European Offshore Wind Deployment Centre
Environmental Statement

Appendix 19.1: Seascape, Landscape and Visual Baseline Technical Report

A project part-funded by the European Union under the European Economic Plan for Recovery in the field of Energy

LDĀDESIGN

European Offshore Wind Deployment Centre
Seascape, Landscape and Visual Impact Assessment

Baseline Technical Report
21st June 2011

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Version:	1.4
Version date:	21st June 2011
Comment	FINAL

This document has been prepared and checked in accordance with ISO 9001:2000.

1.0 Introduction

This Baseline Technical Report sets out the existing seascape, landscape, and visual environments within an agreed study area and assesses their sensitivity to the type of change proposed. The EIA Technical Report will then determine the magnitude and significance of any change to the character of the identified regional seascape, landscape, and any areas of designated landscapes, as well as assess the potential effect upon views, visual amenity and receptor groups, and cumulative effects within the overall Zone of Theoretical Visibility (ZTV).

1.1. The Proposed Development

The lease boundary for the proposed European Offshore Wind Deployment Centre (EOWDC) covers an area of up to 20 km^2 and is located approximately 2 km east of the nearest landfall on the Aberdeenshire coast.

The deployment centre will have 11 wind turbines between 4 MW and 10 MW. The scheme has undergone numerous iterations since 2005 in terms of location and number of turbines which are discussed in the Environmental Statement (ES). The nature of the deployment centre is that it will comprise first of run turbines which may result in turbines of different heights. For the purposes of the SLVIA (e.g. ZTV, photomontages) the dimensions of the turbines have been agreed with the consultees to be assessed at the worst case scenario which is eleven 10 MW turbines with a hub height of 120 m and blade tip height of 195 m above lowest astronomical tide (LAT). As with all developments, there will be need to be an allowance for micro-siting which in this case may be up to 100m for each turbine.

It is not envisaged that the final mix of turbine heights will result in a height difference that is greater than 20-35 m between turbines. Any differences may be noticeable at closer distances and the assessment will take this into consideration. Please see Volume 3 of the ES for a figure showing a detailed layout.

An Ocean Laboratory, which could be an offshore structure associated with the deployment centre, would be subject to a separate planning application and will not be assessed as part of this seascape, landscape and visual impact assessment (SLVIA). However, as it is a foreseeable development it has been considered as part of the cumulative assessment.

Whilst the majority of the development is located offshore, the completed scheme will also require various onshore elements, including a cable route and an electricity substation. The assessment of all onshore elements associated with the proposed EOWDC and the respective effects upon the landscape, its character and constituent features and the level of visual effect will be addressed separately within the Onshore Environmental Statement and the supporting Landscape and Visual Assessment technical report. Reference is made to the anticipated effects of the construction of offshore elements in section 6.0 of the SLVIA EIA Technical Report.

1.2. The Study Area

It is accepted practice within seascape, landscape and visual assessment work that the extent of the study area is broadly defined by the visual envelope, or the Zone of Theoretical Visibility (ZTV), of the proposed development. The visual envelope represents the area of land and/or sea from within which it may be possible to see any part of the proposed development.

Within the ZTV, the actual extent of visibility of a proposed development then depends upon a variety of factors including the scale of development, the relationship between the viewpoint and the development itself, the context within which the development is seen and the prevailing weather conditions existing at any one time. To cover all the potentially significant seascape, landscape and visual effects, a 40 km radius study area around the proposed offshore wind deployment centre was agreed with Scottish Natural Heritage (SNH).

In order to undertake a full and robust assessment of the actual effects, and to assess the realistic worst-case scenario for the EOWDC development, the assessment also considers all onshore wind farms (existing, consented and in-planning) within a 60 km radius of the EOWDC. There are no other offshore wind farms within the study area. The sensitivity to change of the seascape,

landscape and visual receptors has been assessed on the assumption that the consented wind farms have already been constructed.

1.3. Methodology Consultation

SNH, Aberdeen City Council (ACC), and Aberdeenshire Council (AC) were consulted from the outset with respect to the assessment methodology, study areas, viewpoint locations, and cumulative scope. Table 1.1 below gives a summary of the key consultation stages and dates. Please refer to Appendix 1 for a detailed record of consultation. The agreed methodology used within this assessment is detailed in Appendix 2.

Table 1.1 Summary of Consultation

Key Consultation Dates	Information
24th November 2009	Issue to all consultees of proposed 14 viewpoints, proposed 35km study area, SLVIA methodology including cumulative methodology, proposed cumulative sites and ZTVs.
19th December 2009	SNH response with advice on methodology, viewpoint options and study areas.
14th April 2010	Meeting with AC, ACC and SNH at SNH Offices, Aberdeen.
23rd April 2010	Meeting notes and revised viewpoint list issued incorporating all comments from meeting on 14.04.10.
28th May 2010	Revised Meeting Notes issued.
August 2010	EOWDC Request for Scoping Opinion Seascape, Landscape and Visual section highlighting approach, viewpoints and 35km study area.
29th September 2010	EOWDC Scoping Opinion – SNH response Suggestions on approach including relevant guidance and possible areas for inclusion as viewpoints and part of the study.
19th October 2010	Issue to all consultees of detailed ZTV, large scale 35km study area ZTV and viewpoint list including city centre viewpoints for review following the project layout changes.
29th October 2010	Revised viewpoint list issued to all consultees to include changes following site visit.
9th November 2010	Response from SNH to October 2010 information issued; agreement on viewpoints list with specific comments on cumulative assessment of viewpoints.
13th December 2010	Issue to all consultees of proposed cumulative methodology including sequential cumulative approach and methodology statement covering turbine phasing, turbine heights, and Ocean Laboratory.
24th January 2011	Response from SNH agreeing to the cumulative methodology, querying study area size, agreeing to Bennachie viewpoint as wireframe only due to weather constraints, and suggestion of Menie Estate viewpoint.
25th and 28th January 2011	Discussion emails on study area with SNH.
22nd February 2011	SNH response requesting 40km study area.
25th March 2011	Email to SNH for confirmation of agreement to methodologies and study area.
7th April 2011	SNH response confirming receipt of information and acceptance of 40km study area.

1.4. Key Guidance Documents

Key guidance documents that have informed the SLVIA include:

- Maritime Ireland/Wales Interreg 1994 – 1999 Guidance 'Guide to Best Practice in