient monuments and other important archaeological sites)

Lewes District Local Plan (adopted 2003) Saved Policies

- Policy CT2 (Landscape Conservation and Enhancement)
- Policy H13 (Parks and Gardens of Special Historic Interest)

Eastbourne Borough Plan (adopted 2003) Saved Policies

- Policy NE12 (Renewable Energy)
- Policy D1 (Area of Outstanding Natural Beauty)
- Policy D2 (Heritage Coast)
- Policy UHT4 (Visual Amenity)
- Policy UHT9 (Protection of Historic Parks and Gardens)
- Policy UHT15 (Protection of Conservation Areas)
- Policy UHT20 (Archaeological Sites and Scheduled Monuments)

Mid Sussex District Local Plan (adopted 2004) Saved Policies

- Policy C4 (Areas of Outstanding Natural Beauty)
- Policy B15 (The Setting of Conservation Areas)
- Policy B17 (Historic Parks and Gardens)
- Policy B18 (Archaeological Sites)

12.2.16 The common themes running throughout policies across the study area relate to:

- Minimising effects on landscape and visual amenity and character; and
- Affording the highest protection to designated resources – specifically AONBs, Heritage Coast, Conservation Areas, Historic Parks and Gardens and Scheduled Monuments.

Seascape and Landscape Designations

12.2.17 The extent of seascape and landscape designations referred to below are illustrated on Figures 12.2a and 12.2b.

National Park

- 12.2.18 The South Downs National Park was designated in 2011 and covers an area extending from Winchester in the west to Eastbourne in the east, and includes the dramatic chalk cliffs associated with the Sussex Heritage Coast between Seaford and Beachy Head. The route of the South Downs Way national trail also coincides with both the highpoint ridgeline of the National Park and the Heritage Coast.
- 12.2.19 The National Park is an area of mixed farming with extensive swathes of semi-natural species-rich chalk grassland which accentuates the undulating landform of the Downs, river valleys, frequent small woodlands and areas of heathlands. It is a complex landscape with notable local variation and contrast.
- 12.2.20 The South Downs Management Plan (pre-dating the National Park designation) features 10 'Management Ambitions', which includes the aspiration that development *'does not detract from but makes a positive contribution to local landscape character'*.
- 12.2.21 The South Downs National Park lies approximately 14km north of the Offshore Project at its closest point at Rottingdean, east of Brighton, but generally maintains a more remote but extensive visual relationship with the sea across its elevated extents at the northern limits of the Zone of Theoretical Visibility (ZTV). An explanation of the basis for defining the extent of ZTV is provided in Sections 12.3.28 and 12.3.64.
- 12.2.22 The first South Downs Planning Inspector's report commented on the associative relationship between the proposed National Park boundary and the marine environment below the Mean Low Water Mark between Eastbourne and Seaford. The Inspector's conclusions cited the 'spectacular natural and scenic beauty along this section of the coast' and recommended that the National Park boundary should remain open at its seaward limit to encompass an associative (but not formally defined) extent of seascape.

Heritage Coast

- 12.2.23 The Sussex Heritage Coast stretches for 6 miles around the point at Beachy Head from Eastbourne to Seaford, and is designated on the merits of its distinctive chalk cliffs (refer to Figure 12.2b for location).
- 12.2.24 In 1973, this was the first length of Heritage Coast to be designated in England. It includes the dramatic chalk cliffs of the Seven Sisters and Beachy Head and the estuary of the Cuckmere marking the eastward extremity of the South Downs chalk ridge.
- 12.2.25 There is a waymarked path along the cliffs, part of which is included in the long distance South Downs Way trail.

12.2.26 Beachy Head is the highest point along the Heritage Coast, and long distance and wide-ranging views can be obtained from the cliff tops.

12.2.27 As described for the wider South Downs context above, The South Downs Management Plan includes the aspiration that development '*does not detract from but makes a positive contribution to local landscape character*'.

Registered Parks and Gardens

12.2.28 Effects upon the character and setting of Registered Parks and Gardens of Special Historic Interest are considered on individual merit of their relative significance and location (refer to Figures 12.2a and 12.2b for locations). This is based on the judgment that perceptible effects on the character of a registered site are likely to be limited with the distance of the proposals offshore, whilst acknowledging that the seascape context may nonetheless form a notable component in a particular view from a particular location. This relative consideration reflects the possible national significance and status of registered sites.

12.2.29 Registered Historic Parks and Gardens within the study area with visual associations with the seascape context of the proposals are located at:

- Stanmer Park, Brighton (19km) – 18th century landscape park surrounding an early 18th century country house with informal gardens and pleasure grounds. Views extend west and south west from the upper ground on the west side of the site across the Downs and Brighton towards the sea;
- Kemp Town Enclosures, Brighton (14km) – Private 19th century town gardens including a semi-circle of open space enclosed by residential properties facing the sea;
- Queens Park, Brighton (14km) – 19th century public park occupying a steep sided valley with glimpsed views from the park southwards to the sea;
- Highdown (17km) – 20th century plantsman's garden based around a former chalk pit and located on the south facing upper slopes of Highdown Hill with limited views of the coastal plain and the sea; and
- Arundel Park (25km) – early and mid 19th century partly walled pleasure grounds laid out within and around a castle of 11th century origin and with, on its north side, an extensive late 18th century to early 19th century walled park. Views refer to those of the immediate valley but with potential for distant views of the sea.

12.2.30 The inherent heritage value and historic setting associations of Registered Historic Parks and Gardens sites are referenced in Section 25 (Archaeology and Cultural Heritage).

Conservation Areas

12.2.31 The remoteness of the Offshore Project proposals limits the capacity for perceptible effects in relation to the local status of Conservation Areas; however those areas with a direct visual association with the sea have been identified to relate the potential for locally heightened areas of townscape sensitivity:

- Bognor Regis - The Steyne and Waterloo Square (25km);
- Worthing - Marine Parade and Hinterland (14km);
- Worthing – Steyne Gardens (14km);
- Worthing – South Street (14km);
- Brighton – Brunswick Town (14km);
- Brighton – Kemp Town (14km);
- Brighton – Pembroke and Princes, Hove (14km);
- Brighton – Regency Square (14km); and
- Brighton – Sackville Gardens, Hove (14km).

12.2.32 The location and historic setting designation value of Conservation Areas is illustrated and described in Section 25 (Archaeology and Cultural Heritage).

Scheduled Monuments

12.2.33 Scheduled Monument sites have not in themselves been considered as individual landscape/seascape or visual receptors, but have been considered in terms of potential to contribute to a heightened location sensitivity, where relevant to the broader context addressed by the SLVIA. In this respect, the following sites are coincident with National Park, National Trail or National Trust Ownership extents and therefore a notable component of the general landscape baseline:

- Cissbury Ring (19km);
- Highdown Hill (17km);
- Devils Dyke (20km);
- Ditchling Beacon (23km); and
- Firle Beacon (22km).

12.2.34 Refer to Figures 12.2a and 12.2b for the location of Scheduled Monuments.

National Trust Land

12.2.35 The relevance of National Trust land in this assessment is to identify location specific associations of landscape sensitivity where seascape forms a notable backdrop. In this respect, National Trust land which is coincident with the extents of the South Downs National Park with potential to prompt a locally enhanced landscape context sensitivity is located at:

- Slindon Estate (26km);
- Highdown Hill (17km);
- Cissbury Ring (19km);
- Ditchling Beacon (23km);
- Shoreham Gap (16km);
- Fulking Escarpment (18km);
- Devils Dyke (20km);
- Newtimber and Pangdean (20km); and
- Crowlink (16km).

12.2.36 Refer to Figures 12.2a and 12.2b for locations of National Trust land.

Other Conservation Designations

12.2.37 Other conservation designations such as Ramsar sites, National Nature Reserves (NNR) and Special Areas of Conservation (SAC) have been used in the seascape and landscape assessment as indicators of relative value.

12.2.38 Pagham mudflats Ramsar (28km from the proposed development) is notable for its landscape quality as an area of remoteness (refer to Figure 12.2a).

12.3 Assessment Methodology

Scope of the Assessment

Round 3 Strategic Environmental Assessment

12.3.1 The UK Offshore Energy Strategic Environmental Assessment (SEA) (Future Leasing for Offshore Wind Farms and Licensing for Offshore Oil & Gas and Gas Storage – January 2009) and subsequent amendment (OESEA2 Future Leasing/Licensing for Offshore Renewable Energy, Offshore Oil & Gas, Hydrocarbon Gas and Carbon Dioxide Storage and Associated Infrastructure - February 2011) provides a reference point for the scope of the current

assessment. Within this the SEA cites the key considerations for the assessment of development impacts on the seascape/landscape as being:

- the limit of visual perception from the coast (i.e. are the devices or installations visible and what influences their visibility);
- the individual characteristics of the coast which affect its capacity to 'absorb' the development; and
- how people perceive and interact with the seascape.

12.3.2 The SEA also includes a summary reference to the context of the proposed development:

'There are a number of designated areas including the Sussex Downs AONB, the proposed South Downs National Park and the Sussex Heritage Coast. The coastal sections of these designations suggest low to moderate impacts from the developments with 5MW turbines between 13 and 24km offshore. Beachy Head has an extensive chalk cliffed area reaching heights in excess of 100m, and includes the distinctive Seven Sisters landform. The elevation of the cliffs will not only increase viewable distance, but may not be compatible with the scale of some developments. In addition, the relatively rural nature of the area around Beachy Head and the presence of the South Downs Way mean that people wishing to perceive a 'wild' part of the countryside may be impacted. This area contrasts markedly with lower and more developed urban areas along the coast including Brighton, Littlehampton and Bognor Regis'.

SLVIA

12.3.3 The following SLVIA considers the anticipated effects of the proposed wind farm on:

- Seascape/landscape elements and character; and
- Visual amenity.

12.3.4 The seascape, landscape and visual assessments within the SLVIA are separate but closely linked processes that are undertaken in parallel. Seascape and landscape assessment considers the effects of the proposed development on the seascape/landscape as an environmental resource. Visual assessment considers the effect of visual change on people.

12.3.5 The seascape and landscape components of the SLVIA consider:

- The effect on seascape character areas (identifiable areas with a distinct and consistent pattern of seascape elements, noting that in part these may not be immediately apparent with reference to below surface water level influences);

- The effect on landscape character areas (identifiable areas with a distinct, recognisable and consistent pattern of landscape elements);
- The indirect visual effects on key characteristic views and designated resources (protected areas of seascape/landscape defined in national and local policy).

12.3.6 With regard to references to 'seascape' and 'landscape' character areas as distinct entities, it is acknowledged that the two are fundamentally interlinked. Each are nonetheless recorded as distinct sea or land entities to ensure that the subtleties of context can be clearly related, from which the interrelationships may then be drawn out.

12.3.7 The assessment of indirect effects upon Registered Parks and Gardens, Scheduled Monuments and Conservation Areas and the capacity for historic seascape and maritime and cultural aspects to inform seascape character has been carried out in consultation and partnership with the authors of the Archaeology and Cultural Heritage assessment (Section 25 – Archaeology and Cultural Heritage).

CSLVIA

12.3.8 The CSLVIA considers cumulative seascape, landscape and visual effects where additional wind energy developments have been consented or are proposed (the subject of a full planning application) within 35 km of the Offshore Project. The distance of 35 km is considered appropriate to reflect the landward topographic influences of the South Downs and was discussed and agreed upon with the respective Local Planning Authorities (LPAs) (refer to Section 12.3.14 for named consultees).

12.3.9 Following discussion with the respective LPAs within the study area, one known (approved planning application) project was identified as requiring consideration within the cumulative extent of visual influence of the Offshore Project. This is considered in Section 12.7.

12.3.10 No highways, sea faring or recreational routes have been identified as requiring an assessment of sequential visual effects (either as part of the SLVIA or as part of the CSLVIA).

12.3.11 The scope and focus of the assessment has been agreed with the LPAs and other statutory consultees. This has included a formal scoping process, further details of which are provided below.

Scoping and Consultation

Scoping Report and Opinion

12.3.12 As part of the scoping phase of the EIA, a Scoping Report (E.ON/RSK, September 2010) was prepared to set out the proposed approach to EIA in respect of the

proposed development, including the identification of assessment methodologies for each of the EIA topic areas to be assessed. The Scoping Report was submitted to the IPC in September 2010. A Scoping Opinion (IPC, October 2010) was received from the IPC in October 2010, incorporating comments from a wide range of consultees. A copy of the Scoping Report, the consultee scoping responses and a summary of the scoping responses is included in Appendix 5.2.

- 12.3.13 Consultee responses highlighted a number of seascape, landscape and visual issues for consideration in the assessment. Those of relevance to the scale and subject coverage of this section are summarised in the tables below, with corresponding reference to how these have been acknowledged in the assessment.

Table 12.1: Scoping Response Summary

Date	Consultee	Scoping response	Consideration within the assessment
October 2010	IPC	1. Assessment to make clear reference to the combined on and offshore impacts of the proposals	The combined influence of on and offshore effects is reported in Section 12.6.
		2. Assessment to take reference from other consultee responses as a basis for identifying cumulative effects	Consultation discussions with the various parties listed in Section 12.3.14 identified the cumulative developments identified in Section 12.4.59 – 12.4.61 and assessed in Section 12.7.
		3. Assessment to consider the night time impacts of lighting	The potential effect of lighting associated with the turbines and substations is considered inherently within the assessment.
11th October 2010	English Heritage	1. Historic Seascape Characterisation (HSC) studies to be considered as a basis for understanding the historic seascape/landscape dimension	The published coverage of HSC does not yet include the study area therefore it has not been possible to access this reference source to inform the assessment.
12th October 2010	Havant Borough Council	1. The effect of different weather conditions on visibility should be considered	The principles of the effects of the seascape environment on visibility are considered in Section 12.3.74-12.3.79 and reported specifically in the effects on representative viewpoints within the visual assessment.

Date	Consultee	Scoping response	Consideration within the assessment
		2. The viewpoint assessment should include both coastal and inland vantage points	The distribution of viewpoints acknowledges both coastal and inland vantage points as agreed with the consultees referenced in this section and as reflected in the distribution of viewpoints illustrated in Figure 12.13.
		3. Hayling Island and the harbour areas at Langstone and Emsworth to be considered in the assessment	Potential visibility of the turbines from these locations was scoped out following a site visit and digital Zone of Theoretical Visibility modelling.
		4. Night time impacts of lighting to be considered	The potential effect of lighting associated with the turbines and substations is considered inherently within the assessment.
12th October 2010	Natural England	1. Views from land to sea, sea to sea and sea to land need to be appropriately considered in the assessment	The varying nature of views is referenced in the seascape and landscape baseline in Section 12.4 and where relevant throughout the assessment of effects in Section 12.5.
		2. New development should consider the character and distinctiveness of the area and the EIA process should detail the layout alternatives and justification of the selected option in terms of landscape impact and benefit	Within the scope of this assessment, the development layout is considered in terms of the 'Rochdale Envelope' such that a worst case scenario is considered in the assessment. Consequently, whilst the sensitivities and potential effects on the seascape and landscape resource have been identified, it has not been possible to relate the assessment to the subtleties of option selection and layout refinement – this would occur at the detailed design stage.
		3. Accurate maps showing the extent of visual influence and coincident extent of protected and designated sites should be included	The mapped extents of seascape and landscape designations are illustrated in Figures 12.2a and 12.2b. The corresponding extents of ZTV are illustrated in Figures 12.6 to 12.9.

Date	Consultee	Scoping response	Consideration within the assessment
		4. Protected landscapes should be afforded the highest level of sensitivity	Designations are acknowledged as typically associating with areas of greater seascape, landscape or visual sensitivity. The influence of designation on sensitivity is identified within the methodology in Section 12.3.54.
		5. Distinctive characteristics of seascapes/landscapes should be highlighted in character assessments and the distinctive characteristics which give a particular landscape or seascape its sense of place should be conserved and sustained	The basis for identification of seascape and landscape character areas is defined in Section 12.4.21 with the purpose of identifying the perceptible sense of place within the scale and extents of study.
		6. Any other associated infrastructure development should be incorporated into the impact assessment	The combined influence of on and offshore effects is reported in Section 12.6.
		7. Viewpoints to be agreed with Natural England (NE)	NE was engaged in the process of agreement of viewpoints as referenced in Section 12.3.14.
		8. Cumulative and in-combination effects should be assessed	Consultation discussions with the various parties listed in Section 12.3.14 identified the cumulative developments listed in Section 12.4.59 –12.4.61 and assessed in Section 12.7.
16th November 2010	Follow-up Natural England scoping discussion meeting	1. Consensus suggested that no more than 25 viewpoints would be anticipated but that these should include representation of; sea to land, land to sea, sea to sea, and along the coastline views	The number and location of viewpoints was determined following consultation discussions with the various parties listed in Section 12.3.14. A total of 31 viewpoints were ultimately identified for inclusion in the assessment. Representative viewpoints are listed in Table 12.8, positions are indicated in Figure 12.13 and photo illustrations are presented in Figures 12.14 to 12.44.

Date	Consultee	Scoping response	Consideration within the assessment
		2. Elevation of viewpoints may require more than one viewpoint for a particular location e.g. beach level and cliff top level	Where beach and coastline are coincident, the interface is generally characterised by a gradual level transition therefore one viewpoint has been considered adequately representative. Where cliffs occur, the corresponding inter-tidal zone has typically been narrow and inaccessible such that a cliff top position has been taken as representative of the view. The dual elevation viewpoint principle has however been applied at Birling Gap (viewpoints 2 and 3).
		3. Views from sea to land should consider effects on views to landmarks for navigating	The main orientational landmarks have been identified from admiralty charts (as described in Section 12.4.18) and a relative judgement on their context visibility has been included in the assessment.
		4. Photomontages to take account of dawn, dusk and midday lighting conditions were requested	The seasonal weather constraints (December 2011 and January/February 2012) have limited the potential to represent specific lighting scenarios; however the photomontages capture a range of lighting situations which represent the local conditions.
8th October 2010	South Downs National Park Authority	1. Seascape/visual impact assessment should consider impact from the extent of Heritage Coast and higher ground of the Downs in particular.	Representation from the South Downs National Park Authority was included in the discussion of viewpoints to determine the number and location of viewpoints included in the assessment (refer to the agreed viewpoint locations in Figure 12.13).
October 2010	East Sussex County Council	1. The assessment needs to fully address the issue of impact on views from the East Sussex Coast and the South Downs National Park	Representation from East Sussex County Council was included in the discussion of viewpoints to determine the number and location of viewpoints included in the assessment (refer to the agreed viewpoint locations in Figure 12.13).

Date	Consultee	Scoping response	Consideration within the assessment
		2. Visual impact on recreational users should be recorded, particularly in respect of open access areas on the South Downs, pleasure craft and beach/seafront users (including views from recreation boats out at sea).	The range of potential receptors identified by the Council (both sea and land based) have been considered within the visual assessment. During the consultation referred to in Section 12.3.14 it was considered that assessment from the Newhaven to Dieppe Ferry would provide an appropriately representative illustration of the sea based visual context of the offshore wind farm.

Additional Pre-Application Liaison

- 12.3.14 Consultees with potential interest in the seascape, landscape and visual aspects of the assessment were contacted to discuss the scope of the SLVIA. In culmination of this process, a co-ordination meeting was held on 21 October 2011 attended by representatives from South Downs National Park, East Sussex County Council, West Sussex County Council and Brighton and Hove Council (representatives from Natural England, English Heritage and Horsham District Council were also invited but unable to attend; however comment was subsequently provided in correspondence).
- 12.3.15 During the meeting, wireline images of the proposed offshore wind farm development were tabled to prompt discussion of draft representative viewpoint positions. Following discussion, the scope for additional views was identified and as a follow-up to the meeting the agreed positions of representative views and key views for visualisation were circulated and agreed (and have been illustrated in this assessment).
- 12.3.16 The extent of study area and cumulative development considerations were also discussed and confirmed during the course of the meeting.

Formal Pre-application Consultation

- 12.3.17 As detailed in Section 5 – EIA Methodology, an extensive programme of engagement has been undertaken with regard to the Offshore Project, details of which are provided in the Consultation Report (which accompanies the DCO application) Document 5.1. This included publication of the Draft ES as part of the Section 42 and Section 48 consultation in June 2012.
- 12.3.18 Following a review of consultee feedback on the Draft ES, and discussions with consultees (including meetings with Friends of the Earth, the Campaign for the Protection of Rural England, the South Downs Network and the South Downs

Society), the following modifications have been made to the Offshore Project and overall assessment scope:

- Variations in turbine layout have been included to demonstrate consideration of the relative effects of layout alternatives in response to comments querying the potential for mitigation and for a reduced impact on the Heritage Coast (Section 12.5.2 and Figures 12.48 and 12.49);
- Additional photomontage illustration and corresponding text description has been included for viewpoints 3, 5 and 6 to address comments suggesting that viewpoints were under-represented in the assessment (Table 12.14 and Figures 12.16, 12.18 and 12.19);
- Assessment scoring has been amended to reflect specific viewpoint sensitivities in response to comments suggesting that designations were not given due weight in the assessment, with particular reference to the Heritage Coast and National Park;
- Additional detail on the lighting proposals has been provided in Section 12.5.76 in response to requests for further detail on night time effects;
- Additional reference to the Strategic Environmental Assessment has been included in Section 12.3; and
- Photomontage photography has been re-taken in clear weather conditions to address comments that weather conditions were not ideal for the initial presentation of viewpoint graphics.

12.3.19 Full details of the consultation process and associated responses are documented in Document 5.1 (Consultation Report).

Guidance

12.3.20 SLVIA is not based on prescribed methods or criteria. Each assessment is tailored to the specific requirements of the proposed development and its seascape/landscape context. The method of assessment used here is based on approaches recommended in the following best practice guidance:

- Guidelines for Landscape and Visual Impact Assessment (GLVIA - Second Edition), published by Landscape Institute and the IEMA (2002);
- Landscape Character Assessment: Guidance for England and Scotland, published by Scottish Natural Heritage and the Countryside Agency (2002);
- Guidance on the Assessment of the Impact of Offshore Wind Farms: Seascape and Visual Impact Report (GAIOWF), published by DTI (2005);
- Guide to Best Practice in Seascape Assessment (GSA), published by The Marine Institute (2001);

- Visual Assessment of Wind Farms: Best Practice, published by Scottish Natural Heritage (SNH) and the University of Newcastle (2002);
- Assessing the Environmental Capacity for Onshore Wind Energy Development – Consultation on Proposed Approach to Natural England guidance: issued by Natural England;
- Assessing the Cumulative Impact of Onshore Wind Energy Developments: published by SNH (March 2012);
- Visual Representation of Wind Farms: Good Practice Guidance, published by Horner and MacLennan and Envision (2006);
- Landscape Institute Advice Note: Photography and Photomontage in Landscape and Visual Assessment (2011); and
- Siting and Designing Windfarms in the Landscape, SNH (2009).

