CHAPTER 13: SEASCAPE, LANDSCAPE AND VISUAL AMENITY

Chapter Summary

This chapter considers the potential effects upon both seascape and landscape character and visual amenity that may arise from the optimised Seagreen Project. Whilst this assessment considers both Project Alpha and Project Bravo the focus of the assessment is upon the optimised Seagreen Project, as this presents the worst case for landscape and visual receptors. Where lesser effects would arise as a result of only Project Alpha or Project Bravo being built these are also identified and assessed.

This SLVIA provides a standalone assessment of the anticipated effects arising from the optimised Seagreen Project. Its scope is consistent with the 2017 Scoping Report and the 2017 Scoping Opinion and was further agreed through consultations with the relevant local planning authorities, SNH and MS-LOT. Consistent with these documents, it also makes appropriate reference to the SLVIA conclusions of the previous 2012 Offshore ES to help define the parameters for the assessment. Where no likelihood of a significant effect was identified these receptors have been scoped out of the assessment as appropriate. The SLVIA has also reviewed and maintained the previously established sensitivities for the baseline resource. This has assisted in providing consistency in approach, and additionally in understanding the potential for changes in effects resulting from the optimised Seagreen Project. Consistent with current GLVIA 3 methodology, the SLVIA has also factored in susceptibility to the type of development proposed and the value attached to the baseline resource. For each of the SLVIA receptors, the SLVIA provides a summary of the assessment outcomes for the optimised Seagreen Project.

To further assist the reviewer and consultees in understanding the significance of effects, summary cross references are made at the end of assessment sections to the originally consented project for information purposes.

The SLVIA for the optimised Seagreen Project is predicted to result in some visual effects upon the seascape neighbouring the Angus coastline. These include two significant effects upon visual amenity at viewpoints (VP) 2 and 5. These relate to Project Alpha elements, with no significant effects assessed for Project Bravo. This relates to a consideration of effects during all stages of the project: construction, operational and de-commissioning.

The optimised Seagreen Project is also predicted to combine with a number of other onshore and offshore wind farms, as well as other projects, to contribute to cumulative and in-combination effects. Whilst visual receptors at two viewpoints have been assessed to be likely to experience Moderate cumulative effects (VP2 and VP5), these are not considered to be 'Significant' in SLVIA terms. It is also noted that this is comparable to the originally consented Project. Elsewhere, including cumulative effects on Regional Seascape Character Units (RSCUs), no significant effects are predicted.

INTRODUCTION

13.1. This chapter of the Environmental Impact Assessment (EIA) Report describes the potential impact of the optimised Seagreen Project and has been prepared to accompany a new application for development consent, on the existing landscape and seascape character. It also provides an assessment of the separate but related effects on visual amenity within the Zone of Theoretical Visibility (ZTV). In doing so it assesses the potential impacts that may arise during the construction, operation and decommissioning phases of the project. Throughout this chapter, this assessment will be referred to as a Seascape, Landscape and Visual Impact Assessment (SLVIA).

13.2. This chapter should be read in conjunction with Chapter 3 (Site Selection and Alternatives), which identifies the embedded mitigation measures included within the project, and Chapter 5 (Project Description) which sets out the design parameters and project information on which this assessment is based.

13.3. As set out in Chapter 1, the original Seagreen Project (herein referred to as the originally consented project) received development consents from Scottish Ministers in 2014. This was confirmed in November 2017, following legal challenge to the consent award decision. Seagreen is now applying for additional consents for an optimised design (herein referred to as the optimised Seagreen Project), based on fewer, larger, higher capacity wind turbines that have become available, since the 2014 consent decision.

13.4. The originally consented project comprises the Seagreen Alpha Offshore Wind Farm (OWF) (herein referred to as 'Project Alpha'), Seagreen Bravo OWF (herein referred to as 'Project Bravo') and the Offshore Transmission Asset.

13.5. It is noted that the Transmission Asset has been separately licensed and no changes to this are proposed and therefore this is not considered further within this assessment. This includes the landfall arrangements which were previously covered within the Seagreen Phase 1 Onshore Transmission Works ES. While there may be potential for changes to the inter array cables, this element of the offshore proposal will not be visible from within the identified SLVIA baseline and thus these elements are not considered further within the SLVIA. However, Offshore Substation Platforms (OSPs) are included within the SLVIA given their location within the project site area and visibility.

13.6. Whilst the SLVIA considers the anticipated changes in effects arising from both Project Alpha and Project Bravo, the focus of the assessment is upon the two projects combined, with the SLVIA identifying where lesser effects can be anticipated to arise as a result of Project Alpha or Project Bravo only being built. It is pertinent that both Project Alpha and Project Bravo are to be located within the same site area as identified within the originally consented Project and that the principle of the acceptability of offshore wind farm development within this section of the sea has already effectively been established through the 2014 consent.

13.7. The Structure of this chapter is as follows:

- Legislation, Policy and Guidance: sets out key legislation, policy context and guidance with reference to latest updates in guidance and approaches;
- Consultation: provides details of consultation undertaken to date and how this has informed the scope of the assessment;
- Scope of Assessment: sets out the scope of the impact assessment for the SLVIA in line with the 2017 Scoping Report, the 2017 Scoping Opinion and subsequent SLVIA-focused consultation;
- Methodology: sets out the overall approach to the SLVIA including the extent of the study area, data collection undertaken, identification of the worst case scenario, the number and location of selected viewpoints, and the approach to the assessment of effects for the SLVIA;
- Baseline Conditions: describes and characterises the baseline environment for the SLVIA and identifies the information used to inform the baseline;

- Assessment of Effects and worst case scenario: confirms the project design parameters to be assessed (the worst case scenario [WCS]);
- Assessment of Impacts: presents the impact assessment for the SLVIA throughout the construction, operation and decommissioning phases and concludes on the likely significance of impacts. The assessment includes the consideration of any mitigation measures (both embedded and additional) and sets out any monitoring proposals for potentially significant impacts, if required;
- Cumulative Impact Assessment: presents the cumulative impact assessment throughout the construction, operation and decommissioning phases and concludes on the likely significance of impacts with consideration of mitigation measures;
- Interrelationships: Assesses the potential interrelated effects on any given receptor scoped into the assessment;
- Transboundary impacts: Considers the potential for any transboundary impacts in relation to SLVIA; and
- Assessment summary: provides a summary of the impact assessment undertaken.

13.8. It should be noted that for the purposes of this assessment and in accordance with the 'Guidelines for Landscape and Visual Impact Assessment, Third edition' (GLVIA3, 2013, Landscape Institute and Institute of Environmental Management and Assessment) the term 'impact' has been used to define the action being taken, whilst the term 'effect' is used where it defines the change resulting from that action. However, 'impact' may also be used where this is the term in common usage (GLVIA3, paragraph 1.15)

13.9. There may be some overlaps between seascape, landscape and visual effects and effects associated with other topics. Constraints relevant to other topics are assessed in detail within the relevant chapters but are also, where appropriate, referenced in this chapter where they may have some bearing upon potential, seascape, landscape and visual effects.

13.10. All figures supporting this chapter (see Figures 13.1 to 13.35) can be found in the EIA Report Volume II: Figures. They comprise the following:

- Site location, study area and indicative turbine layout (Figure 13.1);
- Various ZTVs (Figures 13.2 to 13.11);
- Baseline plans with ZTV overlays (Figures 13.12 to 13.14);
- Cumulative Plans and ZTVs (Figures 13.15 to 13.19);
- Viewpoint Panoramas, Wireframes and Photomontages (Figures 13.20 to 13.33); and
- Design Height Comparison Figures (13.34 to 13.35).

13.11. The following documents support this chapter and are provided in Volume III: Appendices:

- Appendix 13A: SLVIA Methodology; and
- Appendix 13B: Seagreen 2012 Offshore ES (for the originally consented project) – Volume 1: Chapter 16-SLVIA baseline.

13.12. The SLVIA has been prepared by The Landscape Partnership.

LEGISLATION, POLICY AND GUIDANCE

13.13. The legislation, policy and guidance relevant to the assessment of potential effects on the existing SLVIA resource are outlined below. This chapter should be read in conjunction with Chapter 4 (Policy and Legislation), which summarises any updates to the legislative and policy context within which an impact assessment should be undertaken. Professional judgement has been applied in considering their relevance and importance to this assessment.

13.14. Although the optimised Seagreen Project is located within the marine environment other national, regional and local policies are considered within this assessment where they are relevant to SLVIA considerations and provide some context to the assessment within the agreed study area.

Policy Context

International

13.15. The European Landscape Convention (ELC) became binding in 2007 and promotes landscape protection, management and planning, and European co-operation on all landscapes including; natural, managed, urban and peri-urban areas, and special, everyday, and also degraded landscapes. It aims to organise European co-operation on landscape issues.

13.16. The Scottish Government notes agreement with the ELC in its Topic papers for Landscape under *"Countryside and Landscape in Scotland - European Landscape Convention"* that it *"is satisfied that existing legislation and administrative systems for land use planning and environmental management provide appropriate means for meeting the obligations and objectives set out in the ELC"*

National

13.17. The UK Marine Policy Statement was jointly published in March 2011 by all UK Administrations as part of a new system of marine planning being introduced across UK seas. The Policy Statement recognises that activities and development in marine and coastal areas may give rise to seascape effects and recommends that marine planning authorities should consider potential effects at a strategic level, liaising with terrestrial planning authorities where necessary, and utilising appropriate tools such as seascape and landscape character assessment. It also recommends that the authorities should have particular regard to development within, or close to any nationally designated areas.

13.18. The UK Marine Policy Statement indicates, *"seascape should be 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"* (HM Government, Northern Ireland Executive, Scottish Government and Welsh Assembly Government, 2011: 21)

13.19. Scotland's National Marine Plan: (NMP) was adopted in 2015. The NMP sets out policies for the sustainable development of Scotland's seas and it is intended that authorisations will be determined in accordance with the adopted NMP, unless material considerations indicate otherwise. In relation to seascape/landscape, the NMP recommends that development in the marine environment should, in general, take into account the existing character and quality of the seascape, how highly it is valued and its capacity to accommodate change, with a particular focus on minimising negative impacts on National Scenic Areas (NSA).

Scottish Planning Policy

13.20. National planning policy for land use planning in Scotland is contained within Scottish Planning Policy (SPP) – June 2014. Of relevance to SLVIA it states that:

> *"The design and location of any wind farm development should reflect the scale and character of the landscape. The location of turbines should be considered carefully to ensure that the landscape and visual impact is minimised."* (paragraph 187).

Scottish Natural Heritage Policy and Guidance

13.21. SNH does not have a specific policy relating to offshore wind energy. Offshore wind development is covered by an overarching Policy on Renewable Energy (SNH, 2000) and in SNH (2004) Policy Statement 04/01 Marine Renewable Energy and the Natural Heritage: An Overview and Policy Statement. Landscape and seascape effects are recognised as having the potential to be significant:

> *"…as turbines are likely to be large (150m or taller), arrays of turbines may have a strong visual and land/seascape impact, reducing with distance from the coast. Areas of special landscape value require special consideration…Requirements for navigational lighting may lead to significant night-time impacts."* (paragraph 32).

13.22. SNH Guidance on assessing the impact of offshore renewables on coastal landscape and seascape was published in March 2012 (SNH, 2012b) and SNH also offers advice and guidance on a case by case basis as referenced in the Scoping and Consultation Section of this chapter.

SLVIA Guidance

13.23. This SLVIA has been undertaken in accordance with current best practice and draws upon various established guidance documents. Consistent with the 2017 Scoping Opinion this also includes best practice and baseline information which is adapted from previous baseline studies produced for the originally consented project, including the various FTOWDG studies. The guidance used is noted below and listed in date order with the most recent first:

- 'Visual Representation of Windfarms Best Practice Guidance' version 2.2 (SNH, 2017). All ZTVs and wireframes produced for the assessment adhere to this guidance;
- 'Guidance on Coastal Character Assessment', (SNH, 2017);
- 'Visual representation of development proposals. Technical Guidance Note 02/17' (Landscape Institute, 31 March 2017);
- 'An Approach to Landscape Character Assessment' (Natural England, 2014). This guidance establishes the approach to landscape character assessment;
- 'Guidelines for Landscape and Visual Impact Assessment, Third Edition' (known as GLVIA3 by the Institute of Environmental Management and Assessment [IEMA] and the Landscape Institute [LI], 2013). The principles set out in this guidance on sensitivity, magnitude and significance will be followed in the assessment of potential effects of the optimised Seagreen Project;
- 'Offshore Renewables – Guidance on Assessing the Impact on Coastal Landscape and Seascape' (SNH, March 2012). This document provides guidance on scoping an offshore assessment;

- 'Guidelines for data acquisition to support marine environmental assessments of offshore renewable energy projects' (The Centre for Environment, Fisheries and Aquaculture Science [Cefas], May 2012, albeit published October 2012). Section 4.8 of this document records all source references relevant to seascape character and visual impact assessment;
- 'An Approach to Seascape Character Assessment' (Natural England, October 2012). This document identifies a complementary approach to seascape characterisation that more closely follows established landscape characterisation. It requires the identification of character areas or types;
- 'Assessing the Cumulative Impact of Onshore Wind Energy Developments, version 2.2' (SNH, 2012). This document identifies the principles of combined and sequential cumulative assessment;
- 'Photography and Photomontage in Landscape and Visual Impact Assessment. Advice Note 01/11' (Landscape Institute, 2011);
- 'Guidance on Landscape/Seascape Capacity for Aquaculture'. (SNH, 2008);
- 'Guidance on the Assessment of the Impact of Offshore Wind Farms: Seascape and Visual Impact Report' (DTI – November 2005). This is an all-encompassing document; it refers to methodologies set out in the GLVIA, SNH and GSA guidance documents (see above) specifically relating them to offshore sites and best practice. As with GSA (see below), it requires the identification of seascape units;
- 'An assessment of the sensitivity and capacity of the Scottish seascape in relation to offshore wind farms'. (SNH, 2005, Report No.103 (ROAME No. F03AA06);
- 'Visual Assessment of Wind Farms Best Practice'. (SNH Report F01AA303A University of Newcastle, 2002); and
- 'Guide to Best Practice in Seascape Assessment' (Maritime Ireland/Wales Interreg 1994 – 1999 Guidance, March 2001). Seascape character is defined and assessed at a regional scale within the study area based on this guidance and the published CCW Seascape Assessment of Wales. This methodology requires the identification of regional seascape units (RSCUs).

13.24. Elements of best practice and baseline information has also been adapted from previous baseline studies produced for the 2012 Offshore ES, including:

- 'Approach to Assessment of Landscape, Seascape and Visual Cumulative Effects' (Forth and Tay Offshore Wind Developers Group [FTOWDG], 2011). This sets out a methodology and approach to the assessment of cumulative impacts, which will form the basis for SLVIA for all FTOWDG developments;
- 'Regional Seascape Character Assessment' (FTOWDG, 2011). This includes an appraisal of sensitivity to offshore wind farm development. It was undertaken by the landscape consultants representing FTOWDG. This document will serve as a baseline for assessing impacts on seascape character; and
- 'Design Sensitivity Analysis' (SLR Consulting on behalf of FTOWDG, 2011).

Legislative Requirements

13.25. Designated areas and features have been identified and considered within the 50km radius study area and are consistent with the 2017 Scoping Opinion. In addition, as a direct response to SLVIA-focused consultation in relation to assessment viewpoints the 50km 'study area' has been extended to include a wider 70km 'search area' with two selected, agreed viewpoints located beyond the 70km 'search area'. Figure 13.13 identifies all landscape designations within and beyond these areas. The designated landscapes are identified more fully within Appendix 13B (excerpts taken from the 2012 SLVIA baseline) with the following noted modifications:

- Adopted Aberdeenshire Local Development Plan 2017 – Policy E2 Landscape; and
- Adopted Angus Local Development Plan 2016 – Policy PV6 Development in the Landscape and PV 16 Coastal Planning.

International and National Landscape and Seascape Designations

13.26. There are no international or national designations (National Parks and National Scenic Areas) lying within the 50km study area. The eastern limits of the Cairngorms National Park is the nearest area of nationally designated landscape located at a minimum distance of 65km to the north west of the optimised Seagreen Project. Figure 13.13 identifies the location of landscape designations within the 50km study area and areas beyond.

Local Landscape Designations

13.27. The 50km radius Study Area incorporates two different local authority administrative areas: Aberdeenshire and Angus. Two further local authority administrative areas of Fife and East Lothian lie beyond 50km but, have been included within the extended 70km radius search area for selected landscape and visual elements to ensure that all issues raised though the SLVIA scoping and consultation stages are addressed. These study/search areas are illustrated on all baseline and Zones of Theoretical Visibility (ZTVs) (see Figures 13.2 to 13.19).

13.28. Some local planning authorities designate landscape areas that are deemed valuable at a local scale and recognise their importance through local designations in planning policy documents. These designations play an important role in developing an awareness of the landscape qualities that make particular areas distinctive, which give communities a sense of place. The names used for such local landscape designations currently vary from one local authority to another. For example, they have been termed 'Areas of Great Landscape Value', 'Special Landscape Areas', 'Sensitive Landscape Character Areas' and 'Areas of Landscape Significance' by different authorities within Scotland. However, recent guidance published by SNH and Historic Scotland suggests that the name be standardised to Special Landscape Area (SLA), which for the purposes of this assessment is the adopted terminology. Within the main study area of 50km there are four SLAs (see Figure 13.13) three of which are located within Aberdeenshire (Area 1, North Aberdeenshire Coast, Area 3, South East Aberdeenshire Coast and Area 10, Braes of the Mearns) and one in Fife (Lomond Hills/East Fife). Further SLAs are located beyond the 50km radius study area and are also identified on Figure 13.13.

13.29. The optimised Seagreen Project WTGs are located a minimum distance of 30.7km from the nearest SLA. The extent, location or reasons for designation of SLAs inform the location of representative viewpoints and adds to the value of the landscape character receptor. The planning policies that cover this designation refer to development within or adjacent to the

designated area and it is, therefore, only when the site itself is covered by such a designation, or immediately next to the designation, that the policy is applicable. The effects of the development on the landscape character and visual amenity of SLAs can be judged from the assessment of landscape character areas and representative viewpoints taken from within these areas.

13.30. The SLAs within the study area are covered by the Aberdeenshire and Fife Councils as noted above and detailed in Appendix 13B (2012 SLVIA baseline).

13.31. A series of ZTV figures have been prepared for the optimised Seagreen Project, to inform the SLVIA. Analysis of these (see Figures 13.2 to 13.14), combined with further appraisal on site and consideration of Marine Scotland's Licensing Operations Team's (MS-LOT) Scoping Opinion indicates that visibility of the optimised Seagreen Project would be limited from within key central sections within these SLAs and largely confined to views from within Area 3, South-East Aberdeenshire Coast and Area 1, North Aberdeenshire Coast (see Figure 13.13). Views of up to 50km will also be available from within limited sections of Area 10, Braes of the Mearns and from within the more eastern fringes of the Lomond Hills/East Fife. This limited pattern of visibility is due primarily to the distances involved and the separate seascape context, but also due to the screening effects of coastal embankments, intervening vegetation and local ridgelines in the wider landscape. Given these factors it is evident that there will be no direct impacts upon any of the defining elements, characteristics or attributes of any of these SLAs. Any potential impacts will be confined to impacts upon the visual attributes that contribute to defining character and be associated with very distant views towards Project Alpha from within limited areas of all of these SLAs (see Figure 13.13). It is noted that these potential views will only be available under conditions of good, clear visibility.

13.32. The SLAs on the Aberdeenshire coastline are the closest to the optimised Seagreen Project. From locations within these coastal SLAs, the turbines will be seen to occupy a distant horizon where, visibility permitting, they will appear as small elements set within a wide, expansive seascape. Given the distances involved (in excess of 30km) and the limited extent of potential views towards the turbines, it is not anticipated that there will be any prospect of a significant impact upon the character of any of these SLAs.

13.33. It is noted that the SLVIA for the originally consented project came to the same conclusion noting that for the nearest SLAs on the Aberdeenshire coastline, "*Where these distant views of the WTGs can be seen, the WTGs will appear very small on a distant horizon. Given the distant nature and limited extent of potential views towards the proposed WTGs, the anticipated magnitude and overall significance of operational impact on SLAs in the study area is considered to be negligible. The overall significance of operational impact upon the intrinsic character of the SLAs within the study area will therefore be negligible and not significant*" (paragraph 16.243).

13.34. Given that the optimised Seagreen Project is sited within exactly the same area of seascape, it is unsurprising that the risk of significant effects arising upon any of these designations, (even allowing for the uplift in turbine height and noting the reduction in turbine numbers), should remain Negligible with no prospect of an uplift in effects such that they might be considered to be 'Significant'. The potential for significant effects upon SLAs is therefore considered very unlikely and they are not assessed further.

Historic Gardens and Designed Landscapes (HGDL)

13.35. A range of historic landscape features also occur within the 50km study area and beyond (see Figure 13.13). These are identified within the baseline environment as they can contribute to defining the landscape character of areas included within the baseline study area.

13.36. In terms of the wider landscape context of these historic landscape features there are currently 14 Historic Gardens and Designed Landscapes (HGDL) that lie within the 50km study area (see Figure 13.13).

13.37. The closest of any of the HGDLs to the optimised Seagreen Project is Arbuthnott House (in Angus), located approximately 34km to the north west of the nearest turbine. However, analysis of the ZTVs (see Figures 13.2 to 13.13) combined with further appraisal on site and a consideration of MS-LOT's Scoping Opinion, indicates that potential visibility of the optimised Seagreen Project would, even where it may be possible in clear visibility, be very limited from within these HGDLs. This is due primarily to the distances involved and the separate seascape context within which the optimised Seagreen Project is located. It should also be noted that the ZTVs, unless stated to the contrary, do not factor in any above ground screening elements which means that, given the distances involved, the smallest of above ground elements would be sufficient to provide screening and thus prevent any prospect of a view to the section of the distant seascape horizon occupied by the optimised Seagreen Project.

13.38. The potential for significant effects upon these designations is therefore considered very unlikely and they are not assessed further.

CONSULTATION

13.39. As part of the EIA process Seagreen has consulted with a number of statutory and non-statutory organisations to inform the approach to the SLVIA.

13.40. A Scoping Report was submitted by Seagreen in May 2017. This considered the proposed changes to the optimised Seagreen Project and identified the potential requirements for the assessment. A Scoping Opinion was issued by MS-LOT on behalf of Scottish Ministers in September 2017. This considered the information presented within the Scoping Report and set out key issues to be addressed within the impact assessment.

13.41. Post receipt of MS-LOT's Scoping Opinion, further SLVIA focused consultation has taken place with SNH, Marine Scotland and relevant local authorities within the 50km radius study area (including Angus Council, Fife Council, East Lothian Council and Aberdeenshire Council), during January to May 2018.

13.42. The purpose of the consultation was to secure the consultees agreement to a range of matters, including the proposed approach to the SLVIA; the extent of the study area; the number and location of viewpoints; the selection of the realistic WCS for assessment purposes; the presentation of wireframe views and photomontages and the cumulative assessment. These matters were, in the main, agreed through correspondence during February and March 2018 with further qualifications provided in May 2018, in the light of further dialogue between Seagreen and MS-LOT.

13.43. The consultation undertaken was partially informed by that previously undertaken in relation to the originally consented project, but specifically guided by the proposals for the optimised Seagreen Project. This also appropriately considered consultation undertaken by the FTOWDG which was originally formed to agree on collaborative studies and data collection and, wherever possible, to agree on consistent methodologies for the impact assessment. The group comprised representatives for the developers of the three offshore wind farms currently proposed in the area (the optimised Seagreen Project, Neart na Gaoithe and Inch Cape).

13.44. FTOWDG produced a series of documents which informed the originally consented project and these have been reviewed as part of this SLVIA. This includes the Regional Seascape Character Assessment (2011) and the Approach to Assessment of Landscape, Seascape and Visual Cumulative Effects (FTOWDG, 2011). The latter report sets out a methodology and approach to the assessment of cumulative impacts, to form the basis for the SLVIAs for all the FTOWDG developments.

13.45. Table 13.1 summarises the issues that were highlighted by the consultees in the 2017 Scoping Opinion and indicates which sections of the chapter addresses each issue. Further SLVIA-focused consultation undertaken during the period February to May 2018 is also detailed below.

Table 13.1 Summary of Comments and EIA Response

Consultee	Comment	How the SLVIA has Responded to this Comment
MS-LOT 2017 Scoping Opinion	New SLVIA required due to increase in wind turbine hub and blade tip heights.	The SLVIA focuses upon potential effects relating to the optimised design. If these effects are different to the originally consented Project this is noted.
	Explanation and discussion of wind farm design objectives sought.	Chapter 3 (Site Selection and Alternatives) of this EIA Report describes the design development process and the embedded mitigation associated with the development.
	Extent of the study area - SNH advised broad acceptance of 50km radius but noted that there might be some sensitive receptors just beyond that may require consideration.	The SLVIA considers selected receptors beyond 50km including more distant viewpoints at North Berwick Law (ELC); Isle of May; Pinderarchy (Angus) and Benn Tirran (Angus).
	Understanding of the effects of the increase in turbine size compared to the 2014 consented scheme.	The SLVIA provides new assessment outcomes and provides some commentary where these are different compared to the 2012 Offshore ES. The visual implications of the uplift in turbine height is also explored through ZTVs and graphic presentation – see Figures 13.2 to 13.14
	Consideration of effects arising from turbine lighting.	This is considered within this SLVIA – see 'Night Time Visual Assessment' section of this chapter.
	Cumulative assessment – Inch Cape, Neart na Gaoithe, Kincardine and Forthwind projects to be considered along with any onshore wind farms advised by local authorities.	All offshore wind farms within the study area are considered within this SLVIA with selected onshore wind farms as advised by the local authorities – see the 'Cumulative Effects' Section of this chapter.
	Viewpoint photography – retake at least one of VPs 2, 5 and 6 to represent clearer views during late afternoon.	All viewpoint photography has been retaken to meet latest SNH visualisation guidance. This includes the retaking of views as requested.
	Photomontages need to capture changes in circumference and height of WTGs.	Turbine dimension data has been modelled in to the wireframes, but the practical limitations of modelling elements that are a minimum of 30km distant into wireframes should be noted.
	ZTVs should differentiate between hub and blade tip visibility.	ZTVs have been prepared accordingly.
	Additional viewpoints required within East Lothian with North Berwick Law and a low lying coastal view identified.	North Berwick Law is included as VP9 within the SLVIA. A wireframe was generated (and is provided) for Dunbar Cliffs although, with the agreement of ELC, this viewpoint has been scoped out of the assessment.

Consultee	Comment	How the SLVIA has Responded to this Comment
SNH, Appendix C within MS-LOT's 2017 Scoping Opinion	Impacts are primarily restricted to the South Aberdeenshire / Angus coast where it makes some contribution to the cumulative effects from Forth & Tay wind farms in this area.	The SLVIA considers the impacts upon visual amenity and seascape character within these areas.
	In views from East Fife, it lies at distances >50km and appears behind Inch Cape, so only makes a minor contribution to the landscape and visual impacts along this coastline.	This is confirmed within the SLVIA via the various ZTVs and the visuals prepared for VP8, Fife Ness which is the closest area of land within Fife to the site.
	It is unlikely to be visible from East Lothian (although this may change with the proposed increase in height of the turbines).	This is confirmed within the SLVIA via the various ZTVs and the wireframe views for VPs 9 and 10, both of which are located at distances of over 70km from the nearest Seagreen turbine.
	Approach to wind farm design - The proposed design changes are considered to be significant and have the potential to cause greater effects – SNH would welcome explanation and further discussion of the design objectives for Seagreen taking the neighbouring wind farms into account. Request for clear statement of design rationale.	Chapter 3 (Site Selection and Alternatives) of this EIA Report describes the design development process and the embedded mitigation associated with the development.
	Study area and viewpoints – SNH broadly accepts the use of a 50km study area but defers to the local authorities to identify whether there are any sensitive visual receptors located on the border or just beyond requiring consideration.	The SLVIA considers selected receptors beyond 50km including more distant viewpoints at North Berwick Law (ELC); Isle of May; Pinderarchy (Angus) and Benn Tirran (Angus).
	Coastal character – confirmation that the SLVIA can utilise the baseline coastal character assessment previously undertaken by FTOWDG.	The FTOWDG coastal character assessment has informed the SLVIA with updates where this has been relevant.
	Visibility and ZTVs. SNH consider it helpful to explore the changes in visibility from use of larger turbines.	The visual implications associated with the use of larger turbines has been explored in the turbine height comparison figures included as Figures 13.34 and 13.35
	Viewpoint selection and assessment – SNH is content with the same viewpoint selection being used as for the previous SLVIA but defer to the local authorities if there could be the need for additional viewpoints.	The same 8 viewpoints used for the 2014 consented scheme have been reused for the SLVIA for the optimised Seagreen Project.
	Baseline photography – Broadly accept the continued use of the existing baseline photography but new photography may be necessary for any views that have substantially changed.	All viewpoint photography has been retaken to meet latest SNH visualisation guidance. This includes the retaking of views as requested.
	New Viewpoint photography – SNH recommend that at least one of the original VPs 2, 5 and 6 is retaken to represent clearer views during late afternoon when the turbines would be front-lit with the sun behind the viewer.	All viewpoint photography has been retaken to meet latest SNH visualisation guidance. This includes the retaking of views as requested.

Consultee	Comment	How the SLVIA has Responded to this Comment
	Wirelines – SNH encourage the exploration of the effects of increased turbine height through wireline analysis.	The SLVIA provides new assessment outcomes and provides some commentary where these are different compared to the 2012 Offshore ES. The visual implications of the uplift in turbine height is also explored through ZTVs and graphic presentation – see Figures 13.2 to 13.14
	Photomontages – SNH recommending that increased turbine dimensions are investigated to establish whether this makes a difference to the appearance of the turbines.	Seagreen turbine dimensions have been factored into the wireframe models.
	Lighting – SNH note that lighting impacts are not discussed in the Scoping Report but that it should be considered within the SLVIA.	This is considered within this SLVIA – see 'Night Time Visual Assessment' section of this chapter.
	Cumulative impacts – In combination effects with Inch Cape and Neart na Gaoithe need to be subject to a rigorous design process.	Cumulative impacts are considered within the SLVIA. As the optimised Seagreen Project is sited considerably further offshore than either Inch Cape or Neart na Gaoithe the principal cumulative effects are associated with these two developments and the assessment work undertaken has indicated that, at the distances that the Seagreen turbines may be viewed from the coast and inland locations the detailed arrangement of turbines does not translate through into an uplift in the magnitude of effects.
	Onshore wind farms – information on current onshore wind farms to be included within the SLVIA deferred to the local authorities.	Additional SLVIA-focused consultation has been undertaken with all relevant local authorities including Aberdeenshire Council, Angus Council, Fife Council and East Lothian Council as well as SNH and MS-LOT.
Consultation letters issued 7 February 2018, 4 May 2018 and 21 May 2018		
SNH, Consultation Response (16 February 2018)	Response to Consultation letter and enclosures issued 7 February 2018.	
	Consideration of wind farm design sought, including in conjunction with Inch Cape and Neart a Gaoithe.	Chapter 1 (Introduction) of this EIA report explains the design development process and the embedded mitigation associated with the development.
	Refresh of impacts upon landscape/ coastal character between Aberdeen and Arbroath sought.	Incorporated within this SLVIA – see 'Landscape character baseline' section of this chapter.
	Landscape designations in Aberdeenshire require a refresh.	Noted. Incorporated within this SLVIA – see 'Policy Context' section within this chapter.
	Viewpoint selection – addition of VP9 North Berwick Law requested.	This viewpoint is included within this SLVIA – see Table 13.3 Assessment Viewpoints.
	Viewpoint selection - SNH do not view VP 11 Pinderarchy or VP 12 Benn Tirran as essential to the SLVIA.	These VPs have been retained as additional wireframe information within this SLVIA in response to the 2017 Scoping Opinion.
	Viewpoint selection – Request that Isle of May be included as a viewpoint.	This viewpoint is included within this SLVIA – see Table 13.3 Assessment Viewpoints.
	SNH advise that baseline photography need not be retaken (except for one of the Angus VPs).	All viewpoint photography was retaken, to ensure compliance with SNH visualisation guidance V2.2, Feb 2017 as the 2012 photography was not compliant.

Consultee	Comment	How the SLVIA has Responded to this Comment
	Changes in visual impact arising from use of larger WTGs.	The implications associated with the uplift in the height of the WTGs is included within the SLVIA and the increase in the vertical field of view specifically explored – see the 'Impact Assessment' section of this SLVIA.
	Request that impacts of turbine lighting be considered, also in relation to Inch Cape and Neart na Gaoithe.	This is considered within this SLVIA – see 'Night time assessment' section within this chapter.
	Assessment methodology – SNH confirmed 'no substantive comments' in relation to the WCS or the SLVIA methodology (items 3, 7 and 8).	N/A. the methodology employed is detailed within Appendix 13A (SLVIA Methodology) Volume III: Appendices.
	Cumulative assessment – SNH indicated agreement that the cumulative assessment be focused on the impacts in conjunction with Inch Cape and Neart na Gaoithe but noted the need to consider 'in succession' views.	These are considered within this SLVIA – see the 'Cumulative Effects' section of this chapter.
SNH Acknowledgement response (4 May 2018)	Acknowledgement of receipt of consultation letter dated 4 May 2018 received on 4 May 2018.	No specific response required.
East Lothian Council, Consultation Response (19 February 2018)	Response to Consultation letter and enclosures issued 7 February 2018.	
	Extent of study area – ELC advised 'a larger study area would be useful' to cover potentially significant effects beyond 50km.	Study area locally increased beyond 50km. VP9 North Berwick Law is beyond 70km and the SLVIA considers large onshore wind farms within Fife (all beyond 50km)
	Viewpoint selection – Wireframe and impact assessment from North Berwick Law requested. Agreed that Dunbar Cliffs can be scoped out of the SLVIA.	North Berwick Law is included within this SLVIA (including wireframe) – see Table 13.3 Assessment Viewpoints.
	Cumulative assessment – Request for larger scale wind farm development affecting the Firth of Forth seascape to be included including consideration of Earlseat in Fife and Methil demonstration turbine.	The SLVIA considers all relevant large-scale wind farm development within the study area and relevant more-distant developments including Earlseat and onshore wind farms within Fife – see the 'Cumulative Effects' section of this chapter.
	Cumulative assessment – Request to consider oil rigs berthed in the Firth of Forth but full Cumulative Assessment not required.	The SLVIA considers relevant large-scale development within the agreed study area, including temporary moored oil rigs – see the 'Cumulative Effects' section of this chapter.
Fife Council, Consultation Response (20 Feb 2018)	Response to Consultation letter and enclosures issued 7 February 2018 – No issues raised.	No specific responses required.
Aberdeenshire Council, Consultation Response (1 March 2018)	Response to Consultation letter and enclosures issued 7 February 2018 – Clarification of responses timeframe requested.	
	Design and layout of the scheme requires careful consideration to reduce 'stacking' and cluttered effects.	Chapter 3 (Site Selection and Alternatives) explains the design development process and the embedded mitigation associated with the development for SLVIA is explained in Chapter 7 (Scope of EIA Report).

Consultee	Comment	How the SLVIA has Responded to this Comment
	The SLVIA should incorporate AC guidance and policy updates and reference the adopted AC Local Development Plan 2017.	Addressed within the 'Policy, Legislation and Guidance' section of this chapter.
	Confirmation that 50km Study area is satisfactory.	Noted – no action required.
	Confirmation that viewpoint selection is acceptable.	Noted – no action required.
	Confirmation that the approach to the WCS is acceptable.	Noted – no action required.
	SLVIA methodology is appropriate with request for some commentary on the increase/decrease in impacts associated with the change in the scheme envelope.	The implications associated with the uplift in the height of the WTGs is included within this SLVIA..
	Updated photography is welcomed and presentation of visualisations broadly agreed.	Noted – no action required.
	Cumulative impacts – focus on offshore schemes is agreed but some reference to onshore schemes would be preferable when visible in the same view.	This is addressed within this SLVIA – see 'Cumulative Effects' section of this chapter.
Angus Council, Consultation Response (12 March 2018)	Response to Consultation letter and enclosures issued 7 Feb 2018.	
	Zone of theoretical visibility – accepted.	Noted – no action required.
	Viewpoints and photography – VPs 11-12 should be included due to elevated position.	These have been included within this SLVIA, Photography has been undertaken in accordance with latest SNH guidance.
	Night time assessment and visualisations – defer to SNH.	Night time assessment is included with a photomontage from VP4.
	Cumulative assessment - single turbines greater than 50m be included.	This is included within the 'Cumulative Effects' section of this chapter.
	Explanation and discussion of wind farm design/envelopes/objectives sought.	Chapter 3 (Site Selection and Alternatives) explains the design development process and the embedded mitigation associated with the development for SLVIA is explained in Chapter 7 (Scope of EIA Report).
MS-LOT 2017 Scoping Opinion – Section 19 (Archaeology and Cultural Heritage)	The Bellrock Lighthouse and Arbroath (Ladyloan) Signal tower should be considered.	Refer to Viewpoints VP5 and VP14.
MS-LOT, Consultation Response (1 May 2018)	Response to Consultation letter and enclosures issued 7 Feb 2018 – No further comments to add beyond those of 16 Feb 2018 from SNH.	Noted – no action required.
	Update sought on actions taken to respond to SNH's interest in wind farm design matters.	Addressed within this SLVIA via consideration of ZTVs, wireframes and turbine height comparison figures.

