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Glossary

Assessment (Landscape)	An umbrella term for description, classification and analysis of landscape.
Baseline	The landscape and visual character of the study area as it exists at the commencement of the assessment process – i.e. prior to the development proposal under consideration including the operational and consented wind farms within the study area identified to be taken account of in the assessment.
Blade Tip visibility	Term used when referring to analysis of Zones of Theoretical Visibility which are based on predicted visibility of any part of the proposed Wind Turbine Generators (WTGs) up to the full height of blade tip.
Country	The rural environment and its associated communities (including the coast).
Cumulative Effects	Effects arising from the additional changes to the landscape or visual character caused by a proposed development in conjunction with other developments (associated with it or separate to it).
Digital Terrain Model (DTM)	Computer generated three dimensional model based on aerial survey of ground surface (e.g. Ordnance Survey <i>Profile data</i>). Often utilised as a basis for visibility modelling over large areas.
Diversity	Where a variety of qualities or characteristics occur.
Effect	The result of an impact on a landscape or visual receptor.
Element	A component part of the landscape (e.g. roads, hedgerows, woods).
Field Pattern	The pattern of hedges and walls that define fields in farmed landscapes.
Future Cumulative	Application and scoping stage wind farms within the study area included in the assessment.
Horizontal Subtended Angle	The angle measured in degrees from the left most visible part to the right most visible part of any development.
Key Characteristics	The elements of the landscape and/or their inter relationship which form the defining components of the landscape.
Impact	The change arising for a landscape or visual receptor as a result of some form of alteration to the baseline.
Land Cover:	Combination of land use and vegetation that covers the land surface.
Landform	The topography of land or seabed, the extent to which the elevation changes and resulting features.
Landscape	Human perception of the land conditioned by knowledge and identity with a place (as defined in the <i>Guidelines for Landscape and Visual</i>

Impact Assessment (GLVIA) (The Landscape Institute and the Institute of Environmental Management and Assessment (IEMA), 2002).

An area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors (as defined in the *European Landscape Convention* (Council of Europe, 2000).

Landscape Capacity	The degree to which a particular landscape character type (LCT) or area is able to accommodate change without unacceptable negative effects on its character. Capacity is likely to vary according to the type and nature of the changes being proposed. The capacity of the landscape is derived from a combination of Landscape Character Sensitivity, Visual Sensitivity and Landscape Value.
Landscape Character	The distinct and recognisable pattern of elements that occurs consistently in a particular type of landscape, and how this is perceived by people. It reflects particular combinations of geology, landform, soils, vegetation, land use and human settlement. It creates the particular sense of place in different areas of the landscape.
Landscape Character Area	These are single unique areas which are the discrete geographical areas of a particular landscape type.
Landscape Character Type (LCT)	A landscape type will have broadly similar patterns of geology, landform, soils, vegetation, land use, settlement and field pattern discernible in maps and field survey records.
Landscape Effect	The consequence of change in the elements, characteristics, qualities and overall character of the landscape as a result of any development. These effects can be positive, neutral or negative.
Landscape Feature	A prominent eye-catching element or landmark (e.g. church spire, wooded hilltop).
Landscape Impact	The change in the elements, characteristics, qualities and overall character of the landscape as a result of any development.
Landscape Quality (or Condition)	Based on judgments about the physical state of the landscape and about its intactness. Also relates to the state of repair of individual features and elements which make up character in any one place.
Landscape Resource	The combination of elements that contribute to landscape context, character and value.
Landscape Sensitivity	The sensitivity of a landscape is based on combining value and susceptibility of the resource to the change envisaged by a proposed development.
Landscape Susceptibility (to a specific type of change)	The extent to which a landscape can accept change of a particular type and scale and is assessed in relation to the following: <ul style="list-style-type: none"> • existing land use; • pattern and scale of the landscape and its elements/features; • simplicity/complexity of the landscape;

- landscape quality or condition including presence of any detracting features;
- the nature of skylines;
- visual enclosure/openness of views and distribution of visual receptors;
- value placed on the landscape – which may be expressed through designation or other identifiable form of recognition; and
- scope of mitigation, which will be in character with the existing landscape.

Land Use	The primary use of land, including both rural and urban activities.
Landscape Value	The relative value or importance attached to a landscape (often as a basis for designation or recognition), which expresses commonly held national or local perception of its quality, special qualities and/or scenic beauty, tranquillity or wildness and cultural associations.
Magnitude of Change	<p>The magnitude of change arising from a proposed development is described as high, moderate, low or negligible based on the interpretation of a combination of parameters, as follows:</p> <ul style="list-style-type: none">• distance of the viewpoint from the development;• duration of the predicted impact;• extent of the development in the view (e.g. the horizontal angle subtended by it);• angle of view in relation to main receptor activity;• degree of contrast;• visual permeability of the development (i.e. extent to which views will be blocked or will be retained, albeit interrupted and altered);• background to the development; and• extent and nature of other built development visible.
Methodology	The specific approach and techniques used for a given study.
Mitigation Measures	Measures including any process, activity or design process to avoid, reduce, or remedy negative landscape and visual impacts of a development. Mitigation can also apply to the improvement of existing negative effects associated with existing developments/features in the landscape.
Policy Woodlands	A diverse and multi-purpose woodland, historically associated with plantings around country houses.
Perception (of Landscape)	The psychology of seeing and possibly attaching value or meaning to the landscape.
Receptor	Physical landscape resource, special interest or individual or group experiencing the view liable to change as a result of the proposed development.
Receptor Location	Location occupied by identified receptors.

Residual Effects	Effect of development after mitigation proposals are taken into account.
Scoping	The process of identifying likely significant effects of a development on the environment – which may be carried out in a formal or informal way.
Seascape	An area of sea, coastline and land, as perceived by people, whose character results from the actions and interactions of land with sea, by natural and/or human factors (definition from <i>An Approach to Seascape Character Assessment</i> , Natural England, 2012).
Seascape Character	Seascape character is a distinct and recognisable pattern of elements in the seascape that makes one seascape different from another, rather than better or worse (definition from <i>An Approach to Seascape Character Assessment</i> , Natural England, 2012).
Seascape Sensitivity	The sensitivity of a seascape is based on combining value and susceptibility of the resource to the change envisaged by a proposed development.
Seascape Susceptibility (to a specific type of change)	The ability of a seascape to respond to and accommodate change. It reflects seascape character, the nature of change and the way both are perceived and experienced by people (definition from <i>An Approach to Seascape Character Assessment</i> , Natural England, 2012).
Significant Effect	An effect which is considered by the assessor to be “significant” in terms of the Environmental Impact Assessment Regulations (85/337/EEC) which require the identification of significant effects.
The Development/ Development	Refers to WTGs, inter-array cables, OSPs and the Offshore Export Cable and any other associated works (all elements associated with this application)
Visual Amenity	<p>Particular composition of landscape elements that contribute to a view, or views.</p> <p>The value of a particular area or view in terms of what is seen (as defined in the GLVIA (Landscape Institute and Institute of Environmental Management and Assessment, December 2013).</p>
Visibility Analysis	The process of identifying theoretical (based on digital modelling) and/or actual predicted areas from where any given development may be seen.
Visual Effect	The consequence of change in the appearance of the landscape as a result of a development, which may be positive or negative.
Visual Impact	The change in the appearance of the landscape and nature of views which may be negative or positive.
Viewpoint Sensitivity	<p>Based on combining value and susceptibility of the view or visual amenity to the change envisaged by a proposed development.</p> <p>Taking into account the following:</p>

- location and context of the viewpoint;
- land use or main activity at the viewpoint;
- frequency and duration of use;
- seascape or landscape character and quality of the intervening seascape or landscape; and
- importance of the view (which may be determined with respect to its popularity or number of affected people, its appearance in guidebooks, on tourist maps and the facilities provided for its enjoyment and references to it in literature and/or art).

Zone of Theoretical Visibility

The area predicted to have views of a proposed development on the basis of a digital terrain model or digital surface model, which may/may not take account of land cover features.

Abbreviations and Acronyms

AGLV	Area of Great Landscape Value
AOD	Above Ordnance Datum
FTOWDG	Forth and Tay Offshore Wind Developers Group
GDL	Garden and Designed Landscape
GLVIA	Guidelines for Landscape and Visual Impact Assessment
HSA	Horizontal Subtended Angle
LAT	Lowest Astronomical Tide
LCA	Landscape Character Assessment
LCT	Landscape Character Type
LLA	Local Landscape Area
MOD	Ministry of Defence
MS	Marine Scotland
NCN	National Cycle Network
OfTW	Offshore Transmission Works
OnTW	Onshore Transmission Works
OS	Ordnance Survey
OSP	Offshore Substation Platform
SA	Regional Seascape Character Area
SCA	Seascape Character Assessment
SLV	Seascape, Landscape and Visual
SLVIA	Seascape, Landscape and Visual Impact Assessment
SNH	Scottish Natural Heritage
WTG	Wind Turbine Generator
ZTV	Zone of Theoretical Visibility

12 Seascape, Landscape and Visual Impacts

12.1 Introduction

- 1 This chapter presents the assessment of potential Seascape, Landscape and Visual (SLV) impacts predicted to arise from the Inch Cape Wind Farm and associated Offshore Transmission Works (OfTW) within the Firths of Forth and Tay.
- 2 The Seascape, Landscape and Visual Impact Assessment (SLVIA) considers potential effects including cumulative effects on:
 - Seascape character caused by changes in the key characteristics and qualities of the seascape as a result of the Inch Cape Wind Turbine Generators (WTGs) and Offshore Substation Platforms (OSPs);
 - Landscape character and designated landscapes caused by changes in the key characteristics and qualities of the landscape as a result of the Inch Cape WTGs and OSPs;
 - Visual amenity caused by changes in the appearance of the seascape and/or landscape as a result of the Inch Cape WTGs and OSPs; and
 - Potential SLV amenity effects resulting from the construction of the Offshore Export Cable.
- 3 The following appendices and chapters should be read in conjunction with this chapter and the introductory chapters:
 - *Appendix 12A: Seascape, Landscape and Visual Impact Baseline;*
 - *Appendix 12B: Zones of Theoretical Visibility Analysis;*
 - *Appendix 12C: Viewpoint Assessment;*
 - *Appendix 12D: Regional Seascape Assessment;*
 - *Appendix 12E: Seascape, Landscape and Visual Figures (Figures 12.1-12.34);*
 - *Appendix 12F: Seascape and Landscape Visualisations (Figures 12.35 – 12.60);*
 - *Appendix 12G: Additional Wirelines for Information;*
 - *Appendix 12H: The Likely Observability of Offshore Wind Turbine Lighting;*
 - *Appendix 6A Design Considerations;*
 - *Chapter 13: Cultural Heritage and Marine Archaeology;*
 - *Chapter 15: Shipping and Navigation;*
 - *Appendix 15A: Marine Traffic Validation Study;*
 - *Appendix 15C.1: Navigational Risk Assessment; and*
 - *Chapter 16: Socioeconomics.*

- 4 Where figures are referenced in this chapter they are contained in either *Appendix 12E*, *12F* or *Appendix 12G*.
- 5 As the seascape and landscape surrounding the area in which the Development is located already accommodates both operational and consented wind farms (both onshore and offshore), and other vertical, tall structures (the oil rig maintenance structures in Dundee), this SLVIA has been carried out on the basis of the addition of the Inch Cape WTGs and OSPs to this existing baseline. As the Inch Cape WTGs and OSPs will likely only be viewed with these schemes, this approach has been agreed with consultees during the consultation process as being acceptable. Therefore, the baseline referred to throughout this assessment includes both the relevant operational and consented wind farms (and the oil rig maintenance structures in Dundee where relevant). An assessment of the effects of the Development with the relevant operational and consented schemes: (the baseline) and application or scoping stage wind energy developments has also been carried out (the future cumulative scenario).

12.2 Consultation

- 6 A scoping report for the Development was issued by ICOL in April 2017. ICOL held a stakeholder meeting on the 22nd May 2017 to clarify the proposed methodology and approach and to address questions from stakeholders in order to help them formulate their Scoping response. Details of the Pre-Scoping Opinion Stakeholder meeting are provided in Table 12.1 below.
- 7 Marine Scotland (MS-LOT) acting as consenting authority to the Scottish Ministers responded with a Scoping Opinion in July 2017. Issues relating to the SLVIA are listed in Table 12.2, where these have been addressed in this Environmental Impact Assessment (EIA) Report this has been identified.
- 8 Key consultees who responded to the Scoping Opinion on the matter of SLVIA were:
 - SNH;
 - East Lothian Council (ELC);
 - Angus Council; and
 - Aberdeenshire Council (responded at a later date)
- 9 Dundee City Council, Scottish Borders Council and Fife Council had no comments specific to the SLVIA.
- 10 In addition to the responses provided in the formal Scoping Opinion (Table 12.2 and Table 12.3), further consultation has been undertaken in relation to clarifying the scope of the assessment, relevant details of which are included in the consultation Table 12.4 below.
- 11 The information received through the Scoping Opinion, along with the additional consultations and recognised best practice, has informed the methodology and scope for the assessment of the impacts presented in this chapter.

- 12 In addition to this, the SLVIA utilises the approach established by the Forth and Tay Offshore Wind Developers Group (FTOWDG) ¹ initiative, where relevant and as agreed by SNH and detailed within the assessment.

Table 12.1: Pre-Scoping Opinion Stakeholder Meeting (22nd May 2017)

Consultees	Issue and ICOL response
SNH, ELC, MS-LOT	<p>ICOL met with SNH, ECL and MS_LOT at a stakeholder meeting on 22 May 2017 to discuss in more detail the proposed approach to the SLVIA.</p> <p>ICOL agreed to include North Berwick Law as a specific viewpoint. ICOL provided wirelines from Berwick Law, Tantallon Castle, Ravenshaugh Sands and Yellow Craig and an additional note in relation to the proposed study area for Seascape, Landscape Visual Impact Assessment ("SLVIA"). ICOL has agreed that these will be included in an appendix of the EIA Report (see <i>Appendix 12G</i>).</p> <p>ELC subsequently requested one further wireframe for a view towards Bass Rock and an assessment of the effect of night time lighting on this viewpoint.</p> <p>ICOL maintain a 50km study area is sufficient and proportionate to assess the potential significant effects from the Revised Development (see <i>Section 12.6.1</i>).</p>

Table 12.2: Scoping Opinion

Consultees	Issue and ICOL response
Scottish Ministers (Scoping Opinion)	<p>Study Area and Viewpoints</p> <ul style="list-style-type: none"> As the turbine height in the Revised Development are larger than any that have been considered previously the Scottish Ministers consider that using a 50km radius study area with the addition of potentially sensitive visual receptors located outside this will ensure that areas where there could be a significant effect will be taken into account. The additional potentially sensitive visual receptors should be as agreed with the relevant local authorities. The Scottish Ministers agree with the provision of wirelines from Berwick Law, Tantallon Castle, Ravenshaugh Sands and Yellow Craig for information and recommend that the additional viewpoint towards Bass Rock as suggested by ELC is included. That ICOL discuss with Angus Council the inclusion of viewpoints for Cat Law, Dreish and Airlie Monument. That ICOL retake photographs where stakeholders have recommended that this should be done to represent clearer views or to adhere to SNH's new guidelines.

¹ FTOWDG was formed in 2009 and was chaired by The Crown Estate and representatives from the offshore wind farms in the outer Firth of Tay: Inch Cape; Neart na Gaoithe (NNG); and the Firth of Forth Round 3 Zone (Seagreen) (see Figure 12.19 which identifies the location of NNG and Seagreen).

Scottish Ministers (Scoping Opinion)	<p>Design</p> <p>The Scottish Ministers</p> <ul style="list-style-type: none"> • Agree with the summary of potential effects and whether they should be scoped in or out as listed in Table 9-5 and 9-6 but note that the assessment should include additional viewpoints (see above). • Advise ICOL provide a clear explanation of the approach being taken to the wind farm design and the choice of layout taking into account advice from SNH and comments received previously from Angus Council. • Advise ICOL that where the design and layout differ from SNH guidance reasons for this must be given.
Scottish Ministers (Scoping Opinion)	<p>Assessment Methodology and Approach</p> <p>The Scottish Ministers</p> <ul style="list-style-type: none"> • Agree that the proposed development should be considered in relation to the consented development rather than the original “worst case”. • Agree that the baseline coastal character assessment previously undertaken by the Forth and Tay offshore wind developer’s group can be used, see <i>Appendix 12D: Regional Seascape Assessment</i>. • Agree with the suggestion by SNH that a comparison of the model outputs of the increase in turbine size in appropriate increments (either as individual or composite ZTVs) with the ZTV for the 2014 consented scheme is provided to give more detailed information on the amount and range of visibility of the larger turbines.
Scottish Ministers (Scoping Opinion)	<p>Assessment Methodology and Approach – Cumulative Impacts</p> <p>The Scottish Ministers advise that the following developments should be considered in the cumulative impact assessment for SLVIA:</p> <ul style="list-style-type: none"> • Worst case scenario of Neart na Gaoithe (2014 as consented) or Neart na Gaoithe (2017 scoping report) • Worst case scenario of Seagreen Alpha and Bravo (2014 as consented) or Seagreen (2017 scoping report) • Kincardine Offshore Windfarm • Forthwind Offshore Windfarm (2016 consent) • Forthwind Offshore Wind Demonstration Project • Onshore wind farms as advised by Local Authorities

Table 12.3: Scoping responses and actions

Consultees	Scoping Response	ICOL Response
SNH	Design: SNH raised concerns over the Wind Farm design and that it is contrary to SNH guidance. Request that there is a clear statement of the design rationale, including any technical constraints which have influenced the turbine layout.	The design rationale and approach were discussed with SNH and MS-LOT at September 2017 consultation meeting when the key design factors from all environmental and technical considerations were identified. This information and the design rationale is provided in <i>Appendix 6A Design Considerations</i> .
	Design: Suggestion of reviewing the embedded design mitigation and reworking the previous design sensitivity analysis.	This was discussed with MS-LOT and SNH at the September 2017 consultation meeting when it was agreed that the key findings of the design sensitivity analysis remain valid, namely that a grid or offset grid layout of turbines corresponds to the most consistently visually balanced appearance to the proposed WTGs.
	Study Area: SNH broadly accept the 50 km study area but noted there may be sensitive visual receptors on the border or just beyond that would need consideration.	As confirmed by MS-LOT the study area has been retained at 50 km radius with the addition of one viewpoint at North Berwick Law and illustrative wirelines from more distant locations requested by consultees.
	Baseline: SNH advise that the coastal character assessment previously undertaken by the FTOWDG can be used for this EIA Report.	Noted and applied, see <i>Section 12.6.5</i> , paragraph 95, Table 12.9 and <i>Appendix 12D</i> .
	ZTV: SNH request that it would be useful to explore the changes in visibility between the 215m high turbines to the larger turbines proposed using an incremental ZTV.	Discussed at subsequent meetings when limited changes in ZTV for Scoping stage layout at 301m to blade tip and the consented Inch Cape development at 215m were noted. A further comparative blade tip ZTV for the proposed Inch Cape Wind Farm (291m to blade tip) with the consented Inch Cape development was provided to SNH during consultation. Horizontal angle subtended ZTVs have been provided in <i>Appendix 12E</i> .
	Viewpoints: SNH are content with the proposed viewpoint selection, taking into consideration any sensitive locations on the borderline of the 50km study area.	Noted. An additional viewpoint at North Berwick Law (Viewpoint 26) was agreed following discussions with ELC, due to its elevated location providing panoramic views for many visitors and walkers. Further illustrative wirelines from Airlie Monument in Angus, Tantallon Castle,

Consultees	Scoping Response	ICOL Response
		Ravenshaugh Sands, Yellow Craig, and a coastal route view towards Bass Rock in East Lothian have been provided in <i>Appendix 12G</i> . The additional wirelines are provided for information only and have not formed part of the SLVIA.
	Photography: General acceptance to retaining original photography but new photographs will be needed where baseline has substantially changed.	New photography was taken for 12 of the 25 Inch Cape 2013 EIA Photographs following a review of baseline changes.
	Wirelines: SNH request the exploration of the changes in turbine height from the Original Development to the proposed through the use of wirelines and comparative distances.	Comparative wirelines were tabled at the August 2017 consultation meeting, and a further set of comparative wirelines provided during subsequent consultation.
	Photomontages: SNH advise that the photomontages should provide accurate turbine tower widths and blade widths for the taller turbine.	Noted. The photomontages use a model based on the expected worst-case dimensions of the turbine models to be shown in the assessment. As WTGs of the proposed worst case do not currently exist, dimensions have been extrapolated to ensure they remain proportionate relative to the proposed height. Dimensions used in the photomontages comprise: 291m blade tip height, 166m hub height; tower 10m diameter at base and 7.5m diameter at top; hub 15m diameter; nacelle 26m x 9.5m x 9.5m; maximum blade width 9.5m. Should the largest turbine be constructed these dimensions may vary slightly but are unlikely to materially alter the appearance of the turbines from those shown in the visualisations.
	Cumulative Impact Assessment (CIA): Acknowledgment that the cumulative effects with NNG and Seagreen will intensify and that a rigorous design process is likely to reduce the potential for significant effects.	Noted. The consented (2014) NNG and Seagreen Wind Farms, as agreed, have been used in the CIA. The design criteria developed through the FTODWG Sensitivity Design Analysis will continue to be applied, within the context of other hard constraints. See <i>Section 12.5</i> , and <i>Appendix 6A</i>

Consultees	Scoping Response	ICOL Response
	CIA: SNH request that Kincardine Floating Wind Project is included with regard to sequential cumulative impacts on coastal transport routes.	Kincardine Floating Wind Project is considered in the cumulative assessment.
ELC	Data: ELC make reference to their <i>Local Landscape Designation Review</i> (2016) published as Technical Note 9 and Appendices I to IV.	ELC's Landscape Designation Review (2016) and Technical Note 9, Appendices 1 to VI were consulted during preparation of the SLVIA. It is noted that it is not adopted guidance at the time of preparing this assessment.
	Viewpoints: ELC have concerns that visuals from East Lothian would be scoped out.	Viewpoint 25 at Dunbar and a new viewpoint at North Berwick Law (Viewpoint 26) are included in the SLVIA along with additional illustrative wirelines from the ELC coast provided in <i>Appendix 12G</i> . The illustrative wirelines will not undergo any assessment.
	Onshore Works: Consideration of Landscape and Visual impacts of the onshore works within scope of SLVIA.	The SLVIA considers the construction and installation of the landfall connection up to high water. The onshore application submitted to ELC in March 2018 assesses all other onshore works. Reference will be made to the EIA submitted as part of this application, and an overall assessment has been included in this EIA Report.
	CIA: ELC considers there are wind turbines outwith the 50 km ZTV that will add to the cumulative impact upon views from East Lothian. They request that Earls Seat, Crystal Rig and Aikengall should be included as a minimum.	The cumulative search area extended to 65 km from the outer Inch Cape turbines and those sites mentioned within ELC are considered. It is noted from subsequent discussions with ELC that other wind farms in the view from North Berwick will be referenced but not included within the full cumulative assessment.
	Lighting: ELC request that the effects on night lighting on East Lothian are assessed and including cumulative sites.	ICOL commissioned the University of Edinburgh's Institute of Astronomy to carry out an assessment on the potential observability of lighting from an offshore wind farm, see <i>Appendix 12H: The Likely Observability of Offshore Wind Turbine Lighting</i> . This report assessed the likely detectability of lighting required at the Wind Farm, taking into account the properties of the human eye. For example, a 2000 candela light would be

Consultees	Scoping Response	ICOL Response
		<p>potentially visible (on a moonless night, in clear conditions away from street lighting) to a distance of approximately 37 km for a red light (see Figure 4: The illuminance of a single red light as a function of distance).</p> <p>Therefore, it is unlikely that the 2000 red candela (the highest intensity light currently required to be installed on the WTGs) will be visible from East Lothian Coast (the closest locations being Bass Rock at approximately 46.9 km, or St Baldred's Boat near Tantallon Castle at 48.6 km).</p> <p>In the unlikely scenario that the WTG lights are observed together due to a particular alignment of WTGs (creating the illusion of a higher intensity light on the human eye) it is considered that the impacts would not result in a significant effect.</p>
	Photographs: ELC request that a new photograph is taken from Dunbar due to cloud shadows at location of proposed development.	It is noted that the photography at Dunbar used for the Inch Cape 2014 Consent SLVIA demonstrates a relatively clear horizon line. However, as new photography at Berwick Law is required, the photography will be retaken at Dunbar.
	Study Area: Concerns that a 50 km Radius would not be appropriate and recommend a 60 km radius.	<p>In agreement with MS-LOT the study area has been retained at 50 km radius with the addition of illustrative wirelines from more distant locations requested by consultees.</p> <p>This was discussed at the pre-submission meeting where it was explained that the detailed study area was retained at 50 km, but this was supplemented by one additional viewpoint (North Berwick Law at 52.47 km) that is at an elevated position providing panoramic views to many visitors and walkers, and as such has also been assessed.</p>
	Viewpoints: Request for North Berwick Law as a specific viewpoint. In addition, views towards Bass Rock from locations along the East Lothian Coast are important to assess.	North Berwick Law has been included as a specific viewpoint due to its elevated location on a popular hill walking summit where panoramic views are obtained. Illustrative wirelines from Tantallon Castle, Ravenshaugh Sands, Yellow Craig, and a coastal route view

Consultees	Scoping Response	ICOL Response
		towards Bass Rock have been provided in <i>Appendix 12G</i> .
	Weather effects (climatic factors): ELC requested that consideration should be given to the effects of wind farms on local weather and the subsequent impacts on landscape/ seascape. ELC provided a series of citations.	ICOL reviewed the information provided by ELC, further information is provided in table 12.4 below. Whilst ICOL appreciate that on very rare occasions the creation of weather effects may occur, it is unlikely to lead to a significant effect and therefore has not been assessed in the EIA.
Angus Council	Study Area: Should be increased to 60km radius.	In agreement with MS-LOT and SNH the study area has been retained at 50 km radius with the addition of illustrative wirelines from more distant locations requested by consultees.
	Lighting: lighting scenarios required comparing the brightness of lighting on the telecommunications mast at Sidlaws.	There are technical difficulties in making comparisons of perceived lighting brightness due to the onshore and offshore locations, changes of perceived brightness over distance as well as environmental factors. Therefore, a meaningful comparison is not possible and thus not been included in the assessment. The assessment includes four night time visualisations showing the lighting requirements for the Inch Cape Offshore Wind Farm. This was agreed by MS-LOT and SNH as an appropriate means of assessing the impacts from turbine lighting.
	ZTV: Angus Council require a detailed 50km basemap to determine any additional VPs. Hub and tip height comparative needed.	A detailed ZTV was issued to Angus Council.
	The Council noted that additional VPs may be required from Braes of Angus, including Cat Law, Dreish and Airlie Monument. Later correspondence on review of ZTV, Angus requested an additional viewpoint at Airlie Monument.	Working wirelines were provided to the Council and it was agreed that illustrative wirelines from Cat Law and the Airlie Monument would be provided for information only and are included within <i>Appendix 12G</i> .
	Photography: advised they were happy with photography reuse, noting new photography would be needed at any new VPs and any VPs where baseline has changed.	New photography was taken for 12 of the 25 Inch Cape 2013 EIA Photographs following a review of baseline changes.

Consultees	Scoping Response	ICOL Response
	<p>CIA: need to included large turbine developments in Eastern Perthshire and Glen Dye in Aberdeenshire.</p> <p>CIA to be agreed with Angus ahead of assessment. Development update can be requested from the council. Dusty Drum, East Skichen and Nether Kelly can be scoped out.</p>	<p>All known operational, consented and proposed wind farms within a 65 km radius of the Development were included in an initial site search and those with which the addition of the Development could have potential for significant effects have been taken forward to the assessment.</p>
	<p>ICOL to provide their Intentions on the existing consents. Angus suggested the narrowing of envelope and creating greater consistency between the other offshore developments.</p>	<p>The development envelope is detailed in <i>Chapter 4: Process and Methodology</i> and the worst case scenario and cumulative scenarios considered are explained in <i>Section 12.5.2</i> of this SLVIA and further detail in respect of the layout design is provided in <i>Section 12.5.4</i> as well as <i>Chapter 6: Site Selection and Alternatives</i> and <i>Appendix 6A</i>.</p>
Aberdeenshire Council	<p>General agreement to the SLVIA approach and endorse SNH's scoping response. Consider that four VPs proposed to be assessed in Aberdeenshire are appropriate, but request updated photography where required.</p>	<p>Noted. New photography taken for VPs 2, 3 and 4 in Aberdeenshire.</p>
	<p>Reference to Fetteresso Onshore Wind Farm and other cumulative sites to be considered, and request inclusion of Kincardine Offshore Wind Farm in the cumulative assessment.</p>	<p>The cumulative assessment has reviewed all wind energy developments within the study area and included those with which the addition of the Development would be most likely to result in significant effects.</p> <p>Due to the potentially evolving nature of baseline data collection a 'cut off' date for projects to be considered is required. Data for the projects to be considered cumulatively were required by 1st November 2017. No turbine dimensions or locations were available for Fetteresso at the time that cumulative data was collected for the SLVIA, for which a Scoping Report was submitted in February 2018. Accordingly, as no data was available, Fetteresso is not included. Kincardine Offshore Wind Farm is included in the assessment.</p>

- 13 During the compilation of the EIA Report, further consultations were carried out in relation to SLVIA. A summary of the key points has been provided below (Table 12.4).