12.3.21 The assessment has also been carried out with an awareness of the scope of emerging Seascape Character Assessment Guidance steered by Natural England (and complementary revision and re-issue of the Landscape Character Assessment Guidance (Scottish Natural Heritage and the Countryside Agency)).

Stages in Seascape, Landscape and Visual Impact Assessment

12.3.22 SLVIA comprises the following five key stages:

- Analysis and recording of the existing seascape, landscape and visual context of the study area through desk and field based appraisal;
- Appreciation of the nature, forms and features of the proposed offshore wind farm;
- Assessment of the sensitivity of the existing seascape, landscape and visual receptors to change and the magnitude of change likely to result from implementation of the proposed offshore wind farm;
- Identification of mitigation measures appropriate to the proposed wind farm and the receiving seascape/landscape (in this instance limited by the principle of the Rochdale Envelope as no specific design layout is proposed); and
- Identification of residual effects and the assessment of the significance of the residual effects on seascape and landscape character and visual amenity.

12.3.23 The assessment process has been recorded in two principal stages: a baseline study followed by an assessment of effects. Baseline review has included an element of preliminary assessment, with only those receptors identified as potentially subject to perceptible effects considered in detail at the assessment

stage (i.e. minor issues have effectively been scoped out during the baseline study).

Methodology Development Reference Sources

12.3.24 The process for assessing effects has drawn widely from the best practice guidance sources identified in Section 12.3.20. The source definition for seascape characterisation is however more limited but takes key reference from the current GAIOWF. It is understood that the expectations embodied in the Marine and Coastal Access Act 2009, with regard to the character of the seascape and the qualities it derives from the marine environment, will be influential in further developing the basis of context appraisal for development associated with the marine environment, and this is reflected within the scope of the assessment.

Study Area (Establishment of Baseline Environment/Zone of Theoretical Visibility)

12.3.25 Published guidance (including notably Section 6 of 'Visual Assessment of Windfarms: Best Practice' and Section 2.4 of 'An assessment of the sensitivity and capacity of the Scottish seascape in relation to windfarms') contains guidance on the extent of the study area considered appropriate to assess the seascape, landscape and visual effects of wind energy development. For turbines of up to 150 m in height, a 35 km radius study area is generally acknowledged as being appropriate as this reflects the distance over which turbines will potentially remain visible to the human eye. Guidance acknowledges that these distance thresholds serve as a general guide subject to the variability of influence of local conditions. Whilst the proposed development turbine heights will exceed the 150m guideline parameter, the principle of a 35km study area is considered to be appropriately representational of the Offshore Project context (refer to Figure 12.1 for the extent of study area).

12.3.26 Further substantiation of study area extents is provided in the GAIOWF. Section 7.4.2 (Stage 3 Selection of a Representative range of Viewpoints) indicates that the distance of receptor from a proposed development is "usually to a maximum distance of 35 km from the proposed development".

12.3.27 The purpose of the SLVIA is to identify the predicted seascape, landscape and visual effects. It is therefore reasonable to limit the study area in various respects to meet the requirements of the specific project and its seascape and landscape context and to reflect the reduced likelihood of perceptible effects arising over very long distances. It is also important that effects over shorter distances are given appropriate emphasis, given their potential to be of greater significance.

12.3.28 The following tasks have been undertaken:

- A Zone of Theoretical Visibility (ZTV) has been prepared to a 35 km radius from the outer perimeter of the proposed development extents (refer to

Figures 12.6 to 12.9 for the relative extents of ZTVs). This comprehensive ZTV preparation has been examined to identify particularly sensitive locations that might potentially be subject to visual effects over very long distances (e.g. visitor locations within nationally designated landscapes, other very important visitor destinations, promoted viewpoints, national trails or prominent boat routes). The focus of the visual assessment, identification of key receptors and the selection of representative viewpoints is typically concentrated on the coastline or immediate hinterland and to the elevated vantage points coincident with the South Downs National Park (refer to Figure 12.13 for viewpoint locations). These extents relate to those areas with greatest scope for inter-visibility and represent the focus of potential visual effects (though with acknowledgement that designation may merit consideration of areas out-with the scope of these general assumptions).

- Landward effects on landscape character areas and designations are considered within the extent of ZTV of the proposed development, notably limited by the distinct topographic influence of the South Downs to the north. Effects on seascape character areas and designations are considered within a 35 km extent based on the capacity for more uniform visual influence within an open seascape environment. These limits are based on the assumption that visibility of the proposed development over greater distances will be unlikely to result in perceptible changes to seascape or landscape character.
- The CSLVIA has considered a study area with a 35 km radius from the outer perimeter of the proposed development extents of the Offshore Project site. Figure 12.10 illustrates the locations of public domain wind farm projects that are either operational, consented, or at planning application stage. The resulting wind energy developments identified within the 35 km study area have been considered in the cumulative assessment.
- The cumulative assessment has considered all consented and proposed developments of a scale with capacity to influence the visual context of views within a 35 km radius of the Offshore Project site (refer to Figure 12.10 for the locations of cumulative developments). Cumulative developments are described in Sections 12.4.59–12.4.62.

12.3.29 The assessment therefore maintains a proportionate focus on the predicted seascape, landscape and visual effects likely to be presented by the proposed development. The approach is considered to provide appropriate representation of the local context influences and to reflect the specific inter-visibility associations prompted by the overlap of land and sea. The extent of the study area has been agreed with the parties previously referred to in Section 12.3.14.

Seascape and Landscape Resources and Sensitivity

Scope of the Seascape and Landscape Assessment

- 12.3.30 The assessment of seascape and landscape effects considers the sensitivity to change of seascape and landscape receptors within the study area, and the magnitude of change associated with the introduction of the Offshore Project into the existing seascape and landscape context.
- 12.3.31 Seascape is defined in the 'Guidance on the Assessment of the Impact of Offshore Wind Farms' as "the coastal landscape and adjoining areas of open water, including views from land to sea, from sea to land and along the coastline".
- 12.3.32 For the purposes of this assessment, 'seascape' has been considered and described as comprising the physical sea environment as far as the high water mark (including the inter-tidal zone) and the related inter-visibility associations with the land.
- 12.3.33 The complementary extent of 'landscape' has been considered and described as the physical land characteristics as far as the high water mark (excluding the inter-tidal zone) and the related inter-visibility associations with the sea.
- 12.3.34 Clearly, neither defined 'seascape' or 'landscape' units are experienced in isolation of one another as the visual inter-relationship and physical attributes of each overlaps both entities. The distinction of such boundaries is not therefore considered to be divisive or exclusive, but is simply a means of mapping a boundary in the physical extents of seascape and landscape which define the overall combined experience of character.
- 12.3.35 The detail of seascape and landscape components that define character areas is a composite of physical and cultural elements (though in the instance of below water extents these associations are typically less apparent). Land based aspects informing character include landform, hydrology, vegetation, landcover, land use pattern and cultural features and associations. Sea based aspects include consideration of coastal processes, bathymetry, ecological associations and sea and coastal uses.
- 12.3.36 The combined associations create a definable 'sense of place' that has been used to categorise the seascape and landscape into broadly homogenous areas known as seascape/landscape character areas.
- 12.3.37 The level of detail and size of a landscape character area or type can be varied to reflect the scale of definition required, and can be applied at a national, regional or local level. The combined desk and field appraisal has allowed the seascape and landscape in the vicinity of the proposed development to be divided into an appropriate number of seascape/landscape character areas to be used as the basis for assessment.

Definition of land associated character areas

- 12.3.38 Published landscape character assessments have been reviewed at the national scale (Natural England National Character Areas (NCAs)) and at the local scale (by reference to a variety of character assessments published by County Authorities). Landscape character information is also available through other published sources including National Park and Shoreline Management Plans.
- 12.3.39 For the purposes of the SLVIA, the NCA extents have been used as the basis for defining the landscape character areas to be considered in the assessment. This scale of character definition is considered to be proportionate to the relative distance of the proposals from land and therefore the potential for the proposals to affect distinct character components.
- 12.3.40 Fine grained landscape character areas or types identified by local landscape characterisations have been referenced within the character descriptions where relevant to the consideration of specific landscape associations.

Definition of sea associated character areas

- 12.3.41 There is currently no specific seascape characterisation reference resource comparable to that for land, which is instead derived from a combination of contextual references such as the JNCC 'Coastal Directories' and the Natural England 'Marine Natural Area' documents.
- 12.3.42 The classification of seascape into distinct character areas provides a means of grouping and understanding the seascape context at a level proportionate to that of the development. Current published guidance places emphasis on defining seascape character areas (or seascape 'units') relative to distinct coastal landform and visual inter-relationships. The ongoing direction of seascape characterisation, informed by consultation feedback from Natural England and English Heritage, places greater emphasis on defining sea based character areas as a product of understanding the below water level resource as much as that which is visible at the surface. This approach, derived from initial consultation feedback, is acknowledged within the identification and description of character areas associated with this assessment.
- 12.3.43 As such, distinct seascape character areas have been identified in relation to their physical influences, cultural influences and aesthetic and perceptual qualities on a comparable basis to that applied to landscape characterisation.
- 12.3.44 For the purposes of this assessment, the boundaries of seascape character areas have been defined at a proportionate scale to that of the land based NCA descriptive areas, and to provide proportionate representation of discernable variation within the seascape context.
- 12.3.45 Character areas have been defined as the product of associations of distinct elements. These fall broadly into those with a perceptible visual influence from

land (nominally within 5km of the coastline) and those areas which are offshore where the influence is less associated with land and more derived from below sea level processes, which may in turn present themselves as surface sea use activities. Sea based character area boundaries are not absolute in their delineation in acknowledgement that their distinction does not coincide with absolute physical features, but nonetheless provides a means of offering relative character subdivision within the sea environment.

- 12.3.46 Character area boundaries at the seaward extents are effectively open where these are not coincident with an adjacent character area identified within the study area. This reflects the consideration that boundaries would require validation within the context of a wider study area to determine where a transition to another character area occurs. Refer to Figures 12.3a, 12.3b and 12.4 for the extents of character areas coincident with the study area.

The overlap between seascape and landscape character areas

- 12.3.47 The character of seascape is inherently influenced by the character of adjacent land and coastline; however this becomes less distinct with distance from shore, at which point the below or surface water characteristics offer greater scope for distinction.
- 12.3.48 The character of landscape is in turn inherently influenced by the character of adjacent seascape, though such influence becomes increasingly generic inland of the coast where the sea becomes a uniform or remote backdrop, affected in perception by the foreground land context.

Site assessment limitations

- 12.3.49 The validation of seascape character and views has been limited to coastline vantage points and published data sources, rather than site validation by boat (other than assessment from the main Newhaven to Dieppe Ferry – described below). This approach was based on a number of key considerations:
- The relative remoteness of the Offshore Project site from land did not require a boat assessment of sea to land views as the turbines will not be set against a backdrop of distinguishable land features from any notable vantage points (published guidance notes that at 15km from shore the earth's curvature hides low lying land (GAIOWF – Figure 11));
 - Sea based photos of the study area viewed via the Google maps website, along with Admiralty charts noting orientational landmark features and coastal aerial photos viewed on the 'Future Coast' database provided a good understanding of the coastal features with capacity to influence seascape character;

- The seaward extent of visual influence of the Offshore Project has been defined with reference to published guidance identifying the relative visibility of turbines across a uniform seascape context (e.g. GAIOWF – Page 72-73);
- In terms of visual illustration of sea based views, it is considered that assessment and viewpoint photos taken from the Newhaven to Dieppe ferry will provide appropriate representation of sea based users with a sensitivity to the development. The wider experience of recreational or working boat users will typically be generic rather than contextual as the turbines will largely be experienced in isolation from other influences so has been considered without the need for specific viewpoint illustration.

Seascape and Landscape Sensitivity Criteria

12.3.50 The sensitivity of a seascape or landscape is not absolute, and will vary according to its key characteristics and the values placed upon it.

Key Seascape and Landscape Characteristics

12.3.51 The key characteristics of different SCAs and LCAs within the study area have been identified and rated in relation to potential sensitivity to the change brought about by the introduction of the Offshore Project.

12.3.52 The principles of the sensitivity of key seascape and landscape character attributes have been derived from a combination of the following documents:

- Assessing the Environmental Capacity for Onshore Wind Energy Development – Consultation on Proposed Approach to Natural England guidance, Table 1 ‘Criteria for assessing environmental capacity for wind energy development’;
- An Assessment of the Sensitivity and Capacity of the Scottish Seascape in Relation to Wind farms, Table 3 ‘Criteria for seascape sensitivity to offshore wind farms’;
- Cumbria Wind Energy Supplementary Planning Document,¹ Part 2 ‘Landscape and Visual Considerations’, Table 2.1 ‘Landscape Sensitivity Assessment Criteria’; and
- Guidance on the Assessment of the Impact of Offshore Wind Farms - Seascape and Visual Impact Report, Table 2 ‘Criteria for seascape sensitivity to offshore wind farms’.

12.3.53 The following table provides a list of key characteristics and attributes indicating higher or lower sensitivity to change brought about by wind energy development. The table is not a prescriptive tool as the list of key seascape/landscape characteristics and attributes is not exhaustive. The table is used as a **guide** to inform the overall assessment of seascape/landscape

¹ The principals in this guidance are not limited to Cumbria

sensitivity. The sensitivity of the seascape/landscape character area or type to change is defined as **High, Medium** or **Low**.

Table 12.2: Seascape/Landscape Character Sensitivity

Key Characteristics	Attributes indicating higher sensitivity to wind energy development		Attributes indicating lower sensitivity to wind energy development
Scale and enclosure	Small-scale landform/land cover/built development, human scale indicators, fine grained, enclosed with narrow views, sheltered. Large scale seascape where openness is a key characteristic.	↔	Large-scale landform/land cover/built development, featureless, coarse grained, open with broad views. Large scale seascape with limited context or scale references.
Landform	Dramatic or rugged landform. Natural, remote, sloping or concave, sea-orientating topography, or high scenic quality coastline. Important focal points e.g. headlands or offshore islands.	↔	Smooth and convex, or flat and uniform. Flat coastal plain. Lack of natural focal points.
Landcover and pattern	Complex, irregular or intimate landscape patterns, diverse land cover. Seascape/landscape defined by a unifying composition of sea and landform features.	↔	Simple, regular patterns, uncluttered, sweeping lines, consistent land cover. Complex coastline of low scenic value.
Manmade influence	Landscape with natural features and forms perceived as natural 'wild land', absence of manmade elements, traditional or historic settlements, buildings and structures. Natural coastline features and processes are in harmony with their context or potentially associate with low key, non-intrusive interventions.	↔	Engineered forms/pattern, Frequent presence of man-made elements (e.g. utility, infrastructure or industrial elements), brownfield or industrial landscapes already affected by built structures, contemporary structures (e.g. masts, pylons, cranes, silos, industrial sheds with vertical emphasis), commercial forestry. Natural coastline features and processes include apparent man made interventions to maintain existing coastline associations.
Skyline	Distinctive landmark skylines, bare uncluttered horizons, confusion of existing vertical elements of variable form and function	↔	Landscape with no distinctive backdrop or context, simple skyline, existing vertical focal points, discrete and well ordered, low contrast with background
Remoteness and tranquillity	Sense of peace, isolation or wildness, remote and empty, no evident movement.	↔	Busy and noisy, human activity and development, prominent movement.

Key Characteristics	Attributes indicating higher sensitivity to wind energy development		Attributes indicating lower sensitivity to wind energy development
Visual interruption and views	Short distance, enclosed/framed/focused views. Uninterrupted, distant, open, panoramic or expansive views. Strong inter-visibility association between land and sea.	↔	Visually contained by topography, trees, woodlands and built form, with limited inward and outward views. Limited land/sea inter-visibility.
Settlement and key views	Densely populated, dispersed pattern of small settlements, outward looking settlement, landscape focused recreation routes and/or visitor facilities, distinctive settings, gateways or public viewpoints. Backdrop of sunrises or sunsets or viewed from a secluded coastline context or important or elevated viewpoint where the focus is the view itself. Sea based views characterised by a sense of remoteness or a strong associative relationship of sea to land views.	↔	Unpopulated or sparsely populated, concentrated pattern of large settlements, nucleated or introspective settlements, inaccessible, indistinctive or industrial setting. Experienced within an overhead illuminated context outside of sunrise/sunset, or relating to a context where views of the sea are secondary to the predominance of other contextual influences (e.g. inland location or a crowded beach). Sea based views generic with no particular sense of place.

Seascape and Landscape Value

- 12.3.54 The assessment of seascape and landscape sensitivity based on key characteristics has also been informed by the consideration of value attributed to a seascape or landscape area (i.e. a seascape or landscape with characteristics that suggest relatively low sensitivity to change may be judged to be more sensitive because of special values attached to it – either as a result of formal designation or other evidence).
- 12.3.55 The value of a seascape or landscape reflects communal perception on a local, regional, national and international scale. It is informed by a number of factors including scenic beauty, wildness, tranquility, cultural associations or other conservation interests.
- 12.3.56 Seascape or landscapes considered to be of the highest value would generally be internationally or nationally designated, whereas those considered of lowest value would be represented by undesignated, degraded seascapes/landscapes identified as requiring recovery. Although value is frequently determined by reference to statutory and planning agency policy designations, an absence of designation does not infer a lack of value, as other factors such as scarcity can render areas of otherwise unremarkable quality highly valuable as a local resource.

- 12.3.57 The degree to which seascape or landscape character sensitivity is modified (increased) by seascape/landscape values is therefore a matter of professional judgment.

Visual Receptors and Sensitivity

Scope of the Visual Assessment

- 12.3.58 The assessment of visual effects considers the sensitivity to change of visual receptors within the study area, and the magnitude of change associated with the introduction of the Offshore Project into the existing visual context.
- 12.3.59 The assessment commenced with the preparation of ZTVs for the identification of the theoretical visibility associated with the proposed offshore wind farm, leading to identification of representative visual receptors, description of the existing visual context and evaluation of the visual implications of implementation of the proposed development.

Baseline Visual Receptors

- 12.3.60 Before sensitivity could be established, the visual receptors were identified and representative viewpoints selected. Key sensitive visual receptors included the public or community at large, residents, visitors and other groups of viewers.
- 12.3.61 For this assessment, a series of ZTVs (see Figures 12.6 to 12.9, 12.11 and 12.12), together with site visits and consultation with the parties identified in Section 12.3.14, were used to identify visual receptors and inform the choice of representative viewpoints. Viewpoints were selected to represent a range of visual receptor types, viewing distances and directions (refer to Table 12.8 'Representative Viewpoints' and Figure 12.13 'Viewpoint Locations and Atmospheric Visibility'). Representative viewpoints were then validated by way of field survey, resulting in some preliminary viewpoints either being repositioned to locations offering improved representative visibility of the proposed offshore wind farm or being discounted from the assessment as they may be unrepresentative, or the offshore wind farm may not be visible.
- 12.3.62 Once the viewpoints were selected and agreed, a series of computer generated 3D wireline images and photomontages were generated to illustrate how the Offshore Project site may appear in the context of the existing seascape/landscape, and to assist in the robust assessment of the potential effects on seascape/landscape character and the receiving visual context.
- 12.3.63 There is limited capacity for representative viewpoints to consider the detailed appearance of the design and layout of the proposed offshore wind farm as the principle of assessment is based on broad assumptions in accordance with the parameters of the 'Rochdale Envelope'. The consideration of a potential worst-case scenario, in combination with layout option alternatives, has however

ensured that the potential range of issues has been appropriately represented in this assessment.

Computer Modelling of Visual Effects

Zone of Theoretical Visibility

- 12.3.64 Visual assessment began with identification of the maximum theoretical extent of the potential visibility of the proposed development based on surrounding topography. Zone of Theoretical Visibility (ZTV) plans were produced using 'bare earth' topographical data. Consequently, ZTVs do not take into account any screening that may result from man-made structures such as buildings, from vegetation or from localised variations in topography. Therefore, ZTVs present the worst-case maximum theoretical visibility.
- 12.3.65 The ZTV modelling has been prepared using Ordnance Survey (OS) Landform Panorama contour data with contours at 10 m intervals, and takes account of the curvature of the earth. The ZTVs have been modelled using scenarios to represent the range of extremes of turbine numbers and heights within the Offshore Project's Rochdale Envelope. As such, one eventuality illustrates the ZTV of a 175 turbine layout with a turbine hub height of 100m and an overall height to blade tip of 165m and the other eventuality is that of a 100 turbine layout with a turbine hub height of 124 m and an overall height to blade tip of 210m. Separate ZTVs have been produced for hub heights and turbine tip heights for each of the two potential extremes of development scenario described above (refer to Figures 12.6 to 12.9) and for the purposes of cumulative assessment (Figures 12.11 and 12.12).
- 12.3.66 Whilst ZTVs are used as a working tool to inform the assessment, the actual visual effects of the proposed development have been assessed through a more detailed analysis of specific viewpoints, via field survey observations and through the production and analysis of wireline and photomontage visualisations (refer to Figures 12.14 to 12.47). ZTVs indicate areas from which a wind farm may be seen within the study area, but do not differentiate the variability in nature or magnitude of visual effects that may occur.

Visualisations

- 12.3.67 The visual effects of the proposed development have been assessed in the field using computer generated visualisations ('wirelines' and 'photomontage') as prompts. Visualisations are illustrations that aim to represent the observer's view of a proposed wind farm. To this end, a series of computer generated wireline images and photomontages were produced for agreed viewpoint locations within the study area. The wireline and photomontage illustrations presented within this ES, together with ZTVs and field surveys, were used to assist professional judgement in the assessment of the potential effects on the landscape and visual resources and their significance.