SCOPE OF ASSESSMENT

13.46. Effective scoping underpins a proportionate approach to EIA, increasing efficiency and reducing the potential for unnecessary work that can sometimes obscure and cloud the key findings of an assessment which can be unhelpful. This has been recognised by the Institute of Environmental Management and Assessment (IEMA) and addressed within their 2017 document "*Delivering Proportionate EIA*" which sets out "*A Collaborative Strategy for Enhancing UK Environmental Impact Assessment Practice*". This report notes a clear vision for successful EIA and that it is "*…about adding value to the consenting process by making the process and outputs more efficient and effective. In the future, 'proportionate EIA' should become synonymous with good practice.*"(Page 8, para 1)

13.47. The IEMA report goes on to note four themes for co-ordinated action including 'Improved scoping' and states that "*Efforts need to move beyond just addressing length or reducing bulk, to ensure that the process and reporting stages are efficient, effective and add value to the consenting process, its stakeholders and the environment*"(Page 8, para 2)

13.48. As such, to provide a "*fit-for-purpose and not excessive*" SLVIA, it is important that the scoping and SLVIA focusses "*on what significant impacts might realistically arise and how they could be mitigated*". (Page 14, paragraph 5). These must be tailored to the scale of the development, the spatial and temporal scope and the likely effect of the project's effects on the environment. This approach will ensure that the relevant key issues are assessed and, where practicable, that they are mitigated effectively.

13.49. GLVIA3 notes the importance of Scoping in paragraphs 3.8 to 3.12. It notes here that key matters include providing "*the extent and appropriate level of detail for the baseline studies that is reasonably required to assess the landscape and visual effects of the proposed development*" (para 3.11).

13.50. With reference to the 2017 Scoping Opinion (and as confirmed through further SLVIA-focused consultation, it is important to note that, given that the principle of offshore wind farm development has been accepted in this location, this SLVIA scopes out effects which were previously identified to be Minor or Negligible, when combined with defined receptor sensitivities of Medium or Lower, on the basis that this indicated that there was no likelihood of a significant effect arising upon that receptor. These include all landscape character types/areas and protected landscapes.

13.51. This assessment is based on the optimised Seagreen Project design set out in Chapter 5 (Project Description) and with the assumption that mitigation measures and consent conditions as set out in Chapter 7 (Scope of EIA Report) will be applied. The location of the optimised Seagreen Project is a minimum distance of just under 30km from the nearest point of landfall, off the Aberdeenshire, Angus and Fife coastlines.

13.52. A number of landscape and visual receptors have been initially identified within the baseline section for completeness and then subsequently scoped out of the impact assessment. The receptors scoped out are:

- Landscape character areas – All those within the study and search areas have been scoped out given the 30km+ geographical separation between the LCAs and the optimised Seagreen Project turbines; the limited extent of theoretical visibility from within generally limited areas of the Landscape Character Types (LCTs), (see Figure 13.12) which will be further reduced by intervening landform, existing built form and vegetation not identified within the ZTV; and, on the basis that any potential impacts will be no greater than minor and limited to indirect impacts upon distant views (the availability of which will be limited to when conditions of good visibility prevail);

- Landscape designations – These have been scoped out on the same basis as landscape character areas as described above;
- Regional Seascape Character Units (RSCUs) SA2, 8, 12 and 13 – These RSCUs have been scoped out from the assessment as they are largely located beyond the 50km radius study area with the exception of SA8 which extends to within approximately 43km of the nearest Seagreen turbine. There is therefore a large physical separation between these SAs and the optimised Seagreen Project turbines such that any potential impacts will be no greater than minor and limited to indirect impacts upon distant views (the availability of which will be limited to when conditions of good visibility prevail);
- Dunbar Cliffs VP10 – This proposed assessment viewpoint has been scoped out on the basis of negligible theoretical visibility from a distance of over 70km;
- Selected visual receptors included beyond the 50km radius study area – Visual receptors have been scoped out where the theoretical ZTVs confirm that there is no likelihood of visibility from within the 50km study and 70km search areas;
- Visual receptors – roads and railways – These visual receptors have been scoped out on account of their physical separation from the development site, their reduced sensitivity and on the basis that any potential impacts will be no greater than minor and limited to indirect impacts upon distant views (the availability of which will be limited to when conditions of good visibility prevail); and
- Cumulative – limited to selected onshore sites in large scale developments/clusters – Whilst all offshore wind farm developments have been included within the cumulative assessment the onshore sites have been limited to those where blade tip heights are of 100m or above and/or where a minimum group of 3 turbines exist. This was to focus the assessment on potentially significant effects by excluding small single turbines that, as evidenced by the wireframes, have minimal, if any, potential intervisibility with the optimised Seagreen Project.

13.53. The detailed rationale for those receptors that have been scoped in/out of this SLVIA is explained more fully in the 'Baseline Environment' section below.

METHODOLOGY

13.54. This section presents an overview of the SLVIA methodology applied to assess the potential environmental impacts associated with the construction, operation and decommissioning phases of the optimised Seagreen project.

13.55. The SLVIA methodology employed for this assessment necessarily differs from the approach set out in Chapter 6 (EIA Process) and follows an approach specific to SLVIA assessment and in line with appropriate guidance. The method has been refined and developed over many years and has been applied to over 20 previous offshore projects. It has regularly been updated to reflect recent updates in guidance and general advancements within assessment methodology and good practice. It relates to the methodology agreed for the originally consented project and that used for the now consented Beatrice and Aberdeen offshore wind farms.

13.56. The detailed methodology is included within Volume III, Appendix 13A (SLVIA Methodology) of this EIA Report, with an overview summarised below.

Overview of Assessment Methodology

13.57. The overall approach to the SLVIA has three key stages, described in more detail in subsequent sections:

- Baseline – includes the gathering of documented information at an appropriate scale; scoping of the assessment and agreement of that scope with the client, relevant consultees, EIA coordinator and local planning authorities; site visits; and, initial reports to the client of any issues that may need to be addressed within the design;
- Design – includes review of the initial design and turbine options, input into the design and layout and consideration of mitigation options; and
- Assessment – includes an assessment of the seascape, landscape and visual effects, including cumulative effects, of the development requiring site-based work and the completion of a report and supporting graphics.

13.58. The design and assessment stages are necessarily iterative, with stages overlapping in parts. As part of this iterative process, the approach to this SLVIA has included a review of the SLVIA from the originally consented Project.

Approach

13.59. Consistent with the 2017 Scoping Opinion this SLVIA has maintained the established sensitivities for the baseline resource identified within the FTOWDG reports.

13.60. It is acknowledged that the baseline within the study area has been modified and that the principle of wind farm development has been accepted within the optimised Seagreen Project, Inch Cape and Neart na Gaoithe site areas, through the existing 2014 consents. Ordinarily, consistent with current guidance, consented sites would be included within the existing baseline environment where there is a strong likelihood of their construction. However, for the purposes of this SLVIA, these existing consents have not been factored in, given that all three developers are in the process of submitting additional consents, to allow for advances in technology since the original ES's were prepared and there is thus an element of uncertainty linked to whether they will be constructed or not. This approach also enables a standalone assessment of effects and a like-for-like assessment to be made that assists in identifying the order of change that the new proposed scheme will bring about. It is unknown at this time whether the new Inch Cape scheme will be submitted as an amendment to the original consent, or whether it will be submitted as a new application, as is the case with the optimised Seagreen Project and the already submitted Neart na Gaoithe.

13.61. The cumulative effects are considered as a separate exercise within this SLVIA. For the cumulative assessment the worst case scenarios under consideration for the Inch Cape and Neart na Gaoithe sites have been included, to enable a true assessment and to allow an overall conclusion to be made of the additional contribution that the optimised Seagreen Project will bring to the development pattern. The WCS for these other offshore projects is also based upon the tallest turbines under consideration.

13.62. Consistent with GLVIA 3, this SLVIA has also factored in susceptibility to the type of development and the value attributed to the baseline resource unless stated otherwise.

13.63. The scope and approach to this SLVIA was agreed through consultations with local planning authorities, SNH and MS-LOT.

Distinction between Seascape, Landscape and Visual Impacts

13.64. In order to differentiate between landscape and seascape impacts, it is first necessary to define these two terms. The Department of Trade and Industry (DTI) guidance on SVIA defines seascape as *"the coastal landscape and adjoining areas of open water, including views from the land to sea, **from sea to land** and along the coastline"*, and describes *"the effect on landscape at the confluence of sea and land"*.

13.65. Essentially the term seascape is therefore an extension of the landscape concept to take account of the open water beyond the mainland. The DTI guidance states that *"Every seascape therefore has three defined components:*

- *An area of sea (the seaward component);*
- *A length of coastline (the coastline component); and*
- *An area of land (the landward component)."*

13.66. By contrast, the landscape starts at the coastline and includes all areas inland, even where there are no views or direct experience of the sea.

13.67. The following distinction between landscape, seascape and visual impacts is used in this chapter and has been adapted from the Landscape Institute and DTI guidance:

- Landscape impacts relate to the impacts of the optimised Seagreen Project on the physical and perceptual characteristics of the landscape and its resulting character and quality;
- Seascape impacts relate to the impacts of the optimised Seagreen Project on the physical and perceptual characteristics of the seascape and its resulting character and quality; and
- Visual impacts relate to the impacts of the optimised Seagreen Project on views experienced by visual receptors (e.g. residents, footpath users, tourists, boat users etc.) and on the visual amenity experienced by those people.

Types of Effect Considered

13.68. The SLVIA assesses both the long-term effects relating to the operational lifetime of the optimised Seagreen Project and also the short-term effects associated with its construction and decommissioning stages. It also includes a consideration of any potential visual effects arising from navigation, aviation, identification lighting and the lighting of offshore structures. Where appropriate, the SLVIA also considers any residual effects once the optimised Seagreen Project has been decommissioned and removed.

13.69. The SLVIA not only assesses the effects associated with the optimised Seagreen Project turbines but for completeness also assesses any related effects resulting from associated offshore infrastructure, including the previously consented offshore substation platforms (OSPs) (see Figure 13.1 for location of OSPs).

13.70. The SLVIA also assesses the cumulative effects arising from the optimised Seagreen Project in conjunction with other existing, consented and proposed offshore and selected onshore wind farm sites within the study area and selected sites within the search area, which is described in the Section 'Cumulative Impact Assessment' of this chapter. Given that the offshore wind farm at Inch Cape and Neart na Gaoithe have previously been consented, they will effectively form part of the cumulative baseline environment, in line with current

guidance for cumulative assessment. For assessment purposes, the potential for additional effects arising as a result of the identified WCS scheme for the optimised Seagreen Project in conjunction with the 2017 schemes for Inch Cape and Neart na Gaoithe have been assessed. The WCS schemes for these three projects are identified on all wireframes and ZTV figures. The 2017 Inch Cape and Neart na Gaoithe layouts are considered WCS as they have tallest turbines.

Design Sensitivity Analysis

13.71. The 2012 Offshore ES included a 'Design Sensitivity Analysis' which was undertaken by SLR Consulting on behalf of FTOWDG, with input from LUC and Pegasus Planning Group. Generic layouts for each of the three proposed offshore wind farms (the Seagreen Project, Neart na Gaoithe and Inch Cape) were compared in terms of their potential effects. The results of the Design Sensitivity Analysis were provided to SNH, Marine Scotland, and local authorities.

13.72. For each of the three developments, three different WTGs dimension scenarios were provided by the respective developers, including maximum, intermediate and minimum height of WTGs with related spacing requirements. Layouts were then generated on the basis of these WTGs dimension scenarios based on three different generic design concepts, including regular grid, offset grid and series of arcs and a range of wireframe visualisations were generated to illustrate the views from a range of design viewpoints. This was to understand which layouts demonstrated the most balance, coherence and greatest degree of 'legibility', and avoided serried ranks of WTGs extending from the viewpoint.

13.73. The analysis concluded that an offset grid layout was the most visually preferable of the three layout scenarios, in the greatest number of views. However, the consultants agreed that the preference was not strong, and that different layouts appear better in some views than others. Moreover, it is noted that an offset grid cannot appear as offset from all locations and thus there are inevitable limitations on the perceived visual benefits that may arise.

13.74. The findings of the analysis are consistent with previous experience which has consistently indicated that the SLVIA effects associated with an OWF are primarily a reflection of the number and size of turbines, their distance from the coastline and the extent of the seascape within which they are sited. For the optimised Seagreen Project the latter two elements remain unaltered from the originally consented project, accompanied by a 20% reduction in overall turbine numbers and an uplift in total turbine height.

13.75. Whilst matters relating to turbine layout is an additional factor to be included within an SLVIA, experience shows that variations in layout for a scheme that is located approximately 30km from the nearest coastline are judged as being very unlikely to bring about an adjustment in the magnitude of impact and thus the layout's ability to influence the findings of an SLVIA are marginal except for when within much closer proximity to the turbines. However, it is still appropriate for a project to give consideration to layout matters, particularly when considering potential impacts upon particularly sensitive receptors and where the WTGs are within clear visibility of the coastline. The layout used for this assessment is that identified within Chapter 5 (Project Description) and as illustrated within the SLVIA supporting figures (see Figure 13.1). The illustrative layout shown within Figure 13.1 allows for up to 120 turbines for the optimised Seagreen Project with a maximum blade tip height of 280m. This layout has been taken as the WCS and assessed on the basis that this layout includes the largest turbines under consideration by Seagreen.

13.76. The indicative layout for the optimised Seagreen Project is consistent with the findings of the 2012 design sensitivity analysis.

Study Area

13.77. A key initial step in undertaking an SLVIA is to identify the extent of an appropriate study area. This should be sufficient to capture the area within which the optimised Seagreen Project may potentially have a significant effect upon the seascape, landscape and/or visual resource. This is commonly identified through the generation of a bare ground ZTV although it is important to note that just because an OWF may theoretically be visible from all areas within the ZTV it does not mean that all such areas have the potential to experience 'Significant 'effects.

13.78. The study area is not intended to provide a boundary beyond which the optimised Seagreen Project scheme cannot be seen, but rather to define the area and receptors within which to assess the potentially significant landscape and visual effects of the Project Alpha and Project Bravo sites and to identify those receptors that may be scoped out (as previously identified).

13.79. The optimised Seagreen project has the same area and is within the same application boundaries as the originally consented Project and therefore, data collected to inform the SLVIA for the originally consented project remains an appropriate source of information, to inform the assessment of impacts for this EIA Report. As such, as previously stated, the study area for this SLVIA (see Figure 13.1) extends out to cover a 50 km radius around the perimeter of the Alpha and Bravo WTGs. This has been locally extended up to 70km 'search area' to accord with the consultation feedback received from some local authorities in order to allow the inclusion of additional, identified receptors.

13.80. In addition to the 50km study area, scoping requests were made for consideration of additional selected points within a 70km radius wider search area and these have also been considered and illustrated on the SLVIA chapter Figures (see Figure 13.4). Graphic information, including ZTV figures (see Figures 13.2 to 13.14), have accordingly been produced to cover both the 50km study and 70km wider search areas. It is considered that these ZTVs more than adequately cover the area within which the optimised Seagreen Project may be theoretically visible, and therefore those areas from where it may conceivably have an effect upon visual amenity and/or landscape character. Again, the extent of theoretical visibility does not imply visual effect.

13.81. With the exception of Figure 13.8, the ZTVs illustrate the 'bare ground' situation, not taking into account the screening effects of vegetation, buildings, or other local features that may prevent or reduce visibility. They therefore give an exaggerated unrealistic worst case impression of visibility. The ZTVs are based on a digital terrain model (DTM) derived from the Ordnance Survey 'Terrain50' dataset, which provides height data for each point on a 50m by 50m grid and has been verified to be 4m Route Mean Square Error (RMSE). It is important to remember that while the ZTV does indicate the bands of WTGs numbers that are visible, there is still potentially a wide range of variation within these groupings. ArcGIS 10.3 software was used for the calculation of the ZTV. The software incorporates earth curvature and atmospheric refraction in calculating intervisibility. For full details of the preparation and use of visuals, refer to Appendix 13A (SLVIA Methodology) of this EIA Report. The locations of the Inch Cape, Neart na Gaoithe and Kincardine offshore wind farms have been located on the ZTVs for ease of reference and context.

13.82. As an additional exercise to inform the cumulative assessment, an initial Zone of Visual Influence or 'Area of Search' was identified for potential cumulative developments within the area surrounding the optimised Seagreen Project. The Area of Search was undertaken within the main study area extending out to a radius of 70km from the optimised Seagreen Project for selected relevant large-scale developments as agreed through consultation for this SLVIA. These are included within the list of cumulative projects included within this EIA Report (see Appendix 6A).

Desk Study

13.83. A desk study was undertaken to help identify all landscape and seascape character areas/units and potential visual receptors that might reasonably be affected by the optimised Seagreen Project. This study has drawn upon the conclusions of the previous SLVIA produced for the originally consented Project. The desk study has reviewed these conclusions and updated the key seascape, landscape and visual receptors where necessary. The desk study has also sought to identify where there are potential changes in effects and which seascape, landscape and visual receptors can be scoped out from further assessment, in line with GLVIA 3 and the IEMA/LI drive for proportionate assessment.

Survey Work

13.84. The SLVIA is informed by field survey work which is integral to undertaking the assessment. In doing so, site visits have been carried out to become familiar with the study area, the seascape and surrounding landscape; to verify the documented baseline environment; to identify viewpoints and receptors; to determine which visual receptors are likely to be significantly affected and therefore merit detailed assessment and which receptors can be scoped out; and to carry out the impact assessment of magnitude and significance from identified receptors for detailed assessment.

13.85. Survey work was carried out during the week commencing 12 March 2018. During the site visit all initial established viewpoints were visited (viewpoints 1 to 8). Prior to carrying out the fieldwork the weather was checked regularly for windows of good visibility. While visibility conditions remained varied through the course of the fieldwork, the nearest and most important established viewpoints were visited in the best conditions (i.e. viewpoints 1 to 8). The remaining viewpoints were also visited (except for VP12 which was inaccessible over the winter period) to understand the context and potential visibility of views from the remaining viewpoints. Whilst the visibility conditions for undertaking the assessment were not the optimum given the time of year, it is judged that they were sufficiently fit-for purpose.

Impact Assessment

13.86. The purpose of the SLVIA is to evaluate the likely magnitude and the significance of effect arising from the optimised Seagreen Project, upon seascape and landscape character and visual receptors/amenity within the study area, to assist the determining authority when it considers the level of effects arising from the proposed development.

13.87. In accordance with accepted practice, the assessment has identified WCS parameters to ensure that a precautionary approach is taken to the SLVIA. The section 'Assessment of Impacts – Worst Case Scenario' sets out the worst case parameters for the optimised Seagreen Project, informed by the range of parameters identified within Chapter 5 (Project Description), of this EIA Report.

13.88. In addition to considering the WCS for the optimised Seagreen Project parameters, the findings presented in the impact assessment sections of this chapter consider the worst case receptors, within each category. For example, for residential receptors, settlements are considered and assessed, although in practice only a very small proportion of residential properties within an assessed settlement would receive the predicted worst case effects; others would receive lesser effects or no effects at all. This is in accordance with the precautionary principle and forms the basis of EIA guidance. Where potentially significant effects are predicted, additional detail is provided about the anticipated extent of the effects.

13.89. In the interests of providing a concise EIA Report chapter that is focused upon potentially significant effects, this level of detail is not provided for those effects assessed as not significant.

Significance Criteria

13.90. In contrast to other technical assessments within this EIA Report, there are no quantifiable, technical thresholds in SLVIA to determine whether effects are significant or not. SLVIA therefore relies upon clearly defined significance criteria which must be applied transparently, using the informed professional judgement of the experienced assessor. This is in accordance with the guidance documents noted above, principally GLVIA 3. Essentially, the sensitivity of the baseline seascape, landscape and visual receptor is assessed against the magnitude of change associated with the proposed development. The criteria used to determine sensitivity, magnitude of change and significance have been defined below.

Assessment Terminology and Judgements

13.91. The key terms used within offshore assessments are:

- Sensitivity (to the type of change proposed) – established by considering the susceptibility and value attached to seascape, landscape and visual receptors;
- Magnitude of Effect – established through a consideration of the Scale, Duration and Extent of effects; and
- Significance of Effect – established through correlating Sensitivity and Magnitude of Effect.

Sensitivity

Assessing Seascape Sensitivity

13.92. Seascape **Sensitivity** is rated within the range of High-Medium-Low-Very Low and is assessed by combining the considerations of susceptibility and value described below.

13.93. The methodology for seascape, in line with GLVIA3, continues to adhere to the principles set out in the Guide to Best Practice in Seascape Assessment (CCW, 2001) (GSA) guidance, albeit that the terminology is slightly different, as GSA defines the evaluation process and the issues to be considered as seeking to define the capacity of a seascape unit (also character area/type), to accommodate the changes arising from proposed offshore wind farm developments.

13.94. In addition, the DTI's Guidance on the Assessment of the Impacts of Offshore Wind Farms: Seascape and Visual Impact Report (DTI, 2005) guidance identifies a range of criteria that can either increase or decrease the susceptibility (recorded as sensitivity rather than susceptibility) of a seascape to offshore wind farm development and these are taken into consideration in the assessment of sensitivity.

13.95. Factors that can increase seascape susceptibility to offshore wind farms include:

- Small scale seascape, landform limits views to horizon;
- Intricate and complex coastal form;
- Important focal points providing a focus for views;
- Where stillness is a key feature;
- Little impact of sea traffic and night time lighting;
- Viewed from secluded coastlines; and
- An undeveloped, sheltered or calm seascape.

13.96. Factors that can decrease seascape susceptibility to offshore wind farms include:

- Large scale, open views/panoramas;
- A simple composition of flat, horizontal forms;
- A lack of natural focal points;
- Evident marine activity and movement, including night time lighting;
- Crowded beaches where the focus is upon beach activities;
- A highly developed seascape; and
- Exposed, windy seascapes where development would be seen as relating to windiness.

13.97. Seascape **Value** – with regards to value, it is acknowledged that while there are no 'seascape' designations as such, landscape designations which extend up to/lie on the coastline within seascape character units/areas/types (such as Heritage Coasts, National Parks and AONBs) will have a bearing on the overall value, and therefore sensitivity of a seascape receptor. However, these do not automatically infer a high value to the overall seascape character unit/area/type.

13.98. The recreational value attributed to a seascape can also be used to infer an assessment of the value of seascape units, or character areas/types and can be considered according to its value at a national, local/district, community or limited level.

13.99. Seascape **Sensitivity** is identified in a single step process combining susceptibility and value as follows:

- High – Areas of small scale, undeveloped and intimate seascape with particularly distinctive attributes and defining characteristics that are susceptible to relatively small noticeable changes;
- Medium – Areas of moderate scale seascape and form with moderately distinctive attributes and defining characteristics that are reasonably tolerant of noticeable change; and
- Low – Areas of seascape of a very large, expansive scale and of simple form with no particularly distinctive attributes and defining characteristics and which are thus potentially tolerant of noticeable change.

Assessing the Sensitivity of Landscape and Visual Receptors

13.100. Landscape and Visual **Sensitivity** is similarly rated within the range of High-Medium-Low-Very Low and is assessed by combining the considerations of susceptibility and value described below.

13.101. **Susceptibility** is assessed for both landscape receptors such as designated areas and landscape character areas/types, and for visual receptors (people). It indicates the ability of a defined landscape, or visual receptor, to accommodate the proposed development "without undue consequences for the maintenance of the baseline situation and/or the achievement of landscape planning policies and strategies." (GLVIA 3, para 5.40). Susceptibility is rated on the following scale:

- High – undue consequences are likely to arise from the proposed development;
- Medium – undue consequences may arise from the proposed development; and
- Low – undue consequences are unlikely to arise from the proposed development.

13.102. The susceptibility of landscape character areas/types is influenced by their characteristics and is frequently considered (though often recorded as 'sensitivity' rather than susceptibility) within documented landscape character assessments and capacity studies.

13.103. Susceptibility of designated landscapes is influenced by the nature of their special qualities and the purposes of designation and/or the valued elements, qualities or characteristics, indicating the degree to which these may be unduly affected by the development proposed. These special qualities are typically recorded and protected through policy.

13.104. The susceptibility of accessible or recreational landscapes is influenced by the nature of the landscape involved; the likely activities and expectations of people within that landscape and the degree to which those activities and expectations may be unduly affected by the development proposed.

13.105. Susceptibility of visual receptors is primarily a function of the expectations and occupation or activity of the receptor. (GLVIA 3, para 6.32).

13.106. Landscape **Value** is *"the relative value that is attached to different landscapes by society"* (GLVIA 3, page 157). It is rated on the following scale:

- National/International – Landscapes which are nationally or internationally designated or defined for their natural beauty, cultural and natural heritage and value – including National Parks, Areas of Outstanding Natural Beauty, World Heritage Sites and Heritage Coasts;
- Local/District – Locally or regionally designated landscapes (e.g. Area of High Landscape Value, Regional Scenic Areas); areas which local evidence (such as tourism guides, landscape character assessments or other documentary information) indicates as being more valued than the surrounding area;
- Community – 'everyday' landscape which is appreciated by the local community but has little or no wider recognition of its value; and
- Limited – despoiled or degraded landscape with little or no evidence of being valued by the community.

Landscape Sensitivity

13.107. Landscape **Sensitivity** is rated within the range of High-Medium-Low-Very Low and is assessed by combining the considerations of susceptibility and value described above. Table 13.2 below illustrates the judgement process for landscape receptors:

Table 13.2 Landscape Sensitivity

		Susceptibility		
		High	**Medium**	**Low**
Value	**National/International**	High	High - Medium	Medium
	Local/District	High - Medium	Medium	Medium – Low
	Community	Medium	Medium – Low	Low
	Limited	Low	Low – Very Low	Very Low

Visual Receptor Sensitivity

13.108. For visual receptors, judgements of susceptibility and value are closely interlinked considerations; for example, the most valued views are those which people go and visit because of the available view – and it is at those viewpoints that their expectations will be highest. The value attributed to visual receptors also relates to the value of the view – for example, a National Trail is nationally valued for its access, not necessarily for its views. Views will be treated as valued where there is documentary evidence of that value – such as recommendations to visitors; or reference within special qualities of designated areas. The sensitivity of visual receptors is rated in a single step process which combines both susceptibility and value as follows:

- High – visitors to valued viewpoints which people might visit purely to experience the view, e.g. promoted or well-known viewpoints, key designed views; panoramic viewpoints marked on maps;
- High-Medium –people in locations where they are likely to pause to appreciate the view, such as at home, along public rights of way, from local waypoints such as benches; or at locations with views to/from local landmarks. Visitors, including offshore pleasure cruising, to attractions or heritage assets where views are an important contributor to the experience would also fall into this category;
- Medium – travellers using cycle routes or identified scenic road routes, including offshore recreational sailors, canoeists etc. and those engaged in outdoor activities such as on golf courses;
- Medium-Low – users of the majority of road and rail routes and rural, outdoor workers. Those engaged in other marine surface-based activities such as fishing; and
- Low – those with limited opportunity to enjoy the view due either to the speed of travel (on motorways and dual carriageways); or because their attention is elsewhere e.g. those engaged in work or sporting activities. For offshore receptors this would include ships' crew, platform workers and divers.

Magnitude of Effect

13.109. Magnitude is rated within the range of High-Medium-Low-Very Low and is assessed by combining the considerations of scale, extent, and duration of effect.

Scale of Effect

13.110. The Scale of effect is assessed for all receptors and identifies the degree of change which would arise from the development. It is rated on the following scale:

- Large – total or major alteration to key elements, features, qualities or characteristics, such that post development the baseline situation will be fundamentally changed. The degree of change must be such that the wind farm is dominant, commanding and unmistakeable and, being the foremost feature, easily seen;
- Medium - partial alteration to key elements, features, qualities or characteristics, such that post development the baseline situation will be noticeably changed. The degree of change must be such that the wind farm is conspicuous, well defined, clearly visible and catches the eye;
- Small – minor alteration to key elements, features, qualities or characteristics, such that post development the baseline situation will be largely unchanged despite discernible differences. The degree of change must be such that the wind farm is apparent, obvious and evident; and

- Negligible – Very minor alteration to key elements, features, qualities or characteristics, such that post development the baseline situation will be fundamentally unchanged with barely perceptible differences. The degree of change must be such that the wind farm is not obvious, lacks definition and its presence is both subtle and blurred.

13.111. For seascape, standard definitions for judging scale of effect need to embrace descriptors that acknowledge the characteristics of the marine environment. These include the simpler palette of defining characteristics; the dominance of sea and sky; the greater expanse of panoramas; the prevalence of uninterrupted and distant views; the absence of scale indicators and, the limited influence of landform. It is therefore important that definitions include fuller descriptors to assist in attributing scale of effect. The temporal influence of weather can also have a marked influence upon scale of effect in the way that it does not for onshore development, although this is not factored in to the assessment.

Extent of Effect

13.112. The Extent of effect is assessed for all receptors and indicates the geographic area over which the effects will be experienced. For visual receptors, geographical extent takes into account 'the angle of view in relation to the main activity of the receptor; the distance of the viewpoint from the proposed development; and the extent of area over which the changes would be visible' (GLVIA, version 3, para 6.40). Extent of effect is rated on the following scale for all receptors:

- Limited – site, or part of site, or small part of receptor area (< approx. 10%);
- Localised – site and immediate surroundings, or part of receptor area (up to approx. 25%);
- Intermediate – up to approx. 25km, or around half the receptor area; and
- Wide – beyond 25km, or more than half of the receptor.

13.113. The DTI 2005 guidance identifies a range of criteria that tend to either increase or reduce the apparent scale and extent of effect arising from offshore wind development.

13.114. Factors that tend to increase apparent scale and extent of effect upon seascape:

- Short viewing distances from the coastline;
- Large proportion of the field of view occupied by turbines;
- Large percentage of development visible;
- A static receptor;
- The wind development seen as the focal point;
- Visual references to aid understanding of scale; and
- Strong contrasts and movement.

13.115. Factors that tend to reduce apparent scale and extent of effect upon seascape:

- Long viewing distances from the coastline;
- Small proportion of the field of view occupied by turbines;
- Small percentage of development visible;

- A mobile receptor;
- Wind farm not acting as a focal point;
- An absence of visual clues to aid understanding of scale; and
- Low contrasts and visibility.

13.116. The scale and extent of effect is also influenced by the background to the development, the context within which it is seen and the effects of aspect, lighting and weather upon it.

Duration of Effect

13.117. The Duration of effect is assessed for all receptors and identifies the time period over which the change to the receptor as a result of the development would arise. It is rated on the following scale:

- Permanent – the change is expected to be permanent and there is no intention for it to be reversed;
- Long-term – the change is expected to be in place for 10 years or more with a commitment for removal and the change will be reversed, fully mitigated or not occurring permanently;
- Medium-term – the change is expected to be in place for 2 to 10 years and will be reversed, fully mitigated, or no longer occurring beyond that timeframe; and
- Short-term – the change is expected to be in place for 0 to 2 years and will be reversed, fully mitigated or no longer occurring beyond that timeframe.

13.118. The anticipated lifespan of the proposed wind farm is a period of up to 25 years. This can be considered to be long-term on the above scale. The effects associated with construction and decommissioning works will usually be short term. The reversibility of effects is also a material consideration and is referred to within the assessment.

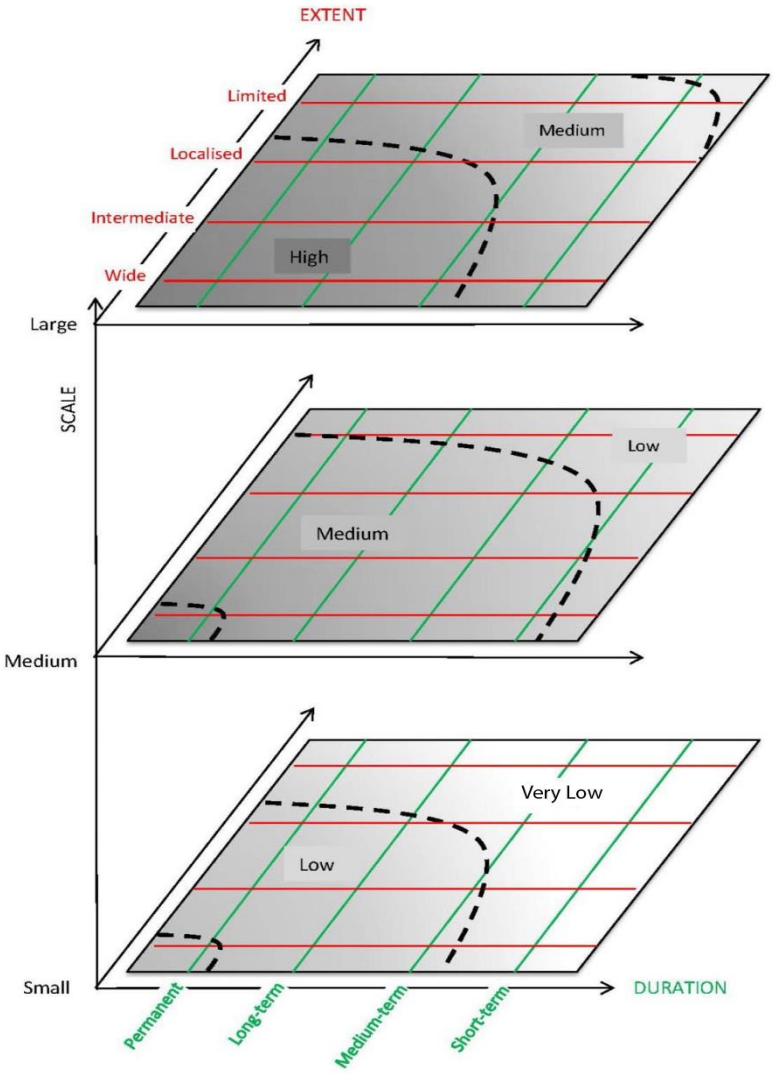
Use of Viewpoints in assessing Magnitude of Effect upon Visual Receptors

13.119. The representative viewpoints are used as 'samples' on which to base judgements of the scale of effects on visual receptors and they represent a range of different types of visual receptors. They are also noted as specific viewpoints, where duration and extent are assessed, with extent reflecting the extent to which the development affects the valued qualities of the view from the specific viewpoint. For example, a very distant wind farm would typically be judged to have a Limited extent of effect on a 360 degree panoramic view; but might be judged to have a greater extent if it appeared within the focal area of a channelled or designed view.

Establishing Magnitude of Effect

13.120. The Magnitude of effect is rated within the range of High-Medium-Low-Very Low and is informed by combining the scale, duration and extent of effect. Plate 13.1 below illustrates the judgement process. Where the Scale of effect is judged to be Negligible the Magnitude is also assumed to be Negligible and no further judgement is required.