Table 12.4: Key points from consultations carried out to clarify the Scope of the EIA

Consultee and Meeting	Summary
SNH Conference Call (17/08/2017)	<p>ICOL provided an overview of the Development and clarification that the layout presented in the Scoping Report was indicative to provide consultees with some indication of the scale of the change from the consented Development and to confirm the SLVIA study area.</p> <p>SNH confirmed that they understood this and that the layout presented in the EIA would be illustrative.</p> <p>ICOL explained that the design envelope being considered at Scoping stage was 48 turbines of up to 301m to blade tip (the lowest number of turbines likely at the tallest height) and 72 turbines of 215m to tip (the greatest number of turbines at the lowest height considered). SNH agreed that on initial review of the preliminary wirelines for both scenarios sent to SNH, it was likely that the worst case scenario for Inch Cape would be the tallest turbines as this created the greatest visual presence and result in a greater difference between Inch Cape and NNG and Seagreen. The maximum blade tip height was reduced from 301m at scoping to 291m in the application. Accordingly, the SLVIA has taken account of the tallest proposed turbines (291m) with the consented NNG and Seagreen offshore wind farms.</p> <p>SNH requested that comparative wirelines for the design viewpoints be provided in order for SNH to confirm the worst case scenario. These have been provided to SNH.</p> <p>In respect of the cumulative assessment it was agreed that this should be carried out based on the consented NNG and Seagreen schemes.</p> <p>SNH noted that consultation should be carried out with the LPAs to ensure that consideration is given to the all the relevant projects within the cumulative assessment.</p> <p>ICOL explained the process that SLR would undertake to scope the cumulative assessment from projects identified within 65km radius to those taken forward in the detailed assessment, which comprised collection of data, preparation of ZTVs and review of these in relation to the Inch Cape ZTV and location of landscape and visual receptors including sequential routes through the landscape.</p> <p>ICOL undertook to circulate the list of projects to be considered in the cumulative assessment for agreement with SNH and the LPAs.</p> <p>ICOL explained the appearance of the indicative layout being considered derived from various constraints. SNH requested that further information on the layout evolution be provided in the EIA Report. This is set out in <i>Sections 12.5 2 – 12.5.4</i> as well as <i>Appendix 6A</i>.</p> <p>ICOL noted that because the application will be considered as a Multi Stage Regulatory Consent, whilst the EIA would commit to specific design principles, ICOL is mindful that the layout should present some irregularities to ensure that the assessment carried out in the EIA is considered realistic worst case. SNH noted that whilst they appreciate this, the new application would need to be consentable.</p>

Consultee and Meeting	Summary
	<p>There was discussion on the extent to which comparative wirelines and/or ZTVs could be produced to explore the impact of increased turbine height. SLR subsequently provided comparative ZTV and wirelines to SNH.</p> <p>SNH advised that any additional SLVIA Viewpoints would need to be agreed with the LPAs. It was agreed that, following the request from ELC, Berwick Law would be included as an additional viewpoint, (Viewpoint 26) in the assessment, and wirelines for illustrative purposes only would be provided for the additional Viewpoints requested by Angus Council and ELC, (see <i>Appendix 12G: Additional Wirelines for Information</i>).</p> <p>SLR advised that after completion of a review of the Viewpoint photography used for the consented development, a list of the viewpoints for which photography was to be retained, and for which new photography would be taken would be circulated to MS and SNH for approval.</p>
SNH (Design Meeting 29/09/2017)	<p>ICOL confirmed that the 'worst case scenario' to be used for the purposes of the SLVIA will consist of the tallest proposed turbines at 291m to blade tip (c.f. 301m at scoping stage).</p> <p>SNH agreed that the worst case scenario in respect of NNG and Seagreen should show the tallest proposed turbines at Inch Cape with the consented NNG and Seagreen wind farms as this would demonstrate the greatest difference in appearance of the turbines (tallest turbines with greater spacing at Inch Cape with smaller, more closely spaced turbines at the other offshore wind farms).</p> <p>ICOL explained some of the economic and engineering factors which influence the design of the wind farm including;</p> <ul style="list-style-type: none"> • CFD- highly competitive auction process • Installation challenges – variable sea depths • Logic behind a 48-location grid and a 90-location grid <p>Known environmental considerations to avoid (such as archaeology)</p> <p>ICOL confirmed that the same criteria will be followed during design of the final layout.</p> <p>ICOL provided a demonstration of the Virtual Reality Model showing both 40 and 72 turbines layouts.</p>
SNH (Pre-submission meeting) (07/03/2018)	<p>SNH noted that the assessment should identify the design parameters (and WTG layout) used for NNG and Seagreen (i.e. the 2014 consented parameters that have been used for the purposes of the Inch Cape SLVIA) see Table 12.20.</p> <p>ICOL confirmed that the SLVIA would reiterate the validity of the previous design sensitivity analysis, noting its application in the final design would be subject to considerations identified at the previous meeting (29/09/17). Further information is provided in <i>Appendix 6A</i>.</p> <p>SNH acknowledged the technical challenges of producing representative night time visualisations having reviewed working examples tabled at the meeting and discussed the range of parameters involved in their preparation and presentation options. SNH requested that ICOL advise what the councils' views were on submission of night time visualisations.</p> <p>SNH requested that the two proposed OSPs should be labelled in the visualisations.</p>

Consultee and Meeting	Summary
	<p>ICOL confirmed that the assessment has been carried out on the basis of the addition of the Development to the baseline of operational and consented wind farms, as well as the future cumulative context taking account of the application and scoping stage wind farms.</p> <p>ICOL also provided an overview of the assessment findings noting that a key change since the SLVIA for the consented development was completed relates to the cumulative context which now consists of several more operational and consented developments (which are considered as part of the baseline assessment) and only one application and one scoping stage wind farm.</p> <p>SNH requested that an additional copy of the ES SLVIA should be sent to their Aberdeen office.</p>
<p>Aberdeenshire Council (Pre-submission meeting) (08/03/2018)</p>	<p>ICOL noted that Aberdeenshire Council had requested inclusion of the Fetteresso wind farm in the cumulative assessment. ICOL explained that this development had been considered in the initial stages of scoping the cumulative SLVIA, as no layout data was available for Fetteresso at the time the cumulative context (which was fixed at 1st November 2017), it has not been included in the CIA.</p> <p>Aberdeenshire Council requested clear explanation of reasoning behind inclusion of NNG and Seagreen as consented in the cumulative SLVIA. Information on the projects selected in the CIA are included in <i>Section 12.8</i> and listed in Table 12.20.</p> <p>Aberdeenshire Council stated they are content to be guided by response from other councils in respect of whether night time visualisations should be presented.</p> <p>Aberdeenshire Council indicated that they would like an electronic version of the EIA Report, and one hard copy of the 4 Aberdeenshire visualisations.</p>
<p>Angus Council (Pre-submission meeting) (08/03/2018)</p>	<p>Angus Council queried the worst case scenario approach being taken in respect of using the tallest turbines rather than the greatest number of turbines, particularly in the context of the cumulative assessment with NNG and Seagreen. ICOL noted that it was agreed with SNH that where there was a greatest difference in height with other the two other offshore projects this would be likely to result in the greatest magnitude of change and consequent effects on seascape, landscape and visual receptors.</p> <p>Angus Council requested further information on distances at which lighting of the WTGs would be seen. ICOL noted that it was the intention to provide greater clarity on this matter and that the available information would be provided in the EIA report.</p> <p>Angus Council requested a copy of SNH's email response in respect of night time lighting visualisations. Subsequently provided to the council.</p>
<p>East Lothian Council (Pre-submission meeting) (13/03/2018)</p>	<p>SLVIA</p> <p>ELC asked how the offshore development would be assessed in relation to the onshore components. ICOL explained that in the new offshore application, ICOL will include a summary of the new onshore application impacts where relevant, so that the new onshore and new offshore elements will be considered together in this application.</p>

Consultee and Meeting	Summary
	<p>ELC noted the approach to terminology for the SLVIA, but had some concern over the assessment criteria descriptions. ICOL noted that they would review the 'magnitude of change' definition used within the assessment, but that the language used in the definitions (e.g. partial loss) inevitably required an element of subjective assessment in their application. ICOL further noted that the assessment was carried out utilising expert opinion and guidance.</p> <p>In respect of ELC's query with regards to night time lighting of the Development, ICOL noted that it was not anticipated that the lighting would be visible due to the intervening distance, and that there would be commentary within the EIA on lighting and distances to which the proposed lighting would be visible.</p> <p>ELC queried whether the SLVIA Viewpoints in East Lothian would be illustrated by photomontages. ICOL stated that was not intended as photomontages were being provided for Viewpoints up to a distance of approximately 30km from the nearest proposed turbine, and that photomontages for distances greater than that were not intended. ELC advised that they would confirm whether they specifically require the additional Viewpoint at North Berwick Law to be illustrated by a photomontage.</p> <p>(Post meeting note – ELC confirmed that they required a photomontage to be prepared for the Berwick Law viewpoint).</p> <p>Weather effects (climatic factors):</p> <p>ICOL noted that there was no intention to assess the impacts on sea fog and climatic consequences in ELC, and that it was unlikely to lead to significant effect. ELC noted that it required some consideration. ICOL noted that they would review the links provided by ELC (in their scoping response) to the information relating to formation of sea fog and local weather conditions at offshore wind farms, but reiterated that it was unlikely to be assessed in the EIA. In addition to the references provided by ELC, ICOL also reviewed other published information on the matter. Through this, the following was noted: <i>'due to the necessary requirements for formation (existence of two layers with considerably different temperature with the separation line between the two layers close to the hub height of the turbines and very high relative humidity in both layers), it can be assumed that the formation of such wake clouds is a rather rare event. The most likely area for such phenomena is a stripe on both sides of a coast line with the sea and land having considerably different surface temperatures and winds crossing the coastline.'</i>² Therefore ICOL's position is that as it is such a rare event, requiring very specific climatic requirements, any assessment would not lead to a significant effect and thus it is not included within this EIA Report. Discussions with MS-LOT have confirmed its exclusion from the formal Scoping Opinion requirements.</p>

12.3 Scope of Assessment

- 14 As part of this application Inch Cape Offshore Limited (ICOL) has drawn on the detail presented in the Scoping Report, the Scoping Opinion from MS-LOT and relevant subsequent consultations to agree on those impacts that may lead to a significant effect.

² Available at: https://www.dewi.de/dewi/fileadmin/pdf/publications/Magazin_37/07.pdf [Accessed 01/05/18]

Therefore, this chapter focusses on those impacts on SLV Amenity that have been agreed throughout this process as being necessary to be assessed. These are presented in Table 12.5.

- 15 For clarity, those impacts that have been agreed to be scoped out of the EIA are included in Table 12.6. For further information reference should be made to the Scoping Report and the Scoping Opinion which can be found on Marine Scotland's (MS's) website³:

Table 12.5: Scope of assessment covered in this Chapter

Potential Impact	Scope of Assessment	Reason
Construction (& Decommissioning) Phase		
Presence of installation vessels and related works for Export Cable Corridor, and trenching of cable at landfall location.	Assessment of effects upon seascape and/or landscape character, landscape designations and visual amenity.	Construction activities in close proximity to visual receptors and physical impacts upon the seascape and landscape which have the potential for significant, albeit temporary effects.
Operation & Maintenance Phase		
Physical presence of WTGs and OSPs	Assessment of effects upon seascape and/or landscape character, landscape designations and visual amenity.	Physical and perceptual impacts of the wind farm have the potential to create significant effects upon the SLV receptors.
Night time lighting of the WTGs and OSPs.	Assessment of effects upon seascape and/or landscape character, landscape designations and visual amenity.	Visibility of lighting has potential to create significant effects upon the SLV receptors.

³ Available at: <http://www.gov.scot/Topics/marine/Licensing/marine/scoping/ICOLRevised-2017>[Accessed 02/05/18]

Table 12.6: Impacts Scoped out of this Chapter

Potential Impact	Justification for Scoping out of the EIA
Construction (& Decommissioning) Phase	
Construction (& Decommissioning) activities in the Development Area may temporarily affect key characteristics of seascape and/ or landscape character, landscape designations and visual amenity.	The impact is temporary and unlikely to lead to a long-term significant effect. Therefore, in line with EIA Regulations does not require assessment. Agreed by MS-LOT in their Scoping Opinion that EIA not required.
Operation & Maintenance Phase	
Routine maintenance activities may affect seascape character area, designated landscape and visual amenity.	Temporary in duration and are unlikely to give rise to any significant effects greater than those associated with the operation of the WTG and construction phase of the Export Cable Corridor and landfall. Agreed by MS-LOT in their Scoping Opinion that EIA not required.

12.4 Regulation and Guidance

- 16 This section contains a summary of the guidance documents relevant to the SLVIA and a brief review of regulation and planning policy specifically related to SLV assessment issues.

12.4.1 Guidance

- 17 The SLVIA has considered the relevant guidance provided in the following documents:
- An assessment of the sensitivity and capacity of the Scottish seascape in relation to offshore windfarms (SNH, 2005a).
 - Assessing the Cumulative Impacts of Onshore Wind Energy Developments (SNH, 2012a).
 - Guidance on the Assessment of the Impact of Offshore Wind Farms: Seascape and Visual Impact Report (Department for Trade and Industry, 2005).
 - Guidance on Landscape/Seascape Capacity for Aquaculture (SNH, 2008).
 - *Guide to Best Practice in Seascape Assessment* (Countryside Council for Wales (CCW), Brady Shipman Martin, University College Dublin, 2001).
 - *Guidelines for Landscape and Visual Impact Assessment* (The Landscape Institute and the Institute of Environmental Management and Assessment (IEMA), 3rd Edition 2013).
 - Landscape Character Assessment Guidance of England and Scotland (The Countryside Agency and SNH, 2002).

- Offshore Renewables – guidance on assessing the impact on coastal landscape and seascape (SNH, 2012b).
- Siting and Designing windfarms in the landscape - Version 3 (SNH, 2017a).
- Visual Representation of Windfarms - Good Practice Guidance (SNH, Version 2.2, 2017b).

12.4.2 National Regulation

Marine Policy Statement

- 18 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 plan authorities should consider potential impacts at a strategic level, liaising with terrestrial planning authorities where necessary, and utilising appropriate tools such as seascape and landscape character assessment (LCA). It also recommends that the authorities should have particular regard to development within or close to any nationally designated areas.

National Marine Plan

- 19 Scotland's National Marine Plan (NMP) was published in March 2015 in accordance with the Marine (Scotland) Act 2019 and the Marine and Coastal Access Act 2009 (the Marine Acts). The NMP is described as 'A Single Framework for Managing Our Seas' and sets out policies for the sustainable development of Scotland's inshore and offshore waters. The Marine Acts require that planning decisions will be determined in accordance with the NMP unless relevant considerations indicate otherwise. In relation to seascape/landscape, policy 'GEN 7 Landscape/seascape' states that 'marine planners and decisions makers should ensure that development and use of the marine environment take SLV impacts into account'. The policy 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 landscape designations.

Scottish Planning Policy

- 20 National planning policy for land use planning is contained within *Scottish Planning Policy* (SPP) June 2014. In relation to offshore wind development, SPP contains little specific guidance except to say that:

"Plans should promote the developed coast as the focus of developments requiring a coastal location or which contribute to the economic regeneration or well-being of communities whose livelihood is dependent on marine or coastal activities. They should provide for the development requirements of uses requiring a coastal location, including ports and harbours, tourism and recreation, fish farming, land-based development associated with offshore energy projects and specific defence establishments" (Paragraph 90).

SNH Policy and Guidance

- 21 SNH does not have a specific policy relating to offshore wind energy. Offshore wind development is covered by an overarching Position Statement 'Renewable Energy and the Natural Heritage' (revised 2014).
- 22 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 *Section 12.3* in the case of Inch Cape.

12.4.3 Regional and Local Planning Policy

- 23 The SLVIA study area incorporates six different local authority administrative areas: Aberdeenshire, Angus, Dundee City, Perth and Kinross, Fife and East Lothian.
- 24 The part of the SLVIA study area falling into Perth and Kinross is relatively small and distant from the Inch Cape WTGs and OSPs and therefore has not been included in this consideration of policy. For the purposes of this assessment, relevant development plans for Aberdeenshire, Angus, Dundee City, Fife, and East Lothian have been considered. These are identified below in Table 12.7, together with landscape (or wind energy related) policies contained within. Local authorities will act as consultees on the application for consents for the Wind Farm and OfTW and are likely to use relevant parts of these policies to guide their consultation responses.

Table 12.7: Regional and Local Development Plan policies relevant to the SLVIA

Local Authority	Regional Plan	Regional Policy	Local Plan	Local Policy
Aberdeenshire	Aberdeen City and Shire Structure Plan 2014	No policies relating specifically to landscape or wind energy	Aberdeenshire Local Development Plan 2017	Policy C2: Renewable Energy Policy E2: Landscape Policy HE1: Protecting historic buildings, sites and monuments Policy HE2: Protecting Historic and Cultural Areas
<p><u>Policy C2 Renewable Energy</u>: states that Aberdeenshire Council support wind developments which are in appropriate sites and of the right design. The policy also refers to detailed supplementary guidance 'Strategic Landscape Capacity Assessment for Wind Turbines' as a relevant consideration.</p> <p><u>Policy E2 Landscape</u>: provides guidance on the approach to development and the landscape. It is supported by supplementary guidance 'Special Landscape Areas' which defines areas of particular valued landscapes within the county and sets out guidance to ensure protection.</p>				

<p>Policy HE1 Protecting Historic buildings, sites and monuments: This policy sets out the protection of all listed buildings, archaeological sites and scheduled monuments with regard to their character, integrity and setting.</p> <p>Policy HE2 Protecting Historic and Cultural Areas: This policy states that development has to consider the preservation and enhancement of conservation areas, both within and outwith where there is potential to affect the setting.</p>				
Local Authority	Regional Plan	Regional Policy	Local Plan	Local Policy
Angus	TAYplan - Strategic Development Plan (SDP) 2012 2016-2036 adopted October 2017	TAYplan Policy: Energy Waste and Resources	Angus Local Development Plan 2016	Policy PV6: Development in the Landscape Policy PV8: Built and Cultural Heritage Policy PV9: Renewable and Low Carbon Energy Development
<p>TAYplan Policy 7: This policy is largely related to the management of energy and waste related resources and focuses on onshore renewable proposals, but relevant to this assessment it states that proposals need to consider the sensitivity of the landscape, cumulative sites, and impacts of strategically significant energy proposals. Map 7a Strategic Energy Opportunities identifies the Strategic Offshore Wind Sites of Inch Cape, NNG and Seagreen developments.</p> <p>Angus LDP: Policy PV6 Development in the Landscape: This policy sets out to protect and enhance the quality of the landscape in Angus, including <i>'its distinctive local characteristics, and its important views and landmarks'</i> which would be relevant to offshore development.</p> <p>Angus LDP Policy PV8 Built and Cultural Heritage: sets out to protect and enhance areas designated for their built and cultural heritage value. It is relevant in so far as acknowledging the settings of built and cultural heritage assets and the potential for the development to affect these. This would be also covered by <i>Chapter 11</i>.</p> <p>Policy PV9 Renewable and Low Carbon Energy Development: This policy ensures that proposals for renewable and low carbon energy developments meet specific criteria, such as minimising impact on amenity, landscape and environment. The policy further stipulates that there should <i>"be no unacceptable adverse impact individually or cumulatively with other existing or proposed development on: -landscape character, setting within the immediate and wider landscape (including cross boundary or regional features and landscapes), sensitive viewpoints and public access routes"</i>.</p>				
Local Authority	Regional Plan	Regional Policy	Local Plan	Local Policy
Dundee City	TAYplan - Strategic Development Plan (SDP) 2012 2016-2036 adopted October 2017	See above	Dundee Local Development Plan 2013	Policy 31: Wind Turbines Policy 47: Environmental Protection Policy 51: Scheduled Ancient Monuments

				and Archaeological Sites Policy 52: Gardens and Designed Landscapes
<p><u>Policy 31: Wind Turbines:</u> This policy relates to onshore wind turbines, but relevant in the reference to considering ‘no unacceptable negative effects in relation to number, height, visual impact, landscape impact...’</p> <p><u>Policy 47: Environmental Protection:</u> This policy is relevant to the SLVIA with regards to potential lighting effects. It states that “All new development or an extension to an existing development that would generate noise, vibration or light pollution will be required to demonstrate that it can be accommodated without an unsatisfactory level of disturbance on the surrounding area.”</p> <p><u>Policy 51: Scheduled Ancient Monuments and Archaeological Sites:</u> This policy sets out protection to these heritage sites and their settings. It is more directly relevant to <i>Chapter 11</i> but has been included with regard to the heritage sites and their contribution to informing the character of a landscape.</p> <p><u>Policy 52: Gardens and Designed Landscapes:</u> This policy sets out protection to Gardens and Designed Landscapes and their setting including views to and from them which is relevant to the SLVIA.</p>				
Local Authority	Regional Plan	Regional Policy	Local Plan	Local Policy
Fife	TAYplan - Strategic Development Plan (SDP) 2012 2016-2036 adopted October 2017 SESplan June 2013 (Edinburgh, East Lothian, Midlothian, Fife, Scottish Borders, West Lothian) SES plan 2 submitted for examination on 26th June 2017.	See above for TAYplan policies which are relevant SES – No specific policies relating to this development.	FIFEPlan Local Development Plan (due to be adopted shortly)	Policy 11: Low Carbon Policy 13: Natural Environment and Access Policy 14: Built and Historic Environment
<p><u>SES plan June 2013:</u> Paragraph 125 relates directly to onshore development but states that landscape and environmental quality should be considered for any development as well as cumulative impacts with other sites.</p> <p><u>FIFEPlan: Policy 11 – Low Carbon:</u> This policy relates directly to onshore development but considers the landscape and visual, and cumulative aspects that require to be considered for any development.</p>				

<p>FIFEPlan: Policy 13 - Natural Environment and Access: This policy sets out conditions for development in relation to the natural environment. Relevant to the SLVIA it includes landscape character and views as a key consideration.</p> <p>FIFEPlan: Policy 14 - Built and Historic Environment: This policy sets out protection to heritage sites, including Gardens and Designed Landscapes, and their settings. It is more directly relevant to <i>Chapter 11</i> but has been included with regard to the heritage sites and their contribution to informing the character of a landscape.</p>				
Local Authority	Regional Plan	Regional Policy	Local Plan	Local Policy
East Lothian	<p>SESplan June 2013 (Edinburgh, East Lothian, Midlothian, Fife, Scottish Borders, West Lothian)</p> <p>SES plan 2 submitted for examination on 26th June 2017.</p>	SES – No specific policies relating to this development.	<p>Adopted East Lothian Local Plan 2008</p> <p>Proposed Local Development Plan 2016 due to be adopted mid-2018.</p>	<p>2008 LP: Policy NRG3: Wind Turbines</p> <p>2016 LP: Policy WD3: All Wind Turbines</p> <p>PROP EGT3: Forth Coast Area of Coordinated Action</p>
<p>ELC LP 2008, Policy NRG3: Wind Turbines sets out that proposals for wind turbines should not have an unacceptable visual impact upon landscape, townscape including impact upon distinctive public views landmark buildings or natural features or routes.</p> <p>ELC Proposed LDP 2016, Policy WD3: All Wind Turbines considers the same relevant factors as the 2008 policy with regards to landscape and visual impacts, and considers cumulative issues with other developments.</p> <p>PROP EGT3: Forth Coast Area of Coordinated Action: This policy relates to electricity grid connections on the Forth Coast from Cockenzie to Torness and whilst the policy does not specifically state any SLVIA constraints the description text infers that all natural and cultural heritage assets must be appropriately taken into account in any development.</p>				

12.4.4 Supplementary Planning Guidance and other Guidance Documents

- 25 Most local authorities have prepared supplementary planning guidance (SPG) and other guidance documents relating to wind energy, as it has been a requirement for local plans and local development plans to include spatial frameworks for wind farms over 20 megawatts. However, these relate primarily to onshore developments but are useful to reference in gaining an understanding of the potential cumulative sites. A list of relevant SPGs and other guidance documents is shown in Table 12.8 below.

Table 12.8: Local authority SPGs and other guidance documents

Local Authority	Document
Aberdeenshire	<p><i>LDP Supplementary Guidance 9: Aberdeenshire Special Landscape Areas</i>, (April 2017)</p> <p><i>Strategic Landscape Capacity for Wind Energy in Aberdeenshire</i> (March 2014)</p> <p><i>Use of Wind Energy in Aberdeenshire Part One – Guidance for Developers</i> (August 2005a).</p> <p><i>Use of Wind Energy in Aberdeenshire Part Two – Guidance for Assessing Wind Energy Developments</i> (August 2005b).</p>
Angus	<p><i>Strategic Landscape Capacity Assessment for Wind Energy in Angus</i> (March 2014).</p> <p><i>Renewable and Low Carbon Energy Development Supplementary Guidance Consultation Draft</i> - Approved for consultation on 27 October 2016. Consultation period ended on 5 January 2017.</p>
Dundee City	No SPGs relating specifically to WTGs in the landscape.
Fife	<p><i>Fife Wind Energy Supplementary Planning Guidance</i> (SPG) (June 2013).</p> <p><i>Review of Onshore Wind Energy in Fife – Strategic Cumulative Landscape and Visual Impact Assessment</i> (May 2013)</p>
East Lothian	<p><i>Guidance for Wind Farms of 12MW and Over</i> (December 2013)</p> <p><i>Planning Guidance for Lowland Wind Turbines</i> (June 2013)</p> <p><i>Landscape Capacity Study for Wind Turbine Development in East Lothian</i> (2005).</p> <p><i>East Lothian Supplementary Landscape Capacity Study for Smaller Wind Turbines</i> (December 2011).</p> <p><i>Local Landscape Designation Review (2016) published as Technical Note 9 and Appendices I to VI (TO BE ADOPTED AS PART OF PROPOSED 2016 LDP)</i></p>

26 Of these guidance documents, only the *Fife Wind Energy SPG* specifically refers to offshore wind farms. The guidance recognises that ultimately the Scottish Government will be responsible for determining consents under Section 36 of the *Electricity Act 1989* and for reviewing environmental statements (now EIA Reports) for offshore wind proposals. However, Fife Council will be a key consultee in all proposals brought forward.

27 Policy R3 – Offshore Activities (*Fife Wind Energy SPG*, 2013), states that:

“Fife Council will support offshore renewable energy development provided that it does not have a significant adverse effect on local maritime activities, including shipping, fishing, leisure sailing, diving, on the natural environment including marine habitats and birds, on pipelines, on research activities and on the historic marine environment.”

12.5 Design Envelope and Embedded Mitigation

12.5.1 Design Sensitivity Analysis

- 28 A design sensitivity analysis may be carried out to understand the sensitivity of various aspects of a design concept, with respect to changes in design parameters and how these would alter the appearance of any proposed development. In respect of the Inch Cape Wind Farm, the design sensitivity analysis compared a range of generic design concepts which could be adopted for the three FTOWDG offshore wind farms, in order to identify the most preferable design when the proposed developments are viewed individually and in-combination.
- 29 A design sensitivity analysis was carried out in 2011 by FTOWDG in respect of three different design concepts for the three offshore wind farm developments comprising the Inch Cape, NNG and Seagreen wind farms. Seagreen has submitted a Scoping Report detailing the intention to submit a new application and NNG submitted a new application in March 2018.
- 30 A review of the design sensitivity analysis has been carried out as part of this application in light of the change in WTG parameters proposed. This review has determined that the principals established during this process are still relevant. As such, a summary is provided below of the findings of the original analysis.
- 31 For each of the three developments, three different WTG dimension scenarios were provided by the respective developers, as follows:
- maximum height of WTGs, with related maximum spacing requirements;
 - intermediate height of WTGs, with intermediate spacing requirement; and
 - minimum height of WTGs, with minimum spacing requirements.
- 32 Layouts were generated on the basis of these WTG dimension scenarios based on three different generic design concepts for the placement of WTGs, as follows:
- regular grid;
 - offset grid; and
 - series of arcs.
- 33 All three WTG dimension scenarios were modelled with ReSoft's Windfarm software for the respective wind farms and then wirelines produced from the three "design" viewpoints agreed through consultation with FTOWDG of:
- Arbroath – grid reference: 365910, 741080;
 - Fife Ness - grid reference: 363842, 709766; and
 - St Abb's Head – grid reference: 391235, 669167.

- 34 These three locations were chosen on the basis of providing a reasonable “spread” of viewpoint locations across the amalgamated cumulative study areas for the three offshore wind farms.
- 35 The wirelines were then reviewed by landscape consultants representing each of the three developers. Each landscape architect recorded independently their ranking of the layouts as predicted to be seen in the wirelines from each viewpoint. Ranking was assessed in relation to the extent to which the layouts demonstrated the most balance, coherence and greatest degree of “legibility”. The ranking was not unanimous for each viewpoint; however, there was a preference firstly for the least “busy” layouts which derived from the maximum height WTG scenarios which resulted in greater spacing between WTGs, as well as a slight visual preference for the offset grid layout.
- 36 The FTOWDG design sensitivity analysis was discussed at the consultation meeting held with SNH and MS-LOT on 29th September 2017. The key design principles and considerations that have informed the proposed development are discussed in *Section 12.5.3 Design Considerations* below. These considerations will be taken into account in the final layout post consent, further information is provided in *Appendix 6A*.
- 37 As the Inch Cape Wind Farm application is for fewer larger turbines, and both Seagreen and NNG in their scoping report and revised application respectively, are also proposing fewer larger turbines, the findings of the design sensitivity analysis remain valid.

12.5.2 Design Envelope

- 38 The potential development parameters and scenarios are defined as a design envelope and presented in *Chapter 7: Description of Development*. The assessment of potential impacts on SLV amenity is based upon the worst case scenario as identified from this design envelope, and is specific to the potential impacts assessed in this chapter.
- 39 On the basis of the Design Sensitivity Analysis of the Inch Cape 2013 EIA described in *Section 12.5.1* above, this SLVIA has assessed what is assumed to be the realistic worst case scenario, with the tallest WTGs (291 m to blade tip) on a layout based on a regular grid layout, although it also has areas of irregular spacing due to both seabed constraints and technical considerations (further detail on these can be found in *Chapter 6* and *Appendix 6A*). For the purposes of this assessment an indicative layout of 40 WTGs at the maximum WTG tip height of 291 m tall spread throughout the Development Area has been considered. The indicative number of 291 m tall WTGs would likely result in up to 40 WTGs spread throughout the Development Area. It is noted that there would likely be a maximum of 72 WTGs for the smallest turbine size but the tallest turbine (291 m to blade tip) was considered to be the worst case over the maximum turbine number as agreed with SNH.
- 40 The WTGs will be laid out within the Development Area in a configuration which optimises performance and takes account of environmental and technical constraints. The orientation of the grid across the Development Area is a product of the direction of

the prevailing wind at this location and is therefore designed to optimise the generating capacity of the Wind Farm.

- 41 Fieldwork surveys undertaken in relation to existing offshore wind farms located off the Cumbria coastline (Barrow, Walney 1 & 2, and Ormonde Offshore Wind Farms) suggests that jacket substructures (as used at Ormonde) tend to increase the visual contrast of the WTGs, although they will not lead to an increase in the overall extent of visibility of the Inch Cape WTGs and OSPs. However, it is recognised that Ormonde Offshore Wind Farm is closer to the adjacent coastline (approximately 9.5 km) than is the case with the Development Area (approximately 15 km). Due to technical constraints in the modelling software it has not been possible to include jacket foundation structures within the visualisations.
- 42 The Development requires a maximum of two OSPs. The visible part of the platforms will consist of a substructure similar to that used for the WTGs and a “topside”, which is a structure housing the transmission equipment. In order to account for various additional elements which may be attached to the topside, for example loading platforms at the sides and a crane and helideck on top, an overall maximum dimension of 100 m x 100 m x 70 m is assumed. Therefore 70 m is the maximum height of the OSPs (Lowest Astronomical Tide (LAT)). Indicative positions are shown in Chart 12.i. This is an indicative layout and illustrates what is considered to be the worst case locations. A ZTV plan indicating theoretical visibility of the Inch Cape OSPs is shown in Figure 12.5 and the locations of the OSPs are indicated on the visualisations. An illustration of a typical OSP is shown in *Chapter 7*, Figure 7.22.

Chart 12.i: WTG layout showing indicative locations of OSPs



- 43 There are no additional anemometry (met) masts required as part of the Development. A met mast for the Development was applied for separately and consented in September 2014. It remains in situ.

Lighting

- 44 Throughout the operation of the Wind Farm and OfTW, navigation lighting for both maritime traffic and aviation will be provided on the WTGs and other offshore structures in accordance with relevant guidance and legislation. More detail on this can be found in *Chapter 15: Shipping and Navigation*, and *Appendix 17.1: Aviation Lighting Plan*; however, in summary this lighting is likely to comprise the following elements.
- 45 For maritime lighting, Significant Peripheral Structures (SPS) – which are the “corners” or other significant points on the periphery of Inch Cape Wind Farm – will be fitted with synchronised flashing yellow lights visible from all directions in the horizontal plane, with a range of not less than five nautical miles (9.26 km). In the case of a large or extended wind farm, the distance between these lights should not normally exceed three nautical miles (5.56 km). Selected intermediate structures on the periphery other than SPSs will also be marked with flashing yellow lights visible from all directions in the horizontal plane (Intermediate Periphery Structures (IPS)). The flash character and range of these intermediate lights will be different from those described above, with a range of not less than two nautical miles (3.70 km). Both types of light will be mounted towards the lower end of the tower, approximately half way between highest astronomical tide (HAT) and 15 m above the WTG support structure’s equipment deck.
- 46 In respect of aviation lighting, the periphery Inch Cape WTGs will be fitted with medium intensity red light (2,000 Candela, visible at 360 degrees) as close as is reasonably practicable at the top of the fixed structure (i.e. the nacelle). There may be a requirement for these lights to flash ‘W’ Morse code simultaneously and repeatedly, however, at the time of writing, the requirement is for steady red lights.
- 47 ICOL has commissioned Edinburgh University’s Astronomy Department to carry out an assessment of the likely observability of these lighting requirements, full details are provided in *Appendix 12H*. This report considers the observability of lighting placed upon the WTGs, as a function of their power and the distance that they are observed from and the effects of attenuation of light as it passes through the atmosphere are taken into account, for atmospheric conditions typical of coastal UK locations. The report should be read in conjunction with the assessment.
- 48 It should be noted that the distances at which navigational and aviation lighting is predicted to be visible, vary depending on the atmospheric conditions. As shown in the met data in *Graph 12.i*, visibility varies considerably throughout the average year which will affect the extent to which the lighting at the Development Area will be visible.