- 12.3.68 Wirelines are computer generated line drawings, based on a digital terrain model, that indicate the three dimensional shape of the landscape and the proposed wind farm. Wirelines are a useful tool, used primarily in the field, to inform the assessment as they strictly portray objective data. Photomontages combine a photograph of an existing view with a computer-generated image. They provide photo-realistic, rendered representations of how the proposed wind farm may look in the context of the existing landscape and thereby inform the process by which assessment judgments are made. A photomontage can however only illustrate how a wind farm would appear in a photograph, as they can never exactly match what is experienced in the field. A combination of wireline and photomontage images has been used to illustrate the representative viewpoints shown in Figures 12.14 to 12.47.
- 12.3.69 A 360-degree photograph has been taken at each selected viewpoint using various models of digital SLR camera, with the specific model used named on the corresponding viewpoint illustration (refer to Figures 12.14 to 12.47). Individual photographs have been merged using Autopano stitching software. 3D visualisations (models) of the proposed turbines were then generated using WindFarm software. Turbines are generally modeled to face the prevailing south-westerly wind direction but have been reoriented to face the viewpoint where the closest turbines would otherwise be illustrated side-on. In terms of photo viewpoint presentation, where coastline context is a notable feature of the view, the general principle of illustrating the offshore wind farm at the centre of view has been altered to show an off-centre bias to allow the coastal feature to appear in the 120 degree image.
- 12.3.70 Photo visualisations included in the assessment represent a typical range of lighting conditions, including winter views taken in December 2011 and January/February 2012 and summer views taken in September 2012. Typically these comprise daytime views which reflect the predominantly 'into the sun' south facing aspect of vantage points, but also includes a sunset view from Birling Gap to capture the range of lighting conditions.

Viewpoint Selection

- 12.3.71 The visual assessment is based on detailed consideration of representative viewpoints. Viewpoints have been selected to reflect key visual issues at a variety of directions and distances from the site. The majority of the selected viewpoints are located on the coastline or immediate hinterland, or relate to the elevated vantage points coincident with the South Downs National Park. Viewpoints are generally in the more visually sensitive locations identified within the study area (for example the main seaside resorts and from within the boundary of the National Park). Viewpoint locations are listed in Table 12.8 and have been discussed and agreed with statutory bodies and those LPAs with administrative areas coinciding with the potential extent of visual influence (as reported in Section 12.3.14).

Effects of Curvature of the Earth on Offshore Wind Turbine Visibility

12.3.72 Section 7.5 of the document GAIOWF considers the effects of the curvature of the earth on the potential visibility of offshore wind turbines.

12.3.73 From this guidance it has been possible to gain a relative understanding of potential influence of curvature of the earth on the scheme proposals using the following published parameters as a guide (relating to the worst case assessment scenario of a 100m high hub height turbine with 130m rotor diameter and overall turbine tip height of 165m);

- A viewer at beach level would see 173m height of a turbine at 15km and 153m height of a turbine at 25km (e.g. a comparable visual experience of the nearest and furthest extents of turbines viewed from Brighton); and
- By contrast, a viewer at elevations in the region of 150m Above Ordnance Datum (AOD) such as Beachy Head would still be able to see the full height of the turbine at the furthest reaches of the scheme (up to 43km away).

Effects of Seascape Environment on Visibility

12.3.74 Visibility and visual context in coastal areas is variable and influenced by wind, light, tidal movements, climatic and atmospheric conditions. Conditions can also frequently alter within a short space of time. Even in apparently clear summer conditions the atmosphere can obscure distant objects and colour and sharpness can be altered in mist and haze. A key aspect of the sea's variability (with regard to experience of the shoreline context) is the tides. The mean tidal range within the extents of the study area varies by up to 6m.

12.3.75 The relative visibility of the horizon is another prominent influence on sea inter-visibility. The viewing distance to the horizon increases with the elevation of the viewer and decreases at lower elevations (see influence of curvature of the earth in Section 12.3.72) and with reduced atmospheric clarity (Guide to Best Practice in Seascape Assessment). On a clear day viewed from a beach, the horizon will be in the order of 6km distant. Viewed from a height of 60m the horizon will be in the order of 32km. Therefore the lower the viewer, the closer the horizon line and the more likely vertical objects are to break the horizon. The horizon itself is noted to appear much the same in all of these views and always perceived as distant.

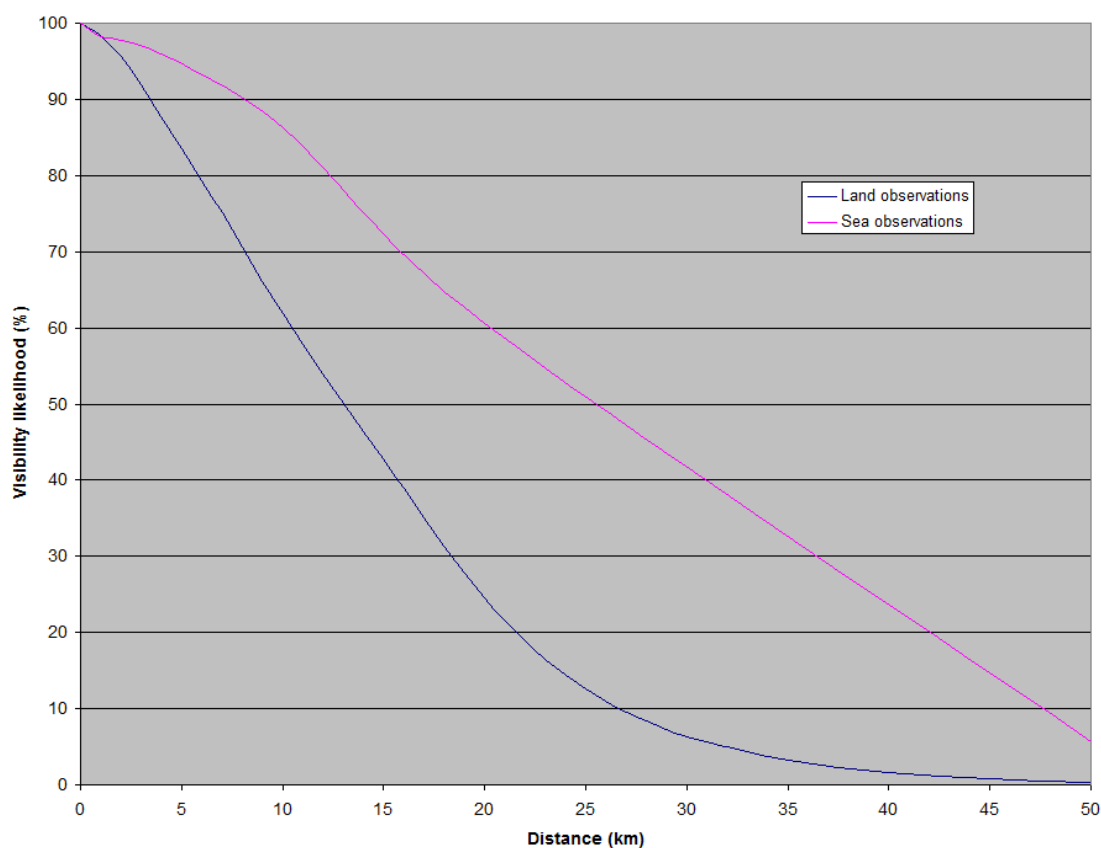
12.3.76 The GSA states that there is a limit to the acuity of the human eye and there will be a point where theoretically a visible object will become too small for the human eye to resolve. It states that at a distance of 1km in good visibility a pole of 100mm diameter will become difficult to see, and at 2km a pole of 200mm diameter would be similarly difficult to see. Based on this, the upper part of a wind turbine tower at 3m diameter (scheme dimension design range 3-4m diameter) would be difficult to see at a distance of 30km. Mist, haze or other atmospheric conditions may exacerbate that difficulty.

12.3.77 The Meteorological Office supplied frequency analyses of two types of hourly visibility recordings for the nearest weather records, as summarised in Table 12.3 below. The position of weather data source locations is recorded in the table below and illustrated in Figure 12.13.

Table 12.3: Visibility Data Sources

	Marine observations	Land observations
Location of observations	Area with boundaries as follows: Latitude 50.3 to 51.0°N, longitude 0.9°W to 0.4°E	Weather station at Herstmonceux, grid reference (5630, 1127) 52 m above mean sea level
Period of data	1981 to 2011	2002 to 2011
Number of observations	241,330	86,748
Visibility bands provided in frequency analysis	0-1 km, 1-2 km, 2-4 km, 4-10 km, 10-20 km, 20-50 km, >50 km	Every 1 km up to 30 km, then every 5 km up to 50 km, then every 10 km up to 70 km, and >70 km

12.3.78 A graph of visibility likelihood (%) versus distance was plotted from these datasets to generate a smooth curve output (see below).



Graph 12.1: Visibility Likelihood

12.3.79 The distance between selected viewpoints and their nearest turbine was determined using GIS software and the corresponding visibility likelihood for that distance was read off from the graph. For coastal and offshore viewpoints, marine observations were used to determine the visibility likelihood. For inland viewpoints, the visibility likelihood was determined in relation to both land and marine observations. The visibility assessment only considers visibility due to the weather and does not consider the influence of topography or obstructions. The influence of weather conditions on individual viewpoints is recorded in Table 12.9.

Visual sensitivity criteria

12.3.80 The sensitivity of visual receptors to change is defined as Very High, High, Medium or Low as follows.

Table 12.4: Visual Receptor Sensitivity

Visual Receptor Sensitivity	Typical Receptors
Very High	Locations defined by a special interest in the available view <u>where the sea is a key component of the view</u> : • Special visitor or recreational sites • Nationally or locally recognised Public Rights of Way and cycleways • Recognised scenic drives or promoted tourist routes
High	Visual receptors with a particular interest in their surroundings or prolonged viewing opportunities: • Residential locations • Special visitor or recreational sites • Nationally or locally recognised ProW and cycleways • Recognised scenic drives or promoted tourist routes • Yachts and inshore recreational boating
Medium	Visual receptors with a general interest in their surroundings or with transient viewing opportunities: • General ProW • Residential and local road • Public spaces • Water based recreation e.g. surfing, sea angling (excluding high speed activities) • Visitors to the main resorts where beach/inshore general recreational water based activities and amusements are the main activities
Low	Visual receptors with a limited or passing interest in their surroundings: • Views from places of employment • Indoor facilities • Commercial and industrial buildings • Commuters

Visual Receptor Sensitivity	Typical Receptors
	• People travelling to or engaged at work with a view of the sea (includes coastguards, fishermen, ferry/shipping workers and some shore – based tourist related employment where sea views occur) • High speed water recreational activities

12.3.81 Sensitivity criteria have been derived from the principles related in the following documents:

- GLVIA Sections 7.31 to 7.35; and
- GAIOWF Box 4 ‘Guide to visual receptor sensitivity’.

12.3.82 Within the offshore seascape environment, there is capacity for enhanced visual sensitivity of sea based users based on heightened senses arising from remoteness from land and the increased sensitivity of associations with land for orientation.

12.3.83 Particular sensitivity may also be placed on formal views in designed historic landscapes where the sea has the potential to form a distinct backdrop or focus of view.

12.3.84 The number of people likely to be present and the duration of time that a view is likely to be experienced may also influence the visual sensitivity of a particular location.

12.3.85 It is sometimes the case that different categories of visual receptor might be present at a selected representative viewpoint (e.g. a selected location may include both residential properties and workplaces suggesting different levels of sensitivity). In such cases the primary receptor category is identified (i.e. the more sensitive).

Cumulative Seascape, Landscape and Visual Effects

12.3.86 Cumulative seascape or landscape effects occur when a combination of two or more wind farm developments begin to influence the perception of seascape/landscape character. Cumulative visual effects occur in several ways, either arising when wind farm developments are visible in combination or succession from a particular viewpoint, or appearing sequentially as multiple developments when moving through the seascape or landscape. Cumulative effects can also develop through a gradual change in perception over time.

12.3.87 In consultation with the parties referenced in Section 12.3.14, wind farm and other relevant developments identified for inclusion within the CSLVIA are shown on Figure 12.10 and described in Sections 12.4.59 – 12.4.62.

12.3.88 In establishing the baseline conditions, the SLVIA takes account of the presence of operational wind energy developments. The CSLVIA component therefore considers the following additional scenario:

- The assessment of the proposed Offshore Project and the existing baseline operational wind turbine development at Glyndebourne, in conjunction with a submitted (but as yet undetermined) wind farm planning application at Shepham Lane, Polegate, and consideration of the overall cumulative effects assuming it will be approved, constructed and become operational.

12.3.89 Consultation did not identify any other known approved or 'under construction' developments relevant to the cumulative assessment.

12.3.90 Cumulative ZTVs for the wind farms within the cumulative assessment scenario have been generated to determine the extent of the potential cumulative effects (refer to Figures 12.11 and 12.12). The assessment criteria for the magnitude of cumulative landscape and visual change reflect the definitions presented in Table 12.5 below.

12.3.91 Sequential visibility occurs when an observer moving through the seascape or landscape along a linear route (e.g. a road or defined shipping route) experiences a series of repeated views containing the proposed development and other wind farms within the area. For the purposes of this assessment, the relative distance of the Offshore Project from other sea-based wind farm developments has been judged to be sufficiently remote to not merit a sequential sea route assessment (the nearest other offshore Round 3 wind farm location of Navitus Bay lies approximately 60 km to the west). The only potential land based sequential route identified relates to that of the South Downs Way national trail, which is considered in Section 12.7.9 of the assessment.

12.3.92 In addition to cumulative wind farm assessment, a number of approved non wind related development proposals yet to be constructed were considered to be of sufficient scale to merit consideration within the extent of visual influence of the Offshore Project; these are described in Section 12.4.204 and depicted in Figure 12.10.

Magnitude of Seascape, Landscape and Visual Change

Magnitude of Seascape/Landscape Change

12.3.93 The magnitude of change arising from the proposed development at any particular location within a seascape, landscape, SCA or LCA, takes into account the following:

- The scale of effect;
- The degree of loss or alteration to key seascape/landscape characteristics;
- The degree of variance with key seascape/landscape characteristics;

- The distance from the development;
- The duration of effect;
- Cumulative effects with operational wind farms; and
- Whether the change is reversible or not.

12.3.94 The magnitude of seascape/landscape change and the resultant effect has been rated on a four-point scale and is set out in Table 12.5 below.

Magnitude of Visual Change

12.3.95 The assessment of visual impact from any one location describes and takes into account the following:

- The scale of the effect;
- The proportion of the proposed development that will be visible;
- The degree of visual intrusion or obstruction that will occur;
- The proportion of the view occupied by the development;
- The distance of the viewpoint from the development;
- The angle of the view in relation to the main activity of the receptor;
- The degree to which the character, quality and composition of the view will be altered compared to the baseline situation (taking into account the degree of consistency between the appearance of the proposed development and what is currently visible);
- The duration of effect; and
- Whether the change is reversible or not.

12.3.96 Additional criteria used to assess cumulative effects include consideration of:

- The number of consented and proposed wind farms/other developments in the view;
- The distance to each of the consented and proposed wind farms/other developments in the view;
- The direction to each of the consented and proposed wind farms/other developments in the view;
- The proportion of the view occupied by each of the consented and proposed wind farms/other developments in the view; and

- The relative composition and scale of the cumulative wind farms/other developments.

12.3.97 The magnitude of visual change and the resultant effect is rated on a five-point scale and is set out in Table 12.5 below.

Table 12.5: Definition of Magnitude of Seascape, Landscape and Visual Change

Magnitude	Seascape/Landscape	Visual
Large	The development will form a prominent seascape/landscape element, or will result in a substantial alteration to key seascape/landscape characteristics.	The development will form a prominent element within the view, resulting in a prominent change to the quality and character of the view. Standing out, striking.
Medium	The development will form a conspicuous seascape/landscape element, or will result in a partial loss of or alteration to key seascape/landscape characteristics.	The development will form a conspicuous element within the view, resulting in a conspicuous change to the quality and character of the view. Noticeable, distinct, clearly visible, well defined.
Small	The development will form an apparent, small seascape/landscape element, or will result in a minor alteration to key seascape/landscape characteristics.	The development will form an apparent small element within the view, without affecting the overall quality and/or character of the view. Evident.
Very Small	The development will form an inconspicuous minor seascape/landscape element, or will result in a very minor alteration to key seascape/landscape characteristics.	The development will form an inconspicuous minor element within the view, without affecting the overall quality and/or character of the view. Lacking sharpness of definition, not obvious, indistinct, not clear.
Negligible	The development will be a barely perceptible seascape/landscape element, or will not change the key seascape/landscape characteristics.	The development will result in a barely perceptible change in the view, or will cause a 'no change' situation to the existing view. Weak, not legible, near limit of acuity of human eye.

12.3.98 The assessment considers the nature of seascape, landscape and visual effects, i.e. whether the change will be direct or indirect, the duration of the effect (i.e. short, medium, long term / permanent or temporary), whether the change will be reversible or not, and whether the change will be positive, neutral or negative. Bearing in mind the nature of the proposed development, effects are considered to be negative unless stated otherwise in the text.

Significance of Landscape and Visual Effects

12.3.99 The significance of the seascape, landscape or visual effects (including cumulative) has been determined by assessing the sensitivity to change against the magnitude of change as indicated by the matrices in Table 12.6 below.

12.3.100 The assessment of significance of residual effects takes into consideration any mitigation measures implemented as part of the development (which in this

instance are limited to the consideration of a 'worst case' and potential alternative development scenarios).

- 12.3.101 For the purposes of this assessment, significance has been determined in accordance with the scoring set out in Table 12.6 below.
- 12.3.102 This table is used as a guide only and the assessment of significance of seascape, landscape, visual and cumulative effects takes into account other modifying factors based upon professional judgment.
- 12.3.103 With offshore wind farms, the majority of the development is not on land, so consideration is focused on the visual effects on the views, setting or perception of coastal or inland landscapes (with a visual association with the sea) as a result of offshore development (though inclusive of appropriate reference to the immediate seascape context).

Table 12.6: Significance of Seascape, Landscape and Visual Effects

Magnitude of Change	Sensitivity			
	Very High	High	Medium	Low
Large	Major	Major	Major/Moderate	Moderate
Medium	Major	Major/Moderate	Moderate	Moderate/Minor
Small	Major/Moderate	Moderate	Moderate/Minor	Minor
Very Small	Moderate	Minor	Minor/Negligible	Negligible
Negligible	Negligible	Negligible	Negligible	Negligible

Uncertainty and Technical Difficulties Encountered

- 12.3.104 The consideration of the development layout in terms of clearly defined and reasonable parameters in accordance with the principles of the Rochdale Envelope means that the specific issues of a fixed turbine layout have not been explicitly considered within the assessment. Whilst this limits the potential for SLVIA principles to inform a particular arrangement of turbines, the assessment does nonetheless allow for consideration of a potentially greater extreme of worst case scenario than that which may ultimately be constructed.
- 12.3.105 The availability of atmospheric data records is limited and not directly coincident with the focus of representative viewpoints and therefore may only be used as a guide as to the local visibility variables.
- 12.3.106 Presentation of the sea based viewpoints, as wirelines and photomontage, is constrained by the influence of photographs having been taken from a moving vantage point (ferry) and subject to the influence of sea swell. Consequently there is potential for a small departure from an absolutely representative image arising from the need to 'best fit' the merging of image frames and for the height dimension of the viewpoint illustration to fall slightly below the minimum advised by presentation guidance standards.

12.4 Environmental Baseline

Site Description

- 12.4.1 The Offshore Project site is located at the northern margins of the English Channel between approximately 14 and 22km offshore of the nearest coastal point of Worthing and offset within the expansive concave sweep of coastline between Beachy Head in the east and Selsey Bill in the west (refer to Figure 12.1 for site location).
- 12.4.2 The sea-bed sediment covering the Offshore Project site is predominantly gravelly sand, with that in the south-western periphery of the site comprising sandy gravel and that in the north east comprising sand.
- 12.4.3 The Offshore Project site is located on a north to south downward sloping seabed, with the north-easternmost turbines charted at 20m Below Ordnance Datum (BOD), and the southernmost turbines charted at 50m BOD. An isolated deep point in the eastern section of the wind farm is charted at 59m BOD.
- 12.4.4 There are five wrecks located within the northern section of the Offshore Project site with the shallowest charted at 14.6m BOD.
- 12.4.5 A gas pipeline runs through the eastern section of the Offshore Project site in a northwest to southeast direction, running from the coastline at Shoreham.
- 12.4.6 The southern limits of a fishing zone run in close proximity to the northern site extents. The south-western periphery of the Offshore Project site is designated as a licensed extraction area for marine aggregates.
- 12.4.7 A number of shipping routes run through the Offshore Project site directly from the UK mainland; three originating in Shoreham (cargo and oil tanker vessels), and one originating in Newham (cargo vessels). There are also two cross channel shipping routes, where oil tanker, gas carrier and bulk vessels operate.
- 12.4.8 Views towards the Offshore Project site are typically experienced remotely from the southern UK coastline, most notably from the seafronts, settlements and elevated South Downs landscape. The Offshore Project site itself appears featureless in such views across the uniform surface water environment with occasional focus provided by transitional boat activity. Views of the Offshore Project site area are also experienced from both commercial and recreational boats, including those from the Newhaven to Dieppe passenger ferry.

Seascape and Landscape Baseline

Published Studies and Reference Sources

- 12.4.9 The seascape and landscape character context has been established using information published at national and local levels, and supported by field observations. The geographic distribution and association of each level of

published sources has been reviewed and rationalised below. Figures 12.3a, 12.3b and 12.4 illustrate the seascape and landscape character context of the proposed development.

National Landscape Character Areas

- 12.4.10 The 'Character of England Landscape, Wildlife and Cultural Features Map' produced in 2005 by Natural England subdivides England into 159 National Landscape Character Areas (NCA). Of these, the 35km land based extents of the study area includes the South Coast Plain (NCA 126) and South Downs (NCA 125) which make up the main coastal associated areas, the Pevensey Levels (NCA 124) which defines the area around Eastbourne, and the Low Weald (NCA 121) which characterises the inland extents.

'Local' Landscape Character Areas

- 12.4.11 The 'East Sussex Landscape Character Assessment' (2004), was produced by East Sussex County Council, and identifies 40 unique landscape character areas, covering the landward extents of the 35km study area, to the east of Brighton.
- 12.4.12 The 'West Sussex Landscape Character Assessment' (2003), was produced by West Sussex County Council and identifies 42 unique landscape character areas, covering the landward extents of the 35km study area, to the west of Brighton.
- 12.4.13 The 'South Downs Integrated Landscape Character Assessment' (2005), was produced by the South Downs Joint Committee and identifies 18 unique landscape areas, extending from Winchester in the west to Beachy Head in the east. At the current scale of study it is considered that the West Sussex Landscape Character Assessment adequately represents 'local' scale landscape character within the extents of the National Park, therefore the South Downs character document has not been referenced further in this assessment.