Plate 13.1 Diagram: Establishing Magnitude of Effect



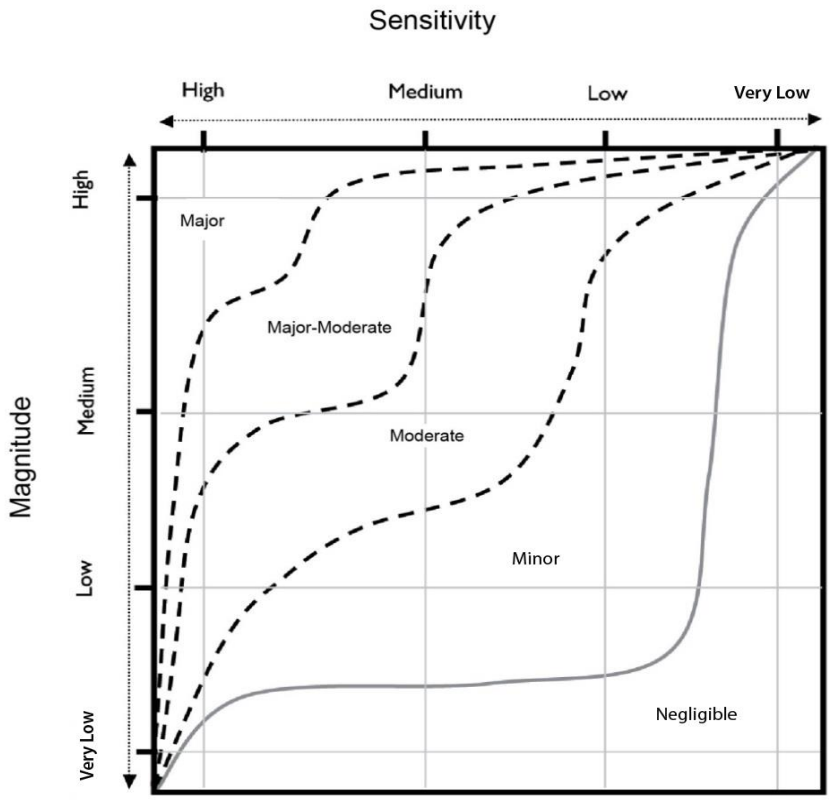
13.121. The layered diagram above illustrates how scale, extent and duration are combined to identify the magnitude of effect. Scale is the primary determining factor of magnitude but is adjusted to reflect variations in both extent and duration such that the magnitude will be higher where the effect is particularly widespread and long-lasting or lower if it is constrained in geographic extent and/or timescale.

Significance

13.122. Significance indicates the importance or gravity of the effect. The process of forming a judgement as to the degree of significance of the effect is based upon the assessments of magnitude of effects and the sensitivity of the receptor, to come to a professional judgement of how important this effect is (Plate 13.2).

13.123. How this judgement is arrived at is illustrated by the diagram below. This provides a guide to decision making, but is not a substitute for professional judgement.

Plate 13.2 Significance (based on EIA significance evaluation matrix, IEMA Special Report 2011)



13.124. The significance ratings indicate a sliding scale of the relative importance of the effect, with Major being the most important and Negligible being the least. Effects that are towards the higher level of the scale (Major) are those judged to be most important, whilst those towards the bottom of the scale are *"of lesser concern"* (GLVIA 3, para 3.35). For the purposes of this EIA Report Impacts identified as Major or Major/Moderate impacts are judged to be Significant whilst impacts identified as Moderate or less are considered to be Not Significant.

13.125. Where intermediate ratings are given, e.g. 'Moderate-Minor', this indicates an effect that is both less than Moderate and more than Minor, rather than one which varies across the range. In such cases, the higher rating will always be given first; this does not mean that the impact is closer to that higher rating, but is done to facilitate the identification of the more significant effects within tables. Intermediate judgements may also be used for judgements of Magnitude.

Assessment Limitations

13.126. The Photomontages that accompany the SLVIA capture changes in circumference and height of WTGs in line with the requests in the Scoping Opinion however, turbine dimension data has been modelled in to the wireframes, but the practical/pixel limitations of modelling in elements that are a minimum of 30km distant into wireframes should be noted.

13.127. Although prior to carrying out fieldwork the weather was checked regularly for windows of good visibility, the time of year (early March) meant that during site work visibility conditions remained varied.

13.128. It should be noted that the ZTVs indicate theoretical visibility, that there are limitations on visual acuity (how much the eye can actually see over different distances) and that prevailing weather and atmospheric conditions, although never factored into the assessment, will also noticeably limit theoretical visibility at greater distances. Accordingly bare ground ZTVs inevitably present an exaggerated picture of visibility whilst prevailing weather and atmospheric conditions will further limit actual visibility on the ground. As these factors are not incorporated into the assessment the SLVIA unavoidably presents an exaggerated picture of potential visibility of the development.

Mitigation

13.129. The Electricity Works (Environmental Impact Assessment) Regulations 2000 (SI 2000/1927) require that where significant effects are identified, mitigation measures must be considered. Guidance on SLVIA for offshore wind farms, such as that included within DTI 2005, discuss design considerations that can be taken into account when developing the layout for an offshore wind farm. However, this discussion was evidently intended for offshore sites much closer to the shore.

13.130. The guidance acknowledges that *"It is questionable how much design changes will mitigate the impacts of, for example, a 200-turbine wind farm located over 25km offshore"*. Bearing in mind that the optimised Seagreen Project will comprise fewer WTGs than this and be located at a distance of approximately 30km from the nearest coastline, the ability for detailed design changes to the layout to translate through into moderating the magnitude of identified effect is likely to be limited. As part of the embedded mitigation, the design has sought to pull the WTGs back from the west site boundary (refer to Chapter 3 [Site Selection and Alternatives]).

13.131. The need to consider the aesthetic aspect of the wind farm layout has been identified in discussions with SNH and other consultees. These discussions also identified the limitations of the approach set out in Siting and Designing Windfarms in the Landscape (SNH, 2009), when applied to an offshore wind farm.

13.132. The marine horizon is flat and typically uninterrupted, and therefore presents no opportunity to relate WTGs to an underlying landform. All offshore wind farms are seen as rows of WTGs, and regular patterns are therefore preferred, in contrast to the more organic layouts sought for onshore wind farms.

Residual Effect

13.133. Due to the above limitations for mitigation, the residual effects are assessed as being the same as the potential effects.

BASELINE CONDITIONS

13.134. The existing baseline conditions relevant to the SLVIA for the optimised Seagreen Project are described in the following section. These take account of the SLVIA scope set out within the 2017 Scoping Report and confirmed through the 2017 Scoping Opinion and subsequent SLVIA-focused consultation. Consistent with this consultation, it also includes consideration of the SLVIA conclusions for the originally consented project.

13.135. In line with GLVIA 3 best practice, the baseline section provides a review of the key local guidance documents "*which is appropriate to the context*" (GLVIA 3, paras 5.3 to 5.4) and identifies receptors which merit detailed consideration in the assessment of effects, and those which are 'scoped out' from further assessment, as effects "*have been judged unlikely to occur or* [to be] *so insignificant that it is not essential to consider them further*" (GLVIA 3, para 3.19).

13.136. The baseline study is presented in the following sections and focussed to be consistent with the 2017 Scoping Opinion:

- Landscape character;
- Seascape character;
- Physical and human influences on the landscape/seascape; and
- Visual receptors and views.

13.137. Relevant landscape designations and policy are identified above, in the policy and legislative context.

13.138. The baseline data gathering exercise included the identification and review of relevant published documents and reports, including the SLVIA for the originally consented project, site survey, ZTV studies, production of wireframes and photomontages and further site visits.

ZTV Studies

13.139. In line with GLVIA 3 (para 3.15), ZTV studies have been used to aid the identification of receptors which are likely to be affected by the proposal and those which may be scoped out. Further information on ZTVs and the methodology employed are set out above in the Study Area section and within Appendix 13A (SLVIA Methodology).

13.140. The ZTVs (see Figures 13.2 to 13.14) were prepared to nacelle (i.e. hub) and blade tip height for the WCS turbine layouts (120 WTG up to a maximum of 280m blade tip height), to indicate the extent and pattern of intervisibility between the optimised Seagreen Project and the terrestrial and seascape hinterland.

13.141. ZTVs were also prepared to assist with identifying the potential for additional areas of new visibility, as a result of the optimised Seagreen Project, compared to the originally consented project. Figures 13.9 to 13.11 indicate that there is only a minimal theoretical increase in geographic extent from which views of the optimised Seagreen Project would be available compared to the extent of theoretical visibility for the originally consented project. These additional areas of theoretical visibility are identified as green (increased extent of visibility arising from Project Alpha only), orange (arising from both Project Alpha and Project Bravo together) and blue (arising from Project Bravo only).

13.142. Figures 13.10a and b and 13.11a and b provide more detailed information on the extent of theoretical visibility associated with the optimised Seagreen Project for Project Alpha and Project Bravo individually.

13.143. In accordance with SNH guidance (2017) the ZTV analysis was carried out firstly using a topographic model alone (referred to as a bare ground model, see Figures 13.2 to 13.7; and secondly including selected visual barriers from settlements and woodlands using NextMap 25 data, to provide a more realistic indication of potential visibility (referred to as obstructions, see Figure 13.8'). The following points should be borne in mind in respect of the ZTV studies:

- The ZTV is a theoretical model only. When viewed on the ground, areas shown as having potential visibility may in fact have restricted or indeed no views of the WTGs, due to local obstructions such as trees, hedgerows, embankments or buildings. Given the distance of the optimised Seagreen Project from the coastline even small-scale obstructions of limited height (such as maintained hedgerows) are likely to obscure or prevent visibility;

- Each WTGs is analysed at both the proposed hub and blade tip height, differentiating the visibility of the two parts of the WTGs in different colours; and
- Since only the WTGs hubs and blade tips have been modelled, this may be all that is visible - rather than the WTGs tower. This is particularly true of areas near the edges of potential visibility.

13.144. The ZTVs illustrate that, subject to suitable visibility and atmospheric conditions, the hub height visibility of the optimised Seagreen Project WTGs will tail off just beyond 40km such that at around 50km fewer than 15% of the WTGs will be visible below hub height (see Figures 13.2, 13.3 and 13.4). The blade tip ZTVs indicate that just beyond 60km some of the WTGs fall wholly out of view and at just under 70km no element of the WTGs will be visible, unless the receptor is located on higher elevated land (see Figures 13.5, 13.6 and 13.7).

13.145. The ZTVs (see Figures 13.2 to 13.14) also indicate the limited areas of theoretical visibility for land-based receptors and thus confirm the appropriateness of scoping out the need to re-assess potential effects upon landscape character and landscape designations (as set out above in 'Scope of Assessment'. The locations of the Inch Cape, Neart na Gaoithe and Kincardine offshore wind farms have been located on the ZTVs for reference and context.

13.146. In reviewing these it should be remembered that the ZTVs indicate theoretical visibility, that there are limitations on visual acuity (how much the eye can actually see over different distances) and that prevailing weather and atmospheric conditions, although never factored into the assessment, will also noticeably limit theoretical visibility at greater distances.

Landscape Character

13.147. Landscape character information is identified by a combination of the desk and site surveys, and the relevant SNH Landscape Character Assessment documentation and local planning authority studies, which comprise the following:

- South and Central Aberdeenshire Landscape Character Assessment (Environmental Resources Management, 1998);
- Landscape Character Assessment of Aberdeen (Nicol I. et al, 1996);
- Tayside Landscape Character Assessment (Land Use Consultants, 1999);
- Fife Landscape Character Assessment (David Tyldesley and Associates, 1999);
- The Strategic Landscape Capacity Study for Windfarms in Aberdeenshire, 2014;
- Fife Wind Energy Planning Supplementary Guidance, June 2013;
- The Lothians landscape character assessment (ASH Consulting Group, 1998); and
- Guidance for Wind Farms of 12MW and over (East Lothian Council, 2013).

13.148. In common, these landscape character assessments divide the landscape into tracts of land that are referred to as landscape character types and areas. The boundaries and descriptions of the landscape character types and areas provided are based upon the published information and were confirmed in the desk study and site appraisal. They are identified on Figure 13.12.

13.149. The relevant landscape character areas and types within 50km remain as detailed within the SLVIA for the originally consented project (see Appendix 13B [2012 SLVIA Baseline]) and are illustrated in Figure 13.12, Seascape and Landscape Character Areas. This figure indicates the limited extent of potential visibility of the optimised Seagreen Project from

within the various landscape character areas which was then confirmed through field work. It is noted that the optimised Seagreen Project WTGs are located a minimum distance of 30.7km from the nearest landscape character areas, which lie within the South and Central Aberdeenshire Landscape area.

13.150. Given the distance between the LCAs and the limited visibility towards the optimised Seagreen Project which will be further reduced from that indicated in Figure 13.12 by intervening built form, vegetation and subtle variations in landform not captured within base data, it is evident that the potential for any effects to arise upon the LCAs will be very limited, with no direct physical effects and effects confined to localised and limited visual effects at distances of at least c30km upon the character of views from within the LCAs. On that basis there is no prospect of 'Significant' effects arising and thus no need to consider potential effects upon landscape character further.

13.151. As noted above in the 'Scope of the Assessment' section, the ZTV studies indicate the limited areas of theoretical visibility for land-based receptors and thus confirm the appropriateness of scoping out the need to assess potential effects upon landscape character. In reviewing these, it should be remembered that the ZTVs indicate theoretical visibility, that there are limitations on visual acuity and that prevailing weather and atmospheric conditions, although never factored into the assessment, will also noticeably limit theoretical visibility at greater distances.

13.152. As noted above, in the ZTV studies, the analysis of the ZTVs, combined with further appraisal on site, indicated that visibility of the optimised Seagreen Project would be considerably limited from within much of the various landscape character areas. Therefore, any potential effects would be confined to limited visual effects arising from a distant offshore element located well beyond the boundaries of the landscape character area, at distances in excess of 30km and with no direct impacts upon the physical defining characteristics and elements of the character areas. The potential for effects on character at these points would, therefore, be noticeably limited with no prospect of Significant effects being identified and thus they are not considered further within the assessment.

Seascape Character

13.153. Seascape Characterisation is based on a coastal and marine adaptation of the established concept of Landscape Character Assessment (see methodology in Appendix 13A). The first step is to define the spatial extent of the seascape units and the 2001 guidance, 'Guide to Best Practice in Seascape Assessment', known as GSA (2001), sets out the methodology for this. It defines seascape units based on physical size from major (national) seascape units through intermediate (regional) sized seascape units down to micro seascape units.

13.154. The document 'Guidance on the Assessment of the Impact of Offshore Wind Farms', known as DTI (2005), provides further guidance on characterisation, as does more recent guidance from CCW (now Natural Resources Wales) and SNH. Natural England also published a report on Seascape Character Assessment in October 2012, entitled 'An Approach to Seascape Character Assessment' which advocates an approach to seascape characterisation that is more aligned with that commonly applied for landscape character.

13.155. More recently, SNH has published reports for 'Offshore Renewables – Guidance on Assessing the Impact on Coastal Landscape and Seascape', in 2012 and 'Guidance on Coastal Character Assessment' in 2017 which provide guidance to seascape character assessment and scoping an offshore assessment.

13.156. The methodologies prescribed in these guidance documents have been considered alongside the 'Regional Seascape Character Assessment' produced by FTOWDG in 2011 which identified Regional Seascape Units (RSCUs) across the study area as part of the 2012 Offshore ES produced for the originally Consented Project (see Appendix 13B, Volume III: Appendices of this EIA Report). These RSCUs have been reviewed for their validity and use in the current assessment to check that the areas retain the aspects noted in the FTOWDG study.

National Seascape Units

13.157. National Seascape Units (NSUs) are defined as an extensive section of the coast with an overriding defining characteristic such as coastal orientation or landform, defined by major headlands of national significance. The SNH Commissioned Report No. 103 (Scott, K.E. *et al.*, 2005) divides the Scottish coastline into 33 indicative National Seascape Areas. These areas were assessed for their sensitivity to a fixed scenario for offshore wind energy development.

13.158. There are four NSUs located within the 50km study area (see Figure 13.12 – Seascape and Landscape Character Areas). They are defined below with the established sensitivities reviewed and retained from the 2012 Offshore ES for the originally consented project (see Appendix 13B [2012 SLVIA Baseline]):

- Unit 1: Berwick Upon Tweed, (Sensitivity: Low – Medium)
- Unit 2: Firth of Forth, (Sensitivity: Medium);
- Unit 3: East Fife/Firth of Tay (Sensitivity: Medium); and
- Unit 4: North East Coast (Sensitivity: Low – Medium).

13.159. These NSUs provide the broad level for understanding the seascape within the study area. However, given their scale and the presence of more detailed regional seascape units, the NSUs are not assessed in detail. This is in line with SNH Guidance on Coastal Character Assessment (para 3.8) and consistent with the SLVIA for the originally consented project which noted that there would be no more than Minor to Moderate significance of effects within these areas, due to a variety of factors including the distance from the Seagreen Project.

13.160. As such, it is not considered that the applications for an optimised design, that is sited within the same section of sea as the originally consented Project, is sufficent to require any clear change in the existing thresholds for significant change at points 7km beyond the outer seaward extent of these NSUs and they are not assessed further.

Regional Seascape Units

13.161. As part of the collaborative approach to impact assessment undertaken by the FTOWDG, a common seascape character baseline was prepared to inform the 2014 SLVIA for the originally consented project. This was produced to ensure consistency between SLVIAs for the offshore wind farms in the Firth of Forth and Tay area.

13.162. The Seascape Character Assessment (SCA) was undertaken following discussions between FTOWDG, SNH and local authorities (including Angus Council, Fife Council, East Lothian Council and Scottish Borders Council). The SCA was developed jointly by the landscape consultants representing the developers in the FTOWDG. The methodology and approach were developed by the three landscape consultants and subsequently agreed with SNH. This characterisation, which includes descriptions of all the regional units and their sensitivities, was set out in the SLVIA for the originally consented project and is included as an appendix to this chapter (see Appendix 13B [2012 SLVIA Baseline]).

13.163. Regional Seascape Units (RSCUs) are a subdivision of the national units and are defined by regional headlands, islands and coastal features. Within the study area for the optimised Seagreen Project they are defined as Seascape Areas (SAs) in the SCA produced by FTOWDG. Nine RSCUs (SAs) are identified within the main 50km study area (see Figure 13.12).

13.164. Table 16.17 within the SLVIA for the originally consented project provided a summary of the impact on these RSCUs. This summary has been reviewed to re-evaluate the potential for change arising from the optimised Seagreen Project, using the analysis of the ZTVs (see Figures 13.2 to 13.14). This is consistent with the 2017 Scoping Opinion.

13.165. As the hub height and blade tip height banded ZTVs (see Figures 13.2 to 13.7) illustrate, subject to suitable visibility and atmospheric conditions, the hub height visibility of the optimised Seagreen Project WTGs will start to tail off at around 40km such that at around 50km fewer than 15% of the WTGs will be visible below hub height (see Figure 13.4). The blade tip ZTVs indicate (see Figures 13.5 to 13.7) that just beyond 50km some of the WTGs will fall wholly out of view such that, at around 60km fewer than half will potentially be visible and at just under 70km no element of the WTGs will be visible, unless the receptor is located on higher elevated land (see Figure 13.7).

13.166. As the comparative ZTVs further indicate (see Figures 13.9 to 13.11) the geographic extent of additional visibility relating to the optimised Seagreen Project, is minimal.

13.167. A review of the conclusions of the SLVIA for the originally consented project also reveals that from the more distant RSCUs where the magnitude of effect was identified as Negligible, or Low with a corresponding Medium sensitivity, the optimised Seagreen Project, would not be of sufficient scale as to constitute an additional significant effect at these distant locations. This was reviewed and evidenced further from the viewpoint photomontages and wireframes (see Figures 13.20 to 13.33) and through fieldwork assessment.

13.168. For these collective reasons, and mindful of the encouragement that assessments should be proportionate and focus upon potentially significant effects, only the following RSCUs are considered within the detailed assessment, with the remaining RSCUs at SA2, 8, 12 and 13, scoped out (see Appendix 13B [2012 SLVIA Baseline]).

- SA3: Cove Bay to Milton Ness RSCU (Sensitivity: Medium);
- SA4: Montrose Bay RSCU (Sensitivity: High);
- SA5: Long Craig RSCU (Sensitivity: Medium);
- SA6: Lunan Bay RSCU (Sensitivity: High); and
- SA7: Lang Craig to The Deil's Heid RSCU (Sensitivity: High).

Physical and Human Influences on the Landscape/Seascape within the Study Area

13.169. Key elements relating to physical and Human Influences on the Landscape and Seascape are provided in detail within Appendix 13B (2012 SLVIA Baseline). The principal elements listed below assist with setting the context for the optimised Seagreen Project:

- The north-west of the 50km study area generally gives way to low-lying cliffs or steep slopes above the sea. The shoreline is rocky and interspersed with small coves and shingle beaches;

- The west of the 50km study area is a predominantly gently sloping and low-lying seascape, and is mostly flat around Montrose Bay, where there is a strong horizontal emphasis. Vertical elements are provided by the dunes, the cliffs and coniferous plantations in some areas;
- South of Usan, the coastal edge gains in height with steep slopes between the shoreline and the fields above. The cliffs of Rickle Craig are approximately 50m high;
- The low-lying coastline between Arbroath and Monifieth has a strong horizontal emphasis, heightened on the coastal edge by extensive rocky platforms, interspersed with lengths of sandy beach; and
- The south-west of the 50km study area approaches the Fife coastline. The area is a mix of relatively straight, but indented coastal edge, marked by low cliffs, rocky platforms and the occasional sandy bay and foreshore such as at Tentsmuir beach, giving way to an undulating agricultural hinterland.

Visual Receptors

13.170. Visual receptors are "the different groups of people who may experience views of the development" (GLVIA 3, para 6.3).

13.171. The different types of receptor groups within the study area encompass residents within settlements; people using key routes such as roads; cycle ways or long-distance paths; people within accessible or recreational landscapes; people using public rights of way; or people visiting key viewpoints. In dealing with public rights of way and local roads, receptors are grouped into areas where effects might be expected to be broadly similar, or areas which share particular factors in common (e.g. routes within an area of designated landscape).

13.172. Potential visual receptors are located both onshore (land based) and offshore (marine based), although the vast majority of views are likely to be experienced from the coastline at distances in excess of 30km within Aberdeenshire and Angus, in excess of 50km from Fife and, very rarely, up to 70km from the East Lothian coastline.

13.173. Offshore receptors are likely to be limited to recreational users of the marine environment, including those involved in yachting, and passengers on ships, or people working in the marine environment, such as fishermen and crews of ships and those in the oil and gas industry operating principally out of Aberdeen.

13.174. The representative viewpoints within the study area were agreed with the consultees and have been selected to assess the effects on visual receptors.

13.175. The receptor groups identified within the SLVIA for the originally consented project (see Appendix 13B [2012 SLVIA Baseline]) have been reviewed and updated as appropriate for the optimised Seagreen Project. They are detailed below and their locations are shown in Figure 13.14 – Visual Receptors. These updates are in line with the GLVIA 3 methodology guidance published post the 2012 Offshore ES and now transparently factor in susceptibility and value to the baseline resource, to determine receptor sensitivity. Receptors have also been scoped out where no prospect of a significant effect is identified, as noted below. This includes a number of the land-based receptor groups away from the immediate coastal edges. For details of the respective sensitivity of the identified visual receptor groups, refer to the Assessment Terminology and Judgements section above and to Appendix 13A (SLVIA Methodology).

Settlements

13.176. The settlement pattern along the Aberdeenshire, Angus and Fife coast, within the 50km study area, consists of a number of towns and villages along the coastline separated by five to 12 miles of open countryside and connected by the A92 in Aberdeenshire, the A917 in Fife and by lower order roads in Angus.

13.177. Aberdeen is situated just outside the northern edge of the main 50km radius study area. The main towns within the 50km radius study area include Stonehaven, Montrose, Arbroath, Brechin, Carnoustie, Portlethen, Inverbervie and Laurencekirk. A number of key villages include Newtonhill, Glenbervie, Gourdon, Fettercairn, Johnshaven, St Cyrus, Hillside, Inverkeilor, Friockheim and Kingbarns.

13.178. The sensitivity of visual receptors within settlements is characterised by the sensitivity of residential properties within those settlements. As noted above in the Assessment Terminology and Judgements section and in more detail in Appendix 13A (SLVIA Methodology).

Route Corridors – Roads, Railways, Cycle Routes and Footpaths

13.179. There are numerous route corridors, many of which are associated with urban development, while others provide access to the wider countryside. Using the conclusions of the SLVIA for the originally consented project as the starting point, these receptors were checked on site and, supported by a review of theoretical ZTVs (see Figure 13.8 which models in key areas of woodland as obstructions) it was considered that any potential increase in the magnitude of effects that might arise would be insufficient as to bring about any likelihood of a 'significant' effect and therefore it is considered that visual receptors on roads and railways can be scoped out from further assessment.

13.180. One National Cycle Network Sustrans route traverses the study area, primarily along the coastline. National Cycle Network 1 (NCN1) extends along the Angus and Aberdeenshire coastline to Aberdeen. As noted in the SLVIA Methodology, users of cycle routes are classed as High to Medium sensitivity receptors as these routes are nationally important and designated routes, and the attention of those who use them tends to be focused on the landscape.

13.181. The study area includes one mainline railway (East Coast Mainline Railway), connecting Aberdeen with Dundee, via Carnoustie, Arbroath and Montrose. As noted in the Assessment Terminology and Judgements section above, and in more detail in the SLVIA Methodology, users on railways are classed as Medium to Low sensitivity receptors.

13.182. The study area includes a long-distance footpath, known as the Fife Coastal Path. It runs the length of the Fife coastline from Largo Bay to Tayport. As noted in the Assessment Terminology and Judgements section above and in more detail in Appendix 13A (SLVIA Methodology), users of long distance footpaths are classed as High to Medium sensitivity receptors as these routes are nationally important and designated routes, and the attention of those who use them tends to be focused on the landscape.

Recognised Vantage Points

13.183. Elevated locations along the coast act as formal vantage points from which visual receptors will have a good view out to sea. These locations include those at Fife Ness, Newtonhill and St. Cyrus (Beach Road). There are also beach level locations at Arbroath, Montrose, Carnoustie, Stonehaven, Lunan, Johnshaven and Inverbervie which act as informal vantage points out to sea.

13.184. In addition, there are various car parks sited off the A92, which are located on top of cliffs and act as informal vantage points affording views out to sea whilst, further inland, there are hilltop viewpoints at Drumtochy Forest and Durris Forest, and other locations which offer coastal and marine views.

13.185. Visual receptors at all of the above identified vantage points will have a High sensitivity to change as visual receptors at these locations tend to pause and take in the view and often focus on the horizon. Refer to the Assessment Terminology and Judgements section above for more detail.

13.186. There are further locations along the coast beyond the 50km study area, within the extended areas of East Lothian, which are formally recognised as vantage points including Dunbar Cliffs and inland at North Berwick Law. Similar inland vantage points occur within Angus at, for example, the Braes of Angus. The inclusion of these viewpoints within the assessment was requested through the SLVIA-focused consultation. The location of all agreed viewpoints is illustrated on the ZTVs included within Figures 13.2 to 13.12 and as noted in Table 13.3.

Recreational Receptors

13.187. Apart from informal recreational activities such as walking and cycling, there are a small number of other recreational visual receptors along the coast. There are several golf courses included within the study area which have several clubs using them and comprise more than one course at each links. These include Stonehaven Golf Club in Aberdeenshire, Montrose Golf Links, Arbroath Golf Links and Carnoustie Golf Links, all located within Angus; and, the Crail Golfing Society in Fife. Visual receptors at golf courses are assessed as having a Medium sensitivity to change, in line with the 'Assessment Terminology and Judgements' section above, as the focus of golfers tends to be upon the sport rather than the surroundings. There are no identified country parks within the main 50km study area.

Tourist Attractions

13.188. Many of the tourist attractions are located within the settlements of the optimised Seagreen Project study area. Within these settlements there are numerous hotels, cafes, bars and tourist shops as well as specialist attractions such as museums and visitor centres. Where there is the potential for direct visibility of aspects of the optimised Seagreen Project for these visual receptors they are assessed as having a High-Medium sensitivity in line with the Assessment Terminology and Judgements section above.

13.189. One of the other attractions for tourists is the coast's beaches that allow direct views out to sea. Receptors at these locations have a High sensitivity to change. These include receptors at the beaches of St. Cyrus, Montrose, Lunan Bay, Arbroath, Elliot, East Haven, Carnoustie, Barry Sands North, Buddon Sands, Cambo and Balcomie, as shown on Figure 13.14, Visual Receptors.

13.190. Within the study area, there are numerous camp sites and caravan parks, many of which are oriented towards the sea and have a High sensitivity to change. The key sites include Wairds Park Caravan Site and East Bowstrips Caravan Park to the north of Montrose and Seaton Estate Holiday Village in Arbroath.

Marine Receptors

13.191. In addition to the land-based visual receptors, there are also people out at sea who may experience views in the direction of the optimised Seagreen Project.

13.192. The seascape is relatively busy, traversed by commercial and recreational vessels, many of which are associated with ports and harbours in the Firths of Tay and Forth outside the

study area (see Chapter 12 [Shipping and Navigation] of this EIA report). No commercially operated pleasure cruises have been identified along this section of the coast.

13.193. The Bell Rock Lighthouse is a heritage feature situated approximately 17.5km from Arbroath, 22.5km from St Andrews on the Fife coast and approximately 28km from the nearest turbine of the optimised Seagreen Project. At approximately 35m in height it is a well-preserved and operational lighthouse built between 1806 and 1811 and is the oldest surviving rock-built lighthouse in Britain. The lighthouse was automated in 1988. From its location there are wide views over the surrounding seascape with the coasts of Angus, Fife, the Lothians and the Scottish Borders in the distance. However, due to the distance from the shore, the Bell Rock Lighthouse is rarely seen from the land, as anything more than a small white feature, or as an intermittent light during the night. In anything but clear weather conditions, the Bell Rock Lighthouse is not visible from the land. Although, there are a limited number of boat trips a year to the lighthouse, landing will be very infrequent and inadvisable because it is automated and unmanned. Therefore, any views from marine receptors around the Lighthouse would be more likely to be related to transient visitors, who would have a Medium sensitivity to change. This is evidenced by the viewpoint wireframes in Figures 13.20 to 13.33.

Viewpoints

13.194. Consistent with the agreement within the MS-LOT Scoping opinion, the visual assessment incorporates the same eight viewpoints utilised within the SLVIA for the originally consented project (see Appendix 13B [2012 SLVIA Baseline]). These all lie within, or just beyond the 50km radius study area.

13.195. An additional six viewpoints for the SLVIA have also been requested and considered through further SLVIA-focused scoping consultation, as noted in Table 13.3. This includes email and letter correspondence with SNH, MS-LOT and the planning authorities for Angus, Fife, East Lothian and Aberdeenshire, over the period February to May 2018. These are identified in the table below as viewpoints 9 to 14.

13.196. These viewpoints are not intended to cover every single view possible but, rather, are intended to be representative of the views potentially available (subject to visibility conditions) to a range of receptor types (e.g., residents, walkers, tourists, road users, etc.) from publically accessible locations, and also different directions, distances and experiences, from the optimised Seagreen Project. The full Methodology for identifying and agreeing representative viewpoints is identified in Appendix 13A (SLVIA Methodology).

13.197. As the ZTVs and wireframe for viewpoint 10 indicates (see Figure 13.29) the potential for visibility towards the optimised Seagreen Project will be marginal from this viewpoint at Dunbar Cliffs, with no significant effects predicted from this location on the basis of both the ZTV and wireline in Figure 13.29. As a result, this viewpoint will not be considered further, in detail. The additional viewpoints at 9, 11-14 are considered further within the assessment section.

13.198. The viewpoint assessment has been used to inform and illustrate the assessment of effects upon seascape and landscape character and the assessment of effects on views.

13.199. The locations of the optimised Seagreen Project viewpoints are illustrated within all ZTVs (see Figures 13.2 to 13.11). Table 13.3 below lists the viewpoints included within the assessment and provides information on their location and distance from the optimised Seagreen Project, the principal visual receptors considered and their associated sensitivity to the type of change proposed.

Table 13.3 Assessment Viewpoints

VP. No.	Viewpoint Name	Approximate distance to optimised Seagreen Project (Km)	Direction from optimised Seagreen Project	Principal Visual Receptors	Sensitivity
1	Garron Point (Stonehaven Golf Club)	38	NNW	Golfers	Medium
2	Beach Road, Kirkton, St Cyrus	32	NW	Visitors, walkers	High-Medium
3	White Caterthun Hill Fort	52	NW	Visitors	High
4	Montrose	33	NW	Residents, visitors	High-Medium
5	Braehead of Lunan	35	WNW	Cyclists, residents, road users	High-Medium
6	Arbroath Signal Tower	40	W	Walkers, residents	High
7	Carnoustie	49	WSW	Residents, visitors	High-Medium
8	Fife Ness, Lochaber Rock	50	SW	Walkers, visitors	High
9	North Berwick Law	73	SW	Visitors – Walkers/ enjoyment of scenery.	High
10	Dunbar Cliffs (Scoped out)	70	SW	Residents, visitors	High-Medium
11	Pinderachy	61	W	Visitors – Walkers/ enjoyment of scenery.	High
12	The Geot/Ben Tirran (a corbett)	71	W	Visitors – Walkers/ enjoyment of scenery.	High
13	Isle of May	55	SW	Visitors – summer months.	High-Medium
14	Bell Rock Lighthouse	30	SW	Visitors – summer months.	High

13.200. All except four viewpoints are at coastal locations, close to or within settlements, which already have moderate levels of street lighting or residual lighting pollution from the settlement. The four viewpoints where views would be obtained from more rural viewpoints are Fife Ness (VP8), White Caterthun Hill Fort (VP3), Pinderachy (VP11) and The Geot/Ben Tirran (VP12). In all cases visitors are likely to have returned home before full nightfall. The viewpoint receptors are therefore considered to have low sensitivity to night-time lighting associated with the optimised Seagreen Project.

Night Time Lighting and Sensitivity

13.201. The night-time visual scene is dependent on the perception of existing elements of light and the resultant relative darkness of a landscape or seascape. The landscape and seascape is perceived differently at night, between dusk and dawn. The strength of moonlight and thus the degree to which a landscape or seascape, is naturally lit, varies according to the phase of the moon and weather conditions.

13.202. Light can be accommodated within many night-time scenes, providing that the intensity of the light is at an acceptable level, relating to the degree of existing darkness or lightness of an area and the context from within which a light source is viewed. The sensitivity of the existing night-time landscape and seascape is assessed, based on the landscape and seascape character assessments, and the findings of night-time field survey. The sensitivity of a night time landscape or seascape, and its capacity to accommodate lighting depends on a variety of factors, including existing levels of lighting, intervisibility, distance, atmospheric conditions, remoteness, scenic quality, and enclosure from landform, and vegetation, and settlement patterns.

Predicted Future Baseline

13.203. The principle and the acceptability of three offshore wind farms (including the originally consented project) being located within the locality has effectively already been established through the existing and still valid consents that apply to Inch Cape, Neart na Gaoithe and the originally consented project. Given the existing consents this means that the existing baseline environment will change and that the nature of this change will depend upon the phased delivery of the three sites and whether they secure funding support. The possibility of further changes occurring to the existing baseline environment is also dependent upon the likelihood of further schemes within the full extent of the Seagreen Round 3 zone coming forward and other Areas of Search (AoS) in line with Marine Scotland's 'Scoping 'Areas of Search' study for offshore wind energy in Scottish Waters, 2018' and whether they are deemed by the authorities to be acceptable or not.

13.204. The wider baseline of the study area will also change with activities associated with other types of larger-scale developments including the temporary mooring of retired oil drilling rigs off the Aberdeen coast or within the near shore/in-firth areas associated with the Firth of Forth and Tay Ports area, such as at Dundee's Prince Charles Wharf and at Safe Bristolia. These are discussed in the Cumulative Impacts section.

ASSESSMENT OF EFFECTS – WORST CASE SCENARIO (WCS)

13.205. To inform the impact assessment on SLVIA, a worst case scenario has been defined using the information contained within the optimised design envelope for the Seagreen Project, Chapter 5 (Project Description) of this EIA Report. This SLVIA considers the effects of the optimised Seagreen Project based on the WCS. The WCS represents, for any given effect, the scenario within the range of options in the design envelope that would result in the greatest potential for change to the receptors assessed.

13.206. The analysis within the FTOWDG '*Design Sensitivity Analysis*' study (SLR Consulting on behalf of FTOWDG, 2011) concluded that there was little perceptible difference in the appearance of the respective design scenarios and that it would be logical to use the tallest WTGs for the SLVIA, given that a greater height of WTG would be most visible from the higher land-based viewpoints. This was also the response within the 2017 Scoping Opinion and the generic consultee response to the SLVIA-focused consultation (Table 13.1).

