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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.
Countryside	The rural environment and its associated communities (including the coast).
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.
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 *Guidelines for Landscape and Visual Impact Assessment* (GLVIA) (The Landscape Institute and the Institute of Environmental Management and Assessment (IEMA), 2013). 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 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	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: • 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	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:

	• 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.
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.
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 *An Approach to Seascape Character Assessment*, 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 *An Approach to Seascape Character Assessment*, 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 *An Approach to Seascape Character Assessment*, Natural England, 2012).
Significant Effect	An effect which is considered by the assessor to be "significant" in terms of the Environmental Impact Assessment Regulations.
Visual Amenity	Particular composition of landscape elements that contribute to a view, or views. The value of a particular area or view in terms of what is seen (as defined in the *Guidelines for Landscape and Visual Impact*

	Assessment (Landscape Institute and Institute of Environmental Management and Assessment, December 2013).
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	Based on combining value and susceptibility of the view or visual amenity to the change envisaged by a proposed development. Taking into account the following: • 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
CNP	Cairngorms National Park
FTOWDG	Firth and Tay Offshore Wind Developers Group
GDL	Gardens and Designed Landscape
HES	Historic Environment Scotland
LCA	Landscape Character Assessment
LCT	Landscape Character Type
LLA	Local Landscape Area
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

12A Seascape, Landscape and Visual Baseline

1 This appendix sets out the baseline description of the relevant Seascape, Landscape and Visual (SLV) amenity receptors within the 50 km study area for the Inch Cape Wind Farm and Offshore Transmission Works (OfTW).

12A.1 Regional Seascape Character Areas and Landscape Character Types and Associated Landscape Character Areas

2 The regional seascape character areas (SA) and landscape character types (LCT) and associated landscape character areas that are predicted to have theoretical visibility of the Inch Cape Wind Turbine Generators (WTGs) and Offshore Substation Platforms (OSPs) are listed in Table 12A.1 below. SAs are described in the Firth and Tay Offshore Wind Developers Group (FTOWDG) Seascape Character Assessment (SCA) contained in *Appendix 12D: Regional Seascape Assessment.* Descriptions of LCTs and associated areas are taken from the relevant Scottish Natural Heritage (SNH) Landscape Character Assessments (LCA). These areas are also shown on Figure 12.2 and 12.2a and with the Zone of Theoretical Visibility (ZTV) overlaid in Figure 12.2b.

Table 12A.1: Theoretical Visibility of SAs and LCTs within study area

	Distance from the closest Inch Cape WTG	**15 km –20 km**	**20 km –30 km**	**30 km –40 km**	**40 km – 50 km**
Code	**SA/ LCT Name**	**Theoretical Visibility**			
	SNH LCA No.102: South and Central Aberdeenshire				
ABS 1	Coastal Strip	Analysed as seascape character area			
ABS 2	Agricultural Farmlands		■	■	■
ABS 4	Moorland Plateaux			■	■
	SNH LCA No.122: Tayside				
TAY 1	Highland Glens				■
TAY 3	Highland Summits and Plateaux				■
TAY 5	Highland Foothills			■	■
TAY 8	Igneous Hills			■	■
TAY 10	Broad Valley Lowlands		■	■	■
TAY 11	Firth Lowlands	Analysed as seascape character area			
TAY 12	Low Moorland Hills		■	■	

	Distance from the closest Inch Cape WTG	15 km –20 km	20 km –30 km	30 km –40 km	40 km – 50 km
Code	**SA/ LCT Name**	**Theoretical Visibility**			
TAY 13	Dipslope Farmland	■	■	■	■
TAY 14	Coast	Analysed as seascape character area			
TAY 15	Lowland Basins	■	■		
	SNH LCA No.113: Fife				
FFE 3	Upland Foothills			■	■
FFE 4	Pronounced Volcanic Hills and Craigs			■	■
FFE 5	Lowland Hills and Valleys			■	■
FFE 6	Lowland Open Sloping Farmland		■	■	■
FFE 7	Lowland Dens			■	■
FFE 8	Lowland Glacial Meltwater Valleys			■	■
FFE 11	Coastal Hills			■	■
FFE 12	Coastal Terraces		■	■	■
FFE 13	Coastal Cliffs	Analysed as seascape character area			
FFE 14	Coastal Braes	Analysed as seascape character area			
FFE 15	Coastal Flats			■	■
	FTOWDG SCA				
SA 3	Cove Bay to Milton Ness		■	■	■
SA 4	Montrose Bay	■	■		
SA 5	Long Craig	■			
SA 6	Lunan Bay	■			
SA 7	Lang Craig to The Deil's Heid	■			
SA 8	Arbroath to Monifieth	■	■	■	
SA 9	Dundee			■	■
SA 10	Inner Firth of Tay			■	■

	Distance from the closest Inch Cape WTG	15 km –20 km	20 km –30 km	30 km –40 km	40 km – 50 km
Code	**SA/ LCT Name**	**Theoretical Visibility**			
SA 11	St Andrews Bay			■	
SA 12	St Andrews to Fife Ness		■	■	
SA 13	East Neuk of Fife		■	■	
SA 14	Kirkaldy to Largo Bay				■
SA 17	Eyebroughy to Torness Point				■

3 The LCTs that are predicted to have visibility of the Inch Cape WTGs and OSPs are further described with respect to receptors, key characteristics and sensitivity to change in Table 12A.2 below. The sensitivity of the LCTs has been assessed by considering their value and susceptibility as explained in *Chapter 12*, *Section 12.7*.

Table 12A.2: Description of SAs and LCTs and associated areas

LCT (and Associated Area) or SA	Receptors/ Designations	Key Characteristics (as described in SNH and other relevant published LCAs with various additions and the FTOWDG SCA)	Value and Susceptibility and resulting Sensitivity to change relating to wind farm development
SNH LCA No.102: South and Central Aberdeenshire			
ABS 1 – Coastal Strip	This area is covered by a seascape character area and is considered under the seascape character analysis as SA3.		
ABS 2 – Agricultural Heartlands (Howe of the Mearns)	Special Landscape Areas (SLA) Gardens and Designed Landscapes (GDLs) A-roads Railway line Small towns, villages and farmsteads Minor roads	Almost uniformly flat; Intensive agriculture within large geometric fields; Mixed farming lends colourful tapestry with red soils; Corridor for road and rail links; Mature (and over mature) beech woodlands and straight beech avenues with stone walls associated with scattered estates; Pockets of rowan and birch coppice stand out within the basin; Red stone houses, bridges and stone	Value: **Medium** The northern half of this LCA lies within the Braes of the Mearns SLA. It is also a well maintained agricultural landscape associated with the early 20th century writings of Lewis Grassic Gibbons. Susceptibility:

LCT (and Associated Area) or SA	Receptors/ Designations	Key Characteristics (as described in SNH and other relevant published LCAs with various additions and the FTOWDG SCA)	Value and Susceptibility and resulting Sensitivity to change relating to wind farm development
	Residents Visitors	dykes give warmth to landscape, but mixed with newer houses of diverse styles and materials; and Expansive views framed by surrounding upland. Low level of night time lighting associated with scattered settlement, A90, and some communication masts including the Durris transmitter in adjacent ABS4; lights of Aberdeen visible beyond northern boundary.	**Medium** Due to the medium to large scale landscape, limited intervisibility with open sea, simple pattern and character. Sensitivity: **Medium**
ABS 2 – Agricultural Heartlands (Garvock and Glenbervie)	GDLs A-roads Railway line Small towns, villages and farmsteads Minor roads Residents Visitors	A series of sweeping, rolling hills that present distant views and draw the eye up and down the terrain; Large scale landscape with open rolling ridges; Large fields of arable land and pasture and red soils, presenting a tapestry of colours; Scarcity of hedges and dykes; Radio masts and wind turbines prominent on high points; Scattered settlement pattern; Evidence of built development pressure, particularly around existing settlements; and Long distance views across Howe of the Mearns to The Mounth. Low level of night time lighting associated with scattered settlement, A90 and some communication masts, including the Durris transmitter in adjacent ABS4; concentrations in towns, e.g. Laurencekirk and Aberdeen visible beyond northern boundary.	Value: **Medium** There are no landscape designations within this LCA. It is valued as a working landscape and also associated with the early 20th century writings of Lewis Grassic Gibbons. Susceptibility: **Medium** Due to large scale, openness, simple landform and pattern. Sensitivity: **Medium**
ABS 2 – Agricultural Heartlands	A-roads Railway line Small towns,	Medium to large scale landscape; Undulating landform falling gently towards coast;	Value: **Medium** There are no landscape

LCT (and Associated Area) or SA	Receptors/ Designations	Key Characteristics (as described in SNH and other relevant published LCAs with various additions and the FTOWDG SCA)	Value and Susceptibility and resulting Sensitivity to change relating to wind farm development
(Kincardine Plateau)	villages and farmsteads Minor roads Residents Visitors	Sloping relief presents many opportunities for long distance views; Character strongly influenced by proximity of sea; Diverse landcover creating a landscape pattern that lacks unity and coherence; Pasture and marginal farmland with rocky outcrops and scrubby patches of derelict pasture or unimproved marshy land with rush infestation; Exposed mounds and hills with windblown trees and sculptured stands of Scots pine and regenerating birch scrub on pockets of moss; Gradual transition between strong moorland character to west and coastal character to east; and Strong development pressures evident. Low level of night time lighting associated with scattered settlement, A90 and some communication masts, including the Durris transmitter in adjacent ABS4; and the lights of Aberdeen visible along eastern boundary.	designations within this LCA. It is valued as a working landscape within close proximity to Aberdeen. Proximity of the sea and long distance views are key scenic qualities. Susceptibility: **Medium** Due to medium to large scale, open character and simple landform. Sensitivity: **Medium**
ABS 4 – Moorland Plateaux (The Mounth)	SLA GDLs Villages and farmsteads Minor roads Isolated residential and road users Walkers	Smooth rolling landform and rounded summits; Substantial highland outcrop forming prominent undulating ridge that dominates views south of Aberdeen; Extensive central and western ridges of heather moorland and grasses; Heavily forested edges particularly in the north and east and within Glen Dye; Encroaching patchwork of green pasture on some fringe slopes	Value: **High-Medium** This LCA lies within the Clachnaben and Forest of Birse SLA and also the Braes of the Mearns SLA. It is a distinctive landscape with scenic qualities relating to the topography and landuse.

LCT (and Associated Area) or SA	Receptors/ Designations	Key Characteristics (as described in SNH and other relevant published LCAs with various additions and the FTOWDG SCA)	Value and Susceptibility and resulting Sensitivity to change relating to wind farm development
		associated with isolated villages and hamlets; and Wild and exposed character with commanding views into tranquil farmed lowland of Howe of the Mearns. Low level of night time lighting apart from the Durris transmitter located in northern part of this LCA.	Susceptibility: **Medium** Due to large scale, open and exposed character, simple landform and land cover, and high degree of afforestation. Sensitivity: **Medium**
SNH LCA No.122: Tayside			
TAY 1 – Highland Glens (1A Upper Highland Glens, 1B Mid Highland Glens)	GDLs Villages and farmsteads Minor roads Isolated residential and road users Walkers	Medium to small scale landscapes; Enclosed glens with perception of enclosure increasing in narrow Upper Glens which are dominated by the scale and proximity of surrounding mountains; Sparsely settled particularly in the remote landscapes of the Upper Glens; Simple landcover with improved pasture or rough grazing concentrated mostly on valley floors giving way to rough grassland and heather moorland on valley slopes and hill tops; Fields, where enclosure occurs, tend to be enclosed by dry-stone walls or post-and-wire fences; Substantial areas of commercial coniferous forestry in Mid Glens often with geometric shapes and linear boundaries; and Areas of native birch and oak woodland in Mid Glens. Limited, low level of night time lighting.	Value: **High-Medium** Parts of this LCA (outwith the study area) lie within the Cairngorms National Park (CNP) and the parts within the study area demonstrate similar characteristics contributing to its scenic quality which give it a higher value. Susceptibility: **High** Due to medium to small scale and enclosure. Particularly sensitive to development that would impact on surrounding skylines. Sensitivity: **High**
TAY 3 – Highland	Isolated farmsteads	Large scale, open and exposed landscape with panoramic views to	Value: **High-Medium**

LCT (and Associated Area) or SA	Receptors/ Designations	Key Characteristics (as described in SNH and other relevant published LCAs with various additions and the FTOWDG SCA)	Value and Susceptibility and resulting Sensitivity to change relating to wind farm development
Summits and Plateaux (Mounth Highlands)	Minor roads and farm tracks Walkers and climbers	surrounding areas; Simple patterns of land cover and land use; Agriculture limited to rough and unimproved pasture; Most of the area managed as open moorland; Little or no settlement; Strong feeling of wildness and remoteness; West Highlands comprise distinct summits and skylines, often craggy whereas towards the east the hills are more rounded with fewer rock outcrops; and Some extensive areas of coniferous plantation. Limited, low level of night time lighting.	Parts of this LCA (outwith the study area) lie within the CNP and the parts within the study area demonstrate similar characteristics contributing to its scenic quality. Susceptibility: **Medium** Due to large scale, open and exposed character, simple landform and land cover. Rising to **High** in areas with more distinctive and defined skylines and areas particularly valued for their remoteness and undeveloped character, where development outwith the area could impact on these characteristics. Sensitivity: **Medium**
TAY 5 – Highland Foothills	GDL Villages and farmsteads Network of minor roads Residential and road users	Overall medium scale landscape within which there are areas having a smaller scale and enclosed character but also some areas with a larger scale and more open character (particularly where overlooking the adjacent lowland areas); Steep whale-backed hills and south-west to north-east valleys; A confusing, almost disorientating landscape with low external	Value: **Medium** There are no landscape designations within this LCA. It is valued as an agricultural landscape which displays a variety of contrasting characteristics and landscape scales. Susceptibility:

LCT (and Associated Area) or SA	Receptors/ Designations	Key Characteristics (as described in SNH and other relevant published LCAs with various additions and the FTOWDG SCA)	Value and Susceptibility and resulting Sensitivity to change relating to wind farm development
		intervisibility in many areas and valleys appearing to run in all directions. This contrasts with the apparent simplicity of lowland Strathmore and the clear structure of Highland and Glens; Scattered areas of broadleaf woodland and small to medium sized coniferous plantations often geometric in form; Settlement concentrated on lower ground comprising small villages and farmsteads; and Agriculture comprising arable land on gentler lower slopes particularly along northern edge of Strathmore, with extensive areas of pasture elsewhere. Fields tend to be medium sized with regular shapes where landform allows. Low level of night time lighting associated with scattered settlement and some communication masts.	**Medium** Due to general low external intervisibility, medium scale and short to medium views, increasing to **High** in smaller scale more enclosed areas where framed views with scale indicators would increase the susceptibility to wind farm development. Sensitivity: **Medium**
TAY 8 – Igneous Hills (Sidlaw Hills)	GDLs Villages, farmsteads and isolated residences Major and minor roads Walkers and other recreational users	Landscape of rounded hills and almost conical summits dominated by grass moorland; Medium scale, semi-enclosed to open; Often distinctive scarp and dipslopes; Short burns and rivers flowing from short steep glens with a few larger glens running through the hills; Generally large and regular shaped arable fields on gentler slopes with post-and-wire or stone dyke field boundaries common; Largely unsettled with farms and villages tending to be concentrated in main glens and lower slopes; Masts and aerials are prominent features on the summits of some	Value: **Medium** While there are no landscape designations within this LCA it has considerable cultural and recreational value as well as distinctive landscape features. Susceptibility: **Medium** Due to open and exposed character of upper hills, simple landform and land cover. Rising to **High** in more enclosed

LCT (and Associated Area) or SA	Receptors/ Designations	Key Characteristics (as described in SNH and other relevant published LCAs with various additions and the FTOWDG SCA)	Value and Susceptibility and resulting Sensitivity to change relating to wind farm development
		hills; Limited broadleaf woodland generally confined to steep slopes, more sheltered sections of glen and along lower level field boundaries; Extensive areas of coniferous plantation in eastern part of the Sidlaws; and Considerable cultural heritage interest particularly where natural defence provided by steep-sided hills has been exploited. Low level of night time lighting with scattered communication masts.	smaller scale glens. Sensitivity: **Medium**
TAY 10 – Broad Valley Lowlands (Strathmore, and the Lower South and North Esk River Valleys)	Residents Visitors A-roads Minor Roads Scattered villages and farmsteads GDL	Overall medium scale landscape varying from larger scale of Strathmore to the smaller scale of the valleys of the Rivers South Esk and North Esk; Contrast between broad, flat-bottomed valley landscape of the strath and neighbouring areas of upland; Predominantly open and expansive landscape of rectilinear fields with scattered large farmsteads; Field boundaries marked by hedgerows with high density of mature hedgerow trees; Extensive areas of broad-leaf woodland limited to policy landscapes; and Dominant arable agricultural land use resulting in mostly simple landscape pattern. Low level of night time lighting associated with scattered settlement, A90 and some communication masts; concentrations in towns, e.g. Brechin and Forfar.	Value: **Medium** There are no landscape designations in this LCA. It is valued as a working agricultural landscape. Susceptibility: **Medium** Due to medium scale landscape, limited intervisibility with open sea, simple pattern and character. Sensitivity: **Medium**

LCT (and Associated Area) or SA	Receptors/ Designations	Key Characteristics (as described in SNH and other relevant published LCAs with various additions and the FTOWDG SCA)	Value and Susceptibility and resulting Sensitivity to change relating to wind farm development
TAY 11 – Firth Lowlands	This area is covered by a seascape character area and is considered under the seascape character analysis as SA 10		
TAY 12 – Low Moorland Hills	Residents Visitors A-roads Minor Roads Scattered villages and farmsteads	Series of low-lying hills to the east and south of Forfar; Approximately 100-150 m above surrounding farmland; Combination of low, rounded hills and craggy, ridge upland; Panoramic views from elevated locations northwards towards Highland foothills; Extensive areas of coniferous plantation at Montreathmont Moor; Simple patterns of land cover and use; Medium scale, open landscape; and Scattered pattern of settlement. Low level, limited night time lighting.	Value: **Medium** There are no landscape designations in this LCA. It is valued for scenic views and its topography. Susceptibility: **Medium** Due to medium scale, openness, simple pattern and character and a degree of afforestation. Sensitivity: **Medium**
TAY 13 – Dipslope Farmland	Residents Visitors A-roads Minor Roads Scattered villages and farmsteads GDL	Medium to large scale landscape; Mostly open character; Dispersed settlement pattern with few settlements of any size; Low woodland cover, except on large estates and along river corridors; Dominated by productive agricultural land; Medium to large scale rectilinear field pattern, boundaries where marked, hedgerow or post-and-wire fencing; Generally sloping from the north-west to south-east, falling from up to 180 m to 50 m Above Ordnance Datum (AOD) along the coastal strip. Dispersed pattern of night time lighting associated with settlement, the A90 and A92 corridors as well as	Value: **Medium** There are no landscape designations in this LCA. It is valued as working agricultural landscape. Susceptibility: **Medium** Due to its medium to large scale, openness, intermittent views to surrounding landscape and lack of distinctive landform. Sensitivity: **Medium**

LCT (and Associated Area) or SA	Receptors/ Designations	Key Characteristics (as described in SNH and other relevant published LCAs with various additions and the FTOWDG SCA)	Value and Susceptibility and resulting Sensitivity to change relating to wind farm development
		communication masts. Lights of Dundee visible to south west.	
TAY 14 – Coast	This area is covered by a seascape character area and is considered under the seascape character analysis as SA 8.		
TAY 15 – Lowland Basins (Montrose Basin)	Residents Visitors A-roads Minor roads Scattered farmsteads GDL	Large rounded estuarine basin; Medium scale open landscape; Close to sea-level, rising to 10 or 20 m AOD; Semi-natural and plantation woodland around fringes of basin; Extensive mud-flats at low tide; Surrounded by low-lying drained farmland; and Settlement concentrated in Montrose, which also separates the basin from the North Sea. Dispersed pattern of low level night time lighting apart from town of Montrose on eastern edge of LCA.	Value: **Medium** While there are no landscape designations in this LCA, this landscape has cultural, ecological and landscape value from its relationship with the basin. Susceptibility: **Medium** Due to its medium scale, openness and limited intervisibility with open sea. Sensitivity: **Medium**
SNH LCA No.113 Fife			
FFE 3 – Upland Foothills	Residents Visitors Minor roads Scattered villages and farmsteads Local Landscape Area (LLA) GDL	Medium to large scale landscape; Extensive views across other landscape types; Distinctive backdrops to other landscape types, defining the extent of views across the lowlands; Landform gentler and less pronounced than upland slopes but usually steeper and higher than lowland hills; Farmsteads scattered throughout; and A combination of open landform and land cover on the upper Foothills	Value: **High-Medium** This LCA lies within the Tay Coast LLA. It has scenic value with long distance views and relationships with adjacent landscape types. Susceptibility: **Medium** Due to medium to large scale and openness of

LCT (and Associated Area) or SA	Receptors/ Designations	Key Characteristics (as described in SNH and other relevant published LCAs with various additions and the FTOWDG SCA)	Value and Susceptibility and resulting Sensitivity to change relating to wind farm development
		with shallower, smoother and more vegetated or developed landform lower down. Limited low level of night time lighting with some communication masts, lights of Dundee visible to north.	landscape and because the foothills form a backdrop in landward views. Sensitivity: **Medium**
FFE 4 – Pronounced Volcanic Hills and Craigs	Residents Visitors Minor roads Scattered farmsteads LLA	Distinctive hills rising above lowlands; Medium to large-scale, open landscape; Some extensive views across other landscape types; Shapes and skylines act as backdrop to surrounding landscape; Scattered farmsteads and buildings; and Contrast between steep-sided, rugged open landform and land cover on hills with shallower, more vegetated and more intensively used lower slopes. Limited low level of night time lighting; communication masts and concentration around settlement, e.g. Ceres.	Value: **High-Medium** Parts of this LCA lie within the Dura Den, and Tarveit and Ceres LLAs. It has scenic value with long distance views and relationships with adjacent landscape types. Susceptibility: **Medium** Due to large scale, open and exposed character, rising to High in smaller scale more enclosed areas where development outwith the area could affect these characteristics. Sensitivity: **Medium**
FFE 5 – Lowland Hills and Valleys	Residents Visitors Minor Roads Scattered farmsteads LLA	Series of low hills and valleys predominantly of boulder clay with outcrops of bedrock; Variety and subtlety of landform; Open, regular farmland patterns with medium scale arable and pasture fields separated by both post-and-wire fences and tall hedgerows;	Value: **Medium** A small part of this LCA lies within the Tay Coast LLA. It is a generally working agricultural and plantation landscape with scenic qualities relating to its

LCT (and Associated Area) or SA	Receptors/ Designations	Key Characteristics (as described in SNH and other relevant published LCAs with various additions and the FTOWDG SCA)	Value and Susceptibility and resulting Sensitivity to change relating to wind farm development
		Extensive areas of plantations, shelterbelts and policy woodlands linked to large estates; Regular pattern of farmsteads and larger settlements and towns, generally well-related to landscape; Variety of middle and long-distance views of, from and across the low hills; and Contrast between generally quiet and calm rural parts of landscape, and more urban and industrialised areas. Limited low level of night time lighting with concentrations along A91 and settlements, e.g. Cupar.	landscape and settlement pattern. Susceptibility: **Medium** Due to medium to large scale in more open areas. Rising to **High** in smaller scale areas. Sensitivity: **Medium**
FFE 6 – Lowland Open Sloping Farmland	Residents Visitors A-roads Minor Roads Scattered villages and farmsteads GDL	Large scale, open and exposed; Generally simple form with regular or geometric patterns; Predominantly large-scale, open, sloping arable fields, often with no field boundaries or with mainly wire fences, low hedges or some stone dykes and little other vegetation cover; Settlements small and scattered but conspicuous due to open landscape; Groups of trees, buildings, etc. act as occasional focal points; Scattered farmsteads with modern agricultural buildings; Extensive seaward and landward views from certain parts owing to elevation and openness; and Distant or occasional views of the sea, the Firths or the estuaries from other areas. Limited, low level of night time lighting with some communication masts.	Value: **Medium** There are no landscape designations within this LCA. It is valued for its scenic views looking out across the landscape and seascape as well as culturally with Kellie Castle a focal point. Susceptibility: **Medium** Due to large scale, open and exposed character, simple pattern and character. Sensitivity: **Medium**

LCT (and Associated Area) or SA	Receptors/ Designations	Key Characteristics (as described in SNH and other relevant published LCAs with various additions and the FTOWDG SCA)	Value and Susceptibility and resulting Sensitivity to change relating to wind farm development
FFE 7 – Lowland Dens	Residents Minor roads Scattered farmsteads LLA GDL	Narrow, deep, gorge-like valleys cut into the Coastal Hills and Terraces and East Fife slopes by fast flowing burns; Steeply sloping, often semi-natural, woodlands on the banks of the Dens; Confined, intimate and sheltered environments which are generally quiet and calm; Variety of irregular patterns, colours and textures; and Tops of the Dens slope more gently to the surrounding farmland. Limited, low level of night time lighting.	Value: **High-Medium** Areas of this LCA lie within the Craigtoun LLA, Largo Law LLA and Dura Den LLA. Susceptibility: **Low** Due to limited intervisibility between narrow deep-cut valleys and open sea. Sensitivity: **Medium**
FFE 8 – Lowland Glacier Meltwater Valleys	Residents Road users A-roads Minor roads Scattered farmsteads	U-shaped, flat-bottomed channel-like valleys with distinctive features relating to glacial origins; Medium to large-scale, open landscape; Medium to large-scale geometric field patterns enclosed by low, gappy hedges or post and wire fences; Intensive arable cultivation on valley floor and lower slopes contrasting with mixed farming or grazing land on the rising slopes; Sand and gravel quarries conspicuous in places; Small, often inconspicuous, burns and rivers; Scattered farmsteads connected by network of minor roads; and Generally organised, tended and balanced landscape outwith areas affected by mineral workings. Dispersed pattern of night time lighting, with some communication masts and lighting on parts of A92.	Value: **Medium** There are no landscape designations within this LCA. It is valued by its distinctive geological features and agricultural and mineral workings. Susceptibility: **Medium** Due to medium to large scale, regular patterns and limited intervisibility with the sea. Sensitivity: **Medium**

LCT (and Associated Area) or SA	Receptors/ Designations	Key Characteristics (as described in SNH and other relevant published LCAs with various additions and the FTOWDG SCA)	Value and Susceptibility and resulting Sensitivity to change relating to wind farm development
		Lights of Dundee visible to north.	
FFE11 – Coastal Hills	Residents Road users A-roads Minor roads Scattered farmsteads LLA	Areas of undulating hills, similar to the Lowland Hills and Valleys but directly influenced by the coast; Overall medium to large scale landscape; Extensive views of the sea, the Firths or the estuaries; Predominantly large, open arable fields often with no field boundaries, or post-and-wire fencing with some stone dykes; Little vegetation cover; Isolated farms and farmsteads set among open, exposed fields; and Generally simple patterns of land cover and land use. Dispersed pattern of night time lighting with lights of St Andrews visible to the east.	Value: **Medium** There are no landscape designations within this LCA. It is valued for its topography and panoramic views. Susceptibility: **Medium** Due to medium to large scale, open character, relatively simple landform and landcover. Sensitivity: **Medium**
FFE12 – Coastal Terraces (Inland of seascape character area SA11)	Residents Road users A-roads Minor roads Scattered farmsteads	Medium to large scale; Mostly flat or gently sloping landform between Coastal Flats and Coastal Hills; Urban development interspersed with agricultural land comprising large arable fields with scattered farmsteads; Policy planting and shelterbelts around large country houses and designed landscapes or on steeper slopes above burns; Open and exposed away from urban areas; and Extensive views of the coast and beyond or to landward hills. Dispersed low level of night time lighting with communication masts beyond LCA visible.	Value: **Medium** There are no landscape designations within this LCA. It is valued as an everyday landscape with a contrast of urban and agricultural landuse. Susceptibility: **Medium** Due to medium to large scale, simple landform and landcover, and limited intervisibility with the sea from inland areas due to intervening

LCT (and Associated Area) or SA	Receptors/ Designations	Key Characteristics (as described in SNH and other relevant published LCAs with various additions and the FTOWDG SCA)	Value and Susceptibility and resulting Sensitivity to change relating to wind farm development
			vegetation. Sensitivity: **Medium**
FFE 13 – Coastal Cliffs	This area is covered by a seascape character area and is considered under the seascape character analysis as SA12.		
FFE 14 – Coastal Braes	This area is covered by a seascape character area and is considered under the seascape character analysis as SA 10.		
FFE15 – Coastal Flats (Inland of seascape character area SA11)	Residents Road users A-roads Minor roads Scattered farmsteads GDL	Flat, low-lying, large-scale exposed coastal landscapes at sea level; Large to medium scale rectilinear and predominantly arable fields; Large areas of coniferous forestry plantation; Extensive seaward views and across the Coastal Flats themselves; Landward views to other coastal landscape types; Scattered farmsteads; A variety of other land uses including industrial developments and golf courses. Limited, low level lighting apart from concentration at Leuchars at southern edge of LCA.	Value: **Medium** There are no landscape designations within this LCA. It is valued as an everyday landscape with a contrast of urban and forestry landuse as well as recreational activities. Susceptibility: **Medium** Due to simple pattern and landform, large scale, limited intervisibility with sea from inland areas due to intervening vegetation. Sensitivity: **Medium**
FTOWDG SCA			
SA 3 – Cove Bay to Milton Ness	Residents Tourists Recreational users	Long, east-facing, generally “straight” coastline with many small indentations and few significant headlands; Predominantly narrow rocky	Value: **High-Medium** This LCA lies within South East Aberdeenshire SLA.

LCT (and Associated Area) or SA	Receptors/ Designations	Key Characteristics (as described in SNH and other relevant published LCAs with various additions and the FTOWDG SCA)	Value and Susceptibility and resulting Sensitivity to change relating to wind farm development
	Road and rail users	shoreline interspersed with small coves and shingle beaches; Shoreline predominantly backed by mixture of cliffs and steep slopes except for southernmost extent between Milton Ness and Gourdon; Some larger beaches including those at Inverbervie Bay and Stonehaven; Larger settlements including towns of Portlethen, Newtonhill, Stonehaven, and Inverbervie; Smaller coastal fishing villages and harbours including Catterline, Gourdon, and Johnshaven; and Agricultural hinterland of arable fields and grazing land with occasional areas of semi-natural vegetation such as the heathland of Findon Moor. Limited night time lighting associated with coastal settlements, more concentrated around Stonehaven, and shipping movement to and from Aberdeen.	Susceptibility: **Medium** Due to linear form, simple landform, lack of focal points, openness and expansiveness of sea Sensitivity: **Medium**
SA 4 – Montrose Bay	Residents Tourists Recreational users Road and rail users	Wide, sandy beach backed by line of dunes and grassland; Heughs of St Cyrus and St Cyrus National Nature Reserve; Mostly flat agricultural hinterland; Coniferous plantations to the south of the North Esk River; North and South Esk Rivers; and, The coastal town of Montrose with its port and industrial developments. Scattered low level night time lighting in northern part of SA, increasing towards Montrose which has concentration of lighting including Scurdie Ness Lighthouse. Shipping movements to and from Montrose harbour as well as further	Value: **Medium** This LCA is not within a designated landscape area but is valued for conservation interests, recreational activities and scenic qualities relating to the coastal views. Susceptibility: **High** Due to medium scale, fairly enclosed nature with short to medium distance views across the

LCT (and Associated Area) or SA	Receptors/ Designations	Key Characteristics (as described in SNH and other relevant published LCAs with various additions and the FTOWDG SCA)	Value and Susceptibility and resulting Sensitivity to change relating to wind farm development
		offshore.	landward component of the seascape unit. Sensitivity: **High**
SA 5 – Long Craig	Residents Road and rail users	A low-lying headland with a rocky foreshore; Gently sloping agricultural hinterland extending in places up to the coastline; Sparse tree cover mainly concentrated around Usan House; Scattered farmsteads; Landmark of Scurdie Ness Lighthouse; and Dundee – Aberdeen railway line defining western extent. Limited low level night time lighting although northern part influenced by lighting and shipping movements associated with Montrose and Scurdie Ness Lighthouse.	Value: **Medium** This LCA is not within a designated landscape area. It is valued as an everyday coastal landscape with the lighthouse a particular focal point. Susceptibility: **Medium** Due to large scale, open nature, expansive views and relatively simple pattern of the seascape. Sensitivity: **Medium**
SA 6 – Lunan Bay	Residents Tourists Recreational users Road and rail users	Wide sandy beach; Well visited by recreational users all year round, particularly during the summer; Traditional salmon fishing using nets staked into the sand; Lunan Water, which empties into the sea in the middle of the bay; Dune system, particularly to the north of Lunan Water; Woodland and shelter belts around Lunan; Rocky headlands to the north and south; and Extensive cultural heritage including the remains of a 15th Century tower at Red Castle overlooking Lunan	Value: **Medium** While it is not within a landscape designation, this SA is valued for landscape, recreational, and cultural aspects. Susceptibility: **High** Due to lack of development in the coastal zone and relatively sheltered character of enclosed bay. Sensitivity: **High**

LCT (and Associated Area) or SA	Receptors/ Designations	Key Characteristics (as described in SNH and other relevant published LCAs with various additions and the FTOWDG SCA)	Value and Susceptibility and resulting Sensitivity to change relating to wind farm development
		Water and the beach. Limited night time lighting apart from settlement of Lunan and holiday enclaves. Some shipping movement apparent.	
SA 7 – Lang Craig to The Deil's Heid	Residents Tourists Recreational users Road users	Old Red Sandstone cliffs display a series of erosion features including sea stacks, blowholes, caves, wave-cut platforms and arches; Small, narrow shingle beaches located on the rock platform at Auchmithie, Carlingheugh Bay and Castlesea Bay; Gently sloping agricultural hinterland contrasting strongly with rocky coastline and cliffs; Limited areas of grassland at the top of cliffs supporting rare plant species; and Coastline important for conservation including large colonies of breeding seabirds on the cliffs, and geological interest. Much of the coast is designated as a Site of Special Scientific Interest (SSSI). Limited low level of night time lightings, associated with scattered settlement. Some shipping movement apparent as well as lights of Arbroath to the south. Bell Rock Lighthouse visible.	Value: **Medium** While it is not within a landscape designation, this SA is valued for landscape, geological, ecological and cultural factors. Susceptibility: **High** Due to the varied, small scale and distinctive elements associated with the coastal edge, the high quality and good condition of the area, and its sense of naturalness. Sensitivity: **High**
SA 8 – Arbroath to Monifieth	Residents Tourists Recreational users Road and rail users	Low-lying coastal edge with extensive rock-cut platform interspersed with sections of sandy beach; Areas of dunes, particularly at Barry Links; Well settled coast with development focusing on the towns of Arbroath, Carnoustie and Monifieth; Active fishing harbour at Arbroath;	Value: **Medium** While it is not within a landscape designation, this SA is valued for its recreational activities and scenic coastal qualities. Susceptibility: **Medium**

LCT (and Associated Area) or SA	Receptors/ Designations	Key Characteristics (as described in SNH and other relevant published LCAs with various additions and the FTOWDG SCA)	Value and Susceptibility and resulting Sensitivity to change relating to wind farm development
		Dundee to Aberdeen railway line running adjacent to coastline; Several golf links including the Championship course at Carnoustie; Conifers associated particularly with golf links, and larger areas of woodland within Barry Links; and Ministry Of Defence (MOD) training ground occupying a large area of Barry Links. Well lit coastal edge associated with settlements, with some exceptions, e.g. Barry Links, which has Buddon Ness Lighthouse at its seaward edge. Some shipping and boat movement. Bell Rock Lighthouse visible.	Due to extensive coastal settlement, large scale and open character of the Outer Firth and coastline towards Arbroath. Sensitivity: **Medium**
SA 9 – Dundee	Residents Tourists Recreational users Road and rail users GDL	Settled coastal fringe centred on the urban developments in and around the city of Dundee; Industry, bridges and other infrastructure, such as the railway and airport; Views focused on the Tay, but also inland to the Sidlaw Hills; and Well-used for recreation particularly the beaches around Monifieth and Broughty Ferry. Well lit coastal edge, particularly associated with the harbour, Tay Bridges and airport as well as street lights. Shipping and vessel movement apparent.	Value: **Medium** This SA is not within a landscape designation. It is valued for recreation and scenic views across the Tay within an urban and industrial area. Susceptibility: **Low** Due to the influence of Dundee and other settlements on the character of the seascape. Sensitivity: **Low**
SA 10 – Inner Firth of Tay	Residents Road and rail users LLA	Long and narrow form of the Inner Firth; Extensive intertidal mudflats and sandbanks; Narrow coastal strip with areas of low cliffs on the south side of the	Value: **High-Medium** Parts of this SA lie within the Tay Coast LLA. It is also valued for its conservational and

LCT (and Associated Area) or SA	Receptors/ Designations	Key Characteristics (as described in SNH and other relevant published LCAs with various additions and the FTOWDG SCA)	Value and Susceptibility and resulting Sensitivity to change relating to wind farm development
		Firth; Narrow shingle and cobble beaches; South side enclosed by relatively low-lying wooded hills, rocky in places, which rise directly from the coastal edge, including the Ochil Hills; Extensive reed beds along the north bank of the Firth; Broad swathe of low-lying agricultural land – the Carse of Gowrie – to the north of the Tay, bisected by the A90 and backed by the Sidlaw Hills; Relatively sparsely settled when compared to strongly developed urban area of Dundee; and Linear coastal settlement at Newport on Tay located between Tay Bridge and Tay Road Bridge. Limited low level lighting associated with coastal settlement. The Firth of Tay is marked with navigation lights upstream to Perth with occasional movement of vessels on the river.	geological qualities. Susceptibility**: Low** Due to its physical separation from the open sea. Sensitivity: **Low**
SA 11 – St Andrews Bay	Tourists Residents Road users Recreational users GDL LLA	Long, sandy beaches; Expansive intertidal shores around the Eden Estuary; Significant dune systems at Tentsmuir; Large areas of sandbars at Tentsmuir Point; Tentsmuir Forest, an extensive, open and mature forest of pine trees; Low-lying agricultural hinterland with scattered farmsteads and geometrically laid out fields; and Golf links and town of St Andrews. Limited low level lighting apart from settlements of St Andrews, Leuchars	Value: **High-Medium** Parts of this SA lie within the Tentsmuir Coast LLA. It is also valued for its cultural heritage, recreational activities and conservation qualities. Susceptibility: **High** Due to degree of naturalness, together with diverse and varied

LCT (and Associated Area) or SA	Receptors/ Designations	Key Characteristics (as described in SNH and other relevant published LCAs with various additions and the FTOWDG SCA)	Value and Susceptibility and resulting Sensitivity to change relating to wind farm development
		and Tayport. Buddon Ness Lighthouse as well as lights of Dundee and from the Angus coastal settlements visible to the north.	character reflected in various designations applying to the area. Sensitivity: **High**
SA 12 – St Andrews to Fife Ness	Tourists Residents Road users Recreational users GDL LLA	Diverse coastal edge comprising small sandy bays, extensive wave-cut rock platforms, low cliffs and narrow, wooded dens; Open and exposed feel to coastline; Gently undulating agricultural landscape slopes down to coastal edge; and Popularity for recreational use. Limited, low level night time lighting from scattered settlement and tourist enclaves along coast. Fife Ness Lighthouse located at the most easterly landward edge. Lights of Dundee visible from the northern part of the SA.	Value: **High-Medium** Much of this SA lies within the St Andrews to Fife Ness LLA. It is also valued for its cultural and geological interest and recreational activities. Susceptibility: **High** Due to wealth of smaller scale detail along the coast, such as sandy coves and incised inlets. Sensitivity: **High**
SA 13 – East Neuk of Fife	Tourists Residents Road users Recreational users LLA	Rocky coastline and shingle beaches, generally low-lying; Attractive fishing villages centred on busy harbours; An exposed landscape; and Distinctive red sandstone cliffs and soils. Lighting from regular pattern of settlement along the coast with lights along the southern edge of the Firth of Forth also apparent. Shipping and vessel movement apparent, as well as Isle of May Lighthouse.	Value: **High-Medium** The East Neuk LLA lies within this SA. Susceptibility: **High** Due to limited modern development within the landscape, small scale of traditional settlements and varied nature of coast with combination of low cliffs, small coves

LCT (and Associated Area) or SA	Receptors/ Designations	Key Characteristics (as described in SNH and other relevant published LCAs with various additions and the FTOWDG SCA)	Value and Susceptibility and resulting Sensitivity to change relating to wind farm development
			and intermittent sandy beaches. Sensitivity: **High**
SA 14 – Kirkcaldy and Largo Bay	Tourists Residents Road users Recreational users GDL LLA.	Medium to large scale; Views to the open sea framed by headlands; Large coastal settlements with an industrial character; Generally low-lying coast; Sandy beaches and bays, including the wide Largo Bay; and Areas of reclaimed land protected by coastal defences. Well lit coastal edge with lighting from settlements, industry and harbours, as well as influence of lights along southern edge of the Firth of Forth.	Value: **High-Medium** Parts of this SA lie within the East Neuk LLA. Susceptibility: **Medium** The open sea to the east is not generally the main focus of views. Many parts are influenced by development, particularly the large settlement of Kirkcaldy, and the industrial seafront at Methil and Leven. Sensitivity: **Medium**
SA17 - Eyebroughy to Torness Point	Tourists Residents A-roads Road users Recreational users AGLV SLA (Draft) GDL	Diversity of coastal scenery and habitats; Extensive views due to flat terrain and few woodlands; Generally low-lying coast; Alternation of rocky headlands and sandy pocket bays; Backed by relatively unfragmented agricultural land; Popular recreational coast; Transport routes form prominent linear features; Relatively densely settled by the towns of Dunbar and North Berwick; and Major localised visual impacts of	Value: **High-Medium** This SA lies within the coastal Area of Great Landscape Value (AGLV) that extends from Longniddry to Dunbar. Susceptibility: **Medium** Areas associated with scenic quality around Tantallon and North Berwick contrasting with industrial development associated with

LCT (and Associated Area) or SA	Receptors/ Designations	Key Characteristics (as described in SNH and other relevant published LCAs with various additions and the FTOWDG SCA)	Value and Susceptibility and resulting Sensitivity to change relating to wind farm development
		cement works and Torness Power Station. Limited lighting associated with settlement, e.g. North Berwick. Shipping and vessel movement on Firth of Forth apparent.	cement works, Torness Power Station and main road/ rail links. Sensitivity: **Medium**

12A.2 Landscape Designations

4 Landscape designations within the Seascape Landscape and Visual Impact Assessment (SLVIA) study area are illustrated in Figure 12.3 and Figure 12.3a, which has the Inch Cape WTGs and OSPs ZTV overlaid on the designated areas.

National Designations

5 Within the SLVIA study area, there are no areas which have been designated as having a landscape or seascape of national importance.

Regional and Local Landscape Designations

6 Within the SLVIA study area, areas which have been designated regional or locally for their landscape value, and which lie within the ZTV for the Inch Cape WTGs and OSPs are shown in Table 12A.3 below.

Table 12A.3: Regional and local areas designated for landscape qualities

Designated Area	Distance and Direction from the Inch Cape WTGs and OSPs (closest WTG)	Key Landscape Qualities (taken from designation statements where available)
Aberdeenshire		
Aberdeenshire Council published new SLAs as supplementary guidance to the *2017 Aberdeenshire Local Development Plan*. These documents were adopted in April 2017. There are three SLAs which lie within the study area, of which only two have any potential visibility with the development.		
South East Aberdeenshire Coast SLA	22.70km N	This SLA covers the coast from the Aberdeen City Council boundary north of Portlethen, to the mouth of the North Esk in the south. Rugged and intricate scenery of weathered coastal cliffs and raised beach landforms, including sites of geological interest. The broad sweep of sand at St Cyrus, backed by dunes that form a National Nature Reserve. Iconic Dunnottar Castle, on a rocky headland south of Stonehaven is one of the most photographed and recognised castles internationally. The coast provides the immediate and wider setting for a number of larger settlements, including Portlethen, Newtonhill, and Stonehaven, framed by rising cliffs on either side. The Stonehaven War Memorial, which overlooks the town, is a landmark seen from the A90 and the coastal path. Intact traditional fishing villages with diminutive harbours including Gourdon and Catterline.

Designated Area	Distance and Direction from the Inch Cape WTGs and OSPs (closest WTG)	Key Landscape Qualities (taken from designation statements where available)
		Coastal routes include the A92, A90, east coast railway, footpaths and National Cycle Network (Route 1), all offering expansive views out to sea. Panoramic views out to sea from headlands and beaches and important views along the coast, including the view over the sands at St Cyrus, and views from Dunnottar.
The Braes of Mearns SLA	37.14km NNW	This SLA includes the south-facing slopes of the Mounth and the northern part of the Howe of the Mearns, where these two distinct landscapes come together. Strong contrast between the distinctive flat Howe and the dramatic ridge of the Mounth to the north. Clear expression of the Highland Boundary Fault, where Highland and Lowland Scotland meet. Intact historic farmed landscape of the Howe of the Mearns, with a strong structure of beech woodland and avenues along the foot of the slopes. Highly visible ridge viewed from across the landscape to the south east, including from the A90, which defines the Howe of the Mearns. Cairn o' Mount scenic viewpoint, a popular stopping place on the former old military road with views across the Howe and remains of Bronze Age burial cairns which give the spot its name there are also views inland to the Cairngorms and northwards. Strath Finella, an intimate wooded glen leading into the hills. Wooded estate landscapes including Fasque, Fettercairn and Drumtochty whose distinctive policies and tree belts give a richness and cultural diversity, which reinforces the contrast of landscape character with the simplicity of land cover of the adjacent uplands. They also have historical connections with national figures such as Gladstone. Well known literary associations of the Howe of the Mearns including the work of Lewis Grassic Gibbon.
Angus		
There are no local landscape designations such as AGLVs within Angus. The protection of landscape character outside the CNP is based on local plan policy which is informed by the Tayside LCA (Angus Council, 2009).		

Designated Area	Distance and Direction from the Inch Cape WTGs and OSPs (closest WTG)	Key Landscape Qualities (taken from designation statements where available)
Fife		
In 2007 Fife Council commissioned a review of local landscape designations to assist in the preparation of new local plans for Fife. The commissioned report provided recommendations for designating SLAs. These have been adopted in the *East Fife Local Plan* (2012) and are known as Local Landscape Areas (LLAs). The LLAs replace the Areas of Great Landscape Value (AGLVs) designated in previous Local Plans.		
Craigtoun LLA	36.96 km west south-west.	Includes the Kinness, Claremont, Lumbo and Cairns Dens which extend from the south-west of St Andrews; Wooded dens with watercourses cutting through a narrow incised valley are an infrequent feature within the Fife landscape; Provide a link from the surrounding countryside towards St Andrews and contributes to the setting and character of the town; and Relationship and linkages between Claremont Den and the policy landscape of Craigtoun Park is a distinct feature.
Dura Den LLA	42.15 km west south-west.	Incorporates the incised valley of Dura Den, the northern slopes of Kemback Hill and the policy influenced valley of the River Eden around Dairsie; Relatively rare landscape feature within Fife; Intimate character of the wooded valley with the burn and road winding along its course; and Sense of naturalness, although the den is also settled and modified by quarrying.
East Neuk LLA	32.01 km west south-west.	Extends along the coastal edge from Crail, to Earlsferry and Kingcraig Hill, and incorporating the inland areas of Balcaskie and Kilconquhar; Relationship between settlements and coast and the surrounding landscape; Extensive seaward views combined with comparatively open character of farmland landscape; Contrasts with intimate character of coastal villages, and more enclosed setting of Kilconquhar Loch; Policies surrounding Balcaskie provide wooded feature within a more open landscape; Key access route of coastal path important for recreation; Cultural heritage of coastal villages and areas of policy

Designated Area	Distance and Direction from the Inch Cape WTGs and OSPs (closest WTG)	Key Landscape Qualities (taken from designation statements where available)
		influenced landscape; and Coastal edge provides some natural character contrasting with intensively managed farmland inland.
Isle of May LLA	34.01 km south-west.	Comprises the three Forth islands of Inchcolm, Inchkeith and the Isle of May, although only the latter is within the SLVIA study area; Isle of May is most remote and largest of the islands; Distinctive long, low profile with steep cliffs on the eastern shore and a central lighthouse; Diverse landscape with high scenic value; Strong sense of naturalness; and Extensive views from the island, although views to the island from shore are strongly influenced by the prevailing weather conditions.
Largo Law LLA	42.55 km west south-west.	Encompasses the rising slopes and low summits which surround Largo Law and to the north it extends along the summit of Flagstaff Hill; Largo Law forms a pronounced and distinctive isolated volcanic hill contributing strongly to the sense of place within this part of Fife; and Surrounding land falls gently with a series of lowland dens and policy woodlands contributing to the landscape pattern.
St Andrews to Fife Ness LLA	28.21km west south-west.	Coastal edge extending from St Andrews around Fife Ness to Crail incorporating Boarhills, Kingsbarns and Cambo; Extensive area of largely undeveloped coast; Relationship between open landscape extending down to coastal edge with expansive seaward views contributes to the particular character and quality of the landscape; Some more intimate and enclosed areas associated with settlements and wooded dens at Boarhills and Cambo; Intricate and rugged coastal edge visually isolated from inland landscape; Coastal path and golf course development make this area important for recreation and enjoyment; and Cultural heritage associated with settlements of Kingsbarns and Boarhills and woodland policy influences at Cambo.

Designated Area	Distance and Direction from the Inch Cape WTGs and OSPs (closest WTG)	Key Landscape Qualities (taken from designation statements where available)
St Andrews Links LLA	35.26 km west south-west.	Extends from the northern edge of St Andrews and the A91 across the golf courses and dune system to the Eden Estuary; Low-lying coastal landscape defined by close association with Eden Estuary and the coastal sands; Coastal edge retains sense of naturalness with dune and extensive seaward views and has higher scenic value than more modified golf course development; Seaward views and visual association with St Andrews are important; and Importance of recreation and enjoyment together with cultural associations of the landscape.
Tarvit and Ceres LLA	43.30 km west south-west.	Comprises the valley of the Ceres and Craigrothie Burns and the softly rolling hills which contain it; Hill slopes cut by narrow valleys and incised wooded dens; Arable farmland covers much of the landscape with more mixed farming on steeper ground; Woodland cover limited to dens and policies of the Hill of Tarvit and Teasses Dens; Tightly clustered, historic villages of Ceres and Craigrothies; and Overall a scenically diverse and balanced landscape.
Tay Coast LLA	37.32 km west.	A long band of low hills and coastal landscapes bordering the southern shores of the Firth of Tay and extending from Newport on Tay to Newburgh, although the western part lies outside the SLVIA study area; 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; Firth of Tay provides setting to these landscapes; and Largely undeveloped with only small clustered settlements and minor roads traversing the hills and coast, lending the area a strong sense of naturalness and feeling of seclusion.
Tentsmuir Coast LLA	32.45 km west.	Comprises the coastal dunes and long sandy beach of Tentsmuir Sands extending from the River Eden estuary to Tayport; Long, broad east-facing beach backed by sand dunes

Designated Area	Distance and Direction from the Inch Cape WTGs and OSPs (closest WTG)	Key Landscape Qualities (taken from designation statements where available)
		with native scrub and broadleaved trees fringing the edge of Tentsmuir Forest; Shifting tidal sands around Tentsmuir Point; High degree of naturalness and sense of remoteness; and Forest rides used by cyclists and walkers, although main recreational attraction is the beach.
East Lothian		
East Lothian Council (ELC) approved its proposed *Local Development Plan* in September 2016 in which the former local landscape designations of AGLVs are to be replaced by SLAs with revised boundaries. ELC is reviewing the *Report of Examination* and the proposed *Local Development Plan* is likely to be adopted by the Council in mid to late 2018. Until then the *East Lothian Local Plan 2008* will remain the adopted local plan for the area and accordingly the AGLVs are extant local landscape designations.		
North Berwick to Longniddry Port Seton Coast Line AGLV	48.7 km south south-west, extending beyond boundary of SLVIA study area.	East Lothian's AGLV are defined only with reference to boundaries shown on a plan. The key characteristics of the AGLVs are not described in planning policy documentation.

Gardens and Designed Landscapes

7 As shown in Figure 12.3, Historic Environment Scotland's (HES) *Inventory of Gardens and Designed Landscapes* (GDL) identifies 30 properties in the SLVIA study area, of which Figure 12.3a indicates that 17 are predicted to have visibility of the Inch Cape WTGs and OSPs, as listed below in Table 12A.4.

Table 12A.4: Gardens and Designed Landscapes

Designated Area	Distance and Direction from the Inch Cape WTGs and OSPs (closest WTG)	Description (summarised from Historic Scotland's GDL inventory)
Fasque House (Aberdeenshire)	Closest area of theoretical visibility at 37.41 km north-west.	Fasque is situated to the north of the village of Fettercairn off the B974, and is set on the lower part of Brunt Hill. There are views from the house of Strathmore and The Mearns. The walls, policy woodland and parkland make a large contribution to the surrounding scenery, and are highly visible from the nearby roads.

Designated Area	Distance and Direction from the Inch Cape WTGs and OSPs (closest WTG)	Description (summarised from Historic Scotland's GDL inventory)
The Burn (Aberdeenshire)	Closest area of theoretical visibility at 37.98 km north-west.	The Burn is situated at the foot of Glenesk, approximately two kilometres north of the village of Edzell and 10 km north of the town of Brechin. It has some scenic value due largely to the contribution of the surrounding woodlands and the gate lodges.
House of Dun (Angus)	Closest area of theoretical visibility at 24.86 km north-west.	The House of Dun lies about three kilometres north-west of Montrose and six kilometres east of Brechin. The landform slopes gently to the south and the house faces south with extensive views across the Montrose Basin. The house, south park and avenues along the drives are very visible from the A935 Brechin to Montrose road which runs along the south of the site.
Dunninald (Angus)	Closest area of theoretical visibility at 18.90 km north-west.	The estate of Dunninald is situated on a hilltop on the Angus coast south of the Montrose Basin and north of Lunan Bay. It lies to the east of the A92. There is a view from the front of the house over the ha-ha to the parkland and woodland. Otherwise the site is self-contained. The policy woodlands provide some scenic value when viewed from the surrounding roads.
Guthrie Castle (Angus)	Closest area of theoretical visibility at 29.29 km west north-west.	Guthrie Castle is situated about 11 km east of Forfar along the A932. It lies in the valley of the Lunan Water which extends some 13 km to the east coast. Fine panoramic views can be obtained from the Castle battlements. Views of the parks and woodlands are obtained from the minor road to the north of the policies. The scenic significance of the landscape has been limited by the railway embankment to the south, but the views of the West Gate and of the park from the north give it some scenic value.
House of Pitmuies (Angus)	Closest area of theoretical visibility at 28.86 km west north-west.	The House of Pitmuies is situated on the north-eastern edge of the Sidlaw Hills approximately 2 km to the west of the village of Friockheim, and 11 km east of Forfar. The A932 forms the northern boundary of the site, beyond which lie the policies of Guthrie Castle. The woodland canopy adds some landscape value in the local scenery.

Designated Area	Distance and Direction from the Inch Cape WTGs and OSPs (closest WTG)	Description (summarised from Historic Scotland's GDL inventory)
The Guynd (Angus)	Closest area of theoretical visibility at 25.79 km west.	The Guynd is situated approximately eight kilometres to the west of the town of Arbroath, and 15 km north-east of Dundee. The low-lying nature of the landscape restricts views from the site but sight of the North Sea can be gained from the top of the house. The surrounding woodlands and boundary wall along the B9127 serve to restrict views to the designed landscape within, although give the site some scenic value locally.
Camperdown House (Angus and Dundee City)	Closest area of theoretical visibility at 45.57 km west.	Camperdown House is situated off the A923 on the outskirts of the City of Dundee, less than 0.5 km from the ring road and five kilometres from the centre. From the house there are extensive views south-west across the Firth of Tay to Fife and west towards the Carse of Gowrie. Within the designed landscape both views are framed by trees. The woodland canopy around the site adds some scenic value to the surrounding area.
Baxter Park (Dundee City)	Closest area of theoretical visibility at 41.04 km west.	Baxter Park is located east of the town centre of Dundee within an entirely urban setting. The park provides some scenic interest when viewed from the road. The views from Gallow Hill of the Firth of Tay are of particular note.
Balgay Park (Dundee City)	Closest area of theoretical visibility at 44.67 km west.	Balgay Park and Necropolis are situated in the south-west of Dundee within easy reach of the town centre, and are confined by Balgay Hill which is 141 m AOD. Balgay Park has great scenic value because of the views from the park over Dundee and the Firth of Tay, and the views to the park from the city.
Earlshall (Fife)	Closest area of theoretical visibility at 37.69 km west south-west.	Earlshall is situated about 1.5 km off the A919 on the outskirts of Leuchars village. It lies on the flat coastal plain about three kilometres west of the Tentsmuir Sands. There are no views out from Earlshall itself but from the edge of the woodland there is a long view south, across the airfield, to the higher ground just west of St Andrews. Within the flat coastal plain, the woodland canopy provides contrast in the surrounding scenery.

Designated Area	Distance and Direction from the Inch Cape WTGs and OSPs (closest WTG)	Description (summarised from Historic Scotland's GDL inventory)
St Andrews Links (Fife)	Closest area of theoretical visibility at 35.26 km west south-west.	The Links are situated on a peninsula lying north-west of St Andrews extending from the north-west of the town for about 3.2 km to the Eden estuary. They are bound to the east by St Andrews Bay and by the A91 to the south and south-west. There are uninterrupted views from all the courses eastwards to St Andrews Bay and southwards to the town. There are also open prospects northwards to Tentsmuir Forest and the Eden estuary.
Craigtoun (Fife)	Closest area of theoretical visibility at 38.19 km west south-west.	Craigtoun Park is situated 3.6 km south-west of St Andrews. Despite the influence of recent development, the site retains a high scenic value, both in terms of views out of the landscape as well as its impact on the landscape character of the surrounding St Andrews hinterland.
Hill of Tarvit (Wemyss Hall) (Fife)	Closest area of theoretical visibility at 48.67 km west south-west.	Hill of Tarvit lies 2.5 km south of the town of Cupar. The Hill rises steeply behind the house to 211 m AOD north of the gardens. The policy walls and woodlands screen the designed landscape from view from the surrounding area but are themselves of scenic interest.
Charleton House (Fife)	Closest area of theoretical visibility at 45.67 km south-west.	Charleton House is located in the East Neuk, 4.5 km east of Lower Largo, to the north of the A917 at its junction with the B942. The policy woodlands of the designed landscape are visible from the B942 and make a contribution to the character and quality of the wider landscape.
Cambo (Fife)	Closest area of theoretical visibility at 29.47 km south-west.	Cambo, situated in the East Neuk of Fife, lies approximately three kilometres north of Crail. The designed landscape extends along the Forth shore, on a coastal terrace cut by a lowland den formed by the Cambo Burn. The designed landscape is visible from the surrounding roads, creating a distinctive local landscape character. Views from the house extend south-westwards over open parkland; other views are now obscured by mature tree cover. A series of coastal views have been created across Kingsbarns Golf Course.

Designated Area	Distance and Direction from the Inch Cape WTGs and OSPs (closest WTG)	Description (summarised from Historic Scotland's GDL inventory)
Tyninghame (East Lothian)	Closest area of theoretical visibility at 50.36 km south south-west.	Tyninghame is situated off the A198 some three kilometres east of East Linton, and about 6.5 km north-west of Dunbar. It lies about 0.8 km west from the seashore and Ravensheugh Sands. There are long views south to the Lammermuir Hills and panoramic views north-east across the estuary to the rocky promontory of Dunbar. The designed landscape contributes greatly to the local scenery.

Settlements

8 There are numerous settlements within the SLVIA study area varying between small hamlets and groups of dwellings in rural areas to large population centres such as Dundee. However, settlements included in the analysis are, where this data is available, taken from recognised local authority lists, typically those associated with local plans.

9 Figures 12.4 and 12.4a-d indicate that the following settlements listed below in Table 12A.5 will have predicted visibility of the WTGs and OSPs (including approximate distance and direction from the closest WTG). Settlement boundaries are defined in Ordnance Survey (OS) data and distances are measured in a straight line from the nominal centre of settlements to the nearest WTG.

Table 12A.5: List of settlements included in the SLVIA

Local Authority	Settlement	Distance and direction from closest Inch Cape WTG
Aberdeenshire	Stonehaven	4268 km north
	Inverbervie	29.50 km north north-west
	Gourdon	27.54 km north north-west
	Johnshaven	25.23 km north north-west
	St Cyrus	24.28 km north north-west
Angus	Montrose	20.42 km north-west
	Lunan	19.32 km west north-west
	Auchmithie	17.14 km west north-west
	Arbroath	19.48 km west north-west

Local Authority	Settlement	Distance and direction from closest Inch Cape WTG
	Carnoustie	26.35 km west
	Monifieth	33.27 km west
Dundee City	Dundee	46.27 km west
	Broughty Ferry	36.29 km west
Fife	Coastal	
	Tayport	37.42 km west
	Guardbridge	39.28 km west south-west
	St Andrews	34.85 km west south-west
	Crail	31.46 km south-west
	Anstruther Easter	37.08 km south-west
	Pittenweem	40.06 km south-west
	Inland	
	Balmullo	41.85 km west south-west
	Boarhills	31.51 km west south-west
	Kingsbarns	30.21 km west south-west
	Leuchars	38.69 km west south-west
	Strathkinness	39.40 km west south-west
	Dairsie	43.71 km west south-west
East Lothian	Dunbar	51.72 km south south-west
	North Berwick	51.48 km south-west

Transportation Links

10 Major transportation links within the SLVIA study area which are included in the assessment are shown in Figure 12.7.

Road

11 Within the SLVIA study area the key road transport routes (A-roads) with theoretical visibility of the Inch Cape WTGs and OSPs are the:

- A90: The main route through the north-eastern part of the SLVIA study area and the main road from Edinburgh to Fraserburgh. The closest point of theoretical visibility is located approximately 30.97 km north-west of the nearest Inch Cape WTG. Due to its largely inland route and limited theoretical visibility of the Inch Cape WTGs and OSPs, this road is not considered in the assessment;
- A92: Formerly Scotland's main east coast route before the A90 was constructed, it now links Dunfermline with Stonehaven and follows the north-east coast for much of its length. The closest point of theoretical visibility is located approximately 19.26 km west north-west of the nearest Inch Cape WTG. The A92 is also designated as one of Scotland's National Tourist Routes – the Angus Coastal Route - running between Dundee and Aberdeen;
- A937: Linking Laurencekirk to Montrose. The closest point of theoretical visibility is located approximately 21.80 km north-west of the nearest Inch Cape WTG;
- A935: A short road linking Brechin to Montrose. The closest point of theoretical visibility is located approximately 21.30 km north-west of the nearest Inch Cape WTG;
- A932: Another short road by-passing Forfar town centre. The closest point of theoretical visibility is located approximately 27.14 km west north-west of the nearest Inch Cape WTG. Due to its largely inland route and limited theoretical visibility of the WTGs and OSPs, this road is not considered in the assessment;
- A933: Linking Brechin to Arbroath. The closest point of theoretical visibility is located approximately 19.87 km west north-west of the nearest Inch Cape WTG;
- A930: A short stretch of A-road between Dundee and Muirdrum. The closest point of theoretical visibility is located approximately 26.04 km west of the nearest Inch Cape WTG. Field reconnaissance suggests that actual visibility of the Inch Cape WTGs and OSPs will be limited therefore it is not considered in the assessment;
- A914: Linking Muirport to Newport on Tay and by-passing Cupar. The closest point of theoretical visibility is located approximately 39.63 km west south-west of the nearest Inch Cape WTG;
- A919: Very short road between St Michaels and Guardbridge. The closest point of theoretical visibility is located approximately 38.86 km west south-west of the nearest Inch Cape WTG;
- A91: Linking St Andrews to Stirling. The closest point of theoretical visibility is located approximately 35.61 km west south-west of the nearest Inch Cape WTG;
- A915: Linking St Andrews to Kirkcaldy. The closest point of theoretical visibility is located approximately 35.61 km west south-west of the nearest Inch Cape WTG;
- A917: Linking Largo to St Andrews. The closest point of theoretical visibility is located approximately 30.38 km south-west of the nearest Inch Cape WTG. The A917 is also designated as one of Scotland's National Tourist Routes – the Fife Coastal Route – running between Dunfermline and St Andrews; and

- A198: A short loop off the A1 from Tyninghame to Tranent via North Berwick. The closest point of theoretical visibility is located approximately 49.86 km south-west of the nearest Inch Cape WTG. Due to its distance from the Development, this road is not considered in the assessment.

Rail

12 The Edinburgh to Aberdeen Line passes through the SLVIA study area from Cupar in Fife to Porthlethen in Aberdeenshire, with predicted visibility for several stretches along the route. At its closest, the route is located approximately 18.13 km north-west of the nearest Inch Cape WTG.

12A.3 Recreation

13 There are a number of recreational routes within the SLVIA study area with potential views of the Inch Cape WTGs and OSPs including:

- The Fife Coastal Path (East Fife). Located approximately 28.28 km south-west of the nearest Inch Cape WTG at its closest point; and
- The John Muir Way (East Lothian). Located approximately 50.0 km south south-west of the nearest Inch Cape WTG at its closest point. Due to distance from the Development Area, this path is not considered in the assessment;

14 There is one main Sustrans cycle route passing through the SLVIA study area with potential views of the Inch Cape WTGs and OSPs:

- National Cycle Network (NCN) Route 1, which extends within the SLVIA study area between the south side of the Inner Firth of Tay and Aberdeen. Located approximately 17.16 km west north-west of the nearest Inch Cape WTG at its closest point.