Other Reference Sources

- 12.4.14 The sea environment, whilst being partially represented in the above reference sources in terms of the immediate coastal context and visual associations between land and sea, is not otherwise distinctly referenced in terms of character. It is however possible to obtain information from a number of sources to be able to build up an understanding of the distinct seascape environment.
- 12.4.15 The Joint Nature Conservation Committee Coastal Directory document 'Region 8 Sussex: Rye Bay to Chichester Harbour Coastal Directory' (1998) describes the coastal and near shore zone within the coincident extents of the study area.
- 12.4.16 The Natural England Marine Natural Areas document 'The Eastern Channel Marine Natural Area' (2004) provides further detail to define broad natural divisions in the marine environment with emphasis on natural processes and the interaction between these, geology and wildlife.

- 12.4.17 The 'Beachy Head to Selsey Bill Shoreline Management Plan' (2005), includes useful reference information on key defining aspects of the immediate coastal context in terms of land use, development pressures and the state of coastal defences.
- 12.4.18 Admiralty Charts issued by the United Kingdom Hydrographic Office include information on water depths, coastline features, seabed composition, hazards, tidal information and prominent land features. Such information also further informs the associations that define character associations between the land and sea.
- 12.4.19 Section 25 - Archaeology and Cultural Heritage offers cultural insight into the context of the Project site. The English Channel has set the scene for many historic events, including invasions such as the Battle of Hastings landing point and the Spanish Armada, and unions such as the series of coastal towns termed Cinque Ports, formed for military and trade purposes.
- 12.4.20 The CPRE 'Intrusion Map 2007' distinguishes between 'Areas disturbed by noise and visual intrusion' and 'Undisturbed areas' associated with land. Within the extent of the study area, coastal undisturbed areas are limited to the sea facing margins of the Seven Sisters cliffs at Beachy Head. Inland, undisturbed areas associate with the South Downs uplands, beyond the influence of the main transport corridors.

The Seascape and Landscape Character Context

- 12.4.21 For the purposes of this assessment, the seascape and landscape within the 35km extents of the Offshore Project site study area has been considered in relation to four main seascape character areas and four main landscape character areas (see Figure 12.4). These areas have been defined as a compilation of the various reference sources identified above.
- 12.4.22 The seascape character areas are defined as an outcome of multiple reference source review as defined in Sections 12.4.9 – 12.4.20. The landscape character areas are defined by the extents of the NCAs, with elaboration on detail taken from local character sources where this informs a greater understanding of the overall character area. The character areas identified as the baseline for the assessment comprise:

Seascape Character Areas

- South Coast Plain Coastal Waters;
- South Downs Coastal Waters;
- The Pevensy Levels Coastal Waters;
- Beachy Head to Selsey Bill Offshore Waters.

Landscape Character Areas

- South Coast Plain;
- South Downs;
- Low Weald;
- Pevensey Levels.

12.4.23 Urban areas have also been mapped in Figures 12.3a and 12.3b to provide illustration of the relative extents of built context that associate with the study area. Brighton's urban and character context has not been mapped in the absence of a published character study reference source. The general character of urban areas has been described under the heading of the corresponding landscape character area.

12.4.24 For the purposes of this assessment, it should be noted that seaward seascape area boundaries are regarded as transitional as they do not directly relate to perceptible physical features within the open sea context.

12.4.25 Table 12.7 below introduces the four seascape and four landscape character areas and explains their relationship to the published character studies and reference sources. The 'local' character areas underlined in the table below are those with potential to be affected by the Offshore Project proposals (based on desktop ZTV and field analysis) and are therefore considered in the baseline and subsequent assessment. The resulting seascape and landscape character areas identified for this assessment are illustrated in Figure 12.4.

Table 12.7: Seascape and Landscape Character Context

Character Area identified as the basis for assessment	National Character Areas (Natural England)	'Local' Character Areas (various sources as stated)	Other Reference Sources (various sources as stated)
Seascape Character Areas			
1. South Coast Plain Coastal Waters	NCA 126 – South Coast Plain	West Sussex Landscape Character Assessment: <u>SC1 South Coast Shoreline</u>	Coastal Directory Region 8 Sussex
			The Eastern Channel Marine Natural Area
			South Downs Shoreline Management Plan
			Admiralty Maps
2. South Downs Coastal Waters	NCA 125 – South Downs	East Sussex Landscape Character Assessment: <u>18 Falmer Telscombe Downs</u> <u>19 Lower Ouse Valley</u> <u>21 Firle Bishopstone</u>	Coastal Directory Region 8 Sussex
			The Eastern Channel Marine Natural Area
			South Downs Shoreline Management Plan

Character Area identified as the basis for assessment	National Character Areas (Natural England)	‘Local’ Character Areas (various sources as stated)	Other Reference Sources (various sources as stated)
		<u>Downs</u> <u>22 Lower Cuckmere Valley</u> <u>23 Wilmington Heritage Downs</u>	Admiralty Maps
3. The Pevensey Levels Coastal Waters	NCA 124 – Pevensey Levels	East Sussex Landscape Character Assessment: <u>24 Eastbourne Levels</u> <u>25 Pevensey Levels</u>	Coastal Directory Region 8 Sussex
			The Eastern Channel Marine Natural Area
			Admiralty Maps
4. Beachy Head to Selsey Bill Offshore Waters			Coastal Directory Region 8 Sussex
			The Eastern Channel Marine Natural Area
			Admiralty Maps
Landscape Character Areas			
1. South Coast Plain	NCA 126 – South Coast Plain	West Sussex Landscape Character Assessment: <u>SC1 South Coast Shoreline</u> <i>SC2 Manhood Peninsula</i> <u>SC4 Pagham Harbour</u> <i>SC7 Halnaker Upper Coastal Plain</i> <i>SC8 Fontwell Upper Coastal Plain</i> <i>SC9 Chichester to Yapton Coastal Plain</i> <i>SC10 Lower Arun Valley</i> <i>SC11 Littlehampton and Worthing Fringes</i> <u>SC12 Angmering Upper Coastal Plain</u> <i>SC13 Worthing and Adur Fringes</i>	
2. South Downs	NCA 125 – South Downs	West Sussex Landscape Character Assessment: <u>SD1 Western Downs</u> <i>SD2 Downland Arun Valley</i> <u>SD3 Central Downs</u> <u>SD4 Angmering Park</u> <i>SD5 Downland Adur Valley</i> <u>SD6 Eastern Downs</u> East Sussex Landscape	The South Downs Integrated Landscape Character Assessment

Character Area identified as the basis for assessment	National Character Areas (Natural England)	'Local' Character Areas (various sources as stated)	Other Reference Sources (various sources as stated)
		Character Assessment: 14 Western Low Weald <u>17 Ditchling-Mount Harry Downs</u> <u>18 Falmer Telscombe Downs</u> 19 Lower Ouse Valley 20 Lewes Downs <u>21 Firle Bishopstone Downs</u> 22 Lower Cuckmere Valley <u>23 Wilmington Heritage Downs</u>	
3. Low Weald	NCA 121 – Low Weald	West Sussex Landscape Character Assessment: <i>LW5 Southern Low Weald</i> <i>LW6 Central Low Weald</i> <i>LW7 Wiston Low Weald</i> <i>LW9 Upper Adur Valley</i> <i>LW10 Eastern Low Weald</i> <i>LW11 Eastern Scarp Footslopes</i> East Sussex Landscape Character Assessment: 14 Western Low Weald 3 Upper Ouse Valley 15 Eastern Low Weald	
4. Pevensey Levels	NCA 124 – Pevensey Levels	East Sussex Landscape Character Assessment: 24 Eastbourne Levels 25 Pevensey Levels	

12.4.26 Baseline descriptions of each of the four seascape and four landscape character areas are presented in Appendix 12.1. Each of the baseline seascape and landscape descriptions ends with a summary of the key characteristics of the seascape or landscape within the extents of the study area and which features have a particular bearing on the assessment of the effects of the proposed development (i.e. the key characteristics and attributes that are likely to be indicators of the sensitivity of each seascape or landscape character area to the introduction of commercial scale wind energy development). Each summary concludes with the identification of a sensitivity rating of the seascape or landscape area relative to the proposed development.

Summary of Seascape and Landscape Character Context

- 12.4.27 The main landscape character area inter-associations with seascape character areas (and thereby those landscape areas with greatest sensitivity to change in the seascape context) relate to the coastal edge component of the South Coast Plain and the south facing dip slope and cliff top extents of the South Downs. Of these, the concentrated areas of settlement along the coast and the designated extents of the South Downs National Park and Sussex Heritage Coast present an accentuated sensitivity within the respective character areas. The seascape associated with views from the National Park and Heritage Coast has an enhanced sensitivity where such extents contribute to the experiential setting of the landscape.

Visual Baseline

Topographical Context

- 12.4.28 Figure 12.5 provides a topographical analysis of the seascape and landscape context of the Offshore Project site (both above and below sea level contours). The below sea level topography is not perceptible but comprises a relatively constant north to south fall from 0m AOD at the coast down to a level of 20m BOD at the northern edge of the Offshore Project site. A more abrupt drop then occurs across the site extents to a level of approximately 50m BOD towards the southern edge of the site.
- 12.4.29 The landward topographical influences are more clearly perceived. A distinct coastal plateau with a nominal elevation of between 0 and 10m AOD extends to the west of Brighton, widening its inland extents towards Chichester in the west. Behind this 'plateau' the land rises into the dip slopes of the South Downs, forming a distinctive coastal backdrop and a physical divide between coastal and inland areas. The elevation of the landform 'spine' of the Downs which runs east to west across the study area varies between approximately 20m and 250m AOD and contributes to notable coastal cliffs east of Brighton, culminating in the dramatic chalk cliffs around Beachy Head. The northern face of the Downs drop more abruptly inland as a scarp slope feature relating to the lower lying Weald landscape beyond. Several valleys, notably associated with the Rivers Arun, Adur, Ouse and Cuckmere, cut through the scarp and dip slope landform, creating a limited visual and physical association between the landscapes to the north and south of the Downs.

Zone of Theoretical Visibility

- 12.4.30 The initial understanding of Zone of Theoretical Visibility (ZTV) is based on a computer model of bare topographical terrain data over a 35km radius, which, notwithstanding the screening effect of local landcover, indicates where visibility of the proposed development might occur (refer to Figures 12.6 to 12.9 for the extent of proposed development ZTVs and to Figures 12.11 and 12.12 for the extent of cumulative ZTVs). Illustration of ZTVs for layout options D and F (as

defined in Section 2a – Offshore Project Description) have been included to assist comparison of the relative visual influence of tall and small turbine height layout variations. This was used to help identify the representative viewpoint locations for detailed visual assessment, which have been agreed with the various parties referred to in Section 12.3.14 and illustrated by location in Figure 12.13.

12.4.31 The actual extent of visibility of the proposals will however be considerably less than that illustrated by the modeled ZTV, influenced by vegetation and built form in particular. At this scale of study it has not been possible to validate the ZTV to reflect a more refined delineation of extents; however as an outcome of field assessment it has been possible to identify a number of key influences limiting the extent of the ZTV:

- Visibility from streets, open spaces and low storey buildings within coastal urban areas are typically contained within the urban environment by surrounding built form;
- Views across the coastal ‘plateau’ (which broadly comprises the area between the coastline and boundary of the South Downs National Park) are heavily filtered by vegetation, built form and infrastructure;
- The landscape to the north of the South Downs is largely screened from the sea by the intervening landform. Where valleys allow capacity for views beyond this divide, such views are heavily filtered by woodland cover;
- Within the seaward facing South Downs dip slope, the rolling topography creates subtle containment within valley landforms;
- The headlands at Selsey Bill and Beachy Head limit the extent of east-west coastal and sea views; and
- The curvature of the earth has capacity to limit visibility where views are experienced across the open sea.

12.4.32 The ZTV most extensively comprises the seascape up to the shoreline. The scope for views of the Offshore Project site from publicly accessible areas along the coastline itself is typically concentrated on the immediate seafront; however the multitude of building heights, orientations and elevations affords the potential for a diverse range of individual property views. The cliff top footpaths, in particular those associated with the Sussex Heritage Coast and Beachy Head, offer a focused scope for views towards the Offshore Project site. Inland views typically associate with areas elevated above the intervening visual coastal barriers, which notably includes settlement within and east of Brighton and the extents of the South Downs National Park.

Existing Key Visual Elements

12.4.33 The context of the Offshore Project site includes a number of visually distinctive elements and vertical infrastructure components, which include:

- General built form within the extensive coastal urban environment which predominates between Seaford and Bognor Regis;
- Landmark, man-made features including high rise buildings and seafront piers at Brighton, Worthing and Bognor, the distinctive built character of Arundel Castle and Shoreham College, the cumulative massing of beach groynes along the coastline and lighthouses at Beachy Head;
- Telecommunications masts in and around Brighton;
- Industrial chimney stacks at Shoreham and Newhaven;
- Concentrations of sea faring activity at Newhaven, Brighton, Shoreham and Littlehampton;
- Cliff landform, most notably between Seaford and Beachy Head;
- The landform massing of the South Downs; and,
- The extensive shingle beach which extends along the majority of the coastline between Brighton and Selsey.

Night Time Context

12.4.34 The Campaign to Protect Rural England (CPRE) night sky mapping of light pollution, based on satellite imagery in the year 2000, identifies that the majority of the coastal margin between Bognor Regis and Seaford falls within the 'brighter' to 'saturated' light influence category (the greatest light influenced end of the spectrum). The relatively less light influenced coastal areas coincide with the headlands of Selsey Bill and Beachy Head. The South Downs uplands, within the eastern and western extents of the study area, demonstrate the greatest association as 'dark sky' areas.

Visual Receptors

12.4.35 Within the extents of the ZTV, the key sensitive visual receptor groups with capacity to be influenced by the proposals have been identified as follows.

Settlement

12.4.36 The larger settlements within the extent of ZTV are generally coincident with the coastline (refer to Figures 12.3a and 12.3b for the extent of urban areas). The main focus of views from such locations is typically 'land to sea' or 'land to land'. Some of the seafront views however also include an element of 'coast across sea

to land' views such as those from Seaford towards Newhaven and those from Selsey Bill towards Worthing. The extent of sea featuring within the line of sight in such views is limited to that within 5km of the shore and does not include the Offshore Project site within the direct line of sight. The principal coastal settlements with capacity for views of the proposals are (with approximate distance to the closest turbine):

- Hove (14km);
- Worthing (14km);
- Newhaven (14km);
- Shoreham (14km);
- Brighton (14km);
- Rottingdean, Saltdean and Peacehaven (14km);
- Seaford (16km);
- Littlehampton (15km);
- Bognor Regis (25km); and
- Selsey Bill (30km).

12.4.37 Smaller settlements and isolated properties and farms are scattered more widely across the inland landscape. The principal inland settlement within the ZTV with a limited capacity for views of the development is:

- Arundel (23km).

Public Rights of Way, Trails and Cycle Routes

12.4.38 There are a number of long distance recreational routes and trails within the extent of ZTV (refer to Figures 12.2a and 12.2b for routes). The primary focus of these vantage points is 'land to land' or 'land to sea' views. Some of the coastal footpath views also include an element of 'coast across sea to land' views such as those from Seaford Head towards Newhaven. The extent of sea featuring within the line of sight in such views is limited and does not include the site area within the direct line of sight. The principal routes with capacity for views of the Offshore Project proposals are:

- The South Downs Way national trail between Winchester and Eastbourne follows the elevated ridgeline of the Downs, coincident with the extents of the National Park, and typically affording panoramic views in all directions. Views towards the Offshore Project site are possible from much of the route, reflecting the open character of the associated chalk grassland, though

excluding seaward views where the route drops to cross the river valleys that cut through the Downs slopes. The seaward visual context includes notable foreground urban coastal influences within the extent of views west of Newhaven.

- The Monarchs Way is a long distance path from Worcester to Shoreham, coincident with the ZTV and affording seaward views where it passes through the elevated extents of the South Downs National Park west of Brighton.
- The Sussex Border Path skirts around the northern edge of Brighton and Hove, with views towards the Offshore Project site primarily associated with elevated areas of the National Park and including the urban extents of Brighton featuring prominently in the foreground.
- The Vanguard Way is a long distance footpath between Croydon and Newhaven. The majority of the route has no association with the sea; however it is coincident with the extents of ZTV along its cliff top extents between Cuckmere and Newhaven.
- Sustrans National Route 2 Dover to Havant is currently substantially installed between Worthing and Eastbourne and includes part of the 'Downs and Wealds Cycle Route' within its route between Brighton and Eastbourne. The route includes notable seaward views between Worthing and Seaford.

12.4.39 A more general concentration of Public Rights of Way is also notable within the extents of the South Downs National Park associated with its open landscape and focus as a centre for outdoor recreation. Sea front promenades, typically associated with the main settlements, provide further linear route vantage points.

Recreational and Visitor Locations

12.4.40 Concentrations of recreational and visitor locations associated with the main coastal resort towns, with their sea front promenades, piers and shingle beaches, including (with distance from the nearest turbine indicated in brackets):

- Brighton and Hove (14km);
- Worthing (14km);
- Bognor Regis (25km);
- Littlehampton (18km); and
- Seaford (16km).

12.4.41 Other notable beach locations (within general accessibility along the majority of the coastline) offering beach and inshore sea based recreational opportunities include:

- Selsey Bill (30km);
- Pagham (29km);
- Middleton (20km);
- South Lancing (13km);
- Shoreham (14km); and
- Birling Gap (18km).

12.4.42 The cliffs east of Seaford and coincident with the extents of Heritage Coast, act as a key visitor focus along the coastline, including locations at Seven Sisters Country Park, Birling Gap, Cuckmere Haven and Beachy Head.

12.4.43 The wetlands at Pagham are a further area of focussed interest associated with bird watching.

12.4.44 Offshore recreational boating activity is concentrated on the harbour areas of Brighton, Littlehampton, Shoreham, Newhaven and Eastbourne, with main Royal Yachting Association routes extending from these points both along the coastline and out across the English Channel.

12.4.45 Beyond the coastal attractions, the South Downs National Park, primarily orientated towards walking and cycling, offers an extensive recreational facility.

12.4.46 Views from facilities immediately on the coast such as seafront promenades and cliffs are typically orientated as 'land to sea' views where the sea is the focus of the view, but may equally include views 'from coast across sea to land' where the alignment of the coastline indents or curves. Views from the inland extents of the South Downs are more apparently 'land to land' but inclusive of 'land to sea' backdrop contexts. Inshore and offshore recreational activities associate with 'sea to land' and 'sea to sea' views.

Principal Highway Routes

12.4.47 The principal highway route with capacity for sea views is the A259 running between Chichester and Eastbourne, connecting the various coastal towns and coincident with the coastline between Worthing and Newhaven. This is not however the main east to west route; rather this is provided by the A27 set inland from the coast but which has only limited scope for views of the site where it reaches its highest point north of Brighton (refer to Figure 12.1 for principal highway routes).

12.4.48 In addition to these routes, many of the coastal towns include local roads which front onto the sea and coincide with adjacent promenades, characteristic of settlements including Bognor Regis, Littlehampton, Worthing and Seaford.

- 12.4.49 The main visual focus of such routes is 'land to land' or 'land to sea' with a limited scope for some views 'from coast across sea to land'.

Principal Rail Routes

- 12.4.50 The only notable rail route with potential for views of the proposals is the Lewes to Seaford line terminating at Seaford, where the line runs parallel to the coast east of Newhaven. Such views are either 'land to land' or 'land to sea' orientating.

Principal Boat Routes

- 12.4.51 The English Channel shipping route, passing to the south of the Offshore Project site, is one of the world's busiest shipping lanes, including both freight and passenger traffic, though predominantly freight in closest proximity to the site (refer to Section 14 (Shipping and Navigation) for figures illustrating vessel movements). The nearest shipping lane used by westbound channel traffic runs to within approximately 9km of the south eastern edge of the Offshore Project site boundary. Traffic diverging from this controlled movement corridor passes to within 5km of the south western boundary of the Offshore Project site. There is an inshore traffic zone north of this lane, which is used by coastal shipping and currently coincides extensively with the Offshore Project site area. Commercial shipping routes also originate from Shoreham, diverging east and west beyond the northern extents of the Offshore Project site but also passing directly through the middle of the site on a north-south axis. The main cross channel passenger routes run from Newhaven to Dieppe, 7km to the east of the Offshore Project site boundary, and from Portsmouth to Le Havre 50km to the west of the Offshore Project site. The nature of such views is either sea to land or sea to sea.

Other Sea Based Users

- 12.4.52 Other sea based users are considered in more detail in Sections 14 (Navigation), 18 (Commercial Fisheries) and 19 (Other Marine Users), with Section 19 providing a plan of the main sea based user routes. The main 'heavy use' recreational boat routes run out of Brighton in a westward direction, to the north of the Offshore Project site. Several 'medium use' routes run through the Offshore Project site. The main recreational boat racing and sailing areas coincide with areas to the east of Selsey Bill and east of Beachy Head. The majority of fishing vessel activity is concentrated on Shoreham with the main fishing grounds occurring within 9km of the coastline to the north of the Offshore Project site, and immediately south of the site, and including transitional movement between the two across the Offshore Project site. The area to the west of the Offshore Project site is a significant resource for aggregate extraction. All such users experience varying aspects of sea to land or sea to sea views.

Representative Viewpoints

- 12.4.53 The visual assessment is based on consideration of representative viewpoints (for which 31 locations have been identified). Viewpoints have been selected to reflect key visual issues at a variety of directions and distances from the Offshore Project site. The majority of the selected viewpoints are located along the immediate coastline and on elevated ground associated with the South Downs and are generally in the more visually sensitive locations identified within the study area (for example in the vicinity of designated areas such as the National Park, Heritage Coast or Registered Historic Parks or Gardens). Viewpoint locations have been discussed and agreed with the LPAs and relevant statutory bodies previously referenced in Section 12.3.14.
- 12.4.54 The following Table 12.8 lists the selected viewpoints identifying the key issues that each represents (see Figure 12.13 for viewpoint locations and Figures 12.14 to 12.47 for viewpoint photographs).
- 12.4.55 A detailed baseline description for fifteen of the thirty one viewpoint locations ('selected representative viewpoints') is included in Appendix 12.2 to provide proportionate representation of the context and issues associated with the range of viewpoints. A summary of the effect on all thirty-one representative viewpoints is included in Table 12.14.