13.207. The design optimisation process carried out for the optimised Seagreen Project identified a range of parameters within which a commercially viable and environmentally sensitive scheme could be taken forward. The SLVIA has been undertaken on the basis of the indicative layout indicated in the ZTVs and as agreed with consultees (see Figures 13.2 to 13.14). With the SLVIA identifying where lesser effects would arise as a result of only Project Alpha or Project Bravo being built.

13.208. Whilst this SLVIA considers the change in effects arising from both Project Alpha and Project Bravo, the focus of the assessment is upon the two projects combined as the optimised Seagreen Project. The parameters identified as the WCS for assessment purposes comprise 120 WTGs for the combined Project Alpha and Project Bravo schemes, utilising WTGs with a hub height of 170m and a blade tip height of 280m. A maximum of 70 WTGs may be included within a single site with the remaining site incorporating a maximum of 50 WTGs. Project Alpha is the closest to the coastline with the greatest potential to give rise to adverse impacts to visual receptors and therefore the WCS for SLVIA assumes a combined development of 70 WTGs within Project Alpha and 50 WTGs within Project Bravo. This is as illustrated within the set of ZTVs (see Figures 13.2 to 13.14) and the accompanying wireframes views which show the WCS for the optimised Seagreen Project and the other offshore wind farm developments within the study and search areas.

13.209. While the focus of the SLVIA is on the optimised Seagreen Project, lesser effects that would arise as a result of only Project Alpha or Project Bravo being built are also considered and reported. This approach, was agreed with consultees during the SLVIA-focused consultation (Table 13.1).

13.210. To note, the SLVIA effects during the construction and decommissioning phases are considered to be broadly similar, with a slightly reduced level of activity for the decommissioning phase, due to the fact that seabed located elements such as WTGs foundations and subsea cables are not required to be removed. As the processes and vessels involved in decommissioning are similar to construction, albeit undertaken in reverse order, it is logical to address the potential effects of decommissioning with construction.

13.211. Table 13.4 identifies the worst case scenario in relation to those issues scoped into the assessment for the SLVIA and provides justification as to why no other scenario would result in a greater impact on the receptors considered.

METEOROLOGICAL CONTEXT

13.212. The degree, extent and likelihood of visual effects arising from the optimised Seagreen Project is an amalgam of a variety of different factors, not least the prevailing weather conditions that occur in the vicinity at any one time which can determine changes in character and visibility with varied wind, light, tidal movements and the clarity, or otherwise of the atmosphere. This information is noted within the SLVIA, but it is highlighted that it is not factored into the assessment judgements.

13.213. The meteorological and climate information has been sourced from Leuchars Met Office. The information gives a summary of general maritime conditions including details on currents, tidal streams, flow, sea level and tidal surges, sea swell and sea surface temperature. All of these will interact with air conditions, particularly temperature, to produce localised weather conditions which intermittently determine coastal visibility within the vicinity of the optimised Seagreen Project. Table 13.5 presents the visibility assumptions, highlighting key figures for the assessment in yellow where they relate to the nearest sections of coastline to the optimised Seagreen Project and the full extent of the main 50km study area.

Table 13.4 Worst Case Scenario Justification

Type of Effect	Worst Case Scenario (individual project)	Justification/Rationale of Selected Design Envelope Parameter
Construction		
Effects upon seascape character (Note: These are temporary effects)	70 WTGs within Project Alpha and 50 WTGs within Project Bravo (280m blade tip height) associated infrastructure, lighting and vessel movement as per construction phase.	Greatest amount of construction activity, number of vessels and vessel movements anticipated, arising from the construction of 120 turbines, and associated infrastructure, all of which impact upon the perceived character of the seascape and the characteristic level of human activity.
Effects upon Visual receptors (Note: These are temporary effects)		The greatest amount of construction activity, number of vessels and vessel movements is anticipated to arise from the construction of 120 turbines, and associated infrastructure, all of which bring about visual impacts upon visual receptors.
Night time effects (Note: These are temporary effects)		The greatest amount of construction activity, number of vessels and vessel movements anticipated, arising from the construction of 120 turbines, and associated infrastructure, all of which potentially bring about the greatest effect in terms of night time lighting levels and thus potential impacts upon visual receptors and seascape character.
Operation		
Effects upon seascape character	70 WTGs within Project Alpha and 50 WTGs within Project Bravo (280m blade tip height) associated infrastructure, lighting and vessel movement as per construction phase.	The identification of the WCS included a review of comparative ZTVs and an analysis of wireframes for each layout, using the selected representative viewpoints. The review indicated that while there is little difference in the geographic extent of theoretical visibility between the different layout options, there is a generally small increase in the geographic extent of visibility of the 280m turbines due to the greater height of the turbines.
Effects upon Visual receptors (Note: These are temporary effects)		The identification of the WCS included a review of comparative ZTVs and an analysis of wireframes for each layout using the selected representative viewpoints. The review indicated that while there is little difference in the geographic extent of theoretical visibility between the different layout options, there is a generally small increase in the geographic extent of visibility of the 280m turbines due to the greater height of the turbines.

Type of Effect	Worst Case Scenario (individual project)	Justification/Rationale of Selected Design Envelope Parameter
Night time effects (Note: These are temporary effects		The identification of the WCS included a review of comparative ZTVs and an analysis of wireframes for each layout using the selected representative viewpoints. The review indicated that while there is little difference in the geographic extent of theoretical visibility between the different layout options, there is a generally small increase in the geographic extent of visibility of the 280m turbines due to the greater height of the turbines.
Decommissioning		
As construction phase		
Cumulative		
Effects upon seascape character	70 WTGs within Project Alpha and 50 WTGs within Project Bravo (280m blade tip height) associated infrastructure, lighting and vessel movement as per construction phase.	The identification of the WCS included a review of comparative ZTVs and an analysis of wireframes for each layout using the selected representative viewpoints. The review indicated that while there is little difference in the geographic extent of theoretical visibility between the different layout options, there is a generally small increase in the geographic extent of visibility of the 280m turbines due to the greater height of the turbines.
Effects upon Visual receptors (Note: These are temporary effects)		The identification of the WCS included a review of comparative ZTVs and an analysis of wireframes for each layout using the selected representative viewpoints. The review indicated that while there is little difference in the geographic extent of theoretical visibility between the different layout options, there is a generally small increase in the geographic extent of visibility of the 280m turbines due to the greater height of the turbines.
Night time effects (Note: These are temporary effects		The identification of the WCS included a review of comparative ZTVs and an analysis of wireframes for each layout using the selected representative viewpoints. The review indicated that while there is little difference in the geographic extent of theoretical visibility between the different layout options, there is a generally small increase in the geographic extent of visibility of the 280m turbines due to the greater height of the turbines.

13.214. Based on the assumptions presented in Table 13.5 it can be concluded that at any point along the coast (approximately 30km at its closest landfall point from the optimised Seagreen Project), the nearest WTGs of the optimised Seagreen Project will be visible for approximately 37% of each year (equivalent to 135 days per year). Between 25 to 30km, the WTGs that will be visible (from sea level) will comprise the upper two-thirds of the tower, hub and blades. Conversely therefore, it can be concluded that there will be no views of the WTGs from anywhere along the coast for approximately 63% of the year (equivalent to 230 days per year). The photomontages presented in this EIA Report (see Figures 13.20 to 13.33) were taken in conditions of generally good visibility for the time of year.

13.215. The numbers in Table 13.5 indicate that the optimised Seagreen Project WTGs will be visible on good weather days (typically high pressure with no haze in the sky) and it is acknowledged that these are the days that are more likely to attract larger visitor numbers to the coast.

Table 13.5 Visibility assumption (Adapted from Leuchars Met Office Visibility Data 2001 to 2010)

Distance	Percentage of the year when nearest WTGs would be visible	Equivalent number of days per year
0km	100%	365
0.1 to 5km	92%	336
5.1 to 10km	83%	303
10.1 to 15km	74%	270
16.1 to 20km	64%	234
20.1 to 25km	54%	197
25.1 to 30km	42%	153
30.1 to 35km	37%	135
35.1 to 40km	24%	88
40.1 to 45km	20%	73
45.1 to 50km	10%	36
>50.1km	<8%	29

Additional Considerations

13.216. A number of additional factors have been considered in relation to visibility and the prediction of the likely significant landscape, seascape and visual effects within the SLVIA Study Area. These include curvature of the earth, state of the tide and the limitations associated with the acuity of the eye (i.e. the level of detail that the eye can actually see and register at varying distances). These factors and their influence on this SLVIA are considered below.

Curvature of the earth

13.217. When the optimised Seagreen Project is viewed from locations at or near sea level, all of the proposed turbines up to and beneath hub height would sit beneath the horizon line at distances greater than 55km away, due to the effects of the curvature of the earth, meaning that only a proportion of blade tips would theoretically be visible at distances greater than this (see Figure 13.4). This figure also indicates that the visibility of some of the turbine hubs would start to disappear from view at and around distances of 40km from the site,

with only the turbine blades of these visible. These distances will be exceeded for land-based receptors, where the viewing height is noticeably elevated above sea level. The presence of hill and upland areas within the study area provides some elevated viewing locations. The angle of view gained by receptors at greater elevations above sea level would, to some degree, counteract the curvature of the earth, extending the potential availability of views of the wind farms. Modelled ZTVs and wireframes and photomontages will consequently take account of the curvature of the earth.

13.218. The potential effect of the curvature of the earth on visibility of the WTGs is described in further detail in Appendix 13A (SLVIA Methodology). It has been calculated using Global mapper software.

Acuity of the Eye

13.219. The Guide to Best Practice in Seascape Assessment (GSA) discusses the limitations of the acuity of the human eye. The guidance states that: *"At a distance of 1 kilometre in conditions of good visibility a pole of 100mm diameter will become difficult to see, and at 2 kilometres a pole of 200mm diameter will similarly be difficult to see. In other words there will be a point where an object, whilst still theoretically visible, will become too small for the human eye to resolve. Mist, haze or other atmospheric conditions may significantly exacerbate that difficulty."* Consequently, when visible in favourable conditions, an object (such as a wind turbine blade) would need to be a minimum of 3m in width to have any possibility of being seen and would be at the limits of perception by the human eye at a distance of 30km.

13.220. Similarly, an object would need to be greater than 5m wide to be visible at or beyond 50km and only the nacelle and not the blades would be large enough to be visible at this distance. However, as Figure 13.4 indicates, all but a maximum of the closest 20 turbines would theoretically be visible to hub height with the remainder of the turbine hubs sited below the horizon line when viewed from near sea level.

13.221. A combination of the curvature of the earth and the acuity of the eye will thus limit the potential for any seascape, landscape and visual effects to be experienced at distances over 50km away.

13.222. Analysis of the local landscape and seascape and the identification of visual receptors and preparation of ZTVs, wirelines and photomontages has been undertaken, to enable an assessment of the particular effects associated with the proposed development to be established. However, the likelihood of significant effects occurring within beyond 50km is limited.

13.223. GSA also gives some attention to issues associated with visibility, both from the land towards the sea, and vice versa. Clarity of visibility is in turn determined by prevailing weather conditions including such aspects as air moisture content and air pressure. Visibility in turn, influences the visual receptor's perception of distance and there are inherent difficulties in judging both scale and distance when looking across expanses of sea. Perspective can often be condensed and misread due to an absence of reference points to provide a sense of scale. Moreover, where the immediate coastline shelves gently, a further dynamic is introduced into the view, varying according to the state of the tide and the resultant extent of exposed foreshore. This can change the character of local areas on a regular basis and alter visual judgments.

ENVIRONMENTAL MEASURES INCORPORATED IN TO THE PROJECT

13.224. Throughout the design evolution process, and mindful of the findings of the SLVIA for the originally consented project, measures have been taken to avoid potentially significant impacts wherever possible and practical to do so. Mitigation measures that are incorporated into the design of the Project are referred to as 'environmental measures incorporated into the Project' i.e. embedded mitigation. These measures are intended to prevent, reduce and, where possible, offset any significant adverse impacts on the environment. These are effectively 'built in' to the impact assessment and as such, the assessment includes consideration of these embedded mitigation measures.

13.225. The need to consider the aesthetic aspect of the wind farm layout has been identified in discussions with SNH and other consultees. Chapter 3 (Site Selection and Alternatives) sets out the design development process and Chapter 7 (Scope of the EIA Report) sets out the environmental measures incorporated into the Project.

13.226. It should be highlighted that the layout is only indicative at this stage. However, given the distance of the optimised Seagreen Project from the nearest landfall, and from the large majority of landscape and visual receptors, the nuances of layout changes, is not expected to be substantive enough as to bring about an adjustment to the magnitude of effect judgements.

13.227. As noted above, embedded mitigation associated with the development principally relates to the 'pulling back' of turbine development from the western boundary of the Crown Estate's Round 3 Zone boundary for Area 2 (see Figure 13.1) and minor adjustments to the boundary location itself such that the nearest turbines are located approximately 10km further offshore than could be presented, while still complying with the development requirements of the Round 3, Area 2 boundary. However, as also noted above, the ability for further detailed design changes to the layout to translate through into moderating the magnitude of identified effect is likely to be limited. It is noted that the optimised Seagreen Projects WCS turbine layouts adhere to a more cohesive and integrated layout than the WCS layouts for either Inch Cape or Neart na Gaoithe. The optimised Seagreen Project consequently appears to be more visually comfortable which can assist in moderating potential effects.

IMPACT ASSESSMENT – CONSTRUCTION PHASE

13.228. The sources of potential effect upon the seascape character and visual amenity during the construction phase will principally derive from:

- The presence and movement of construction vessels at sea;
- Temporary 24 hour construction lighting; and
- The erection of the WTGs, meteorological masts and construction of the offshore substation platforms (OSPs).

13.229. Potential effects upon seascape character and visual amenity arising as a result of the optimised Seagreen Project will increase incrementally as the WTGs are erected. Effects resulting from the WTGs themselves are addressed under the operational phase assessment that follows.

13.230. The principal construction phase effects will derive from construction related activity and movement. Views of boat movements and boat-focused activity will occur with the optimised Seagreen Project and is not considered to be out of place in this moderately busy seascape, where large numbers of boats are moving in and out of the Forth and Tay. While

there may be locally concentrated activity, this is not considered to have the potential to give rise to significant effects on seascape character, or on views. The concentrated activity will be around the WTGs and associated infrastructure and the activities and vessels are not likely to be visible from coastal foreshores and beaches along the coast as they will lie beyond the horizon, due to the curvature of the earth, although they may be visible from higher vantage points. This will limit the potential for change in any key characteristics of the seascape.

13.231. The construction activities during the day, associated with the erection of the WTGs, meteorological masts and offshore substations, within the optimised Seagreen Project will therefore have a minor, reversible and temporary effect on seascape character receptors and given the very small scale of the activities, effects will be **Not Significant** in SLVIA terms for the range of baseline sensitivities.

13.232. During the night, the lighting associated with the presence and movement of construction activities within the optimised Seagreen Project, including Project Alpha and/or Project Bravo, may be distantly visible from elevated positions within the study area that have an unobstructed view to the sea. However, in the main, the lighting associated with construction vessels will not form a noticeably new feature in the marine environment, given the presence of occasional shipping movements out at sea and existing lighting along the coastline, as identified as characteristic elements within a number of seascape and landscape character areas. As such the night time activities will be similar in extent and effect to day time and will therefore be minor, reversible and temporary and **Not Significant i**n SLVIA terms.

13.233. In terms of visual amenity, movements of vessels during the day associated with the optimised Seagreen Project construction will be minor, reversible and temporary and as noted above, the area is already moderately busy with shipping activity. Effects will therefore be **Not Significant** in SLIVA terms for the range of baseline sensitivities.

13.234. Residents of elevated sections of coastal settlements, including Arbroath, St Cyrus, Newtonhill, Inverbervie, Gourdon, Stonehaven, and Portlethen Village, who have a view out to sea will be the main receptor potentially affected during the night as most of the other visual receptors are not active, although the views experienced by residents will be mitigated by existing lighting within the settlements itself. These receptors are assessed as low sensitivity receptors at night-time as the vast majority have lights on in their houses and curtains.. Given the low magnitude of effect at night, the construction activities associated with the erection of the WTGs, meteorological masts and offshore substations, within the optimised Seagreen Project will therefore have a minor, reversible and temporary visual impact and will be **Not Significant** in SLVIA terms.

13.235. The construction stage effects are summarised in Table 13.6 below.

Table 13.6 Summary of Construction Phase Effects

Description of Effect	Potential Effect	Proposed Mitigation Measures	Residual Effect
Construction Phase			
Effects on Seascape Character	Minor, reversible and temporary not significant effect during the day and night-time works	None	Same as potential effects
Effects on visual amenity	Minor, reversible and temporary not significant effect during the day and night-time works	None	Same as potential effects

13.236. The SLVIA effects during the construction and decommissioning phases are anticipated to be broadly similar, although at a slightly reduced level of activity for the decommissioning phase. This is due to the fact that seabed located elements such as WTGs foundations and subsea cables are not required to be removed. In both cases, the effects would be less than the effects identified for the operational phase. As the processes and vessels involved are similar, albeit the decommissioning tasks will be undertaken in reverse order, it is logical to address the potential effects associated with both these shorter-term phases in the same section. Therefore, decommissioning impacts will not be considered further within this assessment.

IMPACT ASSESSMENT – OPERATIONAL PHASE

13.237. This SLVIA assesses the potential effects that may arise as a result of the proposed optimised Seagreen Project, including Project Alpha and Project Bravo, as set out above and as set out in full in Chapter 5 (Project Description).

13.238. Whilst the SLVIA provides a standalone assessment of effects for the optimised Seagreen Project the assessment also seeks to respond to the 2017 Scoping Opinion which indicates under Question 8.2 a need to comment on the changes in visibility arising from the use of larger turbines with a suggested approach whereby a comparison with the 2014 consented scheme is made. The SLVIA thus provides additional comment and draws a summary comparison with the 2014 consented scheme to facilitate understanding of any changes in visibility arising from the use of larger turbines.

13.239. The greatest potential for significant effects will arise from the Operation and Maintenance (O&M) stage of the project as these have the potential to generate the most significant long-lasting effects due to the projected 25 year operational lifetime of the optimised Seagreen Project, after which the project would be decommissioned. Alternatively, Seagreen may apply to re-power the Project, which would require a separate EIA at that time. For this reason the SLVIA focuses upon the impacts that may arise once the project is constructed.

13.240. Whilst a 25 year operational period is regarded as long-term, the potential effects of the optimised Seagreen Project upon the seascape and landscape environments and visual amenity are reversible. This is unlike the effects of climate change, which the development is intended to mitigate. The assessment addresses the effects arising from the identified WCS as discussed above. Each effect has been assessed in its own subsection taking into consideration direct and indirect effects as well as cumulative effects (which are addressed in a separate section 'Cumulative Effects').

13.241. The assessment findings set out in the following sections have been made following field survey and desk-based assessments as set out in the 'Methodology' section above.

13.242. For the purposes of establishing intervisibility of the optimised Seagreen project with the seascape and landscape character areas, the ZTVs (see Figures 13.2 to 13.14) were analysed and the wireframe and photomontages (see Figures 13.20 to 13.33) examined.

13.243. The magnitude and subsequent significance of any effects of the optimised Seagreen Project upon the existing seascape and landscape resource is related to the capacity of the seascape unit or landscape character area to accommodate the type of change proposed and its sensitivity to the proposed change. As explained the SLVIA 'Methodology' section and Appendix 13A (SLVIA Methodology), this is assessed using the recognised Landscape Institute/Institute of Environmental Management and Assessment evaluation process, which looks at the physical form and attributes of the seascape/landscape, its quality, its sensitivity and the range of visual receptor groups that characterise the individual seascape units or character areas. The magnitude of effect upon seascape and landscape character also takes into account the scale, extent and duration of the effect.

ZTV Analysis

13.244. The banded ZTVs in Figures 13.2 to 13.7 (Volume II), illustrate the theoretical geographical extent of those areas of seascape and landscape from where the optimised Seagreen Project WTGs may be visible, assuming bare ground and no above ground obstructions. This includes separate ZTVs for Project Alpha and Project Bravo. The banded ZTV in Figure 13.8 illustrates the theoretical extent of the optimised Seagreen Project, identifying those areas where the WTGs will be visible with the screening effects associated with key obstructions of areas of woodland (derived from OS Vector Map District woodland features) modelled in. The ZTVs do not account for any further screening that the built environment, or other woodland and vegetation features may provide. Therefore, the actual extent of landward visibility will be much less extensive than that suggested by the ZTVs, including the obstructions ZTV and these can be considered precautionary.

13.245. As the banded ZTVs to hub height illustrate (see Figures 13.2 to 13.4), it can be seen that hub height visibility of the optimised Seagreen Project will tail off at around 40km such that at around 50km fewer than 15% of the turbines of the optimised Seagreen Project will be visible below hub height.

13.246. The blade tip banded ZTVs (see figures 13.5 to 13.7), indicate that just beyond 50km some of the turbines fall wholly out of view such that, at around 60km fewer than half will potentially be visible and at just under 70km no element of the turbines will be visible, unless the receptor is located on higher elevated land.

13.247. As these ZTVs indicate, the potential for notable changes in the pattern and nature of visibility, or the geographical extent of visibility that would derive from just Project Alpha or Project Bravo, is limited. This is due to the distance of Project Alpha and Project Bravo offshore and their adjacent location and similar orientation from the coastline. As such either Project Alpha or Project Bravo would very rarely add to the existing extent of visual exposure from the other and seldom provide a new defined element into the seascape resource. This is evidenced in the Comparative ZTV in Figure 13.9 whereby:

- Areas coloured green and brown identify additional areas of potential visibility associated with the Seagreen Alpha site alone; and
- Areas coloured blue and purple identify additional areas of potential visibility associated with the Seagreen Bravo site alone.

13.248. The areas of greatest theoretical visual impact arising from the optimised Seagreen Project, comprising both Project Alpha and Bravo, lie within the seascape areas of the North Sea and the immediate coastal regions of Aberdeenshire, Angus and Fife. Inland, the ZTVs also indicate the limited areas of theoretical visibility for land-based receptors.

13.249. When reviewed against the originally consented Project (see Figures 13.9 to 13.11 for Comparative ZTVs) there will be a negligible theoretical increase in geographic extent from which views of the proposed Seagreen development would be available, compared to the extent of theoretical visibility for the originally consented Project. Whilst there will, potentially, be more to see within the areas of shared visibility, as the proposed WTGs associated with the WCS are taller than the originally consented Project, further analysis of wireframes and photomontages (Figures 13.20 to 13.33) and on-site testing, indicate that there is insufficient evidence to justify the inclusion for assessment purposes of landscape and seascape receptors beyond 50km from the outermost turbines of the optimised Seagreen Project. Furthermore, the ZTVs confirm the appropriateness of scoping out the need to re-assess potential impacts upon landscape character and landscape designations, as noted in the baseline section of this chapter and as agreed through the scoping process undertaken during 2017.

13.250. It is also important to note that these ZTVs indicate theoretical visibility, and that there are further limitations on visual acuity. Not least, prevailing weather and atmospheric conditions, although not factored into the assessment, will also noticeably limit theoretical visibility at greater distances. With this in mind the extent and nature of visibility patterns were further verified by fieldwork which confirmed that the potential for significant visibility upon land-based receptors will be limited and as such these are not considered further in detail within this assessment as summarised below.

Potential Effects on Regional Seascape Character during Operation

13.251. The potential effects arising as a result of the proposed optimised Seagreen Project upon the five RSCUs identified within the baseline have been assessed below. These RSCUs all fall within the 50km study area and may have the potential to experience some degree of effect.

SA3: Cove Bay to Milton Ness RSCU

13.252. This RSCU embraces a large, fairly straight coastline, stretching for approximately 40km between Cove Bay and Milton Ness (see Figure 13.12). It lies approximately 30km at its closest landfall point from the optimised Seagreen Project. The RSCU was defined as part of the 'Regional Seascape Character Assessment' (FTOWDG, 2011). This FTOWDG study defined a number of key characteristics and elements relating to a "long-east-facing, generally 'straight' coastline with many small indentations and few significant headlands" which provides "a large scale seascape with wide, open views out to sea and along the coast". The FTOWDG study also noted the overall condition of the RSCU as medium to high quality and the sensitivity as Medium to offshore wind energy development. Viewpoint 1 lies within this RSCU and sections of the coastline include a local SLA designation, as noted in the baseline.

13.253. As the ZTVs indicate, the theoretical extent of visual exposure to the optimised Seagreen Project, including both Project Alpha and Project Bravo, is principally limited to the sea and short coastal stretches south of Stonehaven, with more intermittent patches of intervisibility on local high ground. Importantly the comparative ZTVs (Figures 13.9 to 13.11) also indicate that the potential for additional geographical visual exposure from either Project Alpha and or Project Bravo on their own would be substantially limited.

13.254. This is also the case when compared with the originally consented Project, with no new areas of visibility, or notable extensions to the extent of geographical visual exposure to those that would have resulted from the originally consented Project. This is illustrated on Figure 13.12 (Comparative ZTV with RSCUs), within Volume II of this EIA Report.

13.255. There would be no direct effects upon the landscape or coastal elements of the RSCU, nor upon the seaward extent as a result of the optimised Seagreen Project. In the north of the RSCU the scale of effect would be much lower as the wind farm would lie oblique to direct views out to the open seascape. To the south, the optimised Seagreen Project would become more noticeable and closer to the seaward limit of the RSCU. Therefore, the scale of effect is considered to be Medium-Small from this RSCU for the optimised Seagreen Project (see below for the separate assessment for Project Alpha and Project Bravo). This is due to the long-distance views outwith this RSCU approximately 15km beyond the seaward limit and the proposed WTGs occupying a small section of the wider open views across the seascape. The extent of these effects is considered to be Intermediate given the geographic area over which the effects will be experienced along the coast and the seaward extent. With Long term effects this would combine to result in a **Medium-Low** magnitude of effect for the Seagreen Project. Although not factored into the assessment, it is noted that, given the prevailing atmospheric conditions this change would only be experienced from this area between < 37% (less than 135 days a year) and < 24% (less than 88 days a year) to the north.

13.256. Taking into account the **Medium** sensitivity within this RSCU, the significance of effect arising from the optimised Seagreen Project is considered to be **Moderate-Minor** as explained by the significance of effect diagram within the SLVIA Methodology section, which is considered **Not Significant** in SLVIA terms.

13.257. For Project Alpha in isolation, the potential scale, magnitude and significance of effect is considered to be the same as the overall optimised Seagreen Project. This is due to the fact that the western side and extents of Project Alpha forms the nearest sections and same extents as the optimised Seagreen Project to this RSCU and occupies a similar orientation and proportion of the seascape area to the southeast as the optimised Seagreen Project. Therefore, effects are assessed as **Moderate-Minor**, which is considered **Not Significant** in SLVIA terms.

13.258. With Project Bravo lying a greater distance (over 12km) to the southeast side of Project Alpha and at a further distance (in excess of 40km) from the landward elements of this RSCU, the scale of effect would be reduced to Small, as it will be less apparent in the context of the RSCU. As such the Magnitude of effect will be **Low** and the Significance to **Minor**, which is considered **Not Significant** in SLVIA terms.

13.259. Summary of effects for SA3: Cove Bay to Milton Ness RSCU are provided in Table 13.7 below.

Table 13.7 Summary of Effect for SA3

SA3: Cove Bay to Milton Ness RSCU	Sensitivity	Magnitude	Significance
Project Alpha (A)	Medium	Medium-Low	Moderate-Minor (Not Significant)
Project Bravo (B)		Low	Minor (Not Significant)
Project Alpha + Project Bravo (2018)		Medium-Low	Moderate-Minor (Not Significant)

SA4: Montrose Bay RSCU

13.260. This RSCU embraces a sandy bay which extends for approximately 8km between northeast of the outflow of the River South Esk to St Cyrus. It lies approximately 32.5km at its closest landfall point from the optimised Seagreen Project. The FTOWDG study (2011) defined a number of key characteristics and elements relating to a "*a wide sandy beach backed by a line of dunes and grassland*". It also noted the overall condition is as medium quality and the sensitivity as High to offshore wind energy development, "*due to its medium scale, fairly enclosed nature with short to medium distance views across the landward component of the seascape unit that contrast with the open vistas from the coastal edge*". There are no landscape designations.

13.261. As the ZTVs indicate, the principal zones of theoretical visual exposure from the optimised Seagreen Project cover the seaward element and the elevated coastal edge with more intermittent patches of intervisibility only inland on local high ground. As the comparative ZTVs indicate, the potential for additional geographical visual exposure arising from either Project Alpha and or Project Bravo on their own would be limited. This is also the case when compared to the originally consented Project, with no new areas of visibility or notable extensions to the extent of geographical visual exposure. This is illustrated on Figure 13.12 (Comparative ZTV with RSCUs) and is a result of the distance of the proposed development offshore.

13.262. There would be no direct effects upon the landscape or coastal elements of the RSCU, nor upon the seaward extent as a result of the optimised Seagreen Project. This is the same as for the originally consented Project.

13.263. The optimised Seagreen Project would be noticeable in the central distant sections of the open seascape beyond the seaward limits of the RSCU as evidenced by Viewpoints 2 and 4 which lie within this RSCU (see Figures 13.21 and 13.23). Therefore, the scale of effect is considered to be Medium-Small from this RSCU for the optimised Seagreen Project with long distance views and the proposed WTGs occupying a small section of the wider open views across the seascape. The extent of these effects is considered to be Intermediate given the geographic area over which the effects will be experienced along the coast and seaward extent. With Long term effects this would combine to result in a **Medium-Low** magnitude of effect for the optimised Seagreen Project. Although not factored into the assessment, it is noted that given the prevailing atmospheric conditions this change would only be experienced from this area between < 37% (less than 135 days a year).

13.264. Taking into account the **High** sensitivity within this RSCU, the significance of effect is considered to be **Moderate** for the optimised Seagreen Project as explained by the significance of effect diagram within the SLVIA Methodology section of this chapter. This is considered **Not Significant** in SLVIA terms, as the effect is at the lower end of significance and 'of lesser concern' (GLVIA 3, para 3.35). This is comparable to the conclusions of the 2012 Offshore ES with no notable change in effect resulting from the optimised Seagreen Project.

13.265. When considering Project Alpha in isolation, the potential scale, magnitude and significance of effect is considered to be the same as the overall optimised Seagreen Project. This is due to the fact that Project Alpha forms the nearest sections of the optimised Seagreen Project and same extents in relation to this RSCU where it occupies a similar orientation and proportion of the seascape area to the southeast of the RSCU as the optimised Seagreen Project. Therefore, effects are assessed as **Moderate**, which is considered **Not Significant** in SLVIA terms.

13.266. With Project Bravo lying at a further point (over 12km) to the southeast side of Project Alpha and at a further distance in excess of 40km from the landward elements of this RSCU, the scale of effect would be reduced to Small, as it will be less apparent in the context of the RSCU. As such this will reduce the Magnitude of effect to **Low** but with the resultant Significance of effect remaining as **Moderate**, which is considered **Not Significant** in SLVIA terms.

13.267. Summary of effects for SA4: Montrose Bay RSCU are provided in Table 13.8 below.

Table 13.8 Summary of Effect for SA4

SA4: Montrose Bay RSCU	Sensitivity	Magnitude	Significance
Project Alpha (A)	High	Medium-Low	Moderate (Not Significant)
Project Bravo (B)		Low	Moderate (Not Significant)
Project Alpha + Project Bravo (2018)		Medium-Low	Moderate (Not Significant)

SA5: Long Craig RSCU

13.268. This RSCU embraces a "relatively small seascape unit comprises the rocky headland and associated agricultural hinterland that stretches between Scurdie Ness in the north and Lunan Bay to the south" as defined within the FTOWDG study (2011). It lies approximately 34km at its closest landfall point from the optimised Seagreen Project. The FTOWDG study defined a number of key characteristics and elements relating to a *"low-lying headland with a rocky foreshore"* with a *"gently sloping agricultural hinterland extending in places up to the coastline"* and *"sparse tree cover"* and built features such as Scurdie Ness Lighthouse and the Dundee to Aberdeen railway.

13.269. The FTOWDG study also noted the overall condition is as medium to good quality and the sensitivity as Medium to offshore wind energy development, "*derived from its large scale, open nature with expansive views of the North Sea, coupled with the relatively simple pattern of the seascape*". There are no specific landscape designations.

13.270. As the ZTVs indicate, the principal zones of theoretical visual exposure from the optimised Seagreen Project covers the seaward element and the elevated coastal edge sections and continues inland on local high ground. As the comparative ZTVs indicate, the potential for additional geographical visual exposure is substantially limited from either Project Alpha and or Project Bravo. This is also the case when compared with the originally consented Project with no new significant areas of visibility or notable extensions to the extent of geographical visual exposure resulting from the optimised Seagreen Project. This is illustrated on Figure 13.12 (Comparative ZTV with RSCUs) and due to the distance of the proposal offshore.

13.271. Within this RSCU, there would be no direct effects upon the landscape or coastal elements, nor upon the seaward extent. The optimised Seagreen Project would be noticeable in the central distant sections of the open seascape. Therefore, the scale of effect of the optimised Seagreen Project is considered to be Medium-Small on this RSCU, with long distance views and the proposed WTGs occupying a small section of the wider open views across the seascape to the north and south. The extent of these effects is considered to be Intermediate within this RSCU, with a Long-term duration. This would combine to result in a **Medium-Low** magnitude of effect for the optimised Seagreen Project. Although not factored into the assessment, it is noted that given the prevailing atmospheric conditions this change would only be experienced from this area < 37% (less than 135 days a year).

13.272. Taking into account the **Medium** sensitivity within this RSCU, the significance of effect is considered to be **Moderate-Minor** for the optimised Seagreen Project as explained by the significance of effect diagram within the SLVIA Methodology section. This is considered **Not Significant** in SLVIA terms and is comparable to the conclusions of the 2012 Offshore ES with no significant effect predicted.

13.273. When considering Project Alpha in isolation, the potential scale, magnitude and significance of effect is considered to be the same as the overall optimised Seagreen Project. This is a result of the similar extents of the Project Alpha scheme which forms the full extent of the optimised Seagreen Project from this RSCU and occupies a similar orientation and proportion of the seascape area to the east/southeast as the optimised Seagreen Project. Therefore effects are assessed as **Moderate-Minor,** which is considered **Not Significant** in SLVIA terms.

13.274. With Project Bravo lying at a further point (up to 6km) to the east side of Project Alpha and at a further distance in excess of 40km from the landward elements of this RSCU, the scale of effect would be reduced to Small, as it will be less apparent in the context of the RSCU. As such this will reduce the Magnitude of effect to **Low** and the Significance to **Minor**, which is considered **Not Significant** in SLVIA terms.

13.275. Summary of effects for SA5: Long Craig RSCU are provided in Table 13.9 below.

Table 13.9 Summary of Effect for SA5

SA5: Long Craig RSCU	Sensitivity	Magnitude	Significance
Project Alpha (A)	Medium	Medium-Low	Moderate – Minor (Not Significant)
Project Bravo (B)		Low	Minor (Not Significant)
Project Alpha + Project Bravo (2018)		Medium-Low	Moderate – Minor (Not Significant)

SA6: Lunan Bay RSCU

13.276. This RSCU embraces a "*broad sandy beach extending for approximately 3.7km between Boddin Point and the Lang Craig. It is a backed by dunes and framed by low cliffs to the north and south*" as defined characteristics in the FTOWDG study (2011). It lies approximately 35km at its closest landfall point from the optimised Seagreen Project. The FTOWDG study also noted that it is well visited by recreational users all year round and there is traditional salmon fishing present. It further notes Lunan Water which empties into the sea and "*rocky headlands to the north and south*" and the presence of cultural heritage features.

13.277. The FTOWDG study also noted the overall condition and quality as good and the sensitivity as High to offshore wind energy development, "*due both to the lack of development in the coastal zone and the relatively sheltered nature of the bay when compared to the adjacent rocky coastline*". There are no specific landscape designations.

13.278. As the ZTVs indicate, the principal zones of theoretical visual exposure from the optimised Seagreen Project, covers the seaward element and the elevated coastal edge sections. It also covers areas inland on local high ground to the north of Lunan Water. As the comparative ZTVs indicate, the potential for additional geographical visual exposure is substantially limited from either Project Alpha and or Project Bravo. This is also the case when compared with the originally consented Project, with no new areas of visibility or notable extensions to the extent of geographical visual exposure resulting from the optimised Seagreen Project. This is illustrated on Figure 13.12 (Comparative ZTV with RSCUs), within Volume II of this EIA Report and due to the distance of the proposal offshore.