15 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. The following coastal destinations are ordered approximately from the north to the south of the SLVIA study area, with approximate distance to the closest Inch Cape WTG:

- Stonehaven Golf Club (43.41 km);
- Dunnottar Castle (39.99 km);
- Fowlsheugh Nature Reserve (RSPB) (36.02 km);
- Inverbervie Campsite and Caravan Park (29.30 km);
- Wairds Park Campsite and Caravan Park (24.75 km);
- Miltonhaven Caravan Park (23.89 km);
- East Bowstrips Caravan Park (25.25 km);
- St Cyrus Holiday Park (24.71 km);

- St Cyrus National Nature Reserve (22.84 km);
- Montrose Golf Courses (19.92 km);
- Seafront Splash, Montrose (19.93 km);
- South Links Holiday Park (19.75 km);
- Seaton Cliffs Nature Reserve (Scottish Wildlife Trust) (17.22 km);
- Elliot Caravan Park (21.26 km);
- Arbroath Artisan Golf Club (21.52 km);
- East Haven Beach and Picnic Area (23.66 km);
- Carnoustie Golf Courses (26.61 km);
- Panmure Golf Course (29.06 km);
- Monifieth Links (32.18 km);
- Riverview Caravan Park (32.60 km);
- Tayview Caravan and Camping Park (33.06 km);
- Broughty Castle (36.37 km);
- Tayport Links Caravan Park (36.44 km);
- Scotscraig Golf Club (36.64 km);
- Tentsmuir Point National Nature Reserve (26.31 km);
- Eden Estuary Nature Reserve (33.53 km)
- St Andrews Golf Links (35.60 km);
- St Andrews Holiday Park (34.33 km);
- St Andrews Bay Golf Courses, Hotel and Conference Centre (33.05 km);
- Kingsbarns Golf Links (29.55 km);
- Balcomie Golf Links (28.51 km);
- Craighead Golf Links (28.36 km);
- The Kilminning Coast Nature Reserve (29.28 km);
- Balcomie Links Caravan Park (31.02 km);
- Sauchope Links Caravan Park (29.85 km);
- Ashburn House Caravan Site (31.48 km);
- Kilrenny Mill Caravan Park (36.07 km);
- Anstruther Golf Course (38.30 km);
- Glen Golf Course (50.10 km);
- Tantallon Castle (49.53 km); and

- Dunbar Golf Club (51.02 km).

16 There are also several country parks located within inland parts of the SLVIA study area having theoretical visibility of the Inch Cape WTGs and OSPs, including Crombie Country Park (30.28 km west), Monikie Country Park (31.93 km west), Clatto Country Park (45.75 km west), Camperdown Country Park (45.44 km west) and Craigtoun Country Park (38.62 km west south-west). The latter two lie within or share part of their site boundary with their namesake HES inventory listed GDL.

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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.
Future Cumulative	Application and scoping stage wind farms within the study area included in the cumulative assessment.
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 *Guidelines for Landscape and Visual Impact Assessment* (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 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	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 Feature	A prominent eye-catching element or landmark (e.g. church spire, wooded hilltop).
Land Use	The primary use of land, including both rural and urban activities.
Methodology	The specific approach and techniques used for a given study.
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.

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 *An Approach to Seascape Character Assessment*, 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 *An Approach to Seascape Character Assessment*, Natural England, 2012).
Visual Amenity	Particular composition of landscape elements that contribute to a view, or views. The value of a particular area or view in terms of what is seen (as defined in the *Guidelines for Landscape and Visual Impact Assessment* (Landscape Institute and Institute of Environmental Management and Assessment, December 2013).
Visibility Analysis	The process of identifying theoretical (based on digital modelling) and/or actual predicted areas from where any given development may be seen.
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	Areas of Great Landscape Value
AOD	Above Ordnance Datum
GDL	Garden and Designed Landscape
HES	Historic Environment Scotland
LCA	Landscape Character Assessment
LCT	Landscape Character Type
LLA	Local Landscape Area
NCN	National Cycle Network
NNG	Neart na Gaoithe Offshore Wind Farm
OSP	Offshore Substation Platform
SA	Regional Seascape Character Area
SLVIA	Seascape, Landscape and Visual Impact Assessment
SNH	Scottish Natural Heritage
WTG	Wind Turbine Generator
ZTV	Zone of Theoretical Visibility

12B Zone of Theoretical Visibility Analysis

12B.1 Visibility Analysis

1 This Appendix provides an analysis of the extents of theoretical visibility of the Inch Cape Wind Turbine Generators (WTGs) and Offshore Substation Platforms (OSPs) as well as the operational and consented wind farms included in the Seascape Landscape and Visual Impact Assessment (SLVIA) which form part of the baseline and, where relevant, the Future Cumulative wind farms (see *Chapter 12: Seascape, Landscape and Visual Impact,* and Table 12.B1). These wind farms are identified on Figure 12.9. The visibility analysis is based on review of Zones of Theoretical Visibility (ZTV) plans provided on Figure 12.10 to Figure 12.22d which are produced on bare ground in the digital terrain model of the 50 km study area. Therefore the analysis does not take account of surface features such as vegetation or buildings. The predicted areas of theoretical visibility have been analysed in relation to the key seascape, landscape and visual receptors (see *Chapter 12, Section 12.10.1*). As described in *Chapter 12*, *Section 12.5.2*, the ZTVs are based on a worst case scenario layout for Inch Cape which is indicative. The ZTVs for the offshore wind farms at Neart Na Gaoithe (NNG) and Seagreen are based on the consented developments. The scope of this worst case scenario was agreed with Scottish Natural Heritage (SNH) in August 2017.

12B.1.1 ZTV Presentation

2 For the purposes of the assessment, certain wind farms included in the assessment have been grouped together in order to keep the presentation and analysis of visibility patterns to a manageable level. Where possible and practical, wind farms have been grouped based on status and geographical proximity. An initial list of cumulative wind farms within a 65 km search area was circulated to consultees and stakeholders (including Marine Scotland Licencing and Operations Team, SNH, and all Councils within the study area) in follow up to issue of the Scoping Report in April 2017.

3 Following receipt of comments, and consultee meetings a final list of the operational and consented wind farms in the baseline and Future Cumulative wind farms to be included in the assessment was completed. The locations of wind farms initially considered are shown on Figure 12.8 and those included in the cumulative assessment are shown in Figure 12.9. Where sites have been grouped together for ease of analysis this is also indicated in Figure 12.9. The agreed list of wind farms included for analysis is shown in Table 12B.1 below. This duplicates Table 12.19 in *Chapter 12*, but is included again here for ease of reference. Cumulative ZTV plans are included in *Appendix 12F: Seascape and Landscape Visualisations*, Figures 12.10 to 12.22d.

4 All the wind farms considered in the assessment are either operational, in-construction or consented except for the in-scoping Forthwind Offshore Wind Farm and the in-planning Ferneylea 2 Wind Farm. Both these exceptions have limited ZTVs within the study area so they are mentioned where relevant in the analysis below but a separate assessment of the Future Cumulative visibility for each receptor has not been considered necessary.

5 Analysis with onshore wind farms has only been considered within a 40 km radius of their location. This is due to their WTG heights being below 150 m and taking into account SNH visualisation guidance (SNH, 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 projects. However, as the height of offshore wind farm turbines is greater than 150 m in height, ZTVs to the full extents of the 50km radius Inch Cape Wind Farm study area have been produced, which was agreed during the scoping process.

Table 12B.1: Agreed list of cumulative wind farm developments included for analysis

ZTV Group	Cumulative 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	39.8 km SSE
2	Brownieleys	Operational	3	100m	30.6 km SSE
	Paul Matthew Hill	Consented (July 2016)	2	99.5m	27.6 km SSE
	Tullo Farm	Operational	7	100m	30.3 km SSE
	Twinsheils	Operational	10	100m	30.5 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	41.9 km E

ZTV Group	Cumulative Site	Status	Number of WTGs	Blade Tip Height (m)	Approx. Distance and Direction to nearest Inch Cape WTG
	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	56.8 km NE
	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

ZTV Group	Cumulative Site	Status	Number of WTGs	Blade Tip Height (m)	Approx. Distance and Direction to nearest Inch Cape WTG
WF3	Kenly	Consented (2013)	6	100m	32.9 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
S1	Dundee – Oil Rig Maintenance Structures	Operational	2-4 Lattice structures	127m	39.3 km ENE
WF = Onshore Wind Farm; OWF = Offshore Wind Farm; and S = Structure (non-wind)					

6 An overview of the existing and proposed wind farm developments within the 50 km study area is discussed below. This considers the pattern of wind farm development in each local planning authority area and explains the reasoning behind the selection of sites that have been included in the assessment. The ZTVs (Figures 12.10 to 12.22d) have been used to inform the selection and should be read in conjunction with the information below.

7 Aberdeenshire: The south east extents of Aberdeenshire lie within the northern part of the study area. There are a number of wind farm developments that lie between Stonehaven and Montrose, between the A92 along the coast and the A90. These are all considered in the assessment as they have intervisibility with Inch Cape Wind Farm, particularly in areas along the coast and from the assessment viewpoints. There are a number of small wind farms and single turbines that lie on the north-west side of the A90 including Jack's Bank, Droop Hill and Herscha Hill. These have not been included in the assessment on account of their ZTV being very limited and very little intervisibility with the Inch Cape Wind Farm. There are some larger wind farms within the higher land of the Howe of Mearns including two proposals at Glendye and Fetteresso. Despite their size, the surrounding landform and distance from Inch Cape Wind Farm (c.50 km) limits intervisibility with Inch Cape Wind Farm

and thus limits potential for any significant cumulative effects. These have therefore not been considered in the assessment.

8 Angus: There is a scattering of wind farm development across Angus, mostly single turbines and/or small turbine sized wind farms. There are no wind farm sites near to the coastline. The assessment includes a number of single turbines that lie within the low moorland hills and adjacent valley lowlands to the east of the A90 road. Wind farms and single turbines at the edge of the foothills in the west of the study area within Angus have very limited intervisibility with Inch Cape Wind Farm, and have been excluded from the assessment. The consented Frawney and Govals wind farms which lie close to the A90 in the south of Angus illustrate some intervisibility with Inch Cape and would be seen from nearby viewpoints. As such these have been included in the assessment.

9 Dundee: The Michelin Tyre Company turbines are the only turbines within Dundee and will be included in the assessment. There are also tall lattice structures associated with oil rig maintenance at Dundee Port and these are included in the assessment also.

10 Fife: There are a number of single and/or small sized wind turbines across Fife and larger wind farms and single turbines on its southern coastline. The majority of the single turbines within Fife have little intervisibility with Inch Cape Wind Farm except the sites closest to the east coast, including Bonerbo, Kenly and Airdrie Farm. The large turbines at Methill, Bayview, Levenmouth and Earlseat, on the south coast of Fife are included in the assessment, particularly in regard to sequential cumulative views.

11 East Lothian and Scottish Borders: Both these counties lie at the edge of the study area, largely beyond 50 km from Inch Cape Wind Farm. The assessment considers the largest wind farms that lie across the border of East Lothian and the Scottish Borders in terms of views from key viewpoints and potential sequential cumulative effects.

12 Offshore wind farms: In addition to the NNG and Seagreen offshore wind farms which lie in relatively close proximity to Inch Cape Wind Farm, the assessment considers the Kincardine Offshore Floating Wind Farm and the Forth Wind Offshore turbines. The European Offshore Wind Deployment Centre (EOWDC) off Aberdeen lies beyond 65 km from the Inch Cape Wind Farm and is not being included in the assessment on account that distance and orientation of coastline would limit the potential for significant cumulative effects.

13 The following sections describe patterns of visibility of the wind farms selected for the assessment together with the Inch Cape WTGs and OSPs.

Group 1: Hillhead of Auquhirie and Clochnahill Wind Farms

14 Group 1 consists of two separate wind farms which lie in close proximity to each other: Clochnahill and Hillhead of Auquhirie. Details of these developments are given in Table 12B.1. Group 1 WTGs are located in Aberdeenshire, in the north of the SLVIA study area at least 39 km distant from the nearest Inch Cape WTG, on hilly ground to the north of the Howe of the Mearns and above the A90. Theoretical cumulative visibility of these wind farms is shown on Figures 12.10a-b.

15 Due to the higher ground to the north and west of the Group 1 WTGs their theoretical visibility is largely limited to the lower lying agricultural land between the coast and the Moorland Plateaux. There are also patches of theoretical visibility along the coast, particularly from Stonehaven south to Inverbervie, and from some isolated summits within the higher ground to the west and north.

16 Cumulative theoretical visibility with the Inch Cape Wind Farm is limited, occurring mainly in small patches across the low-lying hills and coastline adjacent to the A92 between Stonehaven and Inverbervie, and also the south east facing slopes of the Howe of Mearns. The largest extent of cumulative theoretical visibility is between Edzell and Laurencekirk and south of Fettercairn, approximately 20 km south west of the Group 1 turbines, and 40 km north-west of the Inch Cape Wind Farm.

17 Wireline visualisations of the cumulative view from Viewpoint 1 (Garron Point, see Figure 12.35) show that visibility of WTGs within the Group 1 sites may be partially screened by woodland blocks on the skyline, and they will lie recessively within the view. The local topography and extensive areas of woodland in the locality of the Group 1 sites limits combined visibility with Inch Cape WTG as shown by no visibility of Group 1 sites from the nearby Viewpoint 2 (A92 north of Inverbervie – see Figure 12.36) and Viewpoint 4 (Cairn O'Mount – see Figure 12.38). Even from the wider upland areas views of the Group 1 sites may be screened by the extensive areas of woodland in this locality, for example Fetteresso and Drumtochty Forests.

Group 2: Brownieleys; Paul Matthew Hill; Tullo Farm; and Twinsheils

18 Group 2 comprises four operational wind farms grouped together around the Hill of Garvock, above Laurencekirk in Aberdeenshire, which at the closest distance are 27.5 km north of the nearest Inch Cape WTG. These wind farms are also located close to a small single operational WTG at Mains of Bridgeton. Their details are given in Table 12B.1. Brownieleys, Tullo Farm and Twinsheils are perceived as a single wind farm due to their close geographical proximity and identical WTG height. Paul Matthew Hill lies slightly apart from these sites to the south east. Theoretical cumulative visibility with the Inch Cape WTGs and OSPs is indicated in Figure 12.11a-b and shows that visibility within 40 km from the Group 2 sites and within the Inch Cape study area is quite extensive with continuous areas of theoretical cumulative visibility between the Hill of Garvock and the A92, and between the A90 and Fettercairn continuing into the hills above the Howe of the Mearns. There are more scattered areas of cumulative visibility across the lower-lying coastal hills between Inverbervie and Stonehaven. Representative views from these areas include Viewpoints 2, 3 and 4 (A92, North of Inverbervie; Beach Road, Kirkton, St Cyrus; and Cairn o' Mount as shown on Figures 12.36, 12.37 and 12.38 respectively).

19 Further to the south and south-west, other areas of theoretical cumulative visibility are indicated on the ZTV plans, particularly to the north and south of Montrose, south of the A933 and in the hills rising to the north-west above Brechin. Representative views from these areas include Viewpoints 5, 7, 8 and 9 (Montrose, Brechin, White Caterthun and Minor Road South of Cairnconon Hill as shown on Figures 12.39, 12.41, 12.42 and 12.43

respectively). The wireline visualisation from Viewpoint 7 (see Figure 12.41) shows how intervening buildings and vegetation may screen these views. Also, from most of these locations the wind farms will not be seen within the same field of view as Inch Cape WTGs and OSPs.

Group 3: Hill of Stracathro; Whitefield of Dun Farm; and East Drums

20 Group 3 comprises three operational single wind turbines that lie to the north east, east and south of Brechin, in Angus. At closest, they are 29 km from the Inch Cape Wind Farm. Cumulative theoretical visibility is shown in Figures 12.12b and c and indicates that within the SLVIA study area overall cumulative visibility of these wind farms with the Inch Cape Wind Farm is within three main areas: to the east between Brechin and Montrose; to the south of Brechin to Arbroath; and the south east facing slopes of the Angus foothills. Cumulative visibility is limited, particularly from the coastline and adjacent areas.

21 Where theoretical cumulative visibility is indicated on the ZTVs, it is considered that actual visibility of the Group 3 WTGs will be likely from low-lying areas where open views across the surrounding landscape are not screened by intervening trees and vegetation (for example, Viewpoint 7: Brechin, where the wireline visualisation on Figure 12.41 shows that all the Group 3 turbines would be potentially visible but views towards the Hill of Stracathro and East Drums are likely to be screened). However, cumulative visibility of the Inch Cape Wind Farm from these locations may be limited to hubs and blade only or the views may be screened (as can also be seen at Viewpoint 7). Cumulative visibility of the Group 3 WTGs with the Inch Cape WTGs and OSPs is also likely to be possible from elevated locations such as Viewpoints 4 and 8 (Cairn o' Mount and White Caterthun as shown on Figures 12.38 and 12.42 respectively) where the Group 3 WTGs will be noticeable but will be seen as one of many features in expansive views across the landscape.

Group 4: Ascurry Farm; North Mains of Cononsyth; Dubton Farm; and Pickerton

22 Group 4 comprises four operational single wind turbines located in Angus. Pickerton and Dubton Farm lie close together north east of Letham, and Ascurry Farm and North Mains of Cononsyth lie south west of Letham. At the closest distance, these developments are situated 30 km north-west of the nearest Inch Cape WTG.

23 The cumulative theoretical visibility with the Inch Cape Wind Farm is shown in Figures 12.12a-c. This indicates that the cumulative visibility with Inch Cape Wind Farm will be limited to an area east of Brechin; a large area south of Montreathmont Forest to Arbroath and smaller patches of visibility south of Forfar, and within the Angus foothills. Actual visibility may be even more limited due to the screening effect of elements within the landscape, particularly woodland, and it is considered that the Group 4 wind farms are most likely to be seen in conjunction with the Inch Cape WTGs and OSPs in more distant views from upland locations such as White Caterthun (Viewpoint 8 and Figure 12.42).

Group 5: Frawney; Govals; and Tealing

24 Group 5 comprises the consented Frawney and Govals wind farms in the Sidlaw Hills, and the single WTG at Tealing Airfield. They lie 41 km to the west at closest to the nearest Inch Cape WTG. Details of these wind farms are given in Table 12B.1, and cumulative theoretical visibility with the Inch Cape Wind Farm is shown in Figures 12.13a-c. This indicates a pattern of cumulative visibility across the SLVIA study area encompassing the coastline and adjacent inland areas of north-east Fife, together with parts of the Angus and Dundee coastline and inland areas rising up to the summits of the Sidlaw Hills. To the north and north-east cumulative visibility with the Inch Cape WTGs and OSPs is indicated within the hills above Strathmore, and there are also slightly larger and more continuous areas of visibility to the south and east of Brechin. Scattered cumulative visibility with the Inch Cape WTGs and OSPs is also shown across parts of the coastline to the north of Montrose. Due to their location towards the western extent of the SLVIA study area, the Group 5 wind farms are unlikely to be seen within the same field of view as the Inch Cape WTGs and OSPs, but may form part of its cumulative context in certain views, as can be seen in wireline visualisations of the views from Dundee Law and Dodd Hill (Viewpoints 15 and 13 as shown on Figures 12.49 and 12.47 respectively). Both of these views are from elevated locations (in this case, hill summits) within the landscape. Other visualisations indicate that from many areas cumulative views of the Group 5 wind farms may be screened by intervening buildings and vegetation (for example, Viewpoint 12: A92 East of Muirdrum shown on Figure 12.46 and Viewpoint 14: Carnoustie shown on Figure 12.48).

Group 6: Airdrie Farm and Bonerbo

25 Group 6 comprises the operational single turbine at Airdrie Farm, and three operational turbines at Bonerbo. They lie at closest 35 km from the nearest Inch Cape WTG. The Cumulative ZTV (Figures 12.15 to 12.15a and b) illustrates that cumulative visibility is mostly around the locality of the Group 6 sites, and coastal areas around Tentsmuir, and the south coast of Angus from Dundee to Arbroath, with some scattered visibility along the south east facing slopes of the Sidlaw Hills. In addition, there is potential cumulative visibility along the East Lothian coastline.

26 Cumulative wirelines show that Group 6 would be potentially seen along the Angus coastline (Viewpoints 11-15 as shown on Figures 12.45 to 12.49) but seen as distant features on the skyline, separate to the view of Inch Cape WTGs. The main potential for cumulative visibility is from inland Fife such as from Largo Law (Viewpoint 19 shown on Figure 12.53) and the B9131 South of Dunino (Viewpoint 20 as shown on Figure 12.54) where the Group 6 sites will be foreground features and from Viewpoint 19 they will lie within the same portion of view as the Inch Cape Wind Farm. Cumulative wirelines at Viewpoints 25 and 26 from East Lothian shown on Figures 12.59 and 12.60 illustrate that the Group 6 turbines will be barely discernible.

Group 7: Earlseat, East of Fife Football Club (Bayview) Levenmouth Demo, Methill Docks, and Woodbank Farm

27 Group 7 comprises the wind turbines that lie on the south coast of Fife. All are operational except the consented Bayview turbine at East Fife Football Club. At closest they lie 55 km from Inch Cape Wind Farm. The cumulative ZTV on Figures 12.16 to 12.16a illustrates that within the study area there is very limited cumulative visibility. It is largely offshore within the Forth and scattered areas between Crail and Elie on the south east coast of Fife, and also on the north coast of East Lothian. The limited visibility with Inch Cape Wind Farm is illustrated by only two viewpoints having potential cumulative visibility of Group 7. Cumulative wirelines from Viewpoint 19 (Largo Law shown on Figure 12.53) illustrate the visibility of Group 7 turbines and that they would be in the opposite direction from the Inch Cape Wind Farm. The cumulative wireline from Viewpoint 26 (North Berwick Law shown on Figure 12.60) also shows Group 7 within views 90 degrees separate from Inch Cape Wind Farm.

Group 8: Kinegar Quarry; Ferneylea; and Hoprigshiels

28 Group 8 comprises three small wind farms that lie in the coastal margins on the East Lothian/Scottish Borders boundary. They have been included due to their proximity to the coastline and potential for sequential cumulative effects on drivers along the A1. At closest they lie 57 km from Inch Cape Wind Farm.

29 The cumulative ZTV (Figures 12.17 to 12.17a) illustrates the cumulative visibility within the study area is largely from the south east coast of Fife. Just beyond the study area, cumulative visibility with Inch Cape Wind Farm and Group 8 is spread across inland East Lothian and some areas of coastline. In these instances, as illustrated by Viewpoints 25 and 26 shown on Figures 12.59 and 12.60, Group 8 would be seen in the opposite direction to Inch Cape WTGs. Cumulative wirelines from viewpoints in Fife show that Group 8 would be unlikely to be particularly noticeable in the views from this area.

Group 9: Aikengall and Crystal Rig Wind Farms

30 Group 9 comprises the five operational phases of the Crystal Rig Wind Farm and the three phases of Aikengall Wind Farm, two of which are operational and one consented. At closest they lie 58 km from Inch Cape Wind Farm and have been included due to potential sequential and successional cumulative views from roads and viewpoints with East Lothian.

31 The cumulative ZTV (Figures 12.17 to 12.17a) illustrates the cumulative visibility within the study area is largely from the south east coast of Fife. Just beyond the study area, cumulative visibility with Inch Cape Wind Farm and Group 9 is spread across inland East Lothian and some areas of coastline. In these instances, as illustrated by viewpoints 25 and 26 shown on Figures 12.59 and 12.60, Group 9 would be seen in the opposite direction to Inch Cape WTGs. Cumulative wirelines from viewpoints in Fife show that Group 9 would be unlikely to be particularly noticeable in the views from this area.

St John's Hill

32 St John's Hill Wind Farm lies in Aberdeenshire, and consists of nine operational turbines. It lies 32 km to the NNW of the nearest Inch Cape WTG. Figures 12.11a and b illustrates the cumulative visibility with the Inch Cape Wind Farm which shows it is relatively limited, mostly contained within the local area surrounding the St John's Hill Wind Farm and the south east facing slopes of the Howe of Mearns including around Fetteresso Forest, Drumtochty Forest, and an area between Fettercairn and White Caterthun Hill.

33 The viewpoint wirelines illustrate that St John's Hill is barely visible from Viewpoint 1 (Garron Point shown on Figure 12.35) but is a noticeable foreground feature in Viewpoint 2 (A92, North of Inverbervie shown on Figure 12.36) but not within the same portion of view as Inch Cape. St John's Hill would also be seen in the distance as part of expansive panoramic views from Viewpoint 4 Cairn O'Mount, Viewpoint 8 White Caterthun Hill Fort, and also Viewpoint 9, South of Cairnconon Hill (see Figures 12.38, 12.42 and 12.43 respectively).

Michelin Tyre Co. Ltd, Dundee

34 The Michelin Tyre Co. Ltd has two operational turbines in Dundee. They lie 38 km to the west of the nearest Inch Cape WTG. Figures 12.13a-c illustrates the cumulative visibility with the Inch Cape Wind Farm and shows the visibility onshore is limited to the local area around Dundee, coastline between Dundee and Carnoustie, and the coastal edge of Fife from Tayport to Fife Ness. Cumulative visibility within Dundee and on its urban edges are likely to be very limited by the built form and there will also be more limited visibility around Tentsmuir due to the forest. Cumulative wirelines (Figures 12.35–12.60) confirm that visibility of the Michelin Tyre turbines from Fife would be minimal and would not be in the same portion of view as Inch Cape Wind Farm. The main cumulative views would be from Viewpoint 13 Dodd Hill and Viewpoint 15 Dundee Law (as shown on Figures 12.47 and 12.49) where the Michelin Turbines would be foreground features, and in particular from Dundee Law, the Michelin Turbines would lie in front of views of the Inch Cape WTGs.

Kenly

35 Kenly wind farm, located south of St. Andrews was consented in 2013 but is yet to be built due to infrastructure delays. It will have six turbines and lie 33 km south west of the nearest Inch Cape WTG. The cumulative ZTV (Figures 12.15a-b) illustrate that visibility with the Inch Cape Wind Farm is across the north east coastline of Fife, the south coast of Angus from Dundee to Arbroath, with some scattered visibility along the south east facing slopes of the Sidlaw Hills. In addition, there is potential cumulative visibility along the East Lothian coastline.

36 Cumulative wirelines (see Figures 12.45–12.49) show that Kenly wind farm would be potentially seen along the Angus coastline (Viewpoints 11-15 shown on Figures 12.45–12.49) but seen as a distant feature on the skyline, separate to the view of Inch Cape WTGs. The main potential for cumulative visibility is from coastal and inland Fife such as from Largo Law (Viewpoint 19 shown on Figure 12.53) and B9131 South of Dunino (Viewpoint 20 shown on Figure 12.54) where Kenly wind farm would appear as a foreground feature in front of Inch

Cape Wind Farm within the view. Cumulative wirelines at Viewpoints 25 and 26 shown on Figures 12.59 and 12.60 from East Lothian, illustrate that the Kenly turbines will be barely discernible.

Ferneylea 2

37 Ferneylea 2 is a six turbine extension to Ferneylea Wind Farm in East Lothian. It was submitted in July 2015 and a planning decision is still to be issued. It lies 59 km south of the nearest Inch Cape WTG. It has been included due to potential sequential and successional cumulative views from roads and viewpoints with East Lothian. The cumulative ZTV in Figure 12.18 and 121.18a illustrates that cumulative visibility of Ferneylea 2 with Inch Cape Wind Farm is very limited within the study area, mostly offshore with some small areas along the south Fife coast and also East Lothian north coast. The cumulative wirelines from Viewpoints 22 and 23 on the Fife coastline (see Figures 12.56 and 12.57) show that Ferneylea 2 would be approximately 40 km distant and barely discernible in views, and within a different portion of the view to Inch Cape Wind Farm. Similarly, Ferneylea 2 would lie in the opposite direction to Inch Cape Wind Farm in views from East Lothian Viewpoints 25 and 26 (see Figures 12.59 and 12.60) and would not be particularly noticeable.

Kincardine Floating Wind Farm

38 Kincardine Floating Wind Farm lies off the coast of Aberdeenshire north east of Stonehaven. It is currently in construction and has consent for up to 8 turbines up to 192m to blade tip. It lies 48 km north of the nearest Inch Cape WTG. The cumulative wireline shown in Figures 12.10a-b illustrates that it would be visible offshore from Viewpoint 1 (Garron Point as shown on Figure 12.35) but due to the general orientation of the coastline within the study area and also taking into consideration distance, it would not be clearly seen in combination with Inch Cape Wind Farm from any of the other assessment viewpoints.

39 The ZTV in Figures 12.10a-b illustrates that apart from offshore, cumulative visibility of Inch Cape Wind Farm with Kincardine is very limited and largely sporadic inland and coastal areas to the north of Stonehaven and also along the coastline south of Stonehaven towards Montrose. The cumulative visibility inland is largely on the south east facing slopes of the Howe of Mearns which would be reduced to some extent by the forestry cover in this area.

Forth Wind Offshore and extension

40 Forth Wind Offshore is a project which has consent for two turbines but an additional application will be submitted which for nine turbines, including a height increase for the consented turbines. The project lies 56 km SW of Inch Cape Wind Farm at closest. Due to the Forth Wind Offshore Wind Farm location within the Firth of Forth the cumulative visibility with Inch Cape Wind Farm as illustrated by the cumulative ZTV (Figures 12.20, 20a-b) is relatively limited on land. There are only some areas of scattered combined visibility on the south coast of Fife within the study area which is illustrated by Viewpoints 19 and 22, as shown on Figures 12.53 and 12.56 respectively. There would also be cumulative visibility from Viewpoint 26 on the north East Lothian coastline, as shown on Figure 12.60. Forth Wind Offshore would not be seen in the same portion of view as the Inch Cape Wind Farm

and only from viewpoints where the Inch Cape Wind Farm would lie beyond approximately 40 km.

Neart Na Gaoithe

41 The developers of NNG are currently revising their proposals but their 2014 (with variation 2016) consented scheme is considered for this assessment, as agreed with MS Lot and SNH. At closest, NNG lies 11.2 km to the SSW of the Inch Cape Wind Farm. The cumulative ZTV (Figures 12.19a-d) shows that the visibility of NNG and Inch Cape Wind Farm is very similar, particularly along the Fife and Angus Coastlines. NNG would be more visible along the south coast of Fife and in some areas of East Lothian than Inch Cape Wind Farm and less visible to the north of the study area due to distance. The cumulative wirelines from Viewpoints 1 and 2 shown on Figures 12.35 and 12.36 which lie along the coast in Aberdeenshire show that due to the curvature of the earth, only blade tips of NNG would be visible behind Inch Cape Wind Farm at this distance. NNG and Inch Cape Wind Farm would mostly always be seen in the same portion of the view given their proximity to one another offshore. In views from East Lothian, Inch Cape Wind Farm would lie largely behind NNG, and conversely in the north of the study area, NNG would lie behind Inch Cape. From the areas of coastline closest to both wind farms, they would be seen side by side with the largest gap between them seen in views from the Tentsmuir area of Fife.

Seagreen

42 The developers of Seagreen are currently revising their proposals but their 2014 consented scheme is considered for this assessment, as agreed with MS Lot and SNH. At closest, Seagrean lies 11.7 km to the NE of the Inch Cape Wind Farm. The cumulative ZTV (Figure 12.19a-d) shows that the visibility of Seagreen and Inch Cape Wind Farm is very similar, particularly along the Aberdeenshire and Angus coastlines where Seagreen will be most visible. Seagreen becomes less visible in views south of Arbroath and would be barely discernible in views from Fife and East Lothian due to distance and curvature of the earth. This is shown by all the viewpoint wirelines in these areas.

Dundee Port – Oil Rig Maintenance Structures

43 At the time of preparing this Appendix there are four 127m tall large steel lattice structures at Dundee Port which are used for the maintenance of Oil Rigs. They lie 39 km WSW from the Inch Cape Wind Farm. Due to their height and location they have potential to be seen cumulatively with Inch Cape Wind Farm. The cumulative ZTV (Figure 12.14a) illustrates that combined visibility would be limited to the locality of the port and along the Angus coast to Carnoustie, and along the Fife coast from Tentsmuir to Fife Ness, with some scattered visibility inland. The viewpoint wirelines illustrate that they would be most visible from Viewpoint 15 (Dundee Law as shown on Figure 12.49) and 13 (Dodd Hill as shown on Figure 12.47) within the context of Dundee and separate to offshore views towards Inch Cape Wind Farm.

12B.1.2 Regional Seascape Character Areas (SAs)

44 An overlay of the SAs with the ZTV is shown in Figure 12.2b. Table 12B.2 describes patterns of theoretical visibility of the Inch Cape WTGs and OSPs from each of the SAs within the SLVIA study area. A description is included of both the baseline condition (where the Inch Cape WTGs and OSPs are considered alongside existing and consented wind farms) and the cumulative context (where the Inch Cape WTGs and OSPs are considered alongside application and scoping stage wind farms in addition to wind farms which are existing or consented).

Table 12B.2: Theoretical Visibility of the Inch Cape WTGs and OSPs from SAs (see *Appendix 12D: Regional Seascape Assessment*)

Regional Seascape Character Areas (SAs)	Range of Theoretical Visibility (min-max distance from nearest Inch Cape WTG)	Description of Patterns of Theoretical Visibility
SA 3 – Cove Bay to Milton Ness Representative Viewpoints: Vpt 1: Garron Point Figure 12.35 Vpt 2: A92 North of Inverbervie (located outside but looks across seascape character area to sea) Figure 12.36	23.4 km to 50.0 km	This is a large seascape character area covering the stretch of coastline from the northern limit of the SLVIA study area to Montrose Bay. At 50 km distance the lower parts of the towers of the Inch Cape WTGs will start to drop below the sea horizon and views of the Inch Cape WTGs and OSPs from the coast may be obscured in certain locations due to localised topography and the presence of many small-scale bays and coves and other indentations in the coastline. This is most noticeable for example, around Stonehaven and the coastline extending southwards from there, and also to the south of the settlements of Catterline and Inverbervie. With these exceptions theoretical visibility is more or less continuous along the length of this seascape character area. Actual visibility is likely to be more limited due to the screening effect of buildings and vegetation. Visibility of existing and consented onshore wind farms in Groups 1 and 2 and at St John's Hill together with the Inch Cape WTGs and OSPs is indicated at various places within this seascape character area but is not continuous along the coast. The other onshore wind farms having theoretical visibility with the Inch Cape WTGs and OSPs are further away and areas of visibility tend to be more limited. Cumulative visibility of the other offshore wind farms with the Inch Cape WTGs and OSPs is also indicated at locations throughout the seascape character area particularly for Seagreen Alpha and Bravo

Regional Seascape Character Areas (SAs)	Range of Theoretical Visibility (min-max distance from nearest Inch Cape WTG)	Description of Patterns of Theoretical Visibility
		sites, and with Kincardine OWF in the northern extents of the seascape character area.
SA 4 – Montrose Bay Representative Viewpoints: Vpt 3: Beach Road, Kirkton, St Cyrus Figure 12.37 Vpt 5: Montrose Figure 12.39	19.5 km to 26.4 km	Theoretical visibility of the Inch Cape WTGs and OSPs is indicated across most of this seascape character area except for small areas where localised topography introduces screening effects, particularly to the west of Scurdie Ness, but also around St Cyrus. Actual visibility is likely to be somewhat more limited due to features in the seascape which will tend to screen open views of the sea, for example the dunes and adjacent woodland to the west of Montrose Bay, and the buildings and trees in and around various settlements. Visibility of existing and consented onshore wind farms in Groups 2 and 3, and St John's Hill is indicated together with the Inch Cape WTGs and OSPs at locations within this seascape character area but is not continuous, particularly for St John's Hill turbines. The offshore NNG and Seagreen wind farms will both be visible with the Inch Cape WTGs and OSPs from most places in the area.
SA 5 – Long Craig Representative Viewpoints: None	17.4 km to 19.1 km	Theoretical visibility occurs across most of this seascape character area except for a small section of coastline to the west of Scurdie Ness opposite the Port of Montrose. A degree of screening will result from buildings, trees and woodland scattered across the coastal edge, particularly around Usan House. There is limited theoretical visibility of other existing and consented onshore wind farms together with the Inch Cape WTGs and OSPs. Theoretical cumulative visibility of the Inch Cape WTGs and OSPs with NNG and Seagreen offshore wind farms is indicated throughout most of this seascape character area.
SA 6 – Lunan Bay Representative Viewpoints: Vpt 6: Braehead of Lunan Figure 12.40	16.5 km to 19.1 km	Theoretical visibility of the Inch Cape WTGs and OSPs is shown across a large part of this seascape character area except where not possible due to intervening topography, principally to the west of Red Castle and at the southern end of Lunan Bay to the west of Lang Craig. From within the southern third of the Bay the number of Inch Cape WTGs visible will

Regional Seascape Character Areas (SAs)	Range of Theoretical Visibility (min-max distance from nearest Inch Cape WTG)	Description of Patterns of Theoretical Visibility
		gradually reduce as they are screened behind Lang Craig. Trees and other vegetation, together with buildings, will limit actual visibility from some areas, particularly in and around the one or two small villages. The ZTVs show that there is limited theoretical visibility of existing and consented onshore wind farms with the Inch Cape WTGs and OSPs. Both NNG and Seagreen offshore wind farms have theoretical cumulative visibility with the Inch Cape WTGs and OSPs but for NNG this is limited to the northern half of Lunan Bay.
SA 7 – Lang Craig to The Deil's Heid Representative Viewpoint: Vpt 10: Clifftop Path North of Victoria Park Figure 12.44	156 km to 18.7 km	There is theoretical visibility of the Inch Cape WTGs and OSPs across most of this seascape character area except for one small part to the west of Red Head where visibility is not possible due to localised topography. Actual visibility may be limited by features such as trees and shelter belts, particularly in the southern part of the seascape character area, where there are a greater number of farms and hamlets. Within this seascape character area, theoretical visibility of existing and consented onshore wind farms is limited and the closest of these wind farms in Groups 3 and 4 are located at closest 15 km inland of the seascape character area, to the north north-west. Both NNG and Seagreen offshore wind farms have theoretical cumulative visibility with the Inch Cape WTGs and OSPs from within most of the seascape character area.
SA 8 – Arbroath to Monifieth Representative Viewpoints: Vpt 11: Arbroath Signal Tower Figure 12.45 and Vpt 14: Carnoustie Figure 12.48	18.6 km to 32.5 km	This seascape character area encompasses the settlements of Arbroath and Carnoustie as well as the coastline in between and the whole of Barry Links. Theoretical visibility of the Inch Cape WTGs and OSPs occurs across most of the area except for small areas in the centre of Arbroath and Carnoustie and to the east of Monifieth. With the exception of the immediate coastal edge and the stretch of coast between Arbroath and Carnoustie – which is quite open with little tree cover – it is considered that actual visibility of the Inch Cape WTGs and OSPs will be more limited due to local features within the seascape. In the settlements, the density of built form will

Regional Seascape Character Areas (SAs)	Range of Theoretical Visibility (min-max distance from nearest Inch Cape WTG)	Description of Patterns of Theoretical Visibility
		prevent much intervisibility with surrounding areas. Within Barry Links both the dunes and the areas of woodland will curtail many views towards the sea across this predominantly flat seascape. Existing and consented wind farms have some theoretical visibility together with the Inch Cape WTGs and OSPs, particularly the oil rig maintenance structures at Dundee Port, Michelin Tyre Factory and Tealing Airfield wind farms, at between 5 and 10 km distance from the edge of the seascape character area respectively. From the coastline there will also be more distant visibility of the Group 6 and Kenly wind farms in Fife, which are approximately 18.8 km south of the seascape character area at the closest point. Both NNG and Seagreen offshore wind farms have theoretical cumulative visibility with the Inch Cape WTGs and OSPs from within most locations in the seascape character area.
SA 9 – Dundee Representative Viewpoints: Vpt 15: Dundee Law Figure 12.49	32.2 km to 46.7 km	This seascape character area encompasses the settlements of Monifieth, Broughty Ferry and Dundee. Although theoretical visibility of the Inch Cape WTGs and OSPs is shown across large parts of this seascape character area it is considered that actual visibility will be quite limited due to the density of the built form within these towns and the screening effect that will occur because of both buildings and vegetation. Therefore, it is likely that most views of the Inch Cape WTGs and OSPs will be obtained from either the coastal edge (promenades and beaches), particularly between Monifieth and Broughty Ferry, or from elevated areas within the towns which afford long-distance views over the seascape, for example Dundee Law and Balgay Hill. The wind farms at Michelin Tyre Factory and Group 5, and the oil rig maintenance structures at Dundee Port are theoretically visible with the Inch Cape WTGs and OSPs from many places within this seascape character area, although again, actual visibility may be more limited. There would also be visibility of Group 6 and Kenly wind farms. Both NNG and Seagreen offshore wind farms will also be visible with the Inch Cape WTGs

Regional Seascape Character Areas (SAs)	Range of Theoretical Visibility (min-max distance from nearest Inch Cape WTG)	Description of Patterns of Theoretical Visibility
		and OSPs from parts of the seascape character area.
SA 10 – Inner Firth of Tay Representative Viewpoints: None	36.5 km to 50.0 km	Much of this seascape character area lies outside the SLVIA study area. However, even within the SLVIA study area theoretical visibility of the Inch Cape WTGs and OSPs is limited and occurs mainly within Tayport and along the coastline immediately to the west. It is worth noting that actual visibility of the Inch Cape WTGs and OSPs from within Tayport may be more extensive than from other settlements having theoretical visibility as much of it is built on a slope overlooking the outer Firth of Tay and therefore sea views can be obtained from many locations. It is also worth noting here that there will be theoretical visibility of the Inch Cape WTGs and OSPs from the Tay Road Bridge, which does not actually fall within any of the seascape character areas. The potential visibility of the Inch Cape WTGs and OSPs from the Bridge is considered under the route analysis of the A92 in *Section 12B.1.6*. The existing and consented onshore wind farms at Michelin Tyre Factory and Group 5 and the oil rig maintenance structures at Dundee Port are or will be visible with the Inch Cape WTGs and OSPs from limited parts of the seascape character area. There would also be limited cumulative visibility with Group 6 and Kenly wind farms. Theoretical cumulative visibility of the Inch Cape WTGs and OSPs with NNG and Seagreen offshore wind farms is also limited.
SA 11 – St Andrews Bay Representative Viewpoint: Vpt 16: Tentsmuir Figure 12.50	32.4 km to 40.7 km	This seascape character area covers Tentsmuir Point and Sands, the Eden Estuary and the Links at St Andrews. Theoretical visibility of the Inch Cape WTGs and OSPs occurs across most of this character area with the exception of small areas south-east of Tayport and south of Leuchars and Guardbridge. It is considered that in many areas actual visibility will be more limited, particularly within and around Tentsmuir Forest where intervisibility with surrounding areas is prevented by the dense tree cover. In what is a predominantly flat area, localised features in the seascape, such as

Regional Seascape Character Areas (SAs)	Range of Theoretical Visibility (min-max distance from nearest Inch Cape WTG)	Description of Patterns of Theoretical Visibility
		buildings and vegetation associated with settlements, may also screen views towards the sea, as may areas of sand dunes. The existing and consented onshore WTGs at Michelin Tyre Factory and Group 5, and the oil rig maintenance structures at Dundee Port, are, or will be, theoretically visible at most locations from which the Inch Cape WTGs and OSPs will be visible. In addition, Group 6 and Kenly wind farms will be theoretically visible from most of the area from which the Inch Cape WTGs and OSPs will be seen. Other wind farms with theoretical cumulative visibility are more distant and the areas of visibility more limited. Both NNG and Seagreen wind farms will be visible from most of the areas from which the Inch Cape WTGs and OSPs will also be seen.
SA 12 – St Andrews to Fife Ness Representative Viewpoints: Vpt 18: St Andrews, East Scores Figure 12.52 Vpt 21: Kingsbarns (located in FFE6 but view looks across SA 12) Figure 12.55 Vpt 23: Fife Ness Figure 12.57	28.2 km to 37.7 km	Theoretical visibility of the Inch Cape WTGs and OSPs also occurs along most of this seascape character area from the town of St Andrews to the easternmost location in Fife at Fife Ness. Within St Andrews actual visibility will be limited by the screening effect of buildings and vegetation. The exception to this will be in views from the coastal edge. In other parts of the seascape character area there are likely to be open views both from the coastal edge and from adjacent agricultural land. Areas where actual visibility will tend to be limited by localised features include from within the numerous small settlements and hamlets in this area, from other locations where views will be screened by trees and woodland, and also from within the several lowland dens which reach the sea along this length of coastline. There is theoretical cumulative visibility of the Inch Cape WTGs and OSPs with most of the wind farms in the study area, with the exception of those in Group 4. However, most of those located within Angus and Aberdeenshire will only be seen at considerable distance from this seascape character area, across the Firth of Tay. The existing and consented WTGs at Michelin Tyre Factory, Group 5, group 6 and Kenly, and the oil rig maintenance structures at Dundee Port will be closest and will be visible in most areas from

Regional Seascape Character Areas (SAs)	Range of Theoretical Visibility (min-max distance from nearest Inch Cape WTG)	Description of Patterns of Theoretical Visibility
		which the Inch Cape WTGs and OSPs will also be visible. Both NNG and Seagreen offshore wind farms have theoretical cumulative visibility with the Inch Cape WTGs and OSPs within most of the seascape character area.
SA 13 – East Neuk of Fife Representative Viewpoints: Vpt 22: Anstruther Easter Figure 12.56 Vpt 24: Isle of May Figure 12.58	28.2 km to 36 km	There is limited theoretical visibility of the Inch Cape WTGs and OSPs from within this seascape character area. Visibility is concentrated along the coastline between Fife Ness and Anstruther Easter with some small areas of blade tip visibility beyond this. Even within this area theoretical visibility of number of Inch Cape WTGs varies, becoming progressively smaller as the distance from Fife Ness increases. It is considered that actual visibility will be more limited due to the screening effect of buildings and trees in the seascape which may be more apparent due to the relatively flat topography of the coastal edge. Theoretical visibility of the Inch Cape WTGs and OSPs also covers most of the Isle of May apart from a thin strip of land on the western side of the island. Actual visibility is likely to be close to that shown on the ZTV due to the absence of structures and taller vegetation which might screen views. Theoretical cumulative visibility of the Inch Cape WTGs and OSPs with existing and consented wind farms is mostly limited to Group 6 and Group 7, and also those more distant in East Lothian in Groups 8 and 9. There would also be theoretical cumulative visibility of the Forthwind Offshore Wind Farm next to the Group 7 wind farms. Both NNG and Seagreen offshore wind farms have theoretical cumulative visibility with the Inch Cape WTGs and OSPs from limited parts of the seascape character area, mostly between Fife Ness and Anstruther Easter and the Isle of May.
SA 14 – Kirkcaldy and Largo Bay Representative Viewpoint:	44.1 km to 45.6 km	Theoretical visibility of the Inch Cape WTGs and OSPs from within this seascape character area is extremely limited, occurring only from the summit and upper slopes of Kincraig Hill, where limited numbers of WTGs are likely to be

Regional Seascape Character Areas (SAs)	Range of Theoretical Visibility (min-max distance from nearest Inch Cape WTG)	Description of Patterns of Theoretical Visibility
None		visible, but at a considerable distance and with only blade tip visibility. Theoretical cumulative visibility of the Inch Cape WTGs and OSPs with other wind farms is mostly related to those in Group 6 and 7, and Forthwind Offshore wind farm which are the closest wind farms to this seascape character area and will also be seen from the summit of Kincraig Hill. Both NNG and Seagreen offshore wind farms also have theoretical cumulative visibility with the Inch Cape WTGs and OSPs from this location although also limited.
SA17 - Eyebroughy to Torness Point Representative Viewpoints: Vpt 25: Dunbar (outside the SLVIA Study Area but included in the assessment as a representative viewpoint for the East Lothian coastline) Figure 12.59 Vp2 26: North Berwick Law (also outside the SLVIA study area, included at request of ELC) Figure 12.60	49.2km to approximately 50km	Most of this seascape character area lies outside the SLVIA study area however there is some theoretical visibility of the Inch Cape WTGs and OSPs from within the small part of the area lying within the SLVIA study area. Within this area visibility is concentrated along the coastal edge between North Berwick and Tyninghame House although views of the Inch Cape WTGs and OSPs will be partially screened from some locations due to the presence of Bass Rock in the Firth of Forth. Views will also be screened by trees and woodland occurring across this seascape character area, for example around Seacliff, however there are also many areas from which it is considered the proposed Inch Cape WTGs and OSPs will be visible, albeit at a considerable distance. Existing and consented wind farms included within this assessment are unlikely to be visible together with the Inch Cape WTGs and OSPs, although there is some visibility of the Group 8 and 9 wind farms in the Lammermuir Hills. Both NNG and Seagreen offshore wind farms also have theoretical cumulative visibility with the Inch Cape WTGs and OSPs from this seascape character area, although Seagreen would be over 60 km from this area. NNG would lie in front of views of Inch Cape from most of this seascape area.

12B.1.3 Landscape Character Areas/Types and Associated Areas

45 An overlay of the Landscape Character Types (LCT) and associated areas with the ZTV is shown in Figure 12.2b. Tables 12B.3, 12B.4 and 12B.5 describe patterns of theoretical visibility of the Inch Cape WTGs and OSPs from each LCT and associated areas within the SLVIA study area. A description is included of both the baseline condition (where the Inch Cape WTGs and OSPs are considered alongside existing and consented wind farm) and where relevant the cumulative context (where the Inch Cape WTGs and OSPs are considered alongside the one application and one scoping stage wind farm developments in addition to wind farms which are existing or consented).

LCTs (and Associated Areas) in SNH Aberdeenshire Landscape Character Assessment (LCA) (SNH, 1998)

Table 12B.3: Theoretical visibility of the Inch Cape WTGs and OSPs from within SNH Aberdeenshire LCA LCT (and associated areas)

LCT (and Associated Area)	Range of Theoretical Visibility (min distance from the nearest Inch Cape WTG)	Description of Patterns of Theoretical Visibility
ABS 2 – Agricultural Heartlands (Howe of the Mearns) Representative Viewpoint: None	28.8 km to 39.8 km	Theoretical visibility of the Inch Cape WTGs and OSPs within this character area is limited to a triangular wedge of land defined approximately by the line of the River North Esk and the B974 between Marykirk and Fettercairn. The river valley creates a view corridor along which views towards the Inch Cape WTGs and OSPs may be obtained. On lower ground theoretical visibility will be limited to upper tower and blades only. Views of the sea from this area are limited, particularly within Strathmore, and it is considered that actual visibility of the WTGs and OSPs will be lower than shown on the ZTVs due to the screening effect of buildings, trees and other vegetation (roadside hedgerows, etc.) Other existing and consented wind farms in Groups 1, 2 and 3, and St John's Hill Wind Farm are, or will, have limited visibility together with the Inch Cape WTGs and OSPs. Theoretical cumulative visibility of the Inch Cape WTGs and OSPs with NNG and Seagreen offshore wind farms is also limited within this character area.
ABS 2 – Agricultural Heartlands (Garvock and Glenbervie)	23.3 km to 45.9 km	Theoretical visibility of the Inch Cape WTGs and OSPs from within this character area is limited mainly to scattered areas on the south and east facing slopes between the coast and the tops of

LCT (and Associated Area)	Range of Theoretical Visibility (min distance from the nearest Inch Cape WTG)	Description of Patterns of Theoretical Visibility
Representative Viewpoint: None		the hills (Garvock Hill, Tullo Hill, etc.) which define the ridgeline separating coastal from inland areas in Strathmore and the Howe of the Mearns. Actual visibility from many areas may be more limited due to the screening effect of buildings, trees and other vegetation, particularly in areas of shallower topography. There is also limited visibility from some of the higher ground between the A90 and Glenbervie. Existing and consented wind farms in Groups 1, 2, 3 and St John's Hill are all likely to have some visibility with the Inch Cape WTGs and OSPs but from limited parts of the character area. Theoretical visibility for other wind farms is also indicated although with the exception of the Group 3 wind farms, they are located at some distance from the character area. Theoretical cumulative visibility of the Inch Cape WTGs and OSPs with Kincardine, NNG and Seagreen offshore wind farms is also limited, occurring mostly within the coastal parts of the character area.
ABS 2 – Agricultural Heartlands (Kincardine Plateau) Representative Viewpoint: None	45.1 km to 50.0 km	Theoretical visibility of the Inch Cape WTGs and OSPs occurs over a very limited part of this character area, mainly on south and east facing slopes adjacent to the coastal edge and aligned with the A90. There may be some visibility of existing and consented wind farms in Groups 1 and 2 along with Kincardine Offshore Wind Farm together with the Inch Cape WTGs and OSPs but this will be limited. Theoretical cumulative visibility of the Inch Cape WTGs and OSPs with NNG and Seagreen offshore wind farms is also limited.
ABS 4 – Moorland Plateaux (The Mounth) Representative Viewpoint: Vpt 4: Cairn o' Mount Figure 12.38	36.8 km to 50.0 km	Theoretical visibility of the Inch Cape WTGs and OSPs is shown mostly from south and south-west facing slopes and hill tops above Strathmore, the Howe of the Mearns and Glenbervie, beyond which intervening landform will largely screen any views towards the Development Area. Overall visibility covers a relatively small extent of this character area and large parts are covered with coniferous plantations such as Fetteresso Forest and Drumtochty Forest which will decrease the areas of actual visibility. Visibility of

LCT (and Associated Area)	Range of Theoretical Visibility (min distance from the nearest Inch Cape WTG)	Description of Patterns of Theoretical Visibility
		existing and consented wind farms in Groups 1, 2, 3, 4 and St John's Hill, whilst theoretically possible is also likely to be limited. Limited theoretical cumulative visibility together with the Inch Cape WTGs and OSPs is shown for most of the onshore wind farms considered in the assessment although many of these are located at some distance from the character area. Theoretical cumulative visibility of the Inch Cape WTGs and OSPs with Kincardine, NNG and Seagreen offshore wind farms is also limited.

LCTS (and Associated Areas) in SNH Tayside LCA (SNH, 1999b)

Table 12B.4: Theoretical visibility of the Inch Cape WTGs and OSPs from within SNH Tayside LCA LCTS (and associated areas)

LCTS (and Associated Area)	Range of Theoretical Visibility (min distance from the nearest Inch Cape WTG)	Description of Patterns of Theoretical Visibility
TAY 1 – Highland Glens (1A Upper Highland Glens, 1B Mid Highland Glens) Representative Viewpoint: None	37.6 km to 50.0 km	Theoretical visibility of the Inch Cape WTGs and OSPs from these character areas will be very limited, occurring on south and east facing slopes at the entrance to Glen Esk, scattered areas within Glen Lethnot and a very small area of visibility at the confluence of the River South Esk with Prosen water at the edge of the SLVIA study area. Visibility of existing and consented wind farms in Groups 2, 3, and 4 whilst theoretically possible is also likely to be limited. There is limited theoretical cumulative visibility together with the Inch Cape WTGs and OSPs for most of the other onshore wind farms considered in the assessment although many of these are located at some distance from the character area. Theoretical cumulative visibility of the Inch Cape WTGs and OSPs with NNG and Seagreen offshore wind farms is also limited.
TAY 3 – Highland Summits and Plateaux (Mounth Highlands) Representative Viewpoint: None	40.8 km to 50.0 km	Theoretical visibility of the Inch Cape WTGs and OSPs from within this character area is limited to the south and east facing slopes and summits of hills rising above the Glens of Angus including those of Sturdy Hill, Hill of Corathro, Hill of Wirren, Tamhilt, Pinderachy, Hill of Glansie and St Arnold's Seat. Visibility of existing and consented wind farms in Groups 2, 3, 4, and 5 whilst theoretically possible is likely to be limited. Other more distant wind farms included in the assessment are theoretically visible together with the Inch Cape WTGs and OSPs from some parts of this character area, but overall cumulative visibility is limited. Theoretical cumulative visibility of the Inch Cape WTGs and OSPs with NNG and Seagreen wind farms is also limited.
TAY 5 – Highland Foothills	36.8 km to 49.4 km	Theoretical visibility of the Inch Cape WTGs and OSPs occurs on south, south-east and east

LCTS (and Associated Area)	Range of Theoretical Visibility (min distance from the nearest Inch Cape WTG)	Description of Patterns of Theoretical Visibility
Representative Viewpoint: Vpt 8: White Caterthun Figure 12.42		facing slopes and hilltops including the Hill of Edzell, the White and Brown Caterthuns, the Hill of Menmuir, Deuchar Hill and the Hill of Ogil. Overall it covers approximately half of the character area which, within the SLVIA study area, is split into two areas. Visibility of existing and consented wind farms in Groups 2, 3, 4 and 5 whilst theoretically possible is likely to be limited. Other wind farms are more distant and cumulative visibility across the character area more limited. Theoretical cumulative visibility of NNG and Seagreen offshore wind farms is also shown at many of the locations from which the Inch Cape WTGs and OSPs will also be visible.
TAY 8 – Igneous Hills (Sidlaw Hills) Representative Viewpoint: Vpt 13: Dodd Hill Figure 12.47	34.0 km to 49.5 km	Theoretical visibility of the Inch Cape WTGs and OSPs occurs across limited areas on south-east and east facing slopes and hill tops. Within the SLVIA study area, these locations are limited to the ridge line extending from Dodd Hill and Carrot Hill and the parallel ridge running from Balkello Hill to Kincaldrum Hill, which is higher and wider but also more distant from the Development Area. Between these two ridge lines and beyond the more distant ridge, theoretical visibility is greatly reduced due to intervening topography. Of the existing and consented wind farms considered in the assessment, the consented Frawney and Govals Wind Farm lie within the character area and Tealing Airfield single turbine is located approximately 2.5 km to the south of the character area. These wind farms are likely to be visible from most of the locations from which the Inch Cape WTGs and OSPs will also be seen, as will the WTGs at the Michelin Tyre Factory, some 5.8 km to the south, and the oil rig maintenance structures at Dundee Port. Other wind farms included in the assessment are located at much greater distances from this character area. Theoretical cumulative visibility with the Inch Cape WTGs and OSPs, although limited across the character area, is shown for both NNG and Seagreen offshore wind farms.

LCTS (and Associated Area)	Range of Theoretical Visibility (min distance from the nearest Inch Cape WTG)	Description of Patterns of Theoretical Visibility
TAY 10 – Broad Valley Lowlands (Strathmore, and the Lower South and North Esk River Valleys) Representative Viewpoint: Vpt 7: Brechin Figure 12.41	23.2 km to 50.0 km	Theoretical visibility of the Inch Cape WTGs and OSPs from within these large character areas is limited and mainly occurs in the following places. Firstly there is a relatively continuous area of visibility stretching northwards between Brechin and Montrose, on the slopes and low hills above Montrose Basin and the River North Esk, with a limited area of visibility to the north of Brechin. Secondly, there is an area of theoretical visibility to the north-west and west of Brechin at the foot of the slopes below the Caterthuns and the Highland Foothills character area. Finally, there are limited areas of visibility to the north and north-west of Forfar. Of the existing and consented wind farms considered in this assessment which will be visible together with the Inch Cape WTGs and OSPs, Group 2 wind farms are located within the character area surrounding Brechin. Group 3 is located approximately 8.5 km to north-east of the character area, with other existing and consented wind farms at greater distances. Theoretical cumulative visibility of NNG and Seagreen offshore wind farms with the Inch Cape WTGs and OSPs is possible but limited in extent.
TAY 12 – Low Moorland Hills Representative Viewpoint: None	26.5 km to 41.9 km	Theoretical visibility of the Inch Cape WTGs and OSPs is indicated over about one-third of this character area although much of this lies within Montreathmont Forest where actual visibility is likely to be limited by intervening vegetation. Outside of this area, there will be theoretical visibility from the south-east facing slopes and summits of some of the isolated rounded hills which are also characteristic of this area including Turin Hill and Fothringham Hill although it is worth noting that some of these hills (such as Fothringham Hill) have a degree of tree cover which will limit actual visibility. Visibility of the Inch Cape WTGs and OSPs with existing and consented wind farms in Groups 2, 3 and 4 is theoretically possible but likely to be limited. Cumulative visibility with the other onshore wind farms considered in the assessment is intermittent and actual visibility is likely to be

LCTS (and Associated Area)	Range of Theoretical Visibility (min distance from the nearest Inch Cape WTG)	Description of Patterns of Theoretical Visibility
		limited by the extensive woodland cover in this area. Both NNG and Seagreen offshore wind farms have theoretical visibility from some of the areas from which the Inch Cape WTGs and OSPs will also be seen.
TAY 13 – Dipslope Farmland Representative Viewpoint: Vpt 9: Minor Road south of Cairnconon Hill Figure 12.43 Vpt 12: A92 East of Muirdrum Figure 12.46	16.0 km to 41.9 km	This is a relatively large character area stretching inland from the coastal zone towards the Sidlaw Hills and their eastern outliers. Theoretical visibility of the Inch Cape WTGs and OSPs is indicated over much of the area but can be summarised as follows. Firstly, there is an area to the south-west of Montrose with theoretical visibility shown across the south, south-east and east facing slopes of the low-lying ridges and hills which are mostly located between the A92 and A934. Towards Friockheim there will also be visibility. Secondly, there is a fairly continuous band roughly bounded by the A933, to the north-west of Arbroath, and stretching south-west towards Carnoustie and Monifieth and their associated inland areas. Finally, there is a somewhat more discontinuous area between Dundee and the Sidlaw Hills to the north where different extents of Inch Cape Wind Farm will be visible from different areas. The closest existing and consented wind farms having visibility together with the Inch Cape WTGs and OSPs are Group 4 of which the single turbines at Ascurry Farm and North Mains of Cononsyth lie within the character area. The single turbine at Tealing Airfield (within Group 5) also lies within the character area. The Michelin Tyre Factory, which at the closest point is less than 500 m from the southern boundary of the character area and the oil rig maintenance structures at Dundee Port would also be seen together with Inch Cape Wind Farm. Other existing and consented wind farms are located to the north of the character area at a closest distance of approximately seven kilometres (Group 3 sites) and 15 km (Group 2 sites). Both NNG and Seagreen offshore wind farms – will be seen from most of the areas from which, the Inch Cape WTGs and OSPs is predicted to be visible.

LCTS (and Associated Area)	Range of Theoretical Visibility (min distance from the nearest Inch Cape WTG)	Description of Patterns of Theoretical Visibility
TAY 15 – Lowland Basins (Montrose Basin) Representative Viewpoint: None	19.4 km to 28.3 km	Theoretical visibility of the Inch Cape WTGs and OSPs from within this character area is limited by the steep-sided ridge rising up to Rossie Moor, to the south of Montrose Basin. Consequently, there will only be visibility of limited horizontal extent of Inch Cape Wind Farm from within a narrow band of the landscape between the A935 to the north of Montrose Basin and the lowland hills and ridges rising above. Of existing and consented wind farms having theoretical visibility with the Inch Cape WTGs and OSPs, the closest are at Whitefield of Dun (Group 3) and Group 2, but theoretical visibility is limited. Cumulative visibility of the Inch Cape WTGs and OSPs with NNG is very limited but Seagreen will be theoretically visible from most of the areas from which the Inch Cape WTGs and OSPs will also be visible.