Table 12.8: Representative Viewpoints

No.	Location	Distance (km) from nearest turbine & direction from proposals area	Rationale for selection
Coastal Viewpoints			
VP1	Beachy Head cliff top	22.5 NE	Coastal viewpoint (highest point of cliffs within extent of study). South Downs National Park.
VP2	Birling Gap cliff top (top of steps leading down to beach)	19.6 NE	Cliff top visitor facilities and car park providing access to the beach
VP3	Birling Gap beach (bottom of steps leading down to beach)	19.6 NE	Accessible beach access with prominent white cliff backdrop
VP4	Seven Sisters Country Park cliff top	17.8 NE	South Downs Way, Country Park, white cliff viewpoint and Heritage Coast
VP5	Seven Sisters Country Park Cuckmere Haven	18.7 NE	South Downs Way, Country Park, and Heritage Coast
VP6	Seaford Head cliff top	15.7 NE	South Downs Way, Heritage Coast and recreational golf course
VP7	Seaford sea front promenade (adjacent to Martello Tower)	15.5 NE	Main seafront pedestrian walkway, recreational beach area, seafront road and sea

No.	Location	Distance (km) from nearest turbine & direction from proposals area	Rationale for selection
			orientating property frontages.
VP8	Newhaven Coastguard cliff top	14.6 NE	Area of publicly accessible open land coincident with local highpoint, including the vantage point of Newhaven Fort
VP9	Peacehaven cliff top	13.9 N	Cliff top seafront walk adjacent to sea orientating property frontages.
VP10	Beacon Hill, Rottingdean	14.1 N	Landmark windmill and highpoint viewpoint coincident with Public Rights of Way
VP11	Brighton parade	14.2 N	Marine Parade (A259) highway approaches to Brighton, elevated promenade vantage point and extensive residential and hotel seaward orientating frontages.
VP12	Brighton sea front promenade (adjacent to pier).	14.1 N	Prominent tourist focus on the main seafront pedestrian walkway, recreational beach area, seafront road and sea orientating property frontages.
VP13	Shoreham/A259 coastal road	14.2 N	Harbour area is a notable feature along the coastal road which includes views from the road and from sea orientating property frontages.
VP14	Worthing sea front promenade	13.4 N	Main seafront pedestrian walkway, recreational beach area, sea front road and sea orientating property frontages.
VP15	Littlehampton sea front promenade	17.8 NW	Main seafront pedestrian walkway and recreational beach area.
VP16	Bognor Regis sea front promenade	23.9 NW	Main seafront pedestrian walkway, recreational beach area, sea front road and sea orientating property frontages.
VP17	Pagham beach	28.2 NW	Coastal viewpoint, wildlife appreciation area and recreational beach area.

No.	Location	Distance (km) from nearest turbine & direction from proposals area	Rationale for selection
VP18	Selsey sea front promenade	29.5 NW	Main seafront pedestrian walkway, recreational beach area and sea orientating property frontages.
Inland Viewpoints			
VP19	Willingdon Hill	24 NE	Cumulative viewpoint - South Downs Way, recreational golf course.
VP20	Firle Beacon	21.6 NE	Cumulative viewpoint - South Downs Way highpoint.
VP21	Saxon Down	24.1 NE	Cumulative viewpoint – uncategorised path linking between a Public Right of Way and a permitted footpath, but coincident with a localised highpoint.
VP22	Hollingbury Golf Course (Brighton)	18.1 N	Public Right of Way within an outdoor recreational facility in proximity to extensive sea view orientating properties.
VP23	Ditchling Beacon ridge	23.6 N	Cumulative viewpoint - South Downs Way
VP24	Devil's Dyke	19.6 N	South Downs Way and intersection of multiple Public Rights of Way.
VP25	Upper Beeding	19.8 N	Inland area below the main elevational influence of the South Downs (restricted byway Public Right of Way)
VP26	Cissbury Ring	18.9 N	National Trust landscape, notable local landmark hilltop and Public Right of Way access.
VP27	Highdown Hill	16.8 N	National Trust landscape and Public Right of Way access.
VP28	Springhead Hill	25.4 NW	South Downs Way.
VP29	Bignor Hill	30 NW	South Downs Way highpoint.
Sea Based Viewpoints			
VP30	Newhaven to Dieppe Ferry – looking away from land	11.5 SW	Sea views from main ferry route.
VP31	Newhaven to Dieppe Ferry – looking towards land	18.6 NW	Sea views from main ferry route.

Atmospheric Visibility Assessment

12.4.56 A visibility assessment of the influence of atmospheric conditions has been carried out and related to the selected representative viewpoints, the outcome of which is reported in Table 12.9 below. The location of viewpoints and the corresponding closest turbine positions are illustrated in Figure 12.13.

Table 12.9: Atmospheric Visibility Assessment

Viewpoint No.	Location	Distance (km) from nearest turbine	Visibility likelihood (according to marine observations)	
			Time %	Days per year
Coastal Viewpoints				
VP2	Birling Gap (top of steps leading down to beach)	19.6	62	226
VP3	Birling Gap (bottom of steps leading down to beach)	19.6	62	226
VP4	Seven Sisters Country Park cliff top	17.8	65	237
VP5	Seven Sisters Country Park Cuckmere Haven	18.7	63	230
VP6	Seaford Head cliff top	15.7	71	259
VP7	Seaford sea front promenade (adjacent to Martello Tower)	15.5	68	248
VP11	Brighton parade	14.2	74	270
VP12	Brighton sea front promenade (adjacent to pier).	14.1	75	273
VP14	Worthing sea front promenade	13.4	77	281
VP16	Bognor Regis sea front promenade	23.9	53	193
Inland Viewpoints*				
VP20	Firle Beacon	21.6	57 (20)	209 (72)
VP24	Devil’s Dyke	19.6	62 (26)	226 (95)
VP26	Cissbury Ring	18.9	63 (28)	230 (102)
VP27	Highdown Hill	16.8	68 (36)	248 (131)
Sea Based Viewpoints				
VP31	Newhaven to Dieppe Ferry – looking towards land	18.6	64	234

* Data in parentheses for the inland viewpoints are frequencies derived from the land-based observations at Herstmonceux.

12.4.57 A review of atmospheric conditions indicates that the closest row of turbines may be visible for between 53% and 77% of the time from the coastal edge between Bognor Regis and Birling Gap. From the assessed viewpoints inland, the offshore wind farm will be visible for between 57% and 68% of the time, according to the sea-based visibility observations. It is notable, however, that – according to the nearest land-based visibility observation data – inland visibility reduces significantly more with increasing distance than is the case at sea, therefore the marine observations may overestimate visibility for the inland viewpoints.

12.4.58 An assessment of the Met Office marine observations data for the area (refer to Figure 12.13 for definition of the extent of the marine data records area in relation to the Offshore Project site) has revealed that sea fog (visibility less than 2km) occurs approximately 2.3% of the time, or approximately 8 days per year. There is a degree of seasonal variability evident in the sea fog frequency, with the months of February to August all being above the annual average of 2.3% and September to January below the average.

Cumulative Baseline

12.4.59 Research and consultation has identified a proposed wind energy development within 35 km of the Offshore Project site (see Figure 12.10). The site is located at Shepham Lane, Polegate and comprises a submitted planning proposal for 5 turbines of 126.5m tip height.

12.4.60 There is also a 70m tip height single operational wind turbine at Glyndebourne Opera House, east of Lewes (refer to Figure 12.10 for wind turbine location).

12.4.61 Additional consultation has identified the following approved developments with capacity to generate cumulative effects with the proposed Offshore Project site (refer to Figure 12.10 for cumulative development locations):

- Outer Harbour Development, Brighton Marina (application approved on 25 October 2006) – comprising ten, 6 to 13 storey, buildings and one 40 storey residential tower within the existing marina context. Whilst the development has legally commenced, meaning that its permissions will not expire, the timeframe for its implementation is not defined;
- Brighton i360 and West Pier Heritage Centre (application approved on 4 July 2006) – comprising a 183m high steel spire and glass observation pod together with a two level platform building at the landward end of West Pier. The associated environmental assessment advises that the spire will be visible from as far as Peacehaven in the east and Worthing in the west, but states that the spire will not be visible from the upper southern slopes of the South Downs. Whilst the development has legally commenced, meaning that its permissions will not expire, the timeframe for its implementation is not defined;

- Peacehaven waste water treatment works (application approved on 23 October 2008) - the development under construction comprises a new wastewater treatment works and sludge recycling centre at Peacehaven; wastewater flow transfer infrastructure from east Saltdean to the proposed wastewater treatment works at Peacehaven and onward to a new long sea outfall at Friar's Bay; a new pumping station at Portobello in Telscombe Cliffs and sewer connections and access shafts. The main above ground component of the scheme is the treatment works at Peacehaven, however the deliberately low key design means that the development does not present any notable cumulative issues and has not been considered further in this assessment;
- Newhaven Port Masterplan (2012) – a port masterplan has been prepared to define a strategic framework for the port's development over the next 20 to 30 years. The main elements with capacity to perceptibly influence the context of the proposed wind farm include; the development of infrastructure to support construction, operation and maintenance of offshore wind energy; increased warehouse and storage facilities; redevelopment of the road/rail/ferry transport interchange; and, enhancement of recreational access and facilities. The Newhaven Port Masterplan proposals will locally affect the environment of Newhaven but will not notably affect the associative experience with the proposed Offshore Project site so has not been considered further in this assessment.

12.4.62 The influence of the above developments on the assessment has been considered in Section 12.7. The wider scope for general forces for change such as increased urbanisation of the coast or for climate change or coastal defences to affect coastal context has not been considered in this assessment unless associated with known development proposals, as listed above.

Key Seascape, Landscape and Visual Assessment Issues

12.4.63 The baseline assessment has identified the following as the key considerations for the SLVIA and CLVIA:

- The potential effect of the proposed development on the general seascape and landscape character context of the area;
- The potential effect on the character and setting of the South Downs National Park;
- The potential effect on the character and setting of the Sussex Heritage Coast;
- The potential visual effect on the settlements located along the south coast; and

- The potential access and experiential effects on recreational and commercial boat users.

12.5 Assessment of Predicted Effects

12.5.1 The following section evaluates and assesses the significance of the Offshore Project on seascape, landscape and visual sensitivities during the construction, operation and decommissioning stages of the development. The key issues associated with the offshore component of the offshore wind farm proposal include consideration of:

- Direct effects on physical features of the seascape;
- Indirect effects on the character and quality of the seascape or landscape, for example through the development of offshore turbines causing changes in the perception of the seascape or landscape;
- Direct effects on the visual amenity of visual receptors, for example changes in available views of the sea and their content, for residents and visitors caused by the development of the offshore wind farm; and
- Indirect effects of visual receptors in different places, for example an altered visual perception leading to changes in public attitude, behaviour and how they value or use a place.

The Proposed Development

12.5.2 A full description of the proposed development is included in Section 2 (Project Description). Table 12.10 lists the marine components of the project with potential to influence the relative significance of landscape and visual effects.

Table 12.10: Wind farm design features and their influence on the Rochdale Envelope for Seascape, Landscape and Visual Sensitivities

Design feature	Design options
Wind Farm Site Layouts	The physical plan extent of the wind farm has the potential to influence the area over which the wind farm is visible and the extent of physical sea environment disrupted, ranging in extreme from a localised, concentrated area of development to development of the full extent of the site boundary. Worst case would be the full extent of the red line boundary filled with the densest possible arrangement of wind turbines.
Wind Turbines	The size and spacing of turbines has the potential to influence the nature of visual effect, ranging from a complex massing associated with a small turbine and dense layout arrangement, to a less complex but more visible turbine scenario associated with a larger, more widely spaced layout arrangement. Worst case would vary depending on individual viewpoint location influenced by proximity and angle of view, but as a general assumption across the study area the greater massing effect has been adopted as the worst case, with comparative reference to a wider spaced, larger turbine scenario included where relevant.
Foundations	The relative intrusiveness of the foundation treatment has the potential to influence the extent of below sea level environment affected, ranging from narrow piles to more extensive pads. Worst case would be the most disruptive method of foundation construction which would result in the greatest physical change to sea bed features (typically those with the largest footprint represented by the gravity base and suction caisson foundation treatments).
Offshore Substation	The size, position and appearance of the offshore substation has the potential to influence its visual prominence, ranging from a small structure contained internally within the wind farm extents to a large structure located at the closest landward extent of the wind farm.
Cables	The relative intrusiveness of the cable installation process has the potential to influence the extent of below sea level environment affected, however all potential methods are comparable in effect in terms of worst case.
Navigation and Aviation Marking	The extent and type of marking and lighting is defined by formal requirement, of which the lighting component has the greatest potential to cause visual effect. Within the constant of fixed illumination brightness requirements, the lighting influence would be variable in terms of the number of turbines to be illuminated. Worst case would be the layout configuration requiring the greatest number of lights.
Construction and Installation	The location, scale and nature of construction activity has the potential to influence the relative prominence of visual effects, ranging from small scale, remote activity to large scale operations close to receptors. Worst case would be a long period with the presence of construction vessels close to land, visible from a large number of receptors or visible from a sensitive landscape setting.
Operation and Maintenance	The scale and frequency of activity has the potential to influence the perception of visual effects, ranging in extreme from regular, large scale vessel activity to small scale infrequent visits. Worst case would be for maintenance visits additional to the schedule, requiring turbine component replacement and use of large scale vessels.
Decommissioning	Assumed as installation.

- 12.5.3 The potential for landscape and visual effects to vary within the scope of layout afforded by the Rochdale Envelope has been considered with reference to representative layouts, which illustrate the range of potential turbine number, height and pattern variables (refer to Figure 12.50 for plan layouts and Section 2a (Offshore Project Description) for a summary of turbine layout parameters). The design process illustrates the scope for the layout to incorporate 'mitigation' in terms of identifying those associations with potential to minimise adverse effect, as well as those aspects which may serve to define a 'worst case' scenario as a basis for the assessment.
- 12.5.4 The sensitivity of the Heritage Coast has been acknowledged with consideration of options which compress the site area and thereby reduce the visible horizontal extent of the wind farm from Heritage Coast vantage points.
- 12.5.5 The range of seascape, landscape and visual issues associated with variation in layouts and turbine sizes are considered by comparison of representative layout options. Options have been presented as 'wireline' graphics from viewpoint 2 and viewpoint 11 (locations indicated on Figure 12.13) to inform consideration of the visual effects from representative vantage points.

Turbine height/plan layout variables

- 12.5.6 The influence of turbine height and plan layout pattern is considered with comparison of Option A and Option H (Figures 12.48a and b). In terms of height, a taller turbine scenario (Option A) presents the potential to distinguish greater detail and focus on individual turbines when compared with a smaller turbine scenario (Option H). The corresponding visual effect of a taller turbine layout is one of increased turbine prominence but sense of 'permeability' through the wind farm to the seascape beyond. This compares with a lesser individual turbine focus but increased massing and sense of obstruction of view to the seascape beyond associated with a smaller turbine layout.
- 12.5.7 In terms of grid layout the comparison of a hexagonal grid layout (Option A) with a square grid layout (Option H) illustrates that both are subject to similar associations of stacking, gaps and overlaps such that both layouts are comparable in visual effect.
- 12.5.8 Within the scope of variables of the substation layout, their relatively small scale alongside the turbines limits the potential for a variation in position to perceptibly influence the significance of effects. For the purposes of worst case assessment, substation positions have however been considered in an offset row position where this has potential to accentuate their location as an outlier from the main array formation. The potential best case fit would be one where the substation was placed on the same grid spacing as the turbines and therefore more typically align with the surrounding array.
- 12.5.9 As a comparative reference, the draft assessment worst case layout as presented in the Draft ES has been presented alongside Options A and H (Figures 12.48a

and b) to illustrate the progression in the design process in response to stakeholder feedback (and thereby convey the scope for 'mitigation' within the design layout).

Scheme layout variables

- 12.5.10 The influence of scheme layout (as a combination of turbine height and plan layout variables described above) is considered with comparison of Option D and Option F (Figures 12.49a and b). The purpose of this comparison is to identify the potential extremes of layout variables as a basis for assessment of potential effects. In this respect Option D presents the smallest potential plan layout with the corresponding tallest turbines whilst Option F presents the most extensive potential plan layout with the smallest turbines.

Assessment Layout

- 12.5.11 Option F typically presents what has been considered to be the 'worst case' layout based on the relative context judgment that a larger massing of smaller turbines would present a greater seascape, landscape and visual effect than a taller development scenario with fewer turbines. Where there is potential for a taller turbine scenario to increase the relative perception of the presence of turbines this has been considered with the inclusion of Option D in the modeling of photomontage layouts (for viewpoints 2, 4 and 11). A summary of potential variations in effect associated with the alternative assessment layouts has also been provided in a concluding section at the end of the seascape and landscape effects and visual effects sections respectively.
- 12.5.12 The principle of 'mitigation' of landscape and visual effects has been considered as a comparison of the variation in effects within the scope of influence of the wind farm layout rather than assessing the Offshore Project on the basis of a defined or fixed layout. Reference to the potential effect of layout mitigation is included in Section 12.8.

Construction Effects

Seascape and Landscape Effects During Construction

- 12.5.13 The SLVIA has identified that the construction effects on existing character will be comparable across the range of potential layout scenarios. The relatively small footprint of individual turbine foundations will not notably alter the below water level environment in terms of physical or character perception. Above water level, the activity and focus associated with the presence of boats and general construction activity will be apparent within the context of the 'Beachy Head to Selsey Bill Offshore Waters'. The routes of sea based users may be affected by safety exclusion zones. The extent of influence of distinct construction operations (as opposed to the physical presence of the offshore turbines which is considered under operational impacts) will, however, be localised within the broad context and therefore considered **negligible**.

Visual Effects During Construction

12.5.14 Visual effects during construction will be comparable across the range of potential layout scenarios. The presence of installation vessels associated with turbine and substation construction will be apparent both within the Offshore Project site extents and passing between the construction port and Offshore Project site. Surface vessels associated with cable laying will also be visible between Worthing and the Offshore Project site. Night time illumination of construction vessels will accentuate the perception of construction activity but will typically be remote from receptors and set within an expansive seascape context. Temporary visual effects during the construction phase will be no more significant than the visual effects associated with the physical presence of the offshore turbines (which is considered under operational impacts). The visual effect of operations distinctly associated with construction and not addressed by the assessment of operational effects will be **minor**. In the absence of detail on the location of the construction port it has not been possible to assess the potential for localised effects associated with land based construction of offshore components.

Operation EffectsSeascape and Landscape Effects During Operation*Effects on Policy*

12.5.15 Effects on policy are reported in Section 4 -Planning Policy Context.

Effects on Designations

12.5.16 This section of the assessment considers the predicted effects of the proposed development on the character and setting of the South Downs National Park, Sussex Heritage Coast and Registered Historic Parks and Gardens (refer to Figures 12.2a and 12.2b for locations of designated features and Table 12.11 below for a summary of predicted effects). The assessment considers the seascape and landscape character context of each designation as well as their appearance and contribution to the wider surrounding seascape/landscape and views. The character and setting of all designated assets is considered to display **high sensitivity**.

Table 12.11: Seascape and Landscape Effects on Designated Assets

Designated Asset	Magnitude of change to character and setting	Level of predicted effect
National Park:		
South Downs National Park (14 km at nearest point at Seaford cliffs)	Medium The South Downs National Park landscape is a distinctive and defining characteristic of the area. The elevated extents of the south facing South Downs dip slope, typically coincident with open grassland, affords extensive seaward visual	Major/Moderate

Designated Asset	Magnitude of change to character and setting	Level of predicted effect
	associations. The most prominent association with the proposed development relates to the coastal cliff top extents between Seaford and Beachy Head. Whilst open views of the Offshore Project site will be possible, the relative distance of the National Park from the proposed development will limit the prominence of proposals within the extent of view.	
Heritage Coast:		
Sussex Heritage Coast (14 km at nearest point at Seaford cliffs)	Medium The Sussex Heritage Coast is defined by a distinctive cliff faced coastline. The elevated cliff tops (which are also coincident with the extents of the South Downs National Park) afford extensive seaward views. Whilst the proposed development will feature within the extent of view, the seaward outlook will be inclusive of a wider panorama of open sea.	Major/Moderate
Registered Parks and Gardens:		
Stanmer Park, Brighton (19 km)	Negligible The sea is not visible from the majority of the designated area, nor within the extent of any designated vista. Where the proposed development may be glimpsed from the elevated western extents of the area, this will be heavily filtered by foreground buildings, vegetation and landform influences.	Negligible
Kemp Town Enclosures, Brighton (14 km)	Small Within the extents of the designated area bounded by Sussex Square, views of the sea are heavily filtered by vegetation within the garden. Within the bellmouth enclosed by Lewes Crescent, seaward views are gained, though partially screened by internal and boundary vegetation such that the scope for panoramic sea views is limited. The seafront area south of Marine Parade affords open views across the beach towards the sea but is less distinct as a continuation of the garden, with an apparent sense of association with the wider sea front promenade. Within the range of visual experiences of the sea, and taking account of the most distinct context association of the designation as relating to the area to the north of Marine Parade, the overall magnitude of change is considered to be small.	Moderate
Queens Park, Brighton (14 km)	Negligible The capacity for views of the sea is limited by existing vegetation within the park and by the intervening extents of landform and the built form of Brighton.	Negligible
Highdown (17 km)	Negligible The grounds are well vegetated with no designed long distance views. The scope for panoramic	Negligible

Designated Asset	Magnitude of change to character and setting	Level of predicted effect
	views of the coastal plain and sea are limited by the extent of vegetation cover within the garden. The potential for views of the sea along the approach avenue are heavily filtered by the intervening extents of the coastal plain.	
Arundel (25km)	Negligible No significant view of the sea is experienced from this location, which is more immediately focussed eastwards into the River Arun valley.	Negligible

12.5.17 The potential operational effect of the proposed offshore wind farm on the various location specific designation assets will typically be **negligible to moderate**, however the effect on the wider designated assets of the South Downs National Park and Sussex Heritage Coast will be **major/moderate**.

Physical effects on the Seascape of the Site

12.5.18 The relatively small footprint of individual turbine foundations will not notably alter the physical “below water level” environment. The level of effect on the physical seascape will therefore be **negligible**.

12.5.19 In terms of secondary surface activities relating to the physical site environment, shipping routes from Shoreham and Newhaven will be considered within the design layout. Recreational boating routes will be locally affected by the constraint of 50m exclusion zones around pylon bases, but will otherwise retain capacity for recreational passage through the Offshore Project site. Access restriction effects on trawling, dredging and anchoring (potentially inclusive of the cable route) will however affect activity within the area. Regular maintenance boat visits will become an additional component of surface water activity.

12.5.20 In terms of the contribution of boat activity to the character of the seascape, within the broader seascape context, the relative sensitivity of the Offshore Project site environment to a change in sea use will be one of **low sensitivity**. As an outcome of constraints on certain sea based activities there will be a medium magnitude of change to boat activity uses with a resultant **moderate/minor** effect on the physical site context.