13.279. Within this RSCU there would be no direct effects upon the landscape or coastal elements of the RSCU, nor upon the seaward extent. The optimised Seagreen Project would be noticeable in the central distant sections of the open seascape as evidenced by Viewpoint 5 which lies at a high point within this RSCU. Therefore, the scale of effect of the optimised Seagreen Project is considered to be Medium-Small on this RSCU with long distance views and the proposed WTGs occupying a small section of the wider open views across the seascape to the north and south. The extent of these effects is considered to be Intermediate with a Long-term duration. This would combine to result in a **Medium-Low** magnitude of effect for the optimised Seagreen Project. Although not factored into the assessment, it is noted that given the prevailing atmospheric conditions this change would only be experienced from this area < 37% (less than 135 days a year).

13.280. Taking into account the **High** sensitivity within this RSCU, the significance of effect is considered to be, **Moderate** for the optimised Seagreen Project as explained by the significance of effect diagram within the SLVIA Methodology section. This is considered **Not Significant** in SLVIA terms, as the effect is at the lower end of significance and 'of lesser concern' (GLVIA 3, para 3.35).

13.281. When considering Project Alpha in isolation, the potential scale, magnitude and significance of effect is considered to be the same as the overall optimised Seagreen Project. This is due to the fact that that the western side and extents of Project Alpha forms the same extent of development as the optimised Seagreen Project, from this RSCU and occupies a similar orientation and proportion of the seascape area to the east as the optimised Seagreen Project. Therefore, effects are assessed as **Moderate**, which is considered **Not Significant** in SLVIA terms.

13.282. With Project Bravo lying at a further point (in excess of 5km) to the east side of Project Alpha and at a further distance in excess of 40km from the landward elements of this RSCU, the scale of effect would be reduced to Small, as it will be less apparent in the context of the RSCU. As such this will reduce the Magnitude of effect to **Low** with the resultant Significance of effect remaining at the lower end of **Moderate**, which is considered **Not Significant** in SLVIA terms.

13.283. Summary of effects for SA6: Lunan Bay RSCU are provided in Table 13.10 below.

Table 13.10 Summary of Effect for SA6

SA6: Lunan Bay RSCU	Sensitivity	Magnitude	Significance
Project Alpha (A)	High	Medium-Low	Moderate (Not Significant)
Project Bravo (B)		Low	Moderate (Not Significant)
Project Alpha + project Bravo (2018)		Medium-Low	Moderate (Not Significant)

SA7: Land Craig to The Deil's Heid RSCU

13.284. This RSCU embraces a "*continuous stretch of sea cliffs reaching up to 50m and associated rocky coastline between Lang Craig, to the south of Lunan Bay, and Whiting Ness at the eastern edge of Arbroath by St* Ninian's Well" as defined in the FTOWDG study (2011). It lies approximately 35km at its closest landfall point from the optimised Seagreen Project at Lang Craig. The FTOWDG study defined key characteristics as above but also noted that the cliffs "display a series of erosion features including sea stacks, blowholes, caves, wave cut platforms and arches". The coastline also includes *"small, narrow shingle beaches"* which are backed by *"Gently sloping agricultural hinterland contrasting strongly with rocky coastline and cliffs".*

13.285. The FTOWDG study also noted the overall condition and quality as High and the sensitivity as High to offshore wind energy development, "*due to the varied, small scale and distinctive elements associated with the coastal edge, the high quality and good condition of the area, and its sense of naturalness"*. There are no specific landscape designations although the area is noted for ecology value.

13.286. As the ZTVs indicate, the principal zones of theoretical visual exposure from the optimised Seagreen Project covers the seaward element and the elevated coastal edge sections and inland on local high ground. As the comparative ZTVs indicate, the potential for additional geographical visual exposure is substantially limited from either Project Alpha and or Project Bravo. This is also the case when compared with the originally consented Project with no new areas of visibility or notable extensions to the extent of geographical visual exposure resulting from the optimised Seagreen Project. This is illustrated on Figure 13.12 (Comparative ZTV with RSCUs), within Volume II of this EIA Report and due to the distance of the proposal offshore.

13.287. As with the originally consented project there would be no direct effects upon the landscape or coastal elements of the RSCU, nor upon the seaward extent with the optimised Seagreen Project lying in excess of 15km beyond the seaward limits. The optimised Seagreen Project would be noticeable to the northern side of the main focus of the RSCU which looks to the east and southeast. Viewpoint 6 lies just to the south side of this RSCU.

13.288. Given the *"large scale seascape with expansive views from the cliff top edge"* and long distance open views towards the optimised Seagreen Project at a separate point away from the smaller coastal features, the scale of effect is considered to be Small from this RSCU for the optimised Seagreen Project with the proposed WTGs occupying a small distant peripheral section of the wider seascape. The extent of these effects is considered to be Localised with a Long-term duration. This would combine to result in a Low to Very Low magnitude of effect for the optimised Seagreen Project. Although not factored into the assessment, it is noted that given the prevailing atmospheric conditions this change would only be experienced from this area < 37% (less than 135 days a year).

13.289. Taking into account the High sensitivity within this RSCU, the significance of effect is considered to be Moderate-Minor for the optimised Seagreen Project as explained by the significance of effect diagram within the SLVIA Methodology section. This is not considered significant in SLVIA terms and is comparable to the conclusions of the 2012 Offshore ES with no significant effect predicted.

13.290. When considering Project Alpha alone, the potential scale, magnitude and significance of effect is considered to be the same as the overall optimised Seagreen Project. This is again due to the fact that that Project Alpha forms the nearest sections of the optimised Seagreen Project from this RSCU and occupies a similar extent, orientation and proportion of the seascape area to the southeast. Therefore effects are assessed as Moderate-Minor, which is not considered significant in SLVIA terms.

13.291. With Project Bravo lying further to the east than Project Alpha (over 5km further) and at an increased distance in excess of 40km from the landward elements of this RSCU, the scale of effect would be reduced further given that it will be less apparent, but it is considered to still be Small. As for Project Alpha the Magnitude of effect will be **Low to Very Low**. Given the assessment of slightly reduced scale, the significance will be reduced to **Minor**. This is considered **Not Significant** in SLVIA terms.

13.292. Summary of effects for SA7: Land Craig to Deil's Head RSCU are provided in Table 13.11.

Table 13.11 Summary of Effect for SA7

SA7: Land Craig to The Deil's Heid RSCU	Sensitivity	Magnitude	Significance
Project Alpha (A)	High	Low to Very Low	Moderate – Minor (Not Significant)
Project Bravo (B)		Low to Very Low	Minor (Not Significant)
Project Alpha + Project Bravo (2018)		Low to Very Low	Moderate – Minor (Not Significant)

Table 13.12 Summary of Effects resulting from the optimised Seagreen Project (including Project Alpha & Project Bravo) on RSCUs

RSCU	Sensitivity (FTOWDG - 2012 ES)	Magnitude of Change optimised Seagreen Project (2018)	Magnitude of Change Project Alpha	Magnitude of Change Project Bravo	Significance of effect optimised Seagreen Project (2018)	Significance of effect Project Alpha	Significance of effect Project Bravo	Comment on change in significance from the originally consented Project
SA3: Cove Bay to Milton Ness	Medium	Medium-Low	Medium-Low	Low	Moderate-Minor **(Not significant)**	Moderate-Minor **(Not significant)**	Minor **(Not significant)**	No significant change. This SLVIA confirms no significant effect likely on this RSCU .
SA4: Montrose Bay	High	Medium-Low	Medium-Low	Low	Moderate **(Not significant)**	Moderate **(Not significant)**	Moderate **(Not significant)**	Comparable to the findings of the 2012 Offshore ES. No significant change in the level of effect.
SA5: Long Craig	Medium	Medium-Low	Medium-Low	Low	Moderate –Minor **(Not significant)**	Moderate-Minor **(Not significant)**	Minor **(Not significant)**	No significant change in the level of effect.
SA6: Lunan Bay	High	Medium-Low	Medium-Low	Low	Moderate **(Not significant)**	Moderate **(Not significant)**	Moderate **(Not significant)**	While this SLVIA notes a slight change in the significance rating it is not sufficient to change the effect on this RSCU to a significant one .
SA7: Lang Craig to The Deil'sHeid	High	Low-Very Low	Low-Very Low	Low-Very Low	Moderate-Minor **(Not significant)**	Moderate-Minor **(Not significant)**	Minor **(Not significant)**	No significant change in the level of effect

Potential Visual Amenity Effects during Operation

13.293. This section sets out the anticipated visual effects arising from the optimised Seagreen Project upon receptors at selected representative viewpoints and upon the wider visual amenity within the study area. Effects on principal visual receptor groups will arise from the presence of the WTGs in certain views.

13.294. The approach to undertaking the visual assessment is to first establish the extent of the ZTV for the development (as discussed above) and then to determine how visible the proposals would be from a range of representative viewpoints and visual receptor groups and the extent of effects upon general visual amenity within the visual envelope. The methodology for this is detailed in the 'Methodology' section of this chapter and within Appendix 13A (SLVIA Methodology).

13.295. The ZTVs illustrated in Figures 13.2 to 13.11 and 13.14 indicate the theoretical WCS in terms of the extent of visual exposure. In reality, the extent of visual effects arising from the proposed development over land will be greatly reduced, due to the subtleties of intervening landform (including, for example, the sand dunes), built form (e.g. all settlements) and localised vegetation (including hedgerows and other blocks of woodland). Prevailing weather conditions will also further influence the actual extent of visibility as noted above.

Visual Effects from Representative Viewpoints

13.296. The following analysis refers to the agreed viewpoints as set out in the 'Baseline conditions' section of this chapter. The locations of the viewpoints are identified on the ZTVs (Figures 13.2 to 13.11). Reference should be made to the existing panoramas and wireframes/photomontages (see Figures 13.20 to 13.33), which illustrate the existing view and the proposed view for each viewpoint as a wireframe/photomontage.

13.297. Assessment viewpoints are selected to represent the experience of different types of visual receptors where significant effects are unlikely to differ. This is in line with GLVIA 3 (para 6.19). The representative viewpoints were identified and agreed through consultation with viewpoints 1 to 8 being retained from the originally consented Project on the basis that they were identified as possible locations where significant effects might be anticipated. In addition to these eight viewpoints, a further six viewpoints have been included for consideration within the assessment, including viewpoints 9 to 13 which lie beyond the 50km study area. These were included, to either demonstrate the reduction of effects with distance; or to specifically ensure the representation of a particularly sensitive receptor as identified by the consultees (see Table 13.1).

13.298. As set out within the 'Methodology' section of this chapter, scale, extent and duration of effect are combined, to arrive at a judgement regarding the magnitude of effect (see diagram 13.1) and then magnitude of effect is combined with the sensitivity of a receptor, to identify the significance of the effect. (see diagram 13.2). It should be remembered that decisions are reached through professional judgement on site, not simply through the correlation of effects.

13.299. The following sections provide an assessment of the potential visual effects of the optimised Seagreen Project on representative viewpoints.

Viewpoint 1: Garron Point (Stonehaven Golf Club)

13.300. The wireframe and photomontage in Figure 13.20, illustrate that all 120 WTGs of the optimised Seagreen Project will be visible from this viewpoint. They will occupy approximately 22 degrees of the illustrated 180 degree view to the southeast, of which the sea horizon accounts for 139 degrees. The closest WTGs will be approximately 38.9km from the viewpoint and will comprise the Project Alpha WTGs, with the Project Bravo WTGs sitting to the rear of the Project Alpha WTGs, in a continuous arrangement and pattern of WTGs in the view. The WTGs will also be observed as a fairly regular arrangement across the open sea horizon, but with some potential overlap and more defined rows to the east side of the composition. To the east the WTGs will appear with some wider separation from the other WTGs.

13.301. The WTGs of the optimised Seagreen Project will be noticeable in views between bearings of 141 degrees and 163 degrees to the southeast, with Project Alpha extending across the full extent between these bearings, while Project Bravo will sit within a reduced extent, between 141 degrees and 157 degrees. Together they will be seen in long distant, open views on the horizon with open sea behind. Project Alpha will lie approximately 21 degrees to the east of the nearest section of coastline at Bowden Head to the south of Stonehaven, while Project Bravo will lie a further 6 degrees to the east.

13.302. It is considered that, post construction, the distant baseline view would be slightly altered as the optimised Seagreen Project would be visible. However, the distance to the site and the relatively small spread across the available sea horizon would prevent the optimised Seagreen project from being more conspicuous. Further factors that would moderate the scale of effect would be the numerous elements visually competing for the focus in the view, including Stonehaven and the harbour, the Aberdeenshire hillsides and the remaining open and undeveloped seaward horizon.

13.303. Post construction the baseline view would be changed in a small distant, central seascape section of the overall view, but at this distance the optimised Seagreen Project would lack definition and would only just be perceptible. The scale of effect resulting from the optimised Seagreen Project at this viewpoint is considered to be Medium – Small, with a Localised extent of effect, with the proportion of sea horizon affected, and Long-Term duration. This will result in Low to Medium magnitude of effect. This is largely a result of the Project Alpha WTG's. With the Project Bravo WTGs sitting at a further recessive and smaller section of the view the scale of effect would be reduced to Small, which would result in no more than a Low magnitude of effect, as summarised in the table below.

13.304. From this point the full rotor diameter of the nearest WTGs within the Project Alpha scheme will be visible on the far horizon, with the hubs and blades of the more distant WTGs within Project Bravo visible to the rear. On a clear day the wind farm would be seen in an expansive open view to sea. However, visibility at this point is < 24% (less than 88 days a year).

13.305. Although, the WTGs of the optimised Seagreen Project are taller than the originally consented Project, they still occupy a relatively small section of the expansive view, are fewer in number and do not appear to encroach further into the view or its components to a noticeable extent. As such the potential for the additional height of the optimised Seagreen Project WTGs to be perceived and increase the visual effect at this point is judged to be marginal. As noted in the visual baseline the key receptor group of recreational users of the golf course have a Medium sensitivity to the proposed change such that, taking account of the Low – Medium magnitude of effect, the significance of effect is assessed to

be Moderate to Minor at this location for the optimised Seagreen Project. This is considered to be **Not Significant** in SLVIA terms.

13.306. The SLVIA assessment is the same for Project Alpha, with significance of effect assessed as Moderate to Minor and therefore **Not Significant** in SLVIA terms. For Project Bravo, the magnitude of effect will be slightly reduced to Low and the significance of effect will be reduced to Minor, which is also **Not Significant** in SLVIA terms. This is comparable to the findings of the 2012 Offshore ES for the originally consented Project with no greater significance resulting from the optimised Seagreen Project.

13.307. Summary of effects for VP1: Garron Point (Stonehaven Golf Club) are provided in Table 13.13 below.

Table 13.13 Summary of Effect for VP1

VP-1: Garron Point (Stonehaven Golf Club)	Sensitivity	Magnitude	Significance
Project Alpha (A)	Medium	Low-Medium	Moderate-Minor (Not Significant)
Project Bravo (B)		Low	Minor (Not Significant)
Project Alpha + Project Bravo (2018)		Low-Medium	Moderate-Minor (Not Significant)

Viewpoint 2: Beach Road, Kirkton, St Cyrus

13.308. As the wireframe and photomontages indicate in Figure 13.21, the 120 WTGs of the optimised Seagreen Project will be noticeable from this viewpoint and will occupy approximately 26 degrees of the illustrated 180 degree view to the southeast. At this point the sea horizon accounts for 171 degrees of the overall view. The closest WTGs will be approximately 32.7km from the viewpoint. The nearest WTGs relate to Project Alpha, with the Project Bravo WTGs sitting within a central section, to the rear of the arrangement in a continuous pattern of WTGs in the view. The WTGs will be observed in a central distant section of the open seascape view. Together Project Alpha and Project Bravo as the optimised Seagreen Project will be seen as a group of WTGs and with a relatively tightly packed arrangement, which cluster into the centre and feather out towards the edges of the composition.

13.309. The Project Alpha WTGs will be noticeable in views between bearings of 105 degrees and 131 degrees, whereas Project Bravo will be evident between bearings of 110 and 128 degrees. The optimised Seagreen Project will be seen in long distant, open views on the horizon with open sea behind. The optimised Seagreen Project will also lie approximately 46 degrees to the southeast of the nearest section of coastline at Milton Ness.

13.310. It is considered that post construction, the distant baseline view would be slightly altered as the optimised Seagreen Project would be visible, however, the distance to the site and the small spread across the available sea horizon would prevent it from being more conspicuous.

13.311. Post construction, the baseline view would be noticeably changed in a small distant, central seascape section of the overall view, but at this distance would lack definition and would only just be perceptible. The scale of effect is at this viewpoint is considered to be Medium for Project Alpha and Small for Project Bravo (Medium overall for the optimised Seagreen Project), with a Localised extent of effect and Long-Term duration. It is considered that this will result in Medium magnitude of effect for Project Alpha and Low for Project Bravo (Medium overall) for the optimised Seagreen Project.

13.312. From this location the full rotor diameter of the nearest WGTs within the Project Alpha scheme will be visible on the far horizon, with the hubs and blades of the more distant WTGs within Project Bravo visible to the rear. On a clear day the wind farm would be seen in an expansive open view to sea. However, visibility at this point is < 37% (less than 135 days a year).

13.313. While the optimised Seagreen Project WTGs are taller than the originally consented project, they still occupy the same relatively small section of the expansive view. They will also be fewer in number and as such do not appear to encroach further into the view, or its components to a noticeable extent. The potential for additional height of the optimised Seagreen Project WTGs to be perceived and increase the visual effect at this point will be limited. As noted in the 'visual baseline' section of this report, the key receptor group of recreational users at this popular destination with beach access have a High-Medium sensitivity to the change such that, taking account of the Medium magnitude of effect, the significance of effect is assessed to be Major - Moderate overall for the optimised Seagreen Project. As explained by the significance of effect diagram within the SLVIA Methodology section of this chapter, this is considered **Significant** in SLVIA terms.

13.314. The SLVIA assessment is the same for Project Alpha, with significance of effect assessed as Major - Moderate and therefore significant in SLVIA terms. For Project Bravo, the magnitude of effect will be slightly reduced to Low and the significance of effect will be reduced to Moderate, which is considered to be **Not Significant** in SLVIA terms. This is comparable to the findings of the 2012 Offshore ES for the originally consented Project with no greater significance resulting from the optimised Seagreen Project.

13.315. Summary of effects for VP2: Beach Road, Kirkton, St Cyrus are provided in Table 13.14.

Table 13.14 Summary of Effect for VP2

VP-2: Beach Road, Kirkton, St Cyrus	Sensitivity	Magnitude	Significance
Project Alpha (A)	High-Medium	Medium	Major – Moderate (Significant)
Project Bravo (B)		Low	Moderate (Not Significant)
Project Alpha + Project Bravo (2018)		Medium	Major – Moderate (Significant)

Viewpoint 3: White Caterthun Hill Fort

13.316. As the wireframe and photomontage illustrate in Figure 13.22, the 120 WTGs of the optimised Seagreen Project will be evident within a small distant proportion of the available view from this high point inland. At this location they will occupy approximately 16 degrees of a particular view to the southeast, between bearings of 102 degrees and 119 degrees, descending towards the coast. This particular view lies away from the context of key views from this point across the highland foothills, which extend at separate points to the north and west.

13.317. At this location the sea horizon accounts for a total of 69 degrees but forms a small distant element within the wider view. The closest WTGs will be approximately 52.5km from the viewpoint. The nearest WTGS will relate to Project Alpha, with the Project Bravo WTGs sitting further to the east, to the rear of the Project Alpha WTGs in a continuous arrangement and pattern of turbines in the view between bearings of 105 and 117 degrees.

13.318. The WTGs of the optimised Seagreen Project will be observed as a group of WTGs within a central section of the distant seascape view. They will have a relatively tightly packed arrangement, which cluster into the centre and feather out towards the edges of the composition. They will be seen in long distant views on the open sea horizon. This allows for some clarity in the seascape and its distance to the coastal edge, to be retained, thereby forming a transparent and legible element in the wider view. There will also be a dialogue with various onshore WTGs elements which are scattered across the intervening landscape.

13.319. It is considered that post construction, the distant baseline view would be slightly altered as the optimised Seagreen Project would be visible. However, the distance to the optimised Seagreen Project and the small spread across the available sea horizon would prevent it from being more conspicuous, but at this distance would lack definition and would be difficult to perceive. The scale of effect resulting from the optimised Seagreen Project at this viewpoint is considered to be Medium-Small. This will also be the case for Project Alpha. This will be reduced to Small for Project Bravo, given the more distant location, smaller spread and reduced number of WTGs. At this point there will be a Limited extent of effect and Long- Term duration. This is assessed to result in Low – Very Low overall magnitude of effect for the optimised Seagreen Project. This will also be the case for Project Alpha, but this will be reduced to Very Low for Project Bravo.

13.320. From this location the full rotor diameter of the nearest WGTs within the Project Alpha and Project Bravo scheme will be visible on the far horizon, with the hubs and blades of the more distant WTGs visible to the rear. On a clear day the wind farm would be seen in an expansive open view to sea. However, visibility at this point is < 8% (less than 29 days a year).

13.321. Although, the WTGs of the optimised Seagreen Project are taller than the originally consented Project, they are fewer in number and still occupy a relatively small section of one particular view from this highpoint inland. As a result, the potential for the optimised Seagreen Project to increase the visual effect from the originally consented Project at this point is limited. As noted in the visual baseline section of this chapter, the key receptor group of recreational users at this well used panoramic viewpoint have a High sensitivity to change such that, taking account of the Low – Very Low magnitude of effect, the significance of effect is therefore assessed to be Moderate - Minor for the optimised Seagreen Project. As explained by the significance of effect diagram within the SLVIA Methodology section, this is considered to be **Not Significant** in SLVIA terms.

13.322. The SLVIA assessment is the same for Project Alpha, with significance of effect assessed as Moderate - Minor and therefore not significant in SLVIA terms. For Project Bravo, the magnitude of effect will be reduced to Very Low and the significance of effect will be reduced to Minor, which is also considered to be **Not Significant** in SLVIA terms. This is comparable to the findings of the 2012 Offshore ES for the originally consented Project, with no greater significance resulting from the optimised Seagreen Project.

13.323. Summary of effects for VP3: White Caterthun Hill Fort are provided in Table 13.15 below.

Table 13.15 Summary of Effect for VP3

VP-3: White Caterthun Hill Fort	Sensitivity	Magnitude	Significance
Project Alpha (A)	High	Low – Very Low	Moderate –Minor (Not Significant)
Project Bravo (B)		Very Low	Minor (Not Significant)
Project Alpha + Project Bravo (2018)		Low – Very Low	Moderate –Minor (Not Significant)

Viewpoint 4: Montrose

13.324. From this coastal location, the wireframe and photomontage (see Figure 13.23) illustrate that the 120 WTGs of the optimised Seagreen Project will be evident within a distant proportion of the available view from this low lying coastal edge. At this point the optimised Seagreen Project will occupy approximately 26 degrees of the view between bearings of 96 degrees and 122 degrees. In this context, the Project Alpha WTGs will stretch across the full extent of the 26 degree view. The Project Bravo WTGs will then extend across a central section of the arrangement, to the rear of Project Alpha, between bearings of 102 degrees and 118 degrees. This particular view lies within a central section of the open sea horizon where the sea horizon accounts for a total of 124 degrees.

13.325. The closest WTGs will be approximately 33.3km from the viewpoint and these will relate to the Project Alpha WTGs with Project Bravo sitting at a further point, in excess of 10km, to the east. Together the optimised Seagreen Project WTGs will be observed with relatively tightly packed clusters, which feed into the middle of the arrangement and feather out towards the edges of the composition. There will be no notable points of wider separation in the array and as such they will largely be read as one group of WTGs within one development on or to the rear of the distant open sea horizon. An element of stacking will appear in the centre of the array, but this is not to the detriment of the overall clustering of WTGs. The optimised Seagreen Project will be seen in the wider view with low headlines to the north and south and by intermittent built elements including a lighthouse at Scurdie Ness and promenade railings.

13.326. It is considered that post construction, a central section of distant baseline view to the sea horizon would be altered as the optimised Seagreen Project would be visible. However, the distance to the site and the relatively small spread across the available sea horizon would prevent it from being more conspicuous and it would lack definition. The scale of effect for the optimised Seagreen Project is at this viewpoint is considered to be Medium-Small. This will also be the case for Project Alpha, with the scale of effect reduced to Small for Project Bravo. At this point with the extent of effect will be Localised and Long-Term duration. This is assessed to result in Low – Medium overall magnitude of effect for the optimised Seagreen Project. This will also be the case for Project Alpha, while the magnitude of effect will be reduced to Low for Project Bravo.

13.327. At this location, the upper sections of the tower with hubs and blade tips of the nearest WGTs within the Project Alpha scheme will be visible on the far horizon, with the hubs and blade tips of the more distant WTGs, mostly within Project Bravo, just visible on the sea horizon to the rear. On a clear day the wind farm would be seen in an expansive open view to sea. However, visibility at this point is < 37% (less than 135 days a year).

13.328. While the optimised Seagreen Project WTGs are taller than the originally consented Project, they are fewer in number and still occupy a relatively small section of an expansive view across the sea horizon. The potential for this optimised Seagreen Project to increase the visual effect from the originally consented Project at this point is limited. As noted in the visual baseline section of the this chapter, the key receptor group of recreational users at this well used panoramic viewpoint have a High-Medium sensitivity to the change such that, taking into account the Low – Medium magnitude of effect, the significance of effect is assessed to be no more than Moderate overall for optimised Seagreen Project. As explained by the significance of effect diagram within the SLVIA Methodology section, this is considered to be **Not Significant** in SLVIA terms.

13.329. The SLVIA assessment is the same for Project Alpha, with significance of effect assessed as Moderate and therefore **Not Significant** in SLVIA terms. For Project Bravo, the magnitude of effect will be reduced to Low and the significance of effect will be reduced to Moderate - Minor, which is also considered to be **Not Significant** in SLVIA terms. This is broadly comparable to the findings of the 2012 Offshore ES for the originally consented Project with no greater significance resulting from the optimised Seagreen Project.

13.330. Summary of effects for VP4: Montrose are provided in Table 13.16 below.

Table 13.16 Summary of Effect for VP4

VP-4: Montrose	Sensitivity	Magnitude	Significance
Project Alpha (A)	High-Medium	Low- Medium	Moderate (Not Significant)
Project Bravo (B)		Low	Moderate – Minor (Not Significant)
Project Alpha + Project Bravo (2018)		Low -Medium	Moderate (Not Significant)

Viewpoint 5: Braehead of Lunan

13.331. As the wireframe and photomontages indicate in Figure 13.24, the 120 WTGs of the optimised Seagreen Project will be noticeable from this viewpoint and will occupy approximately 24 degrees of the 105 degree view to the open sea horizon. The closest WTGs will be approximately 36.2km from the viewpoint. These will relate to the Project Alpha WTGs with the Project Bravo WTGs sitting a further 7km to the east.

13.332. Together, the WTGs of the optimised Seagreen Project will be observed in a central distant section of the open seascape view. They will be read as a group of WTGs and with a relatively tightly packed arrangement of WTGs clusters which filter out to a lighter arrangement at the edges.

13.333. The WTGs will be noticeable in views between bearings of 89 degrees and 113 degrees. In this context, the Project Alpha WTGs will stretch across the full extent of the 24 degree view. The Project Bravo WTGs will then extend across a central section of the arrangement to the rear of Project Alpha between bearings of 95 degrees and 110 degrees. Together the WTGs will be seen in long distant, open views on the horizon with open sea behind. The optimised Seagreen Project will lie approximately 29 degrees to the east of the nearest section of coastline at Boddin Point.

13.334. It is considered that post construction, the distant baseline view would be altered as the optimised Seagreen Project would be visible, however, the distance to the site and the small spread across the available sea horizon would prevent the optimised Seagreen Project from being more conspicuous.

13.335. Post construction, the baseline view would be changed in a small distant, central seascape section of the overall view. The scale of effect at this viewpoint is considered to be Medium – Small for the optimised Seagreen Project and also for Project Alpha separately. This will be reduced to Small for Project Bravo, with a Localised extent of effect and Long-Term duration for all aspects of the optimised Seagreen Project. It is considered that this will result in Medium - Low magnitude of effect for the optimised Seagreen Project and for Project Alpha separately. This will be reduced to no more than Low for Project Bravo.

13.336. From this elevated coastal point the full rotor diameter of the nearest WGTs within the Project Alpha scheme will be visible on the far horizon, with the hubs and blades of the more distant WTGs within Project Bravo visible to the rear. On a clear day the wind farm would be seen in an expansive open view to sea. However, visibility at this point is < 24% (less than 88 days a year).

13.337. Although, WTG's of the optimised Seagreen Project are taller than the originally consented Project, they are fewer in number and still occupy the same extent of view and a relatively small section of the expansive view and do not appear to encroach further upon the wider view. The potential for the optimised Seagreen Project to be perceived more clearly and increase the visual effect at this point is judged to be limited. As noted in the visual baseline section of this chapter, the key receptor group of recreational users at this popular destination with beach access have a High-Medium sensitivity to the change such that, taking into account the Medium - Low magnitude of effect, the significance of effect is assessed to be Major - Moderate overall for the optimised Seagreen Project. As explained by the significance of effect diagram within the SLVIA Methodology section of this chapter, this is considered **Significant** in SLVIA terms.

13.338. The SLVIA assessment is the same for Project Alpha, with significance of effect assessed as Major - Moderate and therefore **Significant** in SLVIA terms. For Project Bravo, the magnitude of effect will be reduced to Low and the significance of effect will be reduced to Moderate , which is considered to be **Not Significant** in SLVIA terms. This is comparable to the findings of the 2012 Offshore ES for the originally consented Project with no greater significance resulting from the optimised Seagreen Project.

13.339. Summary of effects for VP5: Braehead of Lunan are provided in Table 13.17 below.

Table 13.17 Summary of Effect for VP5

VP-5: Braehead of Lunan	Sensitivity	Magnitude	Significance
Project Alpha (A)	High-Medium	Medium-Low	Major – Moderate (Significant)
Project Bravo (B)		Low	Moderate (Not Significant)
Project Alpha + Project Bravo (2018)		Medium-Low	Major – Moderate (Significant)

Viewpoint 6: Arbroath Signal Tower

13.340. From this elevated coastal viewpoint on the rooftop of the Arbroath Signal Tower, the wireframe and photomontage (Figure 13.25) illustrate that the 120 WTGs of the optimised Seagreen Project will be evident within a distant proportion of the available view. At this point the optimised Seagreen Project WTGs will occupy approximately 20 degrees of the view, between bearings of 73 degrees and 93 degrees, with Project Alpha occupying the full extent of the composition and Project Bravo sitting to the rear, between bearings of 83 degrees and 93 degrees. At this location Project Bravo will extend the composition to the southeast by no more than 1 degree. Importantly this particular view lies away from the important visual link from the Arbroath Signal Tower, to the Bell Rock Lighthouse which extends further to the southeast.

13.341. This particular view to the east from the Arbroath Signal Tower, lies across the harbour walls and just away from the nearest headland at Whiting Ness. The open sea horizon extends to approximately 101 degrees, but the seascape element continues for another 60 degrees across the mouth of the Firth of Tay.

13.342. The closest WTGs will be approximately 39.8km from the viewpoint. They will comprise the southwestern rows of Project Alpha with the nearest WTGs of Project Bravo sitting a further 5km to the east. Together, the WTGs of the optimised Seagreen Project will have a tightly packed arrangement of WTG clusters, which will be read as one large group of WTGs that sit beyond and to the rear of the distant sea horizon. They will also be seen in the wider view of the harbour walls and coastal promenade within Arbroath, providing a range of developed coastal edge features.

13.343. It is considered that post construction, a small section of the distant baseline view would be faintly altered as the optimised Seagreen Project would be distantly visible, however, the distance to the site and the relatively small spread across the available sea horizon would prevent it from being more conspicuous, where it would be difficult to perceive clearly. The scale of effect of the optimised Seagreen Project at this viewpoint is considered to be Small. It is also considered to be Small for Project Alpha and for Project Bravo separately. The scheme Projects will also have a fairly Limited overall extent of effect and Long-Term duration. This is assessed to result in a Low – Very Low overall magnitude of effect for the optimised Seagreen Project and for Project Alpha and Project Bravo separately.

13.344. At this location the majority of Project Alpha and Project Bravo WTGs would only be seen with the hubs and/or blade tips visible on the far horizon. On a clear day the wind farm would be seen in an expansive open view to sea. However, visibility at this point is < 24% (less than 88 days a year).

13.345. While the optimised Seagreen Project WTGs are taller than the originally consented Project, they are fewer in number and still occupy the same extent of the distant sea horizon and a relatively small section of it. As such, the potential for the optimised Seagreen Project to increase the visual effect from the originally consented Project at this point will be limited. As noted in the visual baseline section of this report, the key receptor group of recreational users at this panoramic viewpoint have a High sensitivity to change such that, taking into account the Low – Very Low magnitude of effect, the significance of effect is assessed to be no more than Moderate to Minor for the optimised Seagreen Project overall. As explained by the significance of effect diagram within the SLVIA Methodology section, this is considered to be **Not Significant** in SLVIA terms.

13.346. The SLVIA assessment is the same for both Project Alpha and Project Bravo, with significance of effect also assessed as Moderate to Minor and therefore **Not Significant** in SLVIA terms. This is broadly comparable to the findings of the 2012 Offshore ES with no significant effect resulting from the potential variation to the 2014 consented scheme.

13.347. Summary of effects for VP6: Abroath Signal Tower are provided in Table 13.18 below.

Table 13.18 Summary of Effect for VP6

VP-6: Arbroath Signal Tower	Sensitivity	Magnitude	Significance
Project Alpha (A)	High	Low – Very Low	Moderate -Minor (Not Significant)
Project Bravo (B)		Low – Very Low	Moderate -Minor (Not Significant)
Project Alpha + Project Bravo (2018)		Low – Very Low	Moderate -Minor (Not Significant)

Viewpoint 7: Carnoustie

13.348. From this viewpoint, the wireframe and photomontage (Figure 13.26) illustrate that the 120 WTGs of the optimised Seagreen Project will be evident within a distant proportion of the available view from this point on the coast. At this point, the optimised Seagreen Project WTGs will occupy approximately 18 degrees of the view, between bearings of 69 degrees and 87 degrees with Project Alpha lying between 69 degrees and 86 degrees and Project Bravo sitting to the rear between bearings of 78 degrees and 87 degrees. At this location Project Bravo will slightly extend the composition to the southeast by 1 degree. This particular view to the optimised Seagreen Project lies to the side of the available view to the sea horizon which extends up to 131 degrees.

13.349. The closest WTGs will be approximately 50km from the viewpoint. These nearest WTGs will relate to the two southwestern rows of Project Alpha with the nearest WTGs of Project Bravo sitting a further 5km to the east. The WTGs within both Project Alpha and Project Bravo will mostly sit to the rear of the distant sea horizon, with just the hubs of the nearest WTGs of Project Alpha and Project Bravo visible, and the majority of WTGs visible with just extended blade tips. Where visible the WTGs will be seen in a fairly tight arrangement and they will be read as one group of WTGs.

13.350. It is considered that post construction, only a small section of the distant baseline view would be faintly altered as the optimised Seagreen Project would be visible. However, the distance to the site and the relatively small spread and height of WTGs across the available sea horizon would mean that only a small proportion of the WTGs would be evident and as such they would be difficult to perceive, even in clear weather conditions. The scale of effect of the optimised Seagreen Project at this viewpoint is considered to be Small. This will also be the case for Project Alpha and for Project Bravo separately. All aspects of the optimised Seagreen Project will also have a limited overall extent and Long-Term duration. This is assessed to result in a Low – Very Low overall magnitude of effect for the optimised Seagreen Project and the two projects Alpha and Bravo separately.

13.351. At this point the hubs and blade tips of the nearest WTGs will be evident on the far horizon. The majority of Project Alpha and Project Bravo WTGs would only be seen with the blade tips visible. On a clear day the wind farm would be seen in an expansive open view to sea. However, visibility at this point is < 8% (less than 29 days a year).

13.352. While the optimised Seagreen Project WTGs are taller than the originally consented Project, they are fewer in number and still occupy the same extent of the distant sea horizon and a relatively small section of it. The potential for the optimised Seagreen Project to increase the visual effect from the originally consented Project at this point will be limited. As noted in the visual baseline section of this chapter, the key receptor group of recreational users at this panoramic viewpoint have a High-Medium sensitivity to the change such that, taking into account the Low – Very Low magnitude of effect, the significance of effect is assessed to be no more than Minor for the optimised Seagreen Project. As explained by the significance of effect diagram within the SLVIA Methodology section of this chapter. This is considered to be **Not Significant** in SLVIA terms.