Worst Case Scenario

- 49 For the purposes of the SLVIA it has been agreed with SNH that the worst case scenario would assess WTGs at the greatest height and diameter being proposed. As per the design envelope this will be a 250 m diameter rotor of which there would be a likely maximum of 40 WTGs and a maximum height to tip of 291 m (a reduction from the original scoping report figure of 301 m). An indicative hub height of 166 m has also been used in the assessment. A summary of all key parameters used in the assessment is provided in Tables 12.9 and 12.10 below.
- 50 As ICOL's understanding of the site conditions, WTG technology and evolution of environmental considerations will continue to improve post EIA, the final layout is likely to differ from the indicative layout used for the EIA. The layout assessed is considered to represent a realistic worst-case scenario.

Table 12.9: Worst case scenario definition - Development Area

Potential Impact	Design Envelope Scenario Assessed
Operational Phase	
Physical presence of WTGs and OSPs may affect seascape and/or landscape character, landscape designations and visual amenity.	40 WTGs 291 m to blade tip and 166 m to hub height Nominal Minimum down-wind spacing – 1,278 m Nominal Minimum cross-wind spacing – 1,278 m Jacket WTG foundations with sea level dimensions of 30 m x 30 m Up to two OSPs 100 m x 100 m and up to 70 m height Indicative layout is shown in <i>Chart 12.i</i>
Night time lighting of development area may affect seascape and/or landscape character and visual amenity.	For the indicative layout (as shown in <i>Chart 12.i</i>) all periphery turbines lit with 2000 candela light at nacelle (aviation lighting). For periphery turbines all will be lit with maritime lighting (either visible to 5 nm or 2 nm, depending on whether they are classed as SPS or IPS).

Table 12.10: Worst Case Scenario Definition - Offshore Export Cable Corridor

Potential Impact	Design Envelope Scenario Assessed
Installation Phase	
Presence of installation vessels and related works, and trenching of cable at landfall location may affect seascape character area, designated landscape and visual amenity.	Longest installation period and trenching across landfall by the chosen installation method, which may either be through a single method or a combination of the following: burial Ploughs, jetting trenchers, mechanical cutters, open trenching or horizontal directional drilling.

12.5.3 Embedded Mitigation

- 51 A range of embedded mitigation measures to minimise environmental effects are captured within the Design Envelope (see *Section 4.5.2*). The assessment of effects has taken account of the following embedded mitigation measures:
- WTGs will all be of similar dimensions regarding hub height and blade tip subject to WTG and substructure design and installation specification; and
 - WTGs will all be pale grey in colour with a semi-matt finish. This tends to reduce the distance over which the WTGs are visible, especially in dull or overcast conditions, which often occur. As offshore WTGs are often viewed against the sky, pale grey is the most appropriate colour as it is closest to that of the lower part of the sky under the most frequent UK weather conditions.

12.5.4 Additional Design Considerations

- 52 Further to the embedded mitigation identified above, ICOL has identified a series of design principles and considerations have been taken into account in the layout assessed in this chapter, and which will be taken into account in the final layout. These design considerations have been identified to give reassurance to stakeholders that the final layout will take into account both health and safety requirements and environmental considerations required. For SLV purposes the following design principles are:
- Aim to achieve a coherent and reasonably balanced and consistent pattern of WTGs across the array;
 - Grid or Offset Grid pattern to be the preferred starting point (based on FTOWDG 2011 design sensitivity analysis) for layout evolution;
 - Avoid continuous gaps larger than the grid spacing on the perimeter WTGs which create channels and appear to separate the wind farm into groups;
 - Avoid single outlier WTGs (there will always be corner turbines); and
 - OSP positions to be within the main area of WTGs and not on the western peripheral edge of the Development Area.

12.5.5 Consent Conditions

- 53 As well as the embedded mitigation measures, ICOL proposes to commit to the purpose of the relevant consent conditions granted for the Inch Cape 2014 Consent, as they are still relevant to this application. This will provide reassurance to stakeholders that the relevant issues will be addressed and secured by way of appropriate conditions.
- 54 ICOL recognises that the wording and detail of the consent conditions will be at the discretion of the Scottish Ministers. For SLVIA interests, ICOL propose that the consent conditions address matters surrounding, but not limited to, the following;
- Development Specification and Layout Plan; and

- Production of a Design Statement.

12.6 Baseline Environment

12.6.1 Study Area

- 55 The baseline environment for the SLVIA is considered within a defined study area. The study area was agreed during consultation with SNH and the Local Planning Authorities and covers a 50 km radius from the edge of the Development Area as shown on Figure 12.1 and subsequent figures. In addition to the study area, it was agreed through consultation that the assessment of potential effects upon North Berwick Law which lies just beyond 50 km would be included in the assessment.
- 56 The 50 km radius extent of the SLVIA study area was proposed in the Scoping Report and agreed through consultation, because this was considered to define the maximum area within which significant effects from the Inch Cape Wind Farm could occur. Turbines of 291m to blade tip and with tower bases of 10m diameter will be visible beyond 50 km, but it is not considered that they could give rise to significant effects at this distance. This judgement was based on consideration of several factors including the maximum proposed dimensions of the Inch Cape WTGs and review of preliminary ZTVs and wirelines based on these dimensions; as well as being informed by professional judgement. The selection of a 50 km radius study area also takes account of the curvature of the earth, atmospheric visibility and prevailing weather conditions, as well as acuity of the human eye, all of which are described further in *section 12.6.4*.
- 57 The Offshore Export Cable Corridor runs from the Development Area to the landfall near the site of the former Cockenzie Power Station on the East Lothian coast, east of Preston Links and can be seen in *Chapter 1: Introduction*, Figure 1.2.

12.6.2 Data Sources and Field Work

- 58 A review of existing SLV context within the study area has been undertaken with reference to existing character assessment, SNH guidance, planning policies and mapping information. The following sources were consulted in order to compile the baseline information:
- Scottish Planning Policy (Scottish Government, 2014);
 - SNH Landscape Character Assessments;
 - An assessment of the sensitivity and capacity of the Scottish seascape in relation to offshore windfarms (SNH, 2005a);
 - Historic Environment Scotland's (2016) The Inventory of Gardens and Designed Landscapes in Scotland;
 - Ordnance Survey (OS) Maps;
 - Aerial photography; and

- Consultation with SNH, and other consultees as listed in *Section 12.3*.
- 59 In addition, the SLVIA study area was visited during August and October in 2017 and January 2018 in periods of reasonably fine and clear weather, to verify SLV receptors and related effects.

12.6.3 Overview of baseline

Regional Context

- 60 As noted in *Section 12.4.3*, the landward component of the SLVIA study area covers the administrative areas of six local authorities (Aberdeenshire, Angus, Fife, Dundee, East Lothian and Perthshire). Within the SLVIA study area, the coastline extends from Newtonhill (south of Aberdeen) through Stonehaven to Dundee, across the Firth of Tay before continuing around the coastal edge of East Fife to Largo where it extends across the Firth of Forth to North Berwick and Dunbar. The SLVIA study area is shown on Figure 12.1.
- 61 The SLVIA study area can therefore be broadly divided into two main areas:
- The North East Coast, encompassing Aberdeenshire, Angus and Dundee; and
 - East Fife, incorporating the Firth of Tay.
- 62 Additionally, there is a third area, with a much smaller landward component:
- East Lothian, incorporating the Firth of Forth.
- 63 The first area covers much of the Aberdeenshire coastline to the south of Aberdeen itself, incorporating the local centres of Stonehaven and Inverbervie as well as important tourism and recreational sites such as Dunnottar Castle, and St Cyrus National Nature Reserve. Inland is rural, centred on the major transport corridor of the A90. Between the coast and the A90 the land is broadly rolling with many low-lying hills of volcanic origin, including Bruxie Hill (216 m Above Ordnance Datum (AOD)). These hills physically contain the Howe of the Mearns, which forms a hill girt basin at the north-eastern end of the wide valley of Strathmore, beyond Brechin. To the north, the Howe is overlooked by Strathfinella Hill (414 m AOD) and its main town is Laurencekirk.
- 64 The Angus coastline lies in closest proximity to the Development Area. It runs from Montrose Bay in the north to the outskirts of Dundee, including local centres at Montrose, Arbroath and Carnoustie. It also includes a number of tourism and recreation destinations such as Montrose Bay, Lunan Bay and Carnoustie Golf Course, together with important sites for nature conservation such as Montrose Basin and Barry Links. The A92 runs adjacent to the coast for much of its length, behind which is a largely agricultural and rolling hinterland continuing into the broad valley of Strathmore through which the A90 runs, connecting the local centres of Forfar and Brechin. To the west of Strathmore the ground rises in the area of the five Angus Glens, where the main land use is hill-farming, extending towards the distant summits of the Grampian Mountains.

- 65 Dundee, the fourth largest city in Scotland, lies on the north bank of the Firth of Tay and is a regional employment and education centre for this part of the country. The Port of Dundee is used primarily in the provision of support services to the offshore oil and gas industries. The city is bisected by a line of hills stretching from Balgay Hill, through Dundee Law, to Gallow Hill.
- 66 The Firth of Tay extends eastward from Perth opening into the North Sea beyond Buddon Ness in Angus and Tentsmuir Point in Fife. It contains several important nature conservation sites including the Firth of Tay and Eden Estuary Special Area of Conservation (SAC).
- 67 Within East Fife, the coastline runs west to east from the Inner Firth of Tay past the Tay Bridge and Tayport, before rounding Tentsmuir Point and continuing south across the Eden Estuary, through St Andrews and along the rocky coastline to Fife Ness. Inland areas are largely rural, with low hills achieving a visual prominence which belies their height due to the general low-lying and undulating character of the land. Most larger settlements are located along the coastline, including St Andrews, with its famous university and golf courses.
- 68 The Firth of Forth is the largest estuary on the east coast of Scotland. A number of large towns and settlements line its shores, many of them connected with heavy industry, manufacturing and shipping. The SLVIA study area however only encompasses parts of the Outer Firth between Fife Ness and Dunbar. The northern coastline, in Fife, contains a number of small villages and towns, some with harbours and small scale fishing industry. Within the Firth itself are a number of small islands including the Isle of May and Bass Rock.
- 69 Within East Lothian, the SLVIA study area covers a small part of the town of Dunbar and the adjacent Barns Ness. Further to the west it also incorporates land on the coastal edge of the broad peninsula which projects north into the Firth of Forth, from the headland of St Baldred's Cradle, past Tantallon Castle, to the outskirts of North Berwick.

Local Context and Shipping Movements

- 70 Data showing shipping movements in and around the Development Area and within the SLVIA study area is described in *Chapter 15* and in more detail in *Appendix 15A: Navigational Risk Assessment Development Area*. These show that the area of sea around the Development Area is well-used by a variety of vessels. During the period surveyed, the majority of vessel types crossing within a 10 nm (approximately 18.52 km) buffer zone around the Development Area were cargo vessels (29 per cent) and fishing vessels (27 per cent). Tankers and "other" vessels made up 15 per cent and 14 per cent of the traffic recorded respectively. The passenger vessels in the vicinity of the Development Area (which comprised four per cent of all survey traffic) were all cruise vessels, the majority of which were headed in and out of the Firth of Forth. Recreational vessels, also comprising four per cent of the recorded total, are also active around the Development Area, along the Angus and Fife coastlines, and within both the Firths Tay and Forth. In

terms of facilities, the nearest club is the Arbroath Sailing & Boating club, 10 nm (18.52 km) to the west of the Development Area, with Montrose Sailing Club a similar distance to the north-west. The nearest marina to the Development Area is also at Arbroath.

Landform and Hydrology

- 71 Patterns of landform and watershed drainage within the SLVIA study area are clearly illustrated in Figure 12.1. The north-east coast section comprises a generally rocky coastline with low cliffs, interspersed with wide sandy bays, that backs onto an undulating agricultural hinterland of low rolling hills and depressions, with notable high points in the north around Bruxie Hill (217 m AOD) and the Hill of Garvock (277 m AOD). To the south it includes the easternmost summits of the Sidlaw Hills, such as Craigowl Hill (455 m AOD) and Balkello Hill (397 m AOD), which overlook Dundee and the Firth of Tay.
- 72 To the west of this rolling landscape is the broad valley of Strathmore running from north-east to south-west between the Grampian Mountains and the Sidlaws. Within the southern half of Strathmore minor burns and streams drain into the River Isla which itself is a tributary of the River Tay. In its northern extents the main watercourses are the rivers North Esk and South Esk, which both drain into Montrose Bay, the latter via Montrose Basin which occupies an extensive area of low-lying land to the west of Montrose. Other notable watercourses include Bervie Water, which flows into the North Sea at Inverbervie, and Lunan Water which does likewise at Lunan Bay.
- 73 North-west of Strathmore, the Grampian Mountains rise through two of the five “Glens of Angus”, Glen Esk and Glen Lethnot. The foothills of the Grampians feature prominently in long-distance views westwards across the SLVIA study area, as they rise relatively abruptly from Strathmore. Notable summits include the Hill of Wirren (678 m AOD), with the Cairn o’ Mount being a popular elevated viewpoint (454 m AOD) adjacent to the B974.
- 74 The Firth of Tay and Firth of Forth are the major hydrological features within the SLVIA study area. The former comprises the relatively narrow Inner Firth which runs east from Perth towards the Tay Bridge where it is pinched between Tayport and Broughty Castle. The inner Tay has extensive sediment flats together with the most extensive continuous stands of reed swamp in Britain. The outer Firth lies seaward of Broughty Ferry but includes large areas of sand flats off Tentsmuir Point as well as at St Andrews.
- 75 The Firth of Forth is also divided approximately into an inner and outer section. The Inner Forth extends between the Kincardine and Forth Bridges but lies outwith the SLVIA study area. Further downstream the Forth widens out and the shores become sandy and rocky interspersed with fishing villages. Golf courses have traditionally been created on the sandy grassy links in Fife and East Lothian. Similar to the Tay, the Firth of Forth is an important area for both people and wildlife.
- 76 Between the Tay and Forth lies the Eden Estuary which, apart from the main river channel, is exposed at low water and is an important site for nature conservation with its

landscape of mudflats, sandbanks and saltmarshes providing habitats for various flora and fauna.

- 77 The coastline of East Fife displays very different characters to the north and south of the Eden Estuary. Northwards, it is low-lying and sandy with extensive areas of forest at Tentsmuir. The hinterland here rises gently merging into a rolling landscape of low summits and depressions including Lucklaw Hill (190 m AOD).
- 78 South of the Eden the sandy coastline continues east to the famous links at St Andrews beyond which the coastline becomes rocky with low cliffs backing onto shallow sloping and relatively sparsely populated agricultural land. Further inland the ground rises somewhat including the notable hills of Largo Law (290 m AOD) and Drumcarrow Craig (217 m AOD). The northern coast of the Outer Firth of Forth remains rocky but is interspersed with small sandy beaches and coves, with only limited areas of low cliff-edge.

Land Cover and Land Use

- 79 Land cover refers to the physical material at the surface of the land in question for example grass, tarmac, trees, bare ground, water. Land use is a description of how people actually utilise the land. This could include agricultural land use, urban land use, etc. The two terms, although clearly closely related, are distinct.
- 80 Land use in the SLVIA study area is predominantly agricultural. It includes some of the most productive farmland in Scotland such as Strathmore, where soft fruits, potatoes and cereals predominate. It also includes large areas of pasture – both beef and dairy farming are important on the rich pastures along the highland foothills. On higher ground with more marginal land, particularly within the Grampian Mountains, hill farming prevails.
- 81 Within this matrix of agricultural land there are also many large scale commercial forests and plantations which form prominent features in the local landscape, particularly in the hills above Stonehaven (Fetteresso Forest, Drumtochty Forest), south of Brechin (Montreathmont Forest) and at Tentsmuir.
- 82 There are also large areas of urban development connected by an extensive highway network. Outside of the major regional and local centres, patterns of settlement are more scattered and settlement sizes smaller; nevertheless, with the exception of the upland areas, this is a well-settled landscape. Associated with the bigger towns and cities are more large-scale industrial and commercial areas including both ports at Dundee and Montrose.
- 83 Finally, there are several operational and consented wind farms in the study area, both onshore and offshore. As these developments are (or will be) part of the baseline, they have been taken into account in the assessment. The process by which the projects included in the detailed assessment have been identified is noted in Tables 12.1 and 12.2 and described in *Section 12.8*.

12.6.4 Visibility within the Study Area

- 84 In order to identify the parts of the SLVIA study area which may be affected by the Inch Cape WTGs; tip height, hub height and substructure height, Zone of Theoretical Visibility (ZTV) plans were produced to identify the theoretical extent of visibility of the Inch Cape WTGs within the SLVIA study area. A ZTV was also produced for the OSPs modelled at platform level of 70 m height above Highest Astronomical Tide (HAT). These ZTVs are shown in Figures 12.4, 12.4a-d, and in Figure 12.5. They are supplemented with a horizontal angle ZTV which indicates the proportion of the horizontal view theoretically occupied by the Inch Cape WTGs and OSPs at any given location. These are shown in Figure 12.6, 12.6 a-d.
- 85 An assessment of the predicted visibility of the Inch Cape WTGs and OSPs from each of the landscape and visual receptors in the SLVIA study area has been carried out by analysis of the ZTVs and field verification from key sensitive receptors (*Appendix 12B*). The visibility assessment has concentrated on publicly accessible areas and key receptors including residential and outdoor recreational areas, as well as road and rail routes and public footpath networks.

Additional Considerations

- 86 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 are:
- Curvature of the earth;
 - State of tide;
 - Atmospheric visibility; and
 - Acuity of the eye.

Curvature of the Earth

- 87 When the WTGs and OSPs are viewed from locations near sea level, WTGs at distances greater than 50 km will begin to disappear over the horizon. These distances could theoretically be exceeded for land based receptors, where the viewing height is above sea level. The presence of hill and upland areas within the SLVIA study area provides elevated viewing locations for sensitive receptors. The angle of view gained by receptors at greater elevations above sea level will, to some degree, counteract the curvature of the earth, extending the potential availability of views. Modelled ZTVs and photomontages consequently take account of the curvature of the earth.

State of the Tide

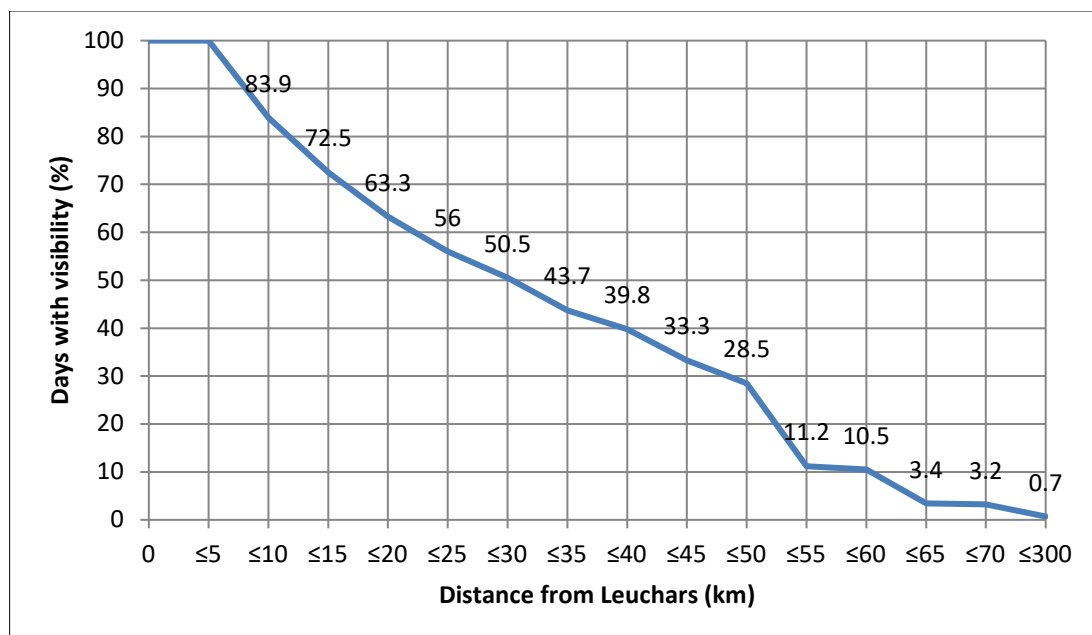
- 88 The apparent height of WTGs will vary between Lowest and Highest Astronomical Tide (LAT/ HAT) by around 5.4 m. It is considered that this difference is unlikely to be

discernible over the distances between the Development Area and the various viewpoints included in the assessment.

Atmospheric Visibility

- 89 It is usual when assessing visibility of WTGs to consider atmospheric visibility by examining meteorological data for the area. Such examination can only be approximate, as visibility varies from year to year, according to season, and will vary across the SLVIA study area, both laterally, and with height above sea level. Ten year averages have been used to indicate approximate percentages of time within each viewing range.
- 90 Atmospheric visibility data collected at the Leuchars weather station for a 10 year period from November 2007 to October 2017 was analysed for the purposes of this assessment, and is summarised in *Graph 12.i* below.
- 91 From Leuchars, the closest Inch Cape WTG will be located east north-east at a distance of approximately 40 km. The furthest WTG will be located approximately 50 km distant. The data shows that visibility between these distances (indicating from this location the Inch Cape WTGs and OSPs) will be visible between approximately 40% of the time at 40 km reducing to 28% up to 50 km distant.

Graph 12.i: Visibility from Leuchars



Acuity of the Eye

- 92 The *Guide to Best Practice in Seascape Assessment* (CCW *et al*, 2001) 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 100 mm diameter will become difficult to see, and at 2 kilometres a pole of 200 mm 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."

- 93 Consequently, when visible in favourable conditions, a slim object, approximately three metres in width will be at the limit of perception by the human eye at a distance of 30 km. An object would need to be greater than five metres wide to be visible at or beyond 50 km.
- 94 A combination of curvature of the earth and acuity of the eye would limit the potential for seascape, landscape and visual effects especially beyond 50 km distance. The assessment has been carried out on the basis of clear visibility and maximum anticipated brightness.

12.6.5 Receptors

- 95 Within the SLVIA study area, there is a range of SLV amenity receptors. A baseline survey has been carried out to identify these receptors, involving desk study and field work and taking account of consultation.
- 96 Seascape receptors are defined as all regional seascape character areas (SAs) in the SLVIA study area from where the Inch Cape WTGs and OSPs are predicted to be visible. Seascape character areas within the SLVIA study area are shown in Figure 12.2, and an overlay with the ZTV is shown in Figure 12.2b.
- 97 Landscape receptors are defined as all landscape character types (LCTs) and associated areas in the SLVIA study area from where the Inch Cape WTGs and OSPs are predicted to be visible. Landscape character types and associated areas within the SLVIA study area are shown in Figures 12.2 and 12.2a, and an overlay with the ZTV is shown in Figure 12.2b. Figure 12.2a has been prepared at a smaller scale to show the more complex pattern of small scale landscape character areas identified in the Fife LCA (SNH, 1999a).
- 98 Designated landscapes within the SLVIA study area from where the Inch Cape WTGs and OSPs may be seen are also included as landscape receptors and are shown in Figure 12.3, and an overlay with the ZTV is shown in Figure 12.3a.
- 99 Visual amenity receptors are defined as individuals or groups of people within the SLVIA study area who are predicted to have views of the Inch Cape WTGs and OSPs. The main groups of visual receptors are defined as follows:
- residents;
 - walkers and climbers;
 - tourists, visitors or users of recreational facilities;
 - road and rail users; and
 - marine based receptors including people taking part in water-based recreational activities, and commercial and cruise ships.

- 100 It is acknowledged that these groups of visual amenity receptors may be sub-divided and that there may be more categories of receptors, but for the purposes of this assessment it is considered that the above categories cover the main groups of landscape and visual receptors in the SLVIA study area.

Seascape Character Areas

- 101 The baseline seascape character is described in detail in the Seascape Character Assessment (SCA): Aberdeen to Holy Island, included as *Appendix 12D*. This identifies and describes 21 SAs of which 13 are located within the SLVIA study area as summarised in Table 12.11 below and shown in Figure 12.2. This Regional SCA was prepared in 2011 to define a common seascape character baseline for the impact assessments of the three offshore wind farms in the outer Firths of Tay and Forth: Inch Cape, NNG and Seagreen. It was agreed through consultation in respect of the current proposed Inch Cape Wind Farm that the 2011 Regional SCA contained in *Appendix 12D* should be used to define the baseline seascape context.
- 102 The key characteristics of each of the seascape character areas (SAs) in the study area together with the sensitive landscape and visual receptors within them, are set out in *Appendix 12A*. The night time context within each SA is also set out in *Appendix 12A*. In accordance with GLVIA3, the value and susceptibility of seascape character areas have been assessed and are also identified in *Appendix 12A*.
- 103 Following the characterisation process, a sensitivity rating of high, moderate or low was assigned to each SA. The assessment of sensitivity considers the ability of each character area to accept change of the type proposed (i.e. offshore wind farm development), without detriment to its key characteristics. As such it is a judgement of sensitivity to a specific type of change, rather than overall or inherent sensitivity.

Table 12.11: Regional seascape character areas

Character Area	Key Characteristics	Sensitivity
SA3 – Cove Bay to Milton Ness	Long, generally linear and rocky coastline interspersed with small coves and beaches and settlements including Stonehaven and Inverbervie.	Moderate
SA4 – Montrose Bay	Wide, sandy beach backed by line of dunes and grassland with cliffs at the National Nature Reserve (NNR) at St Cyrus. Port and town of Montrose at south end of Montrose Bay.	High
SA5 – Long Craig	A low-lying headland with a rocky foreshore and sparsely settled agricultural hinterland.	Moderate
SA6 – Lunan Bay	Wide, sandy beach with rocky headlands to the north and south, backed by dunes with woodland and shelter belts around Lunan.	High

Character Area	Key Characteristics	Sensitivity
SA7 – Lang Craig to the Deil's Heid	Rocky coastline including cliffs, sea stacks, blowholes, caves, wave cut platforms and arches, contrasting with agricultural hinterland.	High
SA8 – Arbroath to Monifieth	Low lying coastal edge with extensive wave-cut platforms interspersed with sections of sandy beach, which are backed by areas of dunes in places; the coastline is extensively settled.	Moderate
SA9 – Dundee	Settled coastal fringe centred on the urban developments in and around the City of Dundee.	Low
SA10 – Inner Firth of Tay	Extensive intertidal mudflats and sandbanks with narrow coastal strip on south side and extensive low-lying agricultural land with the Carse of Gowrie to the north.	Low
SA11 – St Andrews Bay	Long stretch of sandy coastline with expansive intertidal areas backed by extensive areas of dunes and forestry, includes links and town at St Andrews.	High
SA12 – St Andrews to Fife Ness	Diverse coastal edge comprising small sandy bays, extensive wave-cut rock platforms, low cliffs and narrow, wooded dens, backed by gently undulating agricultural landscape.	High
SA13 – East Neuk of Fife	A generally low lying, rocky coastline with distinctive red sandstone cliffs and soils, shingle beaches and attractive fishing villages centred on busy harbours.	High
SA14 – Kirkcaldy to Largo Bay	Generally low lying coast with views to sea framed by headlands and large coastal settlements.	Moderate
SA17 – Eyebroughy to Torness Point	Generally low-lying coast, with an alternation of rocky headlands and sandy pocket bays, backed by relatively intact agricultural land and towns.	Moderate

Landscape Character Types and Associated Areas

- 104 The landscape baseline for the SLVIA study area has been assessed and classified taking account of the following SNH LCAs:
- SNH (1998) No. 102 South and Central Aberdeenshire (Environmental Resources Management);
 - SNH (1999a) No. 113 Fife (David Tyldesley and Associates); and
 - SNH (1999b) No. 122 Tayside (Land Use Consultants).
- 105 LCTs and their associated areas are shown in Figures 12.2 and 12.2a. The key characteristics of each of the landscape character areas (LCAs) in the study area together

with the sensitive landscape and visual receptors within them, are set out in *Appendix 12A*. The night time context within each LCA is also set out in *Appendix 12A*.

- 106 A sensitivity rating has been assigned to each LCT, which occurs in locations within the SLVIA study area and has theoretical visibility of the Inch Cape WTGs and OSPs as described in Table 12.12 and set out in detail in *Appendix 12A*. The assessment of sensitivity considers the ability of each LCT and associated area(s) to accept change of the type proposed (i.e. offshore wind farm development), without detriment to key characteristics. As such it is a judgement of sensitivity to a specific type of change, rather than overall or inherent sensitivity.

Table 12.12: Landscape character types

Character Area	Key Characteristics	Sensitivity
ABS2 – Agricultural Farmlands	Medium to large scale agricultural landscape varying from the almost uniformly flat Howe of the Mearns to the undulating ridges of Hill of Garvock and Kincardine Plateau.	Moderate
ABS4 – Moorland Plateaux	Large scale, open landscape featuring smooth rolling landform and rounded summits, extensive areas of heather moorland and grasses, and large areas of coniferous forest.	Moderate
TAY1 – Highland Glens	Medium to small scale, sparsely settled and enclosed landscape which is dominated by the scale and proximity of surrounding mountains.	High
TAY3 – Highland Summits and Plateaux	Large scale, open and exposed landscape with panoramic views to surrounding areas, with predominantly simple patterns of land cover and land use.	Moderate
TAY5 – Highland Foothills	Overall medium scale landscape of steep whale-backed hills and valleys with scattered settlement and agriculture on lower ground.	Moderate
TAY8 – Igneous Hills	Medium scale landscape of rounded hills dominated by grass moorland, with scattered settlement and agriculture on lower ground.	Moderate
TAY10 – Broad Valley Lowlands	Overall medium scale, predominantly open and expansive landscape of rectilinear fields with scattered large farmsteads contrasting with neighbouring upland areas.	Moderate
TAY12 – Low Moorland Hills	Medium scale landscape comprising a series of low-lying hills and ridges with extensive areas of coniferous plantation and scattered settlement.	Moderate
TAY13 – Dipslope Farmland	Medium to large scale mostly open landscape with few settlements of any size, dominated by productive agricultural land with low woodland cover.	Moderate

Character Area	Key Characteristics	Sensitivity
TAY15 – Lowland Basins	Medium scale open landscape comprising large, rounded estuarine basin surrounded by low-lying drained farmland with settlement concentrated in Montrose.	Moderate
FFE3 – Upland Foothills	Medium to large scale transitional landscape forming distinctive backdrop to lowlands and having extensive views across other landscape types.	Moderate
FFE4 – Pronounced Volcanic Hills and Craigs	Medium to large-scale, open landscape of distinctive hills rising above surrounding lowlands, with contrast between rugged hills and more intensively used lower slopes.	Moderate
FFE5 – Lowland Hills and Valleys	Medium scale landscape of low hills and valleys comprising open farmland with extensive areas of woodland and regular pattern of farmsteads and larger settlements and towns.	Moderate
FFE6 – Lowland Open Sloping Farmland	Large scale, open and exposed landscape with generally simple form and pattern of predominantly large-scale, open, sloping arable fields, with extensive seaward views in places.	Moderate
FFE7 – Lowland Dens	Narrow and steeply sloping valleys with often semi-natural woodlands on the banks and valley sides; the tops of the Dens slope more gently to the surrounding farmland.	Moderate
FFE8 – Lowland Glacial Meltwater Valleys	Medium to large-scale, open landscape of U-shaped valleys with intensive arable cultivation on valley floors contrasting with the mixed farming or grazing land on the rising slopes.	Moderate
FFE11 – Coastal Hills	Medium to large scale landscape of undulating hills, influenced by proximity to the coast and comprising generally simple patterns of land use and land cover.	Moderate
FFE12 – Coastal Terraces	Medium to large scale and mostly flat or gently sloping landscape with extensive views of the coast, comprising agricultural land interspersed with urban development.	Moderate
FFE15 – Coastal Flats	Large-scale low-lying and exposed coastal landscape comprising mix of predominantly agricultural land and coniferous forestry with extensive seaward views.	Moderate

Landscape Designations

- 107 The landscape baseline for the SLVIA study area also includes areas with theoretical visibility of the Inch Cape WTGs and OSPs, which are designated for the quality of their landscapes. This includes Garden and Designed Landscapes (GDLs), AGLV and LLA. These

are shown in Figure 12.3 with an overlay with the ZTV shown on Figure 12.3a and described briefly in Table 12.13.