Effects on Seascape and Landscape Character Areas

Effects on Beachy Head to Selsey Bill Offshore Waters Seascape Character Area (host seascape)

12.5.21 The assessment initially considers the sensitivity of the Beachy Head to Selsey Bill Offshore Waters as the host character area, with respect to the sensitivity of its key characteristics to the proposed development (summarised in Table 12.12

below). Refer to Figures 12.3a, 12.3b and 12.4 for the corresponding character area extents.

Table 12.12: Sensitivity of Beachy Head to Selsey Bill Offshore Waters

Key Seascape Characteristic	Assessment of Sensitivity	Rationale / notes
Scale and enclosure	Low	Large scale seascape with limited context or scale references
Landform	Low	Limited remote reference to the cliffs between Seaford and Beachy Head
Landcover and pattern	Medium	Uniform seascape context and characteristic of an extensive surrounding area
Manmade influence	Medium	General absence of man-made elements but inclusive of transitory shipping and boat activity
Skyline	Medium	Localised association with cliffs between Seaford and Beachy Head, transitory influences from shipping
Remoteness and tranquillity	High	Remoteness associated with seascape dissociated from land, tempered by influence of shipping. Notable contribution to the sense of tranquillity associated with the Heritage Coast and National Park
Visual interruption and views	High	Expansive, panoramic views with limited sea to land associations. Notable land to sea visual setting associations
Settlement and key views	High	Typically generic sea based views with limited visual associations with cliffs between Seaford and Beachy Head from main Newhaven to Dieppe ferry route. Key land based views across the seascape associated with the Heritage Coast and National Park outlook setting views
Value	High	Associative visual relationship as the setting for views from the designated assets of the National Park and Heritage Coast
Overall sensitivity (based on professional judgement)	High	Associative visual relationship as the setting for views from the designated assets of the National Park and Heritage Coast

12.5.22 Whilst the general qualities of the seascape are typically generic at the southern and western extents of the study area, the associative visual relationship with nationally designated landscapes at its northern and eastern extents presents a heightened sensitivity. In acknowledgement of this association the defining sensitivity of the Beachy Head to Selsey Bill Offshore Waters seascape to the proposed development is **high sensitivity**.

12.5.23 The scope for locally heightened sensitivity within the seascape character area is also accentuated by:

- The northern edge of the character area, where contextual land associations become stronger. As a result, the potential to experience the offshore wind

farm in the context of urban development and inland landform, will accentuate the contrast of the proposed development in relation to human scale indicators. The visual association will however be successive, with the offshore wind farm and land influences experienced in opposing viewing directions.

- The area to the east of the proposed development site, where the UK 'gateway' approaches to the iconic white cliffs around Beachy Head is experienced from the Dieppe to Newhaven passenger ferry. The context of the seascape character area along the route of the ferry includes a more associative relationship with land in respect of landform, skyline and key views. The proposed development will not however lie within the direct line of sight between the ferry route and cliffs.

12.5.24 The introduction of the proposed development will have only limited effects upon physical components of the seascape. The main effects on seascape character will result from the visual appearance of the development.

12.5.25 Within a local context (within approximately 10km of the offshore wind farm), the magnitude of change in seascape character will be accentuated to large, by proximity to the proposed development. Within the wider relative uniformity of the seascape (beyond approximately 10km of the offshore wind farm), the magnitude of change in seascape character experienced from the sea will more typically be **medium**. This reflects the large scale and uniform visual character of the seascape and its ability to visually accommodate the scale of the proposed turbines.

12.5.26 The magnitude of change to the perceived character of the area experienced remotely from land (primarily from the coastline and elevated, south facing areas of the South Downs) will be **large**. This reflects the association of the seascape character area with views from land and the scope for change in existing views which currently extend across an open seascape to the horizon.

12.5.27 The potential for night time illumination of the proposed development to affect the experience of night skies and tranquility is considered separately in sections 12.5.76 to 12.5.81.

12.5.28 On balance, and taking into account the range of extremes across the seascape from areas of generic uniformity to areas associated with the setting of views from designated landscape areas, the overall magnitude of seascape change will be large; and the level of effect on the Beachy Head to Selsey Bill Offshore Waters seascape character area will be **major**.

Effects on surrounding seascape and landscape character areas

12.5.29 Table 12.13 below assesses the effects of the proposed development on the seascape and landscape character areas that are located beyond the host seascape and coincident with the extents of ZTV and study area. For these

surrounding character areas, the assessment of sensitivity considers only their sensitivity to the visibility of turbines within their wider visual setting (refer to Figures 12.3a, 12.3b and 12.4 for character area extents).

Table 12.13: Effects on Surrounding Seascape and Landscape Character Areas

Seascape character area (sensitivity to wind energy development within wider visual setting)	Magnitude of predicted seascape change	Level of seascape character effect
South Coast Plain Coastal Waters: Medium sensitivity – Large scale, open seaward views with landward coastal urban development and shipping human scale indicators. Flat coastal plain with broad, simple, sweeping coastline. Man-made coastal defence interventions and distinctive coastal landmarks. Limited sense of remoteness with moderate inter-visibility associations with land. Key seaward views associated with urban and recreational centre beaches and key landward views focussed on main urban centres and South Downs backdrop.	Large The development will form a prominent seascape element within the existing open and undeveloped seascape context.	Major/Moderate Although the proposed development lies outside the character area, the appearance and extent of turbines will directly associate with the area within the sense of continuity afforded by open water.
South Downs Coastal Waters: High sensitivity – Large scale, open seaward views with landward coastal urban development and shipping human scale indicators. Distinctive, indented, scenic cliff coastline. Man-made interventions concentrated in the west. Distinctive built and natural coastal landmarks. Limited sense of remoteness with moderate inter-visibility associations with land. Key seaward views associated with urban and recreational centre beaches and cliff top viewpoints, including landscape designation National Park and Heritage Coast. Key landward views focussed on the cliffs and South Downs backdrop.	Large The development will form a prominent seascape element within the existing open and undeveloped seascape context.	Major Although the proposed development lies outside the character area, the appearance and extent of turbines will directly associate with the area within the sense of continuity afforded by open water.
The Pevensey Levels Coastal Waters: Medium sensitivity – Large scale, open seaward views with landward coastal urban development and shipping human scale indicators. Typically low lying coastal plain with broad, simple, sweeping coastline and remote focal point reference to Beachy Head. Man-made coastal defence interventions and some distinctive coastal landmarks. Limited sense of	Small The development will form an apparent, though small seascape element, experienced from the western extents of the character area. Within the eastern extents of the character area, visibility of the	Moderate/Minor Although the proposed development lies outside the character area, the appearance and extent of turbines will directly associate with the area within the sense of continuity afforded by open water.

Seascape character area (sensitivity to wind energy development within wider visual setting)	Magnitude of predicted seascape change	Level of seascape character effect
remoteness with moderate inter-visibility associations with land. Key seaward views associated with urban and recreational centre beaches and key landward views focussed on main urban centres, Beachy Head and South Downs backdrop.	proposed development will largely be obscured beyond Beachy Head.	
South Coast Plain: Medium sensitivity – Inland sense of containment contrasts with exposure of coastline. Flat and uniform landform with simple, sweeping coastline. Diverse pattern of agricultural and urban land use with frequent man made elements and infrastructure. Backdrop or context associations with the South Downs and the sea (limited to the coastal edge). Associations typically defined by human activity, becoming remote towards Selsey. Sea inter-visibility associations limited to the coastline. Densely populated settlement with outward looking coastal edge. Typical seaward overhead and sunrise lighting associations. (Refer to viewpoints 13, 14, 15, 16, 17, 18 and 27 for representative viewpoint receptor assessment).	Medium The medium magnitude of change relates primarily to the coastal margin of the character area where the inland extents are otherwise largely visually dissociated from the proposed development. The magnitude of change does however acknowledge the scope for inter-visibility from the South Downs foothills from the northern edge of the character area. The relative weighting afforded to the significance of the coastal margin is accentuated by the extent of settlement and recreation which concentrates the experiential focus of the overall character area.	Moderate Although the proposed development lies outside the character area, the relative visual prominence of the proposed development from the coastal edge will perceptibly modify the current undeveloped seaward aspect.
South Downs: High sensitivity – Large scale, open upland with smaller scale, contained valleys. Sea orientating south facing slopes with relatively simple and unified land cover and distinctive coastal cliffs. General absence of man-made elements with urban influence concentrated around Brighton. Seaward backdrop skyline, influenced in part by urban coastline foreground. Extensive areas with a sense of remoteness. Open, panoramic and expansive views from both inland and	Large Within the range of both inland and coastal vantage points where the sea is a key component, the proposed development will form a prominent seascape element. Inland views typically experience the sea within a remote context setting beyond	Major Although the proposed development lies outside the character area, the strong inter-visibility associations between land and sea will prompt a perceptible change in the outlook setting of the character area.

Seascape character area (sensitivity to wind energy development within wider visual setting)	Magnitude of predicted seascape change	Level of seascape character effect
coastal areas with strong inter-visibility associations between land and sea. Landscape focussed recreation routes, visitor facilities and public viewpoints including prominent elevated cliff top views. Designated extents of National Park and Heritage Coast. Typical seaward overhead and sunset lighting associations. (Refer to viewpoints 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 19, 20, 21, 22, 23, 24, 25, 26, 28 and 29 for representative viewpoint receptor assessment).	intervening landscape influences. Coastal cliff top views offer a direct visual outlook towards the proposed development, set within an expansive seascape context.	
Low Weald: Medium sensitivity – Contrasting areas of both small scale and large scale land cover context. Flat and uniform landform with areas of intimate, complex pattern contrasting with areas of more regular, consistent land cover. General absence of man-made elements with concentrations of urban development and a single existing turbine at Glyndebourne. Typically local visual containment but inclusive of South Downs skyline backdrop. Some sense of remoteness associated with the containment of vegetation cover. Inter-visibility with the sea is not a feature of the area.	Negligible The relative inland containment of the character area beyond the landform influence of the South Downs will limit the potential for perceptible change on the context of the character area.	Negligible
Pevensey Levels: Medium sensitivity – Open, expansive, flat and uniform landscape with flat coastal plain. Concentration of urban development south of Pevensey contrasts with the ‘natural’ landscape in the northern extents. Backdrop or context associations with the South Downs and the sea (largely limited to the coastal edge). Sense of remoteness associated with openness and lack of man-made features in the northern extents. Open, panoramic views with limited land/sea inter-visibility. Typical seaward overhead and sunrise lighting associations.	Negligible The relative inland containment of the character area beyond the landform influence of the South Downs will limit the potential for perceptible change in the context of the character area.	Negligible

Summary of Effects on Seascape and Landscape Character Areas

12.5.30 The principal landscape character areas affected will be the coastal edges of the South Coast Plain and the coastal and elevated inland extents of the South Downs, where visual associations with the sea are most apparent. The principle

seascape character areas affected will be the host Beachy Head to Selsey Bill Offshore Waters, South Coast Plain Coastal Waters and South Downs Coastal Waters where proximity to the proposed development and influence on visual setting will be most prevalent.

12.5.31 The greatest prediction of character setting effects will relate to:

- The appearance of the development in land to sea views from scenic and designated context settings including the South Downs National Park and Sussex Heritage Coast;
- The appearance of the development in land to sea views from sea front promenades, piers, beaches and cliffs where the focus of view is on the seaward aspect;
- The appearance of the development in land to sea and sea to sea views where the proposed development will curtail the existing associations with an open sea and expansive horizon; and,
- The change in experiential context of sea users where the increasing sense of remoteness associated with distance from shore will be diminished.

12.5.32 The seascape and landscape assessment has concluded that there will be **major** and **major/moderate** levels of effect on the seascape and landscape character context of the study area.

12.5.33 Whilst the seascape and landscape character context will experience adverse effects from the development, relating primarily to visual impact on setting, the following considerations will be notable:

- Whilst there is scope for the perception of remoteness associated with the upland extents of the South Downs to be affected by the visual influence of the development proposal, the elevated context is inclusive of expansive vistas where the sea comprises only part of the view;
- Extensive areas of the inland plain between the coast and South Downs foothills will not be affected by the proposed development, in the absence of visual associations with the sea. The landscape north of the physical barrier of the South Downs will similarly be unaffected by the proposed development with dissociation of inland areas from views of the sea.
- The distinctive sense of remoteness associated with the coastal wetlands at Pagham will not be affected;
- Where views of the proposed development were experienced from cliff tops, the relative elevation of cliffs will typically place the remote wind farm in a diminutive scale association with the immediate receptor context;

- Coastal urban settlement is typically diverse and expansive in character, and interspersed with prominent transport infrastructure, industry and commercial development, thereby establishing a relatively robust context within which the proposed development will be experienced;
- The proportionate extent of the offshore wind farm as a development intervention relates in scale and character to the associative extent of coastal urban settlement;
- The sense of movement associated with turbine blades will be consistent with the mobile experience of the urban context and active seafronts;
- Night time influences will have a limited effect on character within the existing influence of illumination associated with settlement and shipping; and,
- The below water level character context will not be affected by the proposals.

Alternative Layout Effects on Seascape and Landscape

12.5.34 The assessment above considers the Option F (175 turbines) ‘worst case’ development scenario (worst case from the SLVIA perspective). For relative comparison Option D (100 turbines) is also considered (refer to Section 12.5.2 for development option details). Within this alternative scenario, the effect on seascape and landscape character areas will not be significantly different from that assessed for Option F. Whilst the physical plan area and visual horizontal extent of turbines will be reduced within a compressed layout alternative, the relative scale and massing of turbines within the study area context will present a comparable effect to that of Option F. Consequently the operational effect of the alternative layout option considered (and the range of potential layout variations between the extremes of Options F and D) will not change the significance of potential seascape and landscape effects assessed above.

Visual Effects During Operation

12.5.35 The relative scope for visibility of turbines is summarised within the SNH ‘Assessment of the sensitivity and capacity of the Scottish seascape in relation of windfarms’. Within this document it advises that it is the contrast of turbines with their background rather than their colour which will determine visibility and that this will change dramatically with lighting and weather conditions. Effects range from turbines appearing grey against a lighter sky, white and bright yellow against blue sky and sea and tricolour yellow base, grey tower and white blades and nacelle where the sun illuminates from the front.

12.5.36 The proposed development will typically be experienced within a backlit south facing visual context in land to sea views, though will include scope for side lit and very limited scope for front lit views in along coast views from the headland

extremities of the study area. The scope for backlit views will present the greatest visual contrast scenario for visibility of the proposed wind farm.

Zone of Theoretical Visibility (ZTV)

12.5.37 Figures 12.8 and 12.9 show the tip and hub height ZTV for the 175 turbine layout scenario (Option F). As the emphasis is on the identification of key views, the hub height ZTV (Figure 12.8) has been taken as the prompt for identifying where the most apparent potential visibility of the proposed development may occur. Figures 12.6 and 12.7 illustrate the comparable ZTV for the 100 turbine (Option D) layout. Although the ZTV suggests potential visibility from extensive area areas within 35 km of the Offshore Project site, visibility from much of the low lying coastal plain will be screened by vegetation and buildings. The relative significance of effect on the overall ZTV is considered within the representative viewpoint assessment and the extent of general visual effects reported below.

Representative Viewpoint Assessment

12.5.38 A detailed assessment of the existing baseline and predicted visual impacts has been undertaken for fifteen of the thirty one viewpoint locations to provide proportionate representation of the context and issues associated with the range of viewpoints (See Appendix 12.2). A summary of effect on all thirty one representative viewpoints is included in Table 12.14 below (refer to Figures 12.14 to 12.44 for photo illustration of the respective viewpoints).

Table 12.14: Summary of Representative Viewpoint Assessment

No.	Location and sensitivity	Magnitude of predicted visual change	Level of predicted visual effect
VP1	Beachy Head cliff top <i>Very High Sensitivity</i>	<i>Medium</i>	<i>Major</i>
VP2	Birling Gap (top of steps leading down to beach) <i>Very High Sensitivity</i>	<i>Medium</i>	<i>Major</i>
VP3	Birling Gap (bottom of steps leading down to beach) <i>Very High Sensitivity</i>	<i>Medium</i>	<i>Major</i>
VP4	Seven Sisters Country Park cliff top <i>Very High Sensitivity</i>	<i>Medium</i>	<i>Major</i>
VP5	Seven Sisters Country Park Cuckmere Haven <i>Very High Sensitivity</i>	<i>Very Small</i>	<i>Moderate</i>
VP6	Seaford Head cliff top <i>Very High Sensitivity</i>	<i>Medium</i>	<i>Major</i>
VP7	Seaford sea front promenade (adjacent to Martello Tower) <i>High Sensitivity</i>	<i>Medium</i>	<i>Major/Moderate</i>
VP8	Newhaven Coastguard look-out station <i>Medium Sensitivity</i>	<i>Medium</i>	<i>Moderate</i>

No.	Location and sensitivity	Magnitude of predicted visual change	Level of predicted visual effect
VP9	Peacehaven cliff top public footpath <i>High Sensitivity</i>	<i>Large</i>	<i>Major</i>
VP10	Beacon Hill, Rottingdean <i>High Sensitivity</i>	<i>Large</i>	<i>Major</i>
VP11	Brighton sea front parade <i>High Sensitivity</i>	<i>Large</i>	<i>Major</i>
VP12	Brighton sea front promenade (adjacent to pier) <i>High Sensitivity</i>	<i>Large</i>	<i>Major</i>
VP13	Shoreham/A259 coastal road <i>High Sensitivity</i>	<i>Medium</i>	<i>Major/Moderate</i>
VP14	Worthing sea front promenade <i>High Sensitivity</i>	<i>Large</i>	<i>Major</i>
VP15	Littlehampton sea front promenade <i>High Sensitivity</i>	<i>Medium</i>	<i>Major/Moderate</i>
VP16	Bognor Regis sea front promenade <i>High Sensitivity</i>	<i>Small</i>	<i>Moderate</i>
VP17	Pagham beach viewpoint <i>High Sensitivity</i>	<i>Small</i>	<i>Moderate</i>
VP18	Selsey sea front promenade <i>High Sensitivity</i>	<i>Small</i>	<i>Moderate</i>
VP19	Willingdon Hill <i>High Sensitivity</i>	<i>Medium</i>	<i>Major/Moderate</i>
VP20	Firle Beacon <i>Very High Sensitivity</i>	<i>Medium</i>	<i>Major</i>
VP21	Saxon Down <i>High Sensitivity</i>	<i>Small</i>	<i>Moderate</i>
VP22	Hollingbury Golf Course (Brighton) <i>Very High Sensitivity</i>	<i>Medium</i>	<i>Major</i>
VP23	Ditchling Beacon ridge <i>High Sensitivity</i>	<i>Medium</i>	<i>Major/Moderate</i>
VP24	Devil's Dyke <i>Very High Sensitivity</i>	<i>Large</i>	<i>Major</i>
VP25	Upper Beeding <i>Medium Sensitivity</i>	<i>Very Small</i>	<i>Minor/Negligible</i>
VP26	Cissbury Ring <i>Very High Sensitivity</i>	<i>Medium</i>	<i>Major</i>
VP27	Highdown Hill <i>Very High Sensitivity</i>	<i>Large</i>	<i>Major</i>
VP28	Springhead Hill <i>High Sensitivity</i>	<i>Medium</i>	<i>Major/Moderate</i>
VP29	Bignor Hill <i>High Sensitivity</i>	<i>Medium</i>	<i>Major/Moderate</i>
VP30	Newhaven to Dieppe Ferry – looking away from land <i>Medium Sensitivity</i>	<i>Medium</i>	<i>Moderate</i>

No.	Location and sensitivity	Magnitude of predicted visual change	Level of predicted visual effect
VP31	Newhaven to Dieppe Ferry – looking towards land <i>Medium Sensitivity</i>	<i>Small</i>	<i>Moderate/Minor</i>

12.5.39 The assessment of representative viewpoints demonstrates that visual effects will notably associate with the coastal and elevated inland vantage points in closest proximity to the northern boundary of the proposed offshore wind farm.

General Visual Effects

12.5.40 Examination of the ZTVs, general field assessment and extrapolation from the findings of the representative viewpoint assessment allows general conclusions to be drawn regarding the likely visual effects on the main settlements, routes, visitor locations and sea based users in the vicinity of the Offshore Project site.

12.5.41 The following provides a brief and general overview of each receptor location, indicating whether and approximately where visual effects may occur. These receptor locations have not been comprehensively assessed. No attempt is therefore made to precisely quantify and locate the settlement areas, number of properties, length of route or general receptor location where a visual effect is identified as being likely. The purpose of these summaries is instead to provide further interpretation of the representative viewpoint assessment and to give a general indication of the likely extent of visual effects throughout the wider area within the extent of study area.

12.5.42 Initial consideration is given to the main settlement areas. The sensitivity of settlement receptors is generally considered to be high. Settlement areas can be located with reference to the mapped extents of the study area in Figures 12.3a and 12.3b.

Worthing

12.5.43 Worthing is a generally low lying settlement, coincident with the plateau of the coastal plain, but including elevated residential neighbourhoods at its northern extents. The town includes a notably 'gentrified' sea front character with typically large scale and ornate buildings laid out in a distinctive regular grid layout, but with extensive inland residential suburbs. The hub height ZTV (see Figure 12.8) indicates the potential for the proposed development to be visible from the majority of the town apart from a localized corridor coincident with the railway line. The density of built development and the low lying character of the landform will, however, limit views of the proposed development to those from the seafront, from high rise buildings and from the northern edge of the town. The distance and context of inland views towards the proposed development will include the extensive foreground context of Worthing and be subjected to the local screening influence of buildings and vegetation. The magnitude of change will be small and therefore the potential effect will be moderate. High rise and

seafront views, including those from the pier will be defined by open, direct views of the proposed development (refer to Figure 12.27). The experience of such views will include the Conservation Areas at Marine Parade, Steyne Gardens and South Street. The proposed development will be a prominent element within such views, presenting a large magnitude of change and **major** effect.

Newhaven

- 12.5.44 Newhaven is notably influenced by the valley landform of the River Ouse, which forms a natural enclosure around the harbour and orientates the settlement on a generally inward looking aspect contained by the river valley. Commercial land use predominates across the valley floor, accentuated by the landmark influences of harbour infrastructure and the chimney of the waste recycling facility, with residential areas concentrated on the surrounding slopes. The hub height ZTV (see Figure 12.8) indicates the potential for the proposed development to be visible from the eastern settlement slopes of the river valley. The screening influence of the headland coincident with Newhaven Fort will limit the capacity for extensive or panoramic seascape views of the proposed development from the town. Visibility of the proposed development will be experienced across the intervening extents of the commercial and industrial town centre, harbour and breakwater. The proposed development will form an apparent element within the extent of view, but will typically relate to an existing diverse development foreground, thereby presenting a small magnitude of change and **moderate** effect.