13.353. The SLVIA assessment is the same for Project Alpha and Project Bravo, with significance of effect assessed as no more than Minor and therefore **Not Significant** in SLVIA terms. This is comparable to the findings of the 2012 Offshore ES for the originally consented Project, with no greater significance resulting from the optimised Seagreen Project.

13.354. Summary of effects for VP7: Carnoustie are provided in Table 13.19 below.

Table 13.19 Summary of Effect for VP7

VP-7: Carnoustie	Sensitivity	Magnitude	Significance
Project Alpha (A)	High-Medium	Low – Very Low	Minor (Not Significant)
Project Bravo (B)		Low – Very Low	Minor (Not Significant)
Project Alpha + Project Bravo (2018)		Low – Very Low	Minor (Not Significant)

Viewpoint 8: Fife Ness, Lochaber Rock

13.355. The wireframe and photomontage (Figure 13.27) from this viewpoint illustrate that the 120 WTGs of the optimised Seagreen Project will be evident within a distant proportion of the available view from this point on the coast. At this point, the optimised Seagreen Project WTGs will occupy a maximum of 20 degrees of the view, between bearings of 44 degrees and 64 degrees. With this context the Project Alpha WTGs will lie between 44 degrees and 57 degrees and Project Bravo will overlap slightly and extend the spread from bearings of 56 degrees to 64 degrees. This particular view lies within a small central section of the wider sea horizon view which continues to cover up to 131 degrees. In addition, the seascape component of the view then stretches for up to another 60 degrees to the north and to the south.

13.356. The closest WTGs will be approximately 50.2km from the viewpoint. These nearest WTGs relate to the two southwestern rows of Project Alpha, with the nearest WTGs of Project Bravo sitting approximately 3km further to the east. The WTGs within both Project Alpha and Project Bravo will mostly sit to the rear of the distant sea horizon, with just the hubs of the nearest WTGs of Project Alpha and Project Bravo visible within an 8 degree view. The large majority of WTGs within both Project Alpha and Project Bravo will then sit beyond the sea horizon with just extended blade tips visible.

13.357. It is considered that post construction, only a small section of the distant baseline view would be faintly altered, as the optimised Seagreen Project would be visible. However, the distance to the site and the relatively small spread and visible height of WTGs across the available sea horizon would mean that only a very small proportion of the WTGs would be evident and where this is the case, they will be difficult to perceive. As such, the scale of effect at this viewpoint is considered to be Small – Negligible for the optimised Seagreen Project, including the separate elements of Project Alpha and Project Bravo. At this location there will be a Limited extent of effect and Long-Term duration. This is assessed to result in a Very Low overall magnitude of effect for the optimised Seagreen Project and for Project Alpha and Project Bravo separately.

13.358. At this point the hubs and blade tips of the nearest southwestern rows of WTGs will be evident on the far horizon. The large majority of Project Alpha and Project Bravo WTGs would only be seen with the blade tips visible. This is evidenced by the banded ZTVs (Figures 13.2 to 13.11). On a clear day the wind farm would be seen in an expansive open view to sea. However, visibility at this point is < 8% (less than 29 days a year).

13.359. While the optimised Seagreen Project WTGs are taller than the originally consented Project, they are fewer in number and still occupy the same extent of the distant sea horizon and a relatively small section of it. The potential for optimised Seagreen Project to increase the visual effect from the originally consented Project at this point will be limited. As noted in the visual baseline section of this report, the key receptor group of recreational users and residents at this panoramic viewpoint have a High sensitivity to change such that, taking

into account the Very Low magnitude of effect, the significance of effect is assessed to be Minor – Negligible for the optimised Seagreen Project. As explained by the significance of effect diagram within the SLVIA Methodology section of this chapter, this is considered to be Not Significant in SLVIA terms.

13.360. The SLVIA assessment is the same for Project Alpha and Project Bravo, with the significance of effect also assessed as Minor – Negligible and therefore Not Significant in SLVIA terms. This is comparable to the findings of the 2012 Offshore ES for the originally consented Project with no greater significance resulting from the optimised Seagreen Project.

13.361. Summary of effects for VP8: Fife Ness, Lochaber Rock are provided in Table 13.20 below.

Table 13.20 Summary of Effect for VP8

VP-8: Fife Ness, Lochaber Rock	Sensitivity	Magnitude	Significance
Project Alpha (A)	High	Very Low	Minor-Negligible (Not Significant)
Project Bravo (B)		Very Low	Minor-Negligible (Not Significant)
Project Alpha + Project Bravo (2018)		Very Low	Minor-Negligible (Not Significant)

Viewpoint 9: North Berwick Law

13.362. From this more distant, elevated point to the southwest beyond the main study area of 50km, the 120 WTGs of the optimised Seagreen Project will be evident within a very distant section of the available view, as illustrated within the wireframe (see Figure 13.28) from this viewpoint. At this point the WTGs will occupy up to approximately 15 degrees of the view with Project Alpha occupying approximately 8 degrees and Project Bravo sitting at an adjacent point, occupying the remaining 7 degrees. In this view the optimised Seagreen Project lies within a central section of the wider seascape.

13.363. The closest WTGs will be approximately 73.3km from the viewpoint. These nearest WTGs will relate to the two southwestern rows of Project Alpha with the nearest WTGs of Project Bravo sitting approximately 3km further to the east. The WTGs will mostly sit on and substantially to the rear of the distant sea horizon, where they will form a tight arrangement of faintly, theoretically visible WTGs. At this point of orientation, Project Alpha and Project Bravo will appear as adjoining sites located alongside each other rather than behind or overlapping.

13.364. It is considered that post construction, only a small distant section of the baseline view will be faintly altered, as the optimised Seagreen Project may be faintly visible. However, the distance to the site and the relatively small spread and height of WTGs across the available sea horizon will mean that only a very small proportion of the WTGs would be evident. Where this is the case, they will be difficult to perceive. The scale of effect of the optimised Seagreen Project at this viewpoint is considered to be Small-Negligible. This will also be the case for Project Alpha and for Project Bravo separately. All aspects of the optimised Seagreen Project will also have a Limited overall extent of effect and Long-Term duration. This is assessed to result in a Very Low overall magnitude of effect for the optimised Seagreen Project.

13.365. At this point the hubs and blade tips of the very nearest WTGs may theoretically be evident on the far horizon. The large majority of Project Alpha and Project Bravo WTGs will only be seen with the blade tips visible. On a clear day the wind farm would be seen in an expansive open view to sea. However, visibility at this point will be considerably less than for points at 50km which is < 8% (less than 29 days a year).

13.366. While the optimised Seagreen Project WTGs are taller than the consented 2014 scheme, they are fewer in number and will still occupy a very similar extent of the distant sea horizon and a relatively small section of it. The potential for the optimised Seagreen Project to increase the visual effect from the originally consented Project at this point is limited. As noted in the visual baseline section of this chapter, the key receptor group of recreational users and residents at this panoramic viewpoint have a High sensitivity to change such that, taking into account the Very Low magnitude of effect, the significance of effect is assessed to be Minor - Negligible for the optimised Seagreen Project. As explained by the significance of effect diagram within the SLVIA Methodology section, this is considered to be **Not Significant** in SLVIA terms.

13.367. The SLVIA assessment is the same for Project Alpha and Project Bravo, with significance of effect also assessed as Minor - Negligible and therefore **Not Significant** in SLVIA terms.

13.368. Summary of effects for VP9: North Berwick Law are provided in Table 13.21 below.

Table 13.21 Summary of Effect for VP9

VP-9: North Berwick Law	Sensitivity	Magnitude	Significance
Project Alpha (A)	High	Very Low	Minor-Negligible (Not Significant)
Project Bravo (B)		Very Low	Minor-Negligible (Not Significant)
Project Alpha + Project Bravo (2018)		Very Low	Minor-Negligible (Not Significant)

Viewpoint 10: Dunbar Cliffs

13.369. As noted in the baseline the potential for visibility at this location is extremely limited and the scale and magnitude of effect is considered to be Negligible. This is evidenced by the wireframe in Figure 13.29. As such no further assessment is considered necessary and this was agreed during the consultation stage with east Lothian Council.

Viewpoint 11: Pinderachy

13.370. As the wireframe (see Figure 13.30) illustrates from this elevated point inland, the 120 WTGs of the optimised Seagreen Project will be evident within a small distant proportion of the available view to the east. From this location the optimised Seagreen Project WTGs will occupy approximately 14 degrees of the view. In this context the Project Alpha WTGs will occupy the full 14 degrees and Project Bravo will sit within the centre of the array, occupying approximately 11 degrees to the rear of Project Alpha. This particular view lies away from the context of key views across the highland foothills which extend to the north and west.

13.371. At this location, the sea horizon accounts for a total of 69 degrees of the available view, but forms a small distant element within the panorama. The closest WTGs will be approximately 61km from the viewpoint. The nearest WTGS will relate to Project Alpha, with the Project Bravo WTGs sitting further to the east, to the rear of the Project Alpha. The WTGs of both Project Alpha and Project Bravo will be observed as a group of WTGs within a central section of the distant seascape view. They will have a relatively tightly packed arrangement, which cluster into the centre and feather out towards the edges of the composition. They will be seen in the context of long distant views across to the open sea horizon and there is a clear separation from the coastal edge giving a depth to the view.

13.372. It is considered that, post construction, the distant baseline view would be slightly altered as the optimised Seagreen Project would be distantly visible. However, the distance to the site and the relatively limited spread along the visible sea horizon mean that the WTGs remain as a relatively small element within the view. The scale of effect at this viewpoint is

considered to be Medium-Small for optimised Seagreen Project. This will also be the case for Project Alpha, but reduced to Small for Project Bravo. At this point there will be a Limited extent of effect and Long-Term duration. This will result in Low – Very Low magnitude of effect for the optimised Seagreen Project and also for Project Alpha and Very Low magnitude for Project Bravo.

13.373. On a clear day the wind farm would be seen in an expansive open view to sea. However, visibility at this point will be considerably less than expected at distances of 50km which is < 8% (less than 29 days a year).

13.374. Although, the optimised Seagreen Project WTGs are taller than the consented 2014 scheme, they are fewer in number and still occupy a relatively small distant section of one particular view from this highpoint inland. The potential for the optimised Seagreen Project to increase the visual effect from the originally consented Project at this point is limited. As noted in the visual baseline section of this chapter, the key receptor group of recreational users at this well used panoramic viewpoint have a High sensitivity to change such that, taking into account the Low – Very Low magnitude of effect, the significance of effect is assessed to be Moderate to Minor overall for the optimised Seagreen Project. As explained by the significance of effect diagram within the SLVIA Methodology section of this chapter, this is considered to be **Not Significant** in SLVIA terms.

13.375. The SLVIA assessment is the same for Project Alpha, with significance of effect assessed as Moderate - Minor and therefore **Not Significant** in SLVIA terms. For Project Bravo, the magnitude of effect will be reduced to Very Low and the significance of effect will be reduced to no more than Minor, which is **Not Significant** in SLVIA terms.

13.376. Summary of effects for VP11: Pinderachy are provided in Table 13.22 below.

Table 13.22 Summary of Effect for VP11

VP-11: Pinderachy	Sensitivity	Magnitude	Significance
Project Alpha (A)	High	Low – Very Low	Moderate – Minor (Not Significant)
Project Bravo (B)		Very Low	Minor (Not Significant)
Project Alpha + Project Bravo (2018)		Low – Very Low	Moderate – Minor (Not Significant)

Viewpoint 12: The Geot/Ben Tirran

13.377. The wireframe (see Figure 13.31) from this elevated viewpoint illustrates that from this inland location, the 120 WTGs of the optimised Seagreen Project will be evident within a small distant section of the seascape view, which itself forms a minor component of the wider view from this location. From this elevated location, the optimised Seagreen Project WTGs will occupy approximately 13 degrees of the available panoramic view, with the Project Alpha turbines defining the full horizon spread and the Project Bravo turbines covering a more limited spread of approximately 10 degrees behind the Project Alpha turbines. This particular seaward view lies away from the context of key views across the highland foothills which extend to the north and west.

13.378. At this location the sea horizon forms a small distant element within the wider view. The closest WTGs will be approximately 71.6km from the viewpoint. The nearest WTGS will relate to Project Alpha, with the Project Bravo WTGs sitting further to the east, to the rear of Project Alpha. The WTGs of both Project Alpha and Project Bravo will be observed as a group of WTGs within a central section of the distant seascape view. They will have a

relatively tightly packed arrangement, which cluster into the centre and feather out towards the edges of the composition. They will be seen in the context of long distant views on the open sea horizon and just in front of it. However, they are clearly set back from the nearest sections of land and will not intrude upon the wider seascape element of the view nor the coastal and landscape elements in the intervening view.

13.379. It is considered that post construction, the distant baseline view would be slightly altered as the optimised Seagreen Project will be visible. However, the distance to the site and the limited spread across the available sea horizon would prevent it from being more obvious and, given the distance involved, the turbines will be difficult to detect in all but the clearest of visibility. The scale of effect at this viewpoint is considered to be Medium-Small for the optimised Seagreen Project and also for Project Alpha, but reduced to Small for Project Bravo. At this point there will be a Limited extent of effect and Long-Term duration. This is assessed to result in Low – Very low overall magnitude of effect for the optimised Seagreen Project and also for Project Alpha and Very Low for Project Bravo.

13.380. On a clear day the wind farm would be seen in an expansive open view to sea. However, visibility at this point will be considerably less than expected at distances of 50km which is < 8% (less than 29 days a year).

13.381. Although the optimised Seagreen Project WTGs are taller than the originally consented Project, they are fewer in number and still occupy a relatively small section of one particular view from this highpoint inland. The potential for the optimised Seagreen Project to increase the visual effect from the originally consented Project at this point is marginal. As noted in the visual baseline section of this chapter, the key receptor group of recreational users at this well used panoramic viewpoint have a High sensitivity to the change such that, taking into account the Low – Very Low magnitude of effect, the significance of effect is assessed to be Moderate - Minor overall. As explained by the significance of effect diagram within the SLVIA Methodology section of this chapter, this is considered to be **Not Significant** in SLVIA terms.

13.382. The SLVIA assessment is the same for Project Alpha, with significance of effect assessed as Moderate – Minor and therefore not significant in SLVIA terms. For Project Bravo, the magnitude of effect will be slightly reduced to Very Low and the significance of effect will be reduced to no more than Minor , which is **Not Significant** in SLVIA terms.

13.383. Summary of effects for VP12: The Geot/Ben Tirran are provided in Table 13.23 below.

Table 13.23 Summary of Effect for VP12

VP-12: The Geot/Ben Tirran (a Corbett)	Sensitivity	Magnitude	Significance
Project Alpha (A)	High	Low – Very Low	Moderate – Minor (No Significant)
Project Bravo (B)		Very Low	Minor (Not Significant)
Project Alpha +Project Bravo (2018)		Low – Very Low	Moderate – Minor (Not Significant)

Viewpoint 13: Isle of May

13.384. The wireframe (see Figure 13.32) from this viewpoint illustrates that the 120 WTGs of the optimised Seagreen Project will potentially be visible within a distant proportion of the available view from this point on the coast. At this point they will occupy up to 20 degrees of the view, with Project Alpha occupying approximately 12 degrees and Project Bravo sitting at an adjacent point, occupying the remaining 8 degrees. This particular view lies to the southeast of the nearest coastline, at the south eastern tip of Fife Ness, with the seascape from this point extending in all directions.

13.385. The closest WTGs will be approximately 55.5km from the viewpoint. These nearest WTGs will relate to the two southwestern rows of Project Alpha with the nearest WTGs of Project Bravo sitting a further 2km to the east. The WTGs within both Project Alpha and Project Bravo will mostly sit to the rear of the distant sea horizon, with just the hubs of the nearest WTGs of Project Alpha and Project Bravo visible. The majority of WTGs will then sit beyond the sea horizon with just extended blade tips visible.

13.386. It is considered that post construction, only a small section of the distant baseline view would be faintly altered as the optimised Seagreen Project will be distantly visible. However, the distance to the site and the relatively small spread and height of WTGs across the available sea horizon would mean that only a very small proportion of the WTGs would be evident and where this is the case, they would be difficult to perceive. The scale of effect is at this viewpoint is considered to be Small-Negligible for the optimised Seagreen Project and also for Project Alpha and Project Bravo separately. At this point there will be a fairly Limited extent of effect and Long-Term duration. This is assessed to result in a Very Low overall magnitude of effect for the optimised Seagreen Project and also for Project Alpha and for Project Bravo. On a clear day the wind farm would be seen in an expansive open view to sea. However, visibility at this point is < 8% (less than 29 days a year).

13.387. While the optimised Seagreen Project WTGs are taller than the originally consented Project, they are fewer in number and still occupy the same extent of the distant sea horizon and a relatively small section of it. The potential for the optimised Seagreen Project to increase the visual effect from the originally consented Project at this point is limited. As noted in the visual baseline section of this chapter, the key receptor group of recreational users at this viewpoint (when it is open to the public) have a High -Medium sensitivity to change such that, taking into account the Very Low magnitude of effect as the focus is on the island rather than views from it, the significance of effect for the optimised Seagreen Project is assessed to be Minor – Negligible. As explained by the significance of effect diagram within the SLVIA Methodology section**,** this is considered to be **Not Significant** in SLVIA terms.

13.388. The SLVIA assessment is the same for Project Alpha and Project Bravo, with significance of effect assessed as Minor – Negligible and therefore **Not Significant** in SLVIA terms.

13.389. Summary of effects for VP13: Isle of May are provided in Table 13.24 below.

Table 13.24 Summary of Effect for VP13

VP-13: Isle of May	Sensitivity	Magnitude	Significance
Project Alpha (A)	High-Medium	Very Low	Minor-Negligible (Not Significant)
Project Bravo (B)		Very Low	Minor-Negligible (Not Significant)
Project Alpha + Project Bravo (2018)		Very Low	Minor-Negligible (Not Significant)

Viewpoint 14: Bell Rock Lighthouse

13.390. The wireframe (see Figure 13.33) from this viewpoint illustrates that the 120 WTGs of the optimised Seagreen Project will be evident within a relatively distant proportion of the available view from this point within the seascape. At this point they will occupy up to 29 degrees of the view to the northeast with the seascape extending to all sections of the view from this location. Within this context the Project Alpha WTGs will occupy approximately 21 degrees and Project Bravo will occupy approximately 10 degrees. As such the Project Alpha Turbines will define a slightly larger proportion of the overall arrangement of WTGs to the north, while the Project Bravo WTGs will sit behind the

Project Alpha WTGs and extend the spread of WTGs to the south. Importantly the optimised Seagreen Project is located within the open seascape and lies away from views back to the coastline.

13.391. The closest WTGs will be approximately 30.6km from the viewpoint with the full rotor diameter visible. These nearest WTGs will relate to the southwestern rows of Project Alpha with the nearest WTGs of Project Bravo sitting a further 5km to the east. The WTGs within both Project Alpha and Project Bravo will mostly sit on, or to the rear of the sea horizon and together they will be observed as a series of clusters of WTGs, which feed into the centre of the arrangement, with more defined and stacked rows.

13.392. It is considered that post construction, a small section of the distant baseline view would be altered as a result of the optimised Seagreen Project, with a relatively modest spread and height of WTGs across the wider range of views across the available sea horizon at this point. The scale of effect from this viewpoint is considered to be Medium-Small for the optimised Seagreen Project. This will also be the case for Project Alpha and Project Bravo separately. At this location there will be a Limited overall extent of effect, given the extent of views across the seascape at this point. These effects will be of Long-Term duration. This is assessed to result in a Low-Very Low overall magnitude of effect for the optimised Seagreen Project and also for Project Alpha and for Project Bravo. On a clear day the wind farm would be seen in an expansive open view to sea. However, visibility at this point is < 24% (less than 88 days a year).

13.393. While the optimised Seagreen Project WTGs are taller than the consented 2014 scheme, they are fewer in number and occupy the same extent of the distant sea horizon as the originally consented Project. The potential for the optimised Seagreen Project to increase the visual effect from the originally consented Project at this point is limited. As noted in the visual baseline section of this chapter, the key receptor group of recreational users at this panoramic viewpoint (when it is open to the public) have a High sensitivity to change such that, taking into account the Low - Very Low magnitude of effect, the significance of effect is assessed to be Moderate-Minor for the optimised Seagreen Project. As explained by the significance of effect diagram within the SLVIA Methodology section, this is considered to be not significant in SLVIA terms.

13.394. The SLVIA assessment is the same for Project Alpha, and Project Bravo, with significance of effect assessed as Moderate - Minor and therefore **Not Significant** in SLVIA terms.

13.395. Summary of effects for VP14: Bell Rock Lighthouse are provided in Table 13.25 below.

Table 13.25 Summary of Effect for VP14

VP-14: Bell Rock Lighthouse	Sensitivity	Magnitude	Significance
Project Alpha (A)	High	Low -Very Low	Moderate-Minor (Not Significant)
Project Bravo (B)		Low-Very Low	Moderate-Minor (Not Significant)
Project Alpha + Project Bravo (2018)		Low - Very Low	Moderate-Minor (Not Significant)

Table 13.26 Summary of Visual Effects resulting from the optimised Seagreen Project on Representative Viewpoints

VP	Name	Sensitivity	Magnitude of Change in the view optimised Seagreen Project (2018)	Magnitude of Change Project Alpha	Magnitude of Change Project Bravo	Significance of effect optimised Seagreen Project (2018)	Significance of effect Project Alpha	Significance of effect Project Bravo	Comment on change in significance from the originally consented project
1	Garron Point (Stonehaven Golf Club)	Medium -Moderately used viewpoint for golf club users	Low - Medium	Low-Medium	Low	Moderate -Minor (Not Significant)	Moderate -Minor (Not Significant)	Minor (Not Significant)	No significant change in the level of visual effect. No significant effect likely at this viewpoint
2	Beach Road, Kirkton, St Cyrus	High- Medium Popular recreational destination with beach access. Wide open, immediate and elevated sea views.	Medium	Medium	Low	Major-Moderate (Significant)	Major-Moderate (Significant)	Moderate (Not Significant)	No significant change in the level of visual effect. No increase in effects likely at this viewpoint
3	White Caterthun Hill Fort	High - Well-used panoramic viewpoint. Inland location where sea is a small distant element in a wide view.	Low – Very Low	Low – Very Low	Low –Very Low	Moderate- Minor (Not Significant)	Moderate- Minor (Not Significant)	Minor (Not Significant)	No significant change in the level of visual effect. No significant effect likely at this viewpoint
4	Montrose	High- Medium Popular recreational destination on the foreshore. Wide open, immediate sea views.	Low -Medium	Low - Medium	Low	Moderate (Not Significant)	Moderate (Not Significant)	Moderate-Minor (Not Significant)	No significant change in the level of visual effect. No significant effect likely at this viewpoint

VP	Name	Sensitivity	Magnitude of Change in the view optimised Seagreen Project (2018)	Magnitude of Change Project Alpha	Magnitude of Change Project Bravo	Significance of effect optimised Seagreen Project (2018)	Significance of effect Project Alpha	Significance of effect Project Bravo	Comment on change in significance from the originally consented project
5	Braehead of Lunan	High – Medium Residential receptors with proprietary interest and prolonged viewing opportunities. Open coastal views	Medium - Low	Medium - Low	Low	Major- Moderate (Significant)	Major- Moderate (Significant)	Moderate (Not Significant)	No significant change in the level of visual effect. No increase in effects likely at this viewpoint
6	Arbroath Signal Tower	High - Visitors have an interest in the view, from the building and wider Arbroath promenade. Important visual link to the Bell Rock Lighthouse.	Low – Very Low	Low – Very Low	Low – Very Low	Moderate- Minor (Not Significant)	Moderate- Minor (Not Significant)	Moderate-Minor (Not Significant)	No significant change in the level of visual effect. No significant effect likely at this viewpoint
7	Carnoustie	High- Medium Recreational receptors have an interest in the view. Open views towards the sea	Low- Very Low	Low – Very Low	Low – Very Low	Minor (Not Significant)	Minor (Not Significant)	Minor (Not Significant)	No significant change in the level of visual effect. No significant effect likely at this viewpoint
8	Fife Ness, Lochaber Rock	High - Recreational and nearby residential receptors have an interest in the view. Open marine views.	Very Low	Very Low	Very Low	Minor-Negligible (Not Significant)	Minor-Negligible (Not Significant)	Minor-Negligible (Not Significant)	No significant change in the level of visual effect. No significant effect likely at this viewpoint

VP	Name	Sensitivity	Magnitude of Change in the view optimised Seagreen Project (2018)	Magnitude of Change Project Alpha	Magnitude of Change Project Bravo	Significance of effect optimised Seagreen Project (2018)	Significance of effect Project Alpha	Significance of effect Project Bravo	Comment on change in significance from the originally consented project
9	North Berwick Law	High - Well-used panoramic viewpoint. Inland location where sea is a small distant element in a wide view	Very Low	Very Low	Very Low	Minor-Negligible (Not Significant)	Minor-Negligible (Not Significant)	Minor-Negligible (Not Significant)	-
10	Dunbar Cliffs	High- Medium Popular recreational destination on the foreshore. Wide open, immediate sea views	Negligible	Negligible	Negligible	Negligible (Not Significant)	Negligible (Not Significant)	Negligible (Not Significant)	-
11	Pinderachy	High - Well-used panoramic viewpoint. Inland location where sea is a small distant element in a wide view	Low – Very Low	Low – Very Low	Very Low	Moderate- Minor (Not Significant)	Moderate- Minor (Not Significant)	Minor (Not Significant)	-
12	The Geot/Ben Tirran (a corbett)	High - Well-used panoramic viewpoint. Inland location where sea is a small distant element in a wide view	Low – Very Low	Low – Very Low	Very Low	Moderate- Minor (Not Significant)	Moderate- Minor (Not Significant)	Minor (Not Significant)	-
13	Isle of May	High- Medium Seasonal Access	Very Low	Very Low	Very Low	Minor-Negligible (Not Significant)	Minor-Negligible (Not Significant)	Minor-Negligible (Not Significant)	-
14	Bell Rock Lighthouse	High - Seasonal Access	Low-Very Low	Low-Very Low	Low-Very Low	Moderate -Minor (Not Significant)	Moderate – Minor (Not Significant)	Moderate – Minor (Not Significant)	-

Visual Effects Summary from Representative Viewpoints

13.396. The analysis and conclusions of the representative viewpoint assessment above, show that the potential for significant visual effects to occur for land-based receptors is limited and it is also noted that the significance of effects are comparable to the findings of the 2012 Offshore ES for the originally consented Project with no greater significance resulting from the optimised Seagreen Project.

13.397. While some minor alterations in the arrangement, numbers and heights of the final turbine layout are likely to arise at detail design stage, these changes are not considered to be sufficient to merit any clear change in the overall impact assessment thresholds and levels of significance identified within this assessment, which has been undertaken on a WCS basis. The proposed WTGs will be sited within the same defined area of the sea and will be seen within the same extent of development as the originally consented Project. Given the distance offshore, the WTGs will typically be seen as a small distant element within the wider view across the seascape. Although the proposed turbines for the optimised Seagreen Project will be taller and fewer in number compared to the originally consented Project, the assessment indicates that their increase in height will not be of sufficient additional height as to bring about an elevated significance of effect upon visual receptors.

13.398. The closest WTGs of the optimised Seagreen Project will be in excess of 30km from the nearest land-based receptors and from all points of orientation they will largely be observed as a single group of WTGs, set within the distant seascape view. These WTGs will relate to the nearer Project Alpha WTGs, with the Project Bravo WTGs sitting typically to the rear of the Project Alpha WTGs, or from more distant points to the southwest within Fife and East Lothian, alongside Project Alpha. The WTGs within both Project Alpha and Project Bravo, which make up the optimised Seagreen Project, will normally have a relatively tightly packed arrangement, with WTGs that generally cluster into the centre and feather out towards the edges of the composition. This provides a clear and cohesive arrangement between the two separate elements of the optimised Seagreen Project, set within the open seascape, such that the two projects visually read as a single development, which is a positive visual attribute of the two schemes.

13.399. The WTGs will also frequently be seen, weather and atmospheric conditions permitting, as a distant feature in long distant views within a relatively small central section of the open sea horizon. The WTGs will appear to sit just in front of the horizon line from the nearest points on land within Angus and South Aberdeenshire and intermittent highpoints. From further coastal points within Fife and East Lothian they will sit substantially to the rear and below the sea horizon, due to the curvature of the earth. Also, the proposed WTGs within both Project Alpha and Project Bravo will be clearly set back from the nearest sections of land and will not intrude upon the intervening seascape element of views nor the coastal and landscape elements.

13.400. The optimised Seagreen WTGs will also be seen in the same context as the consented OWF projects at Inch Cape and Neart na Gaoithe. This will bring about a range of potential cumulative effects. However, as the viewpoint assessment has also concluded, the potential contribution that the optimised Seagreen Project will make to the cumulative effects is not considered to be the significant factor. This is primarily due to the distance of the proposed optimised Seagreen Project from the coastal receptors and due to the distance between the optimised Seagreen Project and the two other key offshore cumulative sites. For those receptors where there may exist the potential for cumulative effects, these will predominantly derive from the nearer offshore wind farm developments at Inch Cape and Neart na Gaoithe, rather than the optimised Seagreen Project (refer to cumulative assessment section of this chapter).

13.401. In EIA terms, the viewpoint assessment has found that there will still be the potential for significant effects of Major to Moderate to occur for receptors at two locations, these being at Beach Road, Kirkton, St Cyrus (Viewpoint 2) and at Braehead of Lunan (Viewpoint 5). The SLVIA for the optimised Seagreen Project also notes just one effect of Moderate significance at Montrose (Viewpoint 4). For visual receptors at the remaining ten viewpoints assessed, no further significant visual effects have been identified. It is noted that these findings are comparable to those of the 2012 Offshore ES for the originally consented Project with no significant change in the level of visual effect arising for those receptors at the agreed representative viewpoints.

13.402. Significant visual effects would therefore be experienced by a relatively small number of people, typically the more sensitive receptors to change and those within approximately 35km and directly to the west of the optimised Seagreen Project from the nearest coastal edge of Angus. When using the data obtained from the Met Office, it is noted that, at these distances, where there is the prospect of visibility, the WTGs of the optimised Seagreen Project will be visible on less than 37% of days in a year i.e. approximately 135 days a year. Moreover, it should be remembered that the prospect of visibility itself does not equate to a significant effect in itself.

13.403. The potential for visual effects and any differences in the level of significance on visual receptor groups, compared to the 2012 Offshore ES for the originally consented Project, is discussed below. For ease of comparison, these include the same categories noted in the 2012 Offshore ES (see Appendix 13B [2012 SLVIA baseline] for the originally consented project) for further details of the baseline the identified receptor groups).

Summary of Effects on Land-based Visual Receptors

13.404. The baseline section of this chapter provides an outline of the range of visual receptor groups that can reasonably be anticipated to be affected by the optimised Seagreen Project. The potential effects upon these receptors are discussed below and follow on from the representative viewpoint assessment above.

Summary of Effects on Settlement and Residential Receptors

13.405. All residential visual receptors considered within the assessment are located at distances of over 30km from the optimised Seagreen Project and from Project Alpha. In respect of Project Bravo this increases to approaching 40km. It is noted that differences in the proposed siting of turbines within the Seagreen Project boundary, between the originally consented Project and the optimised Seagreen Project means that the WTG locations for the WCS assessed within this SLVIA are sited slightly further offshore. It is also noted that the optimised Seagreen Project includes embedded mitigation, through Seagreen electing to site the optimised Seagreen Project further offshore than could be considered possible under the lease terms for the Crown Estate's Round 3 Zone 2 development zone.

13.406. As per the analysis in the representative viewpoint assessment section set out above, visual impacts with a Moderate significance of effect can be anticipated for high sensitivity visual receptors. These are those in isolated residential communities/properties in the key coastal settlements where they have uninterrupted views out to sea, within 35km of the optimised Seagreen Project. This includes receptors at Johnshaven, Inverbervie, St Cyrus (VP2) and Montrose (VP4), although views from the settlements are more distant and interrupted than the illustrated view at VP4. Moderate impacts will only occur where the WTGs are clearly visible from locations with an existing open sea view. Where visibility occurs, the upper sections of the tower with hubs and blade tips of the nearest WGTs within Project Alpha will be typically visible on the far horizon, with the hubs and blade tips of the more

distant WTGs, mostly within Project Bravo, just visible on the sea horizon to the rear. It is noted that these views will only be available at these distances in excess of 30km on less than 37% of days in a year i.e. less than 135 days a year.

13.407. Residential receptors are identified as being of high to medium sensitivity in line with the SLVIA Methodology section of this chapter and Appendix 13A (SLVIA Methodology). For these receptors, the magnitude of change will range from Medium to Low for those with uninterrupted sea views in the above identified settlements within 35km of the site. This gives rise to an overall Moderate visual impact for receptors at settlements and residential properties at these locations. This is **Not Significant** under the EIA Regulations for this SLVIA, as the effect is at the lower end of significance and 'of lesser concern' (GLVIA 3, para 3.35). This is comparable to the findings of the SLVIA for the originally consented Project, with no uplift in significance resulting from the optimised Seagreen Project.

13.408. Elsewhere, and from beyond 35km, the potential for significant effects to occur is further limited and **Not Significant** in SLVIA terms. This was noted in the SLVIA for the originally consented Project which concluded that "*Settlements located beyond 35km from Project Alpha will experience up to minor and not significant visual Effects, at residential properties with uninterrupted sea views*" Some of these settlements include, Inverkeilor, Stonehaven, Newtonhill, Hillside and Arbroath (VP6).

13.409. As evidenced within the viewpoint assessment above, when considered together with the effects on residential properties, potentially significant effects would remain consistent with those identified for the originally consented Project with no significant change in the level of visual effects on settlements within the study area arising from the optimised Seagreen Project.

Summary of Effects on Recreational Walking and Cycle Routes

13.410. Given the conclusions of the viewpoint assessment above and as evidenced by fieldwork, the potential for changes in the level of visual effect resulting from the optimised Seagreen Project over and above the originally consented Project, will be limited. The level of significance for the recreational walking and cycling routes has been found to be similar to the SLVIA for the originally consented Project which noted that, for recreational users of the Sustrans National Cycle Route 1, effects would include potentially significant effects "*on a small section of the route between Montrose and north of Inverbervie, where users have uninterrupted views*" (para 16.256).

13.411. Elsewhere, including the Fife Coastal path, the potential for significant effects is limited and identified as being Negligible and therefore **Not Significant** in SLVIA terms and no significant change from the 2012 offshore ES.

Summary of Effects on Roads and Railways

13.412. For roads and railways, following site assessment work, no significant effects or borderline significant effects were predicted. Any seaward views towards the optimised Seagreen Project will be distant and intermittent from the A92 with the optimised Seagreen Project sited on the distant horizon line and seen generally oblique to the principal direction of view when travelling the route. Seaward views will be further limited through towns, due to built form and, elsewhere on account of variations in landform and scattered existing vegetation. Figure 13.9 and the associated detailed ZTVs clearly indicate the limited opportunity along the main routes for views of the WTGs. At its closest point the A92 will be in excess of 30km from the optimised Seagreen Project and visual receptors will experience transitory views of the WTGs on less than 135 days of the year. This will also be similar from the A90 with the route lying further inland up to 38km at its nearest point.

13.413. Given the conclusions noted above in the viewpoint assessment there is no potential for any changes in the level of visual effects upon these receptors beyond those previously identified within the 2012 Offshore ES for the originally consented Project and **No Significant Effect** upon roads or railway receptors is anticipated.

Summary of Effects on Recognised Vantage Points and Tourist Attractions

13.414. As detailed within the viewpoint assessment section above, potentially significant visual effects could be anticipated at some local vantage points where there are, usually elevated, uninterrupted views out to sea within 35km such as at St Cyrus and Inverbervie Bay. Visual receptors at these locations tend to pause and take in the view and often focus on the horizon such that they are more likely than other receptors to notice the WTGs. The optimised Seagreen Project will therefore be noticeable at these locations when weather conditions permit visibility. The extent of significant effect at these points is considered to be comparable to the findings of the 2012 Offshore ES for the originally consented Project, with no significant change in the level of visual effect anticipated for these receptors.