Table 12.13: Landscape designations

Character Area	Key Characteristics	Sensitivity
Gardens and Designed Landscapes (GDL)		
Fasque House	Situated to the north of Fettercairn, there are views from the house of Strathmore with the policy woodland and parkland contributing to the surrounding scenery.	High
The Burn	Located at the foot of Glenesk with scenic value attributed largely to the surrounding woodlands and gate lodges.	High
House of Dun	Situated between Montrose and Brechin, there are extensive views south from the house and grounds across Montrose Basin.	High
Dunninald	Situated on the coastline between Lunan Bay and Montrose, the policy woodlands provide scenic value but screen views from within the grounds to the surrounding landscape.	High
Guthrie Castle	Located between Forfar and the coast, the grounds have some scenic value in the local landscape but long-distance views largely screened by woodland.	High
House of Pitmuies	Located next to Guthrie Castle on the north-eastern edge of the Sidlaw Hills, areas of policy woodland in the grounds adds scenic value but screen views to the surrounding landscape.	High
The Guynd	Located inland to the west of Arbroath, views of the North Sea may be obtained from the top of the house but the policy woodland restricts views from elsewhere in the grounds.	High
Camperdown House	Situated on the outskirts of Dundee, there are extensive views from the house across the Firth of Tay and towards the Carse of Gowrie.	High
Baxter Park	Located in the centre of Dundee, long-distance views are largely screened by trees and vegetation within the park and the urban fabric beyond.	High
Balgay Park	Also located close to the centre of Dundee, there are extensive views from the park across the city to the Firth of Tay and beyond.	High

Character Area	Key Characteristics	Sensitivity
Earlshall	Located on the outskirts of Leuchars village views from within the grounds to the surrounding landscape are screened by the policy woodland.	High
St Andrews Links	The Links are situated to the north-west of St Andrews and have uninterrupted views eastwards across St Andrews Bay.	High
Craigtoun	Located to the west of St Andrews, there are views from within the grounds to the surrounding landscape including the coastline and St Andrews Bay beyond.	High
Hill of Tarvit (Wemyss Hall)	Situated just south of Cupar, views to the surrounding landscape from within the grounds, with the exception of higher land on the Hill of Tarvit, are mostly screened by woodland.	High
Charleton House	Located in the East Neuk, the policy woodlands contribute to the scenic value of the local landscape but also screen views from within the grounds, except from more elevated areas.	High
Cambo	Cambo is located on the north-east Fife coastline, to the north of Crail. There are coastal views from the wider estate, although within the garden these are largely screened.	High
Tynninghame	Located to the north-west of Dunbar, views may be obtained from within the grounds to the adjacent coastline and beyond.	High
Area of Great Landscape Value (AGLV)		
North Berwick to Dunbar Coastal	Includes the rocky coastline to the east of North Berwick, Tantallon Castle, the GDL at Tynninghame and the extensive beach at Belhaven Bay at the mouth of the River Tyne.	High
Local Landscape Area (LLA)		
Craigtoun	Includes the Kinness, Claremont, Lumbo and Cairns Dens which extend from the south-west of St Andrews and provides a link from the surrounding countryside towards St Andrews contributing to the setting of the town.	High
Dura Den	Incorporates the incised valley of Dura Den, the northern slopes of Kemback Hill and the policy influenced valley of the River Eden around Dairsie. Wooded valley has intimate character and feeling of naturalness.	Moderate

Character Area	Key Characteristics	Sensitivity
East Neuk	Extends along the coastal edge from Crail to Earlsferry and Kingcraig Hill, and incorporating the inland areas of Balcaskie and Kilconquhar. Extensive seaward views combine with open character of farmland landscape and contrast with intimate coastal villages.	High
Forth Islands	Comprises the three Forth islands of Inchcolm, Inchkeith and the Isle of May, although only the latter is within the SLVIA study area, having a distinctive long, low profile with steep cliffs on the eastern shore and a central lighthouse.	High
Largo	Encompasses the rising slopes and low summits which surround Largo Law and to the north it extends along the summit of Flagstaff Hill.	Moderate
St Andrews to Fife Ness	Coastal edge extending from St Andrews around Fife Ness to Crail incorporating Boarhills, Kingsbarns and Cambo incorporating an extensive area of largely undeveloped coast with expansive seaward views from an open landscape.	High
St Andrews Links	Low lying coastal landscape defined by close association with Eden Estuary and the coastal sands, extending from the northern edge of St Andrews and the A91 across the golf courses and dune system to the Eden Estuary.	High
Tarvit and Ceres	A scenically diverse and balanced landscape comprising the valley of the Ceres and Craigrothie Burns and the softly rolling hills which contain it.	Moderate
Tay Coast	The Firth of Tay provides the setting for a richly, diverse landscape of steep, wooded coastal braes, gently sloping farmland, deeply incised wooded dens and policies backed by a long band of low rounded hills.	Moderate
Tentsmuir Coast	Comprises the coastal dunes and long sandy beach of Tentsmuir Sands extending from the River Eden estuary to Tayport, possessing a high degree of naturalness and sense of remoteness.	High

Visual Amenity Receptors

108 It is recognised that a wide variety of people will have potential views of the Inch Cape WTGs and OSPs. However, for the purposes of this assessment a representative range of visual amenity receptors has been assessed as follows:

- residents in selected settlements;

- people travelling through the seascape/landscape on major roads and railways. These may be tourists and other visitors or local people;
- users of other recreational facilities including cycle routes, long-distance footpaths, Core Paths, golf courses, caravan parks, country parks, nature reserves and popular tourist destinations; and
- marine based receptors including people taking part in water-based recreational activities, and commercial and cruise ships.

109 The range of receptors subject to detailed assessment is summarised in Table 12.14. It is important to recognise that the high sensitivity rating in this case relates to those residential receptors who have views of the open sea from their properties. As such, it is not a general assessment of the sensitivity of the whole settlement, but rather a worst case which may apply only to relatively few residents, particularly in larger urban settlements and those located away from the coastline. Visual amenity sensitivity for other types of receptor, including non-residential receptors, is also described in Table 12.13.

Table 12.14: Visual amenity receptors

Receptor	Name (and distance to nearest WTG)	Sensitivity
Settlements		
Aberdeenshire	Stonehaven (42.7 km), Inverbervie (29.5 km), Gourdon (27.5 km), Johnshaven (25.2 km) and St Cyrus (24.2 km).	High
Angus	Montrose (20.4 km), Lunan (19.3 km), Auchmithie (17.1 km), Arbroath (19.5 km), Carnoustie (26.3 km) and Monifieth (33.3 km).	High
Dundee	Dundee (46.3 km) and Broughty Ferry (36.3 km).	High
Fife	Tayport (37.4 km), Guardbridge (39.3 km), St Andrews (34.8 km), Crail (31.5 km), Anstruther Easter (37.1 km), Pittenweem (40.1 km), Balmullo (41.8 km), Boarhills (31.5 km), Kingsbarns (30.2 km), Leuchars (38.7 km), Strathkinness (39.4 km) and Dairsie (43.7 km).	High
East Lothian	Dunbar (51.7 km) and North Berwick (51.5 km).	High
Routes (as shown in Figure 12.7a)		
Roads	A92, A937, A935, A933, A914, A919, A91, A915, A917.	Moderate
Railways	Edinburgh to Aberdeen railway line.	Moderate
National Cycle Network (NCN) Routes	NCN Route 1a and 1b.	High
Long Distance Footpaths	Fife Coastal Path.	High

- 110 Other recreational facilities with theoretical visibility of the Inch Cape WTGs and OSPs include numerous golf clubs, caravan parks and campsites, nature reserves, hotels and other tourist destinations such as country parks.

12.6.6 Viewpoints

- 111 The viewpoints used for the Inch Cape 2013 EIA have been agreed as the basis for the viewpoints for this SLVIA given the Development Area has not changed. These were originally agreed during discussions with consultees in relation to establishing the seascape character baseline through FTOWDG and were endorsed through the Scoping process in respect of the current SLVIA. Consultation for the Development and consideration of the larger turbines and additional sites has resulted in an additional viewpoint at Berwick Law within East Lothian. In addition, several other locations within East Lothian and a point within Angus have been included as illustrative wireline viewpoints within *Appendix 12G*. No detailed assessment of effects on these locations has been carried out. The final viewpoint list used in this SLVIA is provided in Table 12.15. Viewpoint locations are illustrated on all ZTV plans (see *Appendix 12E*).
- 112 An assessment of effects on seascape and landscape character as well as visual amenity during hours of darkness has also been carried out. As agreed through consultation, this has been based on completing night time viewpoint assessments for four selected locations, (Viewpoint 6 Braehead of Lunan; Viewpoint 10 Clifftop Path north of Victoria Park, Arbroath; Viewpoint 12 A92 East of Muirdrum; and Viewpoint 14 Carnoustie), which are identified in Table 12.15. The night time viewpoint assessment is set out in *Appendix 12C* with night time visualisations presented in Figures 12.40f and 12.40g; Figures 12.44g and 12.44h; Figures 12.46g and 12.46h; and Figures 12.48g and 12.48h.
- 113 There is no guidance on the preparation of night time visualisations or the assessment of night time effects on SLV receptors. The preparation of night time visualisations present technical challenges, as discussed through consultation with SNH, MS-LOT and the Local Authorities (see Table 12.3 and 12.4). As directed by consultees, the assessment of effects on seascape and landscape character as well as visual amenity has drawn on the findings of the night time viewpoint assessment for the four viewpoints as set out in *Appendix 12C*. Night time visits have only been carried out to the night time assessment viewpoints and therefore the interpretation of baseline conditions at all other locations in the study area has been made on the basis of the findings set out in *Appendix 12D*, as well as general familiarisation with the study area. Likewise, the interpretation of predicted effects on landscape and visual receptors in the study area has drawn on the findings of the four night time assessment viewpoint locations as well as *Appendix 12H*.

Table 12.15: Representative Viewpoints including in Assessment

VP No.	Viewpoint Location (distance to nearest Inch Cape WTG)	Reasons for inclusion
1.	Garron Point (43.72 km)	Extensive view from scenic golf course out to North Sea and south along coast past Stonehaven to Dunnottar Castle and beyond.
2.	A92, North of Inverbervie (30.17 km)	Views of the Inch Cape WTGs and OSPs with cluster of existing and proposed wind farms located on Hill of Garvock.
3.	Beach Road, Kirkton, St Cyrus (24.12 km)	Extensive view over Montrose Bay from well-used car park adjacent to coastal footpath.
4.	Cairn o' Mount (42.87 km)	Recognised scenic viewpoint on B974 between the Howe of the Mearns and Deeside with expansive view over surrounding areas.
5.	Montrose (19.99 km)	Popular tourist and recreational destination on the beach front; views encompassing Montrose Bay and Scurdie Ness Lighthouse.
6.	Braehead of Lunan (19.55 km)	Extensive views across Lunan Bay to Red Head; located on NCN Route 1. Also selected for night time viewpoint assessment due to being in area with low level of background lighting, with open seaward views.
7.	Brechin (31.70 km)	Representative of views of the Inch Cape WTGs and OSPs which might be obtained from the outskirts of this important settlement.
8.	White Caterthun Hill Fort (38.80 km)	Important cultural heritage site in upland foothills popular with walkers having extensive views over surrounding landscape.
9.	Minor Road South of Cairnconon Hill (27.01 km)	Representative of inland views from this agricultural landscape within which the sea is visible.
10.	Cliff-top Path North of Victoria Park (18.58 km)	Popular cliff-top path included to show more coastal context in a view of the Inch Cape WTGs and OSPs from Arbroath. Also selected for night time viewpoint assessment due to being one of the closest viewpoints to the proposed development, close to a settlement, on a popular cliff-top path where people may walk in the evening or during hours of darkness.
11.	Arbroath Signal Tower (19.68 km)	Listed building with historic connection to the Bell Rock, now a museum. Public access to roof top platform not currently possible.

VP No.	Viewpoint Location (distance to nearest Inch Cape WTG)	Reasons for inclusion
12.	A92 East of Muirdrum (25.16 km)	Representative of inland views from this agricultural landscape within which the sea is visible. Located on NCN Route 1. Also selected for night time viewpoint assessment due to being an inland location with seaward views, on road with no street lighting and on cycle route.
13.	Dodd Hill (37.97 km)	Popular with hill-walkers having extensive view over surrounding landscape.
14.	Carnoustie (26.70 km)	Popular destination for tourists, day-trippers and local residents, adjacent to golf course and beach. Also selected for night time viewpoint assessment due to being a popular coastal location with promenade providing opportunity for walkers to enjoy views in hours of darkness.
15.	Dundee Law (43.71 km)	Recognised scenic viewpoint in centre of Dundee with extensive views over the surrounding landscape.
16.	Tentsmuir (33.43 km)	Well-visited beach adjacent to Tentsmuir Forest. Located close to NCN Route 1 and Fife Coastal Path.
17.	Strathkinness (39.42 km)	Representative of inland views from this agricultural landscape within which the sea is visible. Located on NCN Route 1.
18.	St Andrews, East Scores (34.81 km)	Representative of views from seafront of St Andrews. Popular with tourists and local residents. Located on Fife Coastal Path.
19.	Largo Law (48.36 km)	Popular with hill-walkers having extensive view over surrounding landscape.
20.	B9131 South of Dunino (36.18 km)	Representative of inland views from this agricultural landscape within which the sea is visible.
21.	Kingsbarns (30.55 km)	Representative of inland views from this agricultural landscape within which the sea is visible.
22.	Anstruther Easter (36.43 km)	Representative of views from the coastal villages of the East Neuk. On Fife Coastal Path and popular with tourists and day-trippers.
23.	Fife Ness, Lochaber Rock (28.32 km)	Easternmost point in Fife. Located on Fife Coastal Path and popular with tourists and other visitors. Small settlement nearby.

VP No.	Viewpoint Location (distance to nearest Inch Cape WTG)	Reasons for inclusion
24.	Isle of May (34.40 km)	A National Nature Reserve (NNR) and tourist destination popular with day-trippers, which provides a proxy for seaborne views.
25.	Dunbar (51.10 km)	Representative viewpoint on East Lothian coastline. Located on John Muir Way. Visited by residents and recreational users.
26.	North Berwick Law (52.47km)	A prominent conical hill near the East Lothian coast, a recognised viewpoint popular with locals and visitors, it also has geological, archaeological, and cultural heritage value.

- 114 The selected viewpoints are considered to be representative of the main sensitive receptors or receptor groups in the SLVIA study area. The viewpoints have also been checked against the ZTVs for existing/consented and application scoping stage wind farms within the SLVIA study area in order to ensure that they provide representative coverage of potential visibility and related effects.
- 115 Analysis of the potential effect on seascape or landscape character and visual amenity at each of the viewpoints, arising from the Inch Cape WTGs and OSPs has been carried out. This analysis has involved the production of computer generated wirelines and in some cases photomontages, to predict the views of the WTGs from each of the agreed viewpoints. The existing and predicted views from each of these viewpoints have been analysed to identify the magnitude of change and the residual effect on seascape and landscape character and visual amenity based on field work as well as desk based assessment. The assessment has been carried out on the basis of the addition of the Inch Cape WTGs and OSPs to the existing operational and consented wind farms (see Table 12.22).
- 116 An assessment of the future cumulative scenario comprising the addition of Inch Cape WTGs and OSPs with baseline of operational and consented wind farms as well as the application or scoping stage wind energy developments (of which there are only two sites at the time of collecting the cumulative data in November 2017) has also been carried out (see Table 12.22).
- 117 Finally, an assessment of the significance of the residual effects has been carried out to determine the predicted impact of the Inch Cape WTGs and OSPs in this locality in relation to seascape and landscape character and visual amenity. The significance of a seascape, landscape or visual effect is a function of the sensitivity of the affected seascape, landscape or visual receptor, and the magnitude of change that will occur as a result of the Inch Cape WTGs and OSPs.

12.6.7 Baseline without Development

- 118 In the case that the Development is not progressed, baseline seascape and landscape conditions within the SLVIA study area will still be subject to future change. This issue has been addressed with specific reference to the regional seascape character areas in the “Forces for Change” sections of the seascape character assessment, which is included as *Appendix 12D*. The main forces for change identified relate to anticipated future development in and around coastal settlements, and the continuing development of onshore wind farms, with anticipated future development associated with recreational and agricultural land uses being a secondary issue. The Scottish Government publication, *Scotland's Offshore Wind Route Map - Developing Scotland's Offshore Wind Industry to 2020 and Beyond* (2010b), suggests that within the marine environment the development of large scale offshore wind energy facilities will remain an official objective for some time to come, and it is likely that at least some of this activity will be focused on the SLVIA study area given the allocation of Round 3 zone in the Outer Firth of Forth.

12.7 Assessment Methodology

- 119 The aim of the SLVIA is to identify, predict and evaluate potential impacts arising from the Inch Cape WTGs and OSPs and the installation of the OfTW. This section highlights how the SLVIA methodology uses the framework outlined in *Section 4.4* and builds upon the principles to undertake the SLVIA assessments.
- 120 Wherever possible, identified impacts are quantified, but the nature of SLV assessment also requires interpretation by professional judgement.
- 121 In order to provide a level of consistency to the assessment, seascape/landscape sensitivity and the prediction of magnitude of change, are based on pre-defined criteria as outlined in this section. These criteria are derived from the *Guidelines for Landscape and Visual Impact Assessment* (Landscape Institute and IEMA, 2013), as refined for the purposes of offshore wind farm assessment, and also taking account of SNH guidance detailed in *Section 12.4.1*.
- 122 The assessment of significance (sensitivity and magnitude) involved site specific field work to consider the potential impacts on all of the identified receptors included in the assessment. This field work was supplemented by reference to a range of illustrative material including photography, ZTVs, and electronically generated wireline representations of the predicted views at each of the 26 viewpoint locations included in the assessment. The nine viewpoint locations closest to the Inch Cape WTGs and OSPs are illustrated with a photomontage in addition to wireline visualisations. The viewpoint visualisations are presented in Figures 12.35 – 12.60 presented in *Appendix 12F*.
- 123 The potential landscape and visual impacts arising during the operational phase of the Inch Cape WTGs and OSPs have been assessed in two ways:

- Analysis of the ZTVs to provide a general overview of the predicted visibility of the Inch Cape WTGs and OSPs from the different distances within the SLVIA study area. This analysis is contained within *Appendix 12B*; and
- Assessment of the potential landscape and visual effects at 26 selected viewpoints. Descriptions of the existing and predicted view at each viewpoint together within a description of the predicted effects are contained in *Appendix 12C*.

12.7.1 Sensitivity of Receptor

- 124 The sensitivity of the seascape and landscape will be defined as high, moderate or low based on combining value and susceptibility of the resource to the change envisaged from the Development.
- 125 Firstly, the value of the seascape or landscape resource has been assessed taking account of whether or not any designation applies, and if not, based on consideration of seascape or landscape quality or condition; scenic quality; rarity; representativeness; conservation interests; recreational value; perceptual aspects such as wildness or tranquility; and cultural associations.
- 126 The susceptibility of seascape to change has been judged according to a series of criteria originally identified in *“An assessment of the sensitivity and capacity of the Scottish seascape in relation to offshore wind farms”* (SNH, 2005) and, as subsequently modified for the SLVIA of the Inch Cape 2013 EIA to include aspects of seascape covered in *“Guidance on Landscape/Seascape Capacity for Aquaculture”* (SNH, 2008). Susceptibility is defined as high, moderate or low based on professional interpretation of a combination of parameters including:
- scale and openness of the seascape;
 - form, whether complex and intricate or simple;
 - degree of settlement;
 - pattern and number/character of focal points;
 - lighting, whether dark or well-lit;
 - degree and perception of movement in the seascape;
 - aspect, for example whether coastal views are aligned towards the open sea or inner firths;
 - experiential qualities of the seascape such as seclusion, busyness, strong maritime connections, etc.;
 - degree of exposure;
 - process and dynamics;
 - quality and condition; and

- what development or other pressures are present.
- 127 The susceptibility of the landscape to change is defined as high, moderate or low based on professional interpretation of a combination of parameters including:
- the value placed on the landscape as defined by designation or other identifiable form of recognition;
 - the scale and pattern of the landscape and its elements/features;
 - the simplicity or complexity of the landscape;
 - the nature of skylines;
 - landscape quality or condition, including presence of any detracting features;
 - existing land-use;
 - visual enclosure/openness of views and distribution of visual receptors; and
 - the scope for mitigation, which would be in character with the existing landscape.
- 128 This assessment considers landscape and seascape sensitivity in relation to indirect effects arising from development outwith the particular landscape or seascape character area in question. Overall sensitivity of the seascape and landscape resource will be assessed as high, moderate or low in accordance with Table 12.16.

Table 12.16: Criteria for classifying sensitivity of seascape or landscape receptor

Sensitivity	Definition
High	A seascape or landscape of particularly distinctive character, which may be nationally designated for its scenic quality or where its key characteristics have limited resilience to accommodate change without being fundamentally altered.
Moderate	A seascape or landscape of notable character or where its key characteristics have some/medium resilience to accommodate change.
Low	A seascape or landscape which is of low/poor scenic quality or where its key characteristics are such that they are resilient to change.

- 129 It should be noted that the seascape or landscape sensitivity assessed at each of the representative viewpoints is not necessarily the same as that identified as the overall sensitivity for the seascape or landscape character area within which the viewpoint is located. Thus, if the key characteristics of the seascape or landscape at, and seen from, a viewpoint location is different from the key characteristics of the overall seascape or landscape character area, it may be assessed as being of a different sensitivity at the particular viewpoint location.

12.7.2 Viewpoint Sensitivity

- 130 Viewpoint sensitivity is defined as high, moderate or low based on combining value and susceptibility of the view or visual amenity to the change envisaged from the Development.
- 131 The value of views is assessed as high, moderate or low. The value attached to publicly accessible views is judged as high, moderate or low according to a range of criteria as set out in Table 12.17.

Table 12.17: Value attached to publicly accessible views

Value	Criteria
High	<p>Views from nationally (or internationally) known viewpoints, which:</p> <ul style="list-style-type: none"> • have some form of planning designation; • are associated with internationally or nationally designated landscapes or important heritage assets; • are promoted in sources such as maps and tourist literature; • are linked with important and popular visitor attractions where the view forms a recognised part of the visitor experience; or • have important cultural associations. <p>Also may include views judged by the assessors to be of particularly high value.</p>
Moderate	<p>Views from viewpoints of some importance at regional or local levels, which:</p> <ul style="list-style-type: none"> • have some form of local planning designation associated with locally designated landscapes or areas of equivalent landscape quality; • are promoted in local sources; • is linked with locally important and popular visitor attractions where the view forms a recognised part of the visitor experience; or • have important local cultural associations. <p>Also, may include views judged by the assessors to be of value at the local authority level.</p>
Low	<p>Views from viewpoints which, although they may have value to local people:</p> <ul style="list-style-type: none"> • have no formal planning status; • are not associated with designated or otherwise high quality landscapes; • are not linked with popular visitor attractions; or • have no known cultural associations. <p>Also, may include views judged by the assessors to be of value to local communities.</p>

- 132 All views from residential properties will be considered of high value, as the views that people obtain from their home are generally highly valued.

- 133 The susceptibility of views to change arising from the Development will be considered in relation to the following parameters:
- location and context of the viewpoint;
 - land use or main activity at the viewpoint;
 - frequency and duration of use; and
 - seascape or landscape character and quality of the intervening seascape or landscape.
- 134 Overall visual sensitivity will be assessed as high, moderate or low as defined in Table 12.18.

Table 12.18: Visual sensitivity in relation to main activity at viewpoint

Sensitivity of Receptor	Visual Resource of Amenity
High	Locations frequented by viewers with proprietary interest and prolonged viewing opportunities such as at residential properties or at popular recreational destinations, including views obtained by recreational cyclists on recognised national cycle routes.
Moderate	Locations frequented by viewers with a moderate interest in their environment; people travelling through the landscape in a motorised vehicle or at recreational facilities where the main focus of activity is not on the surroundings.
Low	Locations frequented by viewers with a passing interest in their surroundings and whose interest is not specifically focused on the scenery, e.g. at working premises.

12.7.3 Magnitude of Change

- 135 The magnitude change arising from the Development for any particular receptor is described as high, moderate, low or negligible, based on professional interpretation of a combination of parameters, including size and scale of the predicted change; geographic extent; as well as its duration and reversibility. The size and scale of the change arising from the Development will be considered in relation to the distance of the receptor from the Development; the extent of the Development in the view (e.g. the horizontal angle subtended by the main elements of the Development); the angle of view in relation to main receptor activity; and the degree of contrast of the Development compared to its surrounding context. The geographical extent of the change will be considered for each group of receptors; for example, people using a particular route or public amenity, drawing on the viewpoint assessments, plus information about the distribution of that particular group of people in the SLVIA study area. Duration will be considered as long term where effects will occur for 25 years or longer; medium term where effects will occur for between 2 years and 25 years and relatively short term or temporary where effects will occur over a 2 year period.

- 136 Due to the existing baseline in which the Wind Farm will be located, with existing and consented wind farms forming part of the baseline, the magnitude of cumulative change (*Section 12.7.6*) will also be taken into consideration.
- 137 Magnitude of change will be assessed as high, moderate, low or negligible, as defined in Table 12.19.

Table 12.19: Classification of magnitude of change

Magnitude of change	Definition
High	Total loss or considerable alteration to key elements, features or characteristics of the seascape/landscape character or view, resulting in a substantial change to the baseline condition.
Moderate	Partial loss or alteration to one or more key elements, features or characteristics of the seascape/landscape character or view. Change perceived as a partial or localised change within a broader, unaltered context.
Low	Limited loss or small alteration to one or more key elements/features/characteristics of the existing seascape/landscape character or view. Change is discernible but underlying landscape character or view composition will be similar to baseline.
Negligible	Very limited or imperceptible loss or alteration to one or more key elements/characteristics of the baseline. Change may be barely distinguishable.

12.7.4 Cumulative Effects on Seascape and Landscape Character

- 138 As identified in *Section 12.6.3*, the baseline includes several operational and consented wind farms both offshore and onshore, as well as some vertical tall structures (the oil rig maintenance structures in Dundee). The Inch Cape Wind Farm will not be seen on its own, but will be seen in the context of these developments.
- 139 Cumulative effects on seascape and landscape character arise from two or more wind farm developments introducing new features into the seascape or landscape. For the purposes of this assessment, and as agreed in consultation, those wind farms that are already existing or consented within the SLVIA study area are considered within the baseline assessment, as the addition of Inch Cape Wind Farm will add to this already existing, or likely to exist baseline. Where relevant, an assessment has also been carried out for the future cumulative scenario, comprising Inch Cape with the baseline and those wind farms that are at scoping or application stage.

12.7.5 Cumulative Effects on Visual Amenity

- 140 Cumulative effects on visual amenity consist of combined and sequential visibility of wind farms in the SLVIA study area.

- 141 Combined visibility occurs where it is possible to see two or more developments from a single location. Combined visibility may either be in combination (where several wind farms are within a single arc of vision i.e. approximately 90°) or in succession (where wind farms occur in several arcs of vision at the same location). Sequential effects occur where there is visibility of one or more wind farms from any route through the landscape: for example, from roads or footpaths. These definitions are based on SNH guidelines *Assessing the Cumulative Impact of Onshore Wind Energy Developments* (March 2012a).

12.7.6 Magnitude of Cumulative Change

- 142 As the Inch Cape Wind Farm will be seen in the context of other operational or consented wind farms included in the cumulative scenarios (see Table 12.22), in addition to the criteria set out in *Section 12.7.3* above, the following criteria also are considered in order to determine impacts:
- the number of existing and consented and/or proposed wind farms visible;
 - the distance to each of the existing, consented, and/or proposed wind farms from receptor locations;
 - the direction of each wind farm in relation to other wind farm developments and the viewpoint;
 - the horizontal subtended angle (HSA) of the view occupied by each wind farm (i.e. the angle between the left hand visible WTG and right hand visible WTG in each wind farm);
 - the frequency and duration of cumulative visibility; and
 - in the case of seascape and landscape character areas, landscape designations and transportation/recreational routes, the proportion of the area or route subject to cumulative views.
- 143 The additional criteria utilised in ascribing magnitude of cumulative change throughout this assessment are defined in Table 12.20 below.

Table 12.20: Magnitude of cumulative change

Magnitude of Cumulative Change	Definition
High	The Inch Cape WTGs and OSPs would represent a considerable increase in the proportion of the seascape/landscape or view affected by wind farm developments.
Moderate	The Inch Cape WTGs and OSPs would represent a notable increase in the proportion of the seascape/landscape or view affected by wind farm developments. Moderate cumulative change equates to a localised change within an otherwise unaltered context.

Magnitude of Cumulative Change	Definition
Low	The Inch Cape WTGs and OSPs would represent a minor addition to the proportion of the seascape/landscape or view affected by wind farm developments. The change would be discernible, but the original baseline conditions would be largely unaltered.
Negligible	The Inch Cape WTGs and OSPs would represent a barely discernible addition to the proportion of the seascape/landscape or view affected by wind farm developments. The baseline condition of the seascape/landscape or view would, for all intents and purposes, be unaffected.

- 144 In carrying out the cumulative assessment, consideration has been given to cumulative effects arising from combined and/or consecutive (concurrent) visibility (where the observer would be able to see two or more wind farm developments from one viewpoint location), and sequential effects (where a number of wind farm developments would be visible individually or simultaneously over a sequence of connected viewpoints, such as would be found along a road or footpath).

12.7.7 Method for Assigning Significance of Effect

- 145 For the purposes of the SLVIA of the Development and in terms of the *Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017*, significant seascape, landscape or visual effects, are Major or Moderate/Major (denoted in bold in Table 12.21).
- 146 Significance of effects is determined by the sensitivity of receptors and the predicted magnitude of change. For the purposes of this assessment seascape, landscape or visual effects which are Major or Moderate/Major are considered significant.