LCTS (and Associated Areas) in SNH Fife LCA (SNH, 1999a)

Table 12B.5: Theoretical visibility of the Inch Cape WTGs and OSPs from within SNH Fife LCA LCTs (and associated areas)

LCT (and Associated Area)	Range of Theoretical Visibility (min distance from the nearest Inch Cape WTG)	Description of Patterns of Theoretical Visibility
FFE 3 – Upland Foothills Representative Viewpoint: None	37.3 km to 50.0 km	This character type comprises a number of discontinuous areas in the north-east of Fife. Those lying within the SLVIA study area showing theoretical visibility of the Inch Cape WTGs and OSPs include the foothills of the Ochils at Newport, Craigie Hill, Gauldry, Lucklaw Hill, Brunton, Moonzie and Kilmaron. Theoretical visibility is concentrated on east and south-east facing slopes and hill tops. It is worth noting that areas of woodland are characteristic of this landscape, both on the hilltops and on their slopes, so actual visibility may be more limited than shown on the ZTV due to the screening effect of intervening vegetation. Visibility from within settlements, such as Balmullo, will also be more limited than shown on the ZTV due to the screening effect of buildings within the townscape. The wind turbine at the Michelin Tyre Factory and Group 5 sites are, or will be, theoretically visible with the Inch Cape WTGs and OSPs, mostly from north facing slopes and hill tops, but in fairly close proximity across the Firth of Tay. The existing and consented wind farms in Group 6 and Kenly Wind Farm would lie approximately 20 km to the south west and would also be theoretically visible with the Inch Cape Wind Farm in views from the hilltops and south east facing slopes within this character are. Other wind farms included in the assessment are located at much greater distances from these character areas. Both NNG and Seagreen will be theoretically visible from many of the areas from which the Inch Cape WTGs and OSPs will also be seen.
FFE 4 – Pronounced Volcanic Hills and Craigs Representative Viewpoint: Vpt 19: Largo Law Figure 12.53	39.2 km to 50.0 km	This LCT occurs across a range of areas within the SLVIA study area including the hills at Blebocraigs, Ceres, Kettlebridge to Peat Inn, Largoward, Largo Law, and Kincraig. Theoretical visibility of the Inch Cape WTGs and OSPs from within these areas is limited. To the east of St

LCT (and Associated Area)	Range of Theoretical Visibility (min distance from the nearest Inch Cape WTG)	Description of Patterns of Theoretical Visibility
		Andrews there is an area of continuous visibility on the slopes below Clatto Hill and Drumcarrow Craig, whilst to the north of Largoward, there are some continuous areas of visibility both east and west of the A915. Outside of these two areas, visibility is confined to scattered areas on the north, north-east and east-facing slopes and summits of the higher hills such Largo Law, Kincraig Hill (limited numbers of Inch Cape WTG blade tips only), Kellie Law and the Hill of Tarvit. Existing and consented wind farms considered as part of the assessment which are predicted to be visible in conjunction with the Inch Cape WTGs and OSPs are Group 6 and Kenley Wind Farm located between the hills and the north east Fife coastline. There would also be theoretical cumulative visibility with Michelin Tyre Factory, oil rig maintenance structures at Dundee Port and Group 5, at a closest distance of 15.5 km, and located to the north of the Firth of Tay. Theoretical visibility of other wind farms is possible but they are unlikely to have much actual visibility on account of intervening distance. NNG is theoretically visible from most of the areas from which the Inch Cape WTGs and OSPs will also be seen, with cumulative visibility of Seagreen more limited due to distance.
FFE 5 – Lowland Hills and Valleys Representative Viewpoint: None	31.9 km to 39.5 km	This LCT occurs across a number of areas in north-east Fife lying within the SLVIA study area including north-west Cupar, east Cupar, Cameron and Prior Muir. Theoretical visibility of the Inch Cape WTGs and OSPs from within these areas is limited, covering just over half of the latter two areas and a considerably smaller extent of the other two areas. Within the Prior Muir landscape character area visibility of the Inch Cape WTGs and OSPs is concentrated in two relatively continuous areas, the first in a triangle of land relatively close to the coast, between the A917 and B9131, and the second to the east of the A915. Visibility of the Inch Cape WTGs and OSPs occurs across most of the Cameron character area with exception of a parcel of land to the north-west of Cameron Reservoir. In relation to the other two areas, theoretical visibility of the Inch Cape WTGs and

LCT (and Associated Area)	Range of Theoretical Visibility (min distance from the nearest Inch Cape WTG)	Description of Patterns of Theoretical Visibility
		OSPs occurs mostly across the landscape to the north-east of Cupar, on either side of the A91, with small isolated areas of visibility on scattered summits elsewhere. Areas of woodland cover, although variable, are important elements in this landscape, as are roadside trees, linear belts, hedgerow trees, tree groups around steadings and individual trees. Therefore, actual visibility of the Inch Cape WTGs and OSPs from across this character type may be more limited in extent than indicated by the ZTV. The baseline context of the Inch Cape WTGs and OSPs will vary depending on the location in which the area of theoretical cumulative visibility occurs. However, in general, most cumulative visibility with existing and consented onshore wind farms is shown in the areas to the south of St Andrews, from where more open views across the Firth of Tay may be obtained. Cumulative visibility from the areas to the north and east of Cupar is limited. The Group 6 wind farms are closest to this character area. Other wind farms included in the assessment, where visible, will be seen at much greater distances to the north, and across the Firth of Tay, the closest being the Group 5 wind farms, Michelin Tyre Factory, and oil rig maintenance structures at Dundee Port. Theoretical cumulative visibility of NNG and Seagreen offshore wind farms occurs in most of the areas from which the Inch Cape WTGs and OSPs will also be visible, with NNG at a closest distance of 23 km to the east.
FFE 6 – Lowland Open Sloping Farmland Representative Viewpoint: Vpt 20: B9131 South of Dunino Figure 12.54	29.3 km to 40.0 km	This character type occurs within two areas in Fife, on the extensive East Fife Slopes from Carnbee to Crail and a much smaller area at Strathkinness. Theoretical visibility of the Inch Cape WTGs and OSPs within the first area is shown in a more or less continuous band to the north of a very shallow ridge that extends from Crail in the east to Carnbee. This includes approximately two-thirds of this character area. To the south of this ridge the land slopes gently down across the East Neuk of Fife, with no theoretical visibility of the Inch Cape WTGs and OSPs until the coastal strip is reached, where

LCT (and Associated Area)	Range of Theoretical Visibility (min distance from the nearest Inch Cape WTG)	Description of Patterns of Theoretical Visibility
		there is limited visibility between Crail and Anstruther Easter. Within the second area theoretical visibility of the Inch Cape WTGs and OSPs occurs across most of the landscape with the exception of a small area to the south of Strathkinness. The Group 6 wind farms and Kenly Wind Farm are all located within this character type and there will be cumulative visibility together with the Inch Cape WTGs and OSPs over much of the same area as Inch Cape is visible. Visibility of other existing and consented wind farms together with the Inch Cape WTGs and OSPs is limited. Those in Aberdeenshire/north Angus (in Groups 1, 2 and 3) are unlikely to be visible due to distance. The oil rig maintenance structures at Dundee Port, Michelin Tyre Factory and Group 5 wind farms are more likely to be visible with the Inch Cape WTGs and OSPs given their closer proximity to the character area. Both NNG and Seagreen offshore wind farms will have cumulative visibility with the Inch Cape WTGs and OSPs in both areas of this character type with NNG at just over 15 km to the east at closest.
FFE 7 – Lowland Dens Representative Viewpoint: None	30.0 km to 40.8 km	Within the SLVIA study area this character type occurs in five areas: • To the west and south of St Andrews comprising the Dens of the Kinness and Claremont Burns, the Cairnsmill Burn and that running through the Lumbo Den; • To the south-east of St Andrews comprising the Dens of the Kenly Water and Kilduncan Burn; • On the south bank of the Eden Valley east of Cupar – the Dura Den; • On south coast at Largo forming a series of Dens from Methil eastwards to Elie; and • On the north coast at Hazelton Walls – the Corbie Den. Of these, theoretical visibility of the Inch Cape WTGs and OSPs is shown from the first four areas, but is extremely limited from the Dura

LCT (and Associated Area)	Range of Theoretical Visibility (min distance from the nearest Inch Cape WTG)	Description of Patterns of Theoretical Visibility
		Den and areas around Largo. The other two areas show more extensive theoretical visibility of the Inch Cape WTGs and OSPs. It is considered that actual visibility within the dens themselves may be limited due to woodland cover and localised topography; however there may be visibility of the Inch Cape WTGs and OSPs from more open areas which have views across the surrounding landscape. There may also be visibility of the Inch Cape WTGs and OSPs with the existing and consented wind farms at Michelin Tyre Factory and Tealing Airfield, from parts of these areas. Theoretical cumulative visibility with the Inch Cape WTGs and OSPs is shown for most of the wind farms considered as part of the assessment, with the exception of the Group 4. However, many of these are located at some distance from the character areas and actual visibility of these is likely to be limited. Closer wind farms which show theoretical visibility in conjunction with the Inch Cape WTGs and OSPs include those in Group 6 and Kenly which are located just to the south of Kinaldy Burn. There will also be some small areas of cumulative visibility with Inch Cape Wind Farm and the Group 7 sites and also Forthwind Offshore Wind Farm from higher parts of the area around Largo Law. NNG offshore wind farm and to a lesser extent Seagreen will be visible from most of the areas from where the Inch Cape WTGs and OSPs will also be seen.
FFE 8 – Lowland Glacier Meltwater Valleys Representative Viewpoint: None	37.9 km to 44.7 km	There is only one instance of this character type within the SLVIA study aat Motray Water to the south-east of Newport on Tay. Theoretical visibility of the Inch Cape WTGs and OSPs is limited to scattered areas, mostly within the eastern part of the character area. It is considered that actual visibility may be more limited due to the screening effect of intervening woodland and buildings in the surrounding landscape. Visibility of existing and consented wind farms at Michelin Tyre Factory and Group 5 is possible, but only from limited areas from which

LCT (and Associated Area)	Range of Theoretical Visibility (min distance from the nearest Inch Cape WTG)	Description of Patterns of Theoretical Visibility
		the Inch Cape WTGs and OSPs will also be theoretically visible. Theoretical cumulative visibility of existing and consented wind farms with the Inch Cape WTGs and OSPs is limited to sites which are also in Fife, Dundee and Angus. These are the Group 5 and 6 wind farms, Kenly, Michelin Tyre Factory, and the oil rig maintenance structures at the Port of Dundee. Both NNG and Seagreen offshore wind farms are theoretically visible from most areas from which the Inch Cape WTGs and OSPs will also be seen.
FFE11 – Coastal Hills Representative Viewpoint: Vpt 17: Strathkinness Figure 12.51	30.2 km to 41.4 km	Only one relatively small area of this character type occurs in the SLVIA study area, to the north of Strathkinness. Theoretical visibility of the Inch Cape WTGs and OSPs occurs across most of the area. The existing and consented wind farms at Group 5, 6 and Kenly, Michelin Tyre Factory and oil rig maintenance structures at Dundee Port are likely to be visible from many of these same areas from which the Inch Cape WTGs and OSPs will be visible. Other onshore developments are located much further to the north, in Angus and beyond, and are unlikely to be easily noticeable in views. Both NNG and Seagreen offshore wind farms will be theoretically visible with the Inch Cape WTGs and OSPs from across much of the character area.
FFE12 – Coastal Terraces (Inland of SA11) Representative Viewpoint: None	28.21 km to 45.5 km	This character type occurs across three areas within the SLVIA study area: • Near St Michael's Wood, between Leuchars and Guardbridge • Between Nydies to Kincaple to the south of Guardbridge; and • On the North Bank at St Andrews. Theoretical visibility of the Inch Cape WTGs and OSPs occurs across all three areas but is more intermittent around Leuchars and Guardbridge. It is considered that actual visibility is likely to be more limited due to the screening effect of

LCT (and Associated Area)	Range of Theoretical Visibility (min distance from the nearest Inch Cape WTG)	Description of Patterns of Theoretical Visibility
		buildings and vegetation in the surrounding landscape, particularly around Leuchars and St Michael's Wood. Theoretical visibility together with the Inch Cape WTGs and OSPs of existing and consented wind farms at Group 6 and Kenly to the south, and to the north the Michelin Tyre Factory, oil rig maintenance structures at Dundee Port, Group 5 and within Group 2 is also indicated across all three areas but more limited for Group 5 and at a considerable distance for Group 2. Other wind farms included in the assessment may be visible in good conditions and where there are open views across the Firth of Tay but they are located at greater distances from the character areas than the previously mentioned wind farms. Cumulative visibility of the NNG and Seagreen offshore developments is shown from most areas where the Inch Cape WTGs and OSPs will be seen.
FFE15 – Coastal Flats (Inland of SA11) Representative Viewpoint: None	32.4km to 41.6 km	This character type occurs at three locations within the SLVIA study area: between Morton and Leuchars; at Guardbridge; and the River Eden. Of these, most theoretical visibility of the Inch Cape WTGs and OSPs occurs within the first area. However, it is considered that actual visibility will be more limited, due mostly to the low-lying topography of the landscape and the screening effect of intervening trees and vegetation within Tentsmuir Forest. Theoretical cumulative visibility of onshore wind farms with the Inch Cape WTGs and OSPs is limited to those in Groups 5 and 6, Kenly, Michelin Tyre Factory, and oil rig maintenance structures at Dundee Port. There is also cumulative visibility of the NNG and Seagreen offshore wind farms from most areas from which the Inch Cape WTGs and OSPs will also be visible.

12B.1.4 Landscape Designations

46 An overlay of the landscape designations with the ZTV is shown in Figure 12.3a. Tables 12B.6 and Table 12B.7 describe patterns of theoretical visibility of the Inch Cape WTGs and OSPs from each of the landscape designations within the SLVIA study area. A description is provided of the baseline condition where the Inch Cape WTGs and OSPs are considered alongside existing and consented wind farm. The cumulative context of Inch Cape Wind Farm with existing and consented as well as the one application and one scoping stage wind farms is considered where applicable. Designated areas which are shown on the plan but for which no theoretical visibility of the Inch Cape WTGs and OSPs is indicated are not listed.

Garden and Designed Landscape (GDLs) (HES, Inventory of Gardens and Designed Landscapes)

Table 12B.6: Theoretical Visibility of the Inch Cape WTGs and OSPs from within GDLs in the SLVIA Study Area.

Garden and Designed Landscape (GDL)	Range of Theoretical Visibility (min distance from the nearest Inch Cape WTG)	Description of Patterns of Theoretical Visibility
Fasque House (Aberdeenshire) Representative Viewpoint: None	37.41 km north-west.	Theoretical visibility of the Inch Cape WTGs and OSPs increases as elevation across the GDL increases, with all the Inch Cape WTGs being theoretically visible from the highest areas within the designed landscape. However, the characteristics of the GDL which contribute to the landscape are likely to limit any effects relating to the Inch Cape WTGs and OSPs as views to surrounding areas are restricted due to woodland cover within the grounds. Cumulative theoretical visibility with the Inch Cape WTGs and OSPs is indicated for existing and consented onshore wind farms in Groups 1, 2, 3 and St John's Hill. Both NNG and Seagreen are also predicted to be visible with the Inch Cape WTGs and OSPs from part of the GDL.
The Burn (Aberdeenshire) Representative Viewpoint: None	38.0. km north-west.	The ZTVs indicate that theoretical visibility of the Inch Cape WTGs and OSPs varies across the GDL. Actual visibility is likely to be screened by trees and woodland within the grounds. Theoretical visibility of existing and consented onshore wind farms with the Inch Cape WTGs and OSPs is shown for sites in Groups 2, 3 and 4. Again, actual visibility of these wind farms in conjunction with the Inch Cape WTGs and OSPs

Garden and Designed Landscape (GDL)	Range of Theoretical Visibility (min distance from the nearest Inch Cape WTG)	Description of Patterns of Theoretical Visibility
		is likely to be limited. There would be no predicted cumulative visibility of NNG with the Inch Cape WTGs and OSPs and theoretical cumulative visibility of Seagreen Phase 1 is limited due to the distance it lies offshore from this GDL. In all cases, actual visibility is likely to be limited by surrounding trees and vegetation within the grounds.
House of Dun (Angus) Representative Viewpoint: None	24.86 km north-west.	Theoretical visibility of the Inch Cape WTGs and OSPs increases as elevation across the site increases. Although extensive views are possible from the house and grounds southwards across the Montrose Basin, it is predicted that actual visibility of the Inch Cape WTGs and OSPs will be limited due to the screening effect of surrounding woodland in the direction of view of the Inch Cape WTGs. The only existing or consented wind farm with theoretical visibility together with the Inch Cape WTGs and OSPs is Group 3, located 3.2 km at closest to the north-west of the House of Dun. Of the other offshore wind farms, only Seagreen has theoretical cumulative visibility with the Inch Cape WTGs and OSPs although, at the closest point, it is over 38.5 km to this GDL.
Dunninald (Angus) Representative Viewpoint: None	18.9 km north-west.	Although theoretical visibility of the Inch Cape WTGs and OSPs is shown across approximately two-thirds of the GDL it is considered that actual visibility will be limited due to the screening effect of the surrounding woodland within the grounds. Existing and consented wind farms having theoretical visibility with the Inch Cape WTGs and OSPs from this location include sites in Groups 1, 2, 3 and St John's Hill, the closest of which is Group 3 which is located 9.7 km to the north-west of Dunninald. Both the NNG and Seagreen offshore wind farms have theoretical cumulative visibility with the Inch Cape WTGs and OSPs. However, as noted above, actual visibility is likely to be limited.
Guthrie Castle (Angus)	29.29 km west north-west.	Theoretical visibility of the Inch Cape WTGs and OSPs increases as elevation across the grounds increases, with all WTGs being theoretically

Garden and Designed Landscape (GDL)	Range of Theoretical Visibility (min distance from the nearest Inch Cape WTG)	Description of Patterns of Theoretical Visibility
Representative Viewpoint: None		visible from the highest areas within the designed landscape. However, views to surrounding areas from within the grounds are limited due to woodland cover and vegetation. Theoretical cumulative visibility with the Inch Cape WTGs and OSPs is indicated for those wind farms in Groups 4 and 5. The closest of these sites are 1.3 km north at Pickerton Farm and Dubton (Group 4). NNG has no cumulative visibility with the Inch Cape WTGs and OSPs but theoretical visibility of Seagreen is indicated from most of the areas from which the Inch Cape WTGs and OSPs will be seen. However, actual visibility of all these sites is likely to be limited by surrounding trees and vegetation.
House of Pitmuies (Angus) Representative Viewpoint: None	28.86 km west north-west.	Theoretical visibility of the Inch Cape WTGs and OSPs is limited from within the designed landscape. Views to surrounding areas are also limited due to woodland cover and vegetation within the grounds of the GDL. The House of Pitmuies is located next to Guthrie Castle and the cumulative context is similar to that described above in that there is cumulative visibility with Groups 4 and 5. As with Guthrie Castle, actual visibility of all these wind farms, including Seagreen, is likely to be limited by surrounding trees and vegetation.
The Guynd (Angus) Representative Viewpoint: None	25.79 km west.	Theoretical visibility of the Inch Cape WTGs and OSPs is indicated across most of this GDL. However, views to surrounding areas are likely to be extremely limited due to woodland cover and vegetation in the grounds, although the Historic Environment Scotland (HES) Inventory description notes that views to the North Sea are possible from the top of the house. Theoretical cumulative visibility with the Inch Cape WTGs and OSPs is indicated for the wind farms in Groups 5 and 6. Both NNG and Seagreen have theoretical cumulative visibility with the Inch Cape WTGs and OSPs, although actual visibility of all these wind farms is likely to be limited by surrounding trees and vegetation as noted above.

Garden and Designed Landscape (GDL)	Range of Theoretical Visibility (min distance from the nearest Inch Cape WTG)	Description of Patterns of Theoretical Visibility
Camperdown House (Angus and Dundee City) Representative Viewpoint: None	45.57 km west.	All the Inch Cape WTGs are shown as being theoretically visible from the highest points of the GDL, although visibility in lower areas of the grounds will be limited. Views to surrounding areas are also limited due to woodland cover and vegetation. Views are possible from the house across Firth of Tay to Fife. The only existing or consented wind farm with theoretical visibility from this GDL is the Michelin Tyre Factory, 7.5 km to the east. Theoretical cumulative visibility with the Inch Cape WTGs and OSPs is indicated wind farms including the Michelin Tyre Factory, Groups 5 and 6 and also the oil rig maintenance structures at Dundee Port. Both NNG and Seagreen have theoretical cumulative visibility with the Inch Cape WTGs and OSPs, although for Seagreen this is limited. Actual visibility of all these wind farms is also likely to be further limited by surrounding trees and vegetation as noted above.
Baxter Park (Dundee City) Representative Viewpoint: None	41.04 km west.	Theoretical visibility of the Inch Cape WTGs and OSPs is shown across approximately two-thirds of the park (towards its southern end). The HES Inventory notes that there are glimpses of the former panoramic view over the Firth of Tay to Fife but that trees have all but obscured this view. The only wind farms having theoretical visibility with the Inch Cape WTGs and OSPs from this GDL are the Michelin Tyre Factory, 3.5 km to the east of Baxter Park, sites in Group 6, and also the oil rig maintenance structures at Dundee Port which are closest to the GDL at just under a 1 km south. Theoretical cumulative visibility is also indicated for the NNG and Seagreen offshore wind farms, but at a considerable distance from Dundee.
Balgay Park (Dundee City) Representative Viewpoint: None	44.67 km west.	The ZTV indicates theoretical visibility of the Inch Cape WTGs and OSPs across most of the eastern half of the park. Although Balgay Hill, which lies within the Park, is heavily wooded there are locations from which there will be long distance views over the Firth of Tay and

Garden and Designed Landscape (GDL)	Range of Theoretical Visibility (min distance from the nearest Inch Cape WTG)	Description of Patterns of Theoretical Visibility
		possibly towards the Inch Cape WTGs and OSPs. The only wind farms with theoretical visibility together with the Inch Cape WTGs and OSPs are Michelin Tyre Factory at seven kilometres to the east, Group 5, 6.8 km to the north of Balgay Park and also those in Group 6 in Fife. The oil rig maintenance structures would be also seen. Theoretical cumulative visibility with the Inch Cape WTGs and OSPs is also indicated for NNG and Seagreen offshore wind farms, but at a considerable distance from Dundee.
Earlshall (Fife) Representative Viewpoint: None	37.69 km due west south-west.	Theoretical visibility of the Inch Cape WTGs and OSPs is shown across most of the grounds of Earlshall. However, it is considered that actual visibility will be extremely limited due to tree cover both in and around the grounds. The main wind farms having theoretical visibility with the Inch Cape WTGs and OSPs from this GDL are Michelin Tyre Factory, Groups 5 and 6, Kenly and also the oil rig maintenance structures in Dundee Port. Theoretical cumulative visibility is also indicated for the NNG and Seagreen offshore wind farms but at a considerable distance: the closest, NNG is at least 34.4 km to the east south-east. Actual visibility is likely to be limited for the reason noted above.
St Andrews Links (Fife) Representative Viewpoint: None	35.26 km west south-west.	Theoretical visibility of the Inch Cape WTGs and OSPs is shown across the whole of the GDL. The HES Inventory indicates that views east towards St Andrews Bay may be obtained from all the courses. Existing and consented wind farms having theoretical visibility with the Inch Cape WTGs and OSPs include Michelin Tyre Factory, oil rig maintenance structures in Dundee Port, and Group 5 to the north north-west of St Andrews Links. To the south, Kenly and Group 6 sites would be visible. There would be theoretical visibility of Groups further away but distance would limit actual visibility. Both NNG and Seagreen offshore wind farms have theoretical cumulative visibility with the Inch Cape WTGs and OSPs, but visibility of

Garden and Designed Landscape (GDL)	Range of Theoretical Visibility (min distance from the nearest Inch Cape WTG)	Description of Patterns of Theoretical Visibility
		Seagreen would be limited at over 50 km to the north east.
Craigtoun (Fife) Representative Viewpoint: None	38.19 km west south-west.	Theoretical visibility of the Inch Cape WTGs and OSPs is indicated across the whole of this GDL. Although heavily wooded in places, actual visibility is likely to occur in the more open areas of the designed landscape, such as the golf course. Existing and consented wind farms with theoretical visibility from this GDL include the Michelin Tyre Factory, Group 5 and 6, and Kenly, and the oil rig maintenance structures at Dundee Port. Other developments with theoretical visibility are in Aberdeenshire and are unlikely to have actual visibility from the GDL on account of the intervening distance (over 60 km to Group 3), therefore are not described here. Both NNG and Seagreen offshore wind farms have cumulative visibility with the Inch Cape WTGs and OSPs, with NNG 31.3 km east of the GDL and Seagreen over 50 km to the north east.
Hill of Tarvit (Wemyss Hall) (Fife) Representative Viewpoint: None	48.67 km west south-west.	Located on the south-western edge of the SLVIA study area, theoretical visibility of the Inch Cape WTGs and OSPs is shown on the summit and north-east facing slopes of the Hill of Tarvit (211 m Above Ordnance Datum (AOD)). Theoretical cumulative visibility with the Inch Cape WTGs and OSPs is shown for most of the wind farms considered in the assessment. Many of these are unlikely to be actually visible due to distance. It is considered that only the other offshore wind farms and the Group 6 and 7 wind farms are likely to be relevant to the cumulative context of the Inch Cape WTGs and OSPs, although the offshore sites, in particular, are located at a considerable distance from the Hill of Tarvit, particularly Seagreen at over 70 km to the north-east.
Cambo (Fife) Representative Viewpoint: None	29.47 km south-west.	According to the HES Inventory, the GDL incorporates farms, a picturesque estate layout, a mid-20th century golf course and gardens of botanical and horticultural interest. Theoretical visibility of the Inch Cape WTGs and OSPs is

Garden and Designed Landscape (GDL)	Range of Theoretical Visibility (min distance from the nearest Inch Cape WTG)	Description of Patterns of Theoretical Visibility
		shown across nearly the entire designed landscape which is located on the coast of north-east Fife. However it is considered that there will be limited actual visibility of the Inch Cape WTGs and OSPs from within the garden itself due to the level of woodland cover. It is likely to be visible from more open areas such as the adjacent links and coastal footpath. With the exception of Groups 3 and 4, there is theoretical cumulative visibility with all the wind farms considered in the assessment. However, most of the onshore wind farms will be seen at a considerable distance to the north across the Firth of Tay, with only Group 6 and Kenly located in close proximity (Kenly is located 2.9 km to the west). Both NNG and Seagreen offshore wind farms will be seen from most areas from which the Inch Cape WTGs and OSPs will also be visible. NNG is located approximately 18.5 km offshore at the closest point to Cambo.
Charleton House (Fife) Representative Viewpoint: None	45.67 km west south-west.	Located towards the edge of the SLVIA study area in East Fife, theoretical visibility of the Inch Cape WTGs and OSPs is limited to the upper slopes and summit of Flagstaff Hill which rises up 214 m AOD to the north of the house. The only onshore wind farms having any theoretical cumulative visibility are those in Group 6 and Kenly just beyond 10 km to the east, and Group 7 within 10 km to the south west. There is also limited theoretical visibility of the NNG and Seagreen offshore sites with the Inch Cape WTGs and OSPs, although at over 70 Kato the north east Seagreen is unlikely to be visible. Forthwind Offshore Extension which is in scoping would lie approximately 10 km to the west and would be visible with the Inch Cape Wind Farm in succession from this GDL.
Tyninghame (East Lothian) Representative Viewpoint: None	50.36 km south south-west.	There is theoretical visibility of the Inch Cape WTGs and OSPs from much of this coastal GDL, most of which however lies outside the SLVIA study area. There may be distant views of the Inch Cape WTGs from open areas on the coast

Garden and Designed Landscape (GDL)	Range of Theoretical Visibility (min distance from the nearest Inch Cape WTG)	Description of Patterns of Theoretical Visibility
		itself but it is unlikely to be visible from many inland areas due to the extensive woodland cover across the designed landscape. The only onshore wind farms having theoretical cumulative visibility are those in Group 6 and Kenly. However there may be visibility of existing wind farms in the Lammermuir Hills to the south. There is limited visibility of the NNG and Seagreen offshore developments with the Inch Cape WTGs and OSPs. All these wind farms are at a considerable distance from the GDL.

Local Landscape Areas (LLA) (Fife Council, Local Plan 2012); Special Landscape Areas (SLA) (Aberdeenshire Council, Local Development Plan 2017); and Areas of Great Landscape Value (AGLV) (East Lothian Council, Local Plan 2008)

47 Table 12B.7 describes patterns of theoretical visibility of the Inch Cape WTGs and OSPs from each of the LLAs and AGLVs within the SLVIA study area. A description is included of both the baseline condition (where the Inch Cape WTGs and OSPs are considered alongside existing and consented wind farms) and the cumulative (application/scoping stage) context where applicable (where the Inch Cape WTGs and OSPs are considered alongside the one application and one scoping stage wind farms in addition to wind farms which are existing or consented). The ZTV is shown overlaid on the designated landscapes in Figure 12.3a.

Table 12B.7: Theoretical visibility of the Inch Cape WTGs and OSPS from within LLAs and AGLVs in the Study Area

Designated Area	Range of Theoretical Visibility (min distance from the nearest Inch Cape WTG)	Description of Patterns of Theoretical Visibility
SLA		
South East Aberdeenshire Coast Representative Viewpoints: Vpt 1: Garron Point Figure 12.35 Vpt 3: Beach Road, St Cyrus Figure 12.37	22.70 km N	Theoretical visibility of the Inch Cape WTGs and OSPs is possible from within almost all of this SLA. Wireline visualisations from Viewpoint 1 (Figure 12.35) and Viewpoint 3 (Figure 12.37) indicate that actual visibility will also be possible from areas where open sea views may be obtained. The extents of this SLA largely correspond to the Seascape Character Area SA3 and part of SA4 and reference should be made to Table 12B.2 for a detailed description of the extents of theoretical visibility. Visibility of existing and consented onshore wind farms in Groups 1 and 2 and at St John's Hill together with the Inch Cape WTGs and OSPs is indicated at various places within this seascape character area but is not continuous along the coast. The other onshore wind farms having theoretical visibility with the Inch Cape WTGs and OSPs are further away and areas of visibility tend to be more limited. Cumulative visibility of the other offshore wind farms with the Inch Cape WTGs and OSPs is also indicated at locations throughout the seascape character area particularly for Seagreen, and with Kincardine OWF in the northern extents of the seascape character area.
The Braes of Mearns Representative Viewpoints: Vpt 4: Cairn O'Mount Figure 12.38	37.14 km NNW	Theoretical visibility of the Inch Cape WTGs and OSPs is shown mostly from south and south-west facing slopes and hill tops within this SLA. Wireline visualisations from Viewpoint 4 (Figure 12.38) indicate that actual visibility will also be possible from areas where distant open sea views may be obtained. However, there are large parts of the SLA which are covered with coniferous plantations such as Drumtochty Forest which will decrease the areas of actual visibility. Limited theoretical cumulative visibility together with the Inch Cape WTGs and OSPs is shown for most of the other onshore wind farms considered in the assessment although many of these are located at some distance from the character area. Those closest, in Groups 1, 2, 3, 4 and St John's

Designated Area	Range of Theoretical Visibility (min distance from the nearest Inch Cape WTG)	Description of Patterns of Theoretical Visibility
		Hill will be seen in foreground views with Inch Cape Wind Farm visible beyond. Theoretical cumulative visibility of the Inch Cape WTGs and OSPs with Kincardine, NNG and Seagreen offshore wind farms will be limited due to the considerable distances these lie from the SLA.
LLA		
Craigtoun Representative Viewpoints: None	36.96 km west south-west.	There is theoretical visibility of the Inch Cape WTGs and OSPs from within much of this LLA. Although heavily wooded in places, actual visibility is likely to occur in more open areas of the landscape such as the golf course. Existing and consented wind farms with theoretical visibility from this LLA include the Michelin Tyre Factory, Group 5 and 6, and Kenly, and the oil rig maintenance structures at Dundee Port. Other developments with theoretical visibility are in Aberdeenshire and are unlikely to have actual visibility from the LLA on account of the intervening distance (over 60 km to Group 3), therefore are not described here. Both NNG and Seagreen offshore wind farms have cumulative visibility with the Inch Cape WTGs and OSPs, with NNG 29.3 km east of the LLA and Seagreen over 50 km to the north east.
Dura Den Representative Viewpoints: None	4215 km west south-west.	There is theoretical visibility of the Inch Cape WTGs and OSPs from a very small area within the north-eastern part of this LLA, to the north of Blebocraigs, but not from within Dura Den itself. Of the onshore wind farms considered in the assessment, cumulative theoretical visibility with the Inch Cape WTGs and OSPs is indicated for all wind farms except Groups 3, 4. The closest are in Group 6 and Kenly, which is located approximately 10 kilometres to the south-east. Other wind farms are located across the Firth of Tay to the north, and at varying distances. Both NNG and Seagreen offshore wind farms have cumulative visibility with the Inch Cape WTGs and OSPs, with NNG located 36.5 km east of the LLA. In all cases theoretical cumulative visibility is limited and does not occur within the Dura Den itself.

Designated Area	Range of Theoretical Visibility (min distance from the nearest Inch Cape WTG)	Description of Patterns of Theoretical Visibility
East Neuk Representative Viewpoints: Vpt 22: Anstruther Easter (Figure 12.56*)*	32.01 km west south-west.	Theoretical visibility of the Inch Cape WTGs and OSPs from within this LLA is limited to the stretch of coastline between Crail and Anstruther Easter, with some intermittent areas further west towards Earlsferry. The wireline visualisation from Viewpoint 22 (Figure 12.56) suggests that actual visibility of the northern Inch Cape WTGs, particularly from the coastal edge, will be screened by coastal landform. Theoretical cumulative visibility of onshore wind farms is limited to those in Group 6 and Kenly to the north east and Group 7 to the west. Existing wind farms may be visible on the distant skyline of the Lammermuir Hills in conditions of good visibility There is also limited cumulative visibility with the NNG and Seagreen offshore wind farms, with NNG located closest at 19 km to the east. Forthwind Offshore Extension which is in scoping would lie approximately 10 km to the west and would be visible with the Inch Cape Wind Farm in succession from East Neuk.
Forth Islands: Isle of May Representative Viewpoint: Vpt 24: Isle of May Viewpoint 12.58	34.0 km south-west.	There is theoretical visibility of the Inch Cape WTGs and OSPs from most of the Isle of May. The wireline visualisation from Viewpoint 24 (Figure 12.58) suggests that actual visibility will also be possible from most parts of the island due to the lack of tree cover and/or any development. Theoretical cumulative visibility with the Inch Cape WTGs and OSPs is indicated for several onshore wind farms. The closest are in Group 6 and Kenly located at a closest distance of 13.1 km north-west of the island. Other onshore wind farms considered in the assessment are located across the Firth of Tay, to the north, and are at varying distances. Those in Groups 1, 2 and 3 however are unlikely to have actual visibility due to their distance from the island. Both NNG and Seagreen offshore wind farms have cumulative visibility with the Inch Cape WTGs and OSPs, with NNG 16.2 km east north-east.
Largo Law Representative	42.55 km west south-west.	There is theoretical visibility of the Inch Cape WTGs and OSPs from within only a small part of this LLA limited to the summit and eastern slopes

Designated Area	Range of Theoretical Visibility (min distance from the nearest Inch Cape WTG)	Description of Patterns of Theoretical Visibility
Viewpoint: Vpt 19: Largo Law		of Largo Law. The wireline visualisation from Viewpoint 19 (Figure 12.53) suggests that actual visibility will also be possible from these areas. Of the onshore wind farms considered in the assessment, cumulative theoretical visibility with the Inch Cape WTGs and OSPs is indicated for all of them; however, this cumulative visibility is limited to the upper slopes of Largo Law. The closest are in Group 7, located to the south west, with East Fife Football Club turbine 6.75 km from the LLA. Group 6 and Kenly lie to the east north east of which Bonerbo is closest at 11.2 km. Other wind farms are located across the Firth of Tay to the north, and at varying, but much greater, distances. Both NNG and Seagreen offshore wind farms have cumulative visibility with the Inch Cape WTGs and OSPs, with NNG located 31.5 km east of the LLA. Forthwind Offshore Extension which is in scoping would lie approximately 9 km to the south west and would be visible with the Inch Cape Wind Farm in succession from this LLA.
St Andrews to Fife Ness Representative Viewpoints: Vpt 21: Kingsbarns Figure 12.55 Vpt 23: Fife Ness Figure 12.57	28.21. km west south-west.	Theoretical visibility of the Inch Cape WTGs and OSPs is possible from within almost all of this LLA. Wireline visualisations from Viewpoint 21 (Figure 12.55) and Viewpoint 23 (Figure 12.57) indicate that actual visibility will also be possible from areas where open sea views may be obtained. There is cumulative theoretical visibility of all of the wind farms considered in the assessment, although many are located at some distance to the north of the LLA. The closest is Kenly and Group 6 with the wind farm at Kenly located 1.8 km south of the LLA at its closest point. Other onshore wind farms are located across the Firth of Tay to the north, and at varying, but much greater, distances. Both NNG and Seagreen offshore wind farms have cumulative visibility with the Inch Cape WTGs and OSPs, with NNG located 15.8 km to the east of the LLA at its closest point to Fife Ness.
St Andrews Links Representative	28.2 km west south-west.	Theoretical visibility of the Inch Cape WTGs and OSPs is possible from within all of this LLA. There is cumulative theoretical visibility of several

Designated Area	Range of Theoretical Visibility (min distance from the nearest Inch Cape WTG)	Description of Patterns of Theoretical Visibility
Viewpoints: None		of the onshore wind farms although many are located at some distance to the north of the LLA. The closest are in Group 6 with Kenly located approximately 7 km south of the LLA at its closest point. Other onshore wind farms are located across the Firth of Tay to the north, with Port of Dundee the closest at 12.5 km north north-west. Both NNG and Seagreen offshore wind farms have cumulative visibility with the Inch Cape WTGs and OSPs from throughout the LLA, with NNG located 29.6 km east south-east.
Tarvit and Ceres Representative Viewpoints: None	43.30 km west south-west.	There is theoretical visibility of the Inch Cape WTGs and OSPs from within only a small part of this LLA limited to scattered areas around the Hill of Tarvit and across the southern third of the LLA. The pattern of theoretical cumulative visibility of onshore wind farms with the Inch Cape WTGs and OSPs is also limited. The closest are in Group 6 and Kenly with the wind farm at Bonerbo located approximately 7 km to the east of the LLA, at its closest point. Other onshore wind farms are located across the Firth of Tay to the north. Both NNG and Seagreen offshore wind farms also have limited cumulative visibility with the Inch Cape WTGs and OSPs, in small areas scattered throughout the LLA.
Tay Coast Representative Viewpoints: None	37.32 km west.	There is theoretical visibility of the Inch Cape WTGs and OSPs from within scattered parts of this LLA which lie inside the SLVIA study area including the low hills above Tayport and other hill-tops and east facing slopes between the A92 and Firth of Tay. Limited theoretical visibility of existing and consented wind farms is only possible for the closest, which are Group 5, Michelin Tyre Factory, oil rig maintenance structures at Dundee Port located across the Firth of Tay to the north. Both NNG and Seagreen offshore wind farms also have limited cumulative visibility with the Inch Cape WTGs and OSPs, in small areas scattered throughout the LLA.
Tentsmuir Coast Representative Viewpoint:	32.45 km west.	Theoretical visibility of the Inch Cape WTGs and OSPs is possible from within almost all of this LLA. The wireline visualisations from Viewpoint 16 (Figure 12.50) indicate that actual visibility will

Designated Area	Range of Theoretical Visibility (min distance from the nearest Inch Cape WTG)	Description of Patterns of Theoretical Visibility
Vpt 16: Tentsmuir Figure 12.50		also be possible. Theoretical visibility of existing and consented wind farms is only possible for the closest, which are at Michelin Tyre Factory, oil rig maintenance structures at Dundee Port, and Group 5 wind farms located across the Firth of Tay to the north, and Group 6 and Kenly wind farms located to the south. Both NNG and Seagreen offshore wind farms also have theoretical cumulative visibility with the Inch Cape WTGs and OSPs from throughout the LLA, with NNG the closest at 31.7 km east south-east.
AGLV		
East Lothian Coastal AGLV Representative Viewpoints: None	48.7 km south south-west.	There is theoretical visibility of the Inch Cape WTGs and OSPs from much of this coastal AGLV, most of which lies outside the SLVIA study area. There may be distant views of the Inch Cape WTGs and OSPs from open areas on the coast. There is theoretical visibility of existing or consented wind farms in Group 6 and Group 7, and Kenly Wind Farm. There is also theoretical visibility shown for Group 2 however actual visibility is unlikely due to the intervening distance. There may be visibility of existing wind farms in the Lammermuir Hills to the south although these do not lie within the SLVIA study area. There is theoretical cumulative visibility of NNG and Seagreen offshore wind farms with the Inch Cape WTGs and OSPs. However, these wind farms are at a considerable distance from the AGLV. The scoping stage Forth Wind Offshore Wind Farm would theoretically be visible approximately 20 km to the north-west.

12B.1.5 Residential Settlements

48 A review of the ZTV figures has been carried out to establish potential visibility of the Inch Cape WTGs and OSPs together with other existing and consented wind farms considered in the assessment on residential settlements. This review also includes analysis of potential cumulative visibility with the one application and one scoping stage wind farms considered

in the assessment, both onshore and offshore. The findings of this review are summarised in the Table 12B.8 to Table 12B.12 below and the following sections address both visibility of the Inch Cape WTGs and OSPs in its baseline context (with other existing and consented wind farms) and cumulatively where relevant. The analysis has identified 5 tiers of theoretical visibility: all; most; part; limited and none. The shaded rectangles within the table are where the settlement lies beyond 40 km from the onshore cumulative site or beyond the full ZTV extents of the offshore site and therefore are not included in the analysis.

49 It should be noted that visibility as shown on the ZTV often does not reflect the true nature of intervisibility between areas within settlements and wind farms in the wider landscape, due to the screening effect of surrounding buildings, structures and vegetation. Also, to avoid overly complex analysis, this review does not largely distinguish between simultaneous, consecutive and sequential cumulative visibility.

50 In general, most settlements of any size which are shown on the ZTV as having visibility of the Inch Cape WTGs and OSPs are located on the coastal edge. The only major settlements within 20 km of the Inch Cape WTGs and OSPs are Arbroath and Montrose.

Coastal Settlements in Aberdeenshire

Table 12B.8: Theoretical visibility of the Inch Cape WTGs and OSPs from coastal settlements in Aberdeenshire

	Visibility from Coastal Settlement in Aberdeenshire				
	Stonehaven	**Inverbervie**	**Gourdon**	**Johnshaven**	**St Cyrus**
Inch Cape WTGs and OSPs	none	part	all	all	part
Cumulative Sites					
Offshore (within study area)					
NNG	n/a	part	all	all	part
Seagreen	n/a	most	all	all	part
Kincardine	n/a	none	limited	all	none
Onshore (where settlement falls within 40 km of cumulative site)					
Group 1	n/a	none	limited	none	none
Group 2	n/a	part	none	none	part
Group 3	n/a	none	none	none	part
Group 4	n/a	none	none	part	part
Group 5					limited
St John's Hill	n/a	part	part	none	none

The shaded rectangles are where the settlement lies beyond 40 km from the onshore cumulative site or beyond the full ZTV extents of the offshore site and not included in the analysis.

Coastal Settlements in Angus

Table 12B.9: Theoretical visibility of the Inch Cape WTGs and OSPs from coastal settlements in Angus

	Visibility from Coastal Settlements in Angus					
	Montrose	**Lunan**	**Auchmithie**	**Arbroath**	**Carnoustie**	**Monifieth**
Inch Cape WTGs and OSPs	most	all	all	part	most	all
Cumulative Sites						
Offshore (within study area)						
NNG	part	none	all	most	all	all
Seagreen	most	part	all	part	most	all
Kincardine	most	none	part	none	none	none
Forthwind					none	none
Onshore (where settlement falls within 40 km of cumulative site)						
Group 1	none	none				
Group 2	part	none	none			
Group 3	part	none	none	limited	none	none
Group 4	part	none	none	most	none	none
Group 5	limited	none	none	most	part	limited
Group 6			limited	most	all	all
Group 7					none	none
St John's Hill	none	none	none			
Michelin Tyre Factory	none	none	none	part	most	all
Oil Maintenance Structures, Dundee Port	none	none	none	limited	most	most
Kenly			limited	most	all	all

The shaded rectangles are where the settlement lies beyond 40 km from the onshore cumulative site or beyond the full ZTV extents of the offshore site and not included in the analysis.

Coastal Settlements in Fife

Table 12B.10: Theoretical visibility of the Inch Cape WTGs and OSPs from Coastal Settlements in Fife

	Visibility from Coastal Settlements in Fife					
	Tayport	**Guardbridge**	**St Andrews**	**Crail**	**Anstruther Easter**	**Pittenweem**
Inch Cape WTGs and OSPs	all	most	most	most	most	part
Cumulative Sites						
Offshore						
NNG	all	most	all	all	all	all
Seagreen	all	limited	most	most	most	none
Kincardine	none	none	none	none	none	none
Forthwind	none	none	limited	none	most	all
Onshore (where settlement falls within 40 km of cumulative site)						
Group 3	none					
Group 4	none	none	most	none		
Group 5	all	limited	part	none	none	none
Group 6	most	part	limited	most	part	most
Group 7	none	none	none	none	most	most
Group 8				limited	all	all
Group 9				all	all	all
Michelin Tyre Factory	all	limited	part	none	none	none
Oil Maintenance Structures, Dundee Port	most	limited	part	none	none	none
Kenly	most	part	part	most	part	most
Ferneylea 2					most	most

The shaded rectangles are where the settlement lies beyond 40 km from the onshore cumulative site or beyond the full ZTV extents of the offshore site and not included in the analysis.

Inland Settlements in Fife

Table 12B.11: Theoretical visibility of the Inch Cape WTGS and OSPs from inland settlements in Fife

	Visibility from Inland Settlements in Fife					
	Balmullo	**Boarhills**	**Kingsbarns**	**Leuchars**	**Strathkinness**	**Dairsie**
Inch Cape WTGs and OSPs	all	most	all	most	all	all
Cumulative Sites						
Offshore						
NNG	all	all	all	all	all	none
Seagreen	all	most	all	most	all	most
Kincardine	none	none	none	none	none	none
Forthwind	none	none	none	limited	none	none
Onshore (where settlement falls within 40 km of cumulative site)						
Group 4	none	part	all	none	part	none
Group 5	limited	part	most	most	part	none
Group 6	all	part	most	most	most	limited
Group 7	none	none	none	none	none	none
Michelin Tyre Factory	limited	part	limited	most	part	none
Oil Maintenance Structures, Dundee Port	limited	part	limited	limited	part	none
Kenly	all	all	all	all	all	limited

The shaded rectangles are where the settlement lies beyond 40 km from the onshore cumulative site or beyond the full ZTV extents of the offshore site and not included in the analysis.

Other Settlements

Table 12B.12: Theoretical visibility of the Inch Cape WTGs and OSPs from Dundee and East Lothian

	Visibility from Coastal Settlements in Dundee and East Lothian			
	Dundee City	**Broughty Ferry**	**Dunbar**	**North Berwick**
Inch Cape WTGs and OSPs	part	part	part	all
Cumulative Sites				
Offshore				
NNG	part	all	part	part
Seagreen	part	part	part	part
Kincardine	none	none	none	none
Forthwind	none	none	most	all
Onshore (where settlement falls within 40 km of cumulative site)				
Group 3	none	none		
Group 4	None	none		
Group 5	part	limited		
Group 6	limited	all	most	most
Group 7	none	none	most	part
Group 8			limited	all
Group 9			limited	all
Michelin Tyre Factory	most	part		
Oil Maintenance Structures, Dundee Port	most	most		
Kenly	limited	most	most	most
Ferneylea 2			none	limited

The shaded rectangles are where the settlement lies beyond 40 km from the onshore cumulative site or beyond the full ZTV extents of the offshore site and not included in the analysis.

12B.1.6 Road, Rail & Recreation Routes

51 The ZTVs for all existing, consented, application and scoping stage wind farms considered as part of this assessment have been used to generate a series of route analysis diagrams shown in Figures 12.23 to 12.34. Each route is analysed to show theoretical visibility of the Inch Cape WTGs and OSPs together with these wind farms. The location of these routes is shown in Figure 12.7.

A91

52 The A91 is located 35.61 km west south-west of the closest Inch Cape WTG. The route analysis plan in Figure 12.23 shows that there will be theoretical visibility of the Inch Cape WTGs and OSPs from almost the entire stretch of road between St Andrews and Guardbridge, which is at a distance of between 35 km to 40 km from the closest Inch Cape WTG. Along certain stretches of the route, particularly closer to St Andrews, it is possible that actual views of the Inch Cape WTGs may be screened by buildings and roadside vegetation; however there are also sections of the road which have clear views across adjacent fields to the Eden Estuary and open sea and the Inch Cape WTGs and OSPs may be visible in these views.

53 The ZTVs show theoretical visibility of Group 4 wind farms from the A91 but as these are mostly single turbines between 20 and 40 km distant, they are unlikely to be easily visible. Group 5, Michelin Tyre Factory WTGs, and oil maintenance structures at Dundee Port also have theoretical visibility and are closer at around 19 km, 13.5 km and 12 km respectively. It is possible that there may be glimpses of these wind farms from the A91 although intervening vegetation and buildings may screen many views or limit them to views of WTG blade tips. To the south of the A91 there would be theoretical visibility of the consented Kenly Wind Farm. There would be no visibility of Groups 6, 7, 8 or 9 WTGs.

54 Both offshore stage wind farms have theoretical visibility but Seagreen is unlikely to be seen due to intervening distance. NNG, although closer, is also likely to be screened in many views from the road, largely as a result of buildings and vegetation around the town of St Andrews.

A914

55 The A914 is located 39.63 km west south-west of the closest Inch Cape WTG. The route analysis plan in Figure 12.24 shows that there will be limited theoretical visibility of the Inch Cape WTGs and OSPs for a short stretch of the road to the north of St Michaels between Balmullo and Dairsie, and also for several hundred metres of road closer to Newport-on-Tay. However, actual visibility is considered to be unlikely due to screening by roadside vegetation and also by trees and woodland in the surrounding landscape, both close by and also further afield (Tentsmuir Forest).

56 Of the onshore wind farms considered in the assessment, only Groups 5 and 6 and Kenly Wind Farm have theoretical visibility but this is limited and intermittent in extent, with the oil maintenance structures at Dundee Port also predicted to have short stretches of

theoretical visibility. Both NNG and Seagreen offshore wind farms have theoretical visibility along stretches of the route but at considerable distances, particularly Seagreen.

A915

57 The A915 is located 35.61 km west south-west of the closest Inch Cape WTG. The route analysis plan in Figure 12.25 shows theoretical visibility for the Inch Cape WTGs and OSPs for just less than half of the length of road considered, starting to the north of Largoward and continuing for most of the distance to St Andrews. Trees and vegetation at the roadside and in the surrounding landscape will tend to limit actual visibility however it is considered that the Inch Cape WTGs will be visible in the distance from the stretch of road that slopes down to St Andrews and from where there are views of the sea.

58 Figure 12.25 also shows a very clear pattern of visibility for Inch Cape together with other wind farms. Theoretical visibility of most wind farms starts south of the junction of the A915 with the B940. Beyond this point, to the north, the road slopes gently down towards St Andrews affording distant views over East Fife and the Firth of Tay towards Angus. Of the existing and consented onshore wind farms, Groups 6, 7 and Kenly lie within approximately 10 km to the east and would be most visible along the route with Inch Cape WTGs. Group 5, Michelin Tyre Factory WTGs, and the oil maintenance structures at Dundee Port would also be theoretically visible travelling north along this route although more intermittently than Inch Cape Wind Farm and Group 6 and Kenly. Group 4 and 5 would theoretically be visible but lie between approximately 20 and 40 km from the A915 and therefore unlikely to be particularly noticeable. Forthwind Offshore Wind Farm would be theoretically visible in the opposite direction to Inch Cape Wind Farm, intermittently from the southern extents of the A915.

59 The NNG and Seagreen offshore wind farms both have combined theoretical visibility with the Inch Cape WTGs and OSPs, but Seagreen is almost 60 km distant. NNG is closer at 30 km to the east and shows some sequential cumulative visibility (with Group 6 and Kenly) from the A915 between Lower Largo and Largoward.

A917

60 The A917 is located 30.38 km west south-west of the closest Inch Cape WTG and Viewpoint 21 is located adjacent to this road, just north of Kingsbarns. As illustrated in Figure 12.26, there is theoretical visibility of the Inch Cape WTGs and OSPs, for approximately two-thirds of this route. From Anstruther Easter to St Andrews (approximately 25 km) this is almost continuous, with some intermittent sections of visibility to the west of Anstruther Easter to Elie. As the road is located close to the coastline, actual visibility is also likely although it may be intermittent due to the screening effect of buildings and trees in the landscape. Viewpoint 21 (Kingsbarns as shown on Figure 12.55) is situated on the A917 and is considered to be representative of views from this section of the road, and in which the Inch Cape WTGs and OSPs will be visible.

61 For the onshore wind farms considered in the assessment that lie to the north of Fife, theoretical visibility is only possible along the stretch of road between the junction with the

B9171, to the north of Crail, and St Andrews. Onshore existing and consented wind farms at the Michelin Tyre Factory, the oil maintenance structures at Dundee Port, Groups 4 and 5, have varying degrees of theoretical visibility from here although at some distance from the road. Within Fife, Group 6 and Kenly Wind Farm which, at their closest, are situated just under two kilometres to the west of the road will be theoretically visible for much of the route with Inch Cape WTGs. Group 7 and Forthwind Offshore Wind Farm would be theoretically visible in the opposite direction to Inch Cape Wind Farm for the intermittent sections between Crail and Elie. To the south, Groups 8, 9, and Ferneylea 2 (for a very short stretch of the road) would theoretically be visible but over 30 km distant.

62 Both NNG and Seagreen offshore wind farms are theoretically visible, particularly NNG, with its closest WTG located approximately 18.7 km east of the road at Crail, and which is predicted to be visible for most of the route. Seagreen will be located considerably further away.

A919

63 The A919 is located 38.86 km west south-west of the closest Inch Cape WTG. As illustrated in Figure 12.27, there is theoretical visibility of the Inch Cape WTGs and OSPs along much of the length of this relatively short stretch of road. However, actual visibility may be more limited as the land is relatively flat or gently sloping and views towards the Development Area are likely to be screened by buildings, particularly within the settlements at Leuchars and Guardbridge, and also by trees and woodland in the surrounding landscape.

64 Of the onshore wind farms considered in this assessment, Groups 5, 6, Kenly Wind Farm, Michelin Tyre Factory have theoretical visibility with Inch Cape Wind Farm along this route. The oil maintenance structures at Dundee Port also have intermittent theoretical visibility.

65 Both NNG and Seagreen offshore wind farms will have some theoretical visibility from the road although Seagreen is over 60 km distant. Actual visibility is likely to be limited, as with most of the cumulative sites described above.

A92

66 The A92 is located 19.26 km west north-west of the closest Inch Cape WTG. Viewpoint 12 (A92 east of Muirdrum as shown on Figure 12.46) is located adjacent to this road, just to the east of Muirdrum, as is Viewpoint 2, just north of Inverbervie, as shown on Figure 12.36. The route analysis plan in Figure 12.28 shows theoretical visibility for the Inch Cape WTGs and OSPs for approximately two-thirds of the length of road considered in this assessment, from the Tay Road Bridge to Stonehaven in the north. Visibility is not continuous and there are some longer (approximately five kilometres or more) sections where there will be no visibility, including stretches of road to the north of Inverbervie, around Montrose, and between Inverkeilor and Arbroath. In some areas, actual visibility is likely to be limited due to woodland and vegetation in the surrounding landscapes, and where the road runs through settlements or adjacent to houses and other buildings. However, there are also stretches of the route where there are clear views out to sea, particularly where the road

traverses the landscapes and seascapes closer to the coast, for example between Inverbervie and Montrose.

67 As would be expected over a relatively long (over 85 km) length of road, patterns of visibility are somewhat complicated, almost of the wind farms considered in the assessment having theoretical visibility for at least some of the route, although NNG and Seagreen offshore wind farm sites will have theoretical visibility for more than half of the route.

68 Group 1 would be theoretically visible with Inch Cape WTGs from Stonehaven intermittently south to Johnshaven. St John's Hill lies close to the A92 but has a limited extent of visibility beyond the immediate stretch between Dunnottar and Gourdon. Group 2 Wind Farms also have intermittent visibility from Dunnottar to Gourdon but then more continuous visibility to just south of Montrose. Groups 3 and 4 theoretically become visible from Johnshaven intermittently to Montrose and then from Lunan to Arbroath. Group 5 has intermittent theoretical visibility from St Cyrus to Dundee. The Michelin Tyre Factory WTGs and oil maintenance structures at Dundee Port are theoretically visible between Arbroath and Tay Road Bridge. Group 6 and Kenly Wind Farm would be theoretically visible to the south of the A92 from the stretch between Arbroath and Dundee.

69 Theoretical visibility of the NNG and Seagreen offshore wind farms tends to occur mostly along stretches of road that are closer to the coastline, but is not continuous.

A933

70 The A933 is located 19.87 km west north-west of the closest Inch Cape WTG. It divides in Arbroath, with a short section extending round the south west side of the town. Predicted theoretical visibility from this stretch of the road is shown on Figure 12.29a, with the main section of the road shown on Figure 12.29b. The Inch Cape WTGs and OSPs are predicted to be visible for approximately two-thirds of this route, as can be seen in Figures 12.29a-b. This theoretical visibility occurs mostly between Arbroath and the junction with the A934, near Montreathmont Moor. It is considered that actual visibility is likely to be much more intermittent and probably limited to WTG blade tips, as a consequence of trees and vegetation at the roadside as well as in the surrounding landscape.

71 As with the A92, the pattern of visibility of the Inch Cape WTGs and OSPs with other wind farms is somewhat complicated. Groups3 and 4 would lie in close proximity to the A933 and are theoretically visible along the majority of the road to the north of Arbroath. Group 5 is only visible with Inch Cape Wind Farm for an approximate 5 km stretch of the route between the A934 junction and Friockheim. Group 6 and Kenly Wind Farm would theoretically be visible with Inch Cape Wind Farm along a continuous stretch for approximately 5 km just south of Colliston to Arbroath. The other wind farms considered within this assessment are not visible along this route.

72 Simultaneous visibility is also shown with NNG and Seagreen offshore wind farm.

A935

73 The A935 is located 21.3 km north-west of the closest Inch Cape WTG. The route analysis diagram in Figure 12.30 shows that the Inch Cape WTGs and OSPs are theoretically visible for the majority of the road, which runs between Brechin and Montrose. It is considered that actual visibility will be limited due to the screening effect of vegetation and buildings in the surrounding landscape, particularly within the settlement of Montrose.

74 Groups 3 and 4 lie between approximately 3 – 15 km close to the A935 and as a result there is theoretical visibility of these WTGs with Inch Cape Wind Farm for the majority of the route. Group 2 Wind Farms will be theoretically visible with Inch Cape Wind Farm on a 2-3 km stretch at the eastern end at Montrose. Groups 4 and 5 would theoretically be visible for the eastern half of the route, although would lie 25 km at closest.

75 There is also predicted visibility of Seagreen for much of this part of the road.

A937

76 The A937 is located 21.80 km north-west of the closest Inch Cape WTG. The route analysis diagram in Figure 12.31 shows that the Inch Cape WTGs and OSPs are theoretically visible for just under half the length of this road, which runs between Montrose and Laurencekirk. Beyond the settlements of Montrose and Hillside theoretical visibility is more intermittent up to Marykirk where beyond there is not any further visibility. Within these settlements actual visibility from the road is likely to be limited by intervening buildings and, in the countryside, limited by surrounding trees and vegetation.

77 Simultaneous visibility will occur with the wind farms in Groups 2, 3, 4 and 5, across much the route. In regard to NNG and Seagreen offshore wind farms, theoretical visibility of NNG is predicted to be very limited but Seagreen will be mostly seen in conjunction with the Inch Cape WTGs and OSPs.

Fife Coastal Path Footpath

78 The Fife Coastal Path footpath is located 28.28 km south-west of the closest Inch Cape WTG. Viewpoints 16, 18, 22 and 23 are all located on, or close to, the footpath. The Inch Cape WTGs and OSPs are predicted to be visible for just over two-thirds of this route. As can be seen in Figure 12.32, from Pittenweem there is almost continuous visibility along the footpath all the way to the Tay Road Bridge. There is theoretical visibility also from a short section west of St Monans, and also at Sauchar Point near Elie. Apart from where the footpath passes through settlements, and the section through Tentsmuir Forest, actual visibility of the Inch Cape WTGs and OSPs is likely to occur in many places, as the footpath follows the coastal edge closely, particularly between Anstruther and St Andrews.

79 To the west of Fife Ness, cumulative visibility is predicted mostly with the Group 6 and Kenly wind farms, NNG and Forthwind offshore wind farms. Group 7 would also be seen along this stretch of the coast in the opposite direction to Inch Cape Wind Farm. Seagreen would lie over 75 km from Fife Ness and unlikely to be visible. Groups 8, 9, and Ferneylea 2 would

theoretically be visible but over 30 km to the south. Between Fife Ness and St Andrews, there is theoretical visibility of Groups 4 and 5 as well as the Michelin Tyre Factory and oil maintenance structures in Dundee Port in conjunction with the Inch Cape WTGs and OSPs, although beyond Boarhills visibility of some of the more distant onshore wind farm sites is screened by the intervening landform at Red Head. Between Guardbridge and Tayport theoretical visibility is more limited and includes the existing and consented WTGs at Michelin Tyre Factory, oil maintenance structures at Dundee Port, and Group 5. There will also be theoretical cumulative visibility with the NNG and Seagreen offshore wind farms. As noted above, actual visibility of these other wind farms from within Tentsmuir Forest will be limited.

National Cycle Network (NCN) Route 1

80 NCN Route 1 is located 17.16 km west north-west of the closest Inch Cape WTG. It is divided into two sections, with theoretical visibility from the northern section shown on *Figure 12.33a* and from the southern section shown on Figure 12.33b. Theoretical visibility from NCN Route 1 of the Inch Cape WTGs and OSPs is predicted from the majority of the length of this route. Within East Fife theoretical visibility is almost continuous, from the northern slopes of Knock Hill to the Tay Road Bridge. Analysis of other routes (A91 for example) alongside which NCN Route 1 runs, suggests that actual visibility from some locations will be limited by roadside vegetation or by trees and buildings in the surrounding landscape, particularly in and around settlements, such as St Andrews and Leuchars. Also, between Leuchars and Tayport the route runs through Tentsmuir Forest, which has limited intervisibility with the adjacent seascape. From Dundee to Arbroath and from Arbroath to Montrose there is almost continuous theoretical visibility of the Inch Cape WTGs and OSPs. The cycle route follows the line of the railway, and then runs parallel with the A92 on the approach to Arbroath. Leaving Arbroath, the route follows a series of minor roads across the coastal farmland to Lunan Bay, before re-joining with the A92 at Montrose.

81 To the north of Montrose, theoretical visibility continues as the route traverses Montrose Bay, passing through St Cyrus before joining the route of the A92 again, which it follows north to Inverbervie. Between Johnshaven and Inverbervie there is also an alternative route, much closer to the coastline, which follows the route of a former railway line. Theoretical visibility along this section is illustrated in Figure 12.33b. North of Inverbervie, visibility becomes more intermittent as the route follows a series of minor roads in the agricultural landscape just inland of the coastal edge, and there is almost no visibility of the Inch Cape WTGs and OSPs from Stonehaven to the edge of the SLVIA study area, at Cookney.

82 Throughout the length of the route there will be simultaneous visibility with a range of wind farms, although the most visible will be NNG and Seagreen offshore wind farms. Kincardine Offshore Wind Farm would be simultaneously visible within the northern extents of the route, most continuously north of Johnshaven to beyond the study area. In relation to onshore sites, between East Fife and Arbroath simultaneous visibility is indicated with the wind farms in Groups 5 and 6, Kenly, Michelin Tyre Factory and oil maintenance structures at Dundee Port.

83 Between Arbroath and Montrose Bay there will be intermittent visibility of almost all of the other wind farms considered in the assessment. To the north of Montrose Bay however, theoretical visibility is more limited occurring mostly with onshore sites in Groups 1, 2 and 3. As with other routes described in this analysis and assessment, actual visibility of the Inch Cape WTGs and OSPs, is likely to be more limited than that shown in the plans and analysis diagrams, particularly as the route moves further away from the coastline, due to the screening effects of intervening vegetation and buildings in the surrounding landscape.

East Coast Rail Line

84 The railway is located 18.13 km north-west of the closest Inch Cape WTG. The route analysis diagram in Figure 12.34 shows that the Inch Cape WTGs and OSPs will have theoretical visibility for just over half of this journey between Kingoodie and Newtonhill. This is concentrated into three main sections with small isolated stretches of visibility elsewhere. Firstly there is a stretch of continuous theoretical visibility about 30 km in length between the Tay Rail Bridge and Arbroath. It is considered that actual visibility of the Inch Cape WTGs and OSPs will be limited or non-existent in certain locations due to the screening effect of trackside cuttings, buildings and vegetation, particularly where the line passes through built-up areas. However, at other points on this section, where the train line runs parallel with, and in close proximity to, the coast there is likely to be actual visibility of the Inch Cape WTGs and OSPs; for example, the section between Broughty Ferry and Monifieth, and particularly the section between Carnoustie and Arbroath. Theoretical visibility along this part of the route is indicated with the existing wind farm at the Michelin Tyre Factory, oil maintenance structures at Dundee Port, Groups 5 and 6 and Kenly Wind Farm. Both NNG and Seagreen also have theoretical cumulative visibility, although the latter is at a considerable distance. Theoretical visibility of other wind farms along this stretch of line is limited.

85 The second section of mostly continuous theoretical visibility occurs between Lunan Bay and where the line crosses the River North Esk. Actual visibility will be more limited, particularly along the many stretches where the line runs through cuttings and built-up areas. However, there will also be some areas from where it is possible to obtain open views out to sea, mainly between Lunan Bay and Montrose. Theoretical visibility together with the Inch Cape WTGs and OSPs is indicated, at one point or another along this section, with wind farms in Groups 2, 3, and 4, and more limited with Group 5.

86 Finally, there is a section of the line to the north of Stonehaven which shows theoretical visibility. However, it is considered that actual visibility will be limited as the train line runs through a cutting along most of this length. There is also limited theoretical visibility of the Inch Cape WTGs and OSPs together with other wind farms. Only Kincardine and Seagreen Offshore Wind Farms, St Johns Hill Wind Farm, and wind farms in Group 1 show theoretical visibility along this section. NNG would lie beyond 70 km from this section of the route and unlikely to be visible.

12B.1.7 Other Recreational Facilities

87 A separate visibility analysis has not been carried out for the other recreational receptors listed in *Section 12A.5*. The receptors are all located within the ZTV of the Inch Cape WTGs and OSPs although in some cases, for example Dunnottar Castle, theoretical visibility is limited. Predicted visibility of the Inch Cape WTGs and OSPs with other operational or consented, and/or Future Cumulative wind farms may be evaluated from ZTV analysis and/or by reference to the nearest representative Viewpoint.

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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.
Future Cumulative	Application and scoping stage wind farms within the study area included in the cumulative assessment.
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 *Guidelines for Landscape and Visual Impact Assessment* (GLVIA) The Landscape Institute and the Institute of Environmental Management and Assessment (IEMA), 2013). 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 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	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 Feature	A prominent eye-catching element or landmark (e.g. church spire, wooded hilltop).
Land Use	The primary use of land, including both rural and urban activities.
Methodology	The specific approach and techniques used for a given study.
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.
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 *An Approach to Seascape Character Assessment*, 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 *An Approach to Seascape Character Assessment*, Natural England, 2012).
Visual Amenity	Particular composition of landscape elements that contribute to a view, or views. The value of a particular area or view in terms of what is seen (as defined in the *Guidelines for Landscape and Visual Impact Assessment* (GLVIA) The Landscape Institute and the Institute of Environmental Management and Assessment (IEMA), 2013).
Visibility Analysis	The process of identifying theoretical (based on digital modelling) and/or actual predicted areas from where any given development may be seen.
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
EIA	Environmental Impact Assessment
GLVIA	Guidelines for Landscape and Visual Impact Assessment
HSA	Horizontal Subtended Angle
LLA	Local Landscape Area
MS-LOT	Marine Scotland Licensing Operations Team
NCN	National Cycle Network
NnG	Neart na Gaoithe Offshore Wind Farm
OS	Ordnance Survey
OSP	Offshore Substation Platform
SA	Regional Seascape Character Area
SLVIA	Seascape, Landscape and Visual Impact Assessment
SNH	Scottish Natural Heritage
WTG	Wind Turbine Generator
ZTV	Zone of Theoretical Visibility

12C Viewpoint Assessment

12C.1 Introduction

1 This Appendix sets out the findings of the detailed viewpoint assessment, carried out as part of the Seascape, Landscape and Visual Impact Assessment (SLVIA) of the proposed Inch Cape Wind Farm. The findings of the Viewpoint Assessment are used to inform the overall assessment of effects on landscape character and visual amenity reported in *Chapter 12: SLVIA* of the Environmental Impact Assessment (EIA) Report.

2 The 26 viewpoints were agreed with Marine Scotland Licensing Operations Team (MS-LOT), Scottish Natural Heritage (SNH), East Lothian Council, Angus Council, and Aberdeenshire Council. The other council areas within the study area did not have any comments on the viewpoint locations.

3 The viewpoints were selected to cover points of specific importance including: recognised viewpoints, landscape designations, settlements, and important recreational and driving routes, to inform the likely extent of significant seascape, landscape and visual effects arising from the proposed development. A variety of seascape and landscape types and locations at different directions, distances and elevations from the Development have been represented in the selected viewpoints.

4 An assessment of the potential effects on landscape and/or seascape character, and visual amenity arising from the proposed development at each of the agreed viewpoints has been carried out in line with *Guidelines for Landscape and Visual Impact Assessment, 2013, Third edition* (GLVIA 3; Ref 12C.1). The existing and predicted views from each of these viewpoints have been described and analysed to identify the magnitude of change and the residual effects of the proposed development on landscape and seascape character, and visual amenity. The magnitude of change is then considered in relation to the sensitivity of the potentially affected receptors (seascape, landscape and visual amenity) which is set out in *Appendix 12A: Seascape, Landscape and Visual Impact Baseline.*

5 The assessment also takes into consideration the existing and consented wind farms included within the study area which constitute the baseline context. Accordingly, the seascape, landscape and visual effects arising from the addition of the Inch Cape Wind Farm to this baseline taking account of the existing and consented wind farms have been assessed at each of the representative viewpoints. The findings of this assessment have been used to inform the overall summary of effects and conclusions presented in *Chapter 12* of the EIA Report.

6 An assessment of the Future Cumulative effects of the proposed development on landscape and/or seascape character and visual amenity has been made for the viewpoints which have, or would have, visibility of any proposed or in-scoping wind farms included in the cumulative assessment (Table 12C.1). As this only comprises two wind farms: Forthwind Offshore Wind Farm; and Ferneylea 2 Wind Farm; a separate cumulative assessment has not been undertaken for each viewpoint. The potential cumulative effects of Inch Cape Wind Farm with these Future Cumulative wind farms are assessed where relevant.