13.415. Visual receptors at other locations beyond 35km will experience effects of up to Minor significance which are **Not Significant** in SLVIA terms. This includes visual receptors at vantage points and tourist attractions within the settlements of Arbroath and Newtonthill, whilst receptors at locations in Carnoustie and Fife Ness will not, similarly, experience any significant visual effects.

13.416. Visual receptors at informal vantage points such as car parks at locations up to 35km away from the optimised Seagreen Project will experience views of the WTGs on the distant horizon on approximately 135 days a year. Receptors at these locations tend to pause and take in the view and often focus on the horizon of the areas such that they are more likely than other receptors to notice the WTGs. For sensitive visual receptors at these locations, some potentially significant effects are predicted, but, again, these are not considered to be any greater than those previously noted within the 2012 Offshore ES for the originally consented Project. Visual receptors at locations beyond 35km are judged to experience effects of no more than Minor significance which are **Not Significant** in SLVIA terms.

13.417. There are a number of other recreational receptors including those at hill tops and those on golf courses within the study area. These visual receptors are all located at distances of over 35km from the optimised Seagreen Project. Although their sensitivity to change is medium or high, the magnitude of change that these receptors will experience will be generally low as discussed in the viewpoint assessment section. Therefore, the overall significance of effect on the visual amenity of these receptors will be no more than Moderate – Minor and therefore **Not Significant** in SLVIA terms.

Visual Impacts on Other Land-based Receptors

13.418. It is acknowledged that there are other receptor groups represented within the study area, such as shoppers and people at their place of work. Given that these visual receptors have lower levels of sensitivity to change, compared to residents and recreational visitors to the area it is considered that, for these receptors, significance of effects on visual amenity will be Negligible and therefore **Not Significant** in SLVIA terms. They will also have a reduced level of exposure to possible visibility of the optimised Seagreen Project, including both Project Alpha and Project Bravo, given their activities and main focus of interest.

Summary of Effects on Marine Receptors

13.419. In addition to the land-based potential visual receptors, there are also people out at sea who can be expected to have views in the direction of the optimised Seagreen Project.

13.420. Recreational yachts and boats tend to sail near Arbroath Harbour (Arbroath Sailing and Boating Club) which tend to sail along the coastline and rarely venture far out to sea. Boat users may view the WTGs for prolonged periods although they can also be expected to be preoccupied with the task of sailing the vessel. The harbour is approximately 40km from the optimised Seagreen Project and visual receptors in the vicinity will experience views of the WTGs (upper sections of the towers with hubs and tips) on less than approximately 88 days a year. Although their sensitivity to change is identified as Medium, the magnitude of change will be Medium reflecting the above factors. Therefore, the overall significance of effect on the visual amenity of these receptors will be Moderate. It is considered that the effects upon these recreational sailors will only become **Significant** when their boats are in close proximity to the optimised Seagreen Project (less than 20km) but reduce to **Not Significant** as the boats draw away from the optimised Seagreen Project.

13.421. Other marine based visual receptors include those on fishing, commercial, and industrial vessels which frequent the waters in the study area. For these receptors who are likely to sail within much closer vicinity to the WTGs, the WTGs will bring about a fundamental change to their views. Smaller fishing vessels from the harbours may be more affected as they do not travel as fast or as far offshore as the larger ships and may have visibility of the optimised Seagreen Project for the duration of their fishing trips. However, these receptors will tend to be focussed on their line of work and due to their generally transient nature, their experience of visual effects would be reduced. Therefore, the magnitude of effect is judged to be Medium but it is acknowledged that this will become High within closer proximity to the WTGs. As the workers on the boats and ships would have a generally Low sensitivity to change, the significance of effect for these receptors will be lower and generally Minor/Moderate, and therefore **Not Significant** in SLVIA terms.

13.422. Bell Rock Lighthouse is located approximately 30km southwest of the optimised Seagreen Project off the southwestern tip of both Project Alpha and Project Bravo (see Figure 13.33). Visitors to the lighthouse will experience transient views of the WTGs of the optimised Seagreen Project in one direction. Although transient, visitors on boat trips may view the WTGs for prolonged periods. The WTGs of the optimised Seagreen Project will not compete in scale with the lighthouse, nor will they surround it and they will be physically separated from the lighthouse by 30km of open water. The WTGs will also occupy a relatively limited percentage of the seascape and be seen to occupy a different sector of the sea from the lighthouse. The 30km separation also means that the WTGs will only be visible on less than approximately 135 days a year. The magnitude of change for visual receptors at the lighthouse will be Medium. When combined with the Medium sensitivity of the receptor, the overall significance of effect will be no greater than Moderate and therefore **Not Significant** in SLVIA terms. The views from the Arbroath Signal Tower to the lighthouse will not be affected by the optimised Seagreen Project, as the WTGs are located significantly further to the northeast of the lighthouse.

Night Time Visual Assessment

13.423. The WTGs of the optimised Seagreen Project will comprise aviation, navigation and identification lighting. These will be lit in accordance with the International Association of Lighthouse Authorities (IALA) standards, Civil Aviation Authority (CAA), Maritime Coastguard Agency (MCA) and the Royal Yachting Association (RYA) requirements, as stated in Chapter 5 (Project Description) of this EIA Report. As set out in the IALA standards, the WTG lighting will consist of flashing lights which will be visible to at least 5 nautical miles (approximately 9km). Aviation lighting on the WTGs and meteorological masts is likely to be red or infra-red and unlikely to be visible from land-based receptors. Identification lighting is also anticipated but this will be directional (canopied down) and have a very limited extent of visibility.

13.424. The optimised Seagreen Project is located at approximately 30km from the nearest land-based receptors. Lighting of structures at this distance from the coast and at the level proposed is not anticipated to be visible for land-based receptors. Figure 13.23 includes a late dusk photomontage from the nearest viewpoint at Montrose to illustrate the likely dusk/night time lighting effects. Lighting of other elements of the optimised Seagreen Project, including the OSPs, will be close to sea level and will therefore not be visible from near-sea level for land-based receptors on account of both the Earth's curvature and the distance of the OSPs from the coastline.

13.425. The WTGs and offshore structures of the optimised Seagreen Project will introduce light to an area of seascape that is currently predominantly unlit, albeit the principle of night time lighting associated with wind energy developments within this precise sector of the sea has already been deemed to be acceptable, given the existing and valid consent for the originally consented Project. The necessary lighting, a requirement of both aviation and marine safety, will be seen in the context with other existing lighting within the wider study area. These include illumination from occasional shipping movements visible out at sea and some limited aircraft movements in the sky. Lighting is also associated with a number of ports and harbours including Stonehaven, Johnshaven, Montrose and Arbroath. Frequent settlements on the coastline provide illumination, increasing in extent around larger towns such as Stonehaven, Montrose, Arbroath and Carnoustie. There are also a number of lighthouses which have prominent lights at Girdle Ness, Scurdie Ness and Fife Ness. The lighting on the WTGs and offshore structures of the optimised Seagreen Project would be visible on clear nights without any haze, on less than approximately 135 days a year from the nearest coastlines and less from other more distant locations.

13.426. With regards to the SLVIA viewpoints, even allowing for the possibility of some lighting being discernible over extended distances, the magnitude of change is judged unlikely to ever be more than Medium-Low, if viewed from a remote location with no adjacent development. When combined with the Low sensitivity of these receptors at night time the effect on sea views of the marine lighting would be no more than Minor and therefore **Not Significant** in SLVIA terms.

13.427. All other visual receptors will not be active at night-time and are therefore assessed as Low sensitivity receptors. Even allowing that lighting may be discernible, the magnitude of change will not be more than Medium-Low for visual receptors in remote locations with no adjacent development. When combined with the low sensitivity of these receptors at night time, the effect on sea views of the marine lighting would be no more than Minor and therefore **Not Significant** in SLVIA terms.

Valency of Effects

13.428. The SLVIA has identified a range of effects on seascape character and on visual amenity. These effects will occur along sections of the coastal landscape and will be typically experienced by higher sensitivity receptors. These effects can be assessed objectively and quantitatively as either adverse, i.e. loss of valuable elements, degradation of character or loss of integrity in terms of designated landscapes or seascapes, or beneficial, i.e. removal of inappropriate or damaging elements, enhancement of key elements and character, or introduction of positive elements. Neutral effects would occur where there is a balance of beneficial and adverse impacts.

13.429. Whether the landscape and visual effects are adverse, beneficial, or neutral, is influenced by a variety of issues including personal preference, interests, and exposure to similar developments as noted within Appendix 13A (SLVIA Methodology). As such judgements on the valency of effects are made entirely separately from the main assessment in this SLVIA, to retain objectivity in the assessment.

13.430. With regard to the precautionary approach noted in the introductions to this chapter it has been assumed that these effects will be perceived as adverse, although receptors are likely to adopt a range of reactions to offshore wind energy development, including neutral and positive responses.

Residual Effects

13.431. Due to the limitations for mitigation noted in the Mitigation section of this chapter, the residual effects are assessed the same as the potential effects.

IMPACT ASSESSMENT: CUMULATIVE

13.432. The EIA Regulations require a cumulative impact assessment to be undertaken where other similar and associated development is located within the study area. This requires the consideration and assessment of existing projects, projects under construction and consented or proposed projects identified in relevant development plans and programmes that have the potential to combine cumulatively with the optimised Seagreen Project.

13.433. Cumulative effects can occur when the effects from one project on an identified receptor combine (through either spatial or temporal overlap) with similar effects from other projects on the same receptor. The purpose of considering cumulative effects is to understand if the impacts from the optimised Seagreen Project (Project Alpha and Project Bravo), when considered together (combined), or cumulatively with other plans and projects are different, or more significant than from the individual projects in isolation. This enables additional mitigation to be identified, as appropriate.

13.434. This section of the SLVIA assesses the potential additional magnitude of effect and significance of impact arising from the optimised Seagreen Project on the seascape, landscape and visual amenity, in line with the scope defined in the baseline. It raises questions over thresholds of acceptable change (spatial and temporal) and the seascape/landscape's capacity to accept change. GLVIA advises that "*cumulative landscape and visual effects result from additional changes to the landscape or visual amenity caused by the proposed development in conjunction with other developments (associated with or separate to it), or actions that occurred in the past, present or are likely to occur in the foreseeable future*" (para 7.2).

13.435. As noted within the baseline, and consistent with GLVIA guidance, the cumulative assessment considers the consented schemes within the existing baseline environment where there is a strong likelihood of their construction. This will allow an overall conclusion to be made of the additional contribution that the optimised Seagreen Project brings alongside other plans and projects. In line with GLVIA3, other potential schemes that are not yet present in the seascape/landscape but are at various stages in the development and consenting process will also be assessed. These include schemes that are the subject of a valid planning application that has not yet been determined.

13.436. The methodology for the Cumulative Assessment is described in detail in Appendix 13A (SLVIA Methodology) which has reviewed the previous methodologies, developed by FTOWDG, alongside more recent guidance produced by SNH and contained within GLVIA3. The cumulative methodology has also been developed and agreed with the local authorities, SNH and Marine Scotland, through the course of the SLVIA-focused consultations (see Table 13.1) and is consistent with the 2017 Scoping Opinion issued by MS-LOT.

13.437. Through these consultations there was broad agreement that the cumulative assessment should be focused on the offshore schemes and impacts, principally in conjunction with the Inch Cape and Neart na Gaoithe OWFs, but also including those at Kincardine and Forthwind which are

located at distances of approximately 36km and 78km respectively from the nearest optimised Seagreen Project turbines. There was also a mixed consultation response with respect to which onshore wind farms should be included within the cumulative assessment, bearing in mind the very different geographic context. This informed the approach, whereby some reference to onshore schemes has been included within the cumulative assessment in order to address concerns of some of the consultees. Mindful of all consultation responses, the approach adopted includes relevant larger-scaled wind farm developments within the study area along with selected and specifically requested more-distant developments located beyond the study area, such as those at Earlseat and Methil within Fife.

13.438. While other requests were made for smaller wind turbines it is not considered that this would add anything to the assessment of effects, given the conclusions above for most land-based receptors and they are therefore screened out of the cumulative assessment.

13.439. Responses to consultation also requested consideration of other types of larger-scale developments and the temporary mooring of offshore oil rigs was specifically identified. However, a review of these locations suggests that they are generally located at some distance beyond the study area (in excess of 50km and up to and beyond 60km), including locations within the Firth of Forth and Tay Ports area, such as at Dundee's Prince Charles Wharf and at Safe Bristolia (1 mile off the Fife Coast at Burntisland), or off the Aberdeen coast in the case of the temporarily moored retired oil drilling rigs. Given the near shore/in-firth location of these developments which are all beyond 50km from the optimised Seagreen Project and within clearly different contextual sections of the seascape; the potential for any cumulative effects with the optimised Seagreen Project are clearly limited and no significant additional cumulative effects arising from the optimised Seagreen Project in conjunction with these is anticipated. These types of development are therefore not considered within the cumulative assessment undertaken.

Cumulative Effects of the optimised Seagreen Project with other Schemes

13.440. For the Optimised Seagreen Project, the relevant cumulative projects have been drawn from the extensive list of potential cumulative projects agreed with MS-LOT, as identified within the Scoping Opinion and included in Appendix 6A (Cumulative Plans and Projects). In response to SLVIA-focused consultee responses, selected onshore sites have been addressed collectively within the cumulative effects section below. These are shown on Figure 13.15 and included on the wireframes for all viewpoints (see Figures 13.20 to 13.33).

13.441. The wider cumulative assessment of the optimised Seagreen Project with other schemes, examines the same groups of seascape, landscape and visual receptors as the assessment for the optimised Seagreen Project Impact Assessment above. The assessment is informed by cumulative sites location plan (see Figure 13.15) and a series of Cumulative ZTVs (see Figures 13.16 to 13.19). These show the theoretical extent of potential visual effects of the schemes in different colours, to illustrate where visibility of more than one development is likely to arise. Cumulative wireframes have also been prepared consistent with SNH's latest guidance on visualisations for the agreed viewpoints (see Figures 13.20 to 13.33). These show each of the offshore developments in individual colours, so that they are each readily identifiable with the onshore sites categorised according to their status (operational, consented or in planning).

13.442. In addition, the effects on users of routes through the area, from which wind farms may be sequentially visible, as one passes through the landscape, are considered within the cumulative assessment. This assessment is based on a desk study of the ZTVs, aerial photography and site work to travel along the routes being assessed.

13.443. The way in which the assessment is described and presented is varied, depending on the number and nature of scenarios which may arise. This variation is needed to convey to the reader the key points of each assessment, in line with the SNH guidance which emphasises that: "*The key principle for all cumulative impact assessments is to focus on the likely significant effects and in particular those which are likely to influence the outcome of the consenting process*." (SNH 2012, para. 33, and similar directions at paras. 66 and 102).

13.444. For example, the three different cumulative combinations that may arise for an assessment in which there are two existing undetermined applications can each be assessed individually. A situation in which there are 10 applications cannot reasonably be assessed in this way and the developments may need to be grouped for analysis. Such an approach is consistent with current guidance.

13.445. The SNH guidance also encourages consideration of the composition and relationship of the various developments within the landscape and in views, noting that: "*In presenting the findings of the assessment there is a risk of focussing on a quantitative assessment of the effects. This will be helpful, but a qualitative analysis of these is required to fully appraise the effects. The production of extensive quantitative analysis alone is not sufficient*." (SNH 2012, para. 99).

Issues Scoped Out

13.446. Given the conclusions of the SLVIA Impact Assessment for the optimised Seagreen Project, the potential for significant cumulative effects arising from the addition of the optimised Seagreen Project on landscape character, and most land-based receptors away from the nearest sections of coastline within south Aberdeenshire and Angus will be limited, with no further assessment considered necessary. This includes the RSCUs scoped out of the project impact assessment as noted in the Scope of Assessment section of this chapter.

13.447. As shown on Figure 13.15 all the principal onshore wind farm developments, with the exception of isolated single wind turbine developments located within the Crystal Rigg cluster in excess of 70km, are either already operational, under construction or consented. As such, these onshore sites now form part of the receiving cumulative baseline, against which the incremental effects arising from the addition of the optimised Seagreen Project are assessed. The nearest onshore wind farm sites also lie a considerable distance from the optimised Seagreen Project (in excess of 32km to the northwest, up to 50km to the west and over 70km to the south east). It is therefore judged that the addition of the optimised Seagreen Project, sited within a distant and different geographic setting and context, is very unlikely to bring about any potentially significant incremental cumulative effects with these sites.

13.448. As noted in the impact assessment for the optimised Seagreen Project, visible activities associated with the construction and decommissioning stages would typically relate to vessel movements and lighting at the project site which individually and collectively are considered to be of limited scale and unlikely to contribute to cumulative effects in combination with the optimised Seagreen Project in addition to the existing baseline, which includes busy shipping activities within the study area, with **No Significant** effect predicted.

13.449. Construction, and for the same reason, decommissioning effects upon landscape and seascape visual receptors are therefore scoped out of the cumulative effects assessment.

13.450. As set out in Chapter 6 (EIA Process), the licenced offshore Transmission Asset has been considered within the cumulative assessment, however, with respect to SLVIA no effect pathways were identified.

Cumulative Effects with Offshore Wind Farms

13.451. As noted above, the principle for offshore wind farm development and a pattern of developments across the study area has been accepted within the proposed study area, given the existing consents in place for the originally consented Seagreen Project and the Inch Cape and Neart na Gaoithe projects.

13.452. This cumulative effects assessment therefore focuses upon the potential for additional incremental effects arising as a result of the identified WCS scheme for the optimised Seagreen Project in conjunction with the 2018 WCS scenario schemes for Inch Cape and Neart na Gaoithe. The WCS schemes for these three projects are identified on all wireframes and ZTV figures and also include the additional sites at Kincardine and Forthwind.

13.453. Details of the offshore sites included within the cumulative assessment are set out in Table 13.27 below. For details of onshore developments please see the subsequent section for Cumulative effects with Onshore Wind Farms.

Table 13.27 Cumulative Offshore wind farm project details

Site Name	Number of WTGs	Maximum blade tip height (m)	Distance to the optimised Seagreen Project (km)	Application Stage	Council
Offshore wind farms					
Neart na Gaoithe	54	208	30	Previous consent – re-application	N/A
Inch Cape	40	291	12	Previous consent – re-application	N/A
Kincardine	7	191	34	Consented	N/A
Forthwind Demonstrator Wind Turbines – phase 1 and 2	Phase 1 to 2 Phase 2 to 7	99 and 125	75	Phase 1 – consented Phase 2 - scoping	N/A

13.454. In order to assist with the assessment of cumulative impacts cumulative ZTVs have been prepared as follows:

- Figure 13.16: Cumulative ZTV: Projects Alpha + Bravo (combined) with Inch Cape and Neart na Gaoithe;
- Figure 13.17: Cumulative ZTV: Projects Alpha + Bravo (combined) with Inch Cape and Neart na Gaoithe (combined); and Kincardine and Forthwind (combined).

13.455. These are further supported by Figures 13.18 and 13.19 which also consider scenarios with onshore wind farms.

13.456. Cumulative wireframes have also been prepared for the 14 representative viewpoints noted above (Figures 13.19 to 13.33).

Summary of Cumulative Effect on Regional Seascape Character

13.457. It is evident that the proposed Neart na Gaoithe and Inch Cape offshore wind farms will be visible from the same locations along the coastline as the optimised Seagreen Project, particularly from Fife and Angus, although Neart na Gaoithe and Inch Cape both lie much closer to the Fife and Angus coastline at approximately 15km (as opposed to approximately 30km (Angus coastline) and 50km (Fife coastline) for the optimised Seagreen Project). As depicted in Figure 13.16, from most of the nearest sections of coastline and RSCUs at SA3-6, where there is some potential for significant cumulative effect, the proposed optimised Seagreen Project will most often be cumulatively seen with the nearest site at Inch Cape (see Figure 13.16 – areas coloured purple) or with both Inch Cape and Neart na Gaoithe sites (see Figure 13.16 – areas coloured yellow), with minimal potential for combined cumulative visibility between just the optimised Seagreen Project and Neart na Gaoithe (see Figure 13.16 – areas coloured orange). Also, potential visibility of just the optimised Seagreen Project with no cumulative visibility with the other offshore wind farms would be limited from these coastal and inland areas (see Figure 13.16 – areas coloured blue).The optimised Seagreen Project would therefore only add to the existing extent of offshore wind farm visibility as a new offshore wind farm on its own from limited inland locations. For the majority of landscape and visual receptors it will usually be seen in the context of other offshore wind farms.

13.458. Figure 13.17 groups the offshore wind farms differently to also allow consideration of the cumulative effects that may arise through a consideration of the more distant Kincardine and Forthwind projects. As this ZTV shows, these additional offshore wind farms, in conjunction with the optimised Seagreen Project and the Inch Cape and Neart na Gaoithe projects theoretically extend the geographical extent of visibility further along the coastline and further inland. However, appraisal of the ZTV indicates that this increased potential cumulative onshore visibility primarily relates to the other offshore wind farm developments rather than the optimised Seagreen Project which is a reflection of the optimised Seagreen Project's more distant offshore location. This additional cumulative visibility is principally related to Inch Cape and/or Neart na Gaoithe (see Figure 13.17 – areas coloured red) within the nearest sections of coastline. To the north within Aberdeenshire this also relates to the consented site at Kincardine (see Figure 13.17 – areas coloured green around Aberdeen), while to the southeast between 50-90km this relates more to the Forthwind Project (see Figure 13.17 – areas coloured green around the Firth of Forth).

13.459. Potential cumulative effects upon the seascape character arising from the optimised Seagreen Project can only occur within those areas of the seascape coloured in purple, yellow or orange as indicated on Figure 13.17. This ZTV figure also confirms that cumulative effects upon the character of the Firths of Forth and Tay are predominantly associated with the other offshore wind farms within the area, rather than the optimised Seagreen Project (see Figure 13.17 – areas coloured in red, brown and green) with the exception of the more seaward extents of the Firth of Tay where the optimised Seagreen Project turbines may theoretically contribute to the cumulative visual effects upon seascape character as far up the firth as approximately the Tay bridges. These two ZTVs also illustrate potential visibility of all offshore wind farm developments from within the seascape character areas/units.

13.460. The potential cumulative effects on the individual RSCUs are summarised in Table 13.28.

Table 13.28 Cumulative Effects of OWFs on RSCUs

RSCU	Sensitivity	Cumulative Magnitude of Change	Cumulative Effect arising from the optimised Seagreen Project
SA3: Cove Bay to Milton Ness (Representative viewpoints: VP1 – Garron Point)	Medium	The consented Kincardine WTGs would be observed at much closer points more directly to the east, than the optimised Seagreen Project. Although Neart na Gaoithe and Inch Cape are more distant and will not be clearly visible they will sit at various points closer to or extending out from the coastal edge in the aspect to the south. The contribution of the optimised Seagreen Project to the cumulative effects upon the character of this RSCU will be small with a Low magnitude of effect.	Moderate – Minor Not Significant
SA4: Montrose Bay (Representative viewpoints: VP2 – St Cyrus & VP4 – Montrose)	High	The WTGS at Inch Cape, Neart na Gaoithe and Kincardine will be visible across the seascape with Seagreen seen as a separate more distant element in a central section of the wider seascape outwith this RSCU. The contribution of the optimised Seagreen Project to the cumulative effects upon the character of this RSCU will be small with a Low magnitude of effect.	Moderate Not Significant
SA5: Long Craig (Representative viewpoints: N/A)	Medium	The optimised Seagreen Project will form a separate distant element in the context of the RSCU but add to the presence of WTGs within the wider seascape. The Inch Cape WTGs will lie to the southeast but much closer to the coastal edge at Scurdie Ness. The WTGs at Kincardine will lie at a substantial point on the distant sea horizon to the northeast with just the blade tips theoretically visible. The contribution of the optimised Seagreen Project to the cumulative effects upon the character of this RSCU will be small with a Low magnitude of effect.	Minor Not Significant
SA6: Lunan Bay (Representative viewpoints: VP5 – Braehead of Lunan)	High	The WTGs at Inch Cape and Neart na Gaoithe will be evident across the seascape with Inch Cape WTGs at a much closer point, occupying a larger section of the visible seascape. The optimised Seagreen Project WTGs will add to those within the seascape but at a clearly separate distant central section of the seascape. The contribution of the optimised Seagreen Project to the cumulative effects upon the character of this RSCU will be small with a Low magnitude of effect.	Moderate – Minor Not Significant
SA7: Land Craig to The Deil's Heid (Representative viewpoints: N/A)	High	The optimised Seagreen Project will form a separate distant element outwith the immediate seascape context of the RSCU but will add to the presence of consented WTGs. The Inch Cape WTGs will lie much closer to this RSCU and extend across much of the intervening view to the optimised Seagreen Project. The WTGs at Neart Na Gaoithe will lie further afield to the southeast as a separate element within the seascape. The contribution of the optimised Seagreen Project to the cumulative effects upon the character of this RSCU will be small with a Low magnitude of effect.	Moderate – Minor Not Significant

13.461. In summary, the potential for the optimised Seagreen Project to add to the cumulative influence of offshore wind farm development within the seascape will be limited. Whilst there may be some localised Moderate and lower significant effects upon seascape character, these are considered to be **Not Significant**. The limited contribution of the optimised Seagreen Project to the potential cumulative effects is essentially due to its greater distance offshore than the other projects and to its consistently clear visual and physical separation from the coastline, as evidenced within the cumulative wireframes included within Figures 13.20 to 13.33.

13.462. As such, there is no greater potential for increased significance in cumulative effects upon seascape character, as a result of the changes arising from the addition of the optimised Seagreen Project into the marine environment.

Assessment of Cumulative Effects on Visual Amenity

13.463. A summary assessment of the cumulative visual effects upon visual receptors is discussed for each representative viewpoint below. In response to consultees, selected onshore sites, included on the wireframes for all viewpoints (see Figures 13.20 to 13.33) have been addressed collectively within the cumulative effects of onshore wind farms below. The cumulative wind farms are summarised in the long list of cumulative projects in Appendix 6A (Cumulative Plans and Projects) and discussed in Chapter 6 (EIA Process). Locations are identified on Figure 13.15.

13.464. As set out within the introduction to this chapter, it should be noted that the viewpoint assessment for the optimised Seagreen Project on its own does not take account of NNG and IC (although these are shown on the wireframes) as, although the original schemes are consented, it is known that both developers are resubmitting (with the schemes modelled in) and as they are not yet consented they have not been taken as part of the existing baseline environment. However, the Inch Cape and Neart na Gaoithe WCS projects are considered within the cumulative assessment.

Viewpoint 1: Garron Point (Stonehaven Golf Club)

13.465. The cumulative wireframes from this viewpoint (see Figure 13.20), illustrate that there would be the potential for up to three other offshore wind farm sites to be visible in combination with the optimised Seagreen Project. This includes Inch Cape and Neart na Gaoithe to the south in the same sector of view, and Kincardine within a different section of the sea horizon, to the northeast. In this context the optimised Seagreen Project, including both Project Alpha and Project Bravo, will form a visually recessive distant element in a central section of the open sea view. The Kincardine WTGs would appear as a visually open array at a much closer point in a separate section of the view with a gap of approximately 54 degrees to the nearest WTG of the optimised Seagreen Project. In contrast, the Inch Cape and Neart na Gaoithe WTGs would overlap with each other in the same sector of view although the Neart na Gaoithe WTGs are highly unlikely to be perceived given that only a limited number of blade tips may just intermittently appear above the horizon line.. The Inch Cape WTGs would form distant elements that partially extend behind the intervening landform with a gap of approximately 10 degrees to the nearest optimised Seagreen Project WTG.

13.466. It is therefore judged that the cumulative scale of visual effect resulting from the addition of the optimised Seagreen Project to the cumulative view of OWFs would be Small leading to a Low magnitude of effect. For the identified Medium sensitivity receptors at this location the incremental cumulative significance of effect from the optimised Seagreen Project will be Minor, (given the presence of both the inch Cape and Neart na Gaoithe WTGs), which is **Not Significant** in SLVIA terms.

13.467. While the onshore sites at Clochnahill and Hillhead of Auquhirie are also present in wider successional views inland to the west they lie within a different sector of the view and context to the seascape.

Viewpoint 2: Beach Road, Kirkton, St Cyrus

13.468. The cumulative wireframes (see Figure 13.21) illustrate that there would be the potential for up to two other offshore wind farm sites to be visible in combination with the optimised Seagreen Project at this location, namely Inch Cape and Neart na Gaoithe. In this context the optimised Seagreen Project will form a separate distant element within a central section of the open sea horizon. The Inch Cape WTGs would lie to the southeast of the view with a gap of 13 degrees to the nearest optimised Seagreen project WTG, but would overlap with the more distant WTGs of Neart na Gaoithe extending across approximately a 32 degree of the open view to the sea horizon. It is judged that the cumulative scale of visual effect resulting from the addition of the optimised Seagreen Project to the cumulative view of OWFs would be Small, leading to a Low magnitude of effect. For the identified High-Medium sensitivity receptors at this location the incremental cumulative significance of effect from the optimised Seagreen Project would be Moderate, (given the presence of both the inch Cape and Neart na Gaoithe WTGs), which is **Not Significant** in SLVIA terms.

13.469. While some onshore sites are present inland in wider successional views to the north, and theoretically in very long distant views along the coastline to the southeast, they lie within a different sector of the view and context to the seascape views towards the optimised Seagreen Project with no significant cumulative effect anticipated from the addition of the optimised Seagreen Project.

Viewpoint 3: White Caterthun Hill Fort

13.470. The cumulative wireframes (see Figure 13.22) illustrate that there would be the potential for up to two other offshore wind farm sites to be visible in combination with the optimised Seagreen Project at this location, namely Inch Cape and Neart na Gaoithe. In this context the optimised Seagreen Project will form a separate, distant OWF element on the horizon line in a central section of the open sea view. The Inch Cape WTGs would lie slightly further to the southeast stretching across 20 degrees of the view with a gap of only approximately 4 degrees from the nearest turbines of the optimised Seagreen Project. The WTGs at Neart na Gaoithe will extend across a further 8 degrees of the view with a gap of 8 degrees to the south of the Inch Cape WTGs. Although Inch Cape and Neart na Gaoithe are sited closer to the coast all three sites will combine to line a substantial proportion of the horizon line. However, given the distances involved all three sites will appear, when visibility permits, as small elements on the distant horizon line.

13.471. It is judged that the cumulative scale of visual effect resulting from the addition of the optimised Seagreen Project to the cumulative view of OWFs would be Small leading to a Low – Very Low magnitude of effect. For High sensitivity receptors at this location the incremental cumulative significance of effect from the optimised Seagreen Project will be Moderate - Minor (given the presence of both the Inch Cape and Neart na Gaoithe WTGs), which is **Not Significant** in SLVIA terms.

13.472. Given the elevated nature of this inland location the panoramic view available to visual receptors potentially embraces a number of onshore sites principally to the northeast and south east in wider successional views, albeit the wireframe and site work confirms that these are at a considerable distance from the viewpoint and not always easy to identify within the landscape However, these wind farms, where visible clearly occupy a different

context inland, away from the seascape context to the east and views towards the optimised Seagreen Project with no significant cumulative effect anticipated from the addition of the optimised Seagreen Project.

Viewpoint 4: Montrose

13.473. The cumulative wireframes from this location, (see Figure 13.23) illustrate that there would be the potential for up to two offshore wind farm sites to be visible in combination with the optimised Seagreen Project, namely Inch Cape and Kincardine with Neart na Gaoithe effectively screened by intervening landform to the south of the viewpoint. In this context the optimised Seagreen Project will form a separate distant element in a central section of the open sea view. The Inch Cape WTGs will lie to the southeast extending across approximately 20 degrees of the view with a gap of approximately 7 degrees from the nearest Seagreen turbines, but also with gaps of 4-5 degrees within its turbine layout. The WTGs at Kincardine will lie at a substantial distance to the north east and will be almost wholly screened by the effects of the curvature of the Earth, with just the blade tips theoretically visible. Importantly, the Inch Cape WTGs are located much closer to the viewpoint and closer to the coastal edge at Scurdie Ness and thus have the potential to intrude upon other coastal edge features and complicate the perception of scale and perspective in the view. This is evidenced by the Height comparison sections in Figure 13.34 which shows that even with the taller WTGs associated with the optimised Seagreen Project, they would still be observed as smaller scaled elements compared to the Inch Cape WTGs.

13.474. It is judged that the cumulative scale of visual effect resulting from the addition of the optimised Seagreen Project to the cumulative view of OWFs would be Small leading to a Low – Very Low magnitude of effect. For the identified High sensitivity receptors at this location the incremental cumulative significance of effect from the optimised Seagreen Project will be Moderate - Minor, (given the presence of both the inch Cape and Neart na Gaoithe WTGs), which is **Not Significant** in SLVIA terms.

13.475. Whilst some onshore sites are theoretically present in wider successional distant views to the north they lie within a different sector of the view and context to the seascape views towards the optimised Seagreen Project, with no significant cumulative effect anticipated from the addition of the optimised Seagreen Project.

Viewpoint 5: Braehead of Lunan

13.476. The cumulative wireframes (see Figure 13.24) illustrate that there would be potential for up to two other offshore wind farm sites to be visible in combination with the optimised Seagreen Project at this location, these again being Inch Cape and Neart na Gaoithe. In this context the optimised Seagreen Project will form a separate distant element in a central section of the open sea view. The Inch Cape WTGs will lie directly to the southeast with a spread of WTGs across 35 degrees of the view. Whilst there is no clear horizon gap between Inch Cape and the optimised Seagreen Project, the Inch Cape turbines will appear noticeably larger and be seen at a much closer point and with a range of different spacings and gaps between individual turbines up to as much as 5 degrees within the composition. The clearer and larger scale of the Inch Cape WTGs will provide some visual separation between those WTGs and the more distant Seagreen WTGs. At a further point to the southeast, the WTGs at Neart na Gaoithe will stretch across an approximate 11 degree sector of the view where they appear to sit partially behind and extend out from the headland at Lang Craig. This has the effect of setting them within a different perceived area of seascape compared to the optimised Seagreen Project and Inch Cape.

13.477. Given the above it is judged that the cumulative scale of visual effect resulting from the addition of the optimised Seagreen Project to the cumulative view of OWFs would be Small leading to a Low magnitude of effect. For the identified High-Medium sensitivity receptors at this location the incremental cumulative significance of effect from the optimised Seagreen Project will be Moderate, (given the presence of both the inch Cape and Neart na Gaoithe WTGs), which is **Not Significant** in SLVIA terms.

13.478. Given the extent of local enclosure inland behind the main focus of the view, any potential views towards onshore sites will be very limited and confined to very distant theoretical views to the south in a different sector of the view and context to the seascape views towards the optimised Seagreen Project. Therefore, there will be no significant cumulative effects anticipated from the addition of the optimised Seagreen Project.

Viewpoint 6: Arbroath Signal Tower

13.479. The cumulative wireframes (see Figure 13.25) illustrate that there would be potential for up to two other offshore wind farm sites to be visible in combination with the optimised Seagreen Project at this location, these again being Inch Cape and Neart na Gaoithe. In this context, the optimised Seagreen Project, will form a separate peripheral distant OWF element to the north of the available open sea view. The Inch Cape WTGs will overlap with the optimised Seagreen Project to the extent of approximately 11 degrees, but will evidently be much larger, closer individual elements. This is evidenced by the Height comparison sections in Figure 13.34 which show that even with the taller WTGs associated with the optimised Seagreen Project, they would still be observed as smaller scaled elements compared to the Inch Cape WTGs. The cumulative WTGs at Inch Cape will continue to extend across 39 degrees of the view, occupying a significant portion of the horizon line and with a range of gaps and spacings between WTG groupings. The optimised Seagreen Project WTGs will be very much peripheral to the view and, when visible, will be seen on the margins of the viewed seascape. The WTGs at Neart na Gaoithe, will sit within a different sector of the horizon extending across 15 degrees of the distant sea horizon to the south with a gap of 18 degrees to the nearest Inch Cape WTG.

13.480. Given this, it is judged that the cumulative scale of effect resulting from the addition of the optimised Seagreen Project to the cumulative view of OWFs would be Small. Leading to a Very Low magnitude of effect. For the identified High sensitivity receptors at this location the incremental cumulative significance of visual effect from the optimised Seagreen Project will be Moderate – Minor, (given the presence of both the inch Cape and Neart na Gaoithe WTGs), which is **Not Significant** in SLVIA terms.

13.481. Any potential views inland towards onshore sites will be limited from this location and confined to very distant theoretical views to the south with onshore turbines set in a different sector of the view from the seascape views towards the optimised Seagreen Project. Therefore, there will be no significant cumulative effect anticipated arising from the addition of the optimised Seagreen Project.