Table 12.21: Seascape, landscape and visual effects

Magnitude of change	Sensitivity of resource/receptor		
	High	Moderate	Low
High	Major	Moderate/Major	Moderate
Moderate	Moderate/Major	Moderate	Moderate/Minor
Low	Moderate	Moderate/Minor	Minor
Negligible	Moderate/Minor	Minor	Minor/Negligible

- 147 The matrix is not used as a prescriptive tool and the methodology and analysis of potential effects at any particular location will all require the exercise of professional judgement. GLVIA3 (2013) makes clear the importance of professional judgement (paragraph 2.23) and at paragraph 3.32 states:

“The (EIA) Regulations require that a final judgement is made about whether or not each effect is likely to be significant. There are no hard and fast rules about what effects should be deemed ‘significant’ but LVIA’s should always distinguish clearly between what are considered to be significant and non significant effects”.

- 148 Therefore, in line with GLVIA3 the final judgement on whether or not the effect is likely to be significant has been made on professional judgement, with a clear explanation and justification provided.

12.8 Baseline and Cumulative Assessment Data and Scope

- 149 The locations and status of all wind farms (for which data is publicly available) was identified within approximately 65 km of the Development are shown on Figure 12.8. This identifies all wind farms with WTGs larger than 50m in height (operational, under construction, application, at appeal and scoping). The status of the wind farms is taken to be current as of 1st November 2017.
- 150 The context for the 65 km radius search area agreed for the SLVIA is complex with over 130 sites, not including many smaller single turbines. Figure 12.8 shows the location and status of sites across the study area, including some beyond the study area which have been included for reference as requested by consultees.
- 151 An initial comparison review of the ZTVs of wind farm sites within the study area against the Development’s ZTV was undertaken to consider whether cumulative effects would be likely. A judgement was then made on the wind farm sites to be included in the assessment based on the extent of simultaneous cumulative visibility predicted, size and proximity of each wind farm relative to the proposed development. This review also considered potential sequential cumulative effects on the key transport routes in the study area. Based on this review, the list of wind farms to be included in the detailed cumulative assessment was prepared. This totals 30 operational sites, 2 under construction, 9 consented, 1 in-planning and 1 in scoping. The oil-rig maintenance structures in Dundee Port have also been included given their height and location. ZTVs for all of these developments have been prepared and grouped to reflect similar planning status and where possible, the pattern of predicted visibility, for the purpose of being presented on the cumulative ZTVs. The grouped and individual wind farms are identified in Table 12.22 and on Figure 12.9.

Table 12.22: Wind farm developments included for assessment

ZTV Group	Site	Status	Number of WTGs	Blade Tip Height (m)	Approx. Distance and Direction to nearest Inch Cape WTG
1	Hillhead of Auquhirie	Operational	3	92m	40.0 km SSE
	Clochnahill	Operational	4	81m	39.9 km SSE
2	Brownieleys	Operational	3	100m	30.6 km SSE
	Paul Matthew Hill	Consented (July 2016)	2	99.5m	27.8 km SSE
	Tullo Farm	Operational	7	100m	30.3 km SSE
	Twinsheils	Operational	10	100m	31. km SSE
3	Hill of Stracathro	Operational	1	79.6m	30.8 km ESE
	Whitefield of Dun Farm	Operational	1	67m	29.1 km ESE
	East Drums	Operational	1	67m	29.8 km ESE
4	Ascurry Farm	Operational	1	77m	31.2 km E
	North Mains of Cononsyth	Operational	1	66.7m	27.8 km E
	Dubton Farm	Operational	1	77m	29.7 km ESE
	Pickerton	Operational	1	77m	30.1 km ESE
5	Frawney	Consented (2014)	5	80m	41.5 km E
	Govals	Consented (2014)	6	86m	42. km E
	Tealing	Operational	1	86m	42.3 km E
6	Airdrie Farm	Operational	1	74m	35.1 km NE
	Bonerbo	Operational	3	67m	37.4 km NE
7	Earlseat	Operational	9	120m	60.0 km NE
	East Fife Football Club (Bayview)	Consented	1	91m	54.8 km NE
	Levenmouth Demo Project	Operational	1	196m	56.9 km NE

ZTV Group	Site	Status	Number of WTGs	Blade Tip Height (m)	Approx. Distance and Direction to nearest Inch Cape WTG
	Methil Docks	Operational	1	81m	55.2 km NE
	Woodbank Farm	Operational	1	84m	59.6 km NE
8	Kinegar Quarry (Neuk)	Operational	2	130m	57.6 km N
	Ferneylea	Operational	2	71m	58.9 km N
	Hoprigshiels	Operational	3	125m	59.2 km N
9	Aikengall	Operational	16	125m	58.9 km N
	Aikengall 2	Operational	19	145m	60.3 km N
	Aikengall 2a	Consented (Oct 2016)	19	145m	60.7 km N
	Crystal Rig 1	Operational	20	100m	60.6 km N
	Crystal Rig 1a	Operational	5	100m	61.8 km N
	Crystal Rig 2	Operational	51	125m	60.6 km N
	Crystal Rig 2a	Operational	9	125m	60.4 km N
	Crystal Rig 3	Operational	6	125m	60.1 km N
WF1	St John's Hill	Operational	9	80m	32.6 km SSE
WF2	Michelin Tyre Co Ltd	Operational	2	120.5m	37.8 km E
WF3	Kenly	Consented (2013)	6	100m	33.0 km NE
WF4	Ferneylea 2*	Application (submitted July 2015)	6	115m	58.9 km N
OWF1	Kincardine Floating Wind Farm	Construction	8	192m	48.4 km S
OWF2	NNG	Consented	75	197m	11.2 km NNE
OWF3	Seagreen	Consented	75	209.7m	11.7 km SW
OWF4	Forthwind Offshore	Consented	2	198m	56.7 km NE
OWF5	Forthwind Offshore (extension)*	Application	9	225m max	56.7 km NE

ZTV Group	Site	Status	Number of WTGs	Blade Tip Height (m)	Approx. Distance and Direction to nearest Inch Cape WTG
S1	Dundee – Oil Rig Maintenance Structures	Operational	2-4 Lattice structures	127m	39.3 km ENE
<p>WF = Onshore Wind Farm; OWF = Offshore Wind Farm; and S = Structure (non-wind)</p> <p>*For Ferneylea 2 and Forthwind Offshore (extension) these projects are considered only in the future cumulative assessment. All other projects are assessed in the baseline assessment, on the basis that they are operational or consented.</p>					

- 152 For the purposes of the assessment, the baseline wind farms are defined as being operational and consented wind farms. Wind farms under construction are considered under the consented definition. Proposed wind farms which constitute the future cumulative scenario, comprise developments which are at application stage or at scoping stage where the latter are considered relevant to the cumulative assessment.
- 153 The relevant Cumulative Zones of Theoretical Visibility (CZTVs) are illustrated on Figures 12.10 to 12.22d. Each CZTV has been calculated to blade tip based on the available turbine dimensions and layouts for each site at the time of assessment. Cumulative ZTVs with onshore wind farms has only been considered within a 40 km radius of their respective locations. This is due to their turbine heights being below 150 m and taking into account SNH visualisation guidance (2017) which recommends a 40 km radius ZTV study area for turbines 131 m to 150 m to capture all potential significant effects. There are onshore turbines below this height but for consistency a 40 km ZTV radius has been used for all onshore. For offshore wind farms, as their turbine height is greater than 150 m in height, ZTVs to the full extents of the Inch Cape Wind Farm study area have been produced.
- 154 *Appendix 12B* provides a description of the theoretical cumulative visibility of the proposed development in addition to the identified groups and single wind farms listed in Table 12.22 above.

12.9 Impact Assessment – Construction (and Decommissioning) Stage: Offshore Export Cable Corridor

- 155 The potential effects associated with the construction (and decommissioning) of the offshore export cable corridor and its landfall to mean high water have been scoped into this assessment at the request of consultees. This relates to the presence of installation vessels and related works for the Export Cable Corridor, and cable trenching at the landfall location. A full assessment of the cable route inshore from the landfall is provided

in the Onshore EIA Report, which was accepted by East Lothian Council on 8th March 2018 which can be read on East Lothian Council's planning website⁴.

- 156 Only construction and decommissioning activities related to the laying of the Offshore Export Cable have the potential to create seascape, landscape or visual impacts as the Offshore Export Cable will not be visible once laid. Construction will involve cable-laying and associated support vessels, and these are likely to be visible particularly from coastal areas closer to the Offshore Export Cable Corridor. Additionally, operational maintenance of the Inch Cape WTGs or OSPs is not likely to be visible from coastal areas. Accordingly, these activities are unlikely to give rise to significant impacts on seascape or visual amenity as they will take place within the Outer Firths of the Tay and Forth, in an environment where shipping movements and marine activity are commonplace. Therefore, the assessment focusses on such activity near the landfall location only.
- 157 The Offshore Export Cable landfall will be located at Cockenzie as shown on Figure 7.6 in *Chapter 7*. The method of constructing the cable landfall has not been finalised, but as set out in Table 12.10, for the purposes of this assessment, the worst case scenario for the construction has been based on the most visible method over the longest construction stage time frame (it is likely that the landfall construction will take approximately six months, whilst the construction of the substation will take approximately 24 months). Due to the location of these activities on, or close, to the foreshore it is considered that there may be significant effects on part of the Edinburgh to Gullane seascape character area, and visual amenity of recreational users of the open space at Preston Links between Cockenzie and Prestonpans, as well as walkers on the section of the John Muir Way which passes along the coastline at the landfall location. These effects will be localised in extent and temporary in duration.

12.10 Impact Assessment – Operational Stage: WTGs and OSPs

- 158 The potential effects associated with the construction, maintenance and decommissioning of the Inch Cape Wind Farm have been scoped out of this assessment, as discussed in *Section 12.3* above.
- 159 The SLVIA focusses on the effects occurring during the operational phase which relate to views of the WTGs, OSPs and their related components such as marine navigational lighting and aviation lighting. The assessment considers the operational SLV effects of the WTGs and OSPs as the worst case scenario as described in *Section 12.5.2*.
- 160 The assessment has been carried out to identify the additional effects of the Inch Cape WTGs and OSPs with the baseline of operational and consented wind farms identified in Table 12.22. As set out in Table 12.22 there is only one application stage wind farm and one scoping stage wind farm within the study area. The assessment also has taken account of this future cumulative scenario and identified the effects of Inch Cape with

⁴ Available at: <https://pa.eastlothian.gov.uk/online-applications/applicationDetails.do?activeTab=documents&keyVal=P4LTIAGNH3Y00> [Accessed 01/05/18]

the baseline and these two future cumulative developments for receptors where these are considered potentially significant.

- 161 The worst case scenario assessment has been carried out in respect of the tallest turbines at Inch Cape in conjunction with the consented NNG and Seagreen offshore farms. This is considered to represent the worst case scenario because it would result in the greatest contrast between the Inch Cape WTGs and the NNG and Seagreen developments, as agreed with SNH (see Table 12.2).

12.10.1 Visibility Analysis

- 162 In order to identify the parts of the SLVIA study area where the Inch Cape WTGs and OSPs could potentially cause seascape, landscape or visual effects, ZTVs have been analysed of the WTGs at blade tip (291 m) and hub (166 m) height, as well as cumulative ZTVs of the WTGs with existing, consented and submitted (application stage) and scoping wind farms.
- 163 ZTVs for the Inch Cape WTGs and OSPs are shown in Figures 12.4, 12.4a-d and Figure 12.5. They illustrate areas predicted to have views of the WTGs and OSPs based on bare ground analysis, i.e. the OS 1:50,000 digital terrain model with gridded height data at 50 m intervals, which does not take account of local landform, vegetation or buildings. Figures 12.4, 12.4a-d show areas from where any part of the Inch Cape WTGs up to the 291 m overall height are theoretically visible together with areas from where the WTGs up to hub height and areas from where the WTG bases are theoretically visible. Figure 12.5 shows areas from where any part of the Inch Cape OSPs up to 70 m height are theoretically visible. The horizontal subtended angle ZTV in Figure 12.6 shows the horizontal proportion of the view occupied by the Inch Cape WTGs at any given location within the SLVIA study area.
- 164 Descriptions of the geographic areas of predicted visibility for these ZTVs are provided below. *Appendix 12B* includes an analysis of the predicted visibility for the main SLV receptors identified in the SLVIA study area, comprising seascape character areas, LCTs and associated areas, landscape designations, residential settlements, road and rail routes, and recreational routes and facilities.

Blade Tip ZTV Analysis

- 165 The ZTVs show that for offshore areas, theoretical visibility is only limited by the curvature of the earth or by offshore islands, such as the Isle of May, which will limit views of the Inch Cape WTGs and OSPs from certain offshore locations. Beyond the 50 km SLVIA study area, theoretical visibility of the WTGs and OSPs reduces and the WTGs would disappear below the horizon at approximately 75 km from sea level views. It is also worth noting that visibility within the Inner Firths of Forth and Tay will be limited by distance, as described above, and also by the position of the WTGs and OSPs in relation to various headlands and promontories, which will screen views from certain areas.

- 166 The closest onshore location to the Development Area is at Cuthie Harbour, approximately 400 m south of Read Head and 1.6 km south of Lang Craig, at 15.60 km to the nearest Inch Cape WTG.
- 167 Within the SLVIA study area, the following broad patterns of theoretical visibility may be discerned. There will be almost continuous visibility of the Inch Cape WTGs and OSPs from the coastal edge, with the exception of certain areas of the Inner Firths of Forth and Tay where there will be no visibility; the stretch of coastline running south from Stonehaven to Crawton Ness where visibility will be intermittent; and other limited areas such as to the west of Lang Craig, where local topography will prevent views of the Inch Cape WTGs and OSPs.
- 168 Inland of the coastal edge, the extent of theoretical visibility is dictated by patterns of local topography. Between Stonehaven, the northern end of Montrose Bay and the A90, the hills attain heights of up to 266 m AOD and have a more pronounced form of ridge, summit and valley, with visibility limited to the south and south-west facing upper slopes and hilltops. To the north and west of Inverbervie and north of Stonehaven, theoretical visibility is even more limited. To the north-west of Montrose there will be visibility from the south facing slopes above the Montrose Basin. There will also be some visibility of the Inch Cape WTGs and OSPs from areas inland of Lunan Bay and along the stretch of coastline between Lang Craig and Arbroath.
- 169 Inland of Arbroath and Carnoustie, and at distances of between 20 km to 30 km from the Inch Cape WTGs and OSPs, there is a much greater extent of theoretical visibility, due to the lower height and gently rolling and sloping topography of the predominantly agricultural land, although it is likely that actual visibility will be more limited because of the screening effect of woodland and roadside vegetation.
- 170 There are large areas of Aberdeenshire and Angus which lie within the SLVIA study area which will have no visibility of the Inch Cape WTGs and OSPs. These areas include most of Strathmore, following the alignment of the A90, and the Howe of the Mearns, at between 30km and 40km distance from the Development Area. At beyond 40 km distance, theoretical visibility is limited to the summits and south-east facing slopes of the hills which rise above Strathmore. It is also worth noting several areas that have theoretical visibility of the WTGs and OSPs, but from where actual visibility is likely to be limited due to extensive woodland cover. These include Montreathmont Forest, between Brechin and Friockheim, and Drumtochty and Fetteresso Forests to the west of Stonehaven.
- 171 In the urban areas within and around Dundee, actual visibility of the Inch Cape WTGs and OSPs will be limited by intervening buildings and vegetation. To the north of Dundee, theoretical visibility is limited to the south and east facing slopes of the Sidlaw Hills.
- 172 Within East Fife, inland of the coastal edge, most areas of theoretical visibility lie between 30km and 40km to the south-east of the Development Area. Once again, the shallow sloping farmland results in a greater extent of theoretical visibility, but in practice many

inland areas will not have views of the Inch Cape WTGs due to the screening effect of intervening vegetation, particularly where there are large areas of woodland such as Tentsmuir Forest. Beyond 40 km from the Development Area, visibility within Fife will be much more intermittent with most areas beyond approximately 10 km from the coastline having no visibility of the WTGs.

- 173 The areas of East Lothian which lie within the SLVIA study area are very limited and visibility of the Inch Cape WTGs will be largely limited to the coastal edge and areas immediately inland of this. There is potentially visibility from the summit of North Berwick Law and the north facing slopes of the Lammermuir Hills which lie beyond the 50km study area where distance, intervening landform, and curvature of the earth would limit the extent of actual visibility.

Comparison of Blade Tip and Hub Height ZTVs

- 174 A comparison of the blade tip ZTV, hub height ZTV and WTG base is shown in Figures 12.4, 12.4a-d. These figures illustrate that for almost all areas having theoretical visibility of the Inch Cape WTGs, this visibility will include both WTG hubs and blade tips. There are only limited areas that will have visibility of blade tips only. These include the lower south and east facing slopes of the hills above Strathmore, the lower slopes of the shallow ridge to the north of the River South Esk, an area inland of Lunan Bay near Montreathmont Moor and to Leysmill, the lower slopes of the Sidlaws and adjacent hills, and parts of the Inner Firth of Tay. Within Fife, these areas are very limited in extent with the exception of an area of patchy blade tip visibility to the south between Anstruther, Kellie Law, and Elie. Within the SLVIA study area in East Lothian theoretical visibility of blade tips occurs mostly along parts of the coastline and is due to the effects of the curvature of the earth on visibility.
- 175 Figures 12.4, 12.4a-d also illustrate theoretical visibility of the top of the WTG substructures (WTG tower base). This illustrates that up to this height of 28 m there will be no visibility for a large inland area between Laurencekirk to Forfar where the blades and hubs will be visible. The low coastal plains around Tentsmuir will also have no visibility of the WTG substructures due to the low ground level and curvature of the earth. The coastal and inland coastal areas of hub and blade tip visibility within East Lothian (beyond the 50 km study area) will also not have visibility of the WTG substructures.

Horizontal Subtended Angle (HSA) ZTV

- 176 Figure 12.6 illustrates the HSA ZTV for the Inch Cape WTGs. Rather than illustrating the number of WTGs having theoretical visibility, this ZTV shows the angle from any point between the leftmost and rightmost visible WTG within the Development Area, with the aim of indicating the horizontal proportion of the view taken up by the Inch Cape WTGs at any given location. The angle decreases the greater the distance between the viewer and development but is also influenced by variations in topography. The general pattern shows that for locations either within or very close to the Development Area, the WTGs will occupy a HSA of between 90° and 360° of the view. Likewise, the area of coastline

along which views of the WTGs will occupy the greatest horizontal extent of the view (between 30.1° and 50°) lies in Angus, roughly between Montrose and Carnoustie (the HSA at Viewpoint 11: Arbroath Signal Tower is approximately 40°), with a somewhat lesser extent of the field of view being occupied by views of the Inch Cape WTGs and OSPs along stretches of coastline in Aberdeenshire and Fife (mostly between 15.1° to 30°, but lower than this around Stonehaven in the north and along the East Neuk of Fife coastline). The influence of topography on the HSA is more evident along certain stretches of coastline, for example the East Neuk and the Inner Firth of Tay where the location, form and topography of the coastal edge introduces progressive screening effects in relation to WTGs located at the outer extents of the Development Area. This effect is also more evident in certain inland locations, for example the area of land between the River North Esk and Fettercairn. Figures 12.6a to 12.6d provide this information in more detail.

Cumulative ZTV Analysis

- 177 *Appendix 12B* provides an analysis of the blade tip ZTVs of the Inch Cape Wind Farm and existing, consented and proposed wind farms within the study area. In summary this shows that the consented NNG and Seagreen Offshore Wind Farms have the most potential for cumulative visibility with the Inch Cape Wind Farm across the study area. There is a continuous distribution of onshore turbines across the study area with the largest clusters in Aberdeenshire (Group 2 and St John's Hill) and beyond the 50km study area Groups 7 in Fife, and 8 and 9 in East Lothian. Onshore wind farms have more localised areas of cumulative visibility with Inch Cape Wind Farm. However, those onshore wind farms nearest the coastline such as Group 2 are noticeably more visible with Inch Cape Wind Farm for larger areas of the study areas in comparison to the smaller wind farms and single turbines that lie inland.

Lighting Analysis

- 178 *Appendix 12H* describes the technical considerations on the likely observability of the lighting required on the WTGs. In summary this technical report identifies that a red 2000 candela light (the highest intensity light and colour required during the operation of the WTGs) has potential visibility (on a moonless night, in clear conditions away from street lighting) to a distance of approximately 37 km.
- 179 As the Inch Cape Wind Farm will have multiple turbines the report notes that overall light levels provided by an offshore wind farm (calculated using a total candela of 150,000), located at 15 km or further from the coast, will be lower than the ambient levels provided by starlight on a moonless night (see *Appendix 12H*).
- 180 The report also identifies that where multiple lights are perceived as an individual light (due to the limited angular resolution of the eye they are blended into a single, apparently brighter light) there may be an increase in light observed, e.g. there may be several locations along the coast from where one (or more than one) turbine is positioned almost directly behind another one, and the eye may fail to distinguish all lights

individually, which will result in apparently increased light levels. Such light will appear slightly brighter, and/or be visible to slightly greater distances, as illustrated in Figure 8 in *Appendix 12H*.

- 181 There is currently no guidance or methodology for the preparation of dusk or night time visualisations to provide representative images of known levels of lighting at particular distances from any given viewpoint location. The preparation of such visualisations involves multiple parameters which present several challenges, as acknowledged by SNH during consultation (see Table 12.4). However, as agreed through consultations, indicative lighting visualisations have been presented for four viewpoints: Viewpoint 6, Braehead of Lunan; Viewpoint 10 Clifftop Path, Victoria Park, Arbroath; Viewpoint 12 A92, East of Muirdrum; and Viewpoint 14 Carnoustie. These visualisations have been prepared without taking account of the observability of light at any given distance by the human eye, or the variations in observability due to atmospheric conditions and ambient light levels at the viewpoint locations.
- 182 It is considered that the effects of the lighting at the representative viewpoints would not be greater than the predicted effects on seascape, landscape character or visual amenity at each of the representative viewpoints. However, as described in *Section 12.6.6*, interpolation of the effects assessed in respect of the four night time viewpoint assessments has been carried out to inform a generic assessment of effects on SLV amenity receptors.
- 183 ICOL note that there may be different types of mitigation possible to reduce the lighting visible associated with the operation of the WTGs. ICOL will continue to discuss these mitigation possibilities, which include engineering mitigation, to reduce the amount of light visible along the coast.

12.10.2 Summary of Potential Effects Assessed at Viewpoints

- 184 *Appendix 12C* provides a detailed assessment of effects upon landscape and visual receptors at the agreed 26 viewpoint locations, including the assessment of night time effects at the four viewpoints noted above. A summary is provided below.
- 185 Significant effects on landscape or seascape character (Major or Moderate/Major) from the Inch Cape WTGs and OSPs are predicted at 10 of the 26 viewpoints.
- Major impacts are predicted at two of the 26 viewpoints – Viewpoint 5: Montrose and Viewpoint 6: Braehead of Lunan – both located within Angus, at distances of 19.99 km to 19.55 km respectively to the closest WTG within the Development Area. These are both impacts on seascape character where the character area is accorded a high sensitivity to change.
 - Moderate/Major impacts are predicted at eight of the 26 viewpoints at distances ranging from 18.58 km to 34.81 km from the closest WTG within the Development Area. These are: Viewpoint 3: Beach Road, Kirkton, St Cyrus; Viewpoint 9: Minor Road South of Cairnconon Hill; Viewpoint 10: Clifftop Path North of Victoria Park; Viewpoint 11: Arbroath

Signal Tower; Viewpoint 16: Tentsmuir; Viewpoint 18: St Andrews, East Scores; Viewpoint 23: Fife Ness; and, Viewpoint 24: Isle of May.

- 186 Significant effects on visual amenity (Major or Moderate/Major) from the Inch Cape WTGs and OSPs are predicted at 13 of the 26 viewpoints. With the exception of Viewpoint 9: Minor Road South of Cairnconon Hill, these are all associated with high sensitivity visual receptors such as residents and/or recreational users whose attention will be focused on the view (hill walkers, etc.).
- Major impacts are predicted at four of the 26 viewpoints, of which three are located within Angus and one in Aberdeenshire, at distances ranging from 18.58 km to 19.99 km to the closest WTG within the Development Area. These are: Viewpoint 5: Montrose; Viewpoint 6: Braehead of Lunan; Viewpoint 10: Clifftop Path North of Victoria Park; and, Viewpoint 11: Arbroath Signal Tower.
 - Moderate/Major (and significant) impacts are predicted at nine of the 26 viewpoints, of which two are in Aberdeenshire, three are in Angus and four in Fife. These nine viewpoints are located at distances ranging from 24.12 km to 34.81 km to the closest WTG within the Development Area. The viewpoints are: Viewpoint 2: A92 North of Inverbervie; Viewpoint 3: Beach Road, Kirkton, St Cyrus; Viewpoint 9: Minor Road South of Cairnconon Hill; Viewpoint 12: A92 East of Muirdrum; Viewpoint 14: Carnoustie; Viewpoint 16: Tentsmuir; Viewpoint 18: St Andrews, East Scores; Viewpoint 23: Fife Ness; and, Viewpoint 24: Isle of May.
- 187 It is important to reiterate that these are considered to be worst case effects which are only predicted to occur in conditions of good visibility and/or bright daylight, and that actual visibility may be limited with a corresponding reduction in the level of effect.

12.10.3 Potential Operational Effects

- 188 In this section, potential effects on seascape/landscape character and visual amenity are assessed taking into account the viewpoint assessment in *Appendix 12C* and the Regional Seascape Assessment in *Appendix 12D*. As previously stated, the assessment has been carried out to identify the additional effects on SLV amenity from Inch Cape Wind Farm with the baseline (operational and consented) wind farms, and where applicable the future cumulative effects arising with the one application wind farm and one scoping stage wind farm included in the assessment (see *Section 12.8*, Table 12.22 and Figure 12.9).
- 189 The SLVIA has considered the effects of the Inch Cape WTGs and OSPs on the following receptors:
- seascape character areas, and LCTs and associated areas;
 - landscape designations including GDLs, LLAs and AGLVs; and
 - visual amenity receptors including:
 - recreational users of footpaths and cycle routes;

- road users; and
 - residents.
- 190 The effects on these receptors have been assessed through consideration of the predicted effects at the 26 agreed viewpoints as well as review of the ZTV plans presented to accompany this report to establish the extent of visibility of the Inch Cape WTGs and OSPs in relation to the range of SLV receptors across the SLVIA study area. This ZTV analysis is included in *Appendix 12B* with a summary included in *Section 12.10.1*.
- 191 In this section, the landscape, seascape and visual effects of the Inch Cape WTGs and OSPs are summarised in Table 12.23 to Table 12.26 below in relation to a baseline that includes existing and consented wind farms within the SLVIA study area as listed in Table 12.22 and shown in Figure 12.9. The assessment also takes account of the future cumulative scenario where either of the two application/scoping stage wind farms would be visible.
- 192 As noted in *Section 12.6.6*, night time effects arising from the aviation lighting of the peripheral Inch Cape WTGs has been interpolated based on the findings of the night time viewpoint assessment carried out in respect of Viewpoints 6, 10, 12 and 14. The magnitude of change identified below applies to both day time and night time effects unless otherwise indicated. Likewise, the residual effect applies to both day time and night time effects, unless otherwise indicated.