Shoreham

- 12.5.45 Shoreham is a generally low lying settlement, coincident with the plateau of the coastal plain, but including elevated residential neighbourhoods at its northern extents. Shoreham, including the adjacent urban areas of Southwick and Portislade-by-Sea comprises an extensive area of residential development, with a focus of commercial development around the harbour and an overall diverse, sprawling urban character. The hub height ZTV (see Figure 12.8) indicates the potential for the proposed development to be visible from the majority of the settlement area. The greatest capacity for views of the proposed development will be experienced from the sea front properties at Shoreham Beach and from inland, elevated residential neighbourhoods along the northern edge of the settlement area. Views of the sea from the residential areas skirting the northern edge of the harbour will be heavily filtered by the enclosing harbour wall and power station (refer to Figure 12.26). Inland views will include an extensive urban foreground context with prominent focus on Shoreham power station. Within the context of harbour side or inland views the proposed development will form a conspicuous element with a resultant medium magnitude of change and **major/moderate** effect. Within the extent of views from seafront properties the proposed development will be a prominent element, presenting a large magnitude of change and **major** effect.

Brighton and Hove

- 12.5.46 Brighton and Hove includes notably 'gentrified' sea front character areas with typically large scale and ornate buildings laid out in distinctive regular grid layouts. Whilst the settlement area includes a notable seafront character, the greater massing of Brighton and Hove extends onto the lower slopes of the South Downs, which affords a southerly seaward outlook from parts of the urban area. The hub height ZTV (see Figure 12.8) indicates the potential for the proposed development to be visible from the coastal edge, western and mid areas of the town. Subtle valley landform cutting through the town, coincident with main rail and road routes, will afford notable visual containment from views of the proposed development, within the extent of urban area. Where inland seaward views are possible, these will include an extensive and diverse urban foreground context including high rise buildings within the line of sight to the sea. The magnitude of change from inland areas will be small and therefore the potential effect will be moderate. High rise and seafront views, including those from the pier will be defined by open, direct views of the proposed development (refer to Figures 12.24 and 12.25). The experience of such views will include the Conservation Areas at Brunswick Town, Kemp Town, Pembroke and Princes, Regency Square and Sackville Gardens. The proposed development will be a prominent element within such views, presenting a large magnitude of change and **major** effect.

Woodingdean, Rottingdean, Saltdean and Peacehaven

- 12.5.47 Woodingdean, Rottingdean (and Ovingdean), Saltdean and Peacehaven form a series of separate but geographically associated residential settlements to the east of Brighton. Woodingdean occupies an elevated inland position with varying extents of visibility of the sea, influenced by the intervening undulating downland topography. The clifftop coincident positions of Rottingdean, Saltdean and Peacehaven afford elevated seaward aspects, though subtly influenced by the undulating topography, which creates areas of containment within the settlement areas. The hub height ZTV (see Figure 12.8) indicates the potential for the proposed development to be visible from the coastal edge and from south-west facing slopes, though with notable areas of visual containment associated with the undulating landform. Views towards the proposed development from Rottingdean and Saltdean typically associate with properties located on south-west facing valley slopes (refer to Figure 12.23). Peacehaven is located within a more uniform landform setting, which typically limits seaward views to the most immediate coastal facing settlement edge (refer to Figure 12.22). There will be a large magnitude of change in views from residential areas in the northern extents of Woodingdean, the coastal edge and south-west facing slopes of Rottingdean and Saltdean and the coastal edge of Peacehaven with a resultant **major** effect.

Seaford

- 12.5.48 Seaford is the easternmost limit of notable settlement influence along the coast with beach resort associations and a seafront promenade at its eastern end. The hub height ZTV (see Figure 12.8) indicates the potential for the proposed development to be visible from the majority of the settlement area. The potential for open views will however typically be limited to the immediate coastal edge with scope for inland views largely filtered by intervening buildings and vegetation (refer to Figure 12.20). There will be a medium magnitude in change for views from such areas with a resultant **major/moderate** effect.

Littlehampton

- 12.5.49 Littlehampton is a low-lying settlement, coincident with the plateau of the coastal plain. The town includes a notable commercial emphasis around the harbour and western town extents, but with a wider expanse of inland residential suburbs. The hub height ZTV (see Figure 12.8) indicates the potential for the proposed development to be visible from the majority of the settlement area. The density of built development and the low lying character of the landform will however typically limit views towards the proposed development to those from the coastal edge. Coastal edge views will be defined by open, direct views of the proposed development (refer to Figure 12.28). The proposed development will present a conspicuous element within the extent of view, with a medium magnitude of change and **major/moderate** effect.

Bognor Regis

- 12.5.50 Seaside recreational influences are apparent within the character of the built up area, notably defined by the seafront Butlins complex. The greater majority of the settlement is however defined by expansive residential suburbs. The hub height ZTV (see Figure 12.8) indicates the potential for the proposed development to be visible from the majority of the settlement area. The density of built development and the low lying character of the landform will however typically limit views towards the proposed development to those from the coastal edge (refer to Figure 12.29). The experience of such views will include the Conservation Areas at The Steyne and Waterloo Square. The proposed development will present an apparent but small element within the extent of view, with a small magnitude of change and **moderate** effect.

Selsey Bill

- 12.5.51 Selsey Bill is a low lying residential settlement, coincident with a headland on the edge of the coastal plain plateau. The hub height ZTV (see Figure 12.8) indicates the potential for the proposed development to be visible from the majority of the settlement area, though with partial screening of some of the more remote turbines afforded by the curvature of the earth. The density of built development and the low lying character of the landform will however limit views towards the proposed development to those from the coastal edge (refer to Figure 12.31).

The proposed development will present an apparent but small element within the extent of view, with a small magnitude of change and **moderate** effect.

Arundel

- 12.5.52 The town is located approximately 6km inland of the nearest coastline at Littlehampton and is partially elevated by landform at its northern and western extents, with a prominent landmark cathedral and castle. The hub height ZTV (see Figure 12.8) indicates the potential for the proposed development to be visible from the western extents of the settlement area. The expansive foreground coastal plain and glimpsed association with the sea will however limit the potential for views of the proposed development to that of a small seascape element with a small magnitude of change and **moderate** effect.

Public Rights of Way, Trails and Cycle Routes

- 12.5.53 The sensitivity of footpath, trails and cycle route receptors is generally considered to be high.
- 12.5.54 The South Downs Way (refer to viewpoint figures 12.14, 12.15, 12.16, 12.17, 12.18, 12.32, 12.33, 12.36, 12.37, 12.41 and 12.42 for representative viewpoints) – The greatest capacity for effect on views will be experienced from the ridgeline and cliff top extents of the route between Bramber and Beachy Head. This capacity for effect on views will be accentuated where coincident with specific viewpoints such as the highpoint of Firle Beacon, or where the route associates with National Trust Land or Scheduled Monuments, as occurs at Devils Dyke. The visual effect of the proposed development on the overall experience (as opposed to specific viewpoints) of the route will result in a medium magnitude of change and **major/moderate** effect.
- 12.5.55 Long Distance Paths (refer to viewpoint figures 12.24 and 12.25 for representative viewpoints) – The seaward context of views from both the Monarch's Way and The Sussex Border Path is notably influenced by the existing urban context. As such, the proposed development will present a small magnitude of change and moderate effect on the overall experience of these routes. The route of the Vanguard Way is more directly associated with sea views where it follows the cliff top between Cuckmere and Newhaven with a resultant locally medium to large magnitude of change and **moderate** to **major** effects.
- 12.5.56 Sustrans National Route 2 (refer to viewpoint figures 12.23, 12.24, 12.25, 12.26 and 12.27 for representative viewpoints) – The route will include an apparent seaward aspect towards the proposed development, however this will be experienced from a distinctly urban corridor and therefore the magnitude of change will be small and the effect of the development on views will be **moderate**.
- 12.5.57 Public Rights of Way – the effect of the proposed development on individual Public Rights of Way is not measurable within the scope of this assessment;

however those with a direct visual relationship with the sea, typically those associated with coastal or elevated positions, will potentially experience a medium to large magnitude of change and **moderate** to **major** effects. The focus of such routes will however be localised and not therefore considered as a strategic sensitivity at the scale of this assessment.

Recreational and Visitor Locations

12.5.58 The sensitivity of recreational and visitor receptors is generally considered to be high (though potentially very high where associated with a designated landscape with a strong association with sea views).

12.5.59 South Downs National Park (refer to viewpoint figures 12.14, 12.15, 12.16, 12.17, 12.18, 12.19, 12.23, 12.32, 12.33, 12.34, 12.35, 12.36, 12.37, 12.38, 12.39, 12.40, 12.41, and 12.42 for representative viewpoints) – The ZTV indicates that the proposed development will be most extensively visible from the south facing dip slopes of the South Downs National Park. Those areas with greatest visual association with the sea coincide with the South Downs slopes between Worthing in the west and Beachy Head in the east. Within these extents there is potential for the proposed development to appear as a prominent element within the extent of view and to result in a large magnitude of change and **major** effect.

12.5.60 Beaches – The proposed development will be visible from beach locations and associated promenades and piers relating to the main coastal resort towns listed in Section 12.4.183. The potential for the proposed development to form a conspicuous element within the view and to result in a medium magnitude of change and **major/moderate** effect will associate with the following beach location:

- Seaford (refer to Figure 12.20).

12.5.61 The potential for the proposed development to form a prominent element within the view and to result in a large magnitude of change and **major** effect will associate with the following beach locations:

- Brighton and Hove (refer to Figure 12.25);
- Worthing (refer to Figure 12.27);
- South Lancing.

12.5.62 The potential for the proposed development to form a conspicuous element within the context of a ‘very high’ sensitivity view and to result in a medium magnitude of change and **major** effect will associate with the following beach locations:

- Birling Gap (refer to Figure 12.16).

- 12.5.63 Cliffs (refer to viewpoint figures 12.14, 12.15, 12.17, 12.19, 12.21 and 12.22 for representative viewpoints) – The open, elevated aspect of cliff top vantage points (east of Brighton) and the coincident accessibility of Public Rights of Way, will afford the potential for conspicuous and prominent views of the proposed development, with a resultant medium to large magnitude of change and **moderate** to **major** effects. The sensitivity of the cliff top as a recreational vantage point will be lessened where coincident with urban context, which typically defines the experience from cliffs between Newhaven and Brighton.
- 12.5.64 Boats – The main focus of recreational boating activity is concentrated within the waters between the proposed development and the shore, with racing areas located remotely from the development at Selsey and Eastbourne. As such the development will not notably affect the experience of sea to land views but will be a feature of sea to sea views. In isolation of association with the land, the wind farm will become a prominent and defining feature within the extent of view. Views from within the offshore wind farm will be dominated by the scale of the wind farm context, with the relative prominence of land diminished by comparison. Whilst the majority of contextual sea to land views will not be affected, the more general effect on visual context will result in a large magnitude of change and **major** effect.
- 12.5.65 National Trust sites – The proposed development will be visible from the National Trust sites listed in Section 12.2.35. The potential for the proposed development to form a conspicuous element within a notable extent of view and to thereby result in a medium magnitude of change and **major/moderate** effect will be limited to the following location:
- Crowlink.
- 12.5.66 The potential for the proposed development to form a prominent element within a notable extent of view and to thereby result in a large magnitude of change and **major** effect will be limited to the following location:
- Highdown Hill (refer to Figure 12.40).

Principal Highway Routes

- 12.5.67 The primarily urban or developed medium sensitivity context associations of principal highway routes will experience a medium magnitude of change and **moderate/minor** effect on views.

Principal Rail Routes

- 12.5.68 The primarily urban or developed medium sensitivity context of the Lewes to Seaford rail line, where coincident with sea views, will experience a medium magnitude of change and **moderate/minor** effect on views.

Principal Boat Routes

- 12.5.69 Sea to sea views from the main English Channel shipping routes, which pass within 9km of the south eastern edge of the wind farm site boundary and 5km of the south western boundary of the wind farm site, will primarily relate to views from freight carrying vessels and therefore constitute a low sensitivity receptor, experiencing a medium magnitude of change and **moderate/minor** effect.
- 12.5.70 Sea to sea and sea to land views from shipping within the inshore traffic zone, passing through and around the site area, and including shipping originating in Shoreham, will again primarily relate to low sensitivity freight carrying vessels and with close proximity will experience a large magnitude of change and **moderate** effect.
- 12.5.71 The proposed development will form a conspicuous element within the extent of sea to sea views from the main cross channel passenger route from Newhaven to Dieppe, which includes both recreational and commercial receptors and is considered to be of medium sensitivity. The proposed development will result in a medium magnitude of change and **moderate** effect. Notably, the existing sea to land visual relationship between the ferry route and the landward views of the 'Seven Sisters' cliffs will not be obscured by the Offshore Project.

Other Sea Based Users

- 12.5.72 The proposed development will form a prominent element within the sea to sea view from fishing vessels concentrated within fishing zones to the north and south of the site and from aggregate extraction vessels in the area to the west of the wind farm. These low sensitivity receptors will experience a large magnitude of change and **moderate** effect.

Night Time Effects

- 12.5.73 The illumination of turbines will be in accordance with Civil Aviation Authority guidelines and Marine Guidance Note 372, as described in Section 2.
- 12.5.74 The DTI 'Guidance on the Assessment of the Impact of Offshore Wind Farms' acknowledges that the effect of lights at night is only likely to be significant at short distances and is regarded as a secondary visual effect of the wind farm. The guidance also notes that at distances over 8km even the brighter lights associated with illumination of turbines are likely to be seen as just a twinkle due to the nominal range of lights recommended. The intermittent nature of illumination in accordance with on-off coded sequencing further limits the duration of illumination such that the light source will not be a constant point of focus.
- 12.5.75 The existing seascape context is notably influenced by more substantial illumination from coastal urban development and more transiently by sea faring vessels within the seascape. The overall influence of proposed lighting will

typically be faint and associated with individual light source points and will not therefore present any cumulative glare or night glow issues.

- 12.5.76 Night time visual effects from marine navigational lighting will be relatively localised within the overall extents of the study area as the visible range of lighting will be limited to within 5 nautical miles (9.3km). As a comparative reference to proximity of landward vantage points, Beachy Head is located 20km to the north-east and the nearest coastal extents between Worthing and Brighton are located approximately 14km north of the proposed development.
- 12.5.77 Marine based receptors within the operational range of navigational lighting will experience apparent influence from the proposed illumination. The seascape environment at night is however typically dissociated from its surroundings, and the sensitivity of receptors to effects on setting and the significance of visual effects is therefore considered to be negligible (pre-sunset contextual visual effects are considered by the assessment of receptors in the preceding sections).
- 12.5.78 Night time effects from aviation lighting will be limited by the upward deflection of the main focus of the light source. The potential to perceive the influence of aviation lighting may be more apparent from the elevated extents of coastal cliffs and the South Downs where the line of sight will be more coincident with the vertical angle of illumination. There will however be limited scope to affect receptors as the outlook from such areas typically associates with day time rather than night time views.
- 12.5.79 The potential for heightened sensitivity to associate with coastal sunset views and outlook from areas remote from direct built influence such as the Heritage Coast and South Downs National Park presents scope for a small magnitude of change and resultant moderate to minor visual effects, but is tempered by the frequency of occurrence of clear atmospheric/sunset conditions and by the limited potential for night time views from the typically remote rural context.
- 12.5.80 Overall the potential night time effects of the proposed development will range from **moderate to minor** associated with the most sensitive receptor outlooks from the Heritage Coast and South Downs National Park, but more extensively **minor to negligible** effects associated with coastal and inland areas where existing night time illumination is already apparent.

Tranquility Effects

- 12.5.81 The CPRE 'Intrusion Map 2007' distinguishes between 'Areas disturbed by noise and visual intrusion' and 'Undisturbed areas' associated with land. Within the extent of the study area, coastal undisturbed areas are limited to the sea facing margins of the Seven Sisters cliffs at Beachy Head. Inland, undisturbed areas associate with the South Downs uplands, beyond the influence of the main transport corridors. The effect of the proposed development is considered in relation to the criteria applied to the assessment of character impacts and the assessment of night time effects, which includes the assessment of remoteness

and tranquility. Within the extents of those high sensitivity areas highlighted above as 'undisturbed', there will be a perceptible effect on the association between the landscape and seascape with a resultant medium magnitude of change and **major/moderate** adverse effect on the sense of tranquility. This effect will however be contextualised by the relative distance of the proposed development from land and the existing influence of 'intrusive' developed land based elements such as urban areas and highway infrastructure.

Summary of Visual Effects

12.5.82 The greatest prediction of visual effects will associate with the coastal and elevated inland vantage points in closest proximity to the northern boundary of the Offshore Project site, but inclusive of more dispersed views from sea based recreational users.

12.5.83 The assessment has identified that the principal visual effects will relate to:

- The experience of land to sea views from the coast facing extents of settlement at Worthing, Shoreham, Brighton, Hove, Woodingdean, Rottingdean, Saltdean, Peacehaven and Seaford;
- The experience of land to sea views from the elevated South Downs and coastal cliff top extents of the South Downs Way and other Public Rights Of Way;
- The experience of land to sea views from the South Downs National Park between Worthing in the west and Beachy Head in the east;
- The experience of land to sea views from the Heritage Coast;
- The experience of land to sea views from beach locations and associated promenades and piers at Brighton, Hove, Worthing, Seaford, South Lancing and Birling Gap;
- The experience of sea to sea views from recreational boats;
- The experience of land to sea views from cliff top vantage points east of Brighton; and,
- The more localised experience of land to sea views from National Trust sites at Highdown Hill and Crowlink.

12.5.84 The seascape and landscape assessment has concluded that there will be **major** and **major/moderate** levels of effect on the visual experience of receptors within the extent of study.

12.5.85 Whilst certain visual receptors will experience adverse effects from the development, relating primarily to the introduction of a development feature into an open seaward view, the following considerations will be notable:

- The landscape to the north of the South Downs is largely screened from the sea by the intervening landform. Where valleys allow capacity for views beyond this divide, such views are heavily filtered by woodland cover;
- Views from the upland extents of the South Downs are inclusive of expansive vistas where the sea is not the sole focus and typically comprises only part of the view;
- Headlands to the east and west, respectively defined by Selsey Bill and Beachy Head, provide a distinct limit to the potential extent of land to sea visibility of the proposed development.
- Where views of the proposed development are experienced from cliff tops, the relative elevation of cliffs will typically place the remote wind farm in a diminutive scale association with the immediate receptor context;
- The open experience of the horizon in land to sea views from coastal and many elevated inland areas means that the relative proportion of the horizon taken up by the proposed development will be limited;
- Views across the coastal 'plateau' (which broadly comprises the area between the coastline and boundary of the South Downs National Park) are heavily filtered by vegetation, built form and infrastructure;
- Coastal urban settlement is diverse and extensive, and interspersed with prominent transport infrastructure, industry and commercial development, thereby establishing a relatively robust context within which the proposed development will be experienced;
- Visibility towards the sea from streets, open spaces and low storey buildings within coastal urban areas are typically contained within the urban environment by surrounding built form;
- The context of many views is not typically one of remoteness, relating to a densely populated coastline such that views from both the immediate coastline and those set inland include an urban context influence;
- The seasonal nature of many seaside recreation uses will limit the extent to which the effects on viewers will be experienced, with particular regard to beach use and recreational boating;
- Whilst the proposed development will be an apparent feature within the extent of seaward views, the lack of relative depth or perspective in the seascape context will limit the potential to experience any sense of overbearing scale;

- The absence of focal points in land to sea views will mean that the proposed development will not affect views of existing features within the sea environment;
- Atmospheric visibility will notably reduce the number of days in which the proposed wind farm will be visible;
- Night time influences will be contextualised by the existing influence of illumination associated with settlement and shipping;
- The regular plan boundary outline of the proposed wind farm and its offset alignment relationship with the coastline will present an appropriate visual association between the wind farm and context when experienced in views from the air;
- Sea to land views towards the coastline from coastal water character areas, including views of distinctive cliff features, will not be notably affected;
- The sightline of land to land views along the coastline will not be notably affected; and,
- Extensive areas of the National Park will not visually associate with the proposed development, within the subtle but extensive visual containment afforded by variation in landform and vegetation cover.

Alternative Layout Option Visual Effects

12.5.86 The assessment above considers the Option F (175 turbines) ‘worst case’ development scenario (worst case from the SLVIA perspective). For relative comparison Option D (100 turbines) is also considered (refer to Section 12.5.2 for development option details).

12.5.87 Within the parameters of the alternative option considered, the general visual associations in terms of the extent and grouping of turbines and relative visibility of substations will be similar in perception. The compressed plan area, wider grid spacing and reduced number of turbines will however present less of a massing effect across the skyline with a greater sense of permeability of view through the wind farm to the horizon. The relatively larger size of turbines will present less of a perceived difference between the options as there will be limited scope for comparative scale references within the remote sea environment. A compressed layout of turbines (Option D) will reduce the horizontal spread of turbines across the horizon, with a positive visual benefit in limiting the extent of horizon occupied by the proposed development. This principle is illustrated by the outlook from viewpoint 2 on the Heritage Coast, with the potential for the range in the angle of visibility to vary between 20 degrees for Option F and 11 degrees for Option D (refer to Figure 12.49a). This effect will be most apparent from viewpoints east of Seaford, where the Option D development scenario will

present a less prominent sense of development associated with a lesser number and reduced massing of turbines relative to Option F.

- 12.5.88 The operational effect of the alternative layout option considered (and the range of potential layout variations between the extremes of Options F and D) will not however change the significance of potential visual effects assessed above.

Decommissioning

- 12.5.89 The application is for an operational period of 25 years. The turbines and their foundations will be removed down to seabed level. Decommissioning effects will be comparable with those associated with construction considered in Section 12.5.14.

12.6 Combined Onshore/Offshore Effects

- 12.6.1 The proposed onshore cable route associated with the Offshore Project will extend from the shoreline at East Worthing, adjacent to Brooklands Pleasure Park, through to the new onshore substation that will be located due east of the existing Bolney National Grid substation. The extent of combined visibility of both the onshore works and the proposed offshore works will occur between East Worthing and Beeding (refer to Section 26 – Onshore LVIA for detail on the onshore works).
- 12.6.2 In terms of impact on character, the magnitude of change associated with the cable route will be limited in comparison to that of the turbines, such that no combined experiential effect will be noted.
- 12.6.3 In terms of visual influence, the potential for a combined visual effect will be limited to the construction stage following vegetation removal and prior to restoration of earthworks associated with the cable route. The effects will however be temporary in nature and limited in extent due to the screening effect of surrounding vegetation cover and topography.
- 12.6.4 Visual effects will be localised and typically relate to the experience of the following receptors:
- Road users along the A259;
 - Residential receptors on the coastal edge at East Worthing and South Lancing;
 - Recreational users within Brooklands Pleasure Park;
 - Recreational users of East Worthing/South Lancing beach;
 - Users of Public Rights of Way within the South Downs National Park (including the South Downs Way); and

- Isolated residential farmstead receptors within the rural context north-east of Worthing.