7 The locations of the 26 viewpoints are illustrated by Figures 12.1 to 12.22 which are contained in *Appendix 12E: Seascape, Landscape and Visual Figures* A3 Figures. Viewpoint photo-panoramas, wirelines, and selected photomontages are presented in Figures 12.35 to 12.60 which are contained in *Appendix 12F: Visualisations*.

8 For each viewpoint, a viewpoint location plan is provided. This illustrates the viewpoint and surrounding area at a scale 1:25,000, also showing the blade tip Zone of Theoretical Visibility (ZTV) for the proposed development. The plan identifies the extent of the view arcs for the photographic panorama, cumulative wireline and, if relevant, the photomontage. Within the legend of the location plan, the viewpoint information and location description is given.

9 Following the location plan, a 120° photo-panorama and wireline of Inch Cape Wind Farm on its own has been provided. This is followed by 120° photo-panoramas and wirelines of Inch Cape Wind Farm and the baseline cumulative sites. For all viewpoints, cumulative wirelines are presented with the Inch Cape Wind Farm turbines shown in blue; existing and consented turbines shown in green, proposed turbines in red and scoping turbines in purple.

10 For a selection of viewpoints (Viewpoints 3, 5, 6, 9, 10, 11, 12, 14, and 23), a photomontage of the predicted view towards the Development is presented at 120° below a photograph of the existing view of the Development from the viewpoint. For these selected viewpoints, the photomontage and wireline is also presented at 53.5°.

11 Photomontages illustrating the lighting of the proposed development have been provided for Viewpoints 6, 10, 12 and 14, as agreed with SNH. These have been prepared in accordance with the lighting requirements provided by Inch Cape Offshore Limited (ICOL) in respect of the proposed lighting to comply with the Civil Aviation Authority (CAA); and Search and Rescue: Maritime and Coast Guard Agency (SAR (MCA)) requirements. There is no guidance on the preparation of night time lighting visualisations and there are several parameters affecting the presentation of these visualisations which affect the electronic and printed images. This includes the way in which lighting of any known candela are represented; the influence of distance on visibility and intensity of lighting; the influence of ambient lighting at the viewpoint locations; and atmospheric conditions at the time viewpoint photography is taken. Discussions were held with all consultees during the assessment process regarding the uncertainties attached to night time visualisations. It was agreed that night time visualisations for four viewpoint locations closest to Inch Cape would be presented acknowledging these uncertainties. The assessment of effects from the proposed lighting of the Inch Cape Wind Farm at these four viewpoint locations has been used to inform the assessment of night time effects in the wider study area. For further info on the technical visibility of lighting refer to *Appendix 12H, The Observability of Offshore Wind Turbine Lighting.*

12 The locations of all wind farms within approximately 65 km of the proposed development are shown on Figure 12.8 This identifies all wind farms (operational, under construction, consented, application and scoping). The status of the wind farms is taken to be current as of 1st November 2017.

13 The baseline and Future Cumulative context for the initial 65 km radius search area is very complex comprising 123 wind energy developments. These range from numerous small single turbines to very large wind farms, as well as the offshore wind farms. Single turbines have only been considered in the study area where it is considered that the addition of the

proposed development with these turbines has the potential to have a significant cumulative effect. The 65 km radius cumulative search area showing the location and status of the initial long list of wind farms was circulated to MS-LOT, SNH and the Councils within the SLVIA study area post issue of the Scoping Report and the approach to the cumulative assessment was agreed with these consultees through email correspondence.

14 The approach agreed comprised an initial comparison review of the ZTVs of wind farm sites within the 65 km radius search area against the proposed development's ZTV to consider whether significant cumulative effects would be likely to occur. A judgement was then made on the wind farm sites to be included in the assessment. This judgement also considered the potential for sequential cumulative effects on the key transport routes in the study area. Table 12C.1 and Figure 12.9 identify the wind farms which have been included in the detailed assessment which has been carried out for the 50 km radius SLVIA study area. This comprises 31 operational sites, 1 under construction, 9 consented and 2 proposed developments. The oil rig maintenance structures at Dundee Port have also been included in the assessment as they are tall vertical structures, with a similar form to the proposed development and are therefore considered relevant.

15 Developments included in the assessment have been grouped according to geographic location and status (operational and consented, or application/ in-scoping) for presentation on ZTVs and for the purposes of assessment. Table 12C.1 shows the ZTV Groups together with status, the number of wind turbines, blade tip height and approximate distance and direction to the nearest Inch Cape Wind Turbine Generator (WTG).

Table 12C.1 Wind farm developments considered in the SLVIA

ZTV Group	Development	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	39.8 km SSE
2	Brownieleys	Operational	3	100m	30.6 km SSE
	Paul Matthew Hill	Consented (July 2016)	2	99.5m	27.6 km SSE
	Tullo Farm (including Tullo 1, Tullo 2 and Twinshiels)	Operational	7	100m	30.3 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

ZTV Group	Development	Status	Number of WTGs	Blade Tip Height (m)	Approx. Distance and Direction to nearest Inch Cape WTG
4	Ascurry Farm	Operational	1	77m	31.1 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	41.9 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	59.9 km NE
	East Fife Football Club (Bayview)	Consented	1	91m	54.8 km NE
	Levenmouth Demo Project	Operational	1	196m	56.9 km NE
	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 2	Operational	51	125m	60.6 km N
	Crystal Rig 2a	Operational	9	125m	61.8 km N
	Crystal Rig 3	Operational	6	125m	60.6 km N

ZTV Group	Development	Status	Number of WTGs	Blade Tip Height (m)	Approx. Distance and Direction to nearest Inch Cape WTG
	Crystal Rig 1	Operational	20	100m	60.4 km N
	Crystal Rig 1a	Operational	5	100m	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	32.9 km NE
WF4	Ferneylea 2	Application (submitted July 2015)	6	115m	58.9 km N
OWF1	Kincardine Floating Wind Farm	Constructio n	8	192m	48.4 km S
OWF2	Neart na Gaoithe Offshore Wind Farm (NnG)	Consented	75	197m	11.2 km NNE
OWF3	Seagreen	Consented	150	210m	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
S1	Dundee – Oil Rig Maintenance Structures	Operational	2-4 Lattice structure s	127m	39.3 km ENE

WF = Onshore Wind Farm; OWF = Offshore Wind Farm; and S = Structure (non-wind). Suffix numbers refer to the numbers used on the ZTVs (Figures 12.11–12.20).

16 In the viewpoint assessment text, effort has been made to focus on the key additional effect of the proposed development with the most relevant of the baseline wind farms rather than to describe all the wind farms which are predicted to be visible from any given viewpoint and the resulting interactions. All of the wind farms included in the assessment which are predicted to be visible from any given viewpoint are shown in the wirelines and identified. However only those sites with which Inch Cape Wind Farm will have the most potential for significant effects are identified in the table presented for each viewpoint in the viewpoint assessment text. As single turbines of less than 50m to blade tip height have not been included in the assessment, there are some viewpoint locations from where these single

turbines may be seen in the photography of the existing view, but are not taken account of in the assessment. This is because it is judged that Inch Cape Wind Farm in conjunction with such small sized, individual turbines, would not result in significant effects.

17 The following sections, *12C.2* to *12C.27* provides the viewpoint assessment for each of the viewpoints (viewpoints 1 to 26).

12C.2 Viewpoint 1: Garron Point

18 Table 12C.2 presents the key viewpoint information.

Table 12C.2: Viewpoint 1 details

Figure Number	12.35a—12.35c
OS Grid Reference	388592,787597
Regional Seascape Character Area	SA3: Cove Bay to Milton Ness
Seascape Character Sensitivity	Moderate
Landscape Designation	None
Distance to Closest and Furthest Inch Cape WTG	43.72 km—61.61 km
Direction of View Towards Closest Inch Cape WTG	South
Horizontal Subtended Angle (HSA)	14°
Visibility of Closest Inch Cape WTG	For an average of approx.124 days a year
Visual Amenity Receptors	Recreational users
Sensitivity of Visual Receptors	High

12C.2.1 Existing View

19 The existing view from this location is illustrated in Figure 12.35a. The view south towards the Development Area looks over Stonehaven Golf Course, which is separated from the adjacent rocky shoreline by steep slopes and cliffs. Across Stonehaven Bay the indented rocky coastline continues, with several small headlands being visible in the view; Dunnottar Castle can be seen on one of these headlands, although it is not visible on the skyline. The settlement of Stonehaven itself is visible at the back of Stonehaven Bay, to the south of which rises a patterned landscape of agricultural land and woodland, with distant views over the A90 towards the transmitters on Bruxie Hill. There are open views out to sea, predominantly

orientated in a wide sweep from east to south. The view inland towards the west is blocked by the rising topography of Bruxie Hill and adjacent landform.

20 Table 12C.3 and cumulative wireline visualisation in Figures 12.35b–12.35c indicate that several existing and consented onshore and offshore wind farms have theoretical visibility from this viewpoint, almost all of which are seen on the skyline. Of these, the most prominent are the Kincardine and Seagreen offshore developments to the north east and south east respectively. The Kincardine development would be the most visible because its closer proximity to the viewpoint where all eight turbines would form a noticeable feature along the sea horizon occupying a small extent of the overall view. The Seagreen development would occupy a larger extent of the view but would be distant with visibility being dependent on weather conditions. The Neart na Gaoithe (NNG) offshore development is also predicted to be theoretically visible from this location although a combination of distance (>70 km) and screening from a headland would considerably reduce actual visibility of the WTGs. Three onshore developments are predicted to be theoretically visible from this viewpoint, namely the consented St John's Hill and operational Clochnahill and Hillhead of Auquhirie. The wireline and photography of the existing view on Figure 12.35c identifies that turbine blades of the St John's Hill and WTGs of Hillhead of Auquhirie and Clochnahill (both Group 1) would be screened by a combination of landform and vegetation. A summary of the key wind farms visible from this viewpoint is presented in Table 12C.3.

Table 12C.3: Summary of key wind farms theoretically visible from viewpoint 1

Wind Farm Name or Grouping	Status	Distance from Viewpoint	HSA	Direction to Viewpoint
Kincardine	Under Construction	19.39 km	10	ENE
Seagreen	Consented	37.91 km	28	SE

12C.2.2 Predicted View

21 The wireline visualisation in Figures 12.35b–12.35c shows that the Inch Cape WTGs and Offshore Substation Platforms (OSPs) will be visible to the east of the coastline and partially overlapping with the coastal edge, although would be at a much greater distance beyond this visible foreground coastline. The Inch Cape WTGs will occupy a HSA of 14°. Due to the shape of the Development Area and the arrangement of the indicative grid layout, the Inch Cape WTGs in the wireline visualisation appear to form two distinctive groups, each of which will occupy approximately half the total HSA. The eastern group of turbines are fewer and much more distant than the other half of the development. The western half of WTGs would appear at the right-hand side of the view overlapping slightly with the coast with potentially a handful of blade tips visible above the coastline. The indicative layout allows individual WTGs to be potentially seen on both halves of the development area but there are more overlapping and grid lines visible on the western half which has a greater depth of WTGs.

22 At this distance (43.72 km) the curvature of the earth means that the lower parts of the WTG towers will sit below the horizon and the more distant WTGs will also have part of their blade sweep (below the hub) screened below the horizon, although blade tip movement is unlikely to be easily discernible. Although the ZTV indicates theoretical visibility for foundation structures this is likely to be for the closest WTGs only. The ZTV shown on Figure 12.4 also indicates that the OSPs may be discernible at this distance. Met Office data (see *Section 12.4.3*) indicates that on average, the closest WTGs will be visible for 34 per cent of days of the year, equivalent to approximately 124 days. In clear weather, the WTGs will appear backlit at certain times of the day.

12C.2.3 Magnitude of Change

23 The Inch Cape WTGs and OSPs will mostly be seen against the sea horizon, but adjacent to the coastal edge, with which it may compete as a focus of views when looking southwards along the coastline. The Inch Cape WTGs and OSPs will appear in front of NNG which will occupy a HSA of 8° at a closest distance of over 70 km, therefore the NNG WTGs are unlikely to be perceptible. Seagreen will be seen approximately right of centre in the open seaward view at a closest distance of 37.91 km and occupying a HSA of approximately 28°, over twice that of the Inch Cape WTGs and OSPs. Kincardine Offshore Wind Farm will be seen in the opposite direction to Inch Cape, much closer and will be a noticeable feature on its own.

24 The Inch Cape WTGs will be located at a considerable distance from this viewpoint, occupying around 14° of the view, and will be theoretically visible for less than a quarter of the year, on average. At this distance, and considering the composition of the existing view, which comprises a mix of sea, consented offshore wind farms, coastline and inland areas, but tends to be dominated by the expansive character of the open sea, it is considered that the introduction of the Inch Cape WTGs and OSPs into the seascape will result in a limited change to the baseline. The magnitude of change is considered to be **low**.

12C.2.4 Effect on Seascape Character

25 The key characteristic of this seascape is its large scale, resulting primarily from the relatively simple form of the coastline, together with the wide, open views which may be obtained both out to sea and along the coast. On this basis, it is accorded a moderate sensitivity to change. The Inch Cape WTGs and OSPs will extend the proportion of the sea view affected by wind farm development but will be at a considerable distance and will not form a major focus in the overall panoramic sea view which may be obtained at this location. The corresponding effect on seascape character at this viewpoint will be **minor/moderate** and not significant.

12C.2.5 Effect on Visual Amenity

26 Recreational visitors to this part of the coastline and users of Stonehaven Golf Course are considered to have a high sensitivity to change. They may show more of an interest in the

character of their surroundings and the nature of the scenic views available from this location. The Inch Cape WTGs will introduce an additional group of WTGs in seaward views and will be noticeable in views along the coastline but will not occupy a large proportion of the open and expansive view eastwards out to sea. Therefore, the introduction of the Inch Cape WTGs and OSPs into these views will result in a **moderate** effect on visual amenity, which is not considered to be significant.

12C.3 Viewpoint 2: A92, North of Inverbervie

27 Table 12C.4 presents the key viewpoint information.

Table 12C.4: Viewpoint 2 details

Figure Number	12.36a—12.36d
Ordnance Survey (OS) Grid Reference	383156, 773289
Regional Seascape Character Area	SA3: Cove Bay to Milton Ness
Seascape Character Sensitivity	Moderate
Landscape Designation	None
Distance to Closest and Furthest Inch Cape WTG	30.17 km—47.96 km
Direction of View Towards Closest Inch Cape WTG	South south-east
Horizontal Subtended Angle (HSA)	16°
Visibility of Closest Inch Cape WTG	For an average of approx. 175 days a year
Visual Amenity Receptors	Recreational cyclists and road users
Sensitivity of Visual Receptors	High to Moderate

12C.3.1 Existing View

28 The existing view from this location is illustrated in Figure 12.36a. The viewpoint is located at the side of a minor road, just off the A92 approximately 0.5 km from Inverbervie. The view looks across a foreground of arable farmland towards Inverbervie whose church tower is a prominent feature on the skyline. A small section of sea horizon is visible from this location directly beyond the town, but larger views of the sea are screened by rising topography, together with buildings and mature trees in the town. Looking across the valley of Bervie Water, the ground rises to an adjacent high point of 159 m Above Ordnance Datum (AOD) at Knox Hill. Residential housing on the edge of the town occupies part of the lower slopes, the rendered walls of the houses contrasting with the colours of the surrounding landscape, which is mostly farmland. Medium to large sized fields are bounded by post-and-wire fences with

scattered trees and blocks of woodland, some of which form noticeable features on the skyline. Looking inland and across the A92, the wooded valley of Bervie Water and adjacent slopes give way to views of distant hills and ridgelines rising above Strathmore. To the north, the open agricultural landscape continues across a series of low hills and ridges including Gallow Hill (141 m AOD). Tree cover is limited to scattered blocks of woodland, often associated with farmsteads. To the east, views of the sea are blocked by the slopes of rising ground which is heavily wooded although the tops of the masts on Bervie Brow can be seen just above the skyline.

29 Table 12C.4 and cumulative wireline visualisation in Figures 12.36b–12.36d indicate that several existing and consented onshore wind farms have theoretical visibility from this viewpoint, almost all of which are seen on the skyline. St Johns Hill is the most prominent within the view to the north and includes views of five WTGs at hub height and the blade tips of one further WTG. To the west, the upper parts of WTGs of the Tullo, Twinshiels and Brownieleys operational developments (Group 2) are visible above the horizon forming a concentrated block of WTGs mainly viewed at hub height. The wireline shown on Figure 12.36c indicates that developments forming Groups 8 and 9 would be visible from this location; however, as a result of distance and screening from a combination of landform and vegetation, these WTGs would not be visible. There are also existing individual operational single turbines shown within the photo-panoramas in Figures 12.36c and 12.36d which have not been included in the assessment due to their size.

30 Two offshore developments would also be theoretically visible from this location and include the Seagreen to the south east and NNG to the south. The Seagreen scheme would include three groupings of WTGs just beyond the foreground headland occupying a small part of the overall view. To the south, on exceptionally clear days the blades of the NNG WTGs would also be theoretically visible but form a very distant feature on the sea horizon. A summary of the key wind farms visible at this viewpoint is presented in Table 12C.5.

Table 12C.5: Summary of key wind farms theoretically visible from viewpoint 2

Wind Farm Name or Grouping	Status	Distance from Viewpoint	HSA	Direction from Viewpoint
St Johns Hill	Consented	2.45 km	19°	N
Brownieleys	Operational	5.53 km	6°	W
Twinshiels	Operational	6.85 km	5°	W
Tullo	Operational	7.58 km	2°	W
Seagreen	Consented	29.86 km	33°	SE
NNG	Consented	57.76 km	9°	S

12C.3.2 Predicted View

31 Comparison of the wireline visualisation and photograph of the existing view in figure shows that the Inch Cape WTGs will be visible on the short section of distant sea horizon which can be seen from this location. Some of the Inch Cape WTGs will be partially or wholly screened by the intervening buildings and vegetation. The Inch Cape WTGs will be seen at a distance of 30.17 km to the south south-east and occupying 16° of the view. The indicative layout shows two individual turbines to the east more distant and separate to the main group of WTGs which become more densely but generally evenly arranged with individual turbines discernible. The ZTVs indicates that there may be visibility of foundation structures but that no OSPs will be seen from this location. Blade tip movement may be discernible at this distance. The Inch Cape WTGs will sometimes appear back-lit by the sun in good weather conditions. On average, the closest Inch Cape WTGs are likely to be visible for 48 per cent of the time, equivalent to approximately 175 days of the year.

32 NNG will be theoretically visible and viewed behind the Inch Cape Wind Farm. Much of its WTGs are below the horizon line and so mostly only blades will be seen on the horizon between the aligned rows of the Inch Cape WTGs. They are unlikely to be discernible except for exceptionally clear visibility. Views of some of the NNG WTGs will also be screened by intervening buildings and vegetation on the skyline.

33 Views of the Seagreen development would be limited as a result of foreground screening from landform resulting in the development occupying 9° of the view at a distance of just under 30 km to the south east.

34 The onshore existing and consented wind farms will be seen in the wider panoramic views mostly within separate fields of view to the Inch Cape WTGs. St John's Hill is the closest and seen to the north east of the viewpoint on the skyline.

12C.3.3 Magnitude of Change

35 The Inch Cape WTGs will introduce a large number of man-made vertical elements on the horizon occupying approximately 16° of the view. From this location, they will fill a section of the distant sea horizon within the view. The Inch Cape WTGs will extend wind farm development already apparent in the nearby surrounding landscape, to the sea surface but due to distance and limited sea in the view, it is considered a partial change within the wider unaltered context. Therefore, the magnitude of change resulting from the Inch Cape WTGs and OSPs will be **medium.**

12C.3.4 Effect on Seascape Character

36 This seascape character area has a large scale overall, with a relatively simple linear coastline, including a number of smaller-scale localised coastal features, such as Bervie Bay. It is considered that the introduction of the Inch Cape WTGs will give rise to a **moderate** and not significant effect on the moderate sensitivity seascape character at this location.

12C.3.5 Effect on Visual Amenity

37 The viewpoint is representative of views obtained by recreational cyclists on National Cycle Network (NCN) Route 1 and road users on the A92, who are considered to have a high and generally moderate sensitivity to change respectively, although it is recognised that some motorists may be more sensitive to change in the seascape since this road is designated as the Angus Coastal Route – a National Tourist Route. The effect on visual amenity at this location is therefore considered to be **moderate/major** for recreational cyclists who are more likely to be focussed on the scenic quality of the seascape and **moderate** for most road users. As described above, this viewpoint is not considered representative of general views towards the Inch Cape WTGs from this stretch of coastline, in which the Inch Cape WTGs will generally be seen as a smaller part of a wide sea view, rather than here where views are focussed towards a narrow stretch of sea horizon appearing in the context of the settlement in the middle ground of the view towards the Development Area.

12C.4 Viewpoint 3: Beach Road, Kirkton, St Cyrus

38 Table 12C.6 presents the key viewpoint information.

Table 12C.6: Viewpoint 3 details

Figure Number	12.37a—12.37g
OS Grid Reference	375185, 764643
Regional Seascape Character Area	SA4: Montrose Bay
Seascape Character Sensitivity	High
Landscape Designation	None

Distance to Closest and Furthest Inch Cape WTG	24.12 km—42.32 km
Direction of View Towards Closest Inch Cape WTG	South south-east
Horizontal Subtended Angle (HSA)	23°
Visibility of Closest Inch Cape WTG	For an average of approximately 197 days a year
Visual Amenity Receptors	Recreational users
Sensitivity of Visual Receptors	High

12C.4.1 Existing View

39 The existing view from this location is illustrated in Figure 12.37a. The view south south-east towards the Development Area looks out over Montrose Bay from an elevated position at the top of the Heughs of St Cyrus. The wide sweep of the Bay is visible in its entirety from this location, from Milton Ness in the north to Scurdie Ness at the mouth of the River South Esk. To the north-east the view looks along the coastline, with farmland rising gently to a more rolling landscape of shallow hills and ridges, including Cloch Hill at 152 m AOD. Looking south south-west along the coastal edge, the view takes in the beach and dunes at St Cyrus National Nature Reserve (NNR), the mouth of the River North Esk, and beyond to the dunes and plantation forestry at Kinnaber Links and Montrose in the distance. The lighthouse at Scurdie Ness is visible although it does not break the skyline. In the far distance, the vertical cliff edge of Red Head, which lies beyond Lunan Bay, can be distinguished on the skyline. The view west is curtailed by rising landform although the houses at the edge of Kirkton are seen close by along with St Cyrus Church with its prominent spire.

40 Table 12C.7, the existing view shown on Figure 12.37c and cumulative wireline visualisation in Figure 12.37d indicate that several existing and consented onshore and offshore wind farms are theoretically visible from this viewpoint, almost all of which are seen on the skyline. To the north, onshore, the Tullo, Twinshiels and Brownieleys Wind Farms can be seen as a cluster along with some individual small WTGs in the foreground which due to size have not been included in the cumulative assessment. The consented Paul Matthew Hill turbines would also be seen to the north east.

41 Seagreen Offshore Wind Farm will be seen separately and to the left of the Inch Cape WTGs and OSPs, in views south-east at a distance of 32.14 km and occupying 30° of the view, with the WTGs seen as two linear groupings spread along the horizon. NNG will be much further away, at over 50 km to the south. It will be seen behind and to the side of the Inch Cape WTGs and OSPs, overlapping with them for about 1° of a total HSA of 9° of the horizon.

42 Onshore developments in East Lothian are shown to be theoretically visible but due to distance and size of the WTG, and intervening screening from vegetation it is very unlikely that these would be visible.

43 A summary of the key baseline wind farms relevant to this viewpoint is presented in Table 12C.7.

Table 12C.7: Summary of other wind farms theoretically visible from viewpoint 3

Wind Farm Name or Grouping	Status	Distance from Viewpoint	HSA	Direction from Viewpoint
Paul Matthew Hill	Consented	5.05 km	2°	NNE
Tullo	Operational	6.63 km	7°	N
Twinshiels	Operational	7.40 km	3°	N
Brownieleys	Operational	8.03 km	2°	N
Seagreen	Consented	32.14 km	30°	SE
NNG	Consented	50.04 km	9°	SSE

12C.4.2 Predicted View

44 Comparison of the photograph of the existing view and photomontage in Figure 12.37g shows that the Inch Cape WTGs and OSPs will be visible to the centre right of the open sea view across Montrose Bay, occupying a HSA of 23° on the horizon towards the south south-east and at a distance of 24.12 km. All parts of the Inch Cape WTGs will be visible although the foundation structures and lower towers, particularly towards the south of the Development Area, may be screened by the horizon due to the effects of earth curvature. The ZTV indicates that the two Inch Cape OSPs will have theoretical visibility. The indicative layout of the Inch Cape WTGs is generally evenly arranged with slightly denser layering of WTGs within the centre of the array and a single outlier turbine to the east. The spacing and distance allows most of the turbines to be seen individually. Inch Cape WTGs and OSPs will sometimes appear back-lit by the sun in good weather conditions. Blade tip movement will be discernible at this distance. On average, the closest Inch Cape WTGs are likely to be visible for 54 per cent of the time, equivalent to approximately 197 days of the year.

12C.4.3 Magnitude of Change

45 The Inch Cape WTGs and OSPs will introduce a large number of man-made vertical elements on the horizon. They will occupy approximately 23° of the open sea view at a closest distance of over 24 km. In this view the Inch Cape WTGs and OSPs will appear to the right of Seagreen Offshore Wind Farm as a separate development, occupying a relatively large proportion of the remaining open sea view. The NNG WTGs will be seen at much greater distance but overlapping with the Inch Cape WTGs and OSPs. The Seagreen and NNG offshore wind farms will be distant and unlikely to be particularly noticeable in comparison to the proposed development. Other existing and consented onshore wind farms are, or will be, visible from

the same location, but will be seen in the opposite direction to the Inch Cape WTGs and OSPs. Therefore, it is considered that the magnitude of change is **moderate.**

12C.4.4 Effect on Seascape Character

46 This seascape is considered to have a high sensitivity to change associated with offshore wind development due to its medium scale, fairly enclosed nature, with short to medium distance views across the landward component of the seascape character area that contrast with open vistas from the coastal edge. Within this context, but also taking into account the two consented offshore wind farms theoretically visible from this seascape, it is considered that the introduction of the Inch Cape WTGs and OSPs into the seascape will give rise to a **moderate/major** effect which is significant.

12C.4.5 Effect on Visual Amenity

47 The viewpoint is representative of views obtained by recreational users, who are considered to have a high sensitivity to change. The effect on visual amenity is therefore considered to be **moderate/major** and significant.

12C.5 Viewpoint 4: Cairn o' Mount

48 Table 12C.8 presents the key viewpoint information.

Table 12C.8: Viewpoint 4 details

Figure Number	12.38a—12.38b
OS Grid Reference	365039, 780480
Landscape Character Area	ABS4: Moorland Plateaux – the Mounth
Landscape Character Sensitivity	Moderate
Landscape Designation	None
Distance to Closest and Furthest Inch Cape WTG	42.87 km—61.03 km
Direction of View Towards Closest Inch Cape WTG	South south-east
Horizontal Subtended Angle (HSA)	14°
Visibility of Closest Inch Cape WTG	For an average of approx. 120 days a year
Visual Amenity Receptors	Recreational users
Sensitivity of Visual Receptors	High

12C.5.1 Existing View

49 The existing view from this location is illustrated in Figure 12.38a. Cairn o' Mount is a recognised scenic viewpoint on the B974 and the photograph was taken from a footpath a short distance from the car park. From this location, the panoramic view looks out over the road as it descends through the hills, which are covered with a mosaic of heather and rough grassland. The prominent hill on the left of the view, whose slopes are partially cloaked with coniferous plantations, is Strath Finella Hill, which breaks the distant sea horizon. An overhead power line and associated pylons can be seen traversing the landscape in front of this hill. To the left of the hill there are views along Strath Finella itself towards the coast, with a number of telecommunications masts visible on the low hills and ridges to the south of Stonehaven. To the right of the hill there are views towards Garvock Hill with the existing wind farm at Tullo also visible on the skyline. Following the line of the B974, the view looks across the agricultural lands of Strathmore which have a strong horizontal emphasis. The landscape here comprises a patchwork of fields interspersed with areas of woodland. The settlement of Laurencekirk is visible below Garvock Hill and Montrose Bay can be seen in the distance with open sea beyond. To the right of the view, the distant outline of the Sidlaw Hills can be distinguished and in the distance the coastal edge of East Fife can be made out with the hazy outline of the Lammermuir Hills barely perceived in the very far distance.

50 The cumulative wireline shown in Figure 12.38b indicates that a number of operational and consented wind farms will be visible from this location. This includes developments in Groups 2, 3, 4, 5, 6, 8 and 9. Group 2 WTGs are the most noticeable due to their closer proximity to the viewpoint and being sky lined above the sea horizon. The other operational and consented onshore wind farms are backdropped by land and sea reducing their prominence and would be visible on clear days. The remaining developments (Groups 6, 8 and 9) to the south would be barely noticeable from this location due to distance and intervening screening from landform and vegetation.

51 The Seagreen offshore development would be visible as a cluster of turbines on the sea horizon to the left of Inch Cape but would be further away at 48.70 km and would only be visible during periods of clear weather. The onshore Group 2 turbines would lie on the hillside in front of the centre of the Seagreen WTG array. The offshore development of NNG is also only likely to be visible in conditions of good visibility at approximately 67.89 km and would not overlap in the view with Inch Cape WTGs and OSPs. A summary of the key wind farms which are theoretically visible in views from this location are shown in Table 12C.9 below.

Table 12C.9: Summary of key wind farms theoretically visible from viewpoint 4

Wind Farm Name or Grouping	Status	Distance from Viewpoint	HSA	Direction from Viewpoint
Tullo	Operational	13.25 km	4°	SE
Twinshiels	Operational	13.29 km	2°	SE

Wind Farm Name or Grouping	Status	Distance from Viewpoint	HSA	Direction from Viewpoint
Brownieleys	Operational	14.51 km	3°	SE
Paul Matthew Hill	Consented	16.38 km	2°	SE
Seagreen	Consented	48.70 km	23°	SE
NNG	Consented	67.89 km	6°	SSE

12C.5.2 Predicted View

52 The wireline visualisation in Figure 12.38b shows that the Inch Cape WTGs and OSPs will be visible on the sea horizon, seen beyond Montrose Bay, at a distance of 42.87 km south south-east and occupying a HSA of 14° of the view. The indicative layout presents the array in four uneven groups with one outlier to the north. The WTGs are relatively evenly arranged within the groups and individual turbines would theoretically be seen. From this elevated viewpoint all parts of the Inch Cape WTGs and OSPs will be theoretically visible although the foundation structures and lower towers of those to the south of the Development Area may be screened due to the effects of earth curvature. Blade movement is unlikely to be discernible at this distance; however, the ZTV indicates that both OSPs will be visible. The Inch Cape WTGs and OSPs will appear back-lit in certain conditions. On average, the closest Inch Cape WTGs are likely to be visible for 34 per cent of the time, equivalent to approximately 120 days of the year.

12C.5.3 Magnitude of Change

53 In this view, the Inch Cape WTGs and OSPs will introduce a large number of man-made vertical elements to the distant sea horizon. From this location, the sea is a distant element in an extensive view across the surrounding landscape. In relation to the consented offshore sites, the Inch Cape WTGs and OSPs will occupy part of the remaining view of open sea from this location, and will be the closest of the offshore wind farms. At this distance, coupled with the panoramic nature of the view from this location it is considered that the magnitude of change resulting from the introduction of the Inch Cape WTGs and OSPs into distant views of the sea will be **low**.

12C.5.4 Effect on Landscape Character

54 This is considered to be a moderate sensitivity landscape due to its large scale, and open and exposed character. Within this context, the introduction of the Inch Cape WTGs and OSPs into the landscape in view, when considered in addition to other existing and consented wind farms will be **minor/moderate**.

12C.5.5 Effect on Visual Amenity

55 Visitors to this scenic viewpoint are considered to have a high sensitivity to change in the landscape. Therefore, the introduction of the Inch Cape WTGs and OSPs into distant sea views is considered to give rise to a **moderate** effect on visual amenity but this will not be significant.

12C.6 Viewpoint 5: Montrose

56 Table 12C.10 presents the key viewpoint information.

Table 12C.10: Viewpoint 5 details

Figure Number	12.39a—12.39f
OS Grid Reference	372686, 757957
Regional Seascape Character Area	SA4: Montrose Bay
Seascape Character Sensitivity	High
Landscape Designation	None
Distance to Closest and Furthest Inch Cape WTG	19.99 km—37.77 km
Direction of View Towards Closest Inch Cape WTG	South-east
Horizontal Subtended Angle (HSA)	30°
Visibility of Closest Inch Cape WTG	For an average of approx. 215 days a year
Visual Amenity Receptors	Recreational users
Sensitivity of Visual Receptors	High

12C.6.1 Existing View

57 The existing view from this location is illustrated in Figure 12.39a. The photograph is taken from the beach front at Montrose, adjacent to the Seafront Splash Beach Park and at the opposite end of the Bay to Viewpoint 3. The view south-east towards the Development Area looks out over the beach and Montrose Bay to Scurdie Ness Lighthouse, which is a prominent vertical feature on an otherwise almost horizontal skyline. As with Viewpoint 3, the entire sweep of the bay from north to south is visible in this view, enclosed by the headlands at Milton Ness and Scurdie Ness, which also serve to screen more distant views along the coastline. The view inland is blocked by buildings and structures within the Beach Park.

58 To the north, Group 2 developments including the operational Tullo, Twinshiels and Brownieleys and consented Paul Matthew Hill break the horizon. Offshore, both the consented schemes of Kincardine and Seagreen are theoretically visible from this location. Kincardine WTGs occupy a small extent to the north-east but are distant and visibility would

be limited to periods of clear weather. The Seagreen development would also be distant but owing to the number of turbines forming a large cluster, would be more noticeable.

59 Key wind farms and WTGs which are theoretically visible in views from this location are summarised in Table 12C.11 below.

Table 12C.11: Summary of key wind farms theoretically visible from viewpoint 5

Wind Farm Name or Grouping	Status	Distance from Viewpoint	HSA	Direction from Viewpoint
Paul Matthew Hill	Consented	12.18 km	1°	NNE
Tullo	Operational	13.47 km	3 °	N
Twinshiels	Operational	14.44 km	1 °	N
Brownieleys	Operational	15.14 km	1 °	N
Kincardine	Under Construction	47.37 km	4 °	NE
Seagreen	Consented	32.68 km	29 °	E

12C.6.2 Predicted View

60 The photomontage in Figure 12.39b shows that the Inch Cape WTGs and OSPs will be visible at a distance of 19.99 km to the south-east. They will occupy a HSA of 30° of the view. Towards the right of the array and to the right of Scurdie Ness Lighthouse, the blades and some hubs of the Inch Cape WTGs will just be visible above the landform. The turbines will appear behind the lighthouse at approximately just under half of its height. The Inch Cape WTG indicative array appears in a regular layout in this view, particularly towards the right of the Development Area where the WTGs coalesce visually into aligned row. To the left of the view, the WTGs are more sparsely spaced and the northern most WTG appears slightly apart from the rest of the array. The apparent height of the Inch Cape WTGs and OSPs decreases towards the south of the Development Area due to effects of the curvature of the earth although all parts of the WTGs are visible from this location. The ZTV indicates that both Inch Cape OSPs are theoretically visible from this location, with foundation structures of the closest WTGs also likely to be visible. The Inch Cape WTGs will be back-lit in this view and the increased contrast with the sky may tend to make them more noticeable in the view. At this distance blade movement will also be discernible. However, there are many sources of light in the adjacent landscape particularly the lighthouse and the port at Montrose. On average, the closest Inch Cape WTGs are likely to be visible for 59 per cent of the time, equivalent to approximately 215 days of the year.

12C.6.3 Magnitude of Change

61 The Inch Cape WTGs and OSPs will introduce a large number of vertical man-made elements in the view across Montrose Bay and the mouth of the River South Esk towards Scurdie Ness, in addition to the consented although distant offshore wind farms. Some of the WTGs will appear as blades and hubs above the landward skyline but most will be visible on the sea horizon. They will appear behind and adjacent to the lighthouse at Scurdie Ness, and compete with this and the headland, as a focus in the view. In this context, the magnitude of change arising from the Inch Cape WTGs and OSPs in conjunction with existing and consented wind farms is considered to be **high**.

12C.6.4 Effect on Seascape Character

62 This is considered to be a high sensitivity seascape due to its medium scale, fairly enclosed nature with short to medium distance views across the landward component of the seascape character area. In this context, the introduction of the Inch Cape WTGs and OSPs into the sea view is considered to give rise to a **major** and significant effect.

12C.6.5 Effect on Visual Amenity

63 Recreational users at this location are considered to have a high sensitivity to change in the seascape. Therefore, the effect on visual amenity will be **major** and significant.

12C.7 Viewpoint 6: Braehead of Lunan

64 Table 12C.12 presents the key viewpoint information.

Table 12C.12: Viewpoint 6 details

Figure Number	12.40a—12.40d Night time visual: Figures 12.40f and 12.40g
OS Grid Reference	368988, 752598
Regional Seascape Character Area	SA6: Lunan Bay
Seascape Character Sensitivity	High
Landscape Designation	None
Distance to Closest and Furthest Inch Cape WTG	19.55 km—36.46 km
Direction of View Towards Closest Inch Cape WTG	East south-east
Horizontal Subtended Angle (HSA)	34°
Visibility of Closest Inch Cape WTG	For an average of approx.219 days a year
Visual Amenity Receptors	Recreational users
Sensitivity of Visual Receptors	High

12C.7.1 Existing View

65 The existing view from this location is illustrated in Figure 12.40. The view south-east towards the Development Area looks out across fields, which slope gently and then more steeply towards Lunan Bay screening views of the northern part of the beach. To the north and north-east views of the coastline are blocked by rising topography. However, to the east, south-east and south there are clear views out to sea across the expanse of Lunan Bay. The buildings at Home Farm and adjacent dunes can be seen in the middle distance, and beyond the view contains the sweep of the bay as it extends out towards the headland at Lang Craig, with the vertical cliffs of Red Head just visible in the distance. Inland views are mostly screened by adjacent houses and the generally rising landform, with the exception of distant views towards the shallow ridge rising to the south above Lunan Water, which is mostly arable land interspersed with blocks of woodland.

66 The offshore consented developments of Seagreen and NNG will be visible from this location. Both offshore developments will be viewed on the sea horizon at distances of 35.89 km and 40.31 km respectively. Seagreen will occupy the largest extent within the view and would mainly form a cluster of turbines although some individual turbines around the periphery will be observed. The NNG development to the south east would be visible just beyond and above the foreground headland. Both offshore developments would form distant features within the view and only visible during good visibility.

67 The onshore developments forming Group 9 are predicted to be theoretically visible, however, a combination of distance, and screening from vegetation and landform results in no views from this location.

68 The key wind farms which are theoretically visible in views from this location are summarised in Table 12C.13 below.

Table 12C.13: Summary of key wind farms theoretically visible from viewpoint 6

Wind Farm Name or Grouping	Status	Distance from Viewpoint	HSA	Direction from Viewpoint
NNG	Consented	40.31 km	10°	SE
Seagreen	Consented	35.89 km	26°	E

12C.7.2 Predicted View

69 The photomontage in Figure 12.40a shows that the Inch Cape WTGs and OSPs will be visible to the right of centre of the open sea view across Lunan Bay. The Inch Cape WTGs and OSPs will be seen at a closest distance of 19.55 km to the east south-east and occupying a HSA of 34°. The indicative layout shows the WTGs in one large group and a smaller group to the north. Within the larger group the WTGs appear in a random layout with more formality appearing to the right of view as the turbines coalesce visually into aligned rows. WTGs at the rear of the group in this view will appear slightly smaller in the view due to the effects of earth curvature. The turbines in the left of view, in the northern part of the array, appear individually and separate from the main cluster to the south. At this distance blade movement will be discernible. The ZTV indicates that both proposed OSPs will be visible. Foundation structures are also likely to be seen from this distance. On average, the closest Inch Cape WTGs are likely to be visible for 59 per cent of the time, equivalent to approximately 219 days of the year. No other existing or consented wind farms will be visible from this location.

70 Comparison of the wireline visualisation and photograph of the existing view in Figure 16.40b suggests that only the proposed offshore wind farms will be visible at this location due to the screening effect of intervening vegetation, which is likely to prevent actual visibility of the blade tips of the Group 9 wind farms being visible. Both Seagreen and NNG will be seen during periods of good visibility in views across Lunan Bay, at a closest distance of 35.89 km and 40.31 km respectively. Therefore, both will be visible at a further distance from the coastline than the Inch Cape WTGs and OSPs with Seagreen and NNG WTGs appearing correspondingly smaller in the view. NNG will occupy a HSA of 10°, and be seen as a separate wind farm to the Inch Cape WTGs and OSPs, with approximately half the horizontal extent of the array located above a small wedge of sea appearing beyond Lang Craig. Seagreen will occupy a HSA of 26° overlapping the Inch Cape WTGs and OSPs by less than half a degree.

12C.7.3 Magnitude of Change

71 The Inch Cape WTGs and OSPs will introduce a large number of vertical man-made elements onto the sea horizon, occupying a large proportion of the sea view across Lunan Bay. It would lie partly in front of Seagreen Offshore Wind Farm and with NNG Wind Farm on the other side of the array, a large proportion of the sea view would be occupied by wind turbines. In this context, the magnitude of change arising from the Inch Cape WTGs and OSPs in conjunction with existing and consented wind farms is considered to be **high**.

12C.7.4 Effect on Seascape Character

72 This seascape is accorded a high sensitivity to change on account of its relatively undeveloped character together with the sheltered and enclosed nature of the bay. As the Inch Cape Wind Farm will introduce an extensive group of WTGs in seaward views, seen in conjunction with, and at closer distance than, two other more distant offshore wind farms, it is considered that the introduction of the Inch Cape WTGs and OSPs into the view will have a **major** and significant effect on seascape character.

12C.7.5 Effect on Visual Amenity

73 Receptors at this location include residents, cyclists on NCN Route 1 and other recreational users with an interest in the scenic qualities of views. These receptors are all accorded a high sensitivity to change in the seascape. Therefore, the effect on visual amenity at this location is considered to be **major** and significant.

12C.7.6 Night Time Existing View

74 The existing night time view is illustrated in Figure 12.40f. Photographed on an early winter's morning, it shows that there are no light sources visible from the small settlement of Lunan and a generally dark sky. There is one lit offshore structure (ICOL's anemometry mast) visible in an otherwise dark seaward view. It is likely that lights from passing ships and other marine vessels will be intermittently visible, but the overall context is of a dark night time environment.

12C.7.7 Night Time Predicted View

75 The predicted night time view of the proposed Inch Cape WTG aviation lighting is illustrated in Figures 12.40f and 12.40g. This shows all of the aviation lighting on the perimeter turbines, with the row of turbines on the south west edge of the array appearing as a line of lights; one line of three lights visible at the northern end of the array and the remainder of the lights apparent as individual point sources.

12C.7.8 Magnitude of Change

76 The Inch Cape aviation lighting will be at distances of between 19.55km and 36.46km and it is therefore predicted that in clear atmospheric conditions all the aviation lighting on perimeter turbines will be visible. It will introduce a group of fixed point light sources above the sea surface, and will be seen in conjunction with the closest of the peripheral Seagreen turbine aviation lights at 35.89km. The Seagreen turbine lights will be seen partially behind the northern Inch Cape lit turbines but the majority of the peripheral lit Seagreen turbines will be to the north east. It is possible that the NNG turbine lighting would be visible, with the nearest turbine at just over 40km to the south south east. The magnitude of change from the Inch Cape aviation lighting in addition to the Seagreen turbine lighting is considered to be **high**.

12C.7.9 Night Time Effect on Seascape Character

77 The introduction of fixed sources of lighting across part of the horizon in the night time views out across Lunan Bay, in addition to the Seagreen turbine lighting, will have a moderate magnitude of change on this high sensitivity seascape character area, resulting in a **major** and significant night time effect on seascape character at this location.

12C.7.10 Night Time Effect on Visual Amenity

78 Night time receptors at this location will include residents outside of their properties or moving to and from them, as well as any night time cyclists on NCN Route 1, all accorded a high sensitivity to change. The introduction of fixed point sources of lighting on the Inch Cape WTGs in night time seaward views across part of the horizon to the east of Lunan Bay, in

addition to the Seagreen turbine lighting will have a **major** and significant effect on night time visual amenity.

12C.8 Viewpoint 7: Brechin

79 Table 12C.14 presents the key viewpoint information.

Table 12C.14: Viewpoint 7 details

Figure Number	12.41a—12.41c
OS Grid Reference	360070, 761235
Landscape Character Area	TAY10: Broad Valley Lowlands
Landscape Character Sensitivity	Moderate
Landscape Designation	None
Distance to Closest and Furthest Inch Cape WTG	31.70 km—48.86 km
Direction of View Towards Closest Inch Cape WTG	South-east
Horizontal Subtended Angle (HSA)	8°
Visibility of Closest Inch Cape WTG	For an average of approx. 197 days a year
Visual Amenity Receptors	Road users
Sensitivity of Visual Receptors	Moderate

12C.8.1 Existing View

80 The existing view from this location is illustrated in Figure 12.41a. The viewpoint is located on the B966 to the north of Brechin. The view towards the Development Area looks across an undulating agricultural landscape, with medium sized arable fields interspersed with scattered trees including individual trees along field boundaries together with small clumps and larger areas of woodland. The distant view looks across to the wooded skyline of the low ridge rising above the River South Esk. The sea is not visible from this location.

81 A number of operational and consented wind farms are predicted to be theoretically visible from this location. The single turbine at Whitefield of Dun is the most prominent to the south east where the hub would be visible above a ridgeline. The Hill of Strathcathro turbine shown on the wireline is hidden by the intervening house, as shown on Figure 12.41b. There are also a number of smaller single WTGs visible in the view, but these have not been included in the full assessment due to their size. The remaining onshore and offshore WTGs predicted to be theoretically visible are all screened by a combination of landform, vegetation and buildings. Key wind farms and WTGs which are theoretically visible in views from this location are summarised in Table 12C.15 below.

Table 12C.15: Summary of key wind farms theoretically visible from viewpoint 7

Wind Farm Name or Grouping	Status	Distance from Viewpoint	HSA	Direction to Viewpoint
Whitefield of Dun	Operational	4.05 km	< 1°	ENE

12C.8.2 Predicted View

82 The wireline visualisation in Figures 12.41b–12.41c shows that there would be theoretical visibility of six blade tips, two blades, and three hubs and blades of the Inch Cape Wind Farm occupying approximately 8° of the view at a distance of 31.7 km to the south-east. Comparison of the wireline with the photograph of the existing view suggests that in reality screening by intervening vegetation is likely to obscure the majority of these WTGs. There may be potential for one or two hubs and blades seen but these would be barely distinguishable within the view.

12C.8.3 Magnitude of Change

83 As the Inch Cape WTGs are considered to be barely distinguishable from this location the magnitude of change associated with their introduction into the landscape will be **negligible**.

12C.8.4 Effect on Landscape Character

84 The effect on landscape character at this location will be **negligible**.

12C.8.5 Effect on Visual Amenity

85 The effect on visual amenity at this location will be **negligible**.

12C.9 Viewpoint 8: Caterthun Hill Fort

86 Table 12C.16 presents the key viewpoint information.

Table 12C.16: Viewpoint 8 details

Figure Number	12.42a—12.42c
OS Grid Reference	354820, 766090
Landscape Character Area	TAY5: Highland Foothills
Landscape Character Sensitivity	Moderate
Landscape Designation	None
Distance to Closest and Furthest Inch Cape WTG	38.80 km—56.01 km

Direction of View Towards Closest Inch Cape WTG	South-east
Horizontal Subtended Angle (HSA)	19°
Visibility of Closest Inch Cape WTG	For an average of approx. 139 days a year
Visual Amenity Receptors	Recreational users
Sensitivity of Visual Receptors	High

12C.9.1 Existing View

87 The existing view from this location is illustrated in Figure 12.42a. The view south-east towards the Development Area from this elevation is expansive, looking out from the summit of White Caterthun over a foreground mosaic of moorland and rough grassland, across the agricultural lands of Strathmore to the distant coastline and sea beyond. Montrose Bay and the town are visible on the coastline, as is Montrose Basin, just inland; however, Brechin is mostly screened from view by intervening topography and vegetation. The low ridge stretching inland to the south of Montrose screens views of Lunan Bay although the sea horizon is visible beyond. To the north-east, the view also looks across Strathmore but the coastline and sea are screened by the ridgeline which rises between the A90 and A92. Inland, to the north and west, the view looks across the valley of West Water to the Hill of Wirren and adjacent upland areas. This is a complex panoramic view in which the distant sea is just one element.

88 A number of existing and consented wind farms are, or will be, visible from this elevated location, but all at some distance from the viewpoint. The existing WTGs at Tullo Hill and Brownieleys can be seen at a distance of over 20.6 km. Other consented developments will be visible in this same general direction including most of the sites in Groups 1, 3, 4, 6, 8 and 9. However these are located at some distance from the viewpoint occupying a relatively small proportion of the horizontal extent of the view. The only other consented wind farm visible from this location will be the single WTGs at Whitefield of Dun and Hill of Strathcathro (Group 3) which will be seen against a backdrop of farmland in Strathmore.

89 All three offshore wind farm sites will also be theoretically visible from this location but at a considerable distance. Kincardine would be barely visible due to intervening screening from landform and distance to the WTGs. Seagreen would form a distant feature within the view owing to the clustering of WTGs and will be seen to the left of the Inch Cape WTGs and OSPs occupying a slightly larger HSA of the view but at over 52 km from the viewpoint; therefore, the Seagreen WTGs will seem smaller than the Inch Cape WTGs. This is also the case with NNG, which will be seen at an even greater distance and occupying a smaller horizontal proportion of the view. In both cases it is considered that the WTGs will only be visible in clear conditions.

90 Key wind farms and WTGs which are theoretically visible in views from this location are summarised in Table 12C.17 below.

Table 12C.17: Summary of key wind farms theoretically visible from viewpoint 8

Wind Farm Name or Grouping	Status	Distance from Viewpoint	HSA	Direction from Viewpoint
Twinshiels	Operational	21.59 km	1°	ENE
Brownieleys	Operational	23.17 km	1°	ENE
Paul Matthew Hill	Consented	22.64 km	< 1°	ENE
Tullo	Operational	20.63 km	1°	ENE
St Johns Hill	Operational	29.35 km	3°	NE
NNG	Consented	58.65 km	8°	SE
Seagreen	Consented	51.91 km	21°	ESE

12C.9.2 Predicted View

91 The wireline visualisations in Figures 12.42b and 12.42c show that the Inch Cape WTGs and OSPs will be visible at a closest distance of 38.80 km to the south-east occupying 19° of the view. The towers, hubs and blade tips of Inch Cape WTGs will be seen on the distant sea horizon although from this location the area of sea visible between the horizon and the landward skyline is limited. Although the viewpoint is located a considerable distance from the Development Area, all parts of the WTGs will be visible due to the viewpoint elevation, with the lower towers being seen against a background of sea. The ZTV indicates that both Inch Cape OSPs may be theoretically visible and that foundation structures may also be seen. The Inch Cape WTGs indicative layout appears densely arranged to the right of the view becoming more open to the left where individual turbines lie separately across the view with the furthest north WTG slightly apart from the others. The WTGs to the south appear more formally arranged with turbine rows apparent. It is considered that the Inch Cape WTGs and OSPs will only be visible in conditions of good visibility, and that blade movement may just be discernible. On average, the closest Inch Cape WTGs are likely to be visible for 38 per cent of the time, equivalent to approximately 139 days of the year.

12C.9.3 Magnitude of Change

92 The Inch Cape WTGs and OSPs will represent a minor addition to the proportion of the overall view affected by wind farms. In relation to other consented offshore wind farms, the Inch Cape WTGs and OSPs will occupy part of the remaining view of open sea from this location, and will be the closest of the offshore wind farms. However, it is considered that the magnitude of change arising from the introduction of the Inch Cape WTGs and OSPs into the landscape, in addition to both existing and consented developments will be **low**, primarily due to the distance from the viewpoint coupled with the panoramic nature of the view from this location and closer proximity of several onshore wind farms.

12C.9.4 Effect on Landscape Character

93 The landscape character at this location is considered to have a moderate sensitivity to change on account of its large scale and extensive panoramic views to surrounding areas. Therefore, the introduction of the Inch Cape WTGs and OSPs into part of the distant view of the sea is considered to give rise to a **minor/moderate** effect on landscape character.

12C.9.5 Effect on Visual Amenity

94 This viewpoint is considered to be representative of views obtained by recreational users and visitors to White Caterthun Fort who will have a high sensitivity to change. The effect on visual amenity is considered to be **moderate**, due to the distance of the viewpoint from the proposed WTGs together with the corresponding panoramic character of the view and closer proximity of onshore wind farm development.

12C.10 Viewpoint 9: Minor Road near Cairnconon Hill

95 Table 12C.18 presents the key viewpoint information.

Table 12C.18: Viewpoint 9 details

Figure Number	12.43a—12.43f
OS Grid Reference	357540, 744863
Landscape Character Area	TAY13: Dipslope Farmland
Landscape Character Sensitivity	Moderate
Landscape Designation	None
Distance to Closest and Furthest Inch Cape WTG	27.01 km—42.13 km
Direction of View Towards Closest Inch Cape WTG	East south-east
Horizontal Subtended Angle (HSA)	30°
Visibility of Closest Inch Cape WTG	For an average of approximately 189 days a year
Visual Amenity Receptors	Road users
Sensitivity of Visual Receptors	Moderate

12C.10.1 Existing View

96 The existing view from this location is illustrated in Figure 12.43a. It is located on a minor road linking the B961 to A933, at around 8.2 km north-west of Arbroath and 7.5 km from the coast at its nearest point. The view looks across adjacent farmland, which is gently sloping towards the distant coast. The sea horizon extends across a large proportion of the view in this direction although the amount of sea which is visible is somewhat more limited as in some places the sea horizon appears just above an intervening landward skyline. Larger expanses of sea are seen behind Arbroath and also east north-east towards Lunan Bay. Fields are large and boundaries are delineated with a mix of stone dykes, post-and-wire fences and occasional hedgerows dotted with hedgerow trees. Scattered farmsteads, blocks of woodland and shelterbelt planting are features in this agricultural landscape, particularly in more distant views toward the coastline and low hills to the north-east. Also, prominent in more distant views are areas of land being cultivated under the cover of polytunnels, which appear much brighter in the view than their surroundings. To the left of Tullo Hill the broad valley of Strathmore can be distinguished with the land again rising in the distance above the valley. In other directions distant views are screened by topography as the land rises to the nearby summit of Cairnconon Hill at 182 m AOD.

97 The cumulative wirelines shown on Figures 12.43c–12.43d indicate that a number of operational and consented wind farms are theoretically visible from this location. This includes developments forming Groups 2 and 3 as well as St John's Hill and the two offshore developments of Seagreen and NNG. The most potentially visible onshore wind farms are Tullo and Twinshiels which are visible above a distant ridgeline to the north east, although at over 30 km from the viewpoint they are not particularly noticeable. The remaining developments would be barely distinguishable as a result of distance and screening from a combination of landform and vegetation.

98 Both Seagreen and NNG offshore wind farms are predicted to be visible. Seagreen will be seen to the east of the viewpoint at a distance of 47.12 km. From this location it is difficult to discern a pattern in the appearance of the WTGs, and an intervening landward ridge will prevent all of the WTGs from being seen on the sea horizon with some blade tips visible above this ridgeline. NNG will be seen to the south-east at a distance of 39.45 km and occupying 12° of the view. However, from this particular viewpoint it is considered that many of its WTGs will be wholly or partially screened by intervening vegetation.

99 Key wind farms and WTGs which are theoretically visible in views from this location are summarised in Table 12C.19 below.

Table 12C.19: Summary of key wind farms theoretically visible from viewpoint 9

Wind Farm Name or Grouping	Status	Distance from Viewpoint	HSA	Direction from Viewpoint
Tullo	Operational	31.54	1°	NNE
Twinshiels	Operational	32.79	1°	NNE

St Johns Hill	Operational	39.89	2°	NE
NNG	Consented	39.45 km	12°	SE
Seagreen	Consented	47.12 km	20°	E

12C.10.2 Predicted View

100 The photomontage in Figure 12.43b shows that almost the full extent of the Inch Cape WTGs and OSPs will be visible on the distant sea horizon, occupying a HSA of 30° at 27.01 km east south-east of the viewpoint. The WTGs on the left of the array will appear above a very thin horizontal band of sea, due to presence of low ridgelines in the intervening landscape. The indicative layout within this part of the array would be mostly seen as individual turbines with large spaces and with only one instance of two turbines overlapping. Towards the right of the view the density of turbines increases with a more continuous line of turbines and some limited overlapping. The ZTV indicates that both Inch Cape OSPs are theoretically visible and that foundation structures may also be seen. At this distance blade movement may also be discernible. In clear weather conditions the WTGs may appear back-lit by the early morning sun. On average, the closest Inch Cape WTGs are likely to be visible for 52 per cent of the time, equivalent to approximately 189 days of the year. Seagreen Offshore Wind Farm will be seen to the east of the viewpoint at a distance of 47.12 km and occupying a HSA of 20° of which 8.5° will overlap behind the Inch Cape WTGs and OSPs. The onshore wind farms potentially visible in Group 2 and St John's Hill, whilst theoretically visible, will be at distances of over 31 km. Group 3 whilst predicted to be visible at distances of over 13 km, consists of mostly single turbines and it is not considered that the interaction of the Inch cape WTGs with these developments would contribute to significant cumulative effects. appear in a different field of view to the Inch Cape WTGs and OSPs and at a considerable distance.

12C.10.3 Magnitude of Change

101 In sea views, the Inch Cape WTGs and OSPs will introduce a large number of man-made vertical elements occupying approximately 32° on the distant horizon. The Inch Cape WTGs and OSPs will appear in front, and overlapping with just under half the horizontal extent, of the Seagreen WTGs, when seen from this viewpoint. The NNG WTGs will be seen separately and to the right of the Inch Cape WTGs and OSPs although intervening vegetation partially or wholly screens views of some of the NNG WTGs. In this context, also taking into account the overall composition of the view and the proportion of the seaward horizon which WTGs will occupy it is considered that the magnitude of change attributed to the Inch Cape WTGs and OSPs will be **high** as it will increase considerably the amount of the seaward horizon occupied by WTGs and extend turbines in the view behind the landward skyline. The existing and consented onshore wind farms, where visible, will be more distant and occupy a smaller extent of the view.

12C.10.4 Effect on Landscape Character

102 Overall, this is a medium to large scale landscape, however at this location views of the sea are a relatively important component of the landscape. Within this context, it is considered that the introduction of the Inch Cape WTGs and OSPs into seaward views will give rise to **moderate/major** and significant effect on this moderate sensitivity landscape.

12C.10.5 Effect on Visual Amenity

103 The viewpoint is representative of views obtained by road users on this minor road, who are considered to have a moderate sensitivity to change. The effect on visual amenity is considered to be **moderate/major** and significant.

12C.11 Viewpoint 10: Clifftop Path North of Victoria Park

104 Table 12C.20 presents the key viewpoint information.

Table 12C.20: Viewpoint 10 details

Figure Number	16.44 Night time visual: Figures 12.44g and 12.44h
OS Grid Reference	365503, 741364
Regional Seascape Character Area	SA8: Arbroath to Monifieth
Seascape Character Sensitivity	Moderate
Landscape Designation	None
Distance to Closest and Furthest Inch Cape WTG	18.58 km—33.43 km
Direction of View Towards Closest Inch Cape WTG	East south-east
Horizontal Subtended Angle (HSA)	23°
Visibility of Closest Inch Cape WTG	For an average of approximately 226 days a year
Visual Amenity Receptors	Recreational users
Sensitivity of Visual Receptors	High

12C.11.1 Existing View

105 The existing view from this location is illustrated in Figure 16.44. The viewpoint is located on the clifftop path that runs above Victoria Park, which can be seen below and in the foreground view. The rocky headland of Whiting Ness to the east frames the open and expansive view of the North Sea. In the far distance the coastal edge at St Abb's Head can just be discerned together with the outline of the Lammermuir Hills. The view of the open sea is more obviously

broken by the form of the East Fife coastline as it slopes very gently to meet the sea at Fife Ness. Looking down the coastline, towards the south-west, the view takes in the outer Firth of Tay and it is possible to discern the low sandy headland of Buddon Ness and Tentsmuir Forest beyond. Further inland, the distant outline of the Lomond Hills can also be seen. Looking directly inland from this footpath, views are blocked by adjacent residential properties and vegetation. Offshore, the Bell Rock Lighthouse can be seen on the horizon at a distance of about 18.2 km.

106 The wirelines shown in Figures 12.44c and 12.44d indicate that whilst there are onshore wind farms theoretically visible these are all distant and would be barely discernible as a result of distance and screening from vegetation and landform. NNG offshore wind farm is the closest and would be most noticeable wind farm to the south-east which forms a cluster of turbines which would be visible on clear days.

107 The key wind farms which are theoretically visible in views from this location are summarised in the Table 12C.21 below.

Table 12C.21: Summary of key wind farms theoretically visible from viewpoint 10

Wind Farm Name or Grouping	Status	Distance from Viewpoint	HSA	Direction from Viewpoint
NNG	Consented	31.94 km	13°	SE

12C.11.2 Predicted View

108 The photomontage in Figure 16.44 shows that the Inch Cape WTGs and OSPs will be visible at 18.58 km offshore to the east south-east and occupying a HSA of approximately 23°. In this view, approximately half of the Inch Cape WTGs will be screened by the rising landform of the adjacent headland at Whiting Ness, with a few blade tips, blades and hubs being seen on the skyline of the adjacent grassy coastal edge and not on the sea horizon. The indicative layout of the Inch Cape Wind Farm does not appear in any particular pattern but the turbines to the left of the view are more widely spaced and separate to the denser centre of the array. The decreasing height difference of the WTGs due to perspective from front to back of the development is very apparent from this viewpoint. In this view the WTGs will appear well to the left of, and separated from, the Bell Rock Lighthouse but at approximately the same distance offshore. The ZTV indicates that both Inch Cape OSPs will be theoretically visible and that foundation structures may also be seen. Blade movement will also be discernible at this distance. The Inch Cape WTGs may appear back-lit during the early morning in clear weather conditions. On average, the closest Inch Cape WTGs are likely to be visible for 62 per cent of the time, equivalent to approximately 226 days of the year.

109 NNG will be seen to the south-east at a distance of 31.94 km and occupying 13° of the view, just to the right of the Bell Rock Lighthouse, when viewed from this location. The grid layout

of NNG is clear in this view as its WTGs will be seen as a series of closely spaced rows but would be more distant than Inch Cape.

12C.11.3 Magnitude of Change

110 In seaward views, the Inch Cape WTGs and OSPs will introduce a large number of man-made vertical elements on the skyline occupying 23° of the view. The WTGs will be seen extending out from the adjacent headland and across the sea horizon. The NNG WTGs will be seen as a separate wind farm to the Inch Cape WTGs and OSPs but further from the viewpoint and therefore the NNG WTGs will appear smaller, occupying a smaller horizontal proportion of the open sea view. Therefore, it is considered that the magnitude of change will be **high**.

12C.11.4 Effect on Seascape Character

111 This is a medium to large scale coastline, with expansive sea views and is considered to be of moderate sensitivity. Within this context, it is considered that the introduction of the Inch Cape WTGs and OSPs occupying a large proportion of the seaward view of the otherwise open sea view to the north-east of NNG will give rise to **moderate/major** effect, which will be significant.

12C.11.5 Effect on Visual Amenity

112 The viewpoint is representative of views obtained by recreational visitors who are considered to have a high sensitivity to change. Existing effects on visual amenity at this location will be **major** and significant.

12C.11.6 Night Time Existing View

113 The existing night time view on Figure 12.44g shows street lighting at the northern edge of Arbroath to the left of the view, with other street lights from the town visible in the 360 degree view. The seaward component of the view is dark, apart from the intermittent flash of the Bell Rock Lighthouse and occasional passing ships or other marine vessels.

12C.11.7 Night Time Predicted View

114 The predicted night time view of the proposed Inch Cape WTG aviation lighting is illustrated in Figures 12.44g and 12.44f. This shows that the lighting on 16 of the 29 perimeter lit turbines will be visible in the southern half of the array of turbines predicted to be seen from the cliff top path at this location. The lights will mostly be seen as irregular, individual point sources.

12C.11.8 Magnitude of Change

115 The Inch Cape aviation lighting will be at distances of between 18.58km and 33.43km and it is therefore predicted that in clear atmospheric conditions the aviation lighting on 16 of the perimeter turbines will be visible. The Inch Cape aviation lighting will be seen in conjunction with the closest of the peripheral NNG turbine aviation lights at 31.94km, seen as a separate group of lights to the south east. It is considered that the addition of the Inch Cape WTG

aviation lighting to the NNG turbine lighting will result in a **high** magnitude of change at this location.

12C.11.9 Night Time Effect on Seascape Character

116 The introduction of fixed sources of lighting to part of the Arbroath to Monifieth seascape character area in addition to the NNG turbine lighting will have a high magnitude of change on this moderate sensitivity seascape character area, resulting in a **moderate/major** and significant effect on seascape character at this location.

12C.11.10 Night Time Effect on Visual Amenity

117 Night time receptors at this location will be walkers on the cliff top path on the northern edge of Arbroath and nearby residents moving to and from their homes, all accorded a high sensitivity to change. The introduction of the fixed point sources of light on the perimeter Inch Cape turbines in eastward views from the cliff top path, in addition to the NNG turbine lighting will result in a high magnitude of change and a **major** and significant effect on night time visual amenity.

12C.12 Viewpoint 11: Arbroath Signal Tower

118 Table 12C.22 presents the key viewpoint information.

Table 12C.22: Viewpoint 11 details

Figure Number	12.45a—12.45f
OS Grid Reference	364047, 740440
Regional Seascape Character Area	SA8: Arbroath to Monifieth
Seascape Character Sensitivity	Moderate
Landscape Designation	None
Distance to Closest and Furthest Inch Cape WTG	19.68 km—34.45 km
Direction of View Towards Closest Inch Cape WTG	East south-east
Horizontal Subtended Angle (HSA)	40°
Visibility of Closest Inch Cape WTG	For an average of approx. 221 days a year
Visual Amenity Receptors	Recreational users
Sensitivity of Visual Receptors	High

12C.12.1 Existing View

119 The existing view from this location is illustrated in Figure 12.45a. The viewpoint is located on the roof of the Arbroath Signal Tower Museum. The roof top is not publicly accessible except for the occasional open day event; however, this viewpoint was specifically requested by Angus Council. Most visitors to the museum experience the sea view from ground level. The immediate foreground of the view is occupied by Arbroath Harbour, with the town centre to the north including the ruined abbey, harbour to the east and south-east, and suburbs to the west, beyond the A92. The view north-east along the includes Victoria Park and the adjacent headland, but views further north are blocked by the rising landform. Outside the harbour breakwater the open sea stretches to the distant horizon. The view of sea and sky is wide and expansive. Other distant views look south towards Fife, and south-west to Barry Links and the Firth of Tay, with the distinctive profile of the Lomond Hills visible on the skyline. Inland, beyond Arbroath, there are views towards the distant hills rising above Strathmore. In good visibility Bell Rock Lighthouse can be seen on the horizon at a distance of around 18 km to the south-east.