Table 12.23: Summary of effects on seascape and landscape character

Receptor	Sensitivity to Wind Farm Development	Magnitude of Change	Residual Effect (up to)
Seascape Character			
SA3: Cove Bay to Milton Ness	Moderate	Low to High	Minor/Moderate to Moderate and Moderate overall Localised Moderate/Major night time effects in southern part of SA Overall Moderate night time effect
	In the south of the character area, where there will be extensive visibility of the Inch Cape WTGs and OSPs, moderate effects on seascape character are predicted, as at Viewpoint 2 (A92 North of Inverbervie). Further north, around Stonehaven, the effects will be minor/moderate. These are locations in some of the more contained valleys where views towards the sea are more limited and focused and where the Inch Cape WTGs and OSPs will occupy a larger proportion of the available sea view. Such views, whilst		

Receptor	Sensitivity to Wind Farm Development	Magnitude of Change	Residual Effect (up to)
	<p>possible at certain locations, do not reflect the overall character of sea views from the majority of this seascape character area.</p> <p>The Inch Cape WTGs and OSPs will be seen in seaward views with Seagreen offshore Wind Farm at similar distances. From some parts of this seascape character area, Inch Cape will also be seen to varying extents with the operational and consented onshore wind farms in Groups 1 and 2 as well as St Johns Hill.</p> <p>In hours of darkness, the aviation lighting on perimeter turbines at Inch Cape will be seen in addition to the Seagreen aviation lighting at slightly greater distance. SA3 has limited onshore night time lighting, being confined to sporadic settlement, and taking account of intermittent sources of offshore lighting. In this context, the addition of a group of fixed point sources of red lighting offshore to the consented Seagreen lit turbines, at distances of between approximately 23km and the perimeter of the 50km study area, will result in effects ranging from Major/Moderate and significant at and to the south of Inverbervie to Minor at the northern end of the SA. Overall the night time effect on this SA will be Moderate.</p> <p>The variation in predicted effect is due mainly to distance from the Development Area, visibility, and the character of views in which the Inch Cape WTGs and OSPs and other wind farms will be seen. Overall the effect of Inch Cape with the baseline wind farms on seascape character is considered to be Moderate.</p>		
SA4: Montrose Bay	High	Moderate to High	Moderate/Major to Major and Major overall Moderate/Major night time
	<p>Extensive visibility of the Inch Cape WTGs and OSPs is predicted throughout SA4, with expansive open sea views possible from most parts of the coastline, as demonstrated for example in views from St Cyrus (Viewpoint 3) and Montrose (Viewpoint 5). The position of the Inch Cape WTGs and OSPs in these views will vary from being seen in an area of open sea, to being seen in conjunction with adjacent headlands. Although there will be no visibility of the Inch Cape WTGs and OSPs between Scurdie Ness and Montrose, effects on seascape character generally will be significant and range from Moderate/Major towards the northern end of Montrose Bay to Major towards Montrose. Overall, the effect on this character area will be Major and significant.</p> <p>SA4 has limited onshore night time lighting apart from in and around Montrose where Viewpoint 5 is located. The introduction of a group of fixed point sources of red lighting offshore at distances of over approximately 19km seen in addition to the closest of the Seagreen lit turbines will result in a Moderate/Major and significant night time effect.</p>		

Receptor	Sensitivity to Wind Farm Development	Magnitude of Change	Residual Effect (up to)
	None of the onshore baseline wind farms are in SA4, with Group 2 wind farms to the north and the scattered wind farms in Groups 3 and 4 occurring inland potentially visible from some more elevated areas. The Inch Cape WTGs and OSPs will be the closest of the offshore wind farms and from most locations in which it is visible it will be seen extending across part of the remaining sections of open sea horizon.		
SA5: Long Craig	Moderate	High	Moderate/Major
	<p>Theoretical visibility occurs throughout SA5 and there are likely to be views of the Inch Cape WTGs and OSPs from most parts of the coastal edge, where they will be seen within an expansive seawards view, in addition to the consented Seagreen and more distant NNG offshore wind farms. The effect of Inch Cape with the operational and consented wind farms also visible on seascape character is considered to be Moderate/Major and significant. The Inch Cape WTGs and OSPs will be the closest of the offshore wind farms and will be seen across one of the remaining sections of open sea horizon.</p> <p>SA5 has limited night time lighting and the introduction of a group of fixed point sources of red lighting offshore at distances of over approximately 17km seen in addition to the closest Seagreen lit turbines will result in a Moderate/Major and significant night time effect.</p>		
SA6: Lunan Bay	High	High	Major
	<p>Although the Inch Cape WTGs and OSPs will not be visible between the southern end of the sandy bay and the headland at Lang Craig, generally they will occupy a relatively large proportion of the expansive seawards view obtained at most points in the character area from which the sea is visible, and particularly on the coastal edge and coastline. This is demonstrated in views from Viewpoint 6 (Braehead of Lunan). The Inch Cape WTGs and OSPs will occupy a relatively large proportion of the expansive seawards views and will be the closest of the offshore wind farms. Therefore, the effect on seascape character is considered to be Major and significant.</p> <p>SA6 has limited night time lighting, as described in respect of the night time viewpoint assessment for Viewpoint 6 Braehead of Lunan. The introduction of a group of fixed point sources of red lighting offshore at distances of approximately 17km seen in addition to the Seagreen lit turbines will result in a Major and significant night time effect.</p>		
SA7: Lang Craig to the Deil's Heid	High	High	Major
	This is the closest seascape character area to the Development Area. There are expansive views of the open sea from the coastal edge, which possesses a wealth of small-scale detail and a strong sense of naturalness. The Inch Cape WTGs and OSPs will be a prominent feature in views towards the open sea as can be seen in the view from Viewpoint 10 (Clifftop Path North of Victoria Park). They will occupy a relatively large		

Receptor	Sensitivity to Wind Farm Development	Magnitude of Change	Residual Effect (up to)
	<p>proportion of the horizontal view from some locations and are likely to be visible from most of the coastline. The Inch cape WTGs and OSPs will be seen in addition to the Seagreen and NNG offshore wind farms and will be the closest of these developments to the coast. Therefore, the effect on seascape character is considered to be Major and significant.</p> <p>SA7 is the closest seascape character area to Inch Cape with limited night time lighting. The introduction of a group of fixed point sources of red lighting offshore at distances of less than 16km seen in addition to the closest of the Seagreen lit turbines to the east and the NNG lit turbines to the south east will result in a Major and significant night time effect.</p>		
SA8: Arbroath to Monifieth	Moderate	Moderate to High	Moderate to Moderate/Major and Moderate/Major overall
	<p>This seascape character area is extensively developed, with the exception of the area around Barry Links and Buddon Ness. It has a strong horizontal emphasis with open and expansive sea views along the length of the coastline. There is almost continuous theoretical visibility of the Inch Cape WTGs and OSPs throughout the character area. Comparison of views at Viewpoint 11 (Arbroath Signal Tower) and Viewpoint 14 (Carnoustie) illustrates how views of the Inch Cape WTGs and OSPs will vary, becoming less prominent in the view with increasing distance. The Inch Cape WTGs and OSPs will be seen mainly in front of the more distant Seagreen with NNG visible also distantly to the south. Overall, due to the open sea views towards the Inch Cape WTGs and OSPs, it is considered that the effect on seascape character will be Moderate/Major and significant.</p> <p>SA8 has concentrations of night time lighting associated with the coastal settlements. The introduction of a group of fixed point sources of red lighting at distances of between approximately 18km and over 30km seen in addition to the lit turbine at NNG will result in night time effects varying between Moderate/Major and significant at the eastern end of the SA as described in respect of Viewpoint 10; Clifftop Path north of Victoria Park, Arbroath; and Moderate at the western end, as described in respect of Viewpoint 14, Carnoustie.</p>		
SA9: Dundee	Low	Low	Minor overall
	<p>Theoretical visibility of the Inch Cape WTGs and OSPs extends across many parts of the character area although actual visibility will be more limited, except in views from the coastline and hills, due to the density of built development. The view from Viewpoint 15 (Dundee Law) indicates the extent to which the Inch Cape WTGs and OSPs will be visible from elevated locations where panoramic views of the open sea can be obtained. These views typically include the Firth of Tay, and surrounding landscapes and</p>		

Receptor	Sensitivity to Wind Farm Development	Magnitude of Change	Residual Effect (up to)
	<p>seascapes of Fife and Angus. The Inch Cape WTGs and OSPs will introduce a large group of WTGs into seaward views but they will be seen at a considerable distance. They will be seen in addition to the nearby Michelin Tyre Factory turbines and the oil maintenance structures in Dundee Port. Within this context, it is considered that the effect on seascape character will be Minor.</p> <p>SA9 is well lit in hours of darkness with the lights of Dundee, the port, airport, bridges and vessels in, or moving to and from the docks. The introduction of a group of fixed point sources of red lighting at distances of over approximately 32km will result in a Minor night time effect.</p>		
SA10: Inner Firth of Tay	Low	Low to Negligible	<p>Negligible/Minor to Minor and Negligible/Minor overall</p> <p>Negligible night time</p>
	<p>Theoretical visibility of the Inch Cape WTGs and OSPs is limited from within this character area. The incised Inner Firth of Tay is the dominant feature within this character area which is contained by the Sidlaw and Ochil Hills. The Inch Cape WTGs and OSPs will be seen mainly from the northern side of the Inner Firth of Tay, introducing a large group of WTGs well outside the mouth of the Inner Firth. It will be seen in addition to the Michelin Tyre Factory turbines and the oil maintenance structures in Dundee Port from some locations, but the two consented offshore wind farms of Seagreen and NNG are not predicted to be visible. Overall, it is considered that the effect on seascape character will be Negligible/Minor.</p> <p>SA10 has limited night time lighting with the lights of Dundee visible to the east and limited, intermittent shipping movement on the Inner Firth of Tay. There is limited predicted theoretical visibility of the Inch Cape WTGs from the Inner Firth and the aviation lighting at distances of over approximately 36km seen beyond the lights of Dundee would result in a Negligible night time effect.</p>		
SA11: St Andrews Bay	High	Moderate to Low	<p>Moderate/Major to Moderate</p> <p>Moderate/Major overall</p>
	<p>This is a mostly large scale seascape combining a low-lying coastal landform with the expanse of the open sea. Theoretical visibility of the Inch Cape WTGs and OSPs extends across most of the character area and the predicted view from Viewpoint 16 (Tentsmuir) shows that the Inch Cape WTGs and OSPs will be a notable addition to the seascape. They will be seen in the context of an extensive view of the open sea dominated by</p>		

Receptor	Sensitivity to Wind Farm Development	Magnitude of Change	Residual Effect (up to)
	<p>horizontal elements. The Inch cape WTGs and OSPs will be seen in front of the more distant Seagreen offshore wind farm and NNG to the south which will be at a similar distance as Inch Cape. The overall impact on this character area is therefore considered to be Moderate/Major and significant.</p> <p>SA11 has limited night time lighting with the lights of Dundee visible to the north and Leuchars and St Andrews visible to the south and east respectively. The introduction of a group of fixed point sources of red lighting at distance of between 32km and 40km, in addition to the NNG lit turbines at similar distances will result in a Moderate/Major and significant night time effect.</p>		
SA12: St Andrews to Fife Ness	High	Moderate	Moderate/Major
	<p>This seascape character area comprises the largely rocky coastline between St Andrews and Fife Ness. It has a wealth of small scale detail within the coastal edge, coupled with expansive views out to sea and north to the distant Angus coastline. Theoretical visibility of the Inch Cape WTGs and OSPs will be possible throughout the character area and it is likely to be a notable feature in seaward views occupying a large area, albeit at some distance from the coastline, as can be seen in views from Viewpoint 18 (St Andrews, East Scores) and Viewpoint 23 (Fife Ness, Lochaber Rock). The Inch Cape WTGs and OSPs will be seen in addition to NNG which will be slightly closer to the coastal edge from most locations, with the onshore wind farms at Kenly and Group 6 also intermittently visible. The overall impact on this character area is considered to be Moderate/Major and significant.</p> <p>SA12 has limited night time lighting. The introduction of a group of fixed point sources of red lighting at distance of between approximately 28km and 35km, seen in addition to the NNG lit turbines at closer distance, will result in a Moderate/Major and significant night time effect.</p>		
SA13: East Neuk of Fife	High	Low to Moderate	Moderate to Moderate/Major and Moderate overall Moderate/Minor night time
	<p>This character area extends from Fife Ness to Chapel Ness near Earlsferry. It is a medium to high quality seascape of medium to large scale, orientated to the south and south-east. The coastline is rocky and views are mostly focused across the Firth of Forth but with open views out to sea increasing towards the east of the character area and at Fife Ness and considered to be of high sensitivity to offshore wind farm development. Theoretical visibility of the Inch Cape WTGs and OSPs occurs mainly in the east, between Fife Ness and Anstruther Easter and Pittenweem. Viewpoint 23 (Fife Ness) indicates the view of the Inch Cape WTGs and OSPs where it</p>		

Receptor	Sensitivity to Wind Farm Development	Magnitude of Change	Residual Effect (up to)
	<p>is seen within an open sea view. However the view from Viewpoint 22 (Anstruther Easter) is considered more typical of views towards the Inch Cape WTGs and OSPs, where they will be visible adjacent to, and mostly screened by, intervening coastal headlands.</p> <p>The Inch Cape WTGs and OSPs will be seen in addition to NNG which will be closer to the coastal edge, with the onshore wind farms in Groups 6 and 7 as well as the turbines at East Fife Football Club, Methil Docks and the Levenmouth Demo Project also visible from some parts of the seascope character area. The consented and application stage Forth Offshore Wind developments will also be visible. Therefore, although there may be localised significant effects on seascope character within a limited area, the overall effect of the Inch Cape Offshore Wind Farm is considered to be Moderate.</p> <p>SA13 has a regular pattern of coastal settlement contributing to intermittent sources of night time lighting in combination with shipping and vessel movement in the Firth of Forth and visibility of lighting along the southern shores of the river. The Inch Cape WTGs will have limited visibility from this SA and the introduction of a group of fixed point source of red lighting at distances of over 28km seen in addition to the NNG lit turbines at closer distance will result in Moderate/Minor to Negligible night time effects.</p>		
SA14: Kirkcaldy to Largo Bay	Moderate	Negligible	Minor
	<p>Theoretical visibility of the Inch Cape WTGs and OSPs within this character area is limited to a very small area on Kincaig Hill at a distance of just less than 47 km to the nearest Inch Cape WTG. NNG will be more widely visible and closer to this seascope character area, as well as with the Forth Offshore wind farms and other onshore wind developments. In this context, having regard to the limited additional impact of the Inch Cape WTGs and OSPs, the overall effect on the seascope character for both the current baseline and future with the inclusion of the Forth Offshore extension, is considered to be Minor.</p> <p>SA14 is a well let coastal edge with shipping movement in the Inner Firth of Forth apparent. As there is no hub height visibility predicted for the Inch Cape WTGs (see Figure 12.2b), it is unlikely that there will be any night time effects for this SA. Should there be any night lighting visible it is likely to be negligible and thus non-significant.</p>		
SA17: Eyebroughy to Torness Point	Moderate	Negligible	Minor Negligible night time
	<p>This is a large scale coastline, generally open and with expansive seaward views, of which a small part lies within the SLVIA study area. Theoretical visibility of the Inch Cape WTGs and OSPs from within this seascope is shown along most of the coastal edge and at a distance of not less than 50 km from the closest WTG. The Inch Cape WTGs and OSPs will be visible in</p>		

Receptor	Sensitivity to Wind Farm Development	Magnitude of Change	Residual Effect (up to)
	<p>distant views out to sea, but only in clear weather conditions, as shown in the view from Viewpoint 25 (Dunbar). The Inch Cape WTGs and OSPs will be seen in addition to, and generally behind, the closer NNG offshore wind farm. The operational and consented wind farms in Groups 8 and 9 are also theoretically visible from some locations in this seascape character area. The overall effect of the Inch Cape WTGs and OSPs on this character area will be Minor.</p> <p>SA17 has limited night time lighting. The aviation lighting on the peripheral turbines at Inch Cape will be at distances of over approximately 49km to the north north east of the coastal edge, seen beyond and behind the NNG lit turbines. It is therefore considered that there will be Negligible or no night time effects from the Inch Cape Wind Farm in both the landward and seaward components of this SA.</p>		
Landscape Character			
ABS2: Agricultural Heartlands	Moderate	Low Low to Moderate night time	Moderate to Minor/Moderate Overall Minor/Moderate
	<p>Within the SLVIA study area this comprises three separate but adjacent character areas. Overall visibility of the Inch Cape WTGs and OSPs from within these areas is limited and views of the sea are not possible from the majority of the landscape which lies within Strathmore and the Howe of the Mearns. Parts of the landscape where the sea is an important component of the view are limited to the south and south-east facing slopes of the Hill of Garvock. The Inch Cape WTGs and OSPs are predicted to be visible from the higher east facing slopes of the hills which run along the coast and from the south-eastern edge of the Grampians, as well as from a more low lying area to the south and west of Laurencekirk. Seagreen and NNG are also predicted to be theoretically visible from limited parts of these areas, particularly the east facing slopes of the hills adjacent to the coast, where the onshore wind farms in Group 2 and St Johns Hill are located. Within this context whilst there will be locations on the eastern side of the Agricultural Heartlands with moderate effects, the overall effect on landscape character from the addition of the Inch Cape WTGs and OSPs is considered to be Minor/Moderate.</p> <p>ABS2 has limited night time lighting with concentrations associated with settlements, lit junctions on the A90, communications masts and the lights of Aberdeen visible to the north. The introduction of a group of fixed point sources of red lighting out to sea will be at distances of between approximately 23km and the perimeter of the 50km study area, with the closest of the lit Seagreen turbines visible at distances over approximately 35km. The majority of the predicted theoretical hub height visibility at Inch Cape will be at distances of over 30km, where night time effects are considered to be Minor/Moderate. In the southern part of ABS2, between</p>		

Receptor	Sensitivity to Wind Farm Development	Magnitude of Change	Residual Effect (up to)
	Inverbervie and Marykirk on the east facing slopes of the Garvock Hills, night time effects will be Moderate.		
ABS4: Moorland Plateaux	Moderate	Low	Minor/Moderate
	<p>Within the SLVIA study area this comprises one character area. Where visible, the sea will be just one component of the distant and panoramic views available from some of the higher locations within the south-eastern part of this landscape character area. Overall visibility of the Inch Cape WTGs and OSPs from this landscape is limited and where visible, it will be seen as a distant element within an overall expansive view, as shown in the view from Viewpoint 4 (Cairn o' Mount). Seagreen is predicted to be visible at slightly greater distance with the wind farms in Group 2 the closest of the onshore developments included in the cumulative assessment. In this context, and the distance of the Inch Cape WTGs and OSPs, the overall effect on landscape character from the addition of the Inch Cape WTGs and OSPs is considered to be Minor/Moderate.</p> <p>ABS4 has limited night time lighting although night time views south eastward from this upland area towards Inch Cape are across the more settled Howe of the Mearns with associated night time lighting. The aviation lighting on peripheral turbines at Inch Cape will introduce a group of fixed point red lighting to the sea at distances of over approximately 36km, resulting in a Minor/Moderate night time effect. Seagreen aviation lighting is unlikely to be visible.</p>		
TAY1: Highland Glens	High	Negligible	Minor Negligible night time
	<p>Although the LCT is accorded a high sensitivity to wind farm development on account of its medium to small scale and degree of enclosure, theoretical visibility of the Inch Cape WTGs and OSPs is limited and, where visible, they will be seen at a minimum distance of 38 km to the nearest WTG. In this context, it is considered that the overall effect on landscape character is Minor.</p> <p>TAY1 has limited night time lighting. There is very limited theoretical hub height visibility in this landscape character area at distances of over 38km and accordingly night time effects from Inch Cape will be Negligible/None.</p>		
TAY3: Highland Summits and Plateaux	Moderate to High	Low Negligible/No night time	Minor/Moderate Negligible/No night time
	This character type occurs within three parts of the SLVIA study area, although the higher sensitivity locations (such as the Cairngorms National Park and Deeside and Lochnagar National Scenic Area) all lie outside the SLVIA study area. Within the SLVIA study area, overall visibility of the Inch Cape WTGs and OSPs will be limited and where visible, they will be seen on		

Receptor	Sensitivity to Wind Farm Development	Magnitude of Change	Residual Effect (up to)
	<p>the distant sea horizon as just one element within an overall expansive view over the surrounding landscape. The consented NNG and Seagreen offshore wind farms whilst predicted to be visible, would be more distant with the onshore wind farms in Groups 3 and 4 also predicted to be intermittently visible. In this context, the overall effect of the addition of the distant Inch Cape WTGs and OSPs on landscape character is Minor/Moderate.</p> <p>TAY3 has very limited night time lighting. The Inch Cape aviation lighting will be at distances of over approximately 38km and it is unlikely to be visible. Accordingly, there will be Negligible/No night time effect.</p>		
TAY5: Highland Foothills	Moderate	Low	Minor/Moderate Overall Minor/Negligible night time
	<p>There will be limited or no visibility of the Inch Cape WTGs and OSPs from the higher sensitivity parts of areas having this character type. Areas from which the Inch Cape WTGs and OSPs will be visible are the upper slopes and summits of the hills overlooking Strathmore, from where they will be seen on the distant sea horizon as one element in an overall panoramic and expansive view over the surrounding landscape. This can be seen in the view from Viewpoint 8 (White Caterthun Hill Fort). NNG and Seagreen are theoretically visible from similar parts of the Highland Foothills with the onshore wind farms in Groups 3 and 4 visible at closer distances. In this context, the overall effect on landscape character is Minor/Moderate.</p> <p>TAY5 has limited night time lighting. The Inch Cape aviation lighting will be at distances of over approximately 37km with the majority of the predicted hub height visibility at over 40km. There may be a Minor effect on the north eastern edge, to the south east of Viewpoint 8 White Caterthun Hill Fort, decreasing to Negligible with a Minor/Negligible overall night time effect.</p>		
TAY8: Igneous Hills	Moderate	Low	Minor/Moderate Negligible/No night time effect
	<p>Within the SLVIA study area this comprises one character area. Visibility of the Inch Cape WTGs and OSPs from this character area will be limited to the less sensitive upper slopes and summits of the Sidlaw Hills overlooking the coastal farmlands of Angus and the outer Firth of Tay. In views of the surrounding landscape, which can be obtained from these locations, the Inch Cape WTGs and OSPs will be visible on the distant sea horizon as just one element in an overall panoramic view. The consented offshore wind farms of NNG and Seagreen are also predicted to be visible from parts of</p>		

Receptor	Sensitivity to Wind Farm Development	Magnitude of Change	Residual Effect (up to)
	<p>this character area within which some of the Group 5 onshore wind farms are located. This can be seen in the view from Viewpoint 13 (Dodd Hill). Therefore, the overall effect on landscape character from the addition of the Inch Cape WTGs and OSPs is considered to be Minor/Moderate.</p> <p>TAY8 has limited night time lighting. The Inch Cape aviation lighting will be at distances of over approximately 30km from the eastern extremity of this character area, with the majority of the predicted hub height visibility at distances over 40km. It is unlikely that the aviation lighting on Seagreen or NNG will be visible from this area. There will be a Negligible/No night time effect from the Inch Cape aviation lighting.</p>		
TAY10: Broad Valley Lowlands	Moderate	Negligible Negligible to localised Moderate night time	Minor Minor to localised Moderate night time Overall Minor night time effect
	<p>Within the SLVIA study area this comprises two character areas focused on Strathmore and the Lower South and North Esk River Valleys. There will be limited visibility of the Inch Cape WTGs and OSPs from within this largely agricultural landscape. Even where theoretically visibility is indicated, actual visibility is likely to be limited as seen in the view from Viewpoint 7 (Brechtin). There is limited and distant theoretical visibility of NNG and Seagreen, with the onshore wind farms in Groups 3 and 4 also predicted to have some theoretical visibility from parts of this character area. The overall effect of the addition of the Inch Cape WTGs and OSPs on landscape character is considered to be Minor.</p> <p>TAY10 has a low level of night time lighting associated with scattered settlements, the A90 lit junctions and communication masts. There are two areas of predicted hub height visibility: one along the northern edge of the LCA and the other in the south east extending from Brechtin eastward to Hillside, north west of Montrose. From the former area, the Inch Cape aviation lighting will be at distances of over approximately 35km and the night time effect is considered to be Minor/Negligible. For the area to the east of Brechtin, the night time effect from the introduction of a group of fixed red lighting on the peripheral Inch Cape WTG seen in addition to the closest of the Seagreen aviation lights at approximately 34km, may result in localised Moderate effects. However, given the limited extent of predicted visibility in the LCA, the overall effect is considered to be Minor.</p>		
TAY12: Low Moorland Hills	Moderate	Low Localised High night time	Minor/Moderate Localised Moderate/Major night time

Receptor	Sensitivity to Wind Farm Development	Magnitude of Change	Residual Effect (up to)
			Overall Moderate night time
	<p>Within the SLVIA study area this comprises one character area. Although theoretical visibility of the Inch Cape WTGs and OSPs is indicated over parts of this character area, these areas are often located within forest, therefore actual visibility is likely to be limited. From higher points in the character area, which are not forested, there may be views across the surrounding landscape to the distant sea in which the Inch Cape WTGs and OSPs will be seen on the horizon. The consented NNG and Seagreen as well as onshore Groups 3 and 4 are predicted to be visible from localised parts of the Low Moorland Hills. Overall, the effect of the addition of the Inch Cape WTGs and OSPs on landscape character is considered to be Minor/Moderate.</p> <p>TAY12 has limited night time lighting. The Inch Cape aviation lighting may be visible from the part of this character area to the east of Forfar at distances of between 26km and 35km. It is unlikely that the Seagreen or NNG aviation lighting will be visible from this area. There are likely to be localised Moderate/Major and significant effects from isolated parts of the area with open seaward views, however the overall effect is considered to be Moderate.</p>		
TAY13: Dipslope Farmland	Moderate	Low to High	Minor/Moderate to Moderate/Major and Moderate overall
	<p>This LCT is found over a large area, stretching from the coast south of Montrose to the edge of the SLVIA study area west of Dundee. There is theoretical visibility of the Inch Cape WTGs and OSPs across approximately half of this area, including locations from which views of the sea are also possible. In some of these locations, particularly where the view towards the sea is focused, the Inch Cape WTGs and OSPs will occupy a large proportion of the available sea horizon. From similar parts of the Dipslope Farmland the consented offshore wind farms at NNG and Seagreen are also predicted to be theoretically visible at considerable distance. For example, at Viewpoint 9 (Minor Road South of Cairnconon Hill), the localised effect is predicted to be Moderate/Major and significant. However, at other locations there would be less extensive visibility as shown in respect of Viewpoint 12 (A92, East of Muirdrum) where a Moderate effect is predicted. The overall effect on landscape character from the addition of the Inch Cape WTGs and OSPs is considered to be Moderate.</p> <p>TAY13 has a dispersed pattern of night time lighting. The Inch Cape aviation lighting may be visible across quite extensive parts of this character area (see Figure 12.2b), at distances of between approximately</p>		

Receptor	Sensitivity to Wind Farm Development	Magnitude of Change	Residual Effect (up to)
	16km and the perimeter of the 50km study area. It is anticipated that there may be localised Moderate/Major and significant night time effects on the closest and darkest parts of this character area to the lit Inch Cape WTGs, but overall the night time effect will be Moderate.		
TAY15: Lowland Basins	Moderate	Low Localised High night time	Minor/Moderate Localised Moderate/Major night time Overall Minor/Moderate night time
	<p>Within the SLVIA study area this comprises one character area. Theoretical visibility of the Inch Cape WTGs and OSPs from within this landscape character area is limited to the northern side of the Montrose Basin, from where the Seagreen offshore wind farm and the onshore wind farms in Groups 3 and 4 also predicted to be visible. In views where the Inch Cape WTGs and OSPs will be seen, visibility is likely to be limited to WTG blades, seen beyond a skyline comprised of trees and buildings in the surrounding landscape, rather than against a sea horizon. The overall effect on landscape character is therefore considered to be Minor/Moderate.</p> <p>TAY15 has a dispersed pattern of low level lighting with the lights of Montrose influencing the eastern edge of the area. The aviation lighting at Inch Cape will be seen at distances of between 19km and 30km on the northern and western sides of the Montrose Basin, beyond the lights of Montrose. It is anticipated to give rise to localised Moderate/Major and significant night effects on elevated and open parts of the character area, but overall the night time effect is considered to be Minor/Moderate.</p>		
FFE3: Upland Foothills	Moderate	Low	Minor/Moderate
	Within the SLVIA study area this comprises a number of discontinuous areas in the north-east of Fife. These are medium to large scale landscapes with extensive views across other landscape types. Theoretical visibility of the Inch Cape WTGs and OSPs is shown across parts of the character areas, mostly around the hill tops and east facing slopes. The consented offshore wind farms of NNG and Seagreen are also predicted to be visible, with Seagreen at considerable distance and behind Inch Cape. Where visible the Inch Cape WTGs and OSPs are likely to be seen on the distant sea		

Receptor	Sensitivity to Wind Farm Development	Magnitude of Change	Residual Effect (up to)
	<p>horizon comprising one element in extensive views across the surrounding landscape. In this context, the overall effect on landscape character is considered to be Minor/Moderate.</p> <p>FFE3 has limited night time lighting, with the lights of Dundee and around the Firth of Tay more apparent outwith the area to the north. There is intermittent hub height predicted visibility (see Figure 12.2b). The majority of the predicted visibility is at distances of over 37km from the nearest Inch Cape WTG where the aviation lighting would be barely visible, seen in addition to the NNG lit turbines at slightly closer distances. Accordingly, the night time effect from Inch Cape in addition to NNG is considered to be Minor/Moderate.</p>		
FFE4: Pronounced Volcanic Hills and Craigs	Moderate to High	Low	Minor/Moderate
		Low/Negligible night time	Negligible/None
	<p>There is limited visibility of the Inch Cape WTGs and OSPs from within character areas of this type, occurring mainly on the higher ground of the hill tops and east facing slopes below the summits, and therefore the higher sensitivity locations within these character areas will not be affected. NNG is theoretically visible from similar areas with the onshore wind farms in Group 6 and Kenly. As can be seen in the view from Viewpoint 19 (Largo Law), the Inch Cape WTGs and OSPs will be seen as an element on the distant sea horizon, in an extensive view over the surrounding landscape. The overall effect on landscape character is considered to be Minor/Moderate.</p> <p>FFE4 has limited night time lighting. Areas of theoretical visibility are at distances of over approximately 40km and accordingly it is considered that there will be Negligible/No night time effect from the aviation lighting at Inch Cape.</p>		
FFE5: Lowland Hills and Valleys	Moderate	Low to Moderate	Minor/Moderate to Moderate and Minor/Moderate overall
			<p>This character type is found in several locations within the SLVIA study area with theoretical visibility of the Inch Cape WTGs and OSPs varying from area to area. In the areas where visibility is possible, which are likely to be larger scale, more open areas of the landscape having a lower sensitivity, the Inch Cape WTGs and OSPs are likely to be seen as an element on the distant sea horizon, from locations in which the sea may be just one component of the view. The more elevated and open parts of the Lowland Hills and Valleys on either side of the A915 is predicted to have the most extensive visibility of the Inch Cape WTGs and OSPs at distances of over 30km. The consented offshore wind farms at NNG and Seagreen as well as the onshore wind farms in Group 6 and Kenly are also predicted to be</p>

Receptor	Sensitivity to Wind Farm Development	Magnitude of Change	Residual Effect (up to)
	<p>visible from similar elevated parts of this landscape. In this context, and taking the variable patterns of visibility across these areas into account, whilst there will be localised Moderate effects, the overall effect on this character type is considered to be Minor/Moderate.</p> <p>FFE5 has a limited low level of night time lighting. The Inch Cape aviation lighting will be at distances of between approximately 32km and the perimeter of the 50km radius study area. It will be seen in addition to the NNG lit turbines at over approximately 20km. It is considered that the night time effect from the Inch Cape aviation lighting will be Minor/Moderate overall with localised Moderate effects at the eastern end of the character area.</p>		
FFE 6: Lowland Open Sloping Farmland	Moderate	Low to Moderate	Minor/Moderate to Moderate and Minor/Moderate overall
	<p>This character type occurs within two areas in Fife that lie within the SLVIA study area, a small area to the east of St Andrews and a much more extensive area inland of Fife Ness. Theoretical visibility of the Inch Cape WTGs and OSPs occurs across much of these character areas. Views of the sea are possible from parts of the landscape although it is often screened from view by intervening vegetation and local landform. The consented offshore wind farm at NNG is also theoretically visible from similar areas at closer distances than the Inch Cape WTGs and OSPs, with the onshore Kenly and Group 6 wind farms located mainly in this landscape. In views across the landscape in which the Inch Cape WTGs and OSPs will be visible they will be seen as an element on the distant sea horizon, as shown for Viewpoint 20 (B9131 South of Dunino) where a localised Moderate effect is predicted. The overall impact of the addition of the Inch Cape WTGs and OSPs on landscape character is considered to be Minor/Moderate.</p> <p>FFE6 has limited night time lighting. The Inch Cape aviation lighting will be at distances of between approximately 29km and 42km to the north east and will be seen in addition to the NNG lit turbines at closer distances to the east. It is considered that the introduction of an additional group of fixed point red lights further to the north east will result in Moderate night time effects in the east of the area, but overall a Minor/Moderate night time effect on this area.</p>		
FFE 7: Lowland Dens	Medium	Negligible to Low	Negligible/Minor to Moderate/Minor and Negligible/Minor overall
	<p>This character type occurs across several locations within the SLVIA study area with the most extensive area occurring around Largo Law. Although theoretical visibility of the Inch Cape WTGs and OSPs is shown in parts of these areas along with the consented offshore NNG, it is considered that</p>		

Receptor	Sensitivity to Wind Farm Development	Magnitude of Change	Residual Effect (up to)
	<p>actual visibility from within the wooded valleys will be negligible and limited elsewhere. Therefore the overall effect on landscape character from the addition of the Inch Cape WTGs and OSPs is considered to be Negligible/Minor.</p> <p>FFE7 has limited night time lighting. The Inch Cape aviation lighting will be visible from limited parts of this character area at distances of between 30km and approximately 48km. There may be localised Moderate/Minor night time effects at locations in the eastern parts of the area, however the overall night time effects from the Inch Cape aviation lighting seen in addition to the NNG lit turbines at closer distances are considered to be Negligible/Minor.</p>		
FFE 8: Lowland Glacier Meltwater Valleys	Moderate	Negligible to Low Negligible/None night time	Minor to Minor/Moderate and Minor overall Negligible/No night time effect
	<p>This character type occurs at only one location within the SLVIA study area south of Newport-on-Tay between the A914 and the A92. Theoretical visibility of the Inch Cape WTGs and OSPs is limited. Actual visibility will be less than that indicated on the ZTV due to the screening effect of intervening woodland and buildings in the landscape. The consented offshore wind farms at NNG and Seagreen are also predicted to be visible at greater distances. In this context it is considered that the effect on landscape character from the addition of the Inch Cape WTGs and OSPs will be Minor.</p> <p>FFE8 has a dispersed pattern of night time lighting associated with settlement, road junctions and communication masts, as well as the influence of lighting from Dundee to the north. The Inch Cape aviation lighting will be visible at distances of over 38km with the NNG lit turbines at slightly closer distances in the southern part of the area. Given the intervening distance, it is considered that there will be a Negligible/No night time effect from the Inch Cape aviation lighting.</p>		
FFE 11: Coastal Hills	Moderate	Low	Minor/Moderate
	<p>This character type also occurs at only one limited location in the SLVIA study area to the west of St Andrews around Strathkinness, although theoretical visibility of the Inch Cape WTGs and OSPs is shown across most of the area. Views of the sea are an important element in the character of this landscape and the Inch Cape WTGs and OSPs will be visible in these views, occupying part of the distant open sea horizon. The consented offshore NNG wind farm is also predicted to be visible slightly closer than Inch Cape with Seagreen theoretically visible at considerable distance. The view from Viewpoint 17 (Strathkinness) is representative of views towards</p>		

Receptor	Sensitivity to Wind Farm Development	Magnitude of Change	Residual Effect (up to)
	<p>the Development Area from this area of landscape. In this context it is considered that the overall effect on landscape character will be Minor/Moderate.</p> <p>FFE 11 has limited night time lighting. The Inch Cape aviation lighting is predicted to be visible across most of this small character area seen beyond the lights of St Andrews at distances of over 30km in addition to the NNG lit turbines at slightly closer distance to the east south east. Given the intervening distances, it is considered that there will be a Minor/Moderate night time effect from the Inch Cape aviation lighting.</p>		
FFE 12: Coastal Terraces	Moderate	Low	Minor/Moderate
	<p>This LCT occurs inland of Tentsmuir Forest and in an area to the south west of the Eden estuary. Although theoretical visibility of the Inch Cape WTGs and OSPs is shown across parts of this landscape, it is considered that actual visibility will be limited due to buildings and vegetation in the surrounding landscape. Where the Inch Cape WTGs and OSPs are visible, they may be seen on the distant sea horizon or as views of WTG blades over intervening skylines with the consented offshore NNG wind farm also theoretically visible slightly further away. It is considered that the overall effect on landscape character from the addition of the Inch Cape WTGs and OSPs will be Minor/Moderate.</p> <p>FFE12 has limited night time lighting. The Inch Cape aviation lighting is predicted to have limited visibility at distances of over 28km in addition to the NNG lit turbines at slightly closer distance to the east south east. Given the intervening distances, it is considered that there will be a Minor/Moderate night time effect from the Inch Cape aviation lighting.</p>		
FFE 15: Coastal Flats	Moderate	Low	Minor/Moderate
		Low to Negligible	Minor/Negligible night time effect
	<p>This LCT occurs in several locations inland of Tentsmuir Forest. It is considered that actual visibility will be limited mainly due to vegetation in the surrounding landscape. Where the Inch Cape WTGs and OSPs are visible, they may be seen on the distant sea horizon or as views of WTG blades over intervening skylines together with the more distant consented NNG offshore wind farm. It is considered that the overall effect on landscape character from the addition of the Inch Cape WTGs and OSPs will be Minor/Moderate.</p> <p>FFE 15 has limited night time lighting. The Inch Cape aviation lighting is predicted to have limited visibility at distances of over 32km in addition to the NNG lit turbines at similar distances to the south east. Given the</p>		

Receptor	Sensitivity to Wind Farm Development	Magnitude of Change	Residual Effect (up to)
	intervening distances, it is considered that there will be a Minor/Negligible night time effect from the Inch Cape aviation lighting.		