12.6.5 The greatest potential for association of effect between the offshore and onshore components of the proposed development will relate to the overlap in the construction sequence of installation of the cable and construction of the turbines. The project programme included in Section 2 (Project Description) indicates that the installation of turbines will coincide with the last 4 months of construction of the cable route. Within this relatively limited timeframe of overlap, the extents of cable route with a shared visibility with the turbines may already have been installed and restored, or the phase of turbine construction may relate to those most remote from the receptor location. The two phase turbine construction programme will mean that only half the turbines will be under construction at the same time as onshore cable installation. The 'worst case' assessment scenario will be for the closest extent of turbines to the point of landfall of the cable to be installed in combination with installation of the extent of onshore cable route between East Worthing and Beeding.

12.6.6 The SLVIA of the Offshore Project site has considered the impact of turbines within the operational phase, therefore the combined influence of onshore and offshore effects is considered in relation the operational stage of the offshore assessment. In this respect, whilst the individual visual receptors noted above may be temporarily and locally affected by a combined on and offshore influence, there will overall be no change in the relative assessment of significance on receptors identified within the scope of the offshore assessment.

12.7 Cumulative Effects

Scope of the Cumulative Assessment

12.7.1 The cumulative baseline development context is described in Section 12.4.59 to 12.4.62. Figure 12.10 identifies the location of operational and proposed wind energy developments and other cumulative developments within 35 km of the Offshore Project site. The cumulative effects of the proposed development are considered in terms of the additional effect that the development will have compared to the effect on the existing baseline. Where the cumulative effect will be comparable to that of the existing baseline assessment a 'no effect' score has been recorded.

Cumulative ZTV

12.7.2 Figures 12.11 and 12.12 provide cumulative ZTVs illustrating the potential for combined and successive visibility of existing and proposed wind energy developments from within the extents of the assessment study area.

12.7.3 Figure 12.11 illustrates the potential for combined and successive visibility of the Offshore Project site with the wind energy application site at Shepham Lane. The potential for a cumulative landscape or visual effect to arise from land vantage

points between the Offshore Project site and a five turbine layout with a dividing distance of approximately 25 km, and physically separated by the landform of the South Downs, is very limited. The ZTV shows that the potential for combined or successive visibility from locations along the South Downs will be limited to the highpoint ridgeline and a localised area east of Lewes. The inland extents of inter-visibility associated with The Wealds indicated by the ZTV have been discounted from assessment on the basis of remote distance and the localised screening effects of vegetation. The potential for cumulative visibility from the sea will associate with closest visibility distances of 22km towards the Offshore Project site and 7km towards the Shepham Lane site.

- 12.7.4 Figure 12.12 illustrates the potential for combined and successive visibility of the Offshore Project site with the existing single turbine at Glyndebourne. The potential for a cumulative landscape or visual effect between a commercial wind energy development of nine turbines and a single turbine (of limited size) at a distance of approximately 25 km is very limited. Similarly to the visual context of Shepham Lane, the ZTV shows that the potential for combined or successive visibility from locations along the South Downs will be limited to the highpoint ridgeline and a localised area east of Lewes. The inland extents of inter-visibility associated with The Wealds indicated by the ZTV have been discounted from assessment on the basis of remote distance and the localised screening effects of vegetation. The potential for cumulative visibility from the sea has been discounted on the basis of the limited potential to remotely distinguish a single turbine in sea to land views.

Cumulative Effects on Seascape and Landscape Character

- 12.7.5 Where the Offshore Project site will be experienced in a cumulative visual association from land, the elevated viewing position that defines such areas will relate to an expansive context where the wind energy component will only form a minor part of the view (refer to Figures 12.45 to 12.47). Where the Offshore Project site will be experienced in cumulative visual association at sea, the onshore Shepham Lane wind farm will be remote (minimum 7km from viewpoint) and set beyond more prominent foreground urban coastal influences. The cumulative visual effect of the Offshore Project site on landscape and seascape character (including the relative sense of remoteness or wildness) in relation to the single turbine at Glyndebourne and the wind farm at Shepham Lane will result in no additional cumulative effect.
- 12.7.6 The cumulative influence of the Outer Harbour Development at Brighton Marina and Brighton i360 tower will locally (to parts of Brighton) reduce sensitivity to the introduction of wind energy development with accentuation of the prominence of the development context from within which the wind farm will be experienced. There will however conversely be potential for the effect of the Offshore Project site to be locally increased by visual association with the i360 tower where viewed from the South Downs slopes, north of Brighton. The

consideration of the cumulative effect of other development will not however affect the overall judgment of effect.

Cumulative Effects on Designated Landscape Resources

- 12.7.7 The potential for the Offshore Project site to be experienced in a cumulative visual association from the South Downs National Park will typically be limited to the extents of the break of slope along the South Downs ridge line (refer to Figures 12.45 and 12.46). Such associations will be experienced as successive views and typically relate to a combination of one or other of the cumulative wind energy sites in addition to the Offshore Project site rather than all three sites at once. The cumulative effect of the i360 tower and the Offshore Project site on the National Park will present a locally accentuated visual effect where experienced from the South Downs slopes, north of Brighton.
- 12.7.8 The potential for the Offshore Project site to be experienced in a cumulative visual association from Registered Historic Parks and Gardens will be limited to sites at Stanmer Park and Kemp Town Enclosures. In the instance of Stanmer Park this will relate to the potential cumulative visual influence of the i360 tower and Offshore Project site. The Kemp Town Enclosures will include the potential for the combined visual influence of the Outer Harbour Development at Brighton Marina and Offshore Project site.
- 12.7.9 The potential for the proposed Offshore Project site to be experienced in a cumulative visual association from the South Downs Way will be limited to the break of slope in the South Downs ridge line. Such associations will be experienced as successive views and typically relate to a combination of one or other of the cumulative wind energy sites in addition to the Offshore Project, rather than all three sites at once. The cumulative effect of the i360 tower and the Offshore Project will present a locally accentuated visual effect where experienced from the extent of route north of Brighton.
- 12.7.10 The cumulative visual effect of the Offshore Project on designated landscape resources will not present any additional effect.

Cumulative Viewpoint Assessment

- 12.7.11 The cumulative visual effect of wind energy development has been assessed in detail at three of the representative viewpoints. The three viewpoints were selected on the basis that they were located within the ZTV of the existing or proposed developments (see Figures 12.11 and 12.12) and that they provide a good geographical spread. Figures 12.45 to 12.47 provide cumulative wirelines for each of the views considered. The detailed assessment for each viewpoint is given in the tables below. The tables state whether the wirelines indicate the theoretical potential for combined visibility (i.e. in the same direction/field of view) or successive visibility (i.e. in different directions/fields of view) for each of the three sites included within the scope of the cumulative assessment. The text descriptions consider the screening effect of landcover and assess the magnitude

and significance of the potential cumulative visual effects associated with the addition of the Offshore Project site into the view.

- 12.7.12 Other significant infrastructure developments have been assessed more generally in terms of their capacity to influence seascape, landscape and visual sensitivities.

Table 12.15: Cumulative Viewpoint Assessment

Cumulative Viewpoint 19: Willingdon Hill			
See Figure 12.45			
OS Grid Ref: 558305, 099687	Elevation: 160m AOD	Nearest turbine at Rampion (km): 24	Farthest turbine at Rampion (km): 44.4
Landscape context:			
Character area:	South Downs	Designation:	National Park
Visual context:			
Receptor types:	Visitor/Recreational and Footpath Receptors	Viewpoint sensitivity:	High
Cumulative context - potential combined visibility of other existing or proposed developments; and their approximate distance:			
Glyndebourne	No		
Shepham Lane	Yes; 6.0 km		
Predicted view: The potential for cumulative views of the Shepham Lane wind farm will be limited to within the extents of the break of slope in the South Downs ridge line and subject to the localised influence of topography and vegetation within and around the coincident extents of the golf course. The Offshore Project site will only be visible as a successive view by turning and facing in the opposite direction to that facing Shepham Lane. The distinctly different context of the onshore and offshore wind energy development sites will also be remote and dissociative, thereby reducing comparison between the two sites.			
Cumulative magnitude of visual change: No change			
Level and significance of cumulative visual effect: No effect			

Cumulative Viewpoint 20: Firle Beacon See Figure 12.46			
OS Grid Ref: 548554, 105917	Elevation: 210m AOD	Nearest turbine at Rampion (km): 21.6	Farthest turbine at Rampion (km): 39
Landscape context:			
Character area:	South Downs	Designation:	National Park
Visual context:			
Receptor types:	Visitor/Recreational and Footpath Receptors	Viewpoint sensitivity:	High

Cumulative context - potential combined visibility of other existing or proposed developments; and their approximate distance:	
Glyndebourne	Yes; 3.9 km
Shepham Lane	Yes; 11.1 km
Predicted view: The potential for cumulative views of the Shepham Lane wind farm, Glyndebourne turbine and Offshore Project site will be limited to the break of slope in the South Downs ridge line and subject to the localised influence of topography and vegetation. The potential to distinguish the single turbine at Glyndebourne against a landform backdrop will also be limited within the expansive context. Each of the wind energy developments will only be visible within a successive view, by turning and facing towards the respective development location. The division in association between developments will also be distinctly defined by the physical divide of the South Downs which substantially separates the onshore and offshore context.	
Cumulative magnitude of visual change: No change	
Level and significance of cumulative visual effect: No effect	

Cumulative Viewpoint 21: Saxon Down			
See Figure 12.47			
OS Grid Ref: 544360, 110372	Elevation: 132m AOD	Nearest turbine at Rampion (km): 24.1	Farthest turbine at Rampion (km): 38.7
Landscape context:			
Character area:	South Downs	Designation:	National Park
Visual context:			
Receptor types:	Visitor/Recreational and Footpath Receptors	Viewpoint sensitivity:	High
Cumulative context - potential combined visibility of other existing or proposed developments; and their approximate distance:			
Glyndebourne	Yes; 0.7 km		
Shepham Lane	Yes; 15.8 km		
Predicted view: The most distinguishable cumulative relationship will be that experienced between the most immediate Glyndebourne turbine and the Shepham Lane wind farm. The potential to distinguish the Offshore Project site cumulatively with both other developments will only be experienced as a successive view. There will be potential to see the Shepham Lane wind farm and Offshore Project site in the same arc of view, but notably divided by the substantial physical divide of the South Downs landform which dissociates the relationship between the onshore and offshore areas. The remote distance of both wind farms from the viewpoint and from each other will further limit the potential for any perceived associative effects.			
Cumulative magnitude of visual change: No change			
Level and significance of cumulative visual effect: No effect			

12.7.13 The potential to experience cumulative visibility will be limited to the ridgeline of the South Downs and to a localised elevation of landform east of Lewes. The

potential to see the Offshore Project site from a particular viewpoint cumulatively with other wind energy developments will typically relate to a successive visual experience, requiring the viewer to turn through different arcs of view to see the various individual sites.

- 12.7.14 The potential for the noted wind energy developments to be experienced in an occasional sequential effect from the route of the South Downs Way is fundamentally limited by the influence of topography and by the expansive visual context. The sequential experience along the South Downs Way will typically include varying visibility of both onshore developments between Ditchling and Rodmell, with alternating visibility of one or other of the onshore developments between Rodmell and Beachy Head. The relatively small scale of the onshore wind energy developments and the typically multi-directional, successive viewing context of cumulative views limits the potential for significant sequential associations. There is no notable scope for any wider context sequential cumulative visibility beyond that of the South Downs Way.
- 12.7.15 The visual effect of the Offshore Project on viewpoints and views in relation to the single turbine at Glyndebourne and the wind farm at Shepham Lane will not result in an additional cumulative effect.
- 12.7.16 The potential for cumulative visual effects associated with other developments will be limited to that associated with the Outer Harbour Development at Brighton Marina and Brighton i360 tower.
- 12.7.17 The cumulative influence of the Outer Harbour Development and i360 tower will reduce sensitivity to the introduction of wind energy development from parts of Brighton, with accentuation of the prominence of the development context from within which the wind farm will be experienced.
- 12.7.18 There will however conversely be potential for the effect of the Offshore Project site to be increased by visual association with the i360 tower where viewed from the South Downs slopes (and corresponding extents of National Park and South Downs Way), north of Brighton.
- 12.7.19 The consideration of the cumulative effect of other development will not however affect the overall judgment of effect.

12.8 Mitigation Measures

- 12.8.1 Within the parameters of the Rochdale Envelope, the development layout is considered in terms of extreme or worst case layout scenarios. As such it is not possible to identify subtleties of refinement at the current stage of assessment in anticipation that capacity to influence layout in response to seascape, landscape and visual sensitivities will ultimately be used to inform the final site layout prior to construction.

12.9 Residual Effects

- 12.9.1 Given that there are no defined seascape, landscape and visual mitigation parameters associated with the current stage of design of the proposed wind farm, reference to the effects identified in Section 12.5 above provides a considered record of assessment of the significance of residual seascape, landscape and visual effects.

12.10 Conclusions

- 12.10.1 The DTI 'Guidance on the Assessment of the Impact of offshore Wind Farms' refers to a range of visual significance thresholds with corresponding reference to Offshore Wind Strategic Environmental Assessment. These criteria suggest the potential for major visual effects to be limited to within 13km of a viewpoint, however the DTI guidance goes on to advise that exact effects are more subtly influenced by variable and location specific factors that such absolute parameters cannot be absolutely defined.

- 12.10.2 The Strategic Environmental Assessment used to inform the Round 3 wind farm sites (Future Leasing for Offshore Wind Farms and Licensing for Offshore Oil & Gas and Gas Storage – January 2009, and its subsequent February 2011 amendment) acknowledged the potential for the visual and character impacts of development to potentially result in significant effects, which informs the basis of understanding for the current assessment.

- 12.10.3 Assessment of the seascape, landscape and visual effects likely to arise as a result of the development of the Offshore Project site has drawn the following conclusions in relation to designated areas:

- The proposed development will have a major visual effect on the character context of the elevated and coastline extents of the designated assets of the South Downs National Park and Sussex Heritage Coast where views of the sea are a defining feature;
- There will be a moderate visual effect on one site on the English Heritage Register of Parks and Gardens of special historic interest, which relates to Kemp Town Enclosures on the Brighton seafront where there are direct visual associations with the sea; and,
- Whilst there will be major/moderate visual effects on some views from Conservation Areas with seascape associations, the overall effect on setting of Conservation Areas at the distances involved will be minor.

- 12.10.4 The principal conclusions of the assessment regarding the general seascape/landscape (character) context of the proposed development are that:

- Effects associated with the construction phase of the development will be minor;

- Effects on the physical seascape environment will be limited to moderate/minor effects on boat activity;
- Major to moderate effects on landscape character will occur where visual associations with the sea are most apparent, along the coastal edges of the South Coast Plain and within the elevated extents of the South Downs character areas. The Beachy Head to Selsey Bill Offshore Waters, South Coast Plain Coastal Waters and South Downs Coastal Waters seascape character areas will experience major to major/moderate effects where proximity to the development will result in a prominent or conspicuous presence or where landward context associations will be affected by the wind farm; and,
- Extensive areas of the inland plain between the coast and South Downs foothills will not be affected by the proposed development, where visually dissociated from the sea. The landscape north of the physical barrier of the South Downs will be similarly visually dissociated and therefore unaffected by the proposed development.

12.10.5 The principal conclusions of the assessment regarding effects on visual amenity are that:

- Effects associated with the construction phase of the development will be minor and no more significant than the visual effects associated with the physical presence of the offshore turbines considered under operational impacts;
- Major to major/moderate visual effects will associate with the coastal and elevated inland vantage points in closest proximity to the northern boundary of the proposed offshore wind farm;
- Major to major/moderate effects on the visual amenity of residential receptors will be concentrated on the coast facing extents of settlement at Worthing, Shoreham, Brighton, Hove, Woodingdean, Rottingdean, Saltdean, Peacehaven and Seaford;
- Major to major/moderate effects on the visual amenity of recreational receptors will associate with views from the elevated South Downs and coastal cliff tops (including the South Downs Way), from beach locations and associated promenades and piers at Brighton, Hove, Worthing, Seaford, South Lancing and Birling Gap, and from sea based views from recreational boats;
- Whilst the proposed offshore wind farm would form a conspicuous element within the extent of view from the Heritage Coast, the relative angle of view occupied by the proposed development would be limited to between 11 and 31 degrees (based on the potential range of layout scenarios experienced from Heritage Coast representative viewpoints 1 to 6, illustrated in Figures 12.14 to 12.19).

- Within land to sea and land to land views along the coast, the proposed offshore wind farm will not obscure views of remote features or introduce a prominent conflicting sense of scale with existing elements;
- Within sea to land views there will be limited scope for the proposed offshore wind farm to obscure the most apparent visual association with the Seven Sisters cliffs, however the most direct seaward approaches to the cliffs will lie outside the proposed development area; and
- Within sea to sea views the offshore wind farm will be a prominent and defining feature from close proximity, but will diminish in prominence with increasing distance within the expansive, uniform seascape context.

12.10.6 The cumulative assessment has not identified any additional seascape, landscape or visual effects associated with other commercial scale wind energy developments or other large scale developments, either consented or proposed, in the wider area. The principle cumulative effect will relate to visibility of wind development at Shepham Lane and Glyndebourne in conjunction with the Offshore Project site, experienced from the break of slope ridge line of the South Downs, but such effects will typically associate with remote distances and divergent viewing directions.

12.10.7 The assessment considers a 175 turbine (Option F) 'worst case' development scenario (worst case from the SLVIA perspective). Within the scope of potential layout variables, and for relative comparison, a 100 turbine (Option D) layout has also been considered. Whilst potential layout alternatives may offer apparent relative visual benefits the overall effect on seascape and landscape character areas will not be significantly different from that assessed for Option F and will not therefore modify the significance of potential seascape and landscape effects assessed. The assessment therefore appropriately considers a worst case eventuality for development within the parameters of the Rochdale Envelope.

12.11 Monitoring

12.11.1 No monitoring will be anticipated as any mitigation measures will be incorporated as part of the layout design of the offshore wind farm and the predicted effects will occur as soon as the wind farm was operational and for the entire lifecycle of the Offshore Project.

12.12 References

Admiralty charts (coincident with the study area), The United Kingdom Hydrographic Office.

Adur District Local Plan (1996) Adur District Council.

An Assessment of the Sensitivity and Capacity of the Scottish Seascape in Relation to Windfarms (2005) Scottish Natural Heritage.

Assessing the Cumulative Impact of Onshore Wind Energy Developments (2012) Scottish Natural Heritage.

Assessing the Environmental Capacity for Onshore Wind Energy Development – Consultation on Proposed Approach to Natural England guidance (2009) Natural England.

Beachy Head to Selsey Bill Shoreline Management Plan (2006) Department for Environment, Food and Rural Affairs.

Campaign for the Protection of Rural England ‘Intrusion Map 2007’, Campaign for the Protection of Rural England.

Chichester District Local Plan (1999) Chichester District Council.

City of Brighton & Hove Local Plan (2005) Brighton and Hove City Council.

Cumbria Wind Energy Supplementary Planning Document, Part 2 ‘Landscape and Visual Considerations’ (2007) Cumbria County Council.

East Sussex Landscape Character Assessment (2004) East Sussex County Council.

Eastbourne Borough Plan (2003) Eastbourne Borough Council.

Eastern Channel Marine Natural Area (2004) Natural England.

EN-1: Overarching National Policy Statement for Energy (2011) Department of Energy and Climate Change London: The Stationary Office.

EN-3: National Planning Statement for Renewable Energy Infrastructure (2011) Department of Energy and Climate Change London: The Stationary Office.

First South Downs National Park Planning Inspector’s Report, The Planning Inspectorate.

Guidance on the Assessment of the Impact of Offshore Wind Farms: Seascape and Visual Impact Report (2005), Department of Trade and Industry.

Guide to Best Practice in Seascape Assessment (2001), The Marine Institute.

Guidelines for Landscape and Visual Impact Assessment (Second Edition) (2002), Landscape Institute and the IEMA.

Horsham Core Strategy (2007) Horsham District Council.

Horsham General Development Control Policies (2007) Horsham District Council.

Region 8 Sussex: Rye Bay to Chichester Harbour Coastal Directory (1998) Joint Nature Conservation Committee.

Landscape Character Assessment: Guidance for England and Scotland (2002) Scottish Natural Heritage and the Countryside Agency.

Landscape Institute Advice Note: Photography and Photomontage in Landscape and Visual Assessment (2011) The Landscape Institute.

Lewes District Local Plan (2003) Lewes District Council.

Mid-Sussex Local Plan (2004), Mid Sussex District Council.

Natural England National Character Areas (2005) Natural England.

National Planning Policy Framework (2012) Department for Communities and Local Government.

OESEA2 Future Leasing/Licensing for Offshore Renewable Energy, Offshore Oil & Gas, Hydrocarbon Gas and Carbon Dioxide Storage and Associated Infrastructure (2011) Department of Energy and Climate Change.

Siting and Designing Windfarms in the Landscape (2009), Scottish Natural Heritage.

South Downs Integrated Landscape Character Assessment (2005), South Downs Joint Committee.

South Downs Management Plan (2008) South Downs Joint Committee.

South Downs National Park Special Qualities (2011) South Downs National Park.

South East Regional Spatial Strategy (2009) Government Office for the South East The Stationery Office.

UK Marine Policy Statement (2011) HM Government.

UK Offshore Energy Strategic Environmental Assessment (Future Leasing for Offshore Wind Farms and Licensing for Offshore Oil & Gas and Gas Storage (2009) Department of Energy and Climate Change.

Visual Assessment of Wind Farms: Best Practice (2002) Scottish Natural Heritage and the University of Newcastle.

Visual Representation of Wind Farms: Good Practice Guidance (2006) Horner and MacLennan and Envision.

West Sussex Landscape Character Assessment (2003) West Sussex County Council.

West Sussex Structure Plan 2001 – 2016 (2005) West Sussex County Council.

Worthing Core Strategy (2011) Worthing Borough Council.

Worthing Local Plan (2003) Worthing Borough Council.