120 Wirelines shown in Figure 12.45c and 12.45d indicate a few operational and consented onshore and offshore wind farms are visible from this location. Onshore developments theoretically visible from this location include developments forming Group 6, 8 and 9 and Kenly, although only Aidrie Farm, Bonerbo and Kenly are potentially visible to the south due to their closer proximity (although still beyond 25 km from the viewpoint) and as a result of the turbines breaking the skyline. WTGs forming Groups 8 and 9 are barely discernible due to distance and screening by landform and vegetation. The Seagreen and NNG offshore wind farms will also be theoretically visible. Seagreen will be visible at a distance of just over 40 km to the east, occupying a HSA of 24° of the view. At this distance, the Seagreen WTGs will be partially screened by the horizon, particularly those located towards the east of the development zone, where only blade tips will be visible. From this location and distance the pattern of the Seagreen WTG layout will not be apparent. NNG will be seen to the south-east at a distance of 32.05 km and occupying 14° of the view, just to the right of the Bell Rock Lighthouse, when viewed from this location. The grid layout of NNG is apparent in this view with its WTGs visible as a series of closely spaced rows.

121 Key wind farms which are theoretically visible in views from this location are summarised in Table 12C.23 below.

Table 12C.23: Summary of key wind farms theoretically visible from viewpoint 11

Wind Farm Name or Grouping	Status	Distance from Viewpoint	HSA	Direction from Viewpoint
Kenly	Consented	29.74 km	2°	SSW
NNG	Consented	32.05 km	14°	SE
Seagreen	Consented	40.51 km	24°	E

12C.12.2 Predicted View

122 The photomontage in Figure 12.45b shows that the Inch Cape WTGs and OSPs will be visible at a distance of 19.68 km east south-east of the viewpoint and occupying a HSA of 40° of the open sea view. The Inch Cape WTG towers, hubs and blades will all be seen above the horizon and blade tip movement will be visible at this distance. The indicative layout appears with a more openly spaced pattern of WTGs to the left of view where they are closer and appear larger than those to the right of view which are more densely spaced with turbine rows apparent. The Bell Rock Lighthouse is located to the right of the array separated from it by some distance. In good weather conditions, the WTGs will be back-lit by the early morning sun, tending to make them more noticeable. The ZTV indicates that both proposed OSPs will be theoretically visible from this location with their form and mass making them stand out within the array of WTGs. Foundation structures will also be visible. On average, the closest Inch Cape WTGs are likely to be visible for 60.5 per cent of the time, equivalent to approximately 221 days of the year.

123 The Inch Cape WTGs will overlap in front of the Seagreen Offshore Wind Farm visually for about 13.8° of this view. At over 40 km from the viewpoint Seagreen will be barely discernible in contrast to the closer larger Inch Cape WTGs.

12C.12.3 Magnitude of Change

124 In sea views, the Inch Cape WTGs and OSPs will introduce a large number of man-made vertical elements on the horizon occupying approximately 41° of the view within a large expanse of otherwise open sea. The Inch Cape WTGs and OSPs will appear in front of, and largely screen views of, the Seagreen WTGs. NNG will be seen to the south east of Inch Cape in slightly closer proximity and wider extent than Seagreen. However, the Inch Cape WTGs and OSPs will be the closest of the offshore wind farms and occupy the largest portion of the seaward view. In this context, it is considered that the magnitude of change attributed to the Inch Cape WTGs and OSPs will be **high** as it will considerably increase the proportion of the open sea view occupied by wind farms.

12C.12.4 Effect on Seascape Character

125 This is a medium to large scale seascape, with expansive sea views having a moderate sensitivity to this type of development. Within this context, it is considered that the introduction of the Inch Cape WTGs and OSPs will give rise to **moderate/major** and significant effect.

12C.12.5 Effect on Visual Amenity

126 The viewpoint is representative of views obtained by recreational visitors who are considered to have a high sensitivity to change. Existing effects on visual amenity are therefore considered to be **major** and significant.

12C.13 Viewpoint 12: A92 East of Muirdrum

127 Table 12C.24 presents the key viewpoint information.

Table 12C.24: Viewpoint 12 details

Figure Number	12.46a—12.46f Night time visual: Figures 12.46g and 12.46h
OS Grid Reference	357949, 737832
Landscape Character Area	TAY13: Dipslope Farmland
Landscape Character Sensitivity	Moderate
Landscape Designation	None
Distance to Closest and Furthest Inch Cape WTG	25.16 km—39.54 km
Direction of View Towards Closest Inch Cape WTG	East
Horizontal Subtended Angle (HSA)	32°
Visibility of Closest Inch Cape WTG	For an average of approximately 193 days a year
Visual Amenity Receptors	Recreational cyclists and road users
Sensitivity of Visual Receptors	High to Moderate

12C.13.1 Existing View

128 The existing view from this location is illustrated in Figure 12.46a. The viewpoint is located approximately 1.7 km east north-east of the small village of Muirdrum which itself is approximately two kilometres north of Carnoustie. The A92 at this point forms part of the Angus Coastal Route and it also runs parallel with the NCN Route 1. The view towards the sea looks out over very gently sloping arable farmland but the coastline itself is not visible from here so the view is focused on the distant horizon which, coupled with the flat landscape, gives the view a horizontal emphasis. Fields are bounded by post-and-wire fencing, hedgerows and lines of hedgerow trees. There are also isolated trees and small areas of woodland scattered throughout the landscape. Farm buildings and polytunnels are also elements in this agricultural landscape. The horizon does not form a continuous skyline with the open sea in this view but is broken by groups of trees. Towards the south, the Fife coastline is partially visible through breaks in the tree cover. Inland views are limited by rising topography, adjacent buildings and intervening vegetation.

129 Wirelines shown in Figures 12.46c–12.46d indicate that a number of operational and consented offshore and onshore developments are theoretically visible from this location, but at considerable distance. Both Seagreen and NNG will also be visible in this view. The former will be seen at a distance of 46.53 km and occupy 20° of the view. At this distance visibility of Seagreen will be mostly limited to upper towers, hubs and blade tips although some of the

more distant WTGs will only have blade tip visibility. NNG will be seen at a closest distance of just under 33.75 km. It will occupy around 14° of the view and be seen as a mostly organic grouping of WTGs with some regularity apparent towards the edges of the array.

130 The onshore developments identified on wireline 12.46d indicate that theoretical views of WTGs in Groups 6, 8 and 9 are predicted along with the developments of Kenly, and the Michelin Tyre Factory. However, as a result of distance and screening from landform and vegetation, none of these developments would be visible from this location.

131 The key wind farms which are theoretically visible in views from this location are summarised in Table 12C.25 below.

Table 12C.25: Summary of key wind farms theoretically visible from viewpoint 12

Wind Farm Name or Grouping	Status	Distance from Viewpoint	HSA	Direction from Viewpoint
NNG	Consented	33.75 km	14°	SE
Seagreen	Consented	46.53 km	20°	E

12C.13.2 Predicted View

132 The photomontage in Figure 12.46b shows that the Inch Cape WTGs and OSPs will be visible to the east, at a distance of 25.16 km and occupying around a HSA of 32° of the sea view.

133 The Inch Cape WTGs will appear spread out across the horizon with widely spaced WTGs within the northern half in the left of the view and a denser arrangement to the south of the array where turbines will seem to coalesce visually into defined rows reflecting their geometrical layout. Trees and woodland within the intervening landscape will create intermittent screening effect. The ZTV indicates that both Inch Cape OSPs will be theoretically visible and that foundation structures may also be seen. In clear weather the Inch Cape WTGs will appear back-lit by the morning sun and at this distance the sweep of the blades will be visible. On average, the closest Inch Cape WTGs are likely to be visible for 53 per cent of the time, equivalent to approximately 193 days of the year.

134 Inch Cape WTGs will overlap in front of over half of Seagreen Offshore Wind Farm's horizontal extent. NNG will be seen as a separate development to the right of the Inch Cape WTGs and OSPs in this view.

12C.13.3 Magnitude of Change

135 The landscape has a strong horizontal emphasis at this location and is somewhat open and exposed with limited tree cover. The Inch Cape WTGs and OSPs will introduce a large group of WTGs at a distance of approximately 25 km to an open area of the sea horizon adjacent to, and in front of Seagreen. They will represent a notable increase in the proportion of the sea view occupied by WTGs when seen in conjunction with the other offshore developments. However, views of the sea form one element of the overall composition of the landscape, therefore the magnitude of change is considered to be **moderate**.

12C.13.4 Effect on Landscape Character

136 The effect on landscape character at this location is considered to be **moderate**.

12C.13.5 Effect on Visual Amenity

137 The viewpoint is representative of views obtained by recreational cyclists on NCN Route 1 and road users on the A92, who are considered to have a high and generally moderate sensitivity to change respectively. Although it is recognised that some motorists may be more sensitive to change in the seascape since this road is designated as the Angus Coastal Route – a National Tourist Route. Therefore, for recreational cyclists the effect on visual amenity arising from the moderate magnitude of change at this location will be **moderate/major** and significant. For road users the effect will generally be **moderate**.

12C.13.6 Existing Night Time View

138 The existing night time view illustrated in Figure 12.46f, shows that the only source of night time lighting at this viewpoint is from vehicles on the A92, seen in an otherwise dark night sky. The seaward view is also dark with the intermittent flash of Bell Rock Lighthouse, and occasional shipping movement in the outer Firth of Tay.

12C.13.7 Predicted Night Time View

139 The predicted night time view of the proposed Inch Cape WTG aviation lighting is illustrated on Figures 12.46f and 12.46g. This shows all of the aviation lighting on the perimeter turbines will be visible, with two lines of three turbines apparent at the southern end of array, and the remainder consisting of irregularly spaced, individual point sources.

12C.13.8 Magnitude of Change

140 The Inch Cape aviation lighting will be at distances of between 25.16km and 39.54km and it is therefore predicted that in clear atmospheric conditions all the aviation lighting on perimeter turbines will be visible. It will be seen in conjunction with the closest of the peripheral NNG turbine aviation lighting at 33.75km, seen at similar distances to the south south east. It is considered unlikely that the Seagreen turbines would be visible at distances of over 46km to the east. The magnitude of change from the Inch Cape aviation lighting in addition to the NNG turbine lighting is considered to be **moderate.**

12C.13.9 Night Time Effect on Landscape Character

141 The introduction of the fixed point sources of aviation lighting on the Inch Cape WTGs in addition to the NNG turbine lighting will have a moderate magnitude of change on the moderate sensitivity Dip Slope Farmland resulting in a **moderate** effect on landscape character at this location.

12C.13.10 Night Time Effect on Visual Amenity

142 Night time receptors at this location comprise people travelling on the A92, considered to be of medium sensitivity to change. The aviation lighting of the peripheral Inch Cape WTGs will result in a moderate magnitude of change and a **moderate** effect on night time visual amenity for road users at this location.

12C.14 Viewpoint 13: Dodd Hill

143 Table 12C.26 presents the key viewpoint information.

Table 12C.26: Viewpoint 13 details

Figure Number	12.47a—12.47d
OS Grid Reference	345259, 739627
Landscape Character Area	TAY8: Igneous Hills
Landscape Character Sensitivity	Moderate
Landscape Designation	None
Distance to Closest and Furthest Inch Cape WTG	37.97 km—52.31 km
Direction of View Towards Closest Inch Cape WTG	East
Horizontal Subtended Angle (HSA)	22°
Visibility of Closest Inch Cape WTG	For an average of approximately 146 days a year
Visual Amenity Receptors	Recreational users
Sensitivity of Visual Receptors	High

12C.14.1 Existing View

144 The existing view from this location is illustrated in Figure 12.47a. The view east towards the Development Area is expansive, looking out from the summit of Dodd Hill over the Dipslope Farmland landscape towards the distant coastline, with Carnoustie and Barry Links clearly visible, and the sea beyond. To the north-east, although the coastline itself is screened by intervening topography, the sea and horizon are still visible in the distance. Also prominent in this view is the transmitter mast at Harecairn. To the south, there are panoramic views across

the Firth of Tay towards Fife, with Tentsmuir Forest, St Andrews Bay and the East Fife coastline stretching towards Fife Ness. Major landmarks in and around Dundee are also clearly visible including the Michelin Tyre Factory WTGs, the Tay Bridges, Dundee Law and Balgay Hill. On the skyline beyond Dundee, the distinctive profile of the Lomond Hills can be seen in the distance. Eastwards, the distinctive summits of the Sidlaw Hills are prominent, including the masts and aerials on Craigowl Hill, and transmitter mast on Gallow Hill. To the north and north-west there are panoramic views over Strathmore to the foothills and summits of the Highlands beyond.

145 The wireline visualisations in Figures 12.47a—16.47d indicate that a large number of operational and consented developments have theoretical visibility from this viewpoint. These wind farms are arrayed throughout the 360° panorama, although the most prominent will be the Group 5 WTGs including Frawney and Govals to the west of the summit. Wind farms in the Group 1, 2, 3, and 4 cumulative groupings will only be visible in conditions of very good visibility. In views to the south the Group 6, 8 and 9 WTGs will occupy part of the view but at a closest distance of nearly 33 km, therefore they are only likely to be seen in good visibility.

146 Both of the consented offshore wind farms will be seen from this elevated location. Seagreen is located at a distance of nearly 60 km east of the viewpoint and occupying 16° of the sea horizon. NNG will be seen at a distance of 44.43 km occupying 13° of the horizon towards the centre of the open sea view. Only the blade tips of Firth of Forth Phase 1 are theoretically visible but with the intervening landform and vegetation cover it is unlikely that they will be seen.

147 Key wind farms and WTGs which are theoretically visible in views from this location are summarised in the Table 12C.27 below.

Table 12C.27: Summary of key wind farms theoretically visible from viewpoint 13

Wind Farm Name or Grouping	Status	Distance from Viewpoint	HSA	Direction from Viewpoint
Frawney	Consented	4.18 km	7°	NW
Tealing Airfield	Operational	5.25 km	< 1°	SW
Govals	Consented	5.41 km	7°	NW
Michelin Tyre Factory	Operational	6.77 km	3°	S
NNG	Consented	44.43 km	13°	SE
Seagreen	Consented	59.26 km	16°	E

12C.14.2 Predicted View

148 The wireline visualisation in Figure 12.47b—12.47d shows that the Inch Cape WTGs and OSPs will be visible at a distance of 37.97 km and occupying a HSA of 22°. The WTGs will be seen as a loose group on the distant horizon, however the area of sea visible in this view is limited, as it is seen above an intermediate wooded skyline. The array is more permeable to the left of the view where individual WTGs will be seen with limited overlap. Towards the right of view, the WTGs are more densely arranged with some WTGs appearing to coalesce into short rows. Due to the elevation of this viewpoint, WTG towers, hubs and blade tips will all be visible, but the lower parts of the towers, particularly towards the rear of the array, will be screened by the horizon due to the effects of the curvature of the earth. At this distance blade movement may just be discernible. The ZTV indicates that both Inch Cape OSPs will be theoretically visible and that foundation structures may also be seen. Located to the east of the viewpoint, Inch Cape WTGs and OSPs will appear back lit by the morning sun in good weather. On average, the closest Inch Cape WTGs are likely to be visible for 40 per cent of the time, equivalent to approximately 146 days of the year.

149 About one third of the Inch Cape WTGs will overlap with the Seagreen WTGs which will appear just over half the height of the Inch Cape WTGs. However, at almost 60 km from the viewpoint, and with most of the turbines behind the intervening landform, the Seagreen Offshore Wind Farm will be difficult to discern. will be seen as a separate development from Inch Cape WTG and also at a distance that it will be not be particularly noticeable.

12C.14.3 Magnitude of Change

150 The Inch Cape WTGs and OSPs will introduce a large number of vertical man-made elements into distant sea views. It will represent a relatively minor addition to the complicated cumulative context, with several onshore wind farms appearing in much closer proximity. On account of the intervening distance, the nature of the sea view in this direction and its overall importance in the expansive, panoramic view from the summit of Dodd Hill, it is considered that the magnitude of change resulting from the Inch Cape WTGs and OSPs seen with the existing and consented wind farms will be **low**.

12C.14.4 Effect on Landscape Character

151 Within this landscape, views of the sea are just one element of a complex series of interrelated vistas. Due to the distance to the Inch Cape WTGs and OSPs and its offshore context, it is considered that the effect on landscape character on this moderate sensitivity landscape will be **minor/moderate**.

12C.14.5 Effect on Visual Amenity

152 Recreational visitors to Dodd Hill are considered to have a high sensitivity to change in the landscape. The introduction of the Inch Cape WTGs and OSPs into distant seaward views, seen in conjunction with existing and consented wind farms from this location, is considered to result in a **moderate** but not significant effect on visual amenity.

12C.15 Viewpoint 14: Carnoustie

153 Table 12C.28 presents the key viewpoint information.

Table 12C.28: Viewpoint 14 details

Figure Number	12.48a—12.48f Night time visual: Figures 12.48g and 12.48h
OS Grid Reference	356249, 734093
Regional Seascape Character Area	SA8: Arbroath to Monifieth
Seascape Character Sensitivity	Moderate
Landscape Designation	None
Distance to Closest and Furthest Inch Cape WTG	26.70 km—40.51 km
Direction of View Towards Closest Inch Cape WTG	East
Horizontal Subtended Angle (HSA)	31°
Visibility of Closest Inch Cape WTG	For an average of approximately 192 days a year
Visual Amenity Receptors	Recreational users and residents
Sensitivity of Visual Receptors	High

12C.15.1 Existing View

154 The existing view from this location is illustrated in Figure 12.48a, which was photographed at high tide. It shows the expansive character of the seawards view from this point, which is constrained to the north-east by built development on the seafront at Carnoustie, beyond which the coastline is not visible. To the south, the sea view is enclosed by the dunes of Barry Links, where they meet the shoreline. In the distance the Fife coastline is visible in good conditions, approximately 19 km to the south. Inland, the view is of the Carnoustie Golf Links club house and other adjacent buildings, which screen views to more distant areas. The viewpoint is located on the seafront footpath which traverses The Links and is popular with both local residents and tourists. In this photograph, the foreground comprises a line of rough grasses and boulders protecting the coastline from the effects of wave erosion. At low tide however, the sea recedes to reveal the wide sandy beach of Carnoustie Bay. The wide open sea view gives the view a very strong horizontal emphasis, and the sea horizon is only broken by the occasional passing ship and the Bell Rock Lighthouse, which can be seen on clear days looking east south-east approximately 21.6 km offshore.

155 Comparison of the wireline visualisations with photographs of the existing view suggests that apart from possible blade tip visibility of the Michelin Tyre Factory WTGs and views of Group

6 WTGs and Kenly, no other onshore existing or consented wind farms will be visible from this location.

156 Offshore, both Seagreen and NNG will be visible. Seagreen will be at 48.35 km from the viewpoint with only blade tips will be visible above the horizon and these will only be seen in conditions of clear visibility. NNG will be visible on the open sea horizon to the south-east and occupying around 17° of the view at a distance of over 32 km. The turbines will be seen in an arrangement where the offset grid layout is not readily apparent, apart from the right-hand edge of the array where a single row of WTGs is aligned in the view. It is likely that blade tip movement will be discernible.

157 Key wind farms and WTGs which are theoretically visible in views from this location are summarised in Table 12C.28 below.

Table 12C.28: Summary of key wind farms theoretically visible from viewpoint 14

Wind Farm Name or Grouping	Status	Distance from Viewpoint	HSA	Direction from Viewpoint
Kenly	Consented	22.42 km	2°	S
Airdrie Farm	Operational	25.65 km	< 1°	S
Bonerbo	Operational	26.40 km	1°	S
NNG	Consented	32.38 km	17°	SE
Seagreen	Consented	48.35 km	20°	ENE

12C.15.2 Predicted View

158 The photomontage in Figure 12.48b shows that the proposed WTGs and OSPs will be visible at a distance of 26.70 km and occupying 31° of the open sea horizon. The WTGs will be seen as a loose group on the horizon. The array is more permeable to the left of the view where individual WTGs will be seen with limited overlap. Towards the right of view, the WTGs are more densely arranged with some WTGs appearing to coalesce into short rows. Due to the location of the viewpoint just above sea level and the effects of earth curvature, the lower parts of the WTG towers and foundation structures will be screened by the horizon. The ZTV indicates that both proposed OSPs may be visible. Located to the east of the viewpoint, the WTGs will appear back-lit by the morning sun in good weather. At this distance, blade movement will be discernible. On average, the closest WTGs are likely to be visible for 52.5 per cent of the time, equivalent to approximately 196 days of the year.

159 In this view, Seagreen will appear largely behind the Inch Cape WTGs and OSPs, and at a much greater distance. But given that only blade tips will be visible above the horizon it will be barely distinguishable. NNG will be seen as a separate development to Inch Cape, visible on the open

sea horizon to the south-east with its WTGs appearing approximately half the height of Inch Cape WTGs.

12C.15.3 Magnitude of Change

160 Although the Inch Cape WTGs and OSPs will be seen in the view at some distance, they will introduce a large number of vertical man-made structures onto the skyline and occupying a notable proportion of the horizontal extent of the open sea overlapping with Seagreen and seen separately from the more distant NNG. The magnitude of change associated with the introduction of the WTGs into this view is considered to be **moderate.**

12C.15.4 Effect on Seascape Character

161 This is a considered to be a seascape which has a moderate sensitivity to offshore wind farms. The introduction of the Inch Cape WTGs and OSPs into the sea views is considered to have a **moderate** effect on seascape character.

12C.15.5 Effect on Visual Amenity

162 The viewpoint is representative of views obtained by recreational visitors, cyclists and residents, all groups of receptors considered to have a high sensitivity to change. Existing effects on visual amenity are therefore considered to be **moderate/major** and significant at this location.

12C.15.6 Existing Night Time View

163 The existing night time view illustrated in Figure 12.48g shows that street and building lighting in Carnoustie is visible to the north at the further end of the promenade and inland. The seaward component of the view is mainly dark, with Bell Rock Lighthouse visible as well as intermittent shipping movements in the outer Firth of Tay.

12C.15.7 Predicted Night Time View

164 The predicted night time view of the proposed Inch Cape WTG aviation lighting is illustrated in Figures 12.48g and 12.48h. This shows all of the aviation lighting on the perimeter turbines visible, with two lines of lights visible at the northern end of the array and the remaining lights seen as irregular, individual point sources.

12C.15.8 Magnitude of Change

165 The Inch Cape aviation lighting will be at distances of between 26.70km and 40.51km and it is therefore predicted that the majority of the perimeter lights will be visible in clear atmospheric conditions. The lighting will be seen in conjunction with the peripheral NNG turbine aviation lights at distances of over 32.38km to south east. It is considered unlikely that the Seagreen turbine lighting would be visible at over 48km to the east north east. The magnitude of change from the Inch Cape aviation lighting seen in addition to the slightly more distant NNG turbine lights will be **moderate**.

12C.15.9 Night Time Effect on Seascape Character

166 The introduction of fixed sources of lighting across part of the horizon in night time seaward views from Carnoustie arising from the Inch Cape aviation lighting in addition to the NNG turbine lighting, will result in a moderate magnitude of change in the moderate sensitivity Arbroath to Monifieth seascape character area. It is considered that this will result in a **moderate** effect on seascape character.

12C.15.10 Night Time Effect on Visual Amenity

167 Night time visual amenity receptors at this location will be walkers on the promenade and coastal path at the south west edge of Carnoustie, as well as residents moving to and from their properties, all considered to be of high sensitivity to change. The introduction of the Inch Cape aviation lighting in addition to the NNG turbine lighting will result in a moderate magnitude of change and a **major/moderate** and significant effect on night time visual amenity.

12C.16 Viewpoint 15: Dundee Law

168 Table 12C.29 presents the key viewpoint information.

Table 12C.29: Viewpoint 15 details

Figure Number	12.49a—12.49c
OS Grid Reference	339153, 731282
Regional Seascape Character Area	SA9: Dundee
Seascape Character Sensitivity	Low
Landscape Designation	None
Distance to Closest and Furthest Inch Cape WTG	43.71 km—57.29 km
Direction of View Towards Closest Inch Cape WTG	East
Horizontal Subtended Angle (HSA)	20°
Visibility of Closest Inch Cape WTG	For an average of approximately 120 days a year
Visual Amenity Receptors	Recreational users
Sensitivity of Visual Receptors	High

12C.16.1 Existing View

169 The existing view from this location is illustrated in Figure 12.49a. From this elevated position at the top of Dundee Law, adjacent to the war memorial, there is a 360° panoramic view over the surrounding landscape. The view towards the Development Area looks out over Dundee

with the foreground view occupied by the dense urban fabric of the city. Taller tower blocks stand out amongst the streets of residential housing and the city centre is visible to the right of this view, looking south. The viewpoint is approximately two kilometres from the Firth of Tay, which can be seen stretching from the inner Firth all the way out to open sea. The Tay Bridges feature prominently in this view as does the industrial activity associated with the Port, particularly with the large scale oil rig maintenance infrastructure, as is the case in the viewpoint photograph. In the middle distance of the view towards the Development Area, the two WTGs at the Michelin Tyre Factory can be seen against a backdrop of distant farmland which undulates gently towards the coastline from the more elevated ridges of the Sidlaw Hills. The outer Firth is framed in the distant view by the twin promontories of Tentsmuir Point and Buddon Ness, beyond which lies the North Sea. Tentsmuir Forest is noticeable as a dark band in the landscape adjacent to the sandy flats of Abertay Sands. Looking to the south-east, beyond the mosaic of farmland and woodland which cloaks the low-lying hills between Newport on Tay and Tayport, St Andrews Bay and the East Fife coastline can be seen in the far distance. The distant sea view is just one element in a complex pattern of different landscapes and seascapes.

170 Of the other existing and consented onshore wind farms, the two WTGs at the Michelin Tyre Factory, are seen mostly back-clothed against the surrounding urban form and more distant farmland, at a distance of 5.78 km to the east north-east. The consented WTGs at Kenley and under construction developments of Airdrie Farm and Bonerbo are also likely to be visible at just over 25 km to the south-east although this is dependent on clear visibility.

171 Seagreen Offshore Wind Farm will be located to the east of the viewpoint at a distance of 65.63 km and occupying a HSA of 15°. The WTGs will be seen above the distant horizon and it is considered that actual visibility of the Seagreen WTGs will be limited to all but the clearest of weather conditions. In this view, NNG will also appear on the distant horizon although not against a direct and clear view of open sea but where the sea is visible above the intervening coastal hills and flats of north-east Fife. NNG will be seen to the east south-east of the viewpoint at a distance of just over 45 km and occupying a HSA of 14°. It will be perceived as a relatively dense grouping of WTGs with an apparently random layout.

172 Key wind farms and WTGs which are theoretically visible in views from this location are summarised in Table 12C.30 below.

Table 12C.30: Summary of key wind farms theoretically visible from viewpoint 15

Wind Farm Name or Grouping	Status	Distance from Viewpoint	HSA	Direction from Viewpoint
Oil Rig Maintenance Structures	Operational	3.54 km	2°	E
Michelin Tyre Factory	Operational	5.78 km	2°	ENE
Kenly	Consented	25.84 km	2°	SSE

Bonerbo	Operational	27.55 km	< 1º	SSE
Airdrie Farm	Operational	28.57 km	< 1º	SSE
NNG	Consented	45.07 km	14°	SE
Seagreen	Consented	65.63 km	15°	ENE

12C.16.2 Predicted View

173 The wireline visualisation in Figure 12.49b shows that the Inch Cape WTGs and OSPs will be visible to the east at a distance of 43.71 km. It will be seen on the distant horizon, occupying 20° of the sea view, however most of this part of the sea appears behind the line of the intervening coastline including the large sandy promontory of Barry Links extending out into the Firth of Tay behind Buddon Ness. The Inch Cape Wind Farm will appear with a grid structure to the left half of the array where the WTGs appear to coalesce into rows and a more informal and slightly denser layout within the right half of the array. Due to the height of the viewpoint both WTG towers and blade tips will be seen above the horizon, and blade movement may be discernible. The ZTV indicates theoretical visibility of both Inch Cape OSPs and shows that foundation structures may also be visible. Looking east, the Inch Cape WTGs will appear back-lit by the sun on clear mornings. On average, the closest Inch Cape WTGs are likely to be visible for 33 per cent of the time, equivalent to approximately 120 days of the year.

174 Seagreen Offshore Wind Farm will be seen above the distant horizon mostly behind and screened by the Inch Cape WTGs and OSPs although it at over 65 km from the viewpoint is will be barely distinguishable. NNG will appear separately and more distant on the horizon to Inch Cape Wind Farm, on the other side of the opening to the Firth of Tay.

12C.16.3 Magnitude of Change

175 The Inch Cape WTGs and OSPs will occupy a relatively large proportion of the remaining section of open sea horizon taking into consideration the consented offshore wind farms. However, the Inch Cape WTGs and OSPs will be seen at a considerable distance, with the other offshore wind farms more distant, and as just one element within a complex 360° panoramic view. In this context, it is considered that the magnitude of change attributed to the Inch Cape WTGs and OSPs will be **low**.

12C.16.4 Effect on Seascape Character

176 This is a considered to be a seascape which has a low sensitivity to offshore wind farms, due to the developed urban context of the view. Therefore, the effect on seascape character, attributable to the introduction of the Inch Cape WTGs and OSPs, into distant sea views, is considered to be **minor**.

12C.16.5 Effect on Visual Amenity

177 The viewpoint is representative of views obtained by recreational visitors, to this well-known viewpoint, who are considered to have a high sensitivity to change. The effect on visual amenity is considered to be **moderate**.

12C.17 Viewpoint 16: Tentsmuir

178 Table 12C.31 presents the key viewpoint information.

Table 12C.31: Viewpoint 16 details

Figure Number	12.50a—12.50
OS Grid Reference	350325, 724227
Regional Seascape Character Area	SA11: St Andrews Bay
Seascape Character Sensitivity	High
Landscape Designation	Local Landscape Area (LLA)
Distance to Closest and Furthest Inch Cape WTG	33.43 km—46.57 km
Direction of View Towards Closest Inch Cape WTG	East north-east
Horizontal Subtended Angle (HSA)	25°
Visibility of Closest Inch Cape WTG	For an average of approximately 141 days a year
Visual Amenity Receptors	Recreational users
Sensitivity of Visual Receptors	High

12C.17.1 Existing View

179 The existing view from this location is illustrated in Figure 12.50a. The viewpoint is located on the beach, a short distance from the Forestry Commission car park at Tentsmuir Point. Although close by, NCN Route 1 and the Fife Coastal Route follow a course through the forest and not along the shoreline. The sea and sky are the dominant features of the view here, which has a very strong horizontal emphasis. To the south, the view looks across the Eden Estuary towards the Links and St Andrews, whose towers and church spires stand out against the backdrop of gently sloping farmland. The view continues along the coastline as it stretches south-east towards Boarhills and Babbet Ness. To the north, there are views along the Tentsmuir Sands and across the Firth of Tay toward Barry Links and Buddon Ness, whose lighthouses are visible above the distant shore. These views extend towards the sloping farmland to the north of Monifieth and Carnoustie. The Angus coastline beyond Carnoustie is also visible to the north-east until it meets the sea at Red Head. Inland views are curtailed by the dense coniferous plantations of Tentsmuir Forest.

180 Comparison of the wireline visualisations with the photographs of the existing view in Figures 12.50b–12.50d shows that of the onshore wind farms included in the assessment, only the wind farm at Kenly is likely to be visible in the view due to its closer proximity, approximately 13.77 km south south-east of the viewpoint, and viewed on the skyline. Frawney and Govals, in Group 5, are predicted to be visible on the wireline at distances of over 19 km. However, comparison with the photography of the existing view on Figure 12.50b shows that these wind farms would be screened by Tentsmuir Forest.

181 Of the two consented offshore wind farms, it is considered that Seagreen is not likely to be visible due to distance, which means that all but blade tips will be screened by the horizon. From this location, NNG will appear on the open sea horizon 31.95 km distant at this point and occupy a HSA of 19° in the view. There will be mostly hubs and blade tips visible from this sea level viewpoint, being perceived as a randomly configured development.

182 Key wind farms and WTGs which are theoretically visible in views from this location are summarised in Table 12C.32 below.

Table 12C.32: Summary of key wind farms theoretically visible from viewpoint 16

Wind Farm Name or Grouping	Status	Distance from Viewpoint	HSA	Direction from Viewpoint
Kenly	Consented	13.77 km	4^0	SSE
NNG	Consented	31.95 km	20°	SE

12C.17.2 Predicted View

183 The wireline visualisation in Figure 12.50b–12.50d shows that the Inch Cape WTGs and OSPs will be visible on the horizon to the east north-east of the viewpoint and to the left of centre of the open sea view, at a distance of 33.43 km and occupying a HSA of 25° in the view. The Inch Cape WTGs will appear in an informal permeable layout within the left half of the array compared to a more formal regular WTG alignment on the right half of the array where gridlines of WTGs will be visible. As the viewpoint is at sea level, at this distance, the lower parts of the WTGs, including foundation structures, will appear screened by the horizon due to the effect of the earth's curvature. Blade tip movement may be discernible in clear conditions. The ZTV indicates that both Inch Cape OSPs are theoretically visible. The Inch Cape WTGs may appear backlit by the early morning sun at certain times of the year but, when weather conditions are clear, they will mostly appear side-lit by the afternoon sun. On average, the closest Inch Cape WTGs are likely to be visible for 49 per cent of the time, equivalent to approximately 179 days of the year.

184 From this location, NNG will appear on the open sea horizon to the right of, but separated from, the Inch Cape WTGs and OSPs. It will be slightly closer than Inch Cape WTGs but due to the smaller WTG size, the majority of the towers will be below the horizon line.

12C.17.3 Magnitude of Change

185 The Inch Cape WTGs and OSPs will occupy a relatively large proportion of the horizontal extent of the open sea view, appearing larger than the slightly closer and separate, consented NNG Wind Farm. Also taking into consideration the consented Kenly Wind Farm, the Inch Cape Wind Farm will represent a notable increase in the proportion of the view occupied with wind farm development. Therefore, the magnitude of change associated with the introduction of the Inch Cape WTGs and OSPs into this view is considered to be **moderate**.

12C.17.4 Effect on Seascape Character

186 This is a high sensitivity seascape. Although certain characteristics, such as its large scale and openness, tend to decrease sensitivity to offshore wind farms, the area around Tentsmuir, in particular, has a high degree of naturalness. Therefore, the introduction of the Inch Cape WTGs and OSPs into distant sea views is considered to have a **moderate/major** and significant effect on seascape character.

12C.17.5 Effect on Visual Amenity

187 The viewpoint is representative of views obtained by recreational visitors who are considered to have a high sensitivity to change. The effect of the Inch Cape WTGs and OSPs on visual amenity is therefore considered to be **moderate/major** and significant at this location.

12C.18 Viewpoint 17: Strathkinness

188 Table 12C.33 presents the key viewpoint information.

Table 12C.33: Viewpoint 17 details

Figure Number	12.51a—12.5c
OS Grid Reference	346619, 716408
Landscape Character Area	FFE11: Coastal Hills
Landscape Character Sensitivity	Moderate
Landscape Designation	None
Distance to Closest and Furthest Inch Cape WTG	39.42 km—51.36 km
Direction of View Towards Closest Inch Cape WTG	East north-east
Horizontal Subtended Angle (HSA)	22°
Visibility of Closest Inch Cape WTG	For an average of approximately 137 days a year
Visual Amenity Receptors	Residents, recreational cyclists and road users

Sensitivity of Visual Receptors	High to Moderate

12C.18.1 Existing View

189 The existing view from this location is illustrated in Figure 12.51a. The viewpoint is located just outside and to the east of the small settlement of Strathkinness, approximately three kilometres west of St Andrews, whose towers and church spires can be seen against a backdrop of sea and sky. To the north and north-east a foreground view of gently sloping farmland gives way to more distant views of Tentsmuir Forest, which forms a dark band in the landscape above the Eden Estuary. Leuchars airfield is also seen in this same view. The farmland comprises relatively large arable fields bounded by post-and-wire fences with occasional hedgerows. Tree cover is limited although increases moving away from the coastline. In the far distance the Angus coastline can be seen punctuated to the north-east by the headland at Lang Craig. Also, to the north the twin WTGs of the Michelin Tyre Factory are visible on the outskirts of Dundee beyond, and to the left, of which rise the distinctive ridges and summits of the Sidlaw Hills. To the north-west and in the middle distance the large quarry above Balmello is a prominent feature. The sea is just one part of the overall composition of the extensive view from this location, but it does increase the strong horizontal emphasis of the landscape.

190 The wireline visualisations in Figures 12.51b and 12.51c indicate the range of onshore operational and consented wind farms that will be theoretically visible from this location. Only Tealing Airfield, Frawney, Govals and Michelin Tyre Factory would be visible but in distant views. Kenly and Airdrie wind farms, the closest to the viewpoint to the south-east, would theoretically have blade tips visible but unlikely to be visible due to the screening effect of intervening landform and vegetation.

191 Of the two other proposed offshore wind farms, Seagreen will be located to the north-east, at a closest distance of over 61.60 km, and occupying 17° of the view. In this view, NNG will be screened by intervening roadside vegetation. However, it is probable that from other locations along this stretch of road, it will be visible on the horizon, at a distance of 33.32 km and occupying a HSA of 13°, with intervening vegetation screening some of the turbines.

192 Key wind farms and WTGs which are theoretically visible in views from this location are summarised in the Table 12C.34 below.

Table 12C.34: Summary of key wind farms theoretically visible from viewpoint 17

Wind Farm Name or Grouping	Status	Distance from Viewpoint	HSA	Direction from Viewpoint
Michelin Tyre Factory	Operational	16.39 km	1^{o}	N
Tealing Airfield	Operational	21.59 km	$< 1^{0}$	N

Frawney	Consented	26.18 km	2°	N
Govals	Consented	27.56 km	1°	N
NNG	Consented	33.32 km	13°	ESE
Seagreen	Consented	61.60 km	18°	NE

12C.18.2 Predicted View

193 The wireline visualisation in Figure 12.51b shows that the Inch Cape WTGs and OSPs will be visible on the horizon to the east north-east of the viewpoint and towards the centre of the open sea view, at a distance of 39.42 km and occupying a HSA of 22° in the view.

194 The Inch Cape WTGs appear as a loose group with the arrangement of WTGs between the left and right sides of the array different. They appear in a regular arrangement on the right side of the array with aligned rows of WTGs apparent. On the left side of the array the WTGs are more informally arranged with large spacing and some overlapping. The ZTV indicates that both Inch Cape OSPs are theoretically visible and that foundation structures may also be seen. However, although the viewpoint is elevated above sea level (71 m AOD), at this distance and towards the rear of the array, the lower parts of the WTGs towers will appear screened by the horizon due to the effect of the earth's curvature. At this distance blade movement may be discernible. The Inch Cape WTGs may appear backlit by the early morning sun at certain times of the year but, when weather conditions are clear, they will mostly appear side-lit by the afternoon sun. On average, the closest Inch Cape WTGs are likely to be visible for 37.5 per cent of the time, equivalent to approximately 137 days of the year.

195 NNG lies to the south of Inch Cape within the view and separate on the horizon. It is closer than Inch Cape Wind Farm to this viewpoint and will be partially screened by intervening roadside vegetation. The Inch Cape WTGs will seem slightly taller than the NNG and have a more permeable layout given the smaller number of turbines.

12C.18.3 Magnitude of Change

196 Although occupying a relatively large proportion of the horizontal extent of the sea view, the Inch Cape WTGs and OSPs will be seen at a considerable distance. The NNG WTGs will be seen in closer proximity to the viewpoint, but occupying a smaller extent of the view and partially screened by the intervening coastal edge. Other existing onshore wind farms that are visible will not be seen in the same field of view as the Inch Cape WTGs and OSPs and occupy a much smaller extent of the view. Therefore, the magnitude of change associated with the introduction of the Inch Cape WTGs and OSPs is considered to be **low** at this location.

12C.18.4 Effect on Landscape Character

197 This viewpoint overlooks a landscape which is classified into the Coastal Hills Landscape Character Type (LCT). It is medium to large scale, with extensive views towards the coast and

sea beyond, and is considered to have a moderate sensitivity to change. Therefore, the introduction of the Inch Cape WTGs and OSPs into distant sea views is considered to have a **minor/moderate** effect on landscape character which is not significant.

12C.18.5 Effect on Visual Amenity

198 The viewpoint is representative of views obtained by recreational cyclists and residents having direct views of the Inch Cape WTGs and OSPs, who are both considered to have a high sensitivity to change. It is also representative of road users who are considered to have a moderate sensitivity to change. The effect of the Inch Cape WTGs and OSPs on visual amenity is therefore considered to be moderate for residents and recreational users. The effect on the visual amenity of road users is considered to be **minor/moderate**.

12C.19 Viewpoint 18: St Andrews, East Scores

199 Table 12C.35 presents the key viewpoint information.

Table 12C.35: Viewpoint 18 details

Figure Number	12.52a—12.52c
OS Grid Reference	351572, 716671
Regional Seascape Character Area	SA12: St Andrews to Fife Ness
Seascape Character Sensitivity	High
Landscape Designation	None
Distance to Closest and Furthest Inch Cape WTG	34.81 km—46.25 km
Direction of View Towards Closest Inch Cape WTG	East north-east
Horizontal Subtended Angle (HSA)	24°
Visibility of Closest Inch Cape WTG	For an average of approximately 153 days a year
Visual Amenity Receptors	Recreational users and residents
Sensitivity of Visual Receptors	High

12C.19.1 Existing View

200 The existing view from this location is illustrated in Figure 12.52a. The viewpoint is located by the grounds of the ruined cathedral, overlooking the piers at the northern end of East Sands. It lies on the route of the Fife Coastal Path and is a popular destination with visitors to the town. At high tide only, the piers in the foreground of the view will be visible within the immediate context of the foreshore; however, the photograph illustrates the tidal rock

platforms which become progressively more exposed between high and low tides. To the north-west the view looks across residential properties overlooking the shore and the ruins of St Andrews Castle, beyond which views of the Links give way to the forests and shoreline of Tentsmuir Point, seen against a distant backdrop of the Sidlaw Hills. The two existing WTGs at the Michelin Tyre Factory in Dundee can be seen rising above the forest, but they do not appear on the skyline. Northwards the view continues along the distant Angus coastline, meeting the sea at the cliff edge to the north of Arbroath. Between this point and the Fife coastline to the east, the sea view is continuous with the horizon only broken by the occasional passing ship. In good visibility, the Bell Rock Lighthouse can be seen on the horizon, approximately 27 km east north-east, in the middle of the open sea.

201 With the exception of the Michelin Tyre Factory and cumulative Group 5 developments, other existing and consented onshore wind farms are not seen, or will be unlikely to be visible, due to their distance from the viewpoint.

202 Of the two other offshore wind farms, Seagreen will be located at a distance of just over 56.88 km, and occupying 18° of the view. Due to the curvature of the earth, only the blade tips would be theoretically visible and unlikely at this distance to be seen from the viewpoint. NNG will be seen 28.48 km to the east of the viewpoint. Some WTGs at the southern extent of the NNG array will be screened by the rising coastal edge, with only blade tips being visible above the skyline.

203 Key wind farms and WTGs which are theoretically visible in views from this location are summarised *in* Table 12C.36 below.

Table 12C.36: Summary of other wind farms theoretically visible from viewpoint 18

Wind Farm Name or Grouping	Status	Distance from Viewpoint	HSA	Direction from Viewpoint
Michelin Tyre Factory	Operational	17.34 km	1°	NNW
Tealing Airfield	Operational	23.22 km	< 1°	NNW
Frawney	Consented	27.30 km	1°	NNW
Govals	Consented	28.67 km	1°	NNW
NNG	Consented	28.48 km	22°	ESE

12C.19.2 Predicted View

204 The wireline visualisation in Figures 12.52b—12.52c shows that the Inch Cape WTGs and OSPs will be visible on the horizon to the east north-east of the viewpoint at a distance of 34.81 km and occupying a HSA of 24° in the open sea view. The Inch Cape WTGs appear in a generally regular arrangement with rows of turbines apparent at the left and right of the array although

there more densely arranged on the right-hand side. At this elevation (six metres AOD) the lower parts of the WTGs and foundation structures, particularly towards the back of the group, will be screened by the horizon, due to the effect of the earth's curvature, although the ZTV indicates that both Inch Cape OSPs will be theoretically visible. Blade tip movement will also be discernible at this distance. The Inch Cape WTGs may appear backlit by the early morning sun at certain times of the year but, when weather conditions are clear, they will mostly appear side-lit by the afternoon sun. On average, the closest Inch Cape WTGs are likely to be visible for 42 per cent of the time, equivalent to approximately 153 days of the year.

205 Although the Group 5 wind farms and Michelin Tyre Factory are predicted to be theoretically visible, they would be at distances of over 17 km and likely to be minor elements in the view. The NNG WTGs would be located to the right of Inch Cape WTGs as a separate development. Inch Cape WTGs would appear slightly larger than NNG although it is approximately 5 km further from the viewpoint. Inch Cape WTG array would have a more permeable arrangement with individual turbines more noticeable than the more numerous and densely spaced WTGs of NNG.

12C.19.3 Magnitude of Change

206 In sea views, the Inch Cape WTGs and OSPs will introduce a large number of man-made vertical elements on the horizon, occupying approximately 25° of the view, within a large expanse of otherwise open sea, but at considerable distance from the viewpoint, which has the effect of decreasing the vertical extent of the WTGs visible above the horizon. The NNG WTGs will be seen in closer proximity to the viewpoint, occupying a smaller extent of the view, but seen against the coastal edge, which partially screens views of some of the NNG WTGs. The magnitude of change associated with the introduction of the Inch Cape WTGs and OSPs into this view is considered to be **moderate**. Other onshore existing and consented wind farms that are visible are not, or will not, be seen in the same field of view as the Inch Cape WTGs and OSPs and also occupy a much smaller extent of the view.

12C.19.4 Effect on Seascape Character

207 Overall, this is a medium to large scale coastline, with expansive sea views, but having a wealth of fine detail within the coastal edge, including a number of smaller scale sheltered coves and inlets. Also taking into account the NNG Wind Farm, a relatively large proportion of the otherwise open sea view to the north-east will be occupied by WTGs. Within this context, it is considered that the introduction of the Inch Cape WTGs and OSPs will give rise to **moderate/major** effect on this high sensitivity seascape which is significant.

12C.19.5 Effect on Visual Amenity

208 The viewpoint is representative of views obtained by visitors to St Andrews, residents, and recreational users of the Fife Coastal Path, who are all considered to have a high sensitivity to change. The effect of the Inch Cape WTGs and OSPs with the existing and consented onshore wind farms on visual amenity is therefore considered to be **moderate/major** and significant.

12C.20 Viewpoint 19: Largo Law

209 Table 12C.37 presents the key viewpoint information.

Table 12C.37: Viewpoint 19 details

Figure Number	12.53a—12.53c
OS Grid Reference	342704, 704979
Landscape Character Area	FFE4: Pronounced Volcanic Hills and Craigs
Landscape Character Sensitivity	Moderate
Landscape Designation	LLA
Distance to Closest and Furthest Inch Cape WTG	48.36 km—61.26 km
Direction of View Towards Closest Inch Cape WTG	East north-east
Horizontal Subtended Angle (HSA)	18°
Visibility of Closest Inch Cape WTG	For an average of approximately 88 days a year
Visual Amenity Receptors	Recreational users
Sensitivity of Visual Receptors	High

12C.20.1 Existing View

210 The existing view from this location is illustrated in Figure 12.53a. The summit of Largo Law is approximately 2.4 km north of the Forth Estuary at its closest point. Although only 290 m AOD the distinctive form of Largo Law is prominent landmark, rising steeply from the surrounding landscape and the summit affords a 360° panoramic view. Looking towards the Development Area the view looks across an undulating agricultural landscape in which large arable fields and pasture are interspersed with areas of woodland and shelterbelt planting, creating a patchwork effect to which are added scattered settlements and farmsteads. The sea is a distant element in this view, east north-east, although the horizon is unbroken by land between the Angus coastline and St Abb's Head, creating a strong horizontal emphasis.

211 The existing and consented WTGs within Groups 1, 2, 3, and 4 have theoretical visibility but are unlikely to be seen at this distance from the viewpoint. The Michelin Tyre factory and Tealing Airfield WTGs will also be visible, but at a distance of 27.83 km and 32.24 km respectively, with both wind farms occupying less than 1° of the view in each case.

212 The wirelines show that Seagreen will be seen at nearly 70 km and is therefore is unlikely to be perceived. NNG will be seen to the east of the viewpoint at a distance of 37.38 km and occupying a HSA of 18°. It will also be seen on the distant, but open sea horizon.

213 Key wind farms and WTGs which are theoretically visible in views from this location are summarised in Table 12C.38 below.

Table 12C.38: Summary of key wind farms theoretically visible from viewpoint 19

Wind Farm Name or Grouping	Status	Distance from Viewpoint	HSA	Direction from Viewpoint
East Fife Football Club	Consented	6.75 km	< 1°	SW
Methil Docks	Operational	7.08 km	< 1°	SW
Levenmouth Demo Project	Operational	8.82 km	< 1°	SW
Forthwind	Consented	9.08 km	2°	SW
Forthwind Extension	Scoping	9.08 km	19°	SW
Bonerbo	Operational	11.26 km	2°	E
Airdrie Farm	Operational	14.05 km	1°	E
Kenly	Consented	14.46 km	3°	ENE
NNG	Consented	37.38 km	18°	E

12C.20.2 Predicted View

214 The wireline visualisation in Figure 12.53b shows that the Inch Cape WTGs and OSPs will be visible at a closest distance of 48.36 km and occupying approximately 18° of the view. It will be seen to the east north-east of the viewpoint and on the distant sea horizon. The Inch Cape Wind Farm will appear in a generally regular arrangement with some grid lines of turbines apparent within the centre of the array and individual turbines discernible at either side. All upper parts of the Inch Cape WTGs will be visible due to the elevation of the hilltop location. The ZTV indicates both Inch Cape OSPs are theoretically visible and that foundation structures may also be seen. However, the lower parts of the Inch Cape WTGs, particularly towards the rear of the array, will be screened by the horizon due to the effects of the earth's curvature. At this distance it is unlikely that blade tip movement will be visible. On average, the closest Inch Cape WTGs are likely to be visible for 24 per cent of the time, equivalent to approximately 88 days of the year.

215 NNG will be seen to the east of the viewpoint at a distance of 37.38 km, closer to the viewpoint than Inch Cape Wind Farm and will be perceived as a separate wind farm. The Forthwind Offshore consented turbines and single turbines at East Fife Football Club, Methil Docks and the Levenmouth Demo Project are all theoretically visible to the south west at distances of less than 10 km.

216 Table 12C.38 (above) and the wireline visualisation in Figure 12.53b–12.53c indicate that the in scoping Forthwind Extension offshore wind farm has theoretical visibility from this viewpoint. It would be visible to the south-west at a distance of 9.08 km, and seen against a background of the sea and the East Lothian coast.

12C.20.3 Magnitude of Change

217 The magnitude of change attributable to the introduction of the Inch Cape WTGs and OSPs into the landscape, when considered in relation to both existing and consented onshore and offshore, is **low**. Although the Inch Cape WTGs and OSPs will represent a noticeable increase in the proportion of the open sea view affected by wind farms, they will be located at a considerable distance from the viewpoint and be just one element in an overall 360° panoramic view.

218 The magnitude of cumulative change arising from the Inch Cape WTGs in addition to the baseline wind farms and the scoping stage Forthwind Offshore Extension also will be **low**, with the Forthwind Offshore Extension turbines potentially visible at much closer proximity to the viewpoint.

12C.20.4 Effect on Landscape Character

219 Introduction of the Inch Cape WTGs and OSPs into views of the surrounding landscape will have a **minor/moderate** effect on this moderate sensitivity landscape. This is not considered to be significant.

220 The cumulative effect of the Inch Cape with the baseline wind farms and the scoping stage Forthwind Offshore Extension development will also be **minor/moderate** and not significant.

12C.20.5 Effect on Visual Amenity

221 The viewpoint is representative of views obtained by recreational users, mainly hill walkers, who are considered to have a high sensitivity to change. The effect on visual amenity arising from the Inch Cape WTGs and OSPs together with existing and consented wind farms is considered to be **moderate** and does not represent a significant visual impact due to the nature of the panoramic views from this summit and the distance from the Inch Cape WTGs and OSPs.

222 The cumulative effect on visual amenity from Inch Cape with the baseline wind farms and the much closer scoping stage Forthwind Offshore Extension will be **minor/moderate** and not significant, with the Inch Cape WTGs at considerable distance and seen in the opposite direction from the scoping stage offshore wind farm in the Firth of Forth.

12C.21 Viewpoint 20: B9131 South of Dunino

223 Table 12C.39 presents the key viewpoint information.

Table 12C.39: Viewpoint 20 details

Figure Number	12.54a—12.54c
OS Grid Reference	354324, 709610
Landscape Character Area	FFE6: Lowland Open Sloping Farmland
Landscape Character Sensitivity	Moderate
Landscape Designation	None
Distance to Closest and Furthest Inch Cape WTG	36.18 km—49.49 km
Direction of View Towards Closest Inch Cape WTG	East north-east
Horizontal Subtended Angle (HSA)	24°
Visibility of Closest Inch Cape WTG	For an average of approximately 151 days a year
Visual Amenity Receptors	Road users
Sensitivity of Visual Receptors	Moderate

12C.21.1 Existing View

224 The existing view from this location is illustrated in Figure 12.54a. The viewpoint is located on the B9131, approximately one kilometre south of the hamlet of Dunino and about six kilometres from the coast at its closest point. The view captures both the expansive, flat landward area together with views out to the North Sea. The view towards the sea looks across a landscape of arable fields bounded by post-and-wire fences with occasional gappy hedgerows. Groups of trees and larger areas of woodland are dotted throughout the landscape, sometimes breaking the distant sea horizon. A number of farm buildings can be seen and a line of telegraph poles crosses the view running towards the sea, introducing a number of vertical elements into what is otherwise a view with a pronounced horizontal emphasis. In the distance, the Angus coastline is visible across St Andrews Bay and the Outer Firth of Tay, including the prominent vertical cliff edge at Red Head. Beyond this, the ridgeline of the hill ranges to the north-west of Strathmore can just be discerned. To the south there are glimpsed views, between the intervening vegetation cover, of the distant hills rising above East Lothian. Views to inland areas of Fife are mostly screened by tree cover and rising topography.

225 The wireline visualisations in Figures 12.54a–12.54d indicate the range of onshore operational and consented wind farms that have theoretical visibility at this location. Kenly will be seen in close proximity, between the viewpoint and coastline. Only the lower part of the Kenly WTG towers will be screened by the intervening area of woodland. Bonerbo Wind Farm would also be visible in close proximity to the south west of the viewpoint. Of the other existing and

consented onshore wind farms, most are too distant to be visible, apart from in conditions of very good visibility, or they are likely to be screened from view by intervening vegetation.

226 Of the two other offshore wind farms, Seagreen will be located to the north-east, at a distance of 57.42 km, with mostly blade tips visible on the horizon. NNG will appear to the east at 25.28 km distance and will occupy a HSA of 25° of the view. In this particular view, it is likely that woodland blocks in the intervening landscape will reduce visibility of approximately half of the WTGs at NNG to blade tips only, which will be seen above the skyline of trees.

227 Key wind farms and WTGs which are theoretically visible in views from this location are summarised in Table 12C.40 below.

Table 12C.40: Summary of key wind farms theoretically visible from viewpoint 20

Wind Farm Name or Grouping	Status	Distance from Viewpoint	HSA	Direction from Viewpoint
Bonerbo	Operational	1.92 km	17°	S
Kenly	Consented	2.18 km	14°	NE
Airdrie Farm	Operational	2.31 km	< 1°	SE
NNG	Consented	25.28 km	25°	E
Seagreen	Consented	57.42 km	20°	NE

12C.21.2 Predicted View

228 The wireline visualisation in Figure 12.54b shows that the Inch Cape WTGs and OSPs will be visible to the east north-east of the viewpoint at a distance of 36.18 km and occupying a HSA of 24°. The Inch Cape WTG array will appear in two generally evenly arranged groups with a gap either side of two turbines in the centre of the array that lie in front of each other. A small number of WTGs will be partially screened from view by trees in the surrounding landscape. The Inch Cape WTGs may appear backlit by the early morning sun at certain times of the year but, when weather conditions are clear, they will mostly appear side-lit by the afternoon sun. At this distance blade tip movement may be visible. Due to the elevation of the viewpoint, the WTGs will mostly appear above the horizon, with the ZTV indicating theoretical visibility of both Inch Cape OSPs and that foundation structures may also be seen. However, to the rear of the array, the lower parts of the Inch Cape WTGs are likely to be screened below the horizon. On average, the closest Inch Cape WTGs are likely to be visible for 41.5 per cent of the time, equivalent to approximately 151 days of the year.

229 The consented onshore Kenly wind farm would be seen in the foreground as a focus of the view, partially overlapping with the distant Inch Cape WTGs. Seagreen Offshore Wind Farm would be seen largely behind Inch Cape Wind Farm and mostly over 60 km from the viewpoint,

much of its WTGs would be below the horizon line and would be barely discernible. NNG will appear as a separate development to the right of the Inch Cape WTGs and OSPs in this view. It will be closer, at 25.28 km distance, and the NNG WTGs will appear as a similar size to the Inch Cape WTGs, and will occupy a HSA of 25° of the view, slightly greater than that of the Inch Cape WTGs and OSPs. In this particular view, it is likely that woodland blocks in the intervening landscape will reduce visibility of approximately half of the WTGs at NNG to blade tips only, which will be seen above the skyline of trees.

12C.21.3 Magnitude of Change

230 In seaward views, the Inch Cape WTGs and OSPs will introduce a large number of man-made vertical elements on the horizon occupying approximately 24° of the view. Due to the elevation of the viewpoint, even at 36.18 km distance, both WTG towers and rotor blades will be visible above the horizon. The NNG WTGs will be seen at a slight separation from the Inch Cape WTGs and OSPs but closer to the viewpoint. They will occupy a similar extent of the view but, the presence of intervening vegetation means that for about half of the NNG WTGs, visibility will be blade tips only. Of the existing and consented onshore wind farms, the Kenly and Bonerbo will be prominent features in the surrounding landscape, particularly Kenly, which will be located at two kilometres to the north-east of the viewpoint and lie in front of views to Inch Cape Wind Farm. Kenly would partially distract from the sea and Inch Cape WTGs in this part of the view. Taking this in to consideration and noting that the seaward view is broken in places by trees and vegetation in the surrounding landscape, it is considered that the magnitude of change will be **low**. Other onshore existing and consented wind farms are unlikely to be visible from this location.

12C.21.4 Effect on Landscape Character

231 This is a large scale open landscape with a relatively simple pattern and composition of elements. Distant views of the sea are one characteristic of the landscape and tend to emphasise its horizontal focus. Within this context, it is considered that the introduction of the Inch Cape WTGs and OSPs will give rise to a **minor/moderate** effect on this moderate sensitivity landscape which will not be significant.

12C.21.5 Effect on Visual Amenity

232 The viewpoint is representative of views obtained by road users, who are considered to have a moderate sensitivity to change. The effect of the Inch Cape WTGs and OSPs on visual amenity at this location is therefore considered to be **minor/moderate**.

12C.22 Viewpoint 21: Kingsbarns

233 Table 12C.41 presents the key viewpoint information.

Table 12C.41: Viewpoint 21 details

Figure Number	12.55a--12.55c

OS Grid Reference	359221, 712449
Landscape Character Area	FFE6: Lowland Open Sloping Farmland
Landscape Character Sensitivity	Moderate
Landscape Designation	LLA
Distance to Closest and Furthest Inch Cape WTG	30.55 km—44.01 km
Direction of View Towards Closest Inch Cape WTG	East north-east
Horizontal Subtended Angle (HSA)	27°
Visibility of Closest Inch Cape WTG	For an average of approximately 173 days a year
Visual Amenity Receptors	Road users
Sensitivity of Visual Receptors	Moderate

12C.22.1 Existing View

234 The existing view from this location is illustrated in Figure 12.55a. The viewpoint is located on the A917, approximately 0.2 km north of the village of Kingsbarns and about 0.7 km from the coast at its closest point. Compared to the view from Viewpoint 20, the sea is a more important feature in this view and gives it a strong horizontal emphasis. However, landscape elements are similar as the view looks across arable fields, some bounded by stone walls, to the coastal edge and sea beyond. The seaward view is framed by groups of trees and woodland which provide vertical features in the flat landscape and also break the sea horizon. Looking south along the road, houses on the edge of the settlement are visible together with the prominent church spire. However, apart from the horizon out at sea, distant views are largely screened by intervening vegetation and the locally rising topography.

235 The consented Kenly Wind Farm will be seen in relatively close proximity, approximately 2.60 km inland. Comparison of the wireline visualisation with the photograph of the existing view, suggests that other proposed onshore wind farms will be screened from view by locally rising topography and intervening vegetation.

236 The two offshore developments of NNG and Seagreen to the east and north-east respectively would be visible. NNG would be the most noticeable as a result of its closer proximity to the viewpoint (20.36 km); whereas, Seagreen would only be visible during periods of clear visibility as a result of the distance from the viewpoint (51.76 km).

237 Key wind farms and WTGs which are theoretically visible in views from this location are summarised in Table 12C.42 below.

Table 12C.42: Summary of key wind farms theoretically visible from viewpoint 21

Wind Farm Name or Grouping	Status	Distance from Viewpoint	HSA	Direction from Viewpoint
Kenly	Consented	2.60 km	11	WSW
NNG	Consented	20.36 km	30	E
Seagreen	Consented	51.76 km	21	NE

12C.22.2 Predicted View

238 The wireline visualisation in Figure 12.55b shows that the Inch Cape WTGs and OSPs will be clearly visible to the east north-east of the viewpoint at a distance of 30.55 km and occupying a HSA of 27°. The Inch Cape WTG array will appear in two groups with a gap either side of three turbines in the centre of the array that coalesce into a row. The left hand side WTGs appear in a generally open arrangement with more distant individual WTGs at the far left. The right hand side is more evenly arranged with some overlapping WTGs. The WTGs may appear backlit by the early morning sun at certain times of the year but, when weather conditions are clear, they will mostly appear side-lit by the afternoon sun. At this distance blade tip movement is likely to be discernible. The ZTV indicates that both Inch Cape OSPs are theoretically visible from this location and that WTG foundation structures may also be seen. The WTG towers, hubs and rotor blades will mostly appear above the horizon although the lower towers of the most distant WTGs may be screened below the horizon. On average, the closest Inch Cape WTGs are likely to be visible for 47.5 per cent of the time, equivalent to approximately 173 days of the year.

239 Of the two other proposed offshore wind farms, Seagreen will be located to the north-east of the Development Area, at a distance of nearly 51.76 km, and when visible the Seagreen WTGs will theoretically be seen behind the Inch Cape WTGs and OSPs with mostly blade tips and some hubs visible on the horizon. In this view, NNG will appear as a separate wind farm to the right of the Inch Cape WTGs and OSPs. It will be much closer, at 20.36 km distance, therefore its WTGs will appear at a similar height to the Inch Cape WTGs and occupy a similar HSA (30°) of the view. The NNG WTGs will be more densely spaced than Inch Cape and appear in a random arrangement from this viewpoint. In this particular view, intervening vegetation will screen views of a small number of NNG WTGs.

12C.22.3 Magnitude of Change

240 In the framed seaward views available at this viewpoint, the Inch Cape WTGs and OSPs will introduce a large number of man-made vertical elements on the horizon occupying approximately 27° of the view. Both WTG towers and rotor blades will be visible above the horizon. The Inch Cape WTGs and OSPs will appear in front of, and will largely screen views of the minimal extent of Seagreen WTGs theoretically visible. The NNG WTGs will be seen as a

separate wind farm from the Inch Cape WTGs and OSPs but appear similar in height and horizontal extent. Kenly Wind Farm will also feature in inland views in close proximity to the viewpoint. In this context, it is considered that the magnitude of change attributed to the Inch Cape WTGs and OSPs will be **moderate** due to the proportion of the seascape affected by wind farm development.

12C.22.4 Effect on Landscape Character

241 This is a large scale open landscape with a relatively simple pattern and composition of elements. Views of the sea are one characteristic of the landscape and tend to emphasise its horizontal focus, with expansive sea views. Within this context, it is considered that the introduction of the Inch Cape WTGs and OSPs will give rise to a **moderate** effect on this moderate sensitivity landscape which is not significant.

12C.22.5 Effect on Visual Amenity

242 The viewpoint is representative of views obtained by road users, who are generally considered to have a moderate sensitivity to change, although it is recognised that some motorists may be more sensitive to change in the landscape, as the A917 forms part of the Fife Coastal Route – a National Tourist Route. The predicted view will be obtained from short section of the road in views at right angles to the direction of travel. The overall effect on visual amenity at this location is considered to be **moderate**.

12C.23 Viewpoint 22: Anstruther Easter

243 Table 12C.43 presents the key viewpoint information.

Table 12C.43: Viewpoint 22 details

Figure Number	12.56a—12.56c
OS Grid Reference	357901, 704166
Regional Seascape Character Area	SA13: East Neuk of Fife
Seascape Character Sensitivity	High
Landscape Designation	LLA
Distance to Closest and Furthest Inch Cape WTG	36.43 km—51.08 km
Direction of View Towards Closest Inch Cape WTG	North-east
Horizontal Subtended Angle (HSA)	7°
Visibility of Closest Inch Cape WTG	For an average of approximately 151 days a year
Visual Amenity Receptors	Residents / Recreational users

Sensitivity of Visual Receptors	High

12C.23.1 Existing View

244 The existing view from this location is illustrated in Figure 12.56a. The viewpoint is located at the edge of the car park on the northern side of Cellardyke, overlooking a disused open air tidal swimming pool. The Fife Coastal Path passes through Cellardyke and the viewpoint is adjacent to a park and outdoor activity centre. Also close by are residential properties and a caravan park, just to the north. The sea view here is expansive and immediate, taking in a wide area of open sea to the north-east and east, interrupted only by the distinctive form of the Isle of May, with its prominent sheer cliffs and lighthouse, and the occasional ship. The horizontal sea horizon is only broken by distant St Abb's Head, which is visible to the south-east when visibility is particularly clear. Other distinctive landmarks across the Firth of Forth include Bass Rock and North Berwick Law, beyond which the skyline of the Lammermuir Hills rises in the far distance.