- 193 The residual effects on landscape designations are described in Table 12.24 below. Where night time magnitudes of change and related effects differ from day time assessments, this is identified in the table. No assessment has been made of the night time effects in GDLs as these are rarely open to the public in hours of darkness.

Table 12.24: Summary of effects on landscape designations

Receptor	Sensitivity	Magnitude of Change	Residual Effect (up to)
SLA			
South East Aberdeenshire Coast	Moderate to High	Low to Moderate None to Moderate night time	Minor/Moderate to Moderate/Major None to Moderate/Major night time
<p>Theoretical visibility of the Inch Cape WTGs and OSPs is possible from within almost all of this SLA given its coastal extents. The Inch Cape WTGs and OSPs will be seen with the consented and existing wind farms across Aberdeenshire, particularly Group 2 and St John's Hill, although not continuously. Visibility of the Inch Cape WTGs and OSPs with Seagreen offshore wind farm is consistent across the same areas with Kincardine Offshore wind farm also theoretically visible from the northern extents of the SLA.</p> <p>As the distance to Inch Cape Wind Farm varies considerably within this SLA (between 22 km and the edge of the study area) the effects also vary and, as demonstrated by Viewpoint 3, St Cyrus, the Inch Cape Wind Farm would become a noticeable feature in the sea views that are a characteristic of the SLA with a Moderate/Major and significant effect. However, as described in respect of Viewpoint 1, Garron Point, to the north the effect would be Minor/Moderate. Therefore, the overall impact on the SLA is predicted to be at most Moderate/Major in localised southern areas reducing to Minor/Moderate in the northern part of the SLA.</p> <p>Night time lighting varies across this extensive coastal SLA, with concentrations in the north at Aberdeen and at settlements to the south. As in the case of day time effects, the distance from the SLA to the nearest of the peripheral lit turbines at Inch Cape will also vary, with the southern end of the locally designated landscape between Inverbervie and south of St Cyrus having predicted visibility of the aviation lighting at between 30km and 22km respectively. Accordingly, the introduction of a group of fixed point red lights offshore at Inch Cape, seen in addition to the nearest of the lit Seagreen</p>			

Receptor	Sensitivity	Magnitude of Change	Residual Effect (up to)
	turbines to the north east, is considered likely to result in Moderate/Major and significant night time effects in the southern part of the SLA, decreasing to Moderate, Minor and No effects at the northern extremity of the SLA in the study area.		
The Braes of Mearns	High	Low	Moderate Moderate/Minor night time effect
	<p>Theoretical visibility of the Inch Cape WTGs and OSPs is possible from south and south west facing slopes and hill tops within this SLA but actual visibility in many locations will be limited due to the screening effect of large areas of coniferous and mixed plantations. NNG and Seagreen are also predicted to be visible from the more elevated parts of this SLA, with the onshore sites across Aberdeenshire also visible in the fore and middle ground of most views from this SLA and the Inch Cape WTGs and OSPs visible in the distance beyond. Therefore, the overall effect on the SLA is predicted to be Moderate.</p> <p>Night time lighting is limited in the Braes of Mearns SLA. The Inch Cape aviation lighting will be at distances of over 37km to the south east with the closest of the lit Seagreen turbine may be just visible to the east. It is possible that the closest of the peripheral lit turbines at Inch Cape will be visible seen beyond intervening land based lighting from intervening settlement. The night time effect from the introduction of a group of fixed point red lighting in seaward views form this locally designated landscape is considered to result in a Moderate/Minor night time effect.</p>		
LLA			
Craigtoun	High	Low	Moderate Minor night time effect
	<p>Although theoretical visibility of the Inch Cape WTGs and OSPs is possible throughout this LLA, actual visibility in many locations will be limited due to the screening effect of woodland. The consented offshore NNG and Seagreen wind farms are also theoretically visible, with NNG at a similar distance to Inch Cape. The overall effect on the LLA with the addition of the Inch Cape WTGs and OSPs is predicted to be at most Moderate.</p> <p>Night time lighting is limited in the Craigtoun LLA, with lighting from St Andrews seen in seaward views towards Inch Cape. The Inch Cape aviation lighting will be at distances of over 36km seen in addition to the NNG lit turbines at slightly closer distance. The night time effect is considered to be Minor.</p>		
Dura Den	Moderate	Negligible	Minor/Negligible

Receptor	Sensitivity	Magnitude of Change	Residual Effect (up to)
			Negligible/No night time effect
	<p>Theoretical visibility of the Inch Cape WTGs and OSPs across this LLA is limited and does not occur within the Den itself. Therefore, the overall effect on the LLA from the addition of the Inch Cape WTGs and OSPs is predicted to be Minor/Negligible.</p> <p>The Inch Cape aviation lighting will be at distances of over 42km from this LLA and therefore the effect of night time lighting is considered unlikely to be visible resulting in a Negligible/No night time effect.</p>		
East Neuk	High	Low to Negligible No night time change	Moderate to Minor/Moderate and Minor/Moderate overall No night time effect
	<p>This LLA is characterised by extensive seaward views although overall theoretical visibility of the Inch Cape WTGs and OSPs is limited as a result of the south-easterly easterly aspect of the coastline. The consented offshore NNG wind farm is theoretically more visible and at closer distance, as well as the consented and application stage Forthwith Offshore developments and onshore Group 7 wind farms. The overall effect on the LLA from the addition of the Inch Cape WTGs and OSPs is predicted to be Minor/Moderate.</p> <p>There is no predicted theoretical hub height visibility of the Inch Cape WTGs in the East Neuk LLA (see Figure 12.3a) and accordingly it is unlikely that there will be any night time effect on this locally designated landscape.</p>		
Forth Islands	High	Moderate	Moderate/Major but limited to Isle of May Moderate night time effect
	<p>Of the three islands within this LLA only the Isle of May lies within the SLVIA study area. Theoretical visibility of the Inch Cape WTGs and OSPs extends across most of the island and the predicted view from Viewpoint 24 (Isle of May) shows that the Inch Cape WTGs and OSPs will be a feature in open sea views with NNG and Seagreen also visible. The onshore wind farms in Fife and East Lothian are also predicted to be more distantly visible. The effect of the Inch Cape WTGs and OSPs on the part of the LLA comprising the Isle of May is therefore considered to be Moderate/Major and significant.</p> <p>The Isle of May has limited lighting apart from the lighthouse on the island with shipping movement on the Firth of Forth apparent as well as the lights of coastal settlement on either side of the Firth also visible. The Inch Cape</p>		

Receptor	Sensitivity	Magnitude of Change	Residual Effect (up to)
	aviation lighting will be at distances of over 34km to the north east seen beyond the much closer NNG lit turbines. The addition of the Inch Cape aviation lighting to night time views from this LLA seen in addition to the NNG lit turbines is considered to result in a Moderate night time effect, having regard to the intervening distance and closer proximity of the NNG aviation lighting.		
Largo Law	Moderate	Low to Negligible	Minor/Moderate to Minor and Minor overall Negligible/No night time effect
	<p>Much of the landscape value of this LLA derives from the pronounced form of Largo Law which contributes to the sense of place in this part of Fife. However, theoretical visibility of the Inch Cape WTGs and OSPs is limited to the summit and upper slopes of Largo Law, with the majority of the Largo LLA having no theoretical visibility. The consented offshore NNG wind farm is predicted to be more widely visible from the LLA, along with the Forthwind Offshore consented and application development and the onshore Group 7 wind farms in closer proximity. The overall effect on the LLA from the addition of the Inch Cape WTGs and OSPs is predicted to be Minor.</p> <p>As noted above, the only part of this LLA with predicted hub height visibility of the Inch Cape WTGs is Largo Law at approximately 48km from the nearest lit turbine. Accordingly, it is considered that the night time effect will be Negligible/None.</p>		
St Andrews to Fife Ness	High	Moderate	Moderate/Major
	<p>This LLA comprises the long stretch of rocky coastline extending from St Andrews around Fife Ness to Crail. The relationship between the landscape and coastal edge contributes to the distinctive character of this area which includes the extensive seaward views which may be obtained throughout the LLA. Theoretical visibility of the Inch Cape WTGs and OSPs extends across most of the LLA and the predicted view from Viewpoints 21 (Kingsbarns) and 23 (Fife Ness) show that the Inch Cape WTGs and OSPs will be a notable feature in open sea views. Both NNG and Seagreen are theoretically visible with NNG slightly closer than the Inch Cape WTGs. The onshore wind farms in Group 6 and Kenly are also predicted to be intermittently visible but unlikely to affect the coastal character. The overall effect on this designated area from the addition of the Inch Cape WTGs and OSPs is therefore considered to be Moderate/Major and significant.</p> <p>There is limited night time lighting in this LLA being confined to the sporadic settlement along the coast with the Fife Ness Lighthouse visible at the south east extremity of the designated area and the lights of St Andrews apparent at the northern end. The introduction of an additional group of fixed point red lighting seen at distances of over 28km to the north east in conjunction with</p>		

Receptor	Sensitivity	Magnitude of Change	Residual Effect (up to)
	the closer NNG lit turbines is considered to result in a Moderate/Major and significant night time effect decreasing to Moderate at the northern end of the LLA.		
St Andrews Links	High	Moderate	Moderate/Major Moderate night time effect
	<p>Theoretical visibility of the Inch Cape WTGs and OSPs extends across all of this LLA. The Inch Cape WTGs and OSPs are likely to be a notable feature in the seascape with the consented offshore wind farm at NNG also visible at slightly closer distance although seen more obliquely from the links. Other onshore wind farms included in the cumulative assessment are also theoretically visible but less likely to influence the character of the Links. Therefore, overall effect from the addition of the Inch Cape WTG and OSPs on this LLA is considered to be Moderate/Major and significant.</p> <p>There is limited night time lighting in this LLA with the lights of St Andrews apparent in seaward views. The Inch Cape aviation lighting will be at distances of over 35km to the east north east with the NNG lit turbines visible at closer distances to the east south east. The effect of the addition of the Inch Cape aviation lighting with the NNG lit turbines is considered to be Moderate having regard to the intervening distance and the influence of nearby coastal lighting.</p>		
Tarvit and Ceres	Moderate	Low to Negligible	Minor/Moderate to Minor and Minor overall Negligible night time effect
	<p>Theoretical visibility of the Inch Cape WTGs and OSPs across this LLA is limited to scattered areas with similarly limited visibility of the other consented offshore wind farms at NNG and Seagreen and limited theoretical visibility of the onshore wind farms included in the cumulative assessment. The overall effect on the LLA from the addition of the Inch Cape WTGs and OSPs is predicted to be Minor.</p> <p>There is limited hub height visibility from the Inch Cape WTGs predicted for this LLA at distances of over 43km and accordingly the night time effect is considered to be Negligible.</p>		
Tay Coast	Moderate	Low to Negligible	Minor/Moderate to Minor and Minor overall Negligible night time effect
	Part of the Tay Coast LLA lies outside the SLVIA study area and theoretical visibility of the Inch Cape WTGs and OSPs across this LLA is limited to scattered areas. It is likely that intervening woodland will further restrict visibility and		

Receptor	Sensitivity	Magnitude of Change	Residual Effect (up to)
	<p>from the locations where it will be seen, Inch Cape is likely to be a distant feature seen outside the Firth of Tay. Similarly, theoretical visibility of the consented offshore wind farms at NNG and Seagreen is also limited, with the Dundee Port oil maintenance structures and Group 5 onshore wind farms theoretically more widely visible. The overall effect on the LLA from the addition of the Inch Cape WTGs and OSPs is predicted to be Minor.</p> <p>Hub height visibility from the Inch Cape WTs is predicted in the eastern part of this LLA where the lights of Dundee, the bridges, port, airport and associated movements are apparent. The effect of the Inch Cape aviation lighting at distances of over 37km is considered to be Negligible.</p>		
Tentsmuir Coast	High	Moderate	Moderate/Major
	<p>This LLA comprises the large stretch of sandy coastline extending west and south of Tentsmuir Point and ending at the Eden Estuary. It combines a low-lying coastal landform with the expanse of the open sea. There are very few vertical elements in the landscape apart from the low lying Tentsmuir Forest which backs the coast. Theoretical visibility of the Inch Cape WTGs and OSPs extends across most of the LLA and the predicted view from Viewpoint 16 (Tentsmuir) shows that the Inch Cape WTGs and OSPs will be a notable feature in the seascape. The consented offshore wind farm at NNG will also be visible at slightly closer distance and seen separately from Inch Cape with Seagreen theoretically visible behind the Inch Cape WTGs. The overall effect on this LLA is considered to be Moderate/Major and significant.</p> <p>There is very limited lighting within the Tentsmuir Coast LLA although the lights of Dundee and settlement along the coastal edge of the Firth of Tay are apparent to the north with the lights of St Andrews visible to the south with the Bell Rock Lighthouse visible in seaward views. The introduction of an additional group of fixed point red lighting in these seaward views at distances of over 32km to the east north east with the NNG lit turbines at slightly closer distances to the south east is considered to result in a Moderate/Major and significant night time effect having regard to the intervening distance.</p>		
AGLV			
North Berwick to Dunbar Coast	High	Negligible	Minor/Moderate
	<p>Although located at considerable distance (48.7 km) from the Development Area, there will be views of the Inch Cape WTGs and OSPs in conditions of good visibility, seen partially behind the closer consented offshore wind farm at NNG. In these circumstances it is considered that the effect on this coastal AGLV from the addition of the Inch Cape WTG and OSPs will be Minor/Moderate.</p>		

Receptor	Sensitivity	Magnitude of Change	Residual Effect (up to)
	The Inch Cape aviation lighting will be at distances of over 48km and accordingly it is considered that it is unlikely to be visible from this AGLV and therefore there will be no night time effect.		
GDLs in inland locations			
All	High	Negligible to Low	Moderate to Minor/Moderate
	For the GDLs located within inland parts of the SLVIA study area and having theoretical visibility of the Inch Cape WTGs and OSPs, the visibility analysis including examination of satellite imagery indicates that actual visibility in most cases will be limited. This is due to the mature policy woodlands that typically enclose these landscapes and screen views of the wider surroundings, including screening of distant views towards the sea. Cumulative visibility of other wind farms across the study area will be similarly restricted by the vegetation cover within the GDLs. Therefore, it is predicted that effects from the addition of the Inch Cape WTGs and OSPs to the baseline wind farms will vary from Minor/Moderate to Moderate.		
GDLs in coastal locations			
St Andrews Links	High	Low	Moderate/Major
	Open sea views are possible from many places in this GDL, from which there is theoretical visibility of the Inch Cape WTGs and OSPs across most areas. The Inch Cape WTGs and OSPs are likely to be a notable feature in the seascape with the consented offshore wind farm at NNG also visible at slightly closer distance, although seen more obliquely from the links due to its location to the south of Inch Cape. Other onshore wind farms included in the cumulative assessment are also theoretically visible but less likely to influence the character of the Links. Therefore, the overall effect from the addition of the Inch Cape WTG and OSPs on this GDL is considered to be Moderate/Major and significant.		
Cambo	High	Moderate to Low	Moderate/Major to Moderate/Minor
	Open sea views towards the Development Area are possible from the wider designed landscape surrounding the woodland garden at the core of the GDL which extends around Cambo House and down to the coastal edge. The consented offshore wind farms at NNG and Seagreen are also theoretically visible from the same locations in the wider designated area, together with the onshore wind farm at Kenly visible in quite close proximity. It is considered that there may be up to Moderate/Major and significant effects from the addition of the Inch Cape WTGs and OPSs on this landscape.		
Tynninghame	High	Negligible	Minor/Moderate
	Located at considerable distance from the Inch Cape WTGs and OSPs, there may be views towards the Development Area from parts of this designed landscape. The Inch Cape WTGs will be visible partially behind NNG with the		

Receptor	Sensitivity	Magnitude of Change	Residual Effect (up to)
	onshore wind farms in Groups 8 and 9 also intermittently theoretically visible from the GDL. The landscape effects from the addition of the Inch Cape WTGs may be up to Minor/Moderate.		

Settlements

- 194 Whilst theoretical visibility of the Inch Cape WTGs and OSPs is shown for many settlements, it is considered that the degree of actual visibility from within settlements will, in most cases, be limited by the screening effect buildings and vegetation. The summary section contained below in Table 12.25 records what the greatest level of residual effect will be, recognising that this may only occur for a limited number of properties, which have open sea views, in settlements located within the SLVIA study area.

Table 12.25: Summary of effects on settlements

Receptor	Sensitivity	Magnitude of Change	Residual Effect (up to)
Coastal Settlements in Aberdeenshire	High	Moderate to Negligible/None	Moderate/Major (up to 30 km distance from closest Inch Cape WTG)
<p>Of the settlements considered in the assessment, theoretical visibility of Inch Cape Wind Farm is indicated for parts of Inverbervie and St Cyrus, together with all of Gourdon and Johnshaven.</p> <p>Theoretical visibility of the Inch Cape WTGs and OSPs with existing and consented onshore wind farms from these settlements is overall limited with some visibility of Group 2 and St John's Hill from Inverbervie, very limited visibility of Group 1 and part visibility of St John's Hill from Gourdon, part visibility of Group 4 from Johnshaven and part visibility of Groups 2, 3 and 4 with limited visibility of Group 5 from St Cyrus.</p> <p>Theoretical cumulative visibility of the offshore wind farms considered in the assessment with Inch Cape Wind Farm is indicated for Kincardine, Seagreen and NNG from all of Johnshaven. NNG and Seagreen are also theoretically visible from all of Gourdon as well as part visibility of the Kincardine offshore development. NNG and Seagreen are theoretically visible from parts of Inverbervie and St Cyrus.</p> <p>Actual visibility of the Inch Cape WTGs and OSPs is likely to be limited, however where properties have open sea views, residents may experience up to Moderate/Major and significant effects on visual amenity.</p> <p>Night time effects are considered to be up to Moderate/Major for settlements within 30km of the nearest lit Inch Cape turbine, comprising Inverbervie, Gourdon, Johnshaven, and St Cyrus. For settlements to the north of</p>			

Receptor	Sensitivity	Magnitude of Change	Residual Effect (up to)
	Inverbervie, effects will diminish with distance from Moderate to Negligible/None beyond 40km.		
Coastal Settlements in Angus	High	High to Negligible/None	<p>Major (up to 20 km distance from closest Inch Cape WTG)</p> <p>Moderate/Major (up to 26.5 km distance from closest Inch Cape WTG)</p> <p>Moderate/Major (up to 30km) night time effect</p>
<p>Theoretical visibility is indicated across the whole of Monifieth, Lunan, and Auchmithie, from most of Carnoustie and Montrose as well as parts of Arbroath.</p> <p>Theoretical cumulative visibility of the Inch Cape WTGs and OSPs with existing and consented onshore wind farms is variable across these settlements. There is no cumulative visibility within Lunan and only limited cumulative visibility with Group 6 and Kenly at Auchmithie. There is part theoretical visibility of Groups 2, 3, and 4 and limited visibility of Group 5 from Montrose. Further south at Arbroath there is some limited theoretical visibility of Group 3, the oil maintenance structures at Dundee to the south west along with part visibility of the Michelin Tyre Factory turbines. Groups 4, 5 and 6, and Kenly would have the most theoretical visibility with Inch Cape Wind Farm from Arbroath. From Carnoustie and Monifieth, the most potential for theoretical visibility with Inch Cape Wind Farm is with the Group 6 and Kenly turbines, the oil maintenance structures and the Michelin Tyre Factory turbines in Dundee. There is more limited theoretical visibility of the Inch Cape WTGs with the Group 5 turbines.</p> <p>Theoretical cumulative visibility is indicated in most of these settlements for both NNG and Seagreen offshore wind farms in conjunction with the Inch Cape WTGs and OSPs, with the exception of Lunan from where there will be no cumulative visibility of NNG. Kincardine Offshore Wind Farm is also theoretically visible from Montrose and possibly Auchmithie but at a considerable distance.</p> <p>Actual visibility of the Inch Cape WTGs and OSPs will be much more limited; however, it is anticipated that up to Major and significant effects on visual amenity may be experienced where properties have open sea views, particularly between Carnoustie and Montrose.</p> <p>All the coastal settlements within Angus are within 30km of the nearest peripheral lit turbines at Inch Cape, apart from Monifieth at just over 33km to the east. The Inch Cape aviation lighting will be seen in addition to the Seagreen lit turbines in the northern part of the council area (Montrose and Lunan), and in addition to the NNG lit turbines from the southern settlements (Arbroath and Carnoustie). For the settlements within 30km it is considered that the night time effects of the Inch Cape aviation lighting will be Moderate/Major and significant.</p> <p>For coastal settlements at over 30km, (Monifieth) night time effects will be Moderate or less. For inland settlements with predicted hub height visibility of</p>			

Receptor	Sensitivity	Magnitude of Change	Residual Effect (up to)
	the Inch Cape WTGs, the night time effect from the aviation lighting at Inch Cape is considered to be Moderate/Minor or less.		
Coastal Settlements in Fife	High	Moderate to Negligible/None	Moderate/Major (up to 35 km distance from closest Inch Cape WTG)
<p>Of the settlements considered in the assessment, theoretical visibility is indicated across the whole of Tayport, most of St Andrews, Guardbridge, and Crail, parts of Anstruther Easter and limited parts of Pittenweem.</p> <p>Theoretical cumulative visibility of the Inch Cape WTGs and OSPs with the existing and consented onshore wind farms varies between the locations of the settlements on the north and south of the Fife coast but all have most or part theoretical visibility with the Group 6 and Kenly turbines. There is theoretical visibility of Group 5, Michelin Tyre Factory turbines, and the oil maintenance structures at Dundee from most of Tayport and Guardbridge, although slightly more limited at the latter location. From St Andrews there is theoretical visibility of Inch Cape Wind Farm with Groups 4 and 5 as well as the Michelin Tyre Factory turbines, and oil maintenance structures at Dundee. At Crail, aside from Group 6 and Kenly, there is theoretical visibility of Groups 8 and 9 turbines although distant. At Anstruther Easter and Pittenweem which lie on the south coast, there is more potential for theoretical visibility of the Group 7 turbines towards the west, and Group 8 and 9 to the south with Inch Cape Wind Farm.</p> <p>Of the offshore sites, there is theoretical visibility of NNG from within all of these settlements due to its close proximity to Fife. Seagreen will be more distant and have more limited visibility from the East Neuk settlements. The Forthwind consented and proposed offshore turbines are theoretically visible from a limited area of St Andrews and more widely visible within Anstruther Easter and Pittenweem.</p> <p>As with other settlements having theoretical visibility of the Inch Cape WTGs and OSPs, actual visibility will be more limited than shown on the ZTV plans; however, the viewpoint analysis suggests that up to Moderate/Major and significant effects may be experienced where properties have open sea views in the direction of the Inch Cape WTGs and OSPs north west of Fife Ness.</p> <p>The visual effect of the Inch Cape Wind Farm with the baseline wind farms and the proposed Forthwind Extension will also be Moderate/Major and significant.</p> <p>The majority of the settlements in Fife are over 30km distance from the nearest peripheral lit turbine at Inch Cape with St Andrews, Crail, Boarhills and Kingsbarns all just under 30km. At these settlements, apart from Crail, the introduction of an additional group of fixed point red lighting offshore seen in conjunction with the NNG lit turbines in close proximity, the night time effect from the Inch Cape aviation lighting is considered to be Major/Moderate and a significant night time effect. From Crail, the peripheral lit turbines at Inch Cape will be seen partially and along the coast rather than in direct seaward views and the effect of night time lighting is considered to be Moderate/Minor.</p>			

Receptor	Sensitivity	Magnitude of Change	Residual Effect (up to)
	At coastal locations beyond 30km, the night time effect of the aviation lighting at Inch Cape is considered to be Moderate or less, reducing to Negligible/None beyond 40km.		
Inland Settlements in Fife	High	Moderate to Negligible/None	Moderate/Major (up to 35 km distance from closest Inch Cape WTG)
	<p>The ZTVs indicate that theoretical visibility of the Inch Cape WTGs and OSPs is possible across all of Balmullo, Kingsbarns, Strathkinness and Dairsie, across most of Leuchars and across part of Boarhills. Actual visibility will be more limited; however, the viewpoint analysis suggests that up to Moderate/Major and significant effects may be experienced where properties have open sea views.</p> <p>Theoretical visibility of Inch Cape with the existing and consented wind farms is variable across the settlements, although Dairsie has no visibility of any of the baseline wind farms except Group 6 and Kenly. The other settlements have theoretical visibility of Inch Cape with Group 6 and Kenly and also limited and part theoretical visibility with Groups 4 (except Balmullo and Leuchars) and Group 5, the Michelin Tyre Factory turbines, and the oil maintenance structures at Dundee.</p> <p>Visibility of the NNG and Seagreen offshore wind farms in conjunction with the Inch Cape WTGs and OSPs is also indicated across all of these settlements except Dairsie. There is potentially visibility of the consented and proposed Forthwind Offshore Wind Farm from Leuchars but this would be very limited.</p> <p>Actual visibility will be more limited; however, the viewpoint analysis suggests that up to Moderate/Major and significant effects may be experienced where properties have open sea views in the direction of the Inch Cape WTGs and OSPs.</p> <p>The visual effect of the Inch Cape Wind Farm with the baseline wind farms and the proposed Forthwind Extension will also be Moderate/Major and significant.</p> <p>The majority of the inland settlements in Fife are at distances of over 37km from the peripheral lit turbines at Inch Cape seen in addition to the closer NNG lit turbines and accordingly it is considered that the night time effects will be Moderate or less, reducing to Negligible/None at distances over 40km.</p>		
Other Settlements	High	Low to Negligible/None	Moderate Negligible/No night time effect
	<p>Theoretical visibility of the Inch Cape WTGs and OSPs will be possible from parts of Dundee, Broughty Ferry and, at a much greater distance, Dunbar and North Berwick in East Lothian. Where properties have open sea views, residents may experience up to Moderate effects on visual amenity.</p> <p>Cumulative visibility of the Inch Cape WTGs and OSPs with onshore existing and consented wind farms from Dundee and Broughty Ferry is limited to Group 5, 6, Kenly, the Michelin Tyre Factory turbines, and oil maintenance structures at</p>		

Receptor	Sensitivity	Magnitude of Change	Residual Effect (up to)
			<p>Dundee. From Dunbar and North Berwick theoretical visibility would be limited to distant views of Group 6, Kenly, Group 7, and more locally Groups 8 and 9, and the proposed Ferneylea 2 wind farm.</p> <p>The other offshore wind farms at Seagreen and NNG also demonstrate theoretical visibility in conjunction with the Inch Cape WTGs and OSPs from all of these settlements. The proposed and consented Forthwind offshore wind farm would be theoretically visible with Inch Cape from most of Dunbar and all of North Berwick.</p> <p>It is considered that actual visibility will be more limited than indicated on the ZTVs however, where properties have open sea views, residents may experience up to Moderate effects on visual amenity.</p> <p>There will also be Moderate effects from Inch Cape with the baseline developments and the proposed Forthwind offshore extension.</p> <p>The aviation lighting at Inch Cape will be at distances of approximately 46km and 36km from Dundee and Broughty Ferry respectively. Accordingly, and in the context of the well lit baseline at Dundee it is considered that the Inch Cape lighting is unlikely to be visible. At Broughty Ferry, the Inch Cape aviation lighting will be seen in addition to the NNG lit turbines at slightly greater distance. However due to the intervening distance, the effect is considered to be Negligible.</p>

Routes

- 195 The routes considered in the assessment cross large areas of seascape and landscape at varying distances from the Development Area. The routes assessed are shown on Figure 12.7a. Figures 12.7b and 12.7c show more detail of these routes, marked into sections (A to B/F) according to the predicted theoretical visibility of Inch Cape and the other developments included in the cumulative assessment. The location of these developments are also shown on Figures 12.7b and 12.7c. Figure 12.7d identifies the various sections of each route and the related developments predicted to be visible. Table 12.26 below identifies the developments with which Inch Cape WTGs and OSPs will contribute most to sequential cumulative visibility and related effects.
- 196 Theoretical visibility of the Inch Cape WTGs and OSPs from along these routes may vary from no visibility to visibility over continuous stretches of road or path. A series of graphs showing predicted theoretical visibility of the Inch Cape WTGs based on the blade tip ZTVs, are presented in Figure 12.23 to Figure 12.34. Actual visibility may also vary considerably due to the screening effect of vegetation and buildings, both at the roadside, but also in the surrounding landscape or seascape. The summary section contained in Table 12.26 below records what the greatest level of residual effect will be, recognising that this may only occur for a short section or localised area of the route.

- 197 It is considered that **Moderate/Major** and significant night time effects may occur for sections of the A92 and the A917, as well as NCN1 and the Fife Coastal Path within 30km of the peripheral lit turbines at Inch Cape. However, due to a combination of distance and the baseline context of lighting from other vehicles, it is considered unlikely that there will be significant night time effects on other main transport or recreational routes included in the SLVIA.