Viewpoint 7: Carnoustie

13.482. The cumulative wireframes (see Figure 13.26) illustrate that there would be the potential for up to two other offshore wind farm sites to be visible, in combination with the optimised Seagreen Project, at this location. These are again Inch Cape and Neart na Gaoithe. In this context the optimised Seagreen Project will form a separate distant element to the far distant side view to the north of the available open sea view. The Inch Cape WTGs will overlap with the optimised Seagreen Project for approximately 14 degrees but will be seen as much larger, closer individual elements. They will continue to stretch across 31 degrees

of the seaward view with a range of random gaps and spacings between WTGs groupings. The WTGs at Neart na Gaoithe, will be located within a separate section of the sea horizon further to the south and extend across approximately 18 degrees with a gap of 18 degrees to the nearest Inch Cape WTGs. Both the optimised Seagreen Project and the Neart na Gaoithe WTGs will be, when visible, very small elements within the available seascape view with the random array of the Inch Cape turbines being the most visible.

13.483. It is judged that the cumulative scale of effect resulting from the addition of the optimised Seagreen Project to the cumulative view of OWFs would be Small leading to a Very Low magnitude of effect. For the identified High-Medium sensitivity receptors at this location the incremental cumulative significance of visual effect from the optimised Seagreen Project will be Minor, (given the presence of both the inch Cape and Neart na Gaoithe WTGs), which is **Not Significant** in SLVIA terms.

13.484. As the wireframes illustrate the potential for inland and coastal views to large scale onshore sites will be restricted from this location due to surrounding built form, with no significant cumulative effect anticipated from the addition of the optimised Seagreen Project.

Viewpoint 8: Fife Ness, Lochaber Rock

13.485. The cumulative wireframes (see Figure 13.27) illustrate that there would be the potential for up to two other offshore wind farm sites to be visible in combination with the optimised Seagreen Project at this location. This are again Inch Cape and Neart na Gaoithe. In this context the optimised Seagreen Project will form a separate distant element to the far distant side view of the available open sea view. The Inch Cape WTGs will overlap with the optimised Seagreen Project for approximately 17 degrees, but will be seen as much larger, closer individual elements, extending across a total of 37 degrees of the view with a range of gaps and spacings between WTGs groupings. The WTGs at Neart na Gaoithe, will lie with a gap of 10 degrees from Seagreen, but will be seen as much larger, closer individual elements within a neighbouring sector of the sea view. This is evidenced by the Height comparison sections in Figure 13.34 which shows that even with the taller WTGs associated with the optimised Seagreen Project, they would still be observed as smaller scaled elements compared to Inch Cape WTGs. The optimised Seagreen Project WTGs will theoretically just be visible rising above the horizon line but, at a minimum distance of 50km, the likelihood of them being visible to visual receptors at this location is very limited.

13.486. Given the above it is judged that the cumulative scale of effect resulting from the addition of the optimised Seagreen Project to the cumulative view of OWFs would be Small – Negligible, leading to a Very Low magnitude of effect. For the identified High sensitivity visual receptors at this location the incremental cumulative significance of visual effect from the optimised Seagreen Project will be Minor – Negligible, (given the greater prominence of the Inch Cape WTGs and the marginal visibility of the optimised Seagreen Project WTGs), which is **Not Significant** in SLVIA terms.

13.487. Views towards onshore sites will be limited from this location, and confined to very distant theoretical views to the far north and south, both in a different sector of the view and context to the seascape views towards the optimised Seagreen Project and with no significant effect anticipated from the addition of the optimised Seagreen Project.

Viewpoint 9: North Berwick Law

13.488. The cumulative wireframes (see Figure 13.28) illustrate that there will be the potential for up to two other offshore wind farm sites to be visible in combination with the optimised Seagreen Project at this location, these being Inch Cape and Neart na Gaoithe. In this context the optimised Seagreen Project will form a very distant element on the horizon line beyond the nearer wind farms of Inch Cape and Neart na Gaoithe. Both the Inch Cape and Neart na Gaoithe WTGs will overlap with the optimised Seagreen Project WTGs, but both will be seen as much larger, closer individual elements. They will both extend the spread of WTGs by 60 to 70 % either side of the optimised Seagreen Project and will be defined by a range of gaps and spacings between WTGs groupings.

13.489. Given the above and the over 70km to the nearest WTG for the optimised Seagreen Project it is judged that the cumulative scale of effect resulting from the addition of the optimised Seagreen Project to the cumulative view of OWFs would be Small – Negligible, leading to a Very Low magnitude of effect. For the identified High sensitivity receptors at this location the incremental cumulative significance of effect from the optimised Seagreen Project will be Minor – Negligible, (given the presence of the Inch Cape and Neart na Gaoithe WTGs) which is **Not Significant** in SLVIA terms.

13.490. From this location, panoramic views towards onshore sites will include very distant views to the far north and also clearly separate sections inland to the south and southwest with onshore wind farms seen in a different context to the seascape views towards the optimised Seagreen Project. Therefore, no significant cumulative effect is anticipated from the addition of the optimised Seagreen Project.

Viewpoint 11: Pinderachy

13.491. The cumulative wireframe (see Figure 13.30) illustrates that there would be the potential for up to two other offshore wind farm sites to be visible, in combination with the optimised Seagreen Project, at this location, these being Inch Cape and Neart na Gaoithe. In this context, the optimised Seagreen Project will form a separate distant element in a central section of the open sea view. The Inch Cape WTGs will lie to the southeast side of the optimised Seagreen Project, stretching across a much wider and adjoining section of the view. The WTGs at Neart na Gaoithe will stretch across a further section of the view, beyond the illustrated wireframe view. Importantly, the Inch Cape WTGs will be located some distance in front of the sea horizon and thus appear closer to the coastal edge, thereby closing the perception of open sea between the coastline and the wind farm.

13.492. Given the above it is judged that the cumulative scale of effect resulting from the addition of the optimised Seagreen Project to the cumulative view of OWFs would be Small, leading to a Low – Very Low magnitude of effect. For the identified High sensitivity visual receptors at this location the incremental cumulative significance of effect from the optimised Seagreen Project will be Moderate – Minor, (given the presence of the Inch Cape and Neart na Gaoithe WTGs), which is **Not Significant** in SLVIA terms.

13.493. As the wireframe illustrates, views towards onshore sites will be limited in the same view east towards the optimised Seagreen Project with no significant cumulative effect anticipated from the addition of the optimised Seagreen Project.

Viewpoint 12: The Geot/Ben Tirran

13.494. The cumulative wireframe (see Figure 13.31) illustrates that there would be the potential for up to two other offshore wind farm sites to be visible, in combination with the optimised Seagreen Project, at this location, these being Inch Cape and Neart na Gaoithe. In this context the optimised Seagreen Project will form a separate distant element in a central section of the open sea view. The Inch Cape WTGs will lie to the southeast side of Seagreen extending across an adjoining section of the view. The WTGs at Neart na Gaoithe will extend across a further section of the view to the south, beyond the illustrated view. It is noted that the Inch Cape WTGs lie in front of the sea horizon and closer to the coastal edge and thus have the potential to close the perception of depth in the seaward view.

13.495. Given the above, it is judged that the cumulative scale of effect resulting from the addition of the optimised Seagreen Project to the cumulative view of OWFs would be Small, leading to a Very Low magnitude of effect. For the identified High sensitivity receptors at this location the incremental cumulative significance of effect from the optimised Seagreen Project will be Moderate – Minor, (given the presence of the Inch Cape and Neart na Gaoithe WTGs), which is **Not Significant** in SLVIA terms.

13.496. From this elevated viewpoint panoramic views will include the various wind farms that are located within the viewed landscape but these will always be seen to occupy a different receiving environment compared to the optimised Seagreen Project WTGs which will be located on the distant horizon line at a distance in excess of 70km from this viewpoint and thus their actual visibility will be very dependent upon weather and atmospheric conditions.

Viewpoint 13: Isle of May

13.497. The cumulative wireframes (see Figure 13.32) illustrate that there would be the potential for up to two other offshore wind farm sites to be visible in combination with the optimised Seagreen Project at this location, these again being Inch Cape and Neart na Gaoithe. In this context the optimised Seagreen Project will form a separate distant element on the distant horizon line to the rear of the available open sea view. Both the Inch Cape and Neart na Gaoithe WTGs will overlap with the optimised Seagreen Project and will be seen as much larger, closer individual elements. They will continue to extend across wider sections of the open view, with a range of gaps and spacings between WTG groupings. Some element of stacking will be apparent in the Inch Cape WTGs whilst the Neart na Gaoithe WTGs will have a more random arrangement. The optimised Seagreen Project WTGs will appear as a distant cluster and be no more than a half to a third of the height of the other two offshore turbines, this reflecting their further distance from this viewpoint location.

13.498. Given the above, it is judged that the cumulative scale of effect resulting from the addition of the optimised Seagreen Project to the cumulative view of OWFs would be Small, leading to a Very Low magnitude of effect. For the identified High sensitivity receptors at this location the incremental cumulative significance of effect from the optimised Seagreen Project will be Minor – Negligible, (given the presence of the consented Inch Cape and Neart na Gaoithe WTGs), which is **Not Significant** in SLVIA terms.

13.499. In terms of onshore wind farms these will occupy a different sector of the available views, predominantly towards the south round to the north west with no significant cumulative effect anticipated from the addition of the optimised Seagreen Project.

Viewpoint 14: Bell Rock Lighthouse

13.500. The cumulative wireframes (see Figure 13.33) illustrate that there would be the potential for up to two other offshore wind farm sites to be visible in combination with the optimised Seagreen Project at this location, this again being Inch Cape and Neart na Gaoithe. In this context, the Inch Cape WTGs will overlap with the optimised Seagreen Project, but will be seen as much larger, closer individual elements whilst the optimised Seagreen Project will be observed as a clearly separate distant element on the horizon line to the rear of the consented Inch Cape WTGs. The Inch Cape WTGs will continue to stretch across a much wider section of the open view, either side of the optimised Seagreen Project and will be defined by a range of groups and single WTGs, with varying gaps and spacings between groupings. The Neart na Gaoithe WTGs would then be visible in a separate section of the view to the south east at a similar distance from the viewpointas Inch Cape. The optimised Seagreen Project WTGs will be sited approximately 30km from this viewpoint whilst those at both Inch Cape and Neart na Gaoithe will be at approximately 8km and 15km respectively.

13.501. Given the above, it is therefore judged that the cumulative scale of effect resulting from the addition of the optimised Seagreen Project to the cumulative view of OWFs would be Small, leading to a Low - Very Low magnitude of effect. For the identified High sensitivity receptors at this location the incremental cumulative significance of effect from the optimised Seagreen Project will be Minor, (given the presence of the consented Inch Cape and Neart na Gaoithe WTGs), which is **Not Significant** in SLVIA terms.

13.502. In terms of onshore wind farms these may be more distantly seen in landward views to the south round to the north west with no significant cumulative effect anticipated from the addition of the optimised Seagreen Project.

Cumulative Visual Summary

13.503. As noted above in the viewpoint assessment (see Table 13.25) for the 14 Representative Viewpoints, there will be a number of locations along the nearest sections of coastline, from where the optimised Seagreen Project will be seen by visual receptors, cumulatively with the Inch Cape and Neart na Gaoithe offshore wind farms. Given the distance from the coast and the orientation of the optimised Seagreen Project, it will generally be observed as a clearly separate, smaller and more distant element that is set behind/apart from the other cumulative sites in most views. Moreover, from the majority of viewpoints, including the nearest locations along the coast, the optimised Seagreen Project will be seen partially, or wholly within the spread of turbines at Inch Cape. At such locations, when visibility permits, they will be seen as a clearly separate element on the distant sea horizon and typically as a coherent single group with a range of tight clusters. In contrast, the nearer turbines at Inch Cape and at Neart na Gaoithe will more often be observed as much larger, closer individual elements that extend across a much wider section of the open view to the seascape, and would be defined by a range of groups and single WTGs with varying gaps and spacings between groupings. From most locations, the WTGs at Neart na Gaoithe would then be visible in a slightly separate section of the same view to the south east.

13.504. As such, the contribution of the optimised Seagreen Project to the cumulative visual effect experienced by onshore visual receptors will be limited with no potential for adding greater significant visual effects to those previously identified, given that the turbines occupy the same area of the sea as the originally consented Project. For the fewer offshore visual receptors who will generally have a reduced sensitivity to the cumulative visual effects, the optimised Seagreen Project will potentially contribute to significant cumulative visual effects. However, the likelihood of this is less than for either Inch cape or Neart na Gaoithe, as both of these projects are located that much closer to the more sheltered waters associated with the coastline and the Firths and both will always be more prominent within views.

Cumulative Effects with Onshore Wind Farms

13.505. To inform the cumulative assessment for onshore wind farms, an initial Zone of Visual Influence or 'Area of Search' was identified for potential cumulative developments within the area surrounding the optimised Seagreen Project. The Area of Search was undertaken within the main study area, extending out to a radius of 70km from the optimised Seagreen Project for selected relevant large-scale developments, as agreed through consultation for this SLVIA (see Table 13.1).

13.506. Due to the large number of onshore wind farms and the geographic extent of the area (see Figure 13.15), an analysis of the overall pattern of development was undertaken to identify groups of relevant large-scale wind farms, in line with the scoping advice. These groups were selected to include all onshore turbines with a blade tip height of 100m+ as well as all other onshore wind farms comprised of at least three turbines of up to 50m+ to blade tip within 70km of the optimised Seagreen Project. This process therefore scoped out smaller single turbines, as a necessary step, to help focus the cumulative assessment on potentially significant effects and "*the additional changes caused by a proposed development in conjunction with other similar developments*" (SNH, 2012: 4).

13.507. Figure 13-15 illustrates the location of the two main clusters of onshore wind farm development that fall within these criteria. These are located as follows:

- A cluster in South Aberdeenshire between Stonehaven and Laurencekirk located at between 35 to 50km distant from the optimised Seagreen Project. They include operational sites at Sheils, Tullo, St Johns Hill, Easter Tulloch, Mid Hill, Clochna Hill and Hillhead of Auquhirie and Meikle Carewe. Based on their location, it is mainly VP3 from which these sites are also visible clearly cumulatively, although there is some potential for successional visibility from VP1 and VP2; and
- A further cluster of several large-scale wind farm developments south of Dunbar in East Lothian and clustered around Crystal Rig at between 72 to 80km distance from the optimised Seagreen Project. These onshore wind farms may be visible on the distant horizon in southern views from the coastal viewpoint locations such as illustrated by VP6 and VP8.

13.508. Collectively, these wind farms provide a regular built influence, which has a strong focus on the Agricultural Heartlands landscape and particularly the Garvock and Glenbervie LCA, within the main study area of 50km. These are all set back from the immediate coastal edge on higher ground and provide a landscape with wind turbines as a backdrop to the west of the seascape character areas. The OWF developments then lie in the separate, simpler context of the marine environment from these sites and, in the case of the optimised Seagreen Project, at a more distant marine location outwith the RSCU/SCAs.

13.509. Combined ZTVs have been prepared in Volume II of this EIA Report, to show visibility of the optimised Seagreen Project with these wind farms. Figure 13.18 shows the combined visibility with the operational and consented onshore sites while Figure 13.19 shows the same, but with the addition of sites in application. At the specific request of consultees (refer to Table 13.1), these figures also include the additional Fife sites beyond the 70km search area at Earlseat and Methil dock.

13.510. There are a number of other smaller single turbines across Aberdeenshire, Angus and Fife that are present on the viewpoint panoramas (see Figures 13.20 to 13.34), but these were filtered out from the ZTVs by the inclusion criteria above and as agreed through scoping consultation.

Summary Assessment of Cumulative Onshore Effects on Regional Seascape Character

13.511. Cumulative effects of onshore wind farm developments on RSCUs are described and assessed in Table 13.29. Seascape character is considered to be more sensitive to offshore wind farms than to onshore wind farms at similar distances.

Table 13.29 Cumulative Effects of onshore wind farms on RSCUs

Regional Seascape Units	Sensitivity	Cumulative Magnitude of Change	Cumulative Effect
SA3: Cove Bay to Milton Ness (Representative viewpoints: VP1 – Garron Point)	Medium	Various operational and consented sites within the South Aberdeenshire cluster, noted above, will provide an existing pattern of wind farm development in the landward setting and backdrop to the RSCU-SA3, but these sites are set back from the coastal edge and will not have significant impact on the wider seascape character. The optimised Seagreen Project will sit at a distant point within the wider seascape to the southeast, outwith the RSCU area with other consented OWF further to the south. The contribution of the optimised Seagreen Project to the cumulative effects will be Small with a Low magnitude and cumulative effects with onshore developments will be limited	Moderate – Minor Not Significant
SA4: Montrose Bay (Representative viewpoints: VP2 – St Cyrus & VP4 – Montrose)	High	The potential for views to the operational and consented sites within South Aberdeenshire will be limited from key coastal sections of this RSCU and the effects are considered to be limited. The contribution of the optimised Seagreen Project to the cumulative effects will be small with a Low-Very Low magnitude	Moderate – Minor Not Significant
SA5: Long Craig (Representative viewpoints: N/A)	Medium	Various operational and consented sites within the South Aberdeenshire cluster noted above will be evident to the north but are unlikely to have an impact on seascape character. There are no in-planning turbines within proximity to the RSCU. The optimised Seagreen Project will sit at a distant point in the seascape and in association with other consented OWFs located at closer distances to the coast. The contribution of the optimised Seagreen Project to the cumulative effects will be small with a Low magnitude	Moderate – Minor Not Significant
SA6: Lunan Bay (Representative viewpoints: VP5 – Braehead of Lunan)	High	The potential for views to the operational and consented sites within the South Aberdeenshire will be largely restricted from key coastal sections of this RSCU and the effects are considered to be limited. There are no in-planning turbines within proximity to the RSCU. The contribution of the optimised Seagreen Project to the cumulative effects will be small with a Low-Very Low magnitude	Moderate – Minor Not Significant
SA7: Land Craig to The Deil's Heid (Representative viewpoints: N/A)	High	Various operational and consented sites within the South Aberdeenshire cluster noted above will be evident in distant views to the north but will not have an impact on seascape character. There are no in-planning turbines within proximity to the RSCU. The optimised Seagreen Project will sit at a distant point in the seascape with other consented OWFs located closer to the coastline and the seascape character areas/RSCUs. The contribution of the optimised Seagreen Project to the cumulative effects will be small with a Low-Very Low magnitude	Moderate – Minor Not Significant

Summary of cumulative impacts on Visual Amenity

13.512. As discussed in the section 'cumulative effects on seascape character' above, within the 50km study area for the optimised Seagreen Project, there will be various locations where a mixture of the optimised Seagreen Project, Inch Cape and Neart na Gaoithe offshore wind farms will theoretically be visible simultaneously along with a number of onshore wind farms. This is illustrated in the ZTVs shown in Figures 13.18 to 13.19.

13.513. As these Cumulative ZTVs indicate, the theoretical cumulative exposure of the operational and consented wind farm developments is widespread. However, from a number of locations along the immediate coastal edge, visibility towards the onshore wind farm developments is more restricted (as is illustrated within the viewpoint wireframes – see Figures 13.20 to 13.33). This is a result of the nature of the landform along the coastal edge which serves to enclose and restrict potential views inland. This extends to include most of the key beach areas within Angus and Aberdeenshire. As these Cumulative ZTVs also demonstrate, the potential for theoretical cumulative exposure with just the optimised Seagreen Project and the onshore developments is very limited and that, where theoretically visible, the optimised Seagreen Project will be seen in the same context as other consented offshore wind farm developments. In addition, the optimised Seagreen Project will rarely add to the existing extent of visual exposure and seldom provide a new defined element into the seascape resource. This is evidenced by the cumulative wireframes for the 14 viewpoints. This will limit the potential for the Seagreen Project to add to any significant cumulative visual effect to any identified land-based or marine receptors, particularly given the conclusions above and the more distant separate location within the offshore wind farm context.

13.514. In summary, as noted above, it is anticipated that the extent of cumulative visual effect arising from the optimised Seagreen Project with other onshore wind farms is limited, given the notable distances of the optimised Seagreen Project located further out to sea beyond the other offshore wind farms and the location of the optimised Seagreen Project within a separate context and setting compared to the onshore developments.

13.515. Therefore, it is considered that no more than Moderate cumulative effects are predicted for two of the fourteen viewpoints, St Cyrus (VP2) and Braehead of Lunan (VP5). This is considered to be **Not Significant** in SLVIA terms. Moderate cumulative effects are predicted where the Seagreen Project will be simultaneously visible on clear days, in addition to Inch Cape and Neart na Gaoithe. Elsewhere there will be no more than Moderate to Minor effects which are **Not Significant** in SLVIA terms, where the optimised Seagreen Project will be distant, but evident on the far sea horizon in addition to Inch Cape and Neart na Gaoithe.

13.516. The differences in views between very distant off-shore wind farms located on a marine horizon and relatively close on-shore wind farms against a land/sky background act on very different parts of a view in different ways, and therefore are assessed as not creating significant cumulative impacts.

13.517. This is comparable to the findings of the 2012 Offshore ES for the originally consented project with no greater significance resulting from the optimised Seagreen Project. Given that the optimised Seagreen Project WTGs occupy the same area of sea as the originally consented Project and, whilst there may have been minor alterations to the baseline in the interim since the 2012 assessment was undertaken, these have been of insufficient scale as to require any adjustment in the significance of effects arising as a resulted of the new project considered within this assessment.

INTERRELATIONSHIPS

13.518. Interrelationships describe the potential interaction of multiple project impacts upon one receptor and have a spatial and/or temporal component. Impacts may occur throughout different phases of the project (construction, operation or decommissioning) and/or different project impacts may have spatial overlap and may interact to create a more significant impact on a receptor than when considered in isolation. Interrelated impacts may be short term, temporary or longer term over the lifetime of the Project.

13.519. With reference to the 2017 Scoping Opinion and subsequent SLVIA scoping consultation, no inter-relationships have been identified for the assessment.

TRANSBOUNDARY IMPACTS

13.520. With reference to the 2017 Scoping Opinion and subsequent SLVIA scoping consultation, no transboundary issues have been identified for the assessment.

MITIGATION AND MONITORING

13.521. As noted in the Environmental Measures section embedded mitigation associated with the development principally relates to the 'pulling back' of turbine development from the western boundary of the Crown Estate's Round 3 Zone boundary for Area 2 and minor adjustments to the boundary location itself such that the nearest turbines are located approximately 10km further offshore than could be considered under the leasing option agreement.

13.522. In addition, as also noted, the ability for further detailed design changes to the layout to translate through into moderating the magnitude of identified effect is judged to be limited.

IMPACT ASSESSMENT SUMMARY – THE OPTIMISED SEAGREEN PROJECT

13.523. In summary, this assessment has considered in an appropriate and proportionate manner, the potential seascape, landscape and visual effects associated with the optimised Seagreen Project throughout the construction, operation and decommissioning stages both in isolation and cumulatively.

13.524. The SLVIA has defined the existing seascape, landscape and visual baseline environments. In doing so it has reviewed and considered the findings of the SLVIA for the originally consented Project, to help inform and establish the parameters for this new, stand-alone SLVIA. The SLVIA has then appraised the sensitivity of these receptors to the type of change proposed and, consistent with the 2017 Scoping Opinion, has 'scoped out' where there is no potential for significant effects to arise. The assessment has also described the key seascape, landscape and visual related aspects associated with both Project Alpha and Project Bravo, but focused on the combined effects of the two adjoining schemes which form the optimised Seagreen Project. It has described the nature of the anticipated change upon the seascape, landscape and visual environments; and, assessed the magnitude and significance of the changes for the construction, operational and decommissioning stages. It has also referenced the order of change that is likely to result compared to the originally consented Project.

13.525. The assessment has found that the distance that the optimised Seagreen Project is located away from the nearest coastline (approximately a minimum of 30km), combined with its siting within a clearly defined offshore, marine environment where the principle of offshore wind farm development has effectively already been accepted through the existing consents, have combined to ensure that there is no prospect of additional or greater significant effects upon either the seascape, or landscape environment, or visual amenity arising as a result of the optimised Seagreen Project.

13.526. The other prevailing characteristics of the seascape (its horizontal linearity, flatness and openness) and levels of visibility at such distances also combine to limit the effects that are anticipated to arise from the WTGs.

13.527. Night time lighting of the WTGs for navigation and aviation is not anticipated to be visible from land. In addition, from locations out at sea, the lights will be seen by marine receptors within the context of the optimised Seagreen Project turbine lighting and other existing offshore wind farms.

13.528. As is evident in the above, the siting of the proposed optimised Seagreen Project at a considerable distance from the coast, within the same application boundaries as the originally consented Project and in a broader context of other consented offshore wind farms, situated at separate closer points to all land-based receptors, means that the potential for significance of effect on the receptors is judged to be comparable to those originally identified within the originally consented Project, with no greater significant effects anticipated.

13.529. Table 13.30 summarises the impact assessment undertaken and the conclusion of impact significance.

Table 13.30 Impact Assessment Summary

Receptor	Potential Impact	Phase (C, O or D)	Impact Significance	Additional Mitigation Measures	Residual Impact Significance
Projects Alpha and Bravo Combined					
Effects on Seascape Character	Upon seascape character	C&D	Minor, reversible and temporary not significant effect during the day and night-time works	None	Same as potential effects
SA3: Cove Bay to Milton Ness	Upon seascape character type	O	Moderate-Minor (not significant)	None	Same as potential effects
SA4: Montrose Bay	Upon seascape character type	O	Moderate (not significant)	None	Same as potential effects
SA5: Long Craig	Upon seascape character type	O	Moderate –Minor (not significant)	None	Same as potential effects
SA6: Lunan Bay	Upon seascape character type	O	Moderate (not significant)	None	Same as potential effects
SA7: Lang Craig to The Deil'sHeid	Upon seascape character type	O	Moderate- Minor (not significant)	None	Same as potential effects
Effects on visual amenity	Upon visual amenity of visual receptors	C&D	Minor, reversible and temporary not significant effect during the day and night-time works	None	Same as potential effects
VP1-Garron Point (Stonehaven Golf Club)	Upon visual amenity of visual receptor	O	Moderate -Minor (not significant)	None	Same as potential effects
VP2-Beach Road, Kirkton, St Cyrus	Upon visual amenity of visual receptor	O	Major-Moderate (significant)	None	Same as potential effects
VP3 -White Caterthun Hill Fort	Upon visual amenity of visual receptor	O	Moderate- Minor (not significant)	None	Same as potential effects
VP4-Montrose	Upon visual amenity of visual receptor	O	Moderate(not significant)	None	Same as potential effects
VP5-Braehead of Lunan	Upon visual amenity of visual receptor	O	Major- Moderate (significant)	None	Same as potential effects

Receptor	Potential Impact	Phase (C, O or D)	Impact Significance	Additional Mitigation Measures	Residual Impact Significance
VP6-Arbroath Signal Tower	Upon visual amenity of visual receptor	O	Moderate- Minor (not significant)	None	Same as potential effects
VP7-Carnoustie	Upon visual amenity of visual receptor	O	Minor(not significant)	None	Same as potential effects
VP8- Fife Ness, Lochaber Rock	Upon visual amenity of visual receptor	O	Minor-Negligible (not significant)	None	Same as potential effects
VP9-North Berwick Law	Upon visual amenity of visual receptor	O	Minor-Negligible(not significant)	None	Same as potential effects
VP10-Dunbar Cliffs	Upon visual amenity of visual receptor	O	Negligible(not significant)	None	Same as potential effects
VP11-Pinderachy	Upon visual amenity of visual receptor	O	Moderate- Minor (not significant)	None	Same as potential effects
VP12-The Geot/Ben Tirran (a corbett)	Upon visual amenity of visual receptor	O	Moderate- Minor (not significant)	None	Same as potential effects
VP13-Isle of May	Upon visual amenity of visual receptor	O	Minor-Negligible (not significant)	None	Same as potential effects
VP14-Bell Rock Lighthouse	Upon visual amenity of visual receptor	O	Moderate – Minor (not significant)	None	Same as potential effects
Project Alpha					
Effects on Seascape Character	Upon seascape character	C&D	Minor, reversible and temporary not significant effect during the day and night-time works	None	Same as potential effects
SA3: Cove Bay to Milton Ness	Upon seascape character type	O	Moderate-Minor (not significant)	None	Same as potential effects
SA4: Montrose Bay	Upon seascape character type	O	Moderate (not significant)	None	Same as potential effects
SA5: Long Craig	Upon seascape character type	O	Moderate-Minor (not significant)	None	Same as potential effects

Receptor	Potential Impact	Phase (C, O or D)	Impact Significance	Additional Mitigation Measures	Residual Impact Significance
SA6: Lunan Bay	Upon seascape character type	O	Moderate (not significant)	None	Same as potential effects
SA7: Lang Craig to The Deil'sHeid	Upon seascape character type	O	Moderate-Minor (not significant)	None	Same as potential effects
Effects on visual amenity	Upon visual amenity of visual receptors	C&D	Minor, reversible and temporary not significant effect during the day and night-time works	None	Same as potential effects
VP1-Garron Point (Stonehaven Golf Club)	Upon visual amenity of visual receptor	O	Moderate -Minor(not significant)	None	Same as potential effects
VP2-Beach Road, Kirkton, St Cyrus	Upon visual amenity of visual receptor	O	Major-Moderate (significant)	None	Same as potential effects
VP3 -White Caterthun Hill Fort	Upon visual amenity of visual receptor	O	Moderate- Minor (not significant)	None	Same as potential effects
VP4-Montrose	Upon visual amenity of visual receptor	O	Moderate (not significant)	None	Same as potential effects
VP5-Braehead of Lunan	Upon visual amenity of visual receptor	O	Major- Moderate (significant)	None	Same as potential effects
VP6-Arbroath Signal Tower	Upon visual amenity of visual receptor	O	Moderate- Minor(not significant)	None	Same as potential effects
VP7-Carnoustie	Upon visual amenity of visual receptor	O	Minor (not significant)	None	Same as potential effects
VP8- Fife Ness, Lochaber Rock	Upon visual amenity of visual receptor	O	Minor-Negligible (not significant)	None	Same as potential effects
VP9-North Berwick Law	Upon visual amenity of visual receptor	O	Minor-Negligible(not significant)	None	Same as potential effects
VP10-Dunbar Cliffs	Upon visual amenity of visual receptor	O	Negligible (not significant)	None	Same as potential effects
VP11-Pinderachy	Upon visual amenity of visual receptor	O	Moderate- Minor (not significant)	None	Same as potential effects

Receptor	Potential Impact	Phase (C, O or D)	Impact Significance	Additional Mitigation Measures	Residual Impact Significance
VP12-The Geot/Ben Tirran (a corbett)	Upon visual amenity of visual receptor	O	Moderate- Minor (not significant)	None	Same as potential effects
VP13-Isle of May	Upon visual amenity of visual receptor	O	Minor-Negligible (not significant)	None	Same as potential effects
VP14-Bell Rock Lighthouse	Upon visual amenity of visual receptor	O	Moderate – Minor(not significant)	None	Same as potential effects
Project Bravo					
Effects on Seascape Character	Upon seascape character	C&D	Minor, reversible and temporary not significant effect during the day and night-time works	None	Same as potential effects
SA3: Cove Bay to Milton Ness	Upon seascape character type	O	Minor (not significant)	None	Same as potential effects
SA4: Montrose Bay	Upon seascape character type	O	Moderate (not significant)	None	Same as potential effects
SA5: Long Craig	Upon seascape character type	O	Minor (not significant)	None	Same as potential effects
SA6: Lunan Bay	Upon seascape character type	O	Moderate (not significant)	None	Same as potential effects
SA7: Lang Craig to The Deil'sHeid	Upon seascape character type	O	Minor (not significant)	None	Same as potential effects
Effects on visual amenity	Upon visual amenity of visual receptors	C&D	Minor, reversible and temporary not significant effect during the day and night-time works	None	Same as potential effects
VP1-Garron Point (Stonehaven Golf Club)	Upon visual amenity of visual receptor	O	Minor (not significant)	None	Same as potential effects
VP2-Beach Road, Kirkton, St Cyrus	Upon visual amenity of visual receptor	O	Moderate (not significant)	None	Same as potential effects
VP3 -White Caterthun Hill Fort	Upon visual amenity of visual receptor	O	Minor (not significant)	None	Same as potential effects

Receptor	Potential Impact	Phase (C, O or D)	Impact Significance	Additional Mitigation Measures	Residual Impact Significance
VP4-Montrose	Upon visual amenity of visual receptor	O	Moderate- Minor (not significant)	None	Same as potential effects
VP5-Braehead of Lunan	Upon visual amenity of visual receptor	O	Moderate (not significant)	None	Same as potential effects
VP6-Arbroath Signal Tower	Upon visual amenity of visual receptor	O	Moderate- Minor (not significant)	None	Same as potential effects
VP7-Carnoustie	Upon visual amenity of visual receptor	O	Minor (not significant)	None	Same as potential effects
VP8- Fife Ness, Lochaber Rock	Upon visual amenity of visual receptor	O	Minor-Negligible (not significant)	None	Same as potential effects
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VP13-Isle of May	Upon visual amenity of visual receptor	O	Minor-Negligible (not significant)	None	Same as potential effects
VP14-Bell Rock Lighthouse	Upon visual amenity of visual receptor	O	Moderate – Minor (not significant)	None	Same as potential effects
Cumulative Impact Assessment					
Effects on Seascape Character	Upon seascape character	C&D	Minor, reversible and temporary not significant effect during the day and night-time works	None	Same as potential effects
SA3: Cove Bay to Milton Ness	Upon seascape character type	O	Moderate – Minor (not significant)	None	Same as potential effects

Receptor	Potential Impact	Phase (C, O or D)	Impact Significance	Additional Mitigation Measures	Residual Impact Significance
SA4: Montrose Bay	Upon seascape character type	O	Moderate (not significant)	None	Same as potential effects
SA5: Long Craig	Upon seascape character type	O	Minor (not significant)	None	Same as potential effects
SA6: Lunan Bay	Upon seascape character type	O	Moderate – Minor (not significant)	None	Same as potential effects
SA7: Lang Craig to The Deil'sHeid	Upon seascape character type	O	Moderate–Minor (not significant)	None	Same as potential effects
Effects on visual amenity	Upon visual amenity of visual receptors	C&D	Minor, reversible and temporary not significant effect during the day and night-time works	None	Same as potential effects
VP1-Garron Point (Stonehaven Golf Club)	Upon visual amenity of visual receptor	O	Minor (not significant)	None	Same as potential effects
VP2-Beach Road, Kirkton, St Cyrus	Upon visual amenity of visual receptor	O	Moderate (not significant)	None	Same as potential effects
VP3 -White Caterthun Hill Fort	Upon visual amenity of visual receptor	O	Minor (not significant)	None	Same as potential effects
VP4-Montrose	Upon visual amenity of visual receptor	O	Moderate-Minor (not significant)	None	Same as potential effects
VP5-Braehead of Lunan	Upon visual amenity of visual receptor	O	Moderate (not significant)	None	Same as potential effects
VP6-Arbroath Signal Tower	Upon visual amenity of visual receptor	O	Moderate–Minor (not significant)	None	Same as potential effects
VP7-Carnoustie	Upon visual amenity of visual receptor	O	Minor (not significant)	None	Same as potential effects
VP8- Fife Ness, Lochaber Rock	Upon visual amenity of visual receptor	O	Minor-Negligible (not significant)	None	Same as potential effects
VP9-North Berwick Law	Upon visual amenity of visual receptor	O	Minor-Negligible (not significant)	None	Same as potential effects

Receptor	Potential Impact	Phase (C, O or D)	Impact Significance	Additional Mitigation Measures	Residual Impact Significance
VP10-Dunbar Cliffs	Upon visual amenity of visual receptor	O	Negligible (not significant)	None	Same as potential effects
VP11-Pinderachy	Upon visual amenity of visual receptor	O	Moderate-Minor (not significant)	None	Same as potential effects
VP12-The Geot/Ben Tirran (a corbett)	Upon visual amenity of visual receptor	O	Moderate-Minor (not significant)	None	Same as potential effects
VP13-Isle of May	Upon visual amenity of visual receptor	O	Minor-Negligible (not significant)	None	Same as potential effects
VP14-Bell Rock Lighthouse	Upon visual amenity of visual receptor	O	Moderate–Minor (not significant)	None	Same as potential effects
Key: C = Construction, O = Operational, D = Decommissioning					

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