245 Of the two offshore consented developments, Seagreen will be over 57 km from the viewpoint and at this distance it is not considered that it will have actual visibility, particularly as only blade tips are seen above the horizon in the wireline. NNG will be seen in closer proximity at 22.79 km and occupying a HSA of 27°. It will be visible at the centre of the open sea view between the Fife coastline and the Isle of May.

246 The existing wind farms at Kinegar Quarry, Hopsprigshiels (Group 8), and Crystal Rig, Aikengall (Groups 9) are visible on clear days, at over 34 km to the south.

247 Key wind farms and WTGs considered in this assessment which are theoretically visible in views from this location are summarised in Table 12C.44 below.

Table 12C.44: Summary of key wind farms theoretically visible from viewpoint 22

Wind Farm Name or Grouping	Status	Distance from Viewpoint	HSA	Direction from Viewpoint
NNG	Consented	22.79 km	27°	E
Seagreen	Consented	57.14 km	20°	NE

12C.23.2 Predicted View

248 The wireline visualisation in Figure 12.56b shows that a small section of the Inch Cape WTGs and OSPs will be visible to the north-east of the viewpoint at a closest distance of 36.43 km. Based on the wireline this will comprise the upper tower, hubs and blades of 13 WTGs, blades of one WTG and blade tips of two WTGs. Although comparison of the existing photograph with the wireline suggests that the northern most of the theoretically visible WTGs will be not be visible in reality. The Inch Cape WTGs will form a group extending out from the coastal edge as it dips down to the sea, occupying approximately 7° of the view. They will be evenly spaced into six groups of two overlapping WTGs except for three overlapping WTGs closest to the coastal edge. Due to the elevation of the viewpoint, just above sea level, and the effect of earth curvature, the WTG towers are mostly hidden below the horizon and foundation structures will not be visible. The ZTV indicates that the Inch Cape OSPs will not be visible. Blade tip movement may be discernible. The Inch Cape WTGs will not be back-lit against the sun due to the direction of the view, except when the early morning sun may rise behind the WTGs. The WTGs will be mainly side lit and therefore become more noticeable in certain conditions. On average, the closest WTGs are likely to be visible for 41.5 per cent of the time, equivalent to approximately 151 days of the year.

249 NNG will be seen in closer proximity than Inch Cape WTGs, at 22.79 km and occupying a HSA of 27°. The turbines will appear larger than the few Inch Cape WTGs visible and it would become the focus of the sea view.

12C.23.3 Magnitude of Change

250 The Inch Cape WTGs and OSPs will extend wind farm development into the seaward view from the adjacent coastal edge and may compete with it as a focus in the view, but will be at some distance and with only a few turbines visible it will occupy a small part of the view. Also, Inch Cape would be less discernible when seen in comparison to the closer and full extent of the NNG Wind Farm. The magnitude of change associated with the introduction of the Inch Cape WTGs and OSPs into the view is considered to be **low**.

12C.23.4 Effect on Seascape Character

251 This is a high sensitivity seascape due to limited modern development on the coastal edge, the small scale of the traditional settlements and the varied nature of the coastal scenery. Within this context, it is considered that the introduction of the Inch Cape WTGs and OSPs will give rise to **moderate** effect which will not be significant.

12C.23.5 Effect on Visual Amenity

252 The viewpoint is representative of views obtained by recreational receptors on the Fife Coastal Path, and those local residents in the settlement of Anstruther Easter who will have direct views of the Inch Cape WTGs and OSPs, and who are considered to have a high sensitivity to change. The effect of the Inch Cape WTGs and OSPs on visual amenity is therefore considered to be **moderate**.

12C.24 Viewpoint 23: Fife Ness

253 Table 12C.45 presents the key viewpoint information.

Table 12C.45: Viewpoint 23 details

Figure Number	12.57a—12.57c
OS Grid Reference	363844, 709759
Regional Seascape Character Area	SA12: St Andrews to Fife Ness
Seascape Character Sensitivity	High
Landscape Designation	LLA
Distance to Closest and Furthest Inch Cape WTG	28.32 km—43.01 km
Direction of View Towards Closest Inch Cape WTG	North-east
Horizontal Subtended Angle (HSA)	27°
Visibility of Closest Inch Cape WTG	For an average of approximately 179 days a year
Visual Amenity Receptors	Residents and recreational users
Sensitivity of Visual Receptors	High

12C.24.1 Existing View

254 The existing sea view from this location is illustrated in Figure 12.57a. The viewpoint is located just above sea level at the tip of Fife Ness, the easternmost point in Fife. It is home to both a coastguard station and lighthouse and the Fife Coastal Path follows a route around the

headland. The foreshore here is predominantly rocky; although, the photograph was taken before or after high tide so the rock platform offshore is partially submerged. At low tide, much of this platform is exposed, providing a foreground context to the sea view which, from this location, is both expansive and immediate. Unbroken sea views stretch across the horizon from the Angus and Aberdeenshire coastlines in the north-east to the Scottish Borders coastline, and beyond, in the south-east. There are views across St Andrews Bay to the Angus coast and inland hills such as the Sidlaws and also south across the Firth of Forth, to the East Lothian coastline and hill ranges beyond. Within the expanse of sea and sky, and in conditions of good visibility, the Bell Rock Lighthouse may be seen to the north-east at approximately 20 km distance. Looking south, the Isle of May is a prominent feature in the open sea at about 10 km distance, silhouetted against a backcloth of the East Lothian coastline, which is just under 25 km from the viewpoint, at the closest. Bass Rock and other prominent natural features can also be distinguished against this more distant backdrop.

255 The photograph and wireline visualisations in Figure 12.57b show that the Michelin Tyre Factory WTGs are visible to the north-west; however other existing and consented WTGs to the north of Fife Ness are unlikely to be seen due to the intervening distance. The existing wind farms at Aikengall and Crystal Rig may be visible in conditions of good visibility, arrayed on the distant skyline of the Lammermuir Hills at distances of over 39 km.

256 Seagreen Offshore Wind Farm will be located to the north-east of the Development Area, over 49 km from the viewpoint with only blade tips being visible. NNG will be closer, at 15.77 km distance occupying a HSA of 36° on the open horizon.

257 Key wind farms and WTGs considered in this assessment which are theoretically visible in views from this location are summarised in Table 12C.46 below.

Table 12C.46: Summary of key wind farms theoretically visible from viewpoint 23

Wind Farm Name or Grouping	Status	Distance from Viewpoint	HSA	Direction from Viewpoint
NNG	Consented	15.77 km	36°	E
Seagreen	Consented	49.11 km	22°	NE

12C.24.2 Predicted View

258 The photomontage in Figure 12.57b shows that the Inch Cape WTGs and OSPs will be visible to the north-east of the viewpoint at a closest distance of 28.32 km. The Inch Cape WTGs will be perceived as a permeable grouping, occupying approximately 27° of the horizon. Visual coalescence of the group into rows of WTGs is apparent particularly towards the outer extents of the array with turbines in the middle of the array spaced apart individually. At this distance the lower parts of the WTG towers will be hidden below the horizon and foundation structures will not be visible; this effect increasing with distance. The ZTV indicates that both Inch Cape

OSPs may also be visible. The WTGs will not appear back-lit against the sun due to the direction of the view, although they will be side lit and therefore become more noticeable in certain conditions. On average, the closest Inch Cape WTGs are likely to be visible for 49 per cent of the time, equivalent to approximately 179 days of the year.

259 NNG will be much closer than the Inch Cape Wind Farm, at 15.77 km distance and therefore its WTGs will appear taller than the Inch Cape WTGs. From this location the NNG WTGs will be perceived as a much denser and larger WTG group than Inch Cape Wind Farm.

12C.24.3 Magnitude of Change

260 In sea views, the Inch Cape WTGs and OSPs will introduce a large number of man-made vertical elements on the horizon occupying approximately 27° of the view within a large expanse of otherwise open sea. The NNG WTGs will be seen in much closer proximity to the viewpoint and occupying a greater extent of the view. Other onshore existing and consented wind farms are seen at similar distances but not in the same field of view as the Inch Cape WTGs and OSPs and occupying a small proportion of the view. Taking these two factors into consideration, the associated magnitude of change will be **moderate**.

12C.24.4 Effect on Seascape Character

261 This is a medium to large scale coastline, with expansive sea views. There is a wealth of small-scale detail on the coastal edge which tends to increase the sensitivity of this character area. Within this context, and as Inch Cape WTGs will occupy a relatively large proportion of the otherwise open sea view to the north-east of NNG it is considered that the introduction of the Inch Cape WTGs and OSPs will give rise to **moderate/major** effect on this high sensitivity seascape, which will be significant.

12C.24.5 Effect on Visual Amenity

262 The viewpoint is representative of views obtained by recreational receptors on the Fife Coastal Path, local residents in the small settlement of Fife Ness and other visitors to Fife Ness, who are considered to have a high sensitivity to change. The effect of the Inch Cape WTGs and OSPs in conjunction with the existing/consented onshore wind farm development on visual amenity is considered to be **moderate/major** and significant.

12C.25 Viewpoint 24: Isle of May

263 Table 12C.47 presents the key viewpoint information.

Table 12C.47: Viewpoint 24 details

Figure Number	12.58a—12.58c
OS Grid Reference	365655, 699329
Regional Seascape Character Area	SA13: East Neuk of Fife

Seascape Character Sensitivity	High
Landscape Designation	LLA
Distance to Closest and Furthest Inch Cape WTG	34.40 km—50.29 km
Direction of View Towards Closest Inch Cape WTG	North-east
Horizontal Subtended Angle (HSA)	22°
Visibility of Closest Inch Cape WTG	For an average of approximately 139 days a year
Visual Amenity Receptors	Recreational users
Sensitivity of Visual Receptors	High

12C.25.1 Existing View

264 The existing view from this location is illustrated in Figure 12.58a. The viewpoint is located at an elevated position on the north-eastern side of the island, close to the Isle of May Lighthouse. Views of the rocky island foreshore are limited, so the view is predominantly focussed on the sea itself with expansive views out into the North Sea. To the north-west and south-east, the wide horizon is framed by the distant coastlines of Angus and Aberdeenshire to the north and the Scottish Borders to the south-east with St Abb's Head visible at approximately 35 km distance. Fife Ness can also just be seen, approximately eight kilometres to the north. Looking south across the Firth of Forth, both Torness Power Station and Dunbar Cement Works can be seen on the coastline with existing onshore wind farms visible on the distant skyline of the Lammermuir Hills.

265 Seagreen will be located to the north-east of the Development Area, at nearly 55 km from the viewpoint with mainly WTG blade tips being visible. NNG will be much closer, at 16.64 km east north-east and occupy approximately 35° of the view.

266 To the south-east of Inch Cape, the existing wind farms at Aikengall and Crystal Rig (Group 9) as wells as Ferneylea, Kinegar Quarry and Hoprigshiels (Group 8) are visible in conditions of good visibility, arrayed on the distant skyline of the Lammermuir Hills at over 29.32 km.

267 Key wind farms and WTGs considered as part of this assessment which are theoretically visible in views from this location are summarised in Table 12C.48 below.

Table 12C.48: Summary of key wind farms theoretically visible from viewpoint 24

Wind Farm Name or Grouping	Status	Distance from Viewpoint	HSA	Direction from Viewpoint
Aikengall	Operational	29.32 km	2°	ENE
Aikengall 2	Operational	31.15 km	5°	S
Aikengall 2a	Consented	32.01 km	5°	S
Crystal Rig 1	Operational	30.71 km	4°	S
Crystal Rig 1a	Operational	31.89 km	2°	S
Crystal Rig 2	Operational	29.77 km	6°	S
Crystal Rig 2a	Operational	29.30 km	6°	S
Crystal Rig 3	Operational	29.30 km	7°	S
Hoprigshiels	Operational	31.94 km	1°	SE
NNG	Consented	16.64 km	35°	ENE
Seagreen	Consented	54.06 km	22°	NE

12C.25.2 Predicted View

268 The wireline visualisation in Figure 12.58b shows that the Inch Cape WTGs and OSPs will be visible to the north-east of the viewpoint at a closest distance of 34.40 km.

269 The Inch Cape WTGs will appear as a fairly permeable grouping occupying approximately 22° of the horizon. Visual coalescence of the group into rows of WTGs is apparent towards the left of the group with a more linear arrangement of WTGs to the right hand side of the array. Towers, hubs and blade tips of the Inch Cape WTGs will all be visible above the horizon. The ZTV indicates that both Inch Cape OSPs will be theoretically visible and that foundation structures may also be seen. Blade tip movement is also likely to be discernible. There are few existing visual references within this sea view, against which the scale of the Inch Cape WTGs may be assessed although they would lie adjacent to the closer consented NNG turbines which would appear larger. Except on rare occasions, the WTGs will not appear back-lit against the sun due to the direction of the view, although they will be side lit by the sun at certain times of the day and therefore become more noticeable in good weather conditions. On average, the closest Inch Cape WTGs are likely to be visible for 42 per cent of the time, equivalent to approximately 153 days of the year.

270 The onshore wind farms in East Lothian, including the Aikengall and Crystal Rig groups as well as Hoprigshiels will be visible at distances of over 29.32 km seen on the skyline of the Lammermuirs.

271 NNG will lie directly to the right of the Inch Cape WTGs on the open horizon in the view from this location. As NNG lies at 16.64 km east north-east and the WTGs appear much larger than Inch Cape WTGs along with a greater number of WTGs and denser arrangement, it will most likely be perceived as a separate wind farm.

12C.25.3 Magnitude of Change

272 In sea views, the Inch Cape WTGs and OSPs will introduce a large number of man-made vertical elements on the horizon, occupying approximately 22° of the view, within a very large expanse of open sea adjacent to the closer and more prominent consented NNG WTGs. Other onshore existing wind farms in the Lammermuir Hills are seen at similar distances, but not in the same field of view as the Inch Cape WTGs and OSPs and with a different context. The magnitude of change associated with the introduction of the WTGs into this view in conjunction with the onshore wind farms is considered to be **moderate**.

12C.25.4 Effect on Seascape Character

273 This is a medium to large scale coastline, with expansive sea views which include consented offshore wind farms. Within this context, it is considered that the introduction of the Inch Cape WTGs and OSPs, in conjunction with the existing/consented onshore wind farms, will give rise to a **moderate/major** and significant effect on this high sensitivity seascape.

12C.25.5 Effect on Visual Amenity

274 The viewpoint is representative of views obtained by visitors to the island who are considered to have a high sensitivity to change. The effect of the Inch Cape WTGs and OSPs with the existing/consented onshore wind farms on visual amenity is therefore considered to be **moderate/major** and significant.

12C.26 Viewpoint 25: Dunbar

275 Table 12C.49 presents the key viewpoint information.

Table 12C.49: Viewpoint 25 details

Figure Number	12.59a—12.59b
OS Grid Reference	367101, 679377
Regional Seascape Character Area	SA17: Eyebroughy to Torness Point
Seascape Character Sensitivity	Moderate
Landscape Designation	Area of Great Landscape Value (AGLV)

Distance to Closest and Furthest Inch Cape WTG	51.10 km—68.47 km
Direction of View Towards Closest Inch Cape WTG	North north-east
Horizontal Subtended Angle (HSA)	15°
Visibility of Closest Inch Cape WTG	For an average of approximately 69 days a year
Visual Amenity Receptors	Residents / Recreational users
Sensitivity of Visual Receptors	High

12C.26.1 Existing View

276 The existing sea view from this location is illustrated in Figure 12.59a. The viewpoint is located beside the clifftop path where it crosses in front of Winterfield Park, from which it is separated by means of a sandstone wall. The path at this location forms part of the John Muir Way, a long-distance footpath which runs between Edinburgh and the Scottish Borders. The photograph was taken at high tide so the rocky foreshore is mostly submerged. Some taller rocks remain uncovered by the tide and other areas are still visible below the surface of the sea. At low tide, much of this platform is exposed, providing a foreground context to the sea view which, from this location at the top of the cliff, is both expansive and immediate. To the east, beyond the outer Firth of Forth, the horizon is unbroken except for the occasional passing ship. Looking north, the Isle of May is visible at about 20 km distance and forms a focal point in the wide expanse of sea with its lighthouse and steep cliffs. To the left of the Isle of May, the hills and coastline of Fife are also visible in the distance. Looking north-west along the coast, both Bass Rock and North Berwick Law form distinctive features in the middle ground, with Largo Law visible in the far distance. Inland views are interrupted by buildings and vegetation within the settlement of Dunbar; however, the intermittent ridgeline of the Lammermuir Hills is visible and a number of WTGs within the wind farms at Aikengall and Crystal Rig can be seen clearly on the skyline, together with the communications masts on Blackcastle Hill and the distinctive silhouette of Traprain Law.

277 A number of existing and consented developments are visible from this viewpoint location to the north and north-east. The most noticeable of these is the consented offshore NNG wind farm which will be seen to the north-east at approximately 28.14 km away and visible in clear conditions.

278 The existing wind farms at Crystal Rig and Aikengall (Group 9) are visible at a much closer distance than the Inch Cape WTGs although in the opposite direction in landward views.

279 The cumulative wireline shown in Figure 12.59b indicates that cumulative Group 6 wind farms 7 consisting of Airdrie Farm and Bonerbo as well as Kenly, as well as Group 7 wind farms Earlseat, East Fife Football Club, Levenmouth Demo Project, Methil Docks and Woodbank Farm are theoretically visible to the north, all at distances of over 30 km. The consented

Forthwind Offshore turbines and its application stage Extension are also predicted to be visible. .

280 The key wind farms and WTGs considered in this assessment that are theoretically visible in views from this location are summarised in Table 12C.50 below.

Table 12C.50: Summary of key wind farms theoretically visible from viewpoint 25

Wind Farm Name or Grouping	Status	Distance from Viewpoint	HSA	Direction from Viewpoint
Aikengall	Operational	9.41 km	15°	SSE
Aikengall 2	Operational	11.29 km	9°	SSE
Aikengall 2a	Consented	12.10 km	10°	SSE
Crystal Rig	Operational	10.71 km	10°	S
Crystal Rig 1a	Operational	11.89 km	6°	S
Crystal Rig 2	Operational	9.99 km	17°	S
Crystal Rig 2a	Operational	9.76 km	16°	S
Crystal Rig 3	Operational	9.51 km	20°	S
Forthwind Offshore	Consented	34.35 km	2°	WNW
Forthwind Offshore Extension	Application	31.94 km	8°	WNW
Kinnegar Quarry	Operational	13.12 km	< 1°	SE
NNG	Consented	28.14 km	25°	NE

12C.26.2 Predicted View

281 The wireline in Figure 12.59b shows that the Inch Cape WTGs will be visible to the north north-east of the viewpoint. The more distant Inch Cape WTGs will disappear below the horizon due to the effects of the curvature of the earth on visibility. It will mostly be blade visibility, with WTGs towards the front of the Development Area also having theoretical visibility of both hubs and upper towers. The height of the Inch Cape WTGs above the horizon will appear similar to the height of the Isle of May, although at well over twice the distance to the closest Inch Cape WTG (over 51 km), judging the scale of the WTGs is likely to be difficult. The Inch Cape WTGs will not appear back-lit against the sun due to the direction of the view but may often appear side-lit by the sun. Blade movement is unlikely to be perceived at this distance and the ZTV indicates that neither Inch Cape OSPs nor foundation structures will be

theoretically visible. On average, the closest Inch Cape WTGs are likely to be visible for 19 per cent of the time, equivalent to approximately 69 days of the year.

282 NNG is likely to be more visible, seen to the north-east, located at a closest distance of 28.14 km and occupying a HSA of 25°, of which approximately 10°, or slightly under half of the WTGs will overlap with the Inch Cape WTGs.

12C.26.3 Magnitude of Change

283 The Inch Cape WTGs, seen in conjunction with NNG as well as the onshore existing/consented wind farms, will represent a slight increase in the proportion of the sea view affected by wind farm development. The Inch Cape WTGs will be seen at a much greater distance, which has the effect of decreasing the vertical extent of the WTGs that will be visible, and partly behind NNG. In this context, it is considered that the magnitude of change attributed to the Inch Cape WTGs will be **negligible**.

12C.26.4 Effect on Seascape Character

284 This is a large scale coastline, generally open and allowing long views both seaward and along the coast. There are a number of prominent natural focal points such as Bass Rock and the Isle of May and the Firth of Forth is also a busy shipping route. Within this context, it is considered that a **minor** effect on this moderate sensitivity seascape will result from the introduction of the Inch Cape WTGs. This is not considered to be significant.

12C.26.5 Effect on Visual Amenity

285 The viewpoint is representative of views obtained by residential and recreational receptors within the settlement of Dunbar and on the John Muir Way, who are considered to have a high sensitivity. The effect of the Inch Cape WTGs on visual amenity at this location is therefore considered to be **minor/moderate**.

12C.27 Viewpoint 26: North Berwick Law

286 Table 12C.51 presents the key viewpoint information.

Table 12C.51: Viewpoint 26 details

Figure Number	12.60a—12.60d
OS Grid Reference	355639, 684246
Regional Seascape Character Area	Eyebroughy to Torness Point
Seascape Character Sensitivity	Moderate
Landscape Designation	Coastal AGLV
Distance to Closest and Furthest Inch Cape WTG	52.47 km—68.85 km

Direction of View Towards Closest Inch Cape WTG	North-east
Horizontal Subtended Angle (HSA)	16°
Visibility of Closest Inch Cape WTG	For an average of approx. 44 days a year
Visual Amenity Receptors	Recreational users
Sensitivity of Visual Receptors	High

12C.27.1 Existing View

287 The existing panoramic view from this location is illustrated in Figures 12.60b—d. The viewpoint is located at the summit of North Berwick Law. Panoramic views are available with a particular focus across the inner and outer Firth of Forth from the north west to the north east. To the north, the immediate foreground view is across the settlement of North Berwick and to the rocky foreshore with the Firth of Forth beyond. To the north east and east, beyond the outer Firth of Forth, the horizon is unbroken except for the occasional passing ship. Looking north north east, the Isle of May is visible at about 20 km distance and from this elevated viewpoint it lies below the sea horizon. To the left of the Isle of May, the hills and coastline of Fife are also visible in the distance. Towards the north east, closer to the coastline, Bass Rock forms a distinctive feature. Distant inland views across East Lothian and the neighbouring Scottish Borders are seen around the rocky summit to the south east and south. This includes the intermittent ridgeline of the Lammermuir Hills and a number of WTGs within the wind farms at Aikengall and Crystal Rig can be seen clearly on the skyline, together with the communications masts on Blackcastle Hill and the distinctive silhouette of Traprain Law. Views can also be seen towards to the south west along the inner Firth and the distinctive form of Arthur's Seat at Edinburgh and the Pentland Hills are visible.

288 The wireline visualisation in Figure 16.60b indicates that a number of existing and consented wind farms have theoretical visibility from this viewpoint. In conditions of good visibility, the WTGs at Kenly, Airdrie Farm and Bonerbo, will be seen across the Firth of Forth to the left of Inch Cape. To the north-east a number of WTGs such as those forming cumulative Groups 1, 2, 3, 4, and 5 along with the St John's Hill are theoretically visible although this would be dependent on very clear conditions and would be viewed at a considerable distance in combination with Inch Cape.

289 Of the other offshore wind farms, NNG will be visible. It will be seen to the north-east, located at a closest distance of 33.08 km and occupying a HSA of 22°. The Seagreen offshore development would be theoretically visible behind both Inch Cape and NNG wind farms. However, at over 71 km distant, the Seagreen WTGs would not be discernible. To the north-west the Forthwind Offshore development is visible together with the onshore turbines in Group 7, all at distances of over 22 km.

290 Key wind farms and WTGs considered in this assessment that are theoretically visible in views from this location are summarised in Table 12C.52 below.

Table 12C.52: Summary of key wind farms theoretically visible from viewpoint 26

Wind Farm Name or Grouping	Status	Distance from Viewpoint	HSA	Direction from Viewpoint
Airdrie Farm	Operational	24.21 km	< 1°	N
Bonerbo	Operational	23.32 km	1°	N
Forthwind Offshore Extension	Consented	19.53 km	12°	NW
Forthwind Offshore	Scoping	22.11 km	2°	NW
Earlseat	Operational	26.64 km	4°	NW
East Fife Football Club	Consented	23.50 km	< 1°	NW
Levenmouth Demo Project	Operational	22.11 km	< 1°	NW
Methil Docks	Operational	23.46 km	< 1°	NW
Woodbank Farm	Operational	26.78 km	< 1°	NW
Fernylea 2	In planning	22.94 km	2°	SE
Group 9 (Aikengall, Aikengall 2, Aikengall 2a, Crystal Rig, Crystal Rig 1a, Crystal Rig 2, Crystal Rig 2a, Crystal Rig 3)	Operational/Under Construction / Consented	16.97 km	13°	SE
NNG	Consented	33.08 km	22°	NE

12C.27.2 Predicted View

291 The wireline in Figure 12.60a shows that the Inch Cape WTGs will be visible to the north-east of the viewpoint at 52.47 km and occupy a horizontal extent of 16°. Due to the elevation of the viewpoint, the hubs, blades and majority of the towers are potentially visible above the horizon. The lower parts of the towers of the more distant turbines will be hidden below the horizon line due to the curvature of the earth. The Inch Cape Wind Farm will appear as a permeable group of WTGs with those to the left-hand side appearing to coalesce into rows. The right-hand side of the array is less dense with a single line of individual turbines across the horizon with slightly random spacing. Three of the rows of the Inch Cape WTGs will appear to lie behind the Isle of May although there will be over 30 km of sea between the Isle of May and the WTGs and there will be a gap of sea seen between the island and the WTGs. The Isle of May lies approximately 20 km from the viewpoint.

292 The closer NNG Offshore Wind Farm will lie directly to the right of the Inch Cape array with a slight overlap in front of four of the Inch Cape WTGs. NNG WTGs will appear at a similar height to the Inch Cape WTGs from this viewpoint although they are likely to be visible more often and clearly due to their closer distance to the viewpoint, with the closest NNG WTG at just over 33 km.

293 The scoping stage Forthwind Offshore Extension is predicted to be visible seen in front of the onshore Group 7 wind farms, as shown on Figure 12.60b. Fernylea 2 application stage wind farm would also be visible to the left of the Aikengall and Crystal Rig developments.

12C.27.3 Magnitude of Change

294 The Inch Cape WTGs, seen in addition to with NNG and Forth Wind Offshore Wind Farm, as well as the onshore existing/consented wind farms, will represent a slight increase in the proportion of the sea view affected by wind farm development. The Inch Cape WTGs will be seen at a much greater distance so that whilst they may be discernible on very clear days, the underlying composition of the view will remain similar to the baseline. It is noted that the location of the Inch Cape WTGs beyond the Isle of May and also the proximity of the consented NNG Offshore Wind Farm would likely make the Inch Cape WTGs more discernible than within the wider open sea at this distance. In this context, it is considered that the magnitude of change attributed to the Inch Cape WTGs will be **low.**

295 The magnitude of cumulative change from the Inch Cape WTGs with the baseline wind farms and the application stage Ferneylea 2 and scoping stage Forthwind Offshore Extension is also considered to be **low**.

12C.27.4 Effect on Seascape Character

296 The coastline visible from this elevated viewpoint, is large scale, generally open and allowing long views both seaward and along the coast. There are a number of prominent natural focal points such as Bass Rock and the Isle of May and the Firth of Forth is also a busy shipping route. Within this context, it is considered that a **moderate/minor** effect on this moderate sensitivity seascape will result from the introduction of the Inch Cape WTGs. This is not considered to be significant.

297 Similarly, the cumulative effect from the Inch Cape WTGs with the baseline and the application stage Ferneylea 2 and scoping stage Forthwind Offshore Extension will be **moderate/minor** and not significant.

12C.27.5 Effect on Visual Amenity

298 The viewpoint is representative of views obtained by recreational receptors walking up North Berwick Law, who are considered to have a high sensitivity. The effect of the Inch Cape WTGs on visual amenity at this location is therefore considered to be **moderate** and not significant.

299 The cumulative effect from the Inch Cape WTGs with the baseline and both of the application and scoping stage wind energy developments on visual amenity will be **moderate** and not significant.

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12D Regional Seascape Assessment

PREFACE

1 In 2011 a Regional Seascape Character Assessment (RSCA) covering the coastline from Aberdeen to Holy Island was prepared by the Forth and Tay Offshore Windfarm Developer Group (FTOWDG). This was undertaken to provide a common baseline for the three offshore wind farms sites (Inch Cape, Neart Na Gaoithe (NNG), and Seagreen) being developed at that time. It was a comprehensive study produced collaboratively by professional Landscape Architects.

2 For the purposes of the Development, for which this application refers, it has been agreed with Scottish Natural Heritage (SNH) and Marine Scotland that the 2011 RSCA is appropriate to use as the baseline. This is presented on the following pages as the original document.

3 It is however acknowledged that new assessment guidance has been issued since 2011 and the paragraphs below clarify these changes in relation to the RSCA.

4 The 2011 RSCA developed a series of criteria based on '*An Assessment of the sensitivity and capacity of the Scottish seascape in relation to Offshore Wind Farms'* (SNH, 2005) to define sensitivity to offshore wind farms development. There have been no updates to this document or further guidance specifically relating to seascape since the RSCA was completed in 2011. The SNH 2005 guidance was however informed by the 2002 Guidelines for Landscape and Visual Impact Assessment (GLVIA) (Landscape Institute and Institute of Environmental Management & Assessment). This has since been updated to Version 3 in 2013.

5 Relevant to the RSCA the GLVIA (2013) guidance expands the definition of 'Sensitivity' to be determined by '*combining judgements of their susceptibility to the type of change or development proposed and the value attached to the landscape'* (GLVIA 2013, para 5.39). This is not to say that previous assessments did not consider these aspects, but the guidance now advises setting these out as separate judgements for clarity.

6 The RSCA methodology and sensitivity judgements for the individual seascape character areas have been reviewed for use in this assessment. Whilst susceptibility and value are not explicitly identified, the defined sensitivity in the RSCA considers all relevant factors, including those relating to value, and it is considered that the sensitivity judgements given are appropriate to retain and use for this assessment.

Inch Cape Offshore Wind Farm

New Energy for Scotland

Offshore Environmental Statement:
VOLUME 2G
Appendix 16D: Regional Seascape Assessment

REPSOL edp renewables

Scottish Offshore Wind Farms – East Coast

Regional Seascape Character Assessment: Aberdeen to Holy Island

Forth and Tay Offshore Wind Developers Group (FTOWDG)

December 2011

Regional Seascape Character Assessment: Aberdeen to Holy Island

1 Introduction

1.1 As part of the collaborative approach to impact assessment being taken by the Forth and Tay Offshore Windfarm Developer Group (FTOWDG), a common seascape character baseline has been prepared. This note sets out the approach taken to carrying out a regional seascape character assessment (SCA) for FTOWDG.

1.2 The use of a common baseline will ensure consistency between SLVIAs for the offshore wind farms in the Forth and Tay area. The SCA was undertaken following discussions between FTOWDG, SNH and local authorities.

1.3 The SCA has been developed jointly by three landscape consultants working on behalf of the three developers in the FTOWDG. The methodology and approach was developed and agreed by the three consultants. In order to streamline the characterisation process each consultant was assigned responsibility for characterisation across a separate study area, as set out in Table 1.

Table 1 Consultants involved in the assessment

Consultant	Area of focus
SLR Consulting	Aberdeen to Firth of Tay
Land Use Consultants	Firth of Tay to North Berwick
Pegasus Planning Group	North Berwick to Holy Island

1.4 The resulting descriptions and assessments for all areas were reviewed by all three consultants, and the findings were agreed prior to finalisation of this report.

1.5 The study area covers the coastline from Aberdeen in the north to Holy Island in the south. This area has been determined using a combined extent of a 50km radius from the boundaries of each of the FTOWDG wind farm areas.

METHODOLOGY

1.6 The methodology has been developed based on a simplified and less technical adaptation of the approach set out in '*Guide to Best Practice in Seascape Assessment.*'[1] A less technical approach was considered appropriate due to the purpose of the SCA, as a baseline for assessment rather than as a 'stand-alone' document. Other documents referred to in developing the approach were '*Guidance on Landscape/Seascape Capacity for Aquaculture*,[2] and *An assessment of the sensitivity and capacity of the Scottish seascape in relation to offshore windfarms*.'[3]

1.7 Based on desk study, the coastline of the area was initially subdivided into areas of discrete character, based on analysis of coastal morphology and topography, underlying geology, and levels of human influence.

1.8 A series of criteria were developed, based on those used in '*An assessment of the sensitivity and capacity of the Scottish seascape in relation to offshore wind farms'*, to define sensitivity to offshore wind farm development. These were modified to include aspects of seascape covered in '*Guidance on Landscape/Seascape Capacity for Aquaculture'* and are listed in **Table 2**.

1.9 It is to be noted that SNH issued an Advice Note on 22nd July 2011 drawing specific attention to the methodology in the '*Guidance on Landscape/Seascape Capacity for Aquaculture'*. This guidance document had not been raised previously, and work had already been undertaken on this baseline report prior to 22nd July 2011.

1.10 Although the methodology described in the aquaculture document has not been followed, it is considered that the method adopted is fit for purpose. Had the aquaculture methodology been adopted, it is not considered that the outcome would have differed.

1.11 This document sets out the key characteristics for the seascape character areas, but does not describe the characteristics of the landward character areas, which are set out in SNH's Landscape Assessment publications and Natural England's National Landscape Character Assessment publications for England.

[1] Countryside Council for Wales, Brady Shipman Martin, University College Dublin (2001) *Guide to Best Practice in Seascape Assessment*. Maritime Ireland / Wales INTERREG

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

[3] Scott, K.E., Anderson, C., Dunsford, H., Benson, J.F. and MacFarlane, R. (2005). *An assessment of the sensitivity and capacity of the Scottish seascape in relation to offshore windfarms*. Scottish Natural Heritage Commissioned Report No.103 (ROAME No. F03AA06).

Table 1 Assessment criteria

Criteria	Tend to increase sensitivity	Tend to decrease sensitivity
Scale and openness	Small scale, enclosed, views to horizon limited by landform Introduction of an element of scale into previously un-scaled area Where openness is a key characteristic and introduction of built elements would compromise this	Large scale, open views
Form	Intricate, complex, rugged forms	Flat, horizontal or gently undulating Simple forms
Settlement	Small scale, traditional, historic settlements. Small clustered villages Lack of infrastructure	Linear settlements, urban form, larger scale infrastructure
Pattern and foci	Complex or unified pattern which would be disrupted by turbines Important focal points eg headlands, offshore islands, hills, lighthouses	Simple pattern Lack of landmarks or focal points
Lighting	Where the area is unlit at night Little impact of lights from sea and land traffic Where lighting is from scattered small settlements, lighthouses etc and windfarm lighting would introduce a new, different scale	Area is already well lit at night Lights of sea and land traffic present
Movement	Where stillness is a key feature Where/when movement is highly natural, irregular or dramatic (on exposed coastlines, waves crashing) and regular mechanical movement of turbines would distract	In busier areas where turbine movement relates to other forms of mechanical movement present eg cars, boats, aircraft Where/when waves are gentler and slow, regular movement of turbines could compliment lapping of waves
Aspect	Coastal views are aligned towards the location of the potential turbines Aspect towards open sea Turbines would interfere with sunrises and particularly sunsets Where turbines would be most often front lit, thereby increasing contrast and appearing bright against the backcloth of the sea surface	Coastal views are aligned away from the location of the potential turbines Aspect towards inner firths (assuming that the offshore wind farm development is proposed outwith such areas) Turbines would be away from sunrise and sunset positions

Criteria	Tend to increase sensitivity	Tend to decrease sensitivity
How experienced	From secluded coastline, intimate coastal roads and footpaths From important viewpoints and elevated positions where the focus is the view and not the activity Experienced close at hand, with associated maritime sensory experiences (eg sound, smell of the sea)	From main coastal, busy roads. Beaches where focus is on beach activities Maritime sensory experience (eg sound, smell of the sea) more limited or at a remove
Modifications/ Remoteness/ Sense of Naturalness	Undeveloped seascape Natural, unmanaged Remote or isolated	Developed seascape Modified/managed Not remote
Exposure	Sheltered and calm seascapes	Open, windy seascapes
Processes and dynamics	Stable seascape, without significant variation and a less elemental character	Dynamic seascape (changing tides, weather, etc), leading to variations in perception, and a more elemental character
Quality/ condition	Attractive seascapes in better condition, without detractive features	Seascapes which are less attractive and potentially degraded due to development, maintenance, erosion, etc
Designation	Presence of national or local level landscape designations	No designations
Forces for change	Development or other pressures likely to change other criteria towards increased sensitivity	Development or other pressures likely to change other criteria towards decreased sensitivity

1.12 Subsequent field visits by landscape architects were undertaken to check and amend the desk-based boundaries, and to gather information on each of the sensitivity criteria.

1.13 The final stage was to assign a sensitivity rating to each area. The assessment of sensitivity considers the ability of each seascape area to accept change of the type proposed (ie 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.[4] Sensitivity has been classed as high, medium or low, as defined in **Table 3**.

[4] *Landscape Character Assessment: Topic Paper 6: Techniques and Criteria for Judging Capacity and Sensitivity* (2004) Countryside Agency and Scottish Natural Heritage.

Table 3 Sensitivity of Seascape/Landscape Resources

Sensitivity of Receptor	Landscape/Seascape Resource
High	A seascape of particularly distinctive character, which may be nationally designated for its scenic quality and where its key characteristics have limited resilience to change of the type proposed
Medium	A seascape of notable character and where its key characteristics have some/moderate resilience to change of the type proposed
Low	A seascape which is of lower scenic quality and where its key characteristics are such that they are resilient to change of the type proposed

FINDINGS

1.14 The SCA defined a total of 21 regional seascape character areas along the coast. These are listed in **Table 4** and illustrated on the accompanying figure, Regional Seascape and Landscape Character Areas.

Table 4 Regional Seascape Character Areas

SCA no.	SCA Name	Sensitivity
SA1	Nigg Bay	High
SA2	Greg Ness to Cove Bay	Medium
SA3	Cove Bay to Milton Ness	Medium
SA4	Montrose Bay	High
SA5	Long Craig	Medium
SA6	Lunan Bay	High
SA7	Lang Craig to the Deil's Head	High
SA8	Arbroath to Monifieth	Medium
SA9	Dundee	Low
SA10	Inner Firth of Tay	Low
SA11	St Andrews Bay	High
SA12	St Andrews to Fife Ness	High
SA13	East Neuk of Fife	High
SA14	Kirkcaldy and Largo Bay	Medium
SA15	Inner Firth of Forth	Low
SA16	Edinburgh to Gullane	Medium
SA17	Eyebroughy to Torness Point	Medium
SA18	Torness Point to St Abbs Head	Medium
SA19	St Abbs Head to Eyemouth	High
SA20	Eyemouth to Berwick upon Tweed	Medium
SA21	Berwick upon Tweed to Holy Island	Medium

2 Seascape Character Area Descriptions

SA1: NIGG BAY

Definition of regional seascape unit boundaries

2.1 This unit comprises the small sandy cove of Nigg Bay and its enclosing headlands of the Girdleness peninsula and Greg Ness.

Key characteristics

- Contrast between urban inland area and coastline;
- Proximity of urban development to coastline;
- Contrast between shallow sandy bay and more elevated headlands, particularly the rocky headland of Greg Ness;
- Views of Aberdeen harbour and associated shipping movements;
- Historical buildings of Girdleness Lighthouse, Torry Point Battery and St Fittick's Church; and
- Modern infrastructure such as the waste water treatment works and Edinburgh-Aberdeen railway line.

Scale and Openness

2.2 Within the enclosed bay, contained by headlands and urban development inland, the scale of the landscape is small, rising to medium scale within elevated areas of headland, from where longer range views are possible, particularly to the north.

Form

2.3 In terms of area, this is a relatively small seascape character unit, and it also displays a relatively simple form comprising flat sandy beach and grassy hinterland enclosed by elevated headlands, which are rocky in places.

Settlement

2.4 This seascape unit lies wholly within the boundaries of Aberdeen City Council although most of the undeveloped areas are classified within the Local Plan as Green Belt. Large scale built development and infrastructure are visible in close proximity throughout the character area.

Pattern and foci

2.5 The two headlands form natural foci within which the sandy bay is enclosed creating a relatively simple pattern in terms of underlying landform and seascape. The presence of urban development within and adjacent to the character area introduces an overlying layer of complexity through a variety of built form, from harbour and rail infrastructure, to high and low-rise housing, industrial buildings, and other land uses, such as the golf course. Elements of the built form also create additional focal points, such as

Girdleness Lighthouse and the three tower blocks within the Balnagask Estate.

Lighting

2.6 There are streetlights along the length of St Fittick's Road and also adjacent to the shoreline along part of Greyhope Road. Lighting from Aberdeen is very visible throughout this area particularly from the elevated areas of land on the headlands. Girdleness Lighthouse is still in operation.

Movement

2.7 Movement is obvious throughout this area from the vehicles along St Fittick's Road, Greyhope Road and the foreshore car park to the activity associated with the beach itself, the golf course, and the areas of public open space within the Vale of Tullos and on the headlands. Both the harbour and airport are also sources of movement apparent from this character area and the Aberdeen to Edinburgh railway line cuts through the area before heading south along the coast.

Aspect

2.8 Generally, this section of coastline faces east with localised variation. From the beach, views out to sea are due east. From the enclosing headlands, aspect will depend on direction of travel and exact location. Seaward views look out across the North Sea.

How experienced

2.9 This coastline is experienced in a range of ways by large numbers of users including residential receptors, recreational users, tourists and other visitors. Many residential receptors have direct views of the coastline and sea, but also use the open space in the Vale of Tullos for dog-walking and other recreational activities. Many visitors will experience the area in views from the coastal roads and rail line, not to mention views obtained towards the coast from arriving and departing boats. The beach is well-used by recreational visitors and the Girdleness Peninsula in particular attracts visitors both for its panoramic views of coast and harbour but also its variety of historical buildings. The golf course also attracts recreational users to the Peninsula.

Modification/Remoteness/Sense of Naturalness

2.10 Residential and industrial development associated with Aberdeen extends almost to the coastal edge leaving only a small strip of relatively undeveloped land between sea and the city limits. This combination of built development and infrastructure in close proximity to the coast means there is no sense of remoteness, and a much diminished sense of naturalness. However, there is a strong sense of contrast between the relatively undeveloped and small scale bay and its urban hinterland.

Exposure

2.11 The close proximity of, and juxtaposition with, urban residential development may lead to a perception that the coastline is more exposed than it actually is, since the bay is sheltered by its enclosing headlands.

Process and dynamics

2.12 The fact that Nigg Bay is a recognised surfing venue indicates the occasional power of the waves to which the bay is subjected. In these circumstances the dynamic character of the coastline may be emphasised.

Quality/condition

2.13 The quality and condition of Nigg Bay seascape unit is medium. Although urban development, the industrialised harbour, transport infrastructure and busy shipping lanes provide an overall developed character of relatively poor condition to the landward component of this seascape area, the narrow undeveloped coastal edge which fringes Nigg Bay provides a marked contrast to the hinterland.

Designation

2.14 There are no landscape designations associated with this seascape character area.

Sensitivity

2.15 This seascape character area is considered to have a **high** sensitivity to offshore wind energy development. This mainly relates to the relatively small scale and enclosed nature of the undeveloped bay area and its immediate coastal edge which contrast with the proximity of large scale urban and industrial development including the harbour, which is a major base for the North Sea. The bay forms a distinctive and small scale feature which contrasts to the larger scale seascapes associated with the long beach to the north and the rocky coastline to the south.

Forces for Change

2.16 Although the undeveloped areas immediately adjacent to the bay are classified as Green Belt in the Local Plan, urban development pressures exist in surrounding areas, particularly the industrial locations of the harbour and the East Tullos and Altens Industrial Estates. There are plans to develop an Offshore Wind Deployment Centre, involving testing of commercial scale turbines, just off the coastline to the north of Aberdeen.

SA2: GREG NESS TO COVE BAY

Definition of regional seascape unit boundaries

2.17 This unit comprises the rocky coast, low cliffs and narrow strip of agricultural hinterland to the east of the Dundee to Aberdeen railway together with the area of light industrial development to the west of the train line. The unit runs between the headland at Greg Ness and Cove Bay.

Key characteristics

- Contrast between rocky coastline and adjacent agricultural land;
- Contrast between the coastal zone and the hinterland setting of light industry; and

- Main Dundee to Aberdeen railway line running parallel to the coastline, a short distance inland.

Scale and Openness

2.18 This is a large scale seascape with open views out to sea and along the coastline. Views westwards are generally curtailed by the rising landform.

Form

2.19 The area gently slopes towards the coastal edge where it generally gives way to low-lying cliffs or steep slopes above the sea. The shoreline is rocky and there are no areas of sandy foreshore exposed at low tide aside from the small shingle beach at Cove Bay.

Settlement

2.20 To the west of the railway line are two areas of development. Altens Industrial Estate forms a backdrop to the coastal zone of generally one to three storey buildings, mostly industrial or warehouse type structures in a variety of styles, interspersed with a mixture of storage yards and vacant/derelict plots. South of this area is Cove Bay, a mainly residential suburb of Aberdeen. Part of the settlement straddles the railway line and leads down to a small harbour. There are also scattered farms located adjacent to the agricultural land.

Pattern and foci

2.21 Although the range of land uses in the hinterland introduces elements of complexity, overall this seascape unit has a relatively simple pattern with a lack of natural focal points.

Lighting

2.22 Lighting from the Altens Industrial Estate and adjacent settlement of Cove Bay is visible across the area. Girdleness Lighthouse is still operational and its light is also visible from within this character area.

Movement

2.23 There is movement throughout this character area associated with the Dundee to Aberdeen railway line and the coastal road which runs between Aberdeen and Cove Bay. Movement is also obvious within the industrial estate and towards Cove Bay. Although the harbour itself is home to several small fishing boats, only a few are involved in regular fishing activity. Due to the area's relatively close proximity to Aberdeen, shipping movements associated with the harbour, together with planes and helicopters using the airport, are also intermittently apparent.

Aspect

2.24 Generally, this section of coastline faces in an easterly to east south easterly direction with localised variations. Views are eastwards towards the open sea.

How experienced

2.25 The coastline is viewed and used by a variety of receptors, including residential receptors within Cove Bay, some of whom have direct views of the coast and sea. Although agricultural land continues almost to the cliff edge throughout the length of this area, there is a narrow footpath which hugs the coastline and which attracts a degree of recreational use. Doonies Farm is located to the west of the coastal road and provides a home for endangered farm species which is open to the public. Other recreational use is associated with the small harbour at Cove Bay. Many visitors will experience the area in views from the railway line. Business users and local residents will also experience the coast in views from the road which runs adjacent to the railway.

Modification/Remoteness/Sense of Naturalness

2.26 Busy transport routes on land and sea and the large industrial estate to the west of the railway line give a modified feel. Agricultural land extends almost to the coastal edge. As this is primarily grazing land, it creates a buffer zone between the developed land to the west and the coastline itself, which consequently retains more of a naturalistic feel in contrast to the developed hinterland. However, the area is not remote: it is contained entirely within the Aberdeen City local authority boundary.

Exposure

2.27 The coastline is exposed particularly to the east due to openness and lack of shelter provided by landform.

Process and dynamics

2.28 The presence of waves crashing onto the rocky shore and cliffs tends to heighten the sense of the coastline as a dynamic environment. The coastal environment and cliffs are also subject to a range of erosion processes relating primarily to wave action.

Quality/condition

2.29 This is a medium to low quality seascape. Although the coastal edge is generally intact, the presence of the industrial estate, including areas of derelict land, in relatively close proximity to the west, detracts from the condition of the landscape.

Designation

2.30 There are no landscape designations associated with this seascape character area.

Sensitivity

2.31 This seascape character area is considered to have **medium** sensitivity to offshore wind energy development. Turbines would relate to the large scale seascape and generally linear coastline. Existing development and transport infrastructure already give a localised developed character in places.

Forces for Change

2.32 There are development pressures within the industrial and urban parts of this character area particularly around the A956 (Wellington Road) and also associated with the Altens Industrial Estate. There are also quarries just to the south of Cove Bay whose possible future expansion could affect the southern extent of this character area.

SA3: COVE BAY TO MILTON NESS

Definition of regional seascape unit boundaries

2.33 This is a large character area extending almost 40km from Cove Bay in the north to the headland of Milton Ness, approximately 3.3km south of the village of Johnshaven. There are several settlements including the town of Stonehaven. The coastline itself comprises a predominantly rocky shore backed by cliffs or steep slopes and giving way to a predominantly agricultural hinterland.

Key characteristics

- Long, east-facing, generally "straight" coastline with many small indentations and few significant headlands;
- Predominantly narrow rocky shoreline interspersed with small coves and shingle beaches;
- Shoreline predominantly backed by mixture of cliffs and steep slopes except for southernmost extent between Milton Ness and Gourdon;
- Some larger beaches including those at Inverbervie Bay and Stonehaven;
- Larger settlements including towns of Portlethen, Newtonhill, Stonehaven, and Inverbervie;
- Smaller coastal fishing villages and harbours including Catterline, Gourdon, and Johnshaven; and,
- Agricultural hinterland of arable fields and grazing land with occasional areas of semi-natural vegetation such as the heathland of Findon Moor.

Scale and Openness

2.34 This is generally a large scale seascape with wide, open views out to sea and along the coast. A localised sense of enclosure occurs in certain areas, such as Catterline Bay, where orientation and adjacent headlands create a more sheltered environment.

Form

2.35 The landform is not generally complex. The Grampian foothills to the west form a distant backdrop to the coastal zone which comprises rolling farmland which gently slopes to the coastline. Tree cover is largely restricted to the occasional shelterbelt as well as wooded areas around farmhouses and small

settlements. The coastal edge itself provides a contrast to this farmland, comprising primarily of rugged cliffs and steep slopes atop a predominantly rocky shoreline. At the local scale the coastline has many small coves and inlets with sea caves and natural arches being seen together with shingle beaches, rock platforms, and other natural features of the coastal environment.

Settlement

2.36 There are a number of small to medium sized towns including Portlethen, Newtonhill and Stonehaven, all of which function primarily as commuter towns to Aberdeen. These are interspersed with frequent smaller fishing and harbour settlements often situated at the top of slopes overlooking the coast. Outside of the settlements, development is limited.

Pattern and foci

2.37 Within the generally "straight" coastline, there is a smaller scale pattern of indentations with occasional focal points on rocky promontories including the cliffs of Craig David above Inverbervie, the lighthouse at Tod Head and the famous landmark of Dunnottar Castle. The coastline itself is a key focus, contrasting with the intensively farmed hinterland.

Lighting

2.38 Frequent settlements provide limited illumination, increasing in extent around larger towns such as Stonehaven.

Movement

2.39 Movement on land is mainly limited to transport corridors and settlements. Due to the openness of the seascape and expansive views, the movement of weather systems across the skies is noticeable in certain conditions. Although becoming less noticeable with increasing distance from Aberdeen, movements of shipping and also aircraft are occasionally apparent.

Aspect

2.40 Generally, this section of coastline faces in an easterly to east south easterly direction with localised variations. Views are eastwards towards the open sea and also along the coastline. In places where topography allows, there are views inland to the foothills of the Grampian Mountains.

How experienced

2.41 This seascape is experienced by a variety of receptors. There are numerous residential receptors throughout the area, some having direct views of the coastline and sea. A number of major transportation corridors traverse the length of the coastline including the A90, A92 and Dundee to Aberdeen railway line. Therefore much of the time the seascape is experienced by road and rail users, be they local residents or visitors and tourists. Some of the larger towns and villages also attract recreational use both from locals and visitors, especially those places which have accessible shoreline. From the coastal edge the seascape will be experienced by agricultural workers and also by walkers along the cliff-top footpaths. Dunnottar Castle is open daily to the public.

Modification/Remoteness/Sense of Naturalness

2.42 Intensively managed farmland extends to the coastal edge thus limiting the sense of naturalness. This contrasts with the coastline and sea itself which has a strong sense of the natural environment, particularly where the waves crash against rugged cliffs. The area does not seem remote due to the presence of settlements and roads adjacent to the coast, although it does feel separated from the main landward area in places due to the steeply rising landform adjacent to the coastal edge.

Exposure

2.43 In most parts of this character area the seascape is exposed due to the expansiveness of the sea and lack of shelter. Local features, where more natural shelter is available, are less exposed, for example Stonehaven Bay and some of the smaller bays and coves located along the coast.

Process and dynamics

2.44 The rocky coastline is primarily affected by erosion from the sea. Natural erosion is the main influence on the physical structure of cliffs in the area. Slumping of soft cliffs is also noticeable, especially where it affects cliff-top paths squeezed between fields and cliff edges. The sound and movement of wave action against the cliffs and rocky shore edge increases the sense of the coastal zone as a dynamic environment.

Quality/condition

2.45 Overall, the quality and condition of the coast is medium to high. There is limited development outside of the settlements and the condition of the agricultural land is generally good.

Designation

2.46 There are no landscape designations associated with this seascape character area.

Sensitivity

2.47 This seascape character area is considered to have a **medium** sensitivity to offshore wind energy development. The relatively linear nature of the coastline, in conjunction with its simple landform, lack of focal points, openness and the expansive scale of the sea, tends to limit sensitivity to offshore wind development. This is despite the existence of smaller-scale localised coastal features in places.

Forces for Change

2.48 There is potential pressure from onshore wind energy development within the Grampians, including an existing wind farm at Meikle Carew in the foothills above Stonehaven, and a consented development at St John's Hill between Stonehaven and Inverbervie. There are several other wind farms currently at scoping or application stage.

SA4: MONTROSE BAY

Definition of regional seascape unit boundaries

2.49 This unit comprises Montrose Bay, a wide sandy bay which extends approximately 8 km north north-east from the outflow of the River South Esk at Montrose beyond the mouth of the North Esk, to St Cyrus and Milton Ness.

Key characteristics

- Wide, sandy beach backed by line of dunes and grassland;
- Heughs of St Cyrus and St Cyrus National Nature Reserve;
- Mostly flat agricultural hinterland;
- Coniferous plantations to the south of the North Esk River;
- North and South Esk Rivers; and,
- The coastal town of Montrose with its port and industrial developments.

Scale and Openness

2.50 This is a medium scale seascape. The wide sweep of the bay and flat hinterland are contained by Milton Ness to the north and Scurdie Ness to the south, and backed by the higher cliffs of St Cyrus to the north west. Views within the bay and its immediate hinterland are therefore short to medium distance although expansive views out to sea and sky.

Form

2.51 This is a mostly flat or gently sloping, and low-lying seascape with a strong horizontal emphasis. Vertical elements are provided by the dunes and the cliffs around St Cyrus and to the west of Milton Ness.

Settlement

2.52 The southern end of the character area is largely occupied by the town of Montrose, which is located on a peninsula between the sea and the shallow estuarial Montrose Basin. The town has an important commercial port for the offshore oil and gas industry and is also home to industrial development, both around the port and on the northern outskirts of the town. The only other development of any size is the small village of St Cyrus. The seascape is also influenced locally by the presence of Montrose Links and the resort facilities along the beachfront.

Pattern and foci

2.53 This seascape character unit has a simple pattern centring on the wide stretch of sandy beach backed with dunes and grassland. The headlands of Milton Ness and Scurdie Ness are relatively low-lying and the lighthouse at Scurdie Ness provides a focal point and visual "full-stop" at the southern end of the Bay. The dunes themselves are also a focal feature within the seascape rising, as they do, above both beach and grassland. Within the northern half of the character area the cliffs at St Cyrus form another natural focal point.

Lighting

2.54 Settlements and scattered farmsteads provide low level illumination in the coastal hinterland with the larger town of Montrose and its industrial developments centred on the port forming a higher concentration of lighting sources, including the prominent lighthouse at Scurdie Ness.

Movement

2.55 The A92 runs through the area, although the coast itself is not always visible from the road. There is also local movement associated with the settlements. Aside from motor vehicles, there are movements of shipping coming to and from the port and also recreational users of the beach and sea as well as golfers using the links.

Aspect

2.56 Generally east south easterly with some localised variation around the headland of Milton Ness.

How experienced

2.57 Montrose is an important service and employment centre for the north east of Angus consequently the area is experienced by a wide variety of receptors. Its location on the A92 coastal tourist route and the rail network makes it a popular place to live as well as a destination for visitors, tourists and business. Residents will experience the seascape from houses as well as the local network of roads. They are also likely to use the beach and dunes for recreational purposes along with tourists and other visitors. Visitors to the area will also generally experience the seascape from the major roads and railway, along with destinations such as the St Cyrus National Nature Reserve (NNR) and resort facilities on the seafront at Montrose. Other recreational users will experience the seascape from the beach and sea and there will also be walkers using the network of coastal paths.

Modification/Remoteness/Sense of Naturalness

2.58 Montrose town and its associated developments add a high degree of modification to the seascape at the southern extent of this character area. However, this contrasts strongly with the more natural northern extent of the bay with its sandy beach and dunes backed by the high Heughs of St Cyrus.

Exposure

2.59 Some shelter is provided by the enclosing headlands combined with the cliffs on the landward side of the bay. This enclosure together with the varied topography of the sand dunes and areas of coniferous plantation at Kinnaber provide a more sheltered environment in the landward component of the seascape unit which contrasts strongly with the open beach on the seaward side of the dunes which is exposed.

Process and dynamics

2.60 Montrose Bay is a well-known example of natural processes influencing the form and character of the seascape over relatively short periods of time.

Examples of this include changes in the position of the outlet of the River North Esk and erosion of Montrose Beach. The dune landscape in particular is constantly changing. Unlike the dunes of Montrose beach to the south, the dunes of St Cyrus are currently growing in size, whereas until relatively recently they were eroding. These processes contribute to the sense of the coastal zone as a dynamic environment.

Quality/condition

2.61 Overall this is a medium quality seascape. The southern part of the character area is influenced by development in and around Montrose. To the south of the North River Esk, the square lines of the coniferous plantation belts also introduce a landscape element which feels at odds with the more natural forms of the dunes and beach adjacent. The northern part of the character area, in contrast presents a higher quality and condition of seascape incorporating, as it does, the National Nature Reserve.

Designation

2.62 There are no landscape designations associated with this seascape character area.

Sensitivity

2.63 This seascape has a **high** sensitivity to change associated with offshore wind development due to its medium scale, fairly enclosed nature with short to medium distance views across the landward component of the seascape unit that contrast with open vistas from the coastal edge.

Forces for Change

2.64 The main forces for change relate to development pressures in and around the town of Montrose itself particularly around the port, but also the industrial fringes on the northern edge of the town. The site of the former Montrose Airfield, between the A92 and coast is highlighted within the Angus Local Plan Review (2009) as being an appropriate location for employment uses. There is less development pressure in the north of this character area due primarily to the location of St Cyrus National Nature Reserve.

SA5: LONG CRAIG

Definition of regional seascape unit boundaries

2.65 This relatively small seascape unit comprises the rocky headland and associated agricultural hinterland that stretches between Scurdie Ness in the north and Lunan Bay to the south.

Key characteristics

- A low-lying headland with a rocky foreshore;
- Gently sloping agricultural hinterland extending in places up to the coastline;
- Sparse tree cover mainly concentrated around Usan House;

- Scattered farmsteads;
- Landmark of Scurdie Ness Lighthouse; and
- Dundee – Aberdeen railway line defining western extent.

Scale and Openness

2.66 Although a small unit in physical extent, this is a large scale seascape with open views out to the North Sea and along the coastline.

Form

2.67 The landward component of this seascape unit is gently sloping and low-lying with a strong horizontal emphasis. The agricultural hinterland of arable fields and grassland contrasts with the rocky shoreline most of which is covered at high tide. South of Usan, the coastal edge gains in height with steep grass slopes between the shoreline and the fields above.

Settlement

2.68 Settlement is confined to scattered farmsteads and the remains of old fishing villages.

Pattern and foci

2.69 This is a simple seascape with few focal points. The rocky shoreline itself is a focal feature of the coast, when contrasted with the regular field patterns of the farmland inland. The derelict tower at Usan and particularly the lighthouse at Scurdie Ness are prominent vertical elements and focal points within this seascape character unit.

Lighting

2.70 Scattered farmsteads provide limited low level night time illumination. In the north of the character area, the night time character will be influenced by the lights of Montrose and the lighthouse at Scurdie Ness.

Movement

2.71 Movement on land is limited to local traffic on the network of minor roads connecting the various farms as well as trains on the main railway line. At sea, there are movements of vessels to and from the harbour at Montrose.

Aspect

2.72 The character area has an east south easterly aspect. From the coastline, views out to sea are due east. From Scurdie Ness, views also look north along the sandy beach of Montrose Bay. Where local topography allows, views inland extend towards the Grampian foothills.

How experienced

2.73 The seascape will be experienced mainly from minor roads giving varied and changing views of the coast. It will also be experienced by residential receptors in the various isolated farmsteads, some of whom will have direct views of the coast. Visitors to the area travelling by train will also have views of the coastline, although these views will be intermittent as the line passes through cuttings for part of its length.

Modification/Remoteness/Sense of Naturalness

2.74 With agricultural land extending up to, or very close to, the coastal edge, this character area does not possess a strong sense of remoteness. However, the lack of large scale built development in this area and the extensive agricultural landscape lends a sense of naturalness, particularly at the coastal edge where the well-tended fields contrast with the rocky shoreline.

Exposure

2.75 This is a relatively exposed seascape with a lack of shelter.

Process and dynamics

2.76 Compared to the shifting sands of Montrose Bay, this part of the coastline is subject to a slower process of erosion. However, the proximity of the agricultural land of the rocky shoreline and the contrast between these elements increases the perception of the sea as a dynamic environment, particularly when waves are breaking onto the shoreline.

Quality/condition

2.77 This is a medium to good quality/condition seascape.

Designation

2.78 There are no landscape designations associated with this character area although the historic landscapes at Craig House and Dunninald Castle, both listed in Historic Scotland's GDL inventory, are located close to the west.

Sensitivity

2.79 This seascape character area is considered to have a **medium** sensitivity to offshore wind development, derived from its large scale, open nature with expansive views of the North Sea, coupled with the relatively simple pattern of the seascape.

Forces for Change

2.80 Development in and around Montrose may affect the setting of this character area, particularly around Ferryden on the south side of the harbour.

SA6: LUNAN BAY

Definition of regional seascape unit boundaries

2.81 Lunan Bay lies to the south of Montrose with the broad sandy beach extending for approximately 3.7km between Boddin Point and the Lang Craig. It is a backed by dunes and framed by low cliffs the north and south.

Key characteristics

- Wide sandy beach;
- Well visited by recreational users all year round but particularly during the summer;
- Traditional salmon fishing using nets staked into the sand;

- Lunan Water, which empties into the sea in the middle of the bay;
- Dune system, particularly to the north of Lunan Water;
- Woodland and shelter belts around Lunan;
- Rocky headlands to the north and south; and
- Extensive cultural heritage including the remains of a 15th Century tower at Red Castle overlooking Lunan Water and the beach.

Scale and Openness

2.82 This is a medium to large scale seascape. Views out to sea from the bay are expansive, but the headlands to north and south, together with the slopes at the rear of the beach provide a limited sense of enclosure. There are views inland and along the coast from within the agricultural hinterland.

Form

2.83 This is a simple seascape unit, where the form is centred on the shallow arc of the sandy bay. The agricultural hinterland is flat or gently sloping lending the area a strong horizontal emphasis. The enclosing headland to the south is relatively low-lying; the cliffs of Rickle Craig to the north are higher, although sloping down to the natural harbour at Boddin and the promontory of Boddin Point.

Settlement

2.84 There is no settlement in this character area apart from the small village of Lunan, one or two farmsteads and isolated houses, as well as the collections of holiday cabins and caravans at Corbie Knowe and Ethie Haven at the south end of the bay.

Pattern and foci

2.85 A relatively simple seascape unit comprising the wide, sandy bay framed by rocky headlands. The dunes and steep grass slopes to the rear of the bay give way to a relatively undeveloped hinterland comprising a flat or gently sloping agricultural landscape of mostly regular fields divided by hedgerows (gappy in places) with occasional hedgerow trees or linear shelterbelts, but sometimes just by ditches or post-and-wire fencing. The Grampian foothills form a distant backdrop. There are few natural foci aside from the beach and dunes themselves which form a striking contrast to the fields behind. The ruin of Red Castle, standing above the Lunan Water where it discharges into the sea, is a prominent local landmark.

Lighting

2.86 Aside from the small settlement of Lunan and isolated farmsteads and holiday enclaves, there is little illumination in this character area.

Movement

2.87 Movement is mainly related to recreational activities taking place in the sea, on the beach, or in the dunes and cliff top areas. There are also traffic movements on the surrounding minor roads, by both visitors and local residents. At the north of the bay, the railway line is visible from the beach as

it crosses the viaduct over Buckie Den. Although outside the character area, the A92 coastal tourist route passes by relatively closely and has views towards the bay.

Aspect

2.88 The bay itself is east-facing. Views from the headlands to the north and south will depend on orientation but are generally north from Ethie Haven and south-easterly from Boddin.

How experienced

2.89 Lunan Bay is a well-known and popular beach, which attracts year-round recreational use by walkers, horse-riders, sightseers and, particularly in the summer, bathers. The bay also attracts surfers, windsurfers and kite-surfers to its waters. There are a number of holiday cottages and caravans in close proximity to the beach. Residential receptors within Lunan and other scattered farmsteads will also experience the seascape, with some having direct views of the coast. Other visitors and travellers may experience the seascape in passing either from the A92 or more often the railway line, which passes much closer to the coastline, in addition to the network of minor roads in the vicinity.

Modification/Remoteness/Sense of Naturalness

2.90 Although neither remote nor unmodified, Lunan Bay has remained relatively undeveloped with very few tourism facilities despite its popularity with recreational users. This lack of development increases the sense of naturalness experienced within the character unit.

Exposure

2.91 The headlands to north and south add a degree of shelter to the bay.

Process and dynamics

2.92 The main coastal process affecting Lunan Bay is erosion. The cliffs to the rear of the bay are slowly eroding inland and there is dune erosion which is likely to be anthropogenic. This erosion is further intensified by wind action. The presence of recreational users on the water, where activities are associated with the waves and wind, is likely to increase the sense of the coast as a dynamic environment.

Quality/condition

2.93 This is a good quality seascape unit. Aside from areas subject to pressure from visitors, it is also in good condition.

Designation

2.94 There are no designations within this character area although the designed landscape of Dunninald Castle which is listed in Historic Scotland's Inventory of Gardens and Designed Landscapes lies just to the north.

Sensitivity

2.95 Overall, this is a **high** sensitivity seascape, due both to the lack of development in the coastal zone and the relatively sheltered nature of the bay when compared to the adjacent rocky coastline.