Table 12.26: Summary of effects on transport and recreational routes

Receptor	Sensitivity	Magnitude of Change	Residual Effect (up to)
Roads			
A91	Moderate	Moderate	Moderate
	<p>The visibility analysis shows that the Inch Cape WTGs and OSPs are theoretically visible from the entire length of this route between Guardbridge and St Andrews, and intermittently over the majority of the route between the outskirts of Cupar and Guardbridge. In many places actual visibility may be more limited although the road does pass very close to the coastline, from where the Inch Cape WTGs and, over short sections of the route, OSPs may be visible on the distant sea horizon.</p> <p>Cumulative visibility with NNG and Seagreen, and also the closest onshore operational and consented wind farms is theoretically possible, but in practice may be limited as described in the visibility analysis in <i>Appendix 12B</i>. Within this context, it is considered that the effect on visual amenity arising from the addition of the Inch Cape WTGs and OSPs to the baseline wind farms will be at most Moderate, but mainly Minor/Moderate.</p>		
A914	Moderate	Low	Minor/Moderate
	<p>The Inch Cape WTGs and OSPs are theoretically visible intermittently between the junction with the A92 south of Newport-on-Tay to Balmullo and then more continuously to Dairsie. The extensive coniferous forest at Tentsmuir lies between the road and the coastal edge and is likely to screen most seaward views. However, some sections of the road south of Balmullo are more elevated from where there may be views of Inch Cape. NNG and Seagreen are also theoretically visible over similar sections of this route with actual visibility likely to be restricted as described. The visibility analysis (<i>Appendix 12B</i>) describes that only Group 6 and Kenly turbines would potentially be visible from this road with Inch Cape for very limited sections.</p> <p>The effect on the visual amenity of road users from the addition of the Inch Cape WTGs is therefore considered to be at most Minor/Moderate.</p>		
A915	Moderate	Low	Minor/Moderate
	<p>There is theoretical visibility of the Inch Cape WTGs and OSPs for just less than half of the length of the route which is within the SLVIA study area. It is predicted that actual visibility will be possible from certain sections of the road. In these locations the Inch Cape WTGs and OSPs will be seen occupying part of the distant sea horizon.</p> <p>Theoretical visibility is indicated along this stretch of route for the Inch Cape WTGs and OSPs with a number of existing and consented onshore wind farms, particularly those Group 6 and Kenly, and those around Dundee, although the latter are less likely to be visible due to intervening vegetation and local landform. Theoretical visibility</p>		

Receptor	Sensitivity	Magnitude of Change	Residual Effect (up to)
	<p>with offshore wind farms would be most likely with NNG and there also would be theoretical visibility of the proposed and consented Forthwind Offshore Wind Farm from the southern extents of the route.</p> <p>In this context, it is considered that the additional effect on visual amenity resulting from the Inch Cape WTGs and OSPs will be at most Minor/Moderate for both Inch Cape with the baseline developments and with the proposed Forthwind Offshore extension.</p>		
A917	Moderate	Moderate	Moderate
	<p>Theoretical visibility of the Inch Cape WTGs and OSPs is indicated for two-thirds of this road eastward from the west edge of Anstruther. Along many sections of the road from which there are open views of the sea, it is likely that the Inch Cape WTGs and OSPs will be visible, occupying part of the seawards horizon.</p> <p>Theoretical visibility with offshore wind farms would be most likely with NNG which would be visible for most of the route, closer than Inch Cape. There would also be theoretical visibility of the proposed and consented Forthwind Offshore Wind Farm from the Crail to Elie part of the route, travelling in the opposite direction to visibility of Inch Cape Wind Farm.</p> <p>Theoretical visibility is indicated along part of this stretch of route (between B9171 and St Andrews) for the Inch Cape WTGs and OSPs with a number of existing and consented onshore wind farms, mostly quite distant but Group 6 and Kenly would lie within 2km of the road.</p> <p>When considered in addition to the baseline wind farms, the Inch Cape WTGs and OSPs will be seen occupying part of the distant sea horizon and will represent a noticeable increase in the proportion of the seawards view occupied by wind farm development. Therefore, in these locations, road users may experience up to a Moderate cumulative effect on visual amenity from Inch Cape with the baseline as well as with the addition of the proposed Forthwind development.</p>		
A919	Moderate	Low	Minor/Moderate
	<p>The Inch Cape WTGs and, potentially over a short section OSPs, are theoretically visible for most of this short route between the A91 and the A914 north of Guardbridge. However, in many areas views towards the Development Area will be screened by buildings, particularly through Leuchars, as well as by Tentsmuir Forest. This is likely to be the same for other existing and consented wind farms, including the offshore wind farms, which are also theoretically visible.</p> <p>Therefore, the effect on the visual amenity of road users resulting from the Inch Cape WTGs and OSPs is considered to be Minor/Moderate at most.</p>		
A92	Moderate	High to Negligible	Moderate/Major and Moderate to Moderate/Minor overall
	<p>The visibility analysis indicates that the Inch Cape WTGs and OSPs are theoretically visible for two-thirds of this route, with OSPs more intermittently. Actual visibility is most likely on sections of the road which pass in close proximity to the coastline where up to moderate/major and significant effects may occur; however, these locations will be limited to the geographical areas which are closest to the</p>		

Receptor	Sensitivity	Magnitude of Change	Residual Effect (up to)
	<p>Development Area, for example, the short stretch road to the south of Arbroath, and the section to the west of Lunan Bay.</p> <p>Cumulative visibility with both onshore and offshore consented and existing wind farms is also possible from much of the route. In inland locations there is likely to be sequential cumulative visibility with several wind farms considered in this assessment, for example where the road passes between Stonehaven and Montrose, there will be views of St John's Hill and the Group 2 wind farms on the Hill of Garvock, as shown in respect of Viewpoint 2, on the A92 north of Inverbervie. Further south, the Michelin Tyre Factory turbines and Dundee Port oil maintenance structures are visible intermittently to the east of Dundee with Kenly and Group 6 turbines also theoretically visible to the south of Arbroath. Overall, there will be a variety of sequential effects on visual amenity throughout the length of the route. It is considered that there will be localised Moderate/Major and significant effects arising from the addition of the Inch Cape WTGs and OSPs as described in respect of Viewpoint 12, on the A92 east of Muirdrum. However, it is considered that significant effects on the A92 will be limited in duration and extent, resulting in a Moderate to Moderate/Minor overall effect.</p>		
A933	Moderate	Moderate to Negligible	Moderate
	<p>This route extends between Arbroath and Brechin, with theoretical visibility of the Inch Cape WTGs and OSPs occurring for approximately two-thirds of the route. The route analysis figure distinguishes between the bypass round Arbroath identified as A933a, and the main route identified as A933b. It is considered that actual visibility will be more limited than predicted on the ZTV, due mostly to the effects of intervening woodland within the surrounding landscape.</p> <p>Theoretical visibility of Inch Cape Wind Farm and onshore consented and existing wind farms from the A933 is variable with Groups 3 and 4 in close proximity and theoretically visible for much of the route, and other more distant wind farms more intermittently visible. Although Kenly and Group 6 onshore wind farms are theoretically visible, they are at considerable distance and unlikely to influence cumulative effects.</p> <p>NNG and Seagreen offshore wind farms are also predicted to be seen with Inch Cape Wind Farm for the same extents.</p> <p>Given the limited visibility by woodland and roadside vegetation, the effect on visual amenity from the addition of the Inch Cape WTGs and OSPs will be Moderate at most.</p>		
A935	Moderate	Low to Negligible/None	Minor/Moderate
	<p>The Inch Cape WTGs are theoretically visible for approximately three quarters of this route that extends from the A90 west of Brechin to Montrose. It is considered that actual visibility will be limited due to the screening effects of vegetation and buildings in the surrounding landscape, particularly around Montrose.</p> <p>Theoretical visibility with consented and existing onshore wind farms is likely with Groups 3 and 4 wind farms for most of the route with more limited cumulative</p>		

Receptor	Sensitivity	Magnitude of Change	Residual Effect (up to)
	visibility with Group 2 and 5. Theoretical visibility with Seagreen offshore wind farm is predicted for the same extents as Inch Cape Wind Farm. Limited actual visibility of the Inch Cape WTGs and OSPs and cumulative sites is predicted from this route, mostly due to the effects of intervening woodland within the surrounding landscape. Therefore, the effect on the visual amenity of road users from the addition of the Inch Cape WTGs and OSP will be at most Minor/Moderate.		
A937	Moderate	Low to Negligible/None	Minor/Moderate
	Route analysis indicates that the Inch Cape WTGs will be theoretically visible for approximately half the length of this road that extends from Laurencekirk to Montrose, with the OSPs theoretically visible for short sections of the route north of Montrose. Cumulative visibility, both combined and sequential, of the Inch Cape WTGs and OSPs with existing and consented wind farms will be possible, mostly with Groups 2, 3 and 4 as well as the consented Seagreen offshore wind farm. It is considered that the overall effect on the visual amenity of road users from the addition of the Inch Cape WTGs and OSPs is likely to be at most Minor/Moderate given the distance of Inch Cape from the road and the intervening trees and vegetation as well as settlements limiting actual visibility.		
	Recreational Routes		
Fife Coastal Path	High	Moderate to Low	Moderate/Major
	The Inch Cape WTGs and OSPs will be theoretically visible for much of this route particularly to the east and north of Anstruther and it is considered that actual visibility will be possible along many sections, particularly between Anstruther Easter and St Andrews where the footpath follows the coastal edge closely. There will be sequential visibility of the Inch Cape WTGs and OSPs with the Group 6 and Kenly wind farms for much of this route. There will also be simultaneous visibility of the Inch Cape WTGs and OSPs with the NNG and Seagreen offshore wind farms, particularly between Fife Ness and St Andrews, from where there will also be inland views of other existing and consented onshore wind farms across the Firth of Tay. In this context, it is likely that footpath users, who are considered to have a high sensitivity to change, may experience up to Moderate/Major and significant effects on visual amenity from the addition of the Inch Cape WTGs and OSPs.		
NCN Route 1	High	High to Moderate/Low	Major and Major/Moderate overall
	The route analysis has been divided into two: with Route 1a on Figure 12.33a showing theoretical visibility between Johnshaven and Inverbervie where the route follows an alternative alignment, and Route 1b on Figure 12.33b showing theoretical visibility from the remainder of this route through the study area. The Inch Cape WTGs and OSPs will be theoretically visible for most of the NCN Route 1 over both sections analysed. As the route passes through Angus, it runs adjacent or close to the coastal edge, and the Inch Cape WTs and OSPs will be seen in open seaward views. They will		

Receptor	Sensitivity	Magnitude of Change	Residual Effect (up to)
	<p>be visible at a closest distance of 17.2 km near Arbroath varying to 20.4 km and 26.4 km in Montrose and Carnoustie respectively.</p> <p>Intermittent visibility is likely of the onshore wind farms, particularly St John’s Hill and Group 2 wind farms. The consented offshore wind farms at Kincardine, Seagreen and NNG are also theoretically visible from the majority of the route between Johnshaven and Inverbervie, with Seagreen and NNG theoretically visible from most of the rest of the route.</p> <p>Sections of the route in Angus closest to the Development Area will incur a high magnitude of change resulting in a Major and significant effect for cyclists along localised sections between Arbroath and Carnoustie. Significant effects may also be experienced along sections of the route in Aberdeenshire, between Inverbervie and Montrose.</p>		
Train Lines			
Edinburgh to Aberdeen	Moderate	High to Negligible/None	Moderate/Major
	<p>Theoretical visibility of the Inch Cape WTGs and OSPs is predicted from just over half of this route where it passes through the study area. Actual visibility for passengers on this route is likely to be more limited due to adjacent landform, buildings and vegetation adjacent to the line, as well as the direction of views. The consented offshore wind farms at Seagreen and NNG are also theoretically visible from similar sections of the route, with the onshore wind farms at St John’s Hill, Group 1, Group 2 and Group 3 theoretically visible from the route to the north of Montrose. South of Montrose, the Michelin Tyre Factory turbines, oil maintenance structures at Dundee Port as well as Group 6 and Kenly turbines are also theoretically visible.</p> <p>Passengers on this route may experience up to Moderate/Major and significant effects on visual amenity, although this is likely to be for short sections of the route only, particularly along the stretch between Carnoustie and Arbroath where there will be open sea views from the coastal edge. For much of the route, there will be no visibility of the Inch Cape WTGs and OSPs, for example where the train passes through Strathmore.</p>		

Other Recreational Receptors

- 198 Based on the findings of the viewpoint assessment, recreational receptors having open sea views where the Inch Cape WTGs and OSPs are an element within these views, **Major** and significant effects on visual amenity may be experienced at locations up to 20 km distance. Where the available sea view is more focused and in locations where the Inch Cape WTGs and OSPs will occupy a greater extent of a limited sea view, **Major/Moderate** effects on visual amenity may be experienced at up to approximately 35 km distance for high sensitivity receptors. However, it is important to recognise that such locations are likely to be limited and not generally representative of typical sea views obtained from the coastal edge within the SLVIA study area.

- 199 As identified in respect of the baseline, the Firths of Tay and Forth and adjacent outer waters in the North Sea are established shipping routes for both commercial and cruise vessels. The closer inshore waters are used for recreational water based activities including visits to the islands in the Firth of Forth, notably the Isle of May. It is anticipated that high sensitivity recreational receptors, either taking part in water based activities, visiting the Forth islands or on cruise ships will experience **Major** and significant effects from the Inch Cape WTGs and OSPs, at distances similar to those at which land based effects are assessed as being significant.

12.11 Cumulative Impact Assessment Operational Stage: WTGs and OSPs – Application and Scoping Stage Developments

- 200 As set out in *Section 12.8* there is only one application stage wind farm and one scoping stage development included within the assessment for the Inch Cape WTGs and OSPs. These comprise: namely Ferneylea 2 application located in the Lammermuir Hills of East Lothian at 58.9 km to the south of the nearest Inch Cape WTG; and Forthwind Offshore Extension on the northern shores of the Firth of Forth at over 56.7 km from the nearest Inch Cape WTG. The Ferneylea 2 application would be close to the consented wind farms in Group 8 and Group 9, whilst the Forthwind Offshore Extension would be close to the onshore Group 7 wind turbines in Fife.
- 201 As shown on Figure 12.21, there are no parts of the study area where the Inch Cape WTGs will be visible only with these two application and scoping stage wind farms, which would only be seen in the south west part of the study area. In this context and particularly given the considerable distance between these two proposed wind farms, it is considered that the effects of the Inch Cape WTGs and OSPs with the baseline of operational and consented wind farms and these two proposed wind farms, would be no greater than the effects assessed for Inch Cape with the operational and consented developments included in the assessment. Accordingly, the effects for the future cumulative scenario of Inch Cape WTGs and OSPs with the application and scoping stage wind farms included in the assessment may be considered to be as assessed in *Section 12.10*.

12.12 Impact Interactions

- 202 There is an inherent linkage between SLV effects insofar as the changes predicted to occur for seascape or landscape character would affect views and visual amenity. This is reflected in the methodology where the magnitude of change for seascape, landscape character and visual amenity are considered to be the same, but the sensitivity of the respective landscape and visual receptors may vary according to the criteria identified in *Section 12.7.1* and *Section 12.7.2*.
- 203 The SLVIA has identified the linkages between different chapters in this EIA Report where relevant. Specifically, potential impacts upon tourism and recreational receptors and general socio-economic impacts, are fully assessed in *Chapter 16: Socio-economics and Tourism*. In addition, potential impacts on cultural heritage receptors both within the

Development Area and the SLVIA study area have been fully assessed in *Chapter 17*. Any effects are identified and assessed in the respective chapter.

- 204 It is not considered that there will be any significant cumulative seascape, landscape or visual effects arising from the interaction between the construction of the Offshore Export Cable and the Inch Cape WTGs and OSPs. The effects of the Inch Cape WTGs and OSPs in conjunction with other wind farms are separately addressed within the baseline assessment in *Section 12.10* (for operational and consented wind farms) and in *Section 12.11* for application and scoping stage wind farms.

12.12.1 Development and Onshore Transmission Works (OnTW)

- 205 It is not anticipated that there would be any significant cumulative effects on seascape, landscape or visual amenity from construction in the Development Area in addition to the construction of the OfTW or OnTW, due to the distance between the Development Area and the landfall locations and Onshore Area, as well as the limited duration of the construction.
- 206 There will be no cumulative effects on seascape, landscape or visual amenity from the operation of the Wind Farm, OfTW, and the OnTW due to the distance between them and nature of Export Cables (as they will be buried). It is not anticipated that the installed OnTW will be visible from any of the agreed viewpoints or other identified receptors.
- 207 During the construction (and decommissioning) phase, there may be simultaneous visibility of the Offshore Export Cable installation with the OnTW. However, it is considered that the cumulative effect on seascape or landscape character, or on visual amenity of the combined construction would be no greater than the effects assessed from the construction phase of the OfTW considered on its own, as set out in *Section 12.9* above. Therefore, whilst significant effects are likely on part of the Edinburgh to Gullane seascape character area, and visual amenity of recreational users of the open space at Preston Links between Cockenzie and Prestonpans, as well as walkers on the section of the John Muir Way which passes along the coastline at the landfall location, these will be localised in extent and temporary in duration.

12.13 Conclusion and Summary of Effects

- 208 The SLVIA has assessed relevant aspects of the construction and operational stages arising from the Inch Cape Wind Farm on seascape, landscape character and designations and visual amenity within the 50 km SLVIA study area (described in *Section 12.6.1*). A worst case scenario has been assessed, as described in *Section 12.5.2*. A description of the aviation and maritime navigational lighting has also been included in the assessment, as set out in *Section 12.5.2*.

12.13.1 Construction (and decommissioning) Stage: Offshore Export Cable

- 209 The potential effects associated with the construction (and decommissioning) of the offshore export cable corridor and its landfall to mean high water will derive from the

presence of installation vessels and related works for the Export Cable Corridor, and cable trenching at the landfall location. As noted in *Section 12.9*, a full assessment of the cable route inshore from the landfall is provided in the Onshore EIA Report.

- 210 The presence of installation vessels during the construction stage is not considered to represent a high magnitude of change given the extent of vessel activity and movement within the study area.
- 211 The construction works that will occur in the vicinity of the landfall will be temporary in nature. However, directional drilling and associated activity for the construction (and decommissioning) of the landfall at Cockenzie will result in localised significant effects from the construction (and decommissioning) stage on a small part of the Edinburgh to Gullane seascape character area. It is also considered that there will be temporary and significant effects from the construction (and decommissioning) stage on the visual amenity of recreational users of the open space at Preston Links between Cockenzie and Prestonpans, as well as walkers on the section of the John Muir Way which passes along the coastline at the landfall location.

12.13.2 Operational Stage: WTGs and OSPs with Operational and Consented Wind Farms

- 212 Thirty eight operational or consented onshore wind farms; four consented or under construction (Kincardine Floating Wind Farm) and the operational oil rig maintenance structures in Dundee Port have been included in the assessment. As these developments are already operational or will be operational following construction, the SLVIA has been carried out to identify the additional effect of the Inch Cape WTGs and OSPs with these developments which constitute the baseline.
- 213 The SLVIA has established that there will be overall significant effects from the Inch Cape WTGs and OSPs with these operational and consented wind farms, on seascape character areas SA4: Montrose Bay; SA5: Long Craig; SA6: Lunan Bay; SA7: Lang Craig to the Deil's Heid; SA8: Arbroath to Monifieth; SA11: St Andrews Bay and SA12: St Andrews to Fife Ness. With the exception of SA 12, which is in Fife, all of these character areas are located within Angus at a closest distance of between 15.61 km and 32.44 km from the closest WTG within the Development Area.
- 214 Significant night time effects are predicted from the aviation lighting of Inch Cape Wind Farm seen in addition to either the Seagreen or NNG lit turbines, based on interpolation from the four viewpoints assessed (Viewpoints 6; 10; 12 and 14, see *Appendix 12C* and related Figures) at the same seascape character areas as those for which significant day time effects are predicted. Additionally, localised significant night time effects are predicted in the southern part of SA3 Cove Bay to Milton Ness, all at distances of less than 30km from the nearest peripheral lit Inch Cape WTG.
- 215 There are not predicted to be any overall significant effects on LCTs and associated character areas within the SLVIA resulting from the Inch Cape WTGs and OSPs considered in addition to the operational and consented wind farms. However, there may be localised significant effects on landscape character, for example on parts of the Dipslope

Farmland (TAY13) landscape in which open sea views are an important characteristic of the landscape and in which the Inch Cape WTGs will be seen at a closest distance of 16.03 km.

- 216 No overall significant night time effects on LCTs and associated areas within the SLVIA are predicted from the aviation lighting of the Inch Cape Wind Farm. However, localised significant night time effects on landscape character are predicted in the closest parts of TAY12 Low Moorland Hills; TAY12 Dipslope Farmland and TAY15 Lowland Basins.
- 217 There are no national landscape designations (National Parks or National Scenic Areas) within the study area. Locally designated landscapes: Special Landscape Areas (SLAs); Local Landscape Areas (LLAs) and one Area of Great Landscape Value (AGLV) occur respectively in Aberdeenshire, Fife and East Lothian. The assessment has identified that significant effects will occur in the southern parts of the South East Aberdeenshire Coast SLA, as described in respect of Viewpoint 3, in St Cyrus, where open seaward views are a characteristic of the designated coastline. In Fife, significant effects are predicted for the Tentsmuir Coast LLA, as described in respect of Viewpoint 16 at Tentsmuir; St Andrews Links and St Andrews to Fife Ness, as described in respect of Viewpoint 18, on the East Scores in St Andrews; as well as on the Isle of May, one of the islands in the Forth Islands LLA. No significant effects are assessed for the Braes of Mearns SLA in Aberdeenshire; the Tay Coast, Tarvit and Ceres, Craigtoun, Dura Den, East Neuk, or Largo LLAs in Fife; or the North Berwick to Dunbar Coast AGLV in East Lothian.
- 218 Significant night time effects from the Inch Cape aviation lighting seen in addition to either the nearest lit turbines at Seagreen or NNG, are assessed for the southern parts of South East Aberdeenshire Coast SLA; as well as the Tentsmuir Coast and St Andrews to Fife Ness LLAs. None of the other locally designated landscapes included in the SLVA are predicted to incur significant night time effects.
- 219 No significant effects are predicted from the Inch Cape WTGs and OSPs on any of the inland GDLs in the study area. The assessment has identified that localised significant effects will occur in parts of the Cambo GDL, as well as on St Andrews Links (also a LLA). No significant effect is predicted for the Tynninghame GDL in East Lothian.
- 220 In respect of impacts on visual amenity, significant effects have been assessed for parts of the coastal settlement of St Cyrus in southern Aberdeenshire, as described for Viewpoint 3, on Beach Road, Kirkton. No significant effects are predicted for the inland settlements of Aberdeenshire for which theoretical visibility is limited and the combination of distance and intervening elements is likely to further restrict actual visibility of the Inch Cape offshore wind farm.
- 221 In respect of night time effects on visual amenity, significant effects are assessed for the coastal settlements of Inverbervie, Gourdon, Johnshaven and St Cyrus from the Inch Cape aviation lighting seen in addition to the nearest lit turbines at Seagreen.

- 222 In Angus, significant effects are predicted on visual amenity for residents with open seaward views from the coastal settlements of Montrose, as described for Viewpoint 5; Braehead of Lunan, as described for Viewpoint 6; Arbroath as described for Viewpoints 10 and 11; and Carnoustie as described for Viewpoint 14. Theoretical visibility from inland settlements in Angus is more extensive than Aberdeenshire, but again due to the combination of distance and intervening elements likely to restrict actual visibility, no significant effects on visual amenity have been assessed, as described in respect of Viewpoint 7 in Brechin.
- 223 In respect of night time effects on visual amenity, significant effects are assessed for the coastal settlements of Montrose and Lunan where the Inch Cape aviation lighting will be seen in addition to the nearest lit turbines at Seagreen; and at Arbroath and Carnoustie, where the Inch Cape aviation lighting will be seen in addition to the nearest lit turbines at NNG.
- 224 In Fife, for residents of St Andrews significant effects on visual amenity are predicted for residents with elevated and/or open seaward views, as described for Viewpoint 18. At the settlements located close to the coastal edge, such as Kingsbarns and Boarhills north of Fife Ness, significant effects may occur from the Inch Cape WTGs and OSPs for residents of properties with open and/or elevated seaward views. However, no significant effects are predicted for the southward facing settlements on the Firth of Forth in Fife, as described for Viewpoint 22 in Anstruther Easter. For the majority of the inland settlements Fife, significant effects are not predicted.
- 225 Significant night time effects from the Inch Cape aviation lighting seen in addition to the nearest lit NNG turbines at St Andrews; Boarhills; and Kingsbarns.
- 226 Sequential effects from the Inch Cape WTGs and OSPs have been assessed for nine road routes; the Fife Coastal Path; NCN Route 1; and the main railway between Edinburgh and Aberdeen. The predicted effects on these routes varies but the only road predicted to incur significant effects is the A92 which is the longest trunk road within the study area with extensive theoretical visibility of the Inch Cape WTGs and OSPs. Significant effects are predicted to occur on sections of this road with open seaward views between inland of Carnoustie and Montrose, as described for Viewpoint 12, east of Muirdrum.
- 227 The Fife Coastal Path follows the coastline between Lower Largo on the south west edge of the study area and Tayport and therefore obtains extensive open seaward views, and walkers on the majority of the route will incur significant effects on visual amenity from the addition of the Inch Cape WTGs and OSPs to the operational and consented wind farms. Similarly, cyclists on NCN Route 1 are also likely to incur significant effects on sections of the route with open seaward views between Johnshaven and Tayport and between St Andrews and Fife Ness. Views from the main railway line between Edinburgh and Aberdeen through the study area may be significantly affected by the Inch Cape WTGs and OSPs for sections with open seaward views, particularly between Carnoustie and Arbroath.

- 228 Significant night time effects from the aviation lighting of the peripheral Inch Cape WTG is predicted for parts of the A92, A917, NCN 1 and the Fife Coastal Path within approximately 30km of the nearest Inch Cape lit turbine.
- 229 The assessment of the effects of the lighting required for the Inch Cape Wind Farm has been carried out drawing on the findings of the four viewpoints selected for night time assessment as directed by consultees, as well as work commissioned by ICOL from the University of Edinburgh's Institute of Astronomy (see *Appendix 12H*). It is considered that the visibility of night time lighting from both on and offshore wind farms requires further study and refinement of related visualisation and assessment techniques, and therefore a degree of caution should be applied to the night time assessment findings presented in current assessments.

12.13.3 Cumulative Impacts from Operational Stage: WTGs and OSPs with Application and Scoping Stage Wind Farms

- 230 As described in *Section 12.12*, the cumulative impacts from the Operational Stage of the Inch Cape WTGs and OSPs with the baseline of operational and consented wind farms as well as the two application and scoping stage wind farm is considered to be no greater than those effects as summarised in *Section 12.13.2*.

12.13.4 Summary

- 231 The Inch Cape Offshore Wind Farm will consist of up to 72 turbines of up to 291m to blade tip height, occupying a sea area to the east of the Angus and north Fife coastlines, at distances of over 15.60 km which is the closest distance between the nearest Inch Cape WTG and the coast south of Red Head in Angus. It is predicted to give rise to a number of daytime and night time significant effects on SLV amenity when considered in addition to the operational and consented offshore and onshore wind farms, as well as conjunction with the two proposed wind energy developments included in the cumulative assessment. This is due to the height and horizontal extent of the turbines. The assessment has assumed a worst case scenario of 40 turbines up to 291m to blade tip height and clear visibility. Analysis of the visibility data in Graph 12.i shows that at a distance of around 35km, which is the furthest distance at which significant effects are predicted for high sensitivity landscape or visual receptors, visibility of the WTGs is likely to occur for on average, just under 40% of the year.

References

Aberdeenshire Council (2017). *Aberdeenshire Local Development Plan*.

Aberdeenshire Council (April 2017). *Aberdeenshire Special Landscape Areas, Aberdeenshire Local Development Plan Supplementary Guidance*.

Aberdeenshire Council (March 2014). *Strategic Landscape Capacity for Wind Energy in Aberdeenshire*.

Aberdeenshire Council (August 2005a). *Use of Wind Energy in Aberdeenshire Part One – Guidance for Developers*.

Aberdeenshire Council (August 2005b). *Use of Wind Energy in Aberdeenshire Part Two – Guidance for Assessing Wind Energy Developments*.

Angus Council (2016). *Angus Local Development Plan*.

Angus Council (2014). *Strategic Landscape Capacity Assessment for Wind Energy in Angus*.

Angus Council (October 2016). *Renewable and Low Carbon Energy Development Supplementary Guidance Consultation Draft*.

Countryside Council for Wales, Brady Shipman Martin, University College Dublin (2001). *Guide to Best Practice in Seascape Assessment*.

Department of Environment, Food and Rural Affairs (March 2011). *UK Marine Policy Statement*.

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

East Lothian Council (2016). *Proposed Local Development Plan, Technical Note 9: East Lothian Local Landscape Designation Review and Appendices I - IV*.

East Lothian Council (June 2013). *Planning Guidance for Lowland Wind Turbines*.

East Lothian Council (December 2013). *Guidance for Wind Farms of 12 MW and Over*.

East Lothian Council (December 2011). *East Lothian Supplementary Landscape Capacity Study for Smaller Wind Turbines*.

East Lothian Council (2008). *East Lothian Local Plan*.

East Lothian Council (2005). *Landscape Capacity Study for Wind Turbine Development in East Lothian*.

Fife Council (May 2013). *Review of Onshore Wind Energy in Fife – Strategic Cumulative Landscape and Visual Impact Assessment*.

Fife Council (June 2013). *Fife Wind Energy Supplementary Planning Guidance*.

Fife Council (2012). St Andrews & East Fife Local Plan.

Historic Environment Scotland, *Inventory of Gardens and Designed Landscapes*. Available online at: <http://portal.historicenvironment.scot/> [Accessed 01/05/18]

Landscape Institute (March 2017). *Visual representation of development proposals, Technical Guidance Note 02/17*.

Landscape Institute and Institute of Environmental Management & Assessment (December 2013). *Guidelines for Landscape and Visual Impact Assessment*, Third Edition (GLVIA 3).

Landscape Institute (March 2011). *Photography and photomontage in landscape and visual impact assessment*, Advice Note 01/11.

Scottish Natural Heritage (February 2017). *Visual Representation of Windfarms – Good Practice Guidance*, Version 2.2.

Scottish Natural Heritage (2017a). *Siting and Designing Windfarms in the Landscape*.

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

Scottish Natural Heritage (2012b). *Offshore Renewables – guidance on assessing the impact on coastal landscape and seascape*.

Scottish Natural Heritage (2010, revised 2014). *Renewable Energy and the Natural Heritage*.

Scottish Natural Heritage (2008). *Guidance on Landscape/Seascape Capacity for Aquaculture*.

Scottish Natural Heritage (2005a). *An Assessment of the sensitivity and capacity of the Scottish seascape in relation to offshore windfarms*.

Scottish Natural Heritage (1999a). No.113 Fife: Landscape Character Assessment.

Scottish Natural Heritage (1999b). No.122 Tayside: Landscape Character Assessment.

Scottish Natural Heritage (1998). No.102 South and Central Aberdeenshire: Landscape Character Assessment.

The Countryside Agency and SNH (2002). *Landscape Character Assessment Guidance of England and Scotland*.

The Scottish Government (2017). *The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations*.

The Scottish Government (March 2015). *Scotland's National Marine Plan*.

The Scottish Government (June 2014). *Scottish Planning Policy*.

The Scottish Government (2010b). Scotland's Offshore Wind Route Map – Developing Scotland's Offshore Wind Industry to 2020 and Beyond.

The Strategic Development Planning Authority for Dundee, Angus, Perth and North Fife (SDPA) (June 2012) *TAYplan*

The Strategic Development Planning Authority for Edinburgh and South East Scotland (SES) (June 2013). *Strategic Development Plan*.