Forces for Change

2.96 Aside from offshore and onshore wind development, change is likely to come from increased pressures associated with recreational use. The dunes in particular are subject to serious erosion by both foot traffic and unauthorised use by off road vehicles and bikes.

SA7: LANG CRAIG TO THE DEIL'S HEID

Definition of regional seascape unit boundaries

2.97 This seascape unit comprises a continuous stretch of sea cliffs reaching up to 50m and associated rocky coastline between Lang Craig, to the south of Lunan Bay, and Whiting Ness at the eastern edge of Arbroath by St Ninian's Well.

Key characteristics

- Old Red Sandstone cliffs display a series of erosion features including sea stacks, blowholes, caves, wave cut platforms and arches;
- Small, narrow shingle beaches located on the rock platform at Auchmithie, Carlingheugh Bay and Castlesea Bay;
- Gently sloping agricultural hinterland contrasting strongly with rocky coastline and cliffs;
- Limited areas of grassland at the top of cliffs supporting rare plant species; and
- Coastline important for conservation including large colonies of breeding seabirds on the cliffs, and geological interest. Much of the coast is designated as a SSSI.

Scale and Openness

2.98 This is a large scale seascape with expansive views from the cliff top edge out to the North Sea. However, the coastal edge itself is rich in smaller scale detail including the aforementioned bays and inlets, small coves, blowholes and caves.

Form

2.99 The wealth of small scale elements which occurs along the coastal edge creates a more complex form, within the context of a rocky foreshore, cliffs and agricultural hinterland with a strong horizontal emphasis.

Settlement

2.100 The only settlement within this character area is the former fishing village of Auchmithie which is located approximately 5km northeast of Arbroath at the

top of the cliffs almost 40m above the narrow beach. Aside from Auchmithie, there are also several scattered farms and individual residences. Around Seaton there is a large area of land being cultivated under polytunnels in addition to a caravan park.

Pattern and foci

2.101 The predominant land use in this character area is agricultural. This farmed hinterland generally slopes gently towards the coastal edge and lacks natural focal points, aside from areas of woodland and shelterbelt planting. These small woodland areas are often seen in conjunction with collections of farm buildings, which in this relatively flat landscape, form focal points in themselves. In views along the coastline, the cliffs also act as foci, drawing the eye with the sudden dramatic change in level between fields and sea.

Lighting

2.102 In the south of the character area, illumination from Arbroath is visible in the night sky. Moving north along the coast, there are some street lights in Auchmithie with associated sources of lighting from the settlement. Otherwise, light sources are associated with farms and scattered houses. The area of sea is generally fairly dark, although some shipping movements are likely to be visible.

Movement

2.103 There is some movement on the sea from occasional ships and boats. Otherwise, movement is mainly caused by wind and waves. There is vehicular movement on the network of minor roads linking farms and settlements and also agricultural activity on the farms themselves. Recreational activity and associated movement is limited to the coastal footpaths and beach at Auchmithie.

Aspect

2.104 This seascape area is generally east to south easterly facing onto the open North Sea with localised variations along the coastal edge. From farmland areas at the top and behind the cliffs there are views inland to the west.

How experienced

2.105 This character area is generally experienced from the network of minor roads connecting farmsteads and small settlements in the agricultural hinterland. The cliff top edge is also a very popular recreational destination, particularly to the north of Arbroath. It attracts both locals and visitors for its views, cultural heritage and bird watching interest. The shingle beach at Auchmithie is also popular for recreational use.

Modification/Remoteness/Sense of Naturalness

2.106 As the A92 runs some distance inland, this area feels more remote than similar character areas along other parts of the coast. However, the intensively managed farmland abutting the coastline limits the sense of naturalness. The cliffs along this stretch of the coast are higher and more rugged than those to the north. Coupled with the lack of settlement, this tends to give the coastal edge itself a strong sense of naturalness.

Exposure

2.107 From the coastal edge and cliff tops this seascape unit feels exposed due to the expansiveness of the sea and lack of shelter. Inland this sense of exposure is diminished somewhat, especially around areas of woodland and shelterbelt planting.

Process and dynamics

2.108 The cliffs are subject to erosion, primarily by wave action, but the rate of changes is very low.

Quality/condition

2.109 This is a high quality seascape unit with a wealth of natural features and dramatic, rugged feel to the coastal edge. The agricultural hinterland, although intensively managed, is also in a reasonably good condition.

Designation

2.110 There are no landscape designations within this character area.

Sensitivity

2.111 This is a **high** sensitivity seascape due to the varied, small scale and distinctive elements associated with the coastal edge, the high quality and good condition of the area, and its sense of naturalness.

Forces for Change

2.112 There is little human pressure on the coastal edge when compared with adjacent parts of the coast, apart from the coastal path along the cliffs. Inland, large areas of land cultivated under polytunnels could lead to localised effects on the landscape. There is also the possibility of residential expansion on the outskirts of Arbroath at the southern extent of the character area along with onshore wind development in the hinterland.

SA8: ARBROATH TO MONIFIETH

Definition of regional seascape unit boundaries

2.113 This unit comprises the stretch of coastline between Whiting Ness at the eastern end of Arbroath, to the campsite at the eastern edge of Monifieth, including Carnoustie and Barry Links.

Key characteristics

- Low lying coastal edge with extensive rock-cut platform interspersed with sections of sandy beach;
- Areas of dunes, particularly at Barry Links;
- Well settled coast with development focussing on the towns of Arbroath, Carnoustie and Monifieth;
- Active fishing harbour at Arbroath;
- Dundee to Aberdeen railway line running adjacent to coastline;

- Several golf links including the Championship course at Carnoustie;
- Conifers associated particularly with golf links, and larger areas of woodland within Barry Links; and,
- MOD training ground occupying a large area of Barry Links;

Scale and Openness

2.114 Overall, this is a medium to large scale seascape particularly in areas to the east of Barry Links, where the flat coastal landform and expanse of open sea increases the scale in the Outer Firth of Tay.

Form

2.115 The low lying coastline has a strong horizontal emphasis, heightened on the coastal edge by extensive rocky platforms interspersed with lengths of sandy beach. Low dunes and coniferous plantations add small scale vertical elements in some areas.

Settlement

2.116 This is a well-settled coast, having a number of towns interspersed with areas of farmland and other types of open space. Arbroath is the largest town in the council area of Angus with a population of over 20,000.

Pattern and foci

2.117 Generally the seascape has quite a simple pattern. Aside from Barry Links, which extends out into the mouth of the Firth of Tay, the coastline is relatively linear and low-lying, with low cliffs at Whiting Ness and areas of low-lying dunes in between. The presence of the rock platform and sandy beaches adds some subtlety of form to the intertidal zone but these are small scale variations in patterning. From viewpoints along the coastline the sea itself is likely to be the main focus, with its open and expansive nature contrasting with inland areas. There are few other natural focal points in the northern part of the character area. Towards Monifieth, views southwards extend to hills on the opposite side of the Firth. There are also few man-made focal points on the coast although the lighthouse at the tip of Barry Links is seen from many locations. Inland, there are various overhead lines which are prominent within the flat, low-lying landscape.

Lighting

2.118 This is a well-lit coastal edge where there are settlements. However, there are also areas with less illumination, particularly Barry Links and the section of coastline between Carnoustie and Arbroath. Illumination from occasional boats and ships will be visible out to sea.

Movement

2.119 Shipping movements are less prominent than on the Firth of Forth but this is nevertheless a busy seascape, particularly in areas of the Inner Firth and also in and around the settlements and main roads. There is commercial and recreational activity associated with Arbroath Harbour, both inland and at sea, and recreational activity along the whole of the coastline including water-

based sports and activities such as sailing. The railway line is visible from large sections of this coastline.

Aspect

2.120 Aspect along the Outer Firth is generally south to south easterly, with of localised variations. Settlements are generally orientated to face the sea.

How experienced

2.121 The seascape in this character unit is experienced by a range of receptors. Arbroath is popular with visitors for its wide variety of tourism and recreational activities including promenade and cliff top walks as well as beach and water-related leisure use. The coastline in general is well-used by walkers with sailing taking place on the water. The presence of several coastal links golf courses increases the number of recreational receptors who will experience this environment. Aside from recreational use by visitors and locals the seascape will be experience by residential receptors, some of whom will have direct view of the sea and coast, or indeed live adjacent to the coastline itself. The coast will also be viewed from the network of local roads both inside and outwith the settlements and from the railway line, which runs parallel to, and a short distance away from, the coast for much of its length through this character area.

Modification/Remoteness/Sense of Naturalness

2.122 This is a highly modified coastline in urban areas and with agriculture or golf courses forming much of the immediate hinterland. It is not remote, and there is no perception of remoteness aside perhaps from areas at the outer extent of Barry Links around Buddon Ness, which can only be accessed by the public by walking along the shore. The coastal intertidal zone possesses a greater sense of naturalness.

Exposure

2.123 This is an open and exposed seascape although certain areas do have a more sheltered feel, such as Carnoustie Bay.

Process and dynamics

2.124 The coastline is subject to a range of natural processes relating to wind and wave action. Barry Links is one of the largest beach/dune systems in Scotland. The sand dunes rest on sediments deposited under changing relative sea level and climatic conditions following deglaciation of the last Scottish ice sheet. Coastal erosion has become a problem at Carnoustie and defences have been installed in an attempt to counter this. Where there are no defences the coast is subject to cycles of sand erosion and accretion. The presence of sailing boats and people engaged in water sports may increase the sense of the sea as a dynamic environment.

Quality/condition

2.125 The quality of the seascape and coastal zone is medium to high particularly in relation to features of the shoreline and intertidal zone. Compared to some other character areas on the coast, the overall character of this unit is

perhaps less well defined and more fragmented because of the range of land uses encountered and the variable quality of the more urban areas.

Designation

2.126 There are no landscape designations within this character area.

Sensitivity

2.127 This is a **medium** sensitivity seascape unit. The area around Barry Links and Buddon Ness possess a sense of remoteness and naturalness; however, this is countered by the extensive coastal settlement and large scale, open character of the Outer Firth and coastline towards Arbroath both of which tend to diminish sensitivity to offshore wind development.

Forces for Change

2.128 There is some development pressure on the coastal fringes within and on the edge of settlements. Onshore wind development may occur in the coastal hinterland. Two developments at Dusty Drum and East Skichen in the Sidlaw Hills, which form a backdrop to Arbroath and Carnoustie, are currently at application stage.

SA9: DUNDEE

Definition of regional seascape unit boundaries

2.129 This unit comprises the section of coastline between Monifieth and Invergowrie, centred on Dundee. The coastal edge here is almost entirely developed.

Key characteristics

- Settled coastal fringe centred on the urban developments in and around the city of Dundee;
- Industry, bridges and other infrastructure, such as the railway and airport;
- Views focussed on the Tay, but also inland to the Sidlaw Hills; and,
- Well-used for recreation particularly the beaches around Monifieth and Broughty Ferry.

Scale and Openness

2.130 This is a medium scale seascape with containment by surrounding hills to the north. Views are primarily orientated southwards across the water to Fife thus reducing the sense of openness in the seascape. There are coastal views along the Firth to the North Sea but these are contained somewhat by the profile of Buddon Ness on the north side of the estuary and St Andrews Bay and Fife Ness to the south.

Form

2.131 The Inner Firth is an incised channel which is strongly contained by hills on either side. The city of Dundee and associated settlements forms a strongly

developed coastal edge throughout the length of this character area which is relatively low-lying within urban areas, with the exception of some locally prominent hills. Beyond Broughty Ferry, the Firth opens out somewhat and has larger areas of intertidal sands. Outside of the developed areas, the hinterland is primarily agricultural, rising towards the Sidlaw Hills.

Settlement

2.132 This is an almost entirely settled and developed linear coastal zone which centres on the City of Dundee, Scotland's fourth largest city. Larger scale infrastructure is found around the port, particularly associated with the Oil and Gas Offshore Support Facility.

Pattern and foci

2.133 The Firth of Tay is the main focus although there are few distinctive natural features contained within the Firth itself with the exception of Buddon Ness which can be seen extending into the Firth in views east out to sea. Within the City of Dundee, both Dundee Law and Balgay Hill are prominent local landmarks and further afield the Firth is contained on both sides by hilly agricultural hinterland, rising in the north to the prominent summits of the Sidlaw Hills which form a distant backdrop to this character area. Urban developments and infrastructure features also form focal points in the seascape, particularly the rail and road bridges across the Firth but also various residential tower blocks throughout the city.

Lighting

2.134 This is a well-lit coastal edge. Within the Firth there will also be illumination from streetlights on the road bridge, as well as larger ships and boats moving up and down the water. Both the airport and harbour are particularly well illuminated.

Movement

2.135 This is a busy seascape due to the presence of Dundee with its commercial seaport, airport, bridges and network of major and minor coastal routes including the A930 and Dundee to Aberdeen railway line.

Aspect

2.136 There is a southerly aspect from the north side of the Firth of Tay with settlements generally oriented to face the sea.

How experienced

2.137 Within this coastal area, the seascape is primarily experienced from busy coastal routes and well-used beaches and promenades. There are many residential receptors who will also have views of the coast including some within very close proximity. The coastal edge in Dundee is becoming a focus for redevelopment associated with the leisure, visitor and recreational uses.

Modification/Remoteness/Sense of Naturalness

2.138 This is a highly modified coastal zone. It is not remote and a sense of naturalness is felt only in the contrast between both the city and the hills of

its agricultural hinterland, and the intertidal areas of the Firth exposed at low tide including the extensive sand flats around Monifieth.

Exposure

2.139 The Inner Firth is more sheltered with the sense of exposure increasing somewhat as the estuary starts to widen to the east of Tayport and Broughty Ferry.

Process and dynamics

2.140 The Firth of Tay is subject to a range of wave, wind and tidal processes that influence the shape and character of the coastline. These contribute to the perception of the coastal zone as a dynamic environment, as does the large area of foreshore exposed around Monifieth at low tide, and the presence of shipping within the Firth.

Quality/condition

2.141 This is a medium quality seascape. Although the condition of the coastal zone is generally good as reflected in a variety of natural conservation related designations, the range of different land uses and large extent of developed areas contributes to a sense that the seascape character here is not as well-defined when compared to other, perhaps more remote, areas described in this study.

Designation

2.142 There are no landscape designations within the Firth of Tay. Within the City of Dundee there are three designated historic landscapes at Balgay Park, Baxter Park and Camperdown House. There is also a country park at Camperdown.

Sensitivity

2.143 This is a **low** sensitivity area to off shore wind farm development primarily due to the influence of Dundee and other settlements on the character of the seascape.

Forces for Change

2.144 There are development pressures in and around Dundee and other settlements on the coastal fringe. There is also existing and planned onshore wind development in the hilly areas surrounding the coast.

SA10: INNER FIRTH OF TAY

Definition of regional seascape unit boundaries

2.145 This unit comprises the Inner Firth of Tay between, on the north coast, Invergowrie and the breakwaters to the east of Port Allen and, on the south coast, between Newburgh and Tayport. The character area includes a narrow strip of land adjacent to the southern coastline and the extensive area of predominantly low-lying farmland of the Carse of Gowrie, adjacent to the northern coastline.

Key characteristics

- Long and narrow form of the Inner Firth;
- Extensive intertidal mudflats and sandbanks;
- Narrow coastal strip with areas of low cliffs on the south side of the Firth;
- Narrow shingle and cobble beaches;
- South side enclosed by relatively low-lying wooded hills, rocky in places, which rise directly from the coastal edge, including the Ochil Hills;
- Extensive reed beds along the north bank of the Firth;
- Broad swathe of low-lying agricultural land – the Carse of Gowrie – to the north of the Tay, bisected by the A90 and backed by the Sidlaw Hills;
- Relatively sparsely settled when compared to strongly developed urban area of Dundee; and,
- Linear coastal settlement at Newport on Tay located between Tay Bridge and Tay Road Bridge.

Scale and Openness

2.146 Overall this is a medium scale seascape influenced by the containment of the hills on either side of the Firth.

Form

2.147 The incised Inner Firth is the dominant form within this character unit, highlighted by the containment of the Sidlaw and Ochil Hills. The vertical emphasis of these hills contrasts strongly both with the intertidal flats within the Firth and the low lying agricultural land to the north.

Settlement

2.148 Within the Carse of Gowrie there are several villages such as Longforgan, Inchture and Errol, with other small settlements and farms, scattered throughout the farmland, along with individual residences. To the south of the Tay, the coastal strip also includes a scattering of small villages, such as Balmerino, and farms. Between the rail and road bridges is the linear development of Newport-on-Tay and associated suburbs.

Pattern and foci

2.149 The estuary itself is the main focus followed by the backdrop of the surrounding hills, some of which, such as the Ochils, have quite distinctive profiles and are additionally characterised by the extent of woodland. Exposure of the intertidal flats creates more subtle patterning effects within the Firth, whilst the Carse of Gowrie is dominated by large geometric fields, with hedges and hedgerow trees more common along roads and tracks. Around Errol there are shelterbelts and policy woodlands associated with the

estate and the reed beds which line the bank of the estuary here form an important and characteristic element.

Lighting

2.150 There is little illumination in the Inner Tay west of Dundee and Newport on Tay, being confined mostly to the scattered villages and settlements in the Carse of Gowrie. The river is marked by navigation lights upstream to Perth.

Movement

2.151 Movement within the Inner Firth is less prominent when compared to the strongly developed coastal edge of the Outer Firth and is primarily associated with the road and rail network, particularly the fast-moving traffic on the A90. Some shipping still makes use of the navigable stretch of the River Tay to Perth. The extent of the intertidal flats exposed at low tide also highlights movement of the river and estuarial waters. In this flat landscape the sky is also an important element and the pattern of cloud cover and nature of light can have dramatic effects on the perception of character and movement.

Aspect

2.152 There is a north/south aspect on either side of the Firth.

How experienced

2.153 This character area is primarily experienced from the network of minor roads and settlements scattered throughout the landscape. Views of the Firth itself may be obscured by trees and other vegetation or localised variations in topography. The A90 is an important transportation corridor running here between Perth and Dundee. Many visitors to area will experience the landscape of the Firth from this road or from the adjacent railway line. There is some recreational use of the river from Dundee and Newport-on-Tay.

Modification/Remoteness/Sense of Naturalness

2.154 The intensively farmed and modified landscape of the Carse of Gowrie perhaps has a greater sense of naturalness and remoteness than is actually the case due to the relative sparsity of settlement. The estuarial seascape of the Inner Firth also has a greater sense of naturalness when compared to its neighbouring character areas, for this same reason. Both these perceptions are heightened by the backdrop of hills, particularly the higher and more distant Sidlaw Hills.

Exposure

2.155 The containment of the surrounding hills lends this area a more sheltered feel when compared to the Outer Firth and adjacent coastline to the north and south.

Process and dynamics

2.156 The Inner Firth is largely sheltered from the effects of wave action however it is a dynamic coastal environment subject to a range of processes associated with tidal currents and the river. The dynamic nature of this environment is also emphasised by movements of weather fronts across the wide, open sky.

Quality/condition

2.157 The high quality and good condition of the Firth itself and tidal zones is recognised by its conservation designations reflecting a variety of important habitats for flora and fauna. The agricultural land within the Carse of Gowrie is of more variable condition and quality as many of the hedgerows have become gappy and lost trees not replaced.

Designation

2.158 The south bank of the Inner Firth is designated as the Tay Coast Special Landscape Area in the St Andrews and East Fife Local Plan (2009). There are also a number of designated GDLs as listed in Historic Scotland's Inventory, comprising Errol Park, Fingask Castle, Glendoick, Megginch Castle, Naughton, and Rossie Priory.

Sensitivity

2.159 This character unit has a **low** sensitivity to offshore wind development outwith the area due to is physical separation from the open sea.

Forces for Change

2.160 The location of this character area between Firth and Dundee means that there is primarily pressure for housing development. There may also be pressure for onshore wind development. The Perth and Kinross Wind Energy SPG (2005) indicates that the hills to the north of the A90 fall within a broad area of search for this type of development.

SA11: ST ANDREWS BAY

Definition of regional seascape unit boundaries

2.161 This unit comprises the large stretch of sandy coastline extending southwards from Tayport, via Tentsmuir Point, to St Andrews. It includes the Eden Estuary and West Sands, where an abrupt change in coastal direction, and an increase in coastal elevation, marks a transition from the sandy bay to the rocky foreshore of St Andrews.

Key characteristics

- Long, sandy beaches;
- Expansive intertidal shores around the Eden Estuary;
- Significant dune systems at Tentsmuir;
- Large areas of sandbars at Tentsmuir Point;
- Tentsmuir Forest, an extensive, open and mature forest of pine trees;
- Low-lying agricultural hinterland with scattered farmsteads and geometrically laid out fields;
- Golf links courses at the edge of St Andrews.

Scale and Openness

2.162 The flat, low-lying coastal landform combined with the great expanse of open sea and largely linear shoreline creates a large scale, expansive seascape, apart from around the Eden estuary which comprises a smaller scale component. The open sea is flanked by coastlines to north and south, which slightly diminishes the scale.

Form

2.163 This area is characterised by its broad, flat land profile and strong horizontal emphasis, heightened by the coastal edge and other linear features such as forest edges and field boundaries. It is composed of a low-lying, broad sandy headland between the mouths of the Tay to the north and the Eden to the south. Between the rivers is a wide flat sandy beach, backed by wind-blown dune systems. Behind the dunes, the flat landform continues. South of the Eden, which forms a broad muddy estuary, is another long beach backed by dunes and a golf course. The land begins to rise to the south of this, where the coastline turns sharply westward.

Settlement

2.164 Tayport is the only town of any size within this character area. There are scattered farmsteads and smaller settlements, including the village of Leuchars, elsewhere, mainly lying within agricultural land. RAF Leuchars is an important Air Defence Station although not a prominent feature of the landscape. St Andrews is located immediately to the south of the area, Associated development, most importantly the golf courses, extends onto the links area between the town and the Eden.

Pattern and foci

2.165 The seascape here generally has a simple composition of long sandy beaches backed by dune systems and extensive areas of forest. Offshore there are large areas of intertidal flats and sandbars. In this low-lying area there are few natural focal points aside from the distinctive areas of forestry. In this context, the open sea and sky is a focus of attention in itself, as well as the more sheltered estuary of the River Eden. Inland, both fields and forest are notable for their linear edges, geometric shapes, and limited variations in colour and texture. Industrial development, though limited, can be a feature in the landscape, such as the former paper mill at Guardbridge with its distinctive chimney. Other visual foci occur at the edges, in Dundee to the north, and more immediately in St Andrews to the south.

Lighting

2.166 With the exception of lighting in and around settlements, primarily Tayport, Leuchars and St Andrews, there is little illumination in this seascape unit, particularly on the coastal edge around Tentsmuir, although RAF Leuchars is a source of lighting. To the north, lighting along the Dundee and Angus coast is visible.

Movement

2.167 Aside from movements in and around the settlements, there is vehicular movement associated with the network of major and minor roads. The airfield at RAF Leuchars is a source of movement associated with the fighter squadron based there. Movement is more obvious south of the Eden, with activity associated with the golf courses, visitors and the edge of St Andrews. The central and northern part of this area is quiet, with limited activity. Along the coastal edge shipping movements are seen in the Outer Firth and North Sea, together with smaller boats used for leisure. In this open and expansive seascape, the movement of weather systems across the wide sky is characteristic, and weather conditions will also affect the perception of movement within the sea and, at a smaller scale, in the dune landscape.

Aspect

2.168 The aspect of this character area is predominantly easterly, apart from the northern coast around Tentsmuir Point which looks north across the Outer Firth of Tay and St Andrews Links which faces north east. Within the Eden Estuary the seascape is enclosed by the rising coastal hills to the south and west. The view is generally eastward to the open sea, with the Angus and Fife coastlines visible to the periphery. Inland, there are extensive views, mainly to the west, across flatter parts landscape to a backdrop of low-lying hills.

How experienced

2.169 The seascape is primarily experienced by recreational users, visitors and locals alike, on foot and from the coastal edge. Visitors access Tentsmuir Forest and the long beach to the east via the FCS car park. There is also a network of footpaths and National Cycle Route 1 and Fife Coastal Path running through Tentsmuir Forest. The Eden Estuary Nature Reserve and Tentsmuir Point National Nature Reserve are both popular for recreational use including bird watching. Road users will experience the character area from the main routes, particularly the A91, and also a number of minor roads although generally these do not approach the coast. The seascape will also be experienced from a number of settlements including Tayport and St Andrews, with the latter also home to the world-famous golf links.

Modification/Remoteness/Sense of Naturalness

2.170 The dynamic character of the dunes and intertidal areas, together with the wide, open sea and sky gives a high degree of naturalness to the coastal edge. Coupled with the lack of settlement and roads, this lends the area a greater sense of remoteness than is physically actually the case. The managed forest and agricultural land, in contrast, feels less natural because of its form and character. Development at St Andrews Links, and the ease of access, means this area is not at all remote. The area around the Eden Estuary is influenced by the RAF base and by the former mills at Guardbridge, although it has a sense of naturalness arising from its status as a nature reserve.

Exposure

2.171 Whereas the coastal edge can feel very exposed, increasingly so to the north, the inland areas feel somewhat less so, particularly in and around the forested areas of Tentsmuir where the trees offer a large degree of shelter. To the south, exposure to the elements is still pronounced, compared to the more sheltered areas within St Andrews nearby.

Process and dynamics

2.172 This is a highly dynamic seascape where the sense of an ever-changing environment can be heightened by changes in weather and lighting conditions. Coastal processes produced constant change in the seascape; Tentsmuir Point particularly is a very dynamic environment as the Abertay Sands are currently moving seawards at a rate of about five metres a year with an associated movement of the dune front. However at the southern end of the NNR the dunes area currently in retreat. The sandbanks at the mouth of the Eden are also particularly dynamic.

Quality/condition

2.173 The high quality and condition of this seascape is recognised in a range of nature conservation designations. The forested areas inland are carefully maintained and the arable farmland is intensively managed although field boundaries and tree are neglected in places. The dune systems in the St Andrews Links area are protected by management, while in the north these are in good condition due to reduced usage of the area.

Designation

2.174 This coastline is designated as part of the East Fife AGLV. St Andrews Links is listed on the Inventory of Gardens and Designed Landscapes in Scotland, together with the garden at Earlshall, adjacent to Leuchars.

Sensitivity

2.175 This is a **high** sensitivity seascape. Although certain characteristics, such as its large scale and openness, tend to decrease sensitivity to offshore wind development, the area around Tentsmuir in particular has a high degree of naturalness. Although the presence of large settlements nearby can tend to decrease sensitivity, the smaller scale components of the Eden Estuary and St Andrews Bay, and contrast between these and the sweep of beach associated with Tentsmuir, contribute to a diverse and varied character with higher sensitivity, as reflected in the various designations which apply to the area. It is also a popular recreational area, with many visitors attracted by the open seaward aspect and readily accessible beaches.

Forces for Change

2.176 This depositional coast is subject to shifts in coastal processes, which may affect the shape of the Eden and Tay estuaries. Management of the Tentsmuir Forest, including felling, restructuring or replanting, will affect the hinterland. The future use of RAF Leuchars may affect the area around the Eden estuary. There is pressure for housing development as the area is within easy reach of the major settlements of St Andrews and Dundee. Development along the

edge of St Andrews would also affect the character of St Andrews Links courses.

SA12: ST ANDREWS TO FIFE NESS

Definition of regional seascape unit boundaries

2.177 This unit comprises the gently sloping agricultural hinterland, rocky coastline and low cliffs stretching for approximately 15km between St Andrews and Fife Ness.

Key characteristics

- Diverse coastal edge comprising small sandy bays, extensive wave-cut rock platforms, low cliffs and narrow, wooded dens;
- Small rocky headlands of Buddo Ness and Kinkell Ness;
- Open and exposed feel to coastline;
- Gently undulating agricultural landscape slopes down to coastal edge;
- Historic settlement and landmark buildings of St Andrews; and,
- Popularity for recreational use.

Scale and Openness

2.178 Overall this is a medium to large scale seascape with a high degree of openness in clifftop areas. However, there is a wealth of fine detail within the coastal edge including a number of smaller scale sheltered coves and inlets.

Form

2.179 This seascape character unit has a simple form comprising relatively straight but indented coastal edge marked by low cliffs, rocky platforms and the occasional sandy bay, giving way to an undulating agricultural hinterland which slopes gently down to the coast. There is a strong horizontal emphasis to the landform.

Settlement

2.180 St Andrews is the only significant area of settlement, which is visible in views along the coast to the north. There are small villages at Boarhills and Kingbarns and scattered farms and individual houses, together with isolated larger scale development such as the St Andrews Bay Hotel, and a large caravan site just to the east of St Andrews by the East Sands.

Pattern and foci

2.181 Overall this character area has a relatively simple character and composition. Within the coastal zone there is a wealth of smaller scale detail and features such as cliffs, rocky platforms and wooded dens, but a lack of prominent natural focal points. In this context the coastal edge and sea itself become foci. Inland, the agricultural landscape has a simple pattern of geometrical fields and predominantly linear shelterbelt planting. Within this low lying landscape, trees and woodland can also become focal points, as can elements

of the townscape such as the St Andrews Cathedral ruins. Long views northwards are afforded to the long low coastline to the north of the Tay estuary.

Lighting

2.182 Outside of the settlement of St Andrews this is not a well-lit area, particularly on and adjacent to the coastal edge, although there is some illumination associated with small settlements, farms and other developments such as the St Andrews Bay Hotel. There is a small lighthouse at Fife Ness. Dundee forms a distant light source to the north, the influence of which diminishes towards the south.

Movement

2.183 Apart from pedestrian and vehicular movement in and around St Andrews, most movement in the character area is limited to vehicles on the A917 and minor roads connecting to it. The main road is relatively quiet and is set back from the coast following the ridge tops of coastal hills. Within the coastal zone there will be movement associated with the golf courses and coastal footpaths not to mention agricultural work in the surrounding fields. As with other areas characterised by large scale open views of the sea and sky, there will be movement associated with wind and wave action on the sea and clouds. Large ships are often visible offshore.

Aspect

2.184 The aspect of this character unit is predominantly north easterly. However, from Fife Ness there are also views to the east, and south across the Firth of Forth.

How experienced

2.185 The coastal edge (including cliff tops and sandy beaches) is well used by both locals and visitors for recreational activities including beach access, golf, walking and other outdoor activities. There are also a number of visitor destinations within the character unit such as the gardens at Cambo Estate. The Fife Coastal Path traverses the entire length of the coastline: walkers will experience the local variations unfolding along coastline, while the headland at Fife Ness provides more extensive, elevated views across the seascape. The seascape will also be experienced from within St Andrews by residents and visitors alike and also from the A917, promoted as a scenic coastal route, which runs parallel to, and has views of, the coast and sea.

Modification/Remoteness/Sense of Naturalness

2.186 The coastal edge in particular has a strong sense of naturalness with its rocky outcrops, wave-cut platforms and bird life. Although not remote physically, the sense of remoteness may be heightened along the coastal edge as much of it is only accessible on foot. This is tempered by the proximity of urban development in and around St Andrews which extends out along the A917, for example the St Andrews Bay Hotel. The agricultural hinterland is intensively managed, with rectilinear fields and shelterbelts extending up to the narrow rocky foreshore in places, reducing the sense of naturalness.

Exposure

2.187 This is an open and exposed seascape with little shelter apart from the narrow wooded dens and areas of shelterbelt planting around the scattered farmsteads. More enclosed sandy coves provide a degree of localised shelter.

Process and dynamics

2.188 The character area is subject to a range of coastal processes, most importantly erosion by wind and wave action. The dynamic nature of the seascape may be heightened in certain weather conditions due its open and expansive character. Occasionally, dune systems can be damaged by storm tides.

Quality/condition

2.189 The coastal edge has a high quality relating to a diverse range of characteristic feature such as the cliffs, rock platforms and small, sandy coves. Landward areas of agricultural fields are intensively managed but field boundaries and features are poorly maintained and there are a number of derelict buildings, particularly closer to Fife Ness, which detract from the overall quality of the area.

Designation

2.190 The coastline is designated as part of the East Fife AGLV. There designed landscape and gardens at the Cambo Estate are also listed in Historic Scotland's GDL inventory.

Sensitivity

2.191 This is a **high** sensitivity landscape. Although the coastal edge can feel open and exposed at cliff top locations, there is also a wealth of smaller scale detail along the coast, such as sandy coves and incised inlets, which tend to increase sensitivity to the type of development proposed. Aside from the historic town of St Andrews, this is a largely undeveloped seascape with little lighting. There are popular beaches and coastal attractions along the coast.

Forces for Change

2.192 There is development pressure associated with the town of St Andrews. Onshore wind energy development is also a possibility, with a planning application having been submitted recently for a 12MW capacity wind farm at Kenly, just to the south of the A917.

SA13 EAST NEUK OF FIFE

Definition of regional seascape unit boundaries

2.193 This unit includes the coast of the East Neuk of Fife, from the headland of Fife Ness in the east to Chapel Ness near Earlsferry.

Key characteristics:

- Rocky coastline and shingle beaches, generally low lying;
- Attractive fishing villages centred on busy harbours;

- An exposed landscape;
- Distinctive red sandstone cliffs and soils.

Scale and Openness

2.194 Medium to large scale coastal area, enclosed to the south by the Lothian coast but increasingly open views to the east and at Fife Ness.

Form

2.195 The coastline is composed rocky foreshore of exposed igneous rock platforms and caves, with small headlands, low cliffs and sheltered bays, around Earlsferry and Elie.

Settlement

2.196 Small areas of settlement are dispersed regularly along the coast, generally small villages with harbours, including Crail, Piteenweem, and Anstruther. These are located on the coastal edge, often fronting the sea and with historic maritime associations, particularly fishing. There are also individual farmsteads and dwellings scattered along the coast, following the A917 coastal road and other minor roads inland. Along the coastal edge a number of caravan and camping sites and golf courses are features. A disused airfield and occasional larger scale commercial development are located southwest of Fife Ness, but otherwise large scale development is limited.

Pattern and foci

2.197 A hinterland of open, gently undulating farmland extends down to the rocky shoreline. There are few inlets along this stretch of coastline and where they do occur they coincide with the small settlements and harbours. Lighthouses and sea walls are features of the harbours, as are the distinctive vernacular pattern of small cottages and the sea front.

2.198 The Isle of May is a prominent and constant feature in seaward views across the firth, with distant views to North Berwick Law and the Lothian coast and the Lammermuir Hills beyond.

Lighting

2.199 The area is influenced by the lighting from the regular pattern of villages within the area and the influence of towns along both the northern and southern shores of the Firth of Forth, including the city of Edinburgh to the southwest.

Movement

2.200 The busy A917 road runs between Elie and Crail, generally following the line of the coast and set back usually within 1km of the edge. The road has some influence on the character of the hinterland within the area. A small number of minor roads are concentrated around the coastal villages and quiet minor road runs from Crail to Fife Ness.

2.201 At sea large ships are often visible and activity from smaller fishing and shipping vessels are particularly noticeable and characteristic around the small harbours.

Aspect

2.202 The coast faces predominantly south-southeast, with little variation along the relatively straight coastline.

How experienced

2.203 The seascape is experienced by a number of residents within the villages and the scattered farmsteads located on the coastal edge. Long sections of the Fife Coastal path follow the edge of the rocky foreshore, set below the low but sharply rising coastal hills. Views inland are limited and focused out across the Firth of Forth.

2.204 The A917 coastal road is promoted as a scenic coastal route through Fife, and this section of the route is particularly well used. From the road, travellers experience open, wide and extensive views out across the Firth of Forth and to the open sea to the east, often seen across narrow margins of arable farmland. The road and rocky foreshore are generally not intervisible, with the road set back from and slightly elevated above shore.

Modification/Remoteness/Sense of Naturalness

2.205 The area is settled with limited sense of naturalness. The area is however not heavily modified by development, with arable farmland and small settlements within the hinterland and at the coastal edge. The harbours lend a sense of a close maritime connection between the settled coast and the sea.

Exposure

2.206 There is a greater sense of exposure to the east, particularly on the prominent headland of Fife Ness which protrudes into the North Sea. This becomes reduced further west along the coast, as the Firth of Forth becomes gradually more enclosed.

Process and dynamics

2.207 Processes of erosion are generally limited along this stretch of coastline due to the predominance of carboniferous rocky platforms at the coastal edge, which deflect strong tidal currents. There are areas of localised erosion within the sheltered bay at Earlsferry.

Quality/condition

2.208 The quality and condition of the seascape unit is medium to high. There is limited development outwith the settlements, with the exception of the airfield at Fife Ness. The overall quality and condition of the agricultural farmland and links abutting the shore is generally good. Caravan parks and small scale development effect the character locally.

Designation

2.209 The coastline is designated as part of an AGLV. Balcaskie is included on the Inventory of Gardens and Designed Landscapes in Scotland.

Sensitivity

2.210 This is a well visited coastline, with the historic villages and golf courses being the most popular destinations. There is limited modern development within

the landscape, and the traditional villages are small in scale. The outlook of this coast is generally to the southeast, towards the Lothian coast, with the East Neuk villages being focused on their harbours. However, other areas have a wider outlook to the open sea, with the Isle of May a prominent feature in many views. Overall, this area is considered to be of **high** sensitivity to offshore development.

Forces for Change

2.211 Pressures for housing and development related to tourism, such as caravan parks, are likely to be forces for future change.

SA14 KIRKCALDY AND LARGO BAY

Definition of regional seascape unit boundaries

2.212 From the island of Inchkeith, the Forth widens considerably, with wide bays to north and south. The coastal area of the northern bay extends from Pettycur by Kinghorn, to Chapel Ness at Earlsferry.

Key characteristics:

- Large coastal settlements with an industrial character;
- Generally low-lying coast;
- Sandy beaches and bays, including the wide Largo Bay;
- Areas of reclaimed land protected by coastal defences;

Scale and Openness

2.213 A medium to large scale area, semi-enclosed by headland at Kincraig Point to the east and the Lothian coast to the south and Lammermuirs beyond. Views to the open sea are framed by the headlands

Form

2.214 The shore is varied, with contained bays, sand and narrow shingle beaches, boulder clay cliffs and areas of re-claimed land, including coal mining spoil heaps, which are protected by hard sea-defences. The hinterland is generally low-lying and gently undulating, dropping gradually down to the shore. Largo Bay is a widely curved bay of predominantly sandy beaches with some rocky outcrops to the south of Lower Largo. At the eastern extent near Earlsferry, small pocket beaches are enclosed by rock extrusions that protrude into the estuary.

Settlement

2.215 This is a very settled area, with settlement and large scale development extending along much of the coastline to the west of Leven. The seascape is influenced by the presence of masts, large scale industrial development and by the developed coastal edges, particularly around the settlements of Kirkcaldy, Leven, Buckhaven and Kinghorn.

Pattern and foci

2.216 The coast is characterised by long stretches of sandy beaches backed by settlement and broad expanses of gently sloping farmland. The headlands of Kincraig Hill to the east, and across the Forth, North Berwick Law and Bass Rock to the southeast, are prominent features that frame views eastwards to the open sea beyond the firth. The back drop of hills in views inland to the north is distinctive, particularly Largo Law.

Lighting

2.217 The stretch of coast is settled, with lighting associated with the docks and harbours, roads and industrial development dispersed along it. Street lighting is present within the settlement and along promenades. The area is also influenced by lighting from Edinburgh and settlement along the southern shore of the Forth.

Movement

2.218 The network of roads running between the settlements strongly influences the area. There is also movement from marine activities within the Firth of Forth and around the docks and harbours at the coastal edge.

Aspect

2.219 The aspect varies across this coastal stretch. South of Kirkcaldy the coastline faces east, looking out of the Firth of Forth past the Isle of May and Bass Rock. Kirkcaldy itself follows a gentle arc as the aspect turns from east to southeast facing along the settled front. Largo Bay continues the sweep, facing predominantly southwards, with the eastern outlook screened by Kincraig point.

How experienced

2.220 The seascape is experienced by a wide range of receptors, including large numbers of residents within settlements. Visitors to the towns and villages, generally experience the seascape from lower lying modified coastal edges , including harbours and promenades.

2.221 Recreational receptors include golfers on the Lundin Links, walkers following the Fife Coastal Path, as well as those engaging in other water-based recreational pursuits on the estuary itself.

Modification/Remoteness/Sense of Naturalness

2.222 This is a heavily modified coast, with harbours, reclaimed land and reinforced sea walls particularly around coastal towns. There are small pockets of attractive and more natural areas, such as around Largo Bay and West Wemyss.

2.223 There is little sense of isolation, with the coast being largely accessible by road as a result of the dispersal of the towns and villages along the coastal edge. Between the settlements, the Fife Coastal Path provides access along the length of the shoreline.

Exposure

2.224 The coastline is generally sheltered, facing into a broad, semi-enclosed areas of the firth contained, with limited exposure with the open sea.

Processes and dynamics

2.225 This stretch of coast is subject to a complex pattern of coastal processes. There is a strong westerly net drift of material from around Lower Largo to Kirkcaldy. At Lower Largo itself, the shore rock platform causes a drift divide with material to the east of this point moving eastwards due to the influence of wave action from differing directions. Moving down the coast to East and West Wemyss, there is a great deal of erosion and beachfront development is at risk. Colliery waste which in previous years was tipped onto the beaches is being eroded. At Kirkcaldy the harbour blocks the drift from the east and there is also a sea wall defence. South of this, due to the orientation of the coastline, net drift is slowed and there are sandy deposits – these are exposed to severe wave conditions travelling into the Firth of Forth from the North Sea.

Quality/condition

2.226 The area is heavily influenced by large scale development, particularly in the west, with insensitive development in places. However there are a large number of receptors and this is an accessible recreational coast.

Designations

2.227 The area east of Leven is designated as part of the East Fife AGLV. There is a small AGLV at Wemyss. The coastline south of Kirkcaldy is designated as part of another AGLV. There are coastal Inventory-listed designed landscapes at Ravenscraig Park and Wemyss Castle.

Sensitivity

2.228 The open sea to the east is not the main focus of views, except in the southern part where eastward views are channelled along the Firth. In this southern area, development is influential, particularly the large settlement of Kirkcaldy, and the industrial seafront at Methil and Leven. The more intact area of Largo Bay has a limited relationship with the outer Forth. The area is generally busy and complex, and is considered to be of **medium** sensitivity to offshore development.

Forces for Change

2.229 Future forces for change are likely to relate to development pressures, particularly around settlements and possibly large scale industrial development.

SA15 INNER FIRTH OF FORTH

Definition of regional seascape unit boundaries

2.230 This unit comprises the inner section of the Firth of Forth, covering both north and south shores. The inner Firth is enclosed to the east by the

headlands of Kinghorn Ness to the north, and Leith Docks to the south, some 8km apart. The island of Inchkeith in between provides further enclosure. The seascape area extends westward to the Forth Bridges, where the Forth narrows to less than 2km, beyond which the firth is more estuarine in character.

Key characteristics:

- Relatively narrow inlet, only partially maritime in character
- Scatter of small islands
- Settled coastlines to north and south, with a number of landmark buildings and bridges
- Frequent passing cargo ships and occasional cruise ships, as well as smaller pleasure craft
- Rocky shoreline, particularly to the north, with sandy beaches

Scale and Openness

2.231 Medium scale, increasingly contained by hills as the firth narrows to the west. Views to the outer firth, with very limited views to the open sea in the far distance. Small bays and wooded braes and steep hills provide localised areas of containment.

Form

2.232 The coastline is varied and more incised than that of the outer Firth. The northern coast is composed of a series of small bays with a foreshore of sand and shingle beaches backed by steeply rising and irregular coastal hills. Areas of reclaimed land and hard edges formed by docks, harbours and industrial development are also regular features.

Settlement

2.233 The coastal area is well settled. To the south, the suburbs of the city of Edinburgh occupy the shore, including Leith and Granton with their harbours. Further east the smaller settlement of Cramond clusters around the mouth of the Almond, beyond which is the estate of Dalmeny House. This whole coast therefore has a relatively developed appearance. Around the Forth Bridges, there is settlement on both sides of the Forth, as well as prominent infrastructure such as the Hound Point terminal. Along the north coast, settlement is limited to clusters, though the modern housing of Dalgety Bay is particularly prominent. The smaller settlements of Aberdour, Burntisland and Kinghorn each have their small harbours, with more industrial development at Burntisland.

Pattern and foci

2.234 The pattern of this area is defined by built development. To the north the pattern of villages alternating with wooded farmland is associated with the pattern of headlands and bays. To the south the pattern is simpler, being more continuously developed to the east and wooded parkland to the west.

2.235 The area has a wealth of visual foci. The small scattered islands within the firth form distinctive features, such as Inchcolm with its abbey, Inchmickery with its distinctive defences, and Cramond Island linked by a causeway. Arthurs Seat and Edinburgh Castle are landmark features on land to the south and the distinctive profile of the Pentland Hills form a recognisable back-drop to views from the north of the firth. Man-made foci include the Forth Bridges and the gasometer at Granton, as well as prominent settlements and the more distant Cockenzie power station.

Lighting

2.236 Well lit with almost continuous settlement following the coasts of the firth to the north and south. Shipping and the Hound Point terminal are a source of lighting within the firth itself. The Forth Bridges and floodlit.

Movement

2.237 The area is influenced by frequent shipping movement within the Forth, including container ships, oil tankers, cruise ships which moor off the Forth Bridge, and recreational sailing boats. The area is also influenced by air traffic approaching Edinburgh airport. Vehicular traffic on the many stretches of coastal roads, and trains on the Fife railways, also affect.

Aspect

2.238 The coastline is varied in its orientation, but predominantly the aspect is north/south facing across the Firth of Forth. The only significant east-facing area is the frontage of Dalmeny Estate, which looks along the Forth, various islands in the foreground.

How experienced

2.239 The Forth is highly visible from the towns and urban centres fringing it to the north and south. The water and the coastal edge is also highly used recreationally, particularly the Fife coast, with a high concentration of footpaths, cycle routes and opportunities for water-based activities. The firth itself is a focus of views, and provides a foreground.

Modification/Remoteness/Sense of Naturalness

2.240 Highly modified coast and coastal fringe, with large urban centres and industrial development extending up to the coastal edge. The predominance of built development and infrastructure means there is no sense of remoteness in this coast, though there are scattered areas with a degree of naturalness.

Processes and dynamics

2.241 Along both the southern and northern coastlines of the Firth of Forth, longshore drift occurs in a westerly direction, influenced by wave action in the North Sea. This is less pronounced on the northern shore where there are a number of self-contained bays. The southern coast of the Firth of Forth is sheltered from wave action. Sections of this coastline are also protected by concrete/blockwork revetments. Features including Granton Harbour and the breakwater at Cramond act as groynes, and there is considerable build-up of sand and pebbles in this area.

Quality/condition

2.242 The condition of the area is mixed. Industrial and harbour development often reduces apparent quality, while other settlements, such as the more intact village of Aberdour, are in better condition. Some parts of Edinburgh's waterfront have a settlement fringe character, with ongoing regeneration.

Designations

2.243 The coastline between Dalgety Bay and Kinghorn is largely designated as part of an AGLV. Inchkeith (Fife) is also an AGLV. On the Edinburgh side, the Dalmeny House parklands, and the open space between Cramond and Granton, are designated as AGLVs.

2.244 The extensive parklands of Dalmeny House, and the gardens of Lauriston Castle, are listed on the Inventory of Gardens and Designed Landscapes in Scotland. North of the Forth, there are Inventory-listed sites at Aberdour Castle, Donibristle House, and the more extensive policies of St Colme House.

Exposure

2.245 Very limited exposure due to the enclosed nature of this section of the firth and the sense of shelter provided by the hills inland.

Sensitivity

2.246 This area has a very limited visual relationship with the open sea. Although the area has a high number of receptors, it is extensively man-modified, including some inshore development, and frequent shipping movements. It is considered to be of **low** sensitivity to offshore development of the type proposed.

Forces for Change

2.247 Development pressure at the coastal edge and within the settlements abutting the coast.

SA16 EDINBURGH TO GULLANE

Definition of regional seascape unit boundaries

2.248 This unit extends from Leith Docks, eastwards to the small island of Eyebroughy, west of North Berwick. It includes the built-up shoreline of Portobello, Musselburgh, Cockenzie and Port Seton, as well as the less developed East Lothian coast around Gullane.

Key characteristics:

- A broad bay, generally low-lying;
- Developed western part of coast, including docks, harbours, and commercial development, as well as smaller-scale fishing villages;
- Open sandy bays to the east, with extensive sand and mudflats and dune systems;

- Northerly aspect means that views are often contained within the Firth of Forth;
- Designed landscapes and woodland along the less developed coast;
- Popular and accessible recreational areas, including Portobello beach, Gullane Bay and Aberlady Bay nature reserve.

Scale and Openness

2.249 The seascape is generally medium to large in scale, and most areas have a high degree of openness. There are no cliffs or other elevated coast to provide enclosure, and bays are broad. However, views to the open sea are generally limited, as most views are oriented toward the Fife coast. The undeveloped hinterland is also of medium to large scale, with large arable fields, although it is generally well wooded.

Form

2.250 The seascape unit comprises generally shallow, open bays, set within a wide, concave curve. The coast is low-lying, with no cliffs. Generally, the coastal plain is flat or very gently sloping. The foreshore is most often sandy, with dune systems behind some of the bays. Rocky outcrops define low-lying headlands, and provide the setting for harbours. Mud and sand flats extend below high tide, particularly in Aberlady Bay.

Settlement

2.251 The western part of this seascape area is increasingly densely settled. The principal settlements are the resort suburb of Portobello, the town of Musselburgh at the mouth of the Esk, and the villages of Prestonpans and Cockenzie and Port Seton. Further east the villages of Longniddry, Aberlady, and Gullane are set back from the coast. The settled areas of Leith (Seafield and Craigentinny) are set back from the coast, with commercial and industrial development lining the shore from Leith Docks to the mouth of the Braid Burn.

Pattern and foci

2.252 In the east, landscape pattern is defined by the large-scale designed landscapes, including Archerfield and Gosford House estates. These are interspersed with links golf courses. Elsewhere arable farmland is divided by deciduous shelterbelts and wooded burns. Settlements are generally clustered around a harbour, with a small old village surrounded by extensive 20th century development, particularly at Prestonpans and Musselburgh. At Portobello the Victorian street pattern is legible from the beach.

2.253 The principal visual focus in this seascape area is Cockenzie Power Station, with its two 153m-high chimneys clearly visible from most locations. The main natural landmarks visible are outside the seascape area, including North Berwick Law and the Bass Rock to the east, and Arthur's Seat to the west.

Lighting

2.254 This coastline is settled and developed, and lighting is a feature of night time views. Much of the coast has a road on the shore-front, and many sections

are lit, with additional lights from streetlighting within towns and villages. Industrial lighting at Cockenzie power station, including navigation lights on the chimneys, makes this a night time as well as a daytime landmark. Leith Docks and the surrounding industrial developments are also well lit. The eastern part of the area tends to be darker.

Movement

2.255 Most of this area has a road running along the shore, any many sections have busy A roads, including the A199 at Seafield and Musselburgh, and the A198 further east. The B1348 follows the coast between Musselburgh and Longniddry. The hinterland is generally busy, with a dense network of roads including the A1. Offshore movement is apparent as many ships move up and down the Forth, bound for Rosyth, Hound Point or Leith Docks. Recreational boating activity is more limited, with a few boats based in the small harbours. Sailing boats are often visible at weekends.

Aspect

2.256 This coast has a generally northerly aspect, with views across to Fife. This does change gradually along the seascape unit, as the coast curves around. From Portobello, the open sea can be seen, between North Berwick and Elie Ness, with North Berwick Law and the Bass Rock being prominent. Further east, views look more to the north, with Largo Law becoming a visual focus. Around Aberlady and Gullane, the aspect is principally northwest and west, with no view of the open sea, but views into the inner Forth and to the Forth bridges. Edinburgh and Arthur's Seat are key features in these views.

How experienced

2.257 There are many recreational destinations in this area, including come of the more popular beaches in the Lothians. In particular, Portobello beach is much visited by people from Edinburgh. Gullane Beach is also popular, while Aberlady Bay attracts birdwatchers. The long-distance John Muir Way runs east from Musselburgh, generally following the coast, and offering many coastal views to walkers. Other recreational users include golfers, visitors to Gosford House, people staying at caravan parks, and visitors to the coastal settlements.

2.258 The experience of the coast is mediated by development for much of this area, particularly at Musselburgh. Only at Aberlady Bay and other areas in the east is there a more immediate coastal experience. The sea in this sheltered area is generally relatively calm, and the enclosed views lead to a reduced sense of the marine edge.

Modification/Remoteness/Sense of Naturalness

2.259 The shoreline of Leith Docks is heavily modified, through historic lad reclamation and industrial development. Around Musselburgh, ongoing land reclamation of ash lagoons has created an area of flat, artificial ground extending in front of the settlement. Along most of the western part of this area, the coastline or immediate hinterland has been modified to some degree. Further east there is a greater sense of naturalness, particularly around the Aberlady Bay nature reserve where bird life is a part of the

seascape experience. However, no part of this coastline is far from development, and there is therefore very limited remoteness or wildness.

Exposure

2.260 Although generally low-lying, the coast is often sheltered, either by woodland associated with designed landscapes, or by built development. The enclosed nature of views also limits any sense of exposure along this coast.

Processes and dynamics

2.261 Tidal currents are relatively weak in this outer part of the Firth of Forth. Longshore drift is driven by wave action in the North Sea, directly in the western part of the seascape unit, and indirectly in the sheltered east. This results in a moderate, generally westward drift of material, interrupted by rocky outcrops. There is a mix of erosion and deposition ongoing, with groynes on Portobello Beach helping to retain material. Large sections of this coastline are protected by some form of sea wall or other marine defence, most prominently at Leith Docks.

Quality/condition

2.262 At its western end, this coastline is somewhat degraded. Industrial and other development has adversely affected the coastal character, particularly at Leith Docks and Musselburgh lagoons. Other areas are more intact, even where developed, such as Portobello beach and the older settlement nuclei. The condition of the coastline is generally better to the east, with intact sand dunes and saltmarsh.

Designations

2.263 The coastline east of Seton Sands is designated as an AGLV by East Lothian Council. There are Inventory-listed designed landscapes along the coast, at Cockenzie House, Gosford House, Luffness, Greywalls and Archerfield.

Sensitivity

2.264 This coastline has a very high level of human influence, particularly in the west, though the eastern areas are more intact. The limited nature of marine influence, and the relatively sheltered nature of this coast, reduces its sensitivity to development taking place offshore. The high level of residential and recreational use tends to increase its sensitivity. Overall, the sensitivity of this seascape area is considered to be **medium**.

Forces for Change

2.265 Development pressures in this area include ongoing redevelopment of industrial areas, for example at Leith Docks. The ash lagoons at Musselburgh continue to be used for disposal of ash from Cockenzie Power Station, and will eventually be reclaimed for recreational use. There are also development pressures for new housing across this area. The eastern part of this seascape area is less likely to be subject to change.

SA 17 EYEBROUGHY TO TORNESS POINT

Definition of regional seascape unit boundaries

2.266 The small island of Eyebroughy, west of North Berwick provides the northern extent and Torness Point provides the southern extent of the East Lothian Regional Seascape Unit. The visibility splays at the edge of this unit are defined by these headlands, with the area west of North Berwick providing views out to the North Sea and Torness Point containing views south.

Key Characteristics

- Diversity of coastal scenery and habitats;
- Extensive views due to flat terrain and few woodlands;
- Generally low-lying coast;
- Alternation of rocky headlands and sandy pocket bays;
- Backed by relatively unfragmented agricultural land;
- Popular recreational coast;
- Transport routes form prominent linear features;
- Relatively densely settled by the towns of Dunbar and North Berwick; and
- Major localised visual impacts of cement works and Torness Power Station.

Scale and Openness

2.267 A large scale coastline, generally open and allowing long views both seaward and along the coast. The low lying nature of the coastal landscape does not provide enclosure except in occasional areas of higher cliffs, such as around Tantallon Castle east of North Berwick. The hinterland is relatively open with areas of containment around urban areas.

Form

2.268 The coastline is generally composed of low rocky headlands, dividing sandy beaches. These headlands often comprise large areas of rocks which only occasionally rise up into the cliffs such as those around Tantallon. Beaches range from small pockets of sand to the broad estuarine sands of Belhaven Bay, where a substantial dune system has built up. Elsewhere, beaches are backed by arable farmland, and by sloping cliffs. A number of small islands stand offshore of the rockier sections, the most prominent being the volcanic Bass Rock. Other offshore islands include Cragleith and Eyebroughy. Inland, North Berwick Law is the highest point on this coast, also an isolated volcanic feature. At Dunbar there are a series of rounded headlands which are bounded by extensive rocky cliffs. Along the Barns Ness shoreline there are a number of small embayment beaches intersected by rock outcrops. The largest appears to the south of Barns Ness lighthouse, where the beach is predominantly sandy and low dunes have formed.

Settlement

2.269 Settlement on the shoreline in this landscape is concentrated at Dunbar and North Berwick, a small settlement to the northern extents of the regional seascape unit sited on a headland. There are scattered farmsteads and dwellings along a network of major and minor roads inland. Tourism has a strong impact on this landscape type and a number of camping and caravan sites are prominent as well as golf courses close to the coastal edge. Some isolated industrial features including Torness nuclear power station and cements works.

Pattern and foci

2.270 There is a unifying influence in the landscape in the form of the relatively linear coastline with open beaches. The low-lying nature of the coast allows a number of natural and man-made features to provide prominent landmarks, including Bass Rock and North Berwick Law to the north, the Cement Works at Dunbar and Torness Power Station on the coastal edge to the south of the regional seascape unit.

2.271 Turbines may visually compete but could also relate with the strong industrialised foci of the power station at Torness in some views. North Berwick Law is a prominent feature in the hinterland.

Lighting

2.272 This coastline is settled and developed in places and lighting is a feature of time views, including industrial lighting at Torness, street lighting in towns and along the A1. There would be some lighting from ships at sea. There is a sense of space in the low-lying nature of the coast and lighting from man-made features along the coast would provide prominent elements along the shoreline at night.

Movement

2.273 The A1087 runs along the coast from Dunbar to North Berwick. The busy A1 road and the East Coast Main Line pass close to the coastline to the south. The A1 constitutes an important transport corridor which strongly influences the adjoining landscape. There will also be movement from ships at sea and marine activities around the recreational beach areas of the coastal edge.

Aspect

2.274 The coastline faces north-east, with limited variation and as a result can experience severe wave conditions generated by the North Sea. During the summer months, the sun rises to the north-east, swinging around to the south-east during winter. Seaward views look across to Fife Ness and the East Neuk, with the Isle of May in the foreground.

How experienced

2.275 The seascape is experienced in a range of ways, including by numerous residents. Tourists and visitors to the area experience the coast from the seafronts of North Berwick and Dunbar, and from the beaches along the

coast. Walkers on the John Muir Way experience the coastline unfolding and changing gradually, while those who climb North Berwick Law experience a broad panorama taking in this whole seascape. Other visitors experience the historic aspect of the coast, at Tantallon Castle, or the natural heritage aspect, using the remote cameras at the Seabird Centre. Travellers on the A1 and East Coast Main Line experience part of this coast as they pass rapidly between Dunbar and Cockburnspath. The extensive tidal reach of the beaches results in a calm sea, however where rocks are present, the power of the waves against the rocks results in a dynamic and audible sense of the sea along the coast.

Modification/Remoteness/Sense of Naturalness

2.276 The arable, settled nature of the hinterland has an effect on the seascape, particularly where development adjoins the coast. The prominent power station at Torness has a strong influence over a long section of coast, reducing the sense of naturalness. The level of modification is reduced in areas where some separation is available between coast and land, such as below the cliffs around Seacliff, or in the south of the area.

2.277 Transport corridors and intrusive industrial development detract from the otherwise calm character of this landscape. Busy transport routes on land and sea gives a modified alongside built form at Dunbar and the industrialised coast consisting of the Power Station at Torness. The medium to large scale arable fields and sparse settlement areas provides a more naturalistic character. There is a presence of large tanker ships.

2.278 The coast is accessible via the John Muir Way up to Dunbar. Between Dunbar and North Berwick there are intermittent roads which access the coast from the A198, otherwise this stretch of the coast is not easily accessible and there is a sense of isolation along this stretch of coast due to the lack of structures and lack of human influences.

Exposure

2.279 This seascape does not have particularly high exposure. It is an open seascape but generally low lying, and often feels sheltered. The arable farmland, often wooded, quickly reduces the sense of coastal exposure which is only felt at the coastal edge.

2.280 There is a sense of exposure around the open, expansive areas of sands along the coast, enclosed by the low relief of the surrounding hinterland which emphasises the breadth of the water surface. The openness and expanse of water conveys the sense of the sea, an attribute which can be used to help accommodate larger scaled development, which is diminished in scale relative to the expanse of the water.

Process and dynamics

2.281 The extensive tidal reach of the beaches emphasise the dynamic experience of the sea in these areas. A dynamic character is also reflected where the coast is exposed to the power of the waves. There are few coastal defences along this coastline. At Dunbar there is a seawall and at Torness Point a substantial rock revetment and seawall protect the installation.

2.282 The mean spring tidal range within the area is 4.5m at Dunbar with a mean neap range of 2.2m. The tidal cycle has a period of just over 12 hours and high tide occurs at approximately the same time along the length of the coast.

Quality/condition

2.283 The quality and condition of the East Lothian regional seascape unit is Low – Medium. Existing development, the industrialised coastline, transport infrastructure and busy shipping lanes provide a development character in places to the regional seascape area.

Designation

2.284 The coastline is designated as part of an Area of Great Landscape Value (AGLV). The coast west of north Berwick is designated as the Firth of Forth Site of Special Scientific Interest (SSSI) around Belhaven Bay. Aberlady Bay is a Local Nature Reserve. North Berwick Law is designated as a SSSI as is the coast north of Dunbar and Barns Nest Coast.. There are Gardens and Designated Landscapes at Grey Walls, Archerfield, Luffness, Tyninghame. and Broxmouth Park. There are several Conservation Areas along the coast.

Sensitivity

2.285 **Medium** Sensitivity. Existing development, the industrialised coastline and transport infrastructure already give a localised development character in places and busy shipping lanes are present in the sea. Internal intervisibility is generally high, due to the simplicity of the landform and the lack of tree cover.

2.286 Turbines would relate to the relatively large scale seascape and generally linear coastline. Wind energy would relate to the perception of exposure and would be in keeping with the concentration of industrial development located along the coastline including the Power Station at Torness and Oswell Mains cement works.

Forces for Change

2.287 Pressure for onshore wind energy development within the Lammermuir Hills and this may increase sensitivity in some areas due to the potential cumulative impact. There is no significant longshore drift evident on the beach systems and hence areas of long-term erosion are not all that apparent. The northern end of Belhaven Bay known as Sandy Hirst may experience erosion.

SA 18 TORNESS POINT TO ST ABBS HEAD

Definition of regional seascape unit boundaries

2.288 Torness Point provides the northern extent and St Abb's Head provides the southern extent of the St Abb's Head to Torness Point Regional Seascape Unit. The visibility splays at the edge of this unit are defined by these headlands, with Torness Point providing views out to the North Sea and St Abb's Head containing views south.

Key Characteristics

- A landscape with a barren, exposed character and dramatic open views;
- Coastline formed by high, near vertical cliffs carved into strongly-folded resistant sedimentary rocks;
- Pocket beach at Pease Sands;
- Land cover dominated by arable and pastoral fields of varying size, field boundaries of mature thorn hedges with occasional hedgerow trees on lower ground;
- Gorse and other scrub common on steep slopes and exposed locations;
- Widely dispersed farmsteads along minor roads; and
- Cocksburnspath located inland near the coastal edge.

Scale and Openness

2.289 There is a transition between the hill slopes of the Lammermuir hills and the coast. Towards the coast the terrain opens out into a broad, gently undulating plain elevated along the coastline, giving the area an atmosphere of tranquillity.

2.290 The expansive views from the elevated coastline and open, exposed landscape has dramatic distant views along the rugged coastline and over the horizon of the North Sea. Localised enclosure such as moors and small scale settlement are located inland and create a more intimate and contained character. The pocket beach at Pease Sands provides accessible enclosure along the rugged coast.

Form

2.291 Generally elevated, the topography ranges from sea level to 250m, is characterised in inland areas by an undulating landform with strong slopes, valleys and areas of moor vegetation. At the coast the land drops away, in some place steeply to cliffs with a rocky shoreline below. There are significant headlands at St Abb's Head, Fast Castle Head and Reed Point. The majority of the shoreline is indented by rock form with steep sides which result in elevated views out to the sea.

Settlement

2.292 Settlement in this landscape is concentrated in a sheltered location inland at Cocksburnspath to the north of the area. There are scattered farmsteads and dwellings along a network of major and minor roads inland. Fast Castle is located on the coast along with several other National Trust properties. Tourism has a strong impact on this landscape and a number of camping and caravan sites are prominent, particularly around the pocket beach at Pease Sands.

Pattern and foci

2.293 The predominantly rugged coastline comprising cliffs creates a unifying influence along the coast. The localised focus of the headlands at St Abbs and

Fast Castle Head are prominent features creating a strong degree of indentation.

Lighting

2.294 Little lighting on land and none at sea, apart from ships.

Movement

2.295 The area is traversed by the A1107. The busy A1 road and the main East Coast rail line are located inland of several areas of moor. The A1 constitutes an important transport corridor which strongly influences the adjoining landscape.

2.296 Existing marine based activities consist of boats in harbours and ships at sea.

Aspect

2.297 The coastline faces north-east, with limited variation and as a result can experience severe wave conditions generated by the North Sea. During the summer months, the sun rises to the north-east, swinging around to the south-east during winter. On clear days the east facing and turbines would be backlit in the morning.

How experienced

2.298 This is a largely open, exposed landscape with dramatic distant views along the rugged coastline and over the North Sea. Experienced from transport corridors, major rail and road routes, settlement and from beaches and generally in the context of activity. There are panoramic views from St Abb's Head.

Modification/Remoteness/Sense of Naturalness

2.299 Busy transport routes on land and sea, with the presence of large tanker ships, gives a modified feel although the presence of small traditional settlements and a strong rural hinterland counters this impression. The high cliffs, moorland and sparse settlement of St Abb's Head has a more naturalistic character. There is a sense of ruggedness, naturalness and remoteness along the shoreline. There are no footpaths along the majority of the costal edge resulting in little actual accessibility to the coast and the hinterland, except along the A1107 inland. This gives a sense of isolation to the north of St Abb's Head.

Exposure

2.300 Fairly exposed due to openness and lack of shelter provided by the landform. St Abb's Head is particularly exposed and windswept.

Process and dynamics

2.301 A dynamic character is reflected where the coast are exposed to the power of the waves along the rugged coast. At Torness Point a rock revetment gives coastline protection. At Pease Sands gabions provide coastal defences around the caravan park.

Quality/condition

2.302 The quality and condition of the regional seascape unit is Medium.

Designation

2.303 The coastline is designated as part of an Area of Great Landscape Value (AGLV). Pease Bay, Siccar Point and Abbs Head to Fast Castle, Coldingham Common Long and Coldingham Lock SSSI are located along this stretch of coast. An Area of Berwickshire and North Northumberland Special Area of Conservation (SAC) is also located along and beyond the coast.

Sensitivity

2.304 **Medium** Sensitivity. Turbines would relate to the relatively large scale seascape and generally linear coastline, although turbines may visually compete with the strong foci of the high cliffs at St Abbs. Busy shipping lanes are present in the sea although the land is not over developed. Expansive views are available along the coastline and to and from the adjoining moorland, giving high intervisibility.

2.305 Wind energy would relate to the perception of exposure but may conflict with the scale and character of the dramatic coastal edge which exists in some sections of coastline.

Forces for Change

2.306 Pressure for onshore wind energy development within the Lammermuir Hills and this may increase sensitivity in some areas due to the potential cumulative impact. Integrity of agricultural character. Impact of A1 dualling scheme and potential tourism development pressure.

SA 19 ST ABB'S HEAD TO EYEMOUTH

Definition of regional seascape unit boundaries

2.307 St Abb's Head provides the northern extent and Eyemouth provides the southern extent of the Eyemouth to St Abbs Regional Seascape Unit. The visibility splays at the edge of this unit are defined by these headlands, with St Abb's Head providing views out to the North Sea and Ramfauds south of Eyemouth containing views south.

Key Characteristics

- A diverse coastal landscape of rugged sea cliffs;
- A landscape with a barren, exposed character and dramatic open views enclosed by the significant headland to the North Sea;
- Coastal edge rises to the isolated volcanic cliffs at St Abb's Head, frequented by tourists and solely accessible via footpaths;
- Settlement sited at the coast in sheltered folds and valleys inland at Coldingham and at the harbours edge at Eyemouth and St Abbs;
- Large rolling countryside inland, with wooded areas and widely dispersed farmsteads along minor roads;
- Transport corridors occupy elevated locations along the clifftops; and

- The Berwickshire Coast Path runs alongside the coast between St Abb's Head and Eyemouth.

Scale and Openness

2.308 The rugged, exposed and dramatic coastline and has distant views along the shoreline and over the North Sea.

Form

2.309 Generally elevated, the topography is characterised in inland areas by a rugged, strongly undulating landform with strong slopes, hillocks and gently contrasting sloping areas. At the coast the land drops away steeply to cliffs with a rocky shoreline below.

Settlement

2.310 Settlement in this landscape is concentrated in sheltered locations along the coast at the harbours of St Abbs and Eyemouth. The village of Coldingham which is located inland dates from early medieval times. Eyemouth is on the coast and is part seaside resort and part working fishing harbour. There are scattered farmsteads and dwellings along a network of major and minor roads inland. Modern dwellings and village fringe developments are found in a number of areas. Tourism has a strong impact on this landscape type and a number of camping and caravan sites are prominent.

Pattern and foci

2.311 Localised focus of the headlands at St Abbs and Eyemouth along a unified rugged coastline.

Lighting

2.312 This coastline is settled and developed in places and lighting is a feature of views, including street lighting in Eyemouth, Coldingham and St Abbs and along the A1107. There would be some lighting from ships at sea and the lighthouse at St Abb's Head. There is a sense of space from elevated sections of the coast.

Movement

2.313 The area is traversed by the A1107 near to the coast. The busy A1 road and the main East Coast rail line run close to the coast south of Eyemouth. The A1 constitutes an important transport corridor which strongly influences the adjoining landscape.

Aspect

2.314 The coastline which faces east turns inland between the headlands at St Abb's Head and Eyemouth. The east facing turbines would be backlit in the morning. Inland hills tend to limit views of sunsets.

How experienced

2.315 This is a largely open, exposed landscape with dramatic distant views along the rugged coastline and over the North Sea. Experienced from transport corridors, major rail and road routes, settlement and from beaches and

generally in the context of activity. There are panoramic views from St Abb's Head.

Modification/Remoteness/Sense of Naturalness

2.316 Busy transport routes on land and sea gives a modified feel although the presence of small traditional settlements and a strong rural hinterland counters this impression. The high cliffs, moorland and sparseness of St Abb's Head has a more naturalistic character.

Exposure

2.317 Fairly exposed due to openness and lack of shelter provided by landform. St Abbs is particularly exposed and windswept with inland areas of the coastline slightly more sheltered.

Process and dynamics

2.318 The extensive tidal reach of the beaches emphasise the dynamic experience of the sea in these areas. A dynamic character is also reflected where the coast is exposed to the power of the waves.

Quality/condition

2.319 The quality and condition of the regional seascape unit is High.

Designation

2.320 The Berwickshire and North Northumberland Special Area of Conservation (SAC) are located along and beyond the coast. The Berwickshire Coast SSSI is also located along this stretch of coast.

Sensitivity

2.321 **High** Sensitivity. Turbines may be evident from the elevated, well-visited yet isolated cliffs at St Abb's Head. The turbines may visually compete with the strong foci of the high cliffs at St Abb's Head. Existing development and transport infrastructure already give a localised development character in places and busy shipping lanes are present in the sea. Internal intervisibility is generally high, due to the simplicity of the landform inland. Expansive views are available along the coastline with high external intervisibility and sensitivity. Care should be taken not to encroach on panoramic views from the more remote St Abb's Head.

2.322 Wind energy would relate to the perception of exposure but may conflict with the scale of the dramatic coastal edge which exists in some sections of coastline.

Forces for Change

2.323 Pressure for expansion in existing villages and the impact of the A1 dualling scheme.

SA 20 EYEMOUTH TO BERWICK-UPON-TWEED

Definition of regional seascape unit boundaries

2.324 Eyemouth provides the northern extent and Berwick-upon-Tweed provides the southern extent of this Regional Seascape Unit. The visibility splays at the edge of this unit are defined by these headlands, with Berwick-upon-Tweed providing views out to the North Sea and Eyemouth containing views north.

Key Characteristics

- The coastline is relatively linear, and is comprised of mainly rocky cliffs;
- The enclosed harbour at Burnmouth is a feature in the area and is also surrounded by rocky cliffs;
- There are several small headlands to the south of Eyemouth, including Agate Point and Horse Head;
- The Berwickshire Coast Path runs close to the shoreline;
- Inland the medium to large scale landscape is open and undulating; and
- The busy A1 road and the main East Coast rail line runs close to the coast.

Scale and Openness

2.325 The land rises relatively sharply from the coast to the A1 and the main East Coast rail line. There are views of the sea from the elevated landform along the coastal edge giving a sense of scale and openness, although the steep cliffs and rocks below also create a sense of enclosure. The coastal fringe landscape is rocky and linear and only indent at Harker's Haven, Burnmouth Bay and at Marshall Meadows Point.

Form

2.326 At the coast the land drops away, in some place steeply to cliffs with a rocky shoreline below. Inland, areas comprise of an undulating landform with little vegetation. There are several small headlands located along the coast and indents at Burnmouth harbour and Marshall Meadows Bay.

Settlement

2.327 The town of Berwick-Upon-Tweed is located to the south of the area and Eyemouth is located to the north. Burnmouth which is accessed via a steep road which then stretches along the harbour developed as a small fishing harbour and still retains some of its original character. Burnmouth lies at the point where a burn slices through the high cliffs Inland the coastal plain is characterised by small nucleated settlements. There is a Golf Club along the coast at Eyemouth and a caravan park at Marshall Meadows Point.

Pattern and foci

2.328 There is a unifying influence of the linear coastline. There is the localised focus of Burnmouth harbour and the development at Berwick-upon Tweed and Eyemouth at either end of the unit.

Lighting

2.329 Little lighting on land at the major settlements and none at sea, apart from ships.

Movement

2.330 The busy A1 road and the main East Coast rail line run close to the coast. The A1 constitutes an important transport corridor which strongly influences the adjoining landscape.

Aspect

2.331 East facing and turbines would be backlit in the morning.

How experienced

2.332 This is a largely open, exposed landscape with distant views from the rugged coastline over the North Sea. Experienced from transport corridors, major rail and road routes, settlement at Berwick-upon-Tweed, Eyemouth and Burnmouth as well as recreational areas. The area is also experienced from the Berwickshire Coast Path which at times is located on the very edge of the cliffs.

Modification/Remoteness/Sense of Naturalness

2.333 Busy transport routes on land plus Berwick-upon –Tweed, Eyemouth and Burnmouth gives a modified feel. The cliffs and small headland give the area a more naturalistic feel.

Exposure

2.334 Fairly exposed due to elevated character on the cliff tops and along the rugged coastline.

Process and dynamics

2.335 A dynamic character is reflected where the coast is exposed to the power of the waves along the cliffs.

Quality/condition

2.336 The quality and condition of the Eyemouth to Berwick-upon-Tweed regional seascape unit is Medium. Existing development in the main centres and transport infrastructure provide a development character in places. The linear coastline is relatively unspoilt.

Designation

2.337 The coastline is designated as part of an Area of Great Landscape Value (AGLV). The Berwickshire and North Northumberland Special Area of Conservation (SAC) are located along and beyond the coast. Netherbyres and Ayton Castle Garden and Designated Landscapes and Burnmouth Coast SSSI are also located in the area.

Sensitivity

2.338 **Low** Sensitivity. Turbines would relate to the relatively linear elevated coastline. Existing development and transport infrastructure already give a

localised development character in places and shipping lanes are present in the sea.

Forces for Change

2.339 Impact of A1 dualling scheme and potential tourism development pressure along with the decline of fishing industries.

SA 21 BERWICK-UPON-TWEED TO HOLY ISLAND

Definition of regional seascape unit boundaries

2.340 Berwick-upon-Sea provides the northern extent and Holy Island provides the southern extent of the Holy Island to Berwick-upon-Tweed Regional Seascape Unit. The visibility splays at the edge of this unit are defined by these headlands with Berwick-upon-Tweed providing views out to the North Sea and Holy Island containing views south.

Key Characteristics

- Berwick-upon-Tweed and Holy Island are distinctive features;
- Narrow, low-lying, windswept coastal plain with wide views east towards the sea;
- Diverse coastal scenery, with a coast of spectacular high cliffs, off-shore islands, and rocky headlands to the north, contrast with a coast of wide sweeping sandy bays backed by sand dunes and intertidal flats to the south;
- An intensively farmed landscape of predominantly open mixed arable land with limited trees and woodland, and permanent pasture/semi-natural grassland typical of the valleys and coastal fringes;
- The River Tweed crosses the coastal plain at Berwick-upon-Tweed;
- Lindisfarne National Nature Reserve is located along the shoreline south of Berwick-upon-Tweed;
- The Northumberland Coast Path runs parallel to the coast ;
- Holy Island is accessed via the Lindisfarne Causeway;
- A distinctive historic heritage reflects the importance of ecclesiastical influences and the strategic defence of the coast as well as the English/Scottish border. Features include prominent medieval castles, fortifications and structures from both world wars and religious buildings; and
- Dispersed pattern of isolated farmsteads, small nucleated villages, fishing villages and small coastal resort towns.

Scale and Openness

2.341 The coastal fringe landscape is varied. Spectacular and inaccessible high rocky cliffs characterise the coast to the north of the Tweed estuary. To the south are softer limestone cliffs, the sandy beaches of Cocklawburn and Cheswick

and the extensive intertidal mud flats, saltmarsh and sand dunes of Lindisfarne. The largely straight coastline and open, exposed landscape with wide, sweeping, sandy bays backed by sand dunes, has dramatic distant views along the rugged coastline and over the North Sea.

Form

2.342 There are headlands in the extreme north of the area with less resistant areas being eroded to form bays at Cheswick Sands, Cocklawburn Beach as well as Lindisfarne Natural Nature Reserve form sandy flat areas.

Settlement

2.343 The walled and extensively fortified town of Berwick-Upon-Tweed, located at the river's mouth, has a well-preserved form and character which reflects its strategic importance in Elizabethan times and its past prosperity as an agricultural market town and fisheries port. Berwick was extensively fortified as a walled town and formed a cornerstone of Tudor defences. The river Tweed formed a natural frontier between the kingdoms of England and Scotland, and the landscape of the adjacent coastal plain has been strongly influenced by the legacy of medieval cross-border warfare.

2.344 Smaller coastal towns and villages have developed as fishing and trading centres, but are now more geared towards tourism. There is a dispersed pattern of isolated farmsteads, small nucleated villages, fishing villages and small coastal resort towns.

2.345 The Holy Island of Lindisfarne is linked to the mainland only by a tidal causeway. The island retains a remote, spiritual quality which first prompted the founding of an ancient monastery in 635. Lindisfarne castle is located on the south east of the island.

Pattern and foci

2.346 The localised focus of the Berwick-upon-Tweed and Holy Island settlements. Otherwise the coast is relatively flat south of Berwick-upon-Tweed.

Lighting

2.347 There is little lighting on land and none at sea, apart from ships. There would be some lighting from Berwick-upon-Tweed and Holy Island on the coast.

Movement

2.348 The busy A1 road and the main East Coast rail line runs close to the coast. The A1 constitutes an important transport corridor which strongly influences the adjoining landscape.

Aspect

2.349 East facing turbines.

How experienced

2.350 This is a largely open, exposed landscape with dramatic distant views from the sand dunes and beaches as well as from the northern rugged coastline over the North Sea. The landscape is experienced from transport corridors, rail and road routes, Berwick-upon-Tweed, Holy Island and from beaches.

Modification/Remoteness/Sense of Naturalness

2.351 Busy transport routes on land and sea plus Berwick-upon –Tweed gives a modified feel although the presence of small traditional settlements and a strong rural hinterland counters this impression. Presence of large tanker ships. The island and sand dunes have a more naturalistic character.

Exposure

2.352 Fairly exposed due to openness and lack of shelter provided by sand dunes and beaches and rugged coastline to the north.

Process and dynamics

2.353 The extensive tidal reach of the beaches emphasise the dynamic experience of the sea in these areas. A dynamic character is also reflected where the coast are exposed to the power of the waves.

Quality/condition

2.354 The quality and condition of the Holy Island to Berwick-upon-Tweed regional seascape unit is Medium.

Designation

2.355 The coastline is designated as part of an Area of Great Landscape Value (AGLV). Lindisfarne RAMSAR and National Nature Reserve are located to the south of the regional seascape unit and stretches around Holy Island. Bamburgh Coast and Hills SSSI is located along the coastal edge. The Berwickshire and North Northumberland Special Area of Conservation (SAC) are located along and beyond the coast. Lindisfarne Castle Registered Park and Garden is located on Holy Island.

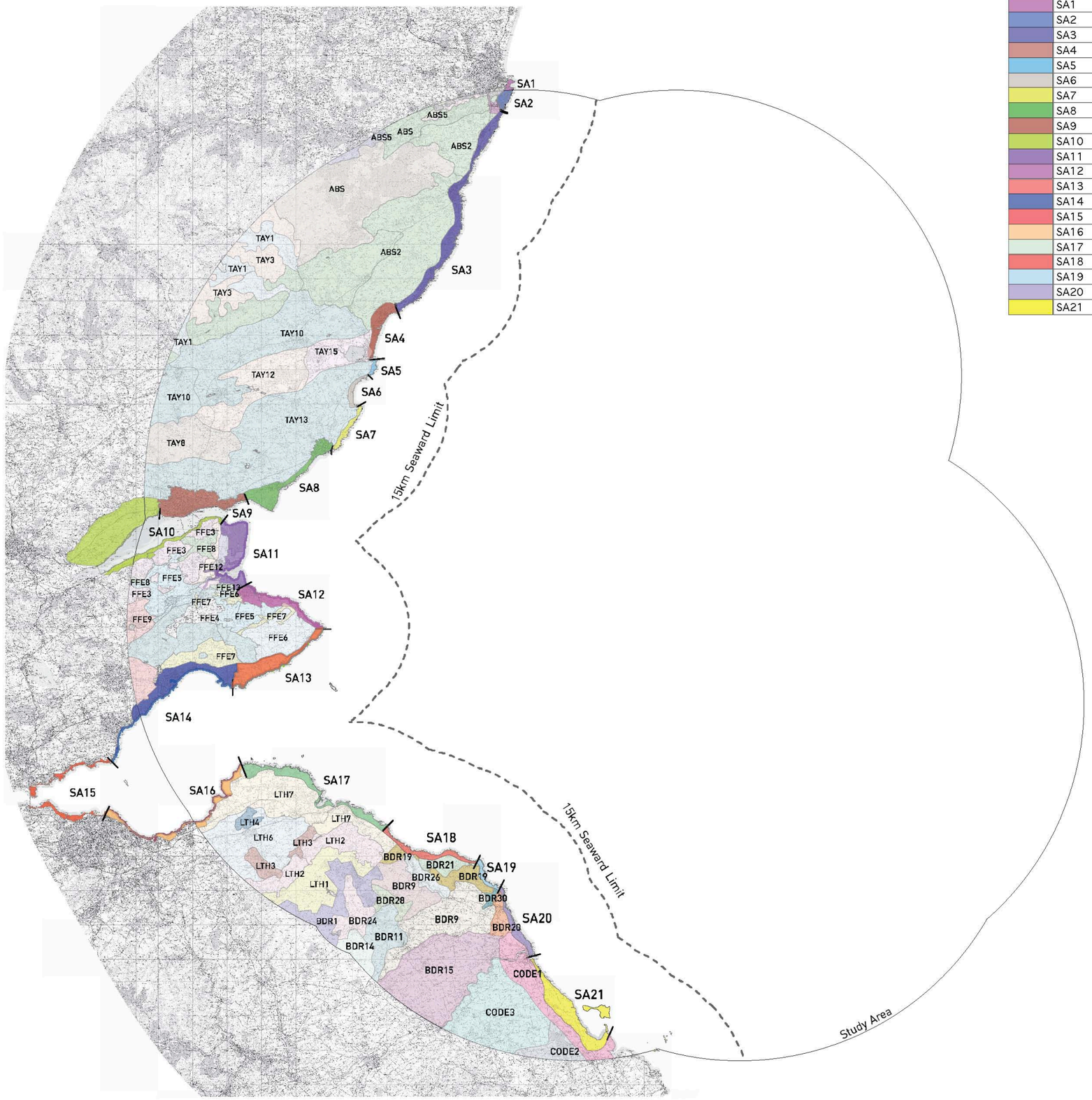
Sensitivity

2.356 **Medium** Sensitivity. Turbines would relate to the relatively large scale seascape and generally linear coastline. Existing development and transport infrastructure already give a localised development character in places and busy shipping lanes are present in the sea. Expansive views are available along the coastline giving a high external intervisibility.

2.357 Wind energy would relate to the perception of exposure but may conflict with the scale and character of traditional settlements and the soft coastal edge which exists in some sections of coastline. Turbines may visually compete with the island foci of the Holy Island.

Forces for Change

2.358 Pressure for expansion in existing villages, the impact of the A1 dualling scheme and potential tourism pressure. The decline of the coal-mining and fishing industries and the increasing importance of recreation and tourism has brought about changes to the character of the coastal plain.



		REGIONAL SEASCAPE CHARACTER UNITS/AREAS
	SA1	Nigg Bay
	SA2	Greg Ness to Cove Bay
	SA3	Cove Bay to Milton Ness
	SA4	Montrose Bay
	SA5	Long Craig
	SA6	Lunan Bay
	SA7	Lang Craig to The Deil's Heid
	SA8	Arbroath to Monifieth
	SA9	Dundee
	SA10	Inner Firth of Tay
	SA11	St Andrews Bay
	SA12	St Andrews to Fife Ness
	SA13	East Neuk of Fife
	SA14	Kirkcaldy & Largo Bay
	SA15	Inner Firth of Forth
	SA16	Edinburgh to Gullane
	SA17	Eyebroughy to Torness Point
	SA18	Torness Point to St Abbs Head
	SA19	St Abbs Head to Eyemouth
	SA20	Eyemouth to Berwick upon Tweed
	SA21	Berwick-Upon-Tweed to Holy Island

		LANDSCAPE CHARACTER AREAS
	ABC1	Major River Valleys
	ABC4	Open Farmland
	ABS2	Agricultural Farmlands
	ABS4	Moorland Plateaux
	ABS5	Straths and Valleys
	BDR1	Dissected Plateau Moorland
	BDR9	Platform Farmland
	BDR11	Grassland with Hills
	BDR14	Upland Fringe Moorland
	BDR15	Lowland with Drumlins
	BDR16	Rolling Lowland Margin
	BDR19	Coastal Farmland
	BDR20	Coastal Pasture
	BDR21	Coastal Moorland
	BDR24	Upland Valley with Farmland
	BDR26	Pastoral Upland Fringe Valley
	BDR28	Wooded Upland Fringe Valley
	BDR30	Coastal Valley
	FFE3	Upland Foothills
	FFE4	Pronounced Volcanic Hills and Craigs
	FFE5	Lowland Hills and Valleys
	FFE6	Lowland Open Sloping Farmland
	FFE7	Lowland Dens
	FFE8	Lowland Glacial Meltwater Valleys
	FFE9	Lowland River Basin
	FFE11	Coastal Hills
	FFE12	Coastal Terraces
	LTH1	Uplands
	LTH2	Upland Fringes
	LTH3	Lowland River Valleys
	LTH4	Lowland Hills and Ridges
	LTH6	Lowland Plains
	LTH7	Coastal Margins
	TAY1	Highland Glens
	TAY3	Highland Summits and Plateaux
	TAY10	Broad Valley Lowland
	TAY12	Low Moorland Hills
	TAY15	Lowland Loch Basin
	CODE 1	North Northumberland and Coastal Plain
	CODE 2	Northumberland Sandstone Hills
	CODE 3	Cheviot Fringe
	URBAN	Urban

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REGIONAL SEASCAPE AND LANDSCAPE CHARACTER AREAS

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Date : 21.09.11	S.0340_02-A
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12H The Observability of Offshore Wind Turbine Lighting

PREFACE

1 This technical report has been produced to accompany ICOL's Environmental Impact Assessment (EIA) Report and relates to the potential observability of the wind turbine lighting requirements for aviation and maritime purposes and should be read in conjunction with Chapter 12: Seascape, Landscape and Visual Impact Assessment.

2 This technical appendix has been produced following discussions during the consultation process with key stakeholders, including Scottish Natural Heritage, Angus Council and East Lothian Council. The information contained within this appendix provides further information on the likely observability of lighting associated with wind turbines, and provides information on the different parameters that need to be considered when determining how visible a light will appear at difference distances from its source.

3 It can be seen from the technical report that the observability of a light can vary depending on the environmental conditions, colour of the light, proximity of light to others, the background illumination levels and the position of the observer at the time.

The Observability of Offshore Wind Turbine Lighting

Professor Philip Best

Institute for Astronomy, University of Edinburgh

7th May 2018

Executive Summary

This report was commissioned by Inch Cape Offshore Limited (ICOL) to investigate the potential observability of lighting placed upon offshore wind turbines. The visibility of the lights is investigated as a function of their power and the distance that they are observed from. The effects of attenuation of light as it passes through the atmosphere are taken into account, for atmospheric conditions typical of coastal UK locations. Consideration is made of different potential colours of lighting. It is shown that a single 2000 candela light, viewed from a distance of 20 km, will have the same apparent brightness as typical bright stars in the night sky, such as those in the constellation of Orion. The minimum detectable light levels are evaluated, taking into account the properties of the human eye. A 2000 candela light would be potentially visible (on a moonless night, away from street lighting but considering realistic levels of airglow around the Lothian / Fife coastline) to a distance of approximately 40 km for a white light. For yellow or red lights, due to the lower sensitivity of the eye at those wavelengths in low light levels, the corresponding maximum visible distances are 36 km and 37 km respectively. It is also shown that the contribution to the overall light level provided by a typical offshore windfarm, located 15km or further from the coast, will be lower even than the ambient levels provided by starlight on a moonless night.

Report prepared on behalf of Edinburgh Innovations Ltd, a wholly-owned subsidiary company of the University of Edinburgh

1 Background and terminology

The total amount of energy that a light source emits per unit time is known as its *power* or *radiant flux*, and is measured in *Watts* (e.g. a 60 W light bulb). This energy can be spread across a wide range of wavelengths of light, some of which are not detectable by the human eye. The amount of energy per unit time emitted at wavelengths detectable by the human eye is known as *luminous flux*. Formally, this is the radiant flux weighted by the sensitivity of the eye at different wavelengths (see Section 3 for further discussion of the eye sensitivity function). Luminous flux is measured in *lumens*.

Another commonly used measure of the intrinsic brightness of a light source is the *luminous intensity*, defined as the luminous flux per unit solid angle in a particular direction. For an isotropic light source (ie. light emitted equally in all directions), the luminous flux and luminous intensity are simply related by a factor of 4π. Luminous intensity is measured in *candelas*.

A more distant light source appears fainter, since the emission spreads out over a larger area. The observability of light depends upon the *illuminance* of the light, which has units of energy per unit time per unit area. For perfect transmission of light (ie. no light absorbed or scattered by the medium through which it is passing), the illuminance (I) is related to the luminous intensity (L) by:

$$I = \frac{L}{D^2} \tag{1}$$

where D is the distance between the light source and the observer (in metres).

2 Atmospheric attenuation of light

In reality, light is attenuated by scattering and absorption processes as it travels through the atmosphere. The attenuation is described by the *optical depth* of the attenuating medium, τ, such that the unattenuated fraction of light (f) is given by

$$f = \exp(-\tau) \tag{2}$$

(where $\exp$ is the exponential function). The optical depth depends upon the amount of attenuating material that the light passes through, and so in the case of light travelling through the atmosphere near the surface of the Earth, the optical depth scales proportionally to the distance travelled. This can be written as:

$$\tau = \tau_0 \left(\frac{D}{1\,\mathrm{km}} \right) \tag{3}$$

where τ_0 is the attenuation for a characteristic distance of 1 km. The value of τ_0 depends on the properties of the atmosphere, and also depends on the wavelength of the light that is being observed.

Atmospheric optical depth has been widely studied, by measuring the attenuation of light as it passes vertically through the atmosphere from the edge of space to the surface of the planet (ie. the attenuation of incoming light from the Sun or stars, or equivalently of out-going light from Earth as measured by satellites). The attenuation is made up of two primary components[1]. These are: (i) Rayleigh scattering by air molecules; and (ii) scattering and absorption by microscopic solid or liquid particles suspended in the atmosphere (aerosols).

2.1 Rayleigh scattering

The scattering by molecules in the atmosphere is known as Rayleigh scattering, and has a characteristic wavelength dependence as roughly λ^{-4}, where λ is the wavelength of the light. Thus, bluer wavelengths are more strongly scattered (this is the reason that the sky appears blue). The total optical depth for Rayleigh scattering vertically through the atmosphere has been well-established. It is given by (e.g. Hayes & Latham 1975; Buton et al. 2013):

$$\tau_{\mathrm{Rayleigh,atmos}} \approx 0.14 \left(\frac{\lambda}{500\,\mathrm{nm}} \right)^{-4} \exp(-h/h_0) \tag{4}$$

[1] A third component of atmospheric attenuation, due to Ozone, is small ($\tau_{\mathrm{ozone}} \approx 0.016$ along a vertical path from Earth to space) and in any case it can be ignored for the current analysis of horizontal attenuation near the Earth's surface, as the ozone is located at high altitude.

where the numerical value corresponds to a wavelength (λ) of 500 nm (5×10^{-7} m), which is appropriate for white light detected by the eye at low light levels (see Section 3). In this equation, h is the height of the observer above sea-level, and h_0 is the scale-height of the atmosphere, set by the rate at which atmospheric pressure falls off with altitude. The atmospheric scale-height depends upon temperature, but for a temperature of 280 K (around 7°C) it is typically $h_0 \approx 8.2$ km.

The optical depth of the atmosphere, viewed vertically to space from sea-level, is equivalent to looking through a distance h_0 of atmosphere horizontally at sea-level. This is because optical depth is proportional to the number of scattering molecules, and therefore to the density of the air. Atmospheric density (ρ) largely follows pressure (apart from small effects of temperature variations with altitude) in falling off exponentially with altitude (ie. $\rho \propto \exp(-h/h_0)$), and $\int_0^\infty \exp(-h/h_0) = h_0$. Thus, at sea level ($h = 0$), the optical depth is

$$\tau_{\mathrm{Rayleigh,h_0}} \approx 0.14 \left(\frac{\lambda}{500\,\mathrm{nm}} \right)^{-4} \tag{5}$$

for a horizontal distance of h_0. Since optical depth is proportional to distance, the optical depth produced by 1 km of atmosphere is therefore

$$\tau_{0,\mathrm{Rayleigh}} \approx \frac{0.14}{8.2} \left(\frac{\lambda}{500\,\mathrm{nm}} \right)^{-4} \approx 0.017 \left(\frac{\lambda}{500\,\mathrm{nm}} \right)^{-4} \tag{6}$$

2.2 Aerosols

In addition to the normal molecular composition of air, air can contain additional components which greatly restrict the passage of light. As a practical example, fog consists of liquid water droplets suspended in the air, and it is common experience that under foggy conditions lights are visible for considerably shorter distances. Smoke is another example of an aerosol that can be present at high concentration levels. Even apparently clear air, however, also contains aerosols. Common examples include dust or man-made pollutants; in maritime environments, sea salt is prevalent. Although these aerosols are present at lower concentrations than the extreme examples of fog or smoke considered above, they nevertheless have the effect of gradually attenuating light.

Like Rayleigh Scattering, the aerosol optical depth is generally measured along a vertical path between the surface of the Earth and space, either by ground-based instruments such as a LIDAR (Light Detection and Ranging) or from space, for example by MODIS (the Moderate Resolution Imaging Spectroradiometer) on NASA's Terra satellite. The total optical depth for aerosol scattering vertically through the atmosphere can be written as

$$\tau_{\mathrm{aerosol,atmos}} \approx A_0 \left(\frac{\lambda}{500\,\mathrm{nm}} \right)^{-\alpha} \exp(-h/h_{\mathrm{aerosol}}) \tag{7}$$

where A_0 is the aerosol optical depth from sea-level to space at 500 nm, α is known as the Angström exponent and determines the wavelength dependence, and h_{aerosol} is the scale-height of aerosols in the atmosphere.

The parameter A_0 is found to vary considerably with location on the Earth, being particularly high in polluted areas. In any given location, it also varies significantly with time. Estellés et al. (2002) measured A_0 over an 8-year period at a coastal location of the UK (Plymouth) and determined that it varies around a mean of 0.18 (median 0.19), with an (asymmetric) standard deviation of 0.08. The lowest observed value of the observed aerosol optical depth over this period was ≈ 0.08. Matthias et al. (2014) presented data from the European Aerosol Research Lidar Network; for the data taken at Aberystwyth (another UK coastal location) they found a median A_0 of 0.14 (after converting their data from 350 to 500nm; see below), with a lower limit of around 0.06. A third estimate of A_0 comes from observations taken from Royal Observatory Edinburgh (ROE). During several years of student projects with the University of Edinburgh telescope at ROE, the total atmospheric optical depth (at 500 nm) has been found to be $\tau_{\mathrm{total,atmos}} \approx 0.3 \pm 0.05$. Subtracting the contribution of 0.14 from Rayleigh Scattering and 0.016 from Ozone implies an aerosol optical depth of $A_0 \approx 0.15 \pm 0.05$. This is largely consistent with the studies in Plymouth and Aberystwyth. Combining these various datasets, a value of $A_0 = 0.15$ is adopted here for average atmospheric conditions, with $A_0 = 0.06$ considered to be the realistic best conditions.

The wavelength dependence of the aerosol optical depth can also vary strongly according to the predominant type of aerosol: Reimann et al. (1992) showed that in theory the exponent α can vary between -2 and $+4$, although observed values are more typically in the range 0 to 1.5 (see discussion in Hayes & Latham 1975). Smirnov et al. (2002) argue that the exponent in maritime environments is $\alpha = 0.3 - 0.7$, while Estellés et al. (2012) found $\alpha = 1.03 \pm 0.21$ for their data taken at Plymouth. For the purposes of this analysis, $\alpha = 0.7$ is adopted, although it should be stressed that the adoption of other reasonable values of α would not have a significant influence on the results.

The scale-height of aerosols (h_{aerosol}) is significantly smaller than that of the molecular content of the atmosphere. Hayes & Latham (1975) argue for a typical scale-height of 1.5 km, while noting that it can vary by a factor of two from night to night. This value is widely adopted by many researchers, and is broadly confirmed for a UK coastal location by the data presented by Matthias et al. (2014) from Aberystwyth. This is the value adopted here.

Putting this together, the aerosol optical depth through the atmosphere under average clear conditions is given by

$$\tau_{\mathrm{aerosol,atmos}} \approx 0.15 \left(\frac{\lambda}{500\,\mathrm{nm}} \right)^{-0.7} \exp(-h/1.5\,\mathrm{km}) \tag{8}$$

Following the same steps as in Section 2.1 then gives

$$\tau_{0,aerosol,avg} \approx 0.10 \left(\frac{\lambda}{500\,\mathrm{nm}} \right)^{-0.7} \tag{9}$$

for average atmosphere conditions. In the best observing conditions this would become

$$\tau_{0,aerosol,best} \approx 0.04 \left(\frac{\lambda}{500\,\mathrm{nm}} \right)^{-0.7} \tag{10}$$

2.3 Resultant total attenuation

Combining the optical depth for Rayleigh scattering with that from aerosols gives the total optical depth:

$$\tau = \tau_{\mathrm{Rayleigh}} + \tau_{\mathrm{aerosol}} \tag{11}$$

At distance D, this is thus

$$\tau \approx \left[0.017 \left(\frac{\lambda}{500\,\mathrm{nm}} \right)^{-4} + 0.10 \left(\frac{\lambda}{500\,\mathrm{nm}} \right)^{-0.7} \right] \left(\frac{D}{1\,\mathrm{km}} \right) \tag{12}$$

From Equation 2, the unattenuated fraction of light is then $f = \exp(-\tau)$. The solid curves on Figure 1 show this attenuation for three different colours of light: white (500 nm), yellow (590 nm) and red (640 nm). It can be seen that atmospheric attenuation has a dramatic effect, reducing light levels by an order of magnitude at $20 - 30$ km distance (depending on colour), with shorter (bluer) wavelengths of light being more strongly attenuated than longer (redder) wavelengths. For comparison, the figure also shows the attenuation under the best atmospheric conditions discussed above (replacing 0.10 by 0.04 in Equation 12) and for Rayleigh scattering alone (albeit that zero aerosol content is never observed in practice).

2.4 Illuminance versus distance for single light sources

Combining these attenuation factors with Equation 1 allows the illuminance to be determined as a function of distance. Table 1 provides illuminance values in 5 km intervals out to 50 km for a 1000 candela light, considering each of Rayleigh scattering ($\tau_{0,\mathrm{aerosol},500\mathrm{nm}} = 0$), best realistic observing conditions ($\tau_{0,\mathrm{aerosol},500\mathrm{nm}} = 0.04$) and average atmospheric conditions ($\tau_{0,\mathrm{aerosol},500\mathrm{nm}} = 0.10$). Results are shown for each of white, yellow and red lights. Illuminances for lights of different luminous intensity can be derived by linear scaling of these results.

For average atmospheric conditions, the illuminance as a function of distance for a white light source of a variety of luminous intensities is shown in Figure 2. Equivalent plots for yellow and red lights are shown in Figures 3 and 4 respectively.

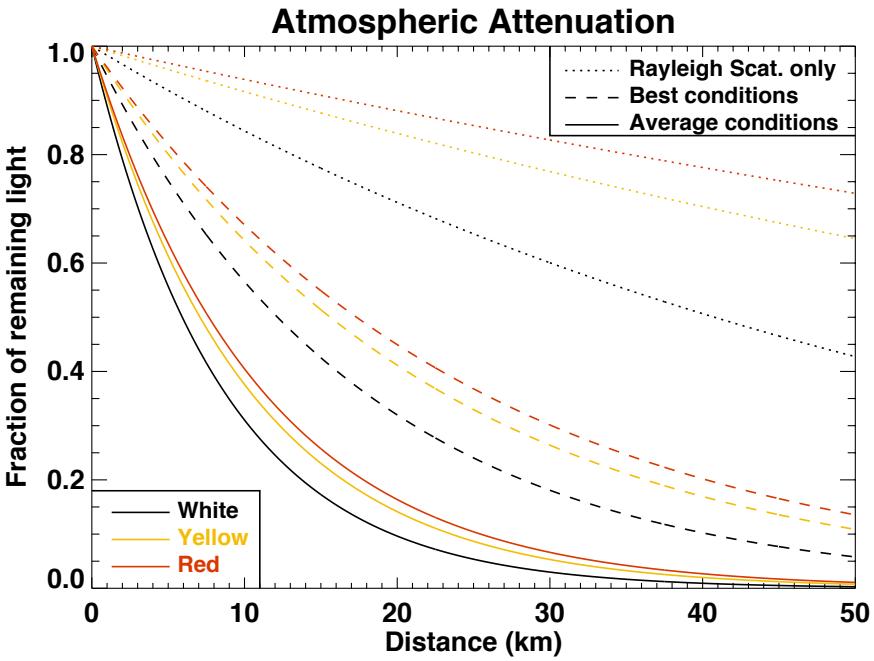

Figure 1: The figure shows the attenuation of light as it passes through the atmosphere, for three different colours of light: white (500 nm), yellow (590 nm) and red (640 nm). The dotted lines show the contribution only from Rayleigh scattering by air molecules, in the absence of aerosols. The dashed line includes aerosol attenuation under the realistic best conditions for UK coastal locations. The solid curves show the result of average aerosol levels. It can be seen that atmospheric attenuation has a dramatic effect, reducing light levels by an order of magnitude at $20-30$ km distance, under typical conditions. There is a weak dependence on colour, with longer (redder) wavelengths of light being less strongly attenuated.

Table 1: Table of (the logarithm of) illuminances of a 1000 candela light of different colours (white, yellow and red) under different atmospheric conditions. The case of 'No Aerosols' corresponds to Rayleigh scattering only, but is unphysical. 'Excellent Conditions' relates to the best conditions realistically observed in coastal regions around the UK, while 'Average Conditions' provides a more typical situation. The results for lights of different luminous intensity can be determined by direct linear scaling of these illuminances.

Distance	..... $\log_{10}$(Illuminance) (lumens / m^2)								
(km)	No aerosols			Excellent conditions			Average conditions		
	White	Yellow	Red	White	Yellow	Red	White	Yellow	Red
5	-4.43	-4.42	-4.41	-4.52	-4.49	-4.48	-4.65	-4.61	-4.59
10	-5.07	-5.04	-5.03	-5.25	-5.19	-5.17	-5.51	-5.42	-5.39
15	-5.46	-5.41	-5.39	-5.72	-5.64	-5.61	-6.11	-5.99	-5.94
20	-5.75	-5.68	-5.66	-6.10	-5.99	-5.95	-6.62	-6.45	-6.39
25	-5.98	-5.89	-5.86	-6.41	-6.28	-6.23	-7.07	-6.86	-6.78
30	-6.18	-6.07	-6.04	-6.70	-6.53	-6.48	-7.48	-7.23	-7.13
35	-6.35	-6.22	-6.18	-6.95	-6.76	-6.70	-7.87	-7.58	-7.46
40	-6.50	-6.36	-6.31	-7.19	-6.98	-6.90	-8.24	-7.90	-7.78
45	-6.64	-6.48	-6.43	-7.42	-7.17	-7.09	-8.59	-8.22	-8.07
50	-6.77	-6.59	-6.54	-7.64	-7.36	-7.27	-8.94	-8.52	-8.36

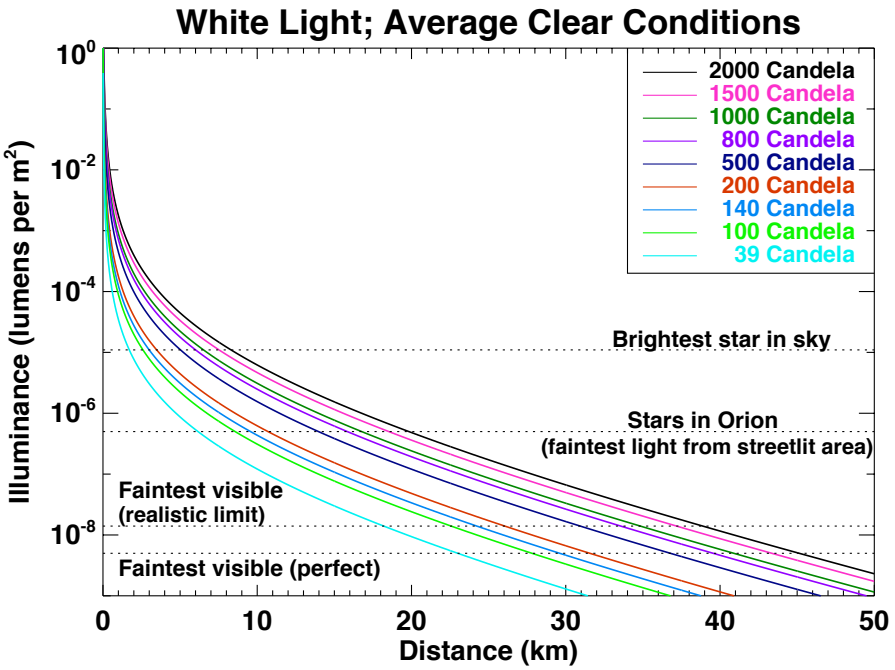

Figure 2: The figure shows the illuminance of a single white light, as a function of distance, for various different luminous intensities of light. The plot assumes average observing conditions for UK coastal regions (ie. $\tau_{0,\mathrm{aerosol},500\mathrm{nm}} = 0.10$). For comparison, the illuminance provided by the brightest star in the northern sky is shown, along with those of typical bright stars such as those in the constellation of Orion. The latter also represents the approximate visual limit of the eye from street-lit areas (see Section 3). Also indicated are the approximate visible limit under perfect conditions (away from street lighting and airglow, new moon, and fully dark-adapted eyes), and a more realistic estimate of the limit for the East coast of Scotland, taking into account light pollution.

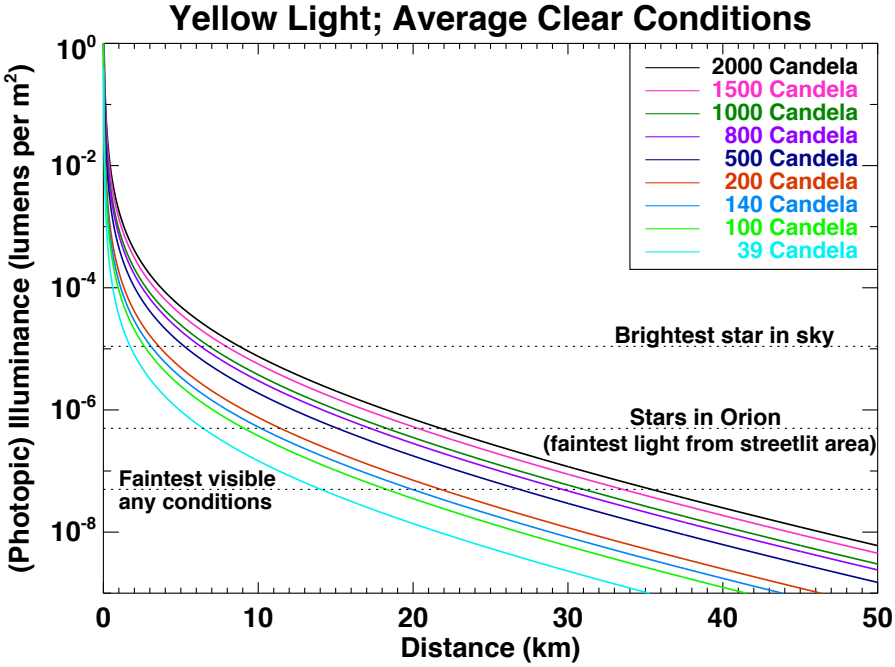

Figure 3: The illuminance of a single yellow light as a function of distance; details as in Figure 2. Note that, as outlined in Section 3.3, the lower sensitivity of the eye to longer wavelengths of light at low ambient light levels means that there is no significant difference between the faintest detectable illuminance of yellow light in quarter-moon *vs* starlit ambient light levels. Hence, only a single 'faintest visible, any conditions' limit is shown.

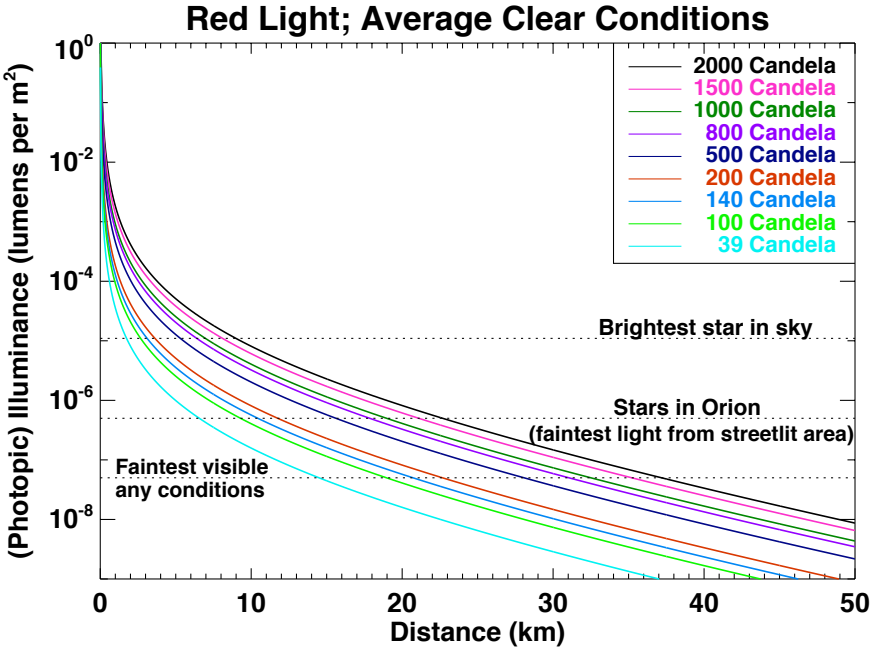

Figure 4: The illuminance of a single red light as a function of distance; details as in Figure 3.

3 Detectability of light by the eye

3.1 The nature of the eye, and colour sensitivity

The eye is composed of two different types of optical sensors, known as *cones* and *rods*, each of which is adapted to function under different light conditions to maximise the overall ability of the eye. Cones come in three types adapted to detect different wavelengths of light (approximately, blue, green and red light respectively). The combination of light detected by these three types of cone cells provides the ability for humans to discern colour. Cones are adapted to work at high ambient light levels, $\gtrsim 3$ candela/m^2, which is known as the *photopic* regime. In contrast, rods have no ability to identify colour, but do have a much higher sensitivity than cones, allowing fainter levels of light to be detected (albeit that in such light levels objects appear grey). Studies indicate that rods are able to detect light down to levels of individual light photons. Rods mediate vision in the *scotopic* regime, corresponding to ambient light levels $\lesssim 0.003$ candela/m^2. At intermediate light levels (0.003 to 3 candela/m^2) both cones and rods play a role; this is known as *mesopic* vision.

As discussed in Section 1, the conversion between radiant flux and luminous flux (ie. how many candela of luminous flux are produced by a light of given Wattage of radiant flux) is derived by weighting the radiant flux by the sensitivity function of the eye at different wavelengths. The eye's sensitivity function has been formalised by the International Commission on Illumination (CIE). In the photopic regime, the widely used standard is the CIE 1978 $V(\lambda)$ function, based on data by Judd (1951) and Vos (1979): this is shown in Figure 5, and has maximum sensitivity at a wavelength of 555 nm (green). The same figure also shows the CIE 1951 $V'(\lambda)$ sensitivity function of the eye in the scotopic regime, which is based on measurements by Wald (1945) and Crawford (1949). Here it can be seen that the peak sensitivity is at significantly shorter wavelength than the photopic curve (507 nm), and that the sensitivity at longer (redder) wavelengths is dramatically lower in the scotopic regime. In particular, at the wavelength of yellow LEDs (typically 580–600 nm) the scotopic relative sensitivity is around a factor of 10 lower than that in the photopic regime, while for red LEDs (630–660 nm) it is a factor 100 lower.

The conversion of radiant to luminous flux is normally derived by weighting the radiant flux by the photopic sensitivity function. Thus, in the photopic regime, a light of given luminous intensity viewed from a given distance will appear to deliver the same illuminance irrespective of its colour: in other words, from a given distance, a blue light and a red light emitting the same candela of light would appear equally bright. However, if the light level is sufficiently low that the eye enters the scotopic (or indeed even mesopic) regime, then the shift of the eye's sensitivity function towards shorter wavelengths would result in the redder light appearing significantly fainter than the bluer one. This has consequences for the limiting detectability of lights of different colours.

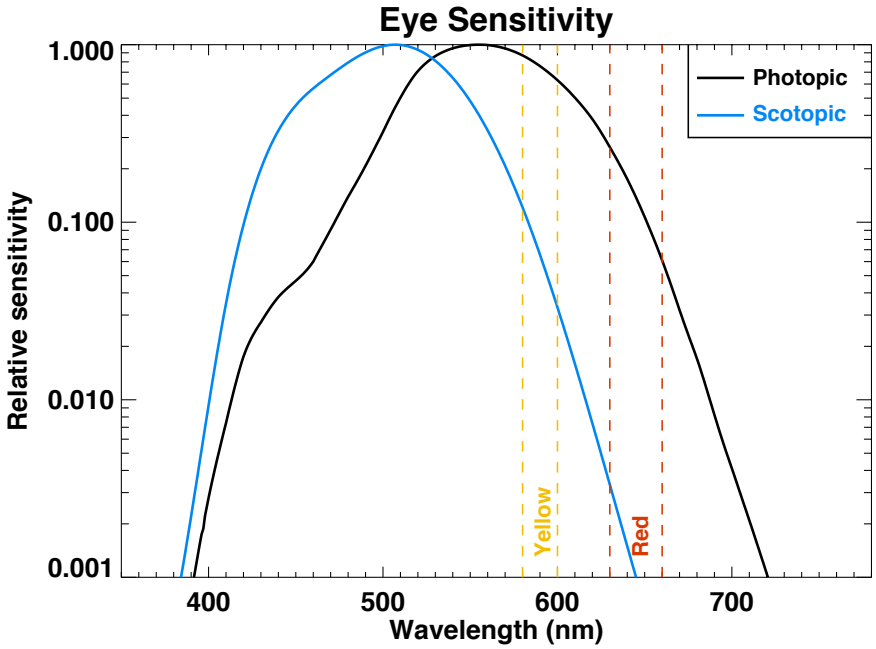

Figure 5: The relative sensitivity of the eye as a function of wavelength, in the photopic regime (vision mediated by cones, at high light levels) and the scotopic regime (vision mediated by rods, at low light levels). The data are the accepted CIE 1978 and CIE 1951 standard values (see text for details). At low light levels the eye sensitivity function shifts towards bluer wavelengths, with significantly lower relative sensitivity to red and yellow lights.

3.2 Eye detection thresholds

Studies of the detection threshold of the eye (that is, the faintest detectable illuminance for a single fixed light) have a long history; for example, it is of wide interest in astronomy to understand the faintest star visible under different light pollution conditions, and that analysis is directly relevant here. The most authoritative and extensive data samples were taken by Blackwell (1946), supplemented by the work of Knoll et al. (1946), who studied the detectability of point sources of light by the eye in different ambient lighting conditions. Specifically, they considered background illumination levels (B), and tested the ability of observers to detect point source lights of incremental illuminance ΔI above this background. The primary results are shown in Figure 6, and have largely been supported by later studies.

There have been many attempts to provide functional fits to these data. The best of these consider separate functional forms in the photopic and scotopic regimes, as it is clear from Figure 6 that the detectability of light is non-linear due to the changes between the different vision regimes. The fit shown in Figure 6 comes from Crumey (2014), and is the one adopted for the current analysis. Note that these data are based on the average results from young adults (less than 30 years old) in fully dark adapted conditions. Older people, or those who have not taken the time to dark-adapt their eye in low lighting conditions, will have significantly higher detectable limits (e.g. Blackwell & Blackwell 1971 estimate a factor ≈ 3 higher threshold on average at age 65). Note also that these results are based on a white light source (ie. one that emits across a very wide range of wavelengths); the colour temperature of the white light (that is, the exact distribution of radiant flux across wavelength) will have an effect on the derived threshold in the scotopic regime, but this will be well below a factor of 2.

3.3 Ambient light levels and detectable limit

Given the strong dependence of the limiting illuminance on the background illumination level, seen in Figure 6, it is clear that in order to consider the detectable limit of a single (static) light from an offshore wind turbine, it is necessary to consider the background ambient light level. This can vary considerably, depending on location and on moon phase. The darkest conditions are found at night, with a new moon, and away from any source of light pollution. For this, the ambient light level due to starlight from all of the stars in the sky is around 2×10^{-4} candela/m^2. From Figure 6 the corresponding faintest detectable illuminance of a (white) point-source light is

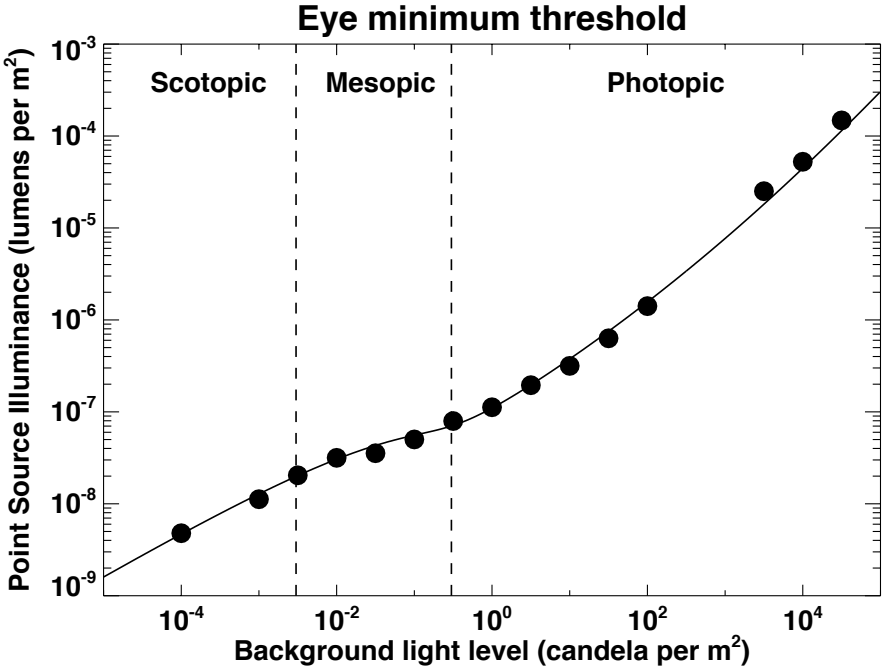

Figure 6: The minimum point source illuminance which is detectable by the eye, as a function of the background ambient light level. Plotted data points are from Knoll et al. (1946), and the fitting function comes from Crumey (2014).

around 6×10^{-9} lumens/m^2. At the other extreme, in a street-lit area, the ambient light level of ≈ 10 candela/m^2 raises the faintest detectable illuminance to around 5×10^{-7} lumens/m^2. To put this later value into context, this is about the same apparent brightness as typical bright stars in the night sky, such as the main stars in the constellation of Orion. These different limiting detection levels are shown on Figure 2.

Falchi et al. (2016) studied the sky brightness as a function of location in Europe; their data indciate that the background light level away from towns on the East coast of Scotland (in the Lothian and Fife areas) is roughly 2-3 times the dark sky background. Cinzano et al. (2001) studied the limiting brightness of stars as a function of location, and found that for coastal regions of Fife the increased sky brightness due to airglow leads to a limit at around 6th magnitude for stars (which is a widely adopted value); this corresponds to an illuminance of $\approx 1.2 \times 10^{-8}$ lumens/m^2. This value thus provides a more realistic estimate of the limit of the detectability of a white light source in optimal new moon conditions (see Figure 2).

It is important to note that these values are for a white light source. As discussed in Section 3.1, in the photopic regime (e.g. from a street-lit area, or even down to full-moon illumination) the limiting detectable light level will be the same for all colours of light, when expressed in terms of lumens/m^2. However, the sensitivity of the eye to longer wavelengths of light (yellow, red) is significantly lower in the scotopic regime. For yellow light (≈ 590 nm) rods have around a factor 10 lower relative sensitivity than cones, effectively raising the detectable limit by a factor 10. Thus, in fully-dark starlit sky, the detectable limit rises to around 6×10^{-8} lumens/m^2, very similar to the limit at the bottom of the photopic regime. This is therefore the approximate detectable limit of a yellow light over a wide range of ambient light levels (see Figure 3). For red light, again the limit at the bottom of the photopic regime is $\approx 6 \times 10^{-8}$ lumens/m^2; at lower ambient light levels, since rods have a factor ~ 100 lower relative sensitivity than cones, in the scotopic regime the limiting point source illuminance is actually brighter than that at the bottom of the photopic regime. Hence, the value of $\approx 6 \times 10^{-8}$ lumens/m^2 sets the approximate limit for the faintest that red lights could be detected in any ambient lighting (see Figure 4).

4 Multiple lights

The analysis above has considered the visibility of a single light source. However, an offshore wind farm will have multiple turbines with multiple lights. There are two effects that are worthy of consideration: the first is the sum total of all of the light sources from the wind farm, and whether this produces a noticeable addition to

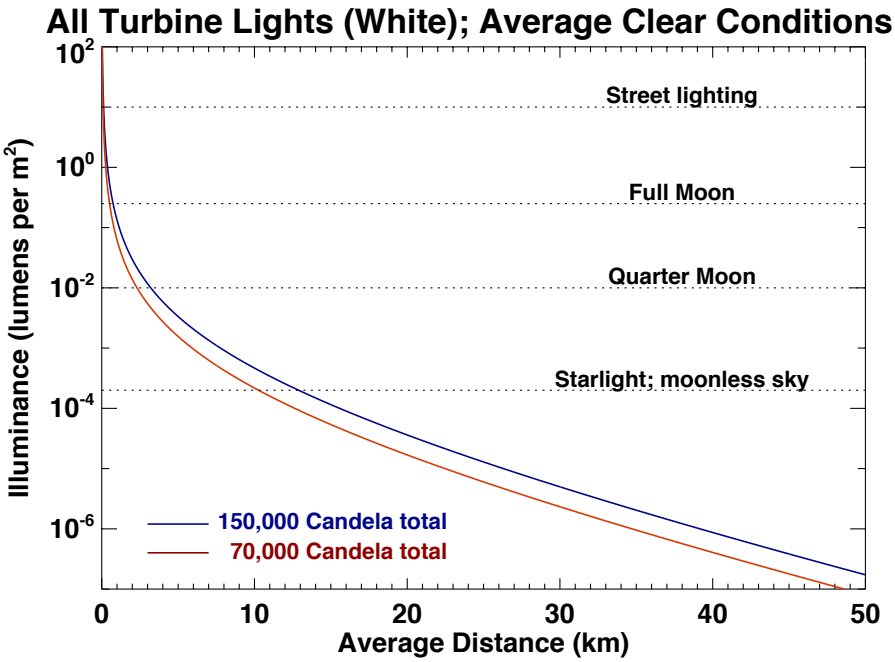

Figure 7: An estimate of the total illuminance provided by all turbine lights of a wind farm as a function of distance. The examples shown are for 150,000 candela (appropriate for a wind farm of around 75 turbines with a 2000 candela light each) and 70,000 candela (a similar wind farm but with 2000 candela lights on peripheral turbines only) total of white lighting. Other total lighting levels can be scaled proportionally. For comparison, the ambient light levels provided by street lighting, the full moon, a quarter moon, and starlight in a moonless sky, are all shown. It is clear that beyond distance of 15 km, the total illuminance provided by a typical wind farm is negligible, below even the level of starlight. Red or yellow lights would appear significantly fainter still at those distances.

the overall ambient light level; the second is whether multiple lights are seen individually, or whether due to the limited angular resolution of the eye they may be blended into a single, apparently brighter, light.

4.1 Contribution of all lights to the ambient background level

The total ambient light level produced by all lights in the wind farm can be derived by summing up the lights and determining their total illuminance. For any given wind farm, this can be calculated as a function of distance by scaling the illuminances in Table 1 to the total wind farm light level. As a graphical illustration, Figure 7 shows this for total levels of 150,000 and 70,000 candela; these are considered to be maximal and realistic levels, respectively, for the total candela emitted by a $\approx$ 75 turbine wind farm. For comparison to this curve, the ambient light levels provided by street lighting, by the full moon, by a quarter moon, and by starlight at new moon, are all shown.

It is immediately apparent that even with a total lighting level of 150,000 candela, the overall ambient light level provided by the wind farm would be below even the level provided by starlight at a new moon (and a factor $\sim$ 1000 below that of the full moon), for offshore distances beyond 15 km. For yellow or red lights, where the eye sensitivity at these ambient light levels is significantly poorer, this would be even lower. It is therefore clear that the overall level of ambient light provided by such a wind farm would be completely negligible.

4.2 Multiple unresolved lights

Angular resolution relates to the ability of an instrument, or the eye, to distinguish that two light sources, separated by some angle, are indeed separate and not solely a single light source. The angular resolution is limited by diffraction, by the formula

$$\theta = 1.22\frac{\lambda}{d} \tag{13}$$

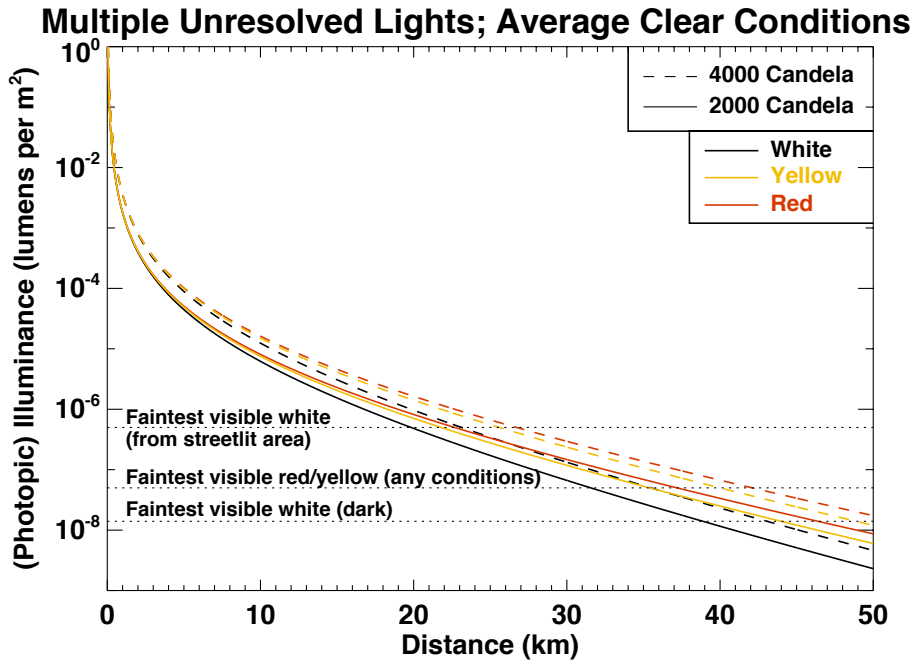

Figure 8: The illuminance as a function of distance for different lighting levels of different light colours, which may result from multiple 2000 candela lights being unresolved by the eye and appearing as a single, apparently brighter, light. The horizontal dashed lines indicate the faintest illuminances detectable by the human eye for different colours of light (in the case of white light, also considering different ambient lighting conditions). Other total candela levels can be scaled proportionally.

where θ is the angular separation in radians, λ is the wavelength of light, and d is the diameter of the detecting instrument. For the eye, at a wavelength of around 500 nm and for a pupil size of about 3 mm, this gives an angular resolution of 0.0002 radians which corresponds to 0.012 degrees (0.7 arcminutes). This is able to resolve the headlights of a car to a distance of about 6 km; at a distance of 20 km the diffraction limit of the eye corresponds to lights separated by about 4 m.

Another factor that limits angular resolution is the distribution of sensory points on the detector. At the main focus of the retina, cones are tightly packed (and each cone is connected to its own neuron to send the signal to the brain). This allows the eye to resolve objects at close to the diffraction limit. At lower light levels, however, the cones are non-functional, and vision is mediated by the rods. These are not as tightly spaced, and multiple rods converge to the same neuron, thus reducing the angular resolution of the eye to a few arcminutes – or to light source separations of about 20 m at a distance of 20 km.

This has a consequence for the detectability of light sources. If, for example, a single wind turbine were to possess two 2000 candela lights, spaced only a few metres apart, then at low light levels the eye would detect these as being equivalent to a single 4000 candela light. Alternatively, if lighting is present on many turbines, then there will be (albeit rare[2]) locations on the coast from which one (or more) turbine is positioned almost directly behind another one, and the eye may fail to resolve the lights from each turbine, again resulting in a single apparently brighter light. Such a light would be visible to slightly greater distances, as illustrated in Figure 8, for each of white, yellow and red lights. Illuminance levels for other potential light combinations can be determined by direct scaling of the values in Table 1.

[2]The rarity of these locations depends on the orientation and layout of the wind farm, and also upon the height of the observer above sea-level on the coast. For an offshore wind farm located 15-20 km off the coast, with only peripheral turbines illuminated, it may typically correspond to at most a couple of percent of the coastline.

5 Conclusions

This report has considered the observability of lighting placed upon on offshore wind turbines. The main conclusions are as follows:

- The attenuation of the light as it passes through the atmosphere has been considered. Under average atmospheric conditions the aerosol optical depth at 500 nm in UK coastal locations is estimated to be 0.10 per kilometre (decreasing to about 0.04 under the best atmospheric conditions). This is combined with Rayleigh scattering by air molecules, for which the optical depth at 500 nm is 0.017 per kilometre. Longer wavelengths of light show lower attenuation. Overall, for average atmospheric conditions, it is shown that the atmosphere leads to attenuation of about 90%, 85% or 83% of the light at a distance of 20 km for a white, yellow or red light source, respectively
- The illuminance of individual lights is calculated as a function of their luminous intensity and the distance they are observed from. It is shown that a single 2000 candela light, viewed from a distance of 20 km, will have the same apparent brightness as typical bright stars in the night sky, such as those in the constellation of Orion.
- The minimum detectable light levels are evaluated, taking into account the properties of the human eye, and the local ambient light level. On a moonless night, for a typical coastal location in eastern Scotland (Lothian / Fife), a 2000 candela white light would be potentially visible to a distance of around 40 km to a dark-adapted human eye. Due to the lower relative sensitivity of the eye to longer wavelengths of light at low light levels, the corresponding maximum distances to which 2000 candela yellow or red lights would be potentially visible are around 36 km and 37 km respectively.
- The overall background light level provided by a typical offshore windfarm (up to 150,000 candela total lighting levels), located 15km or further from the coast, is shown to be lower even than the ambient levels delivered by starlight on a moonless night.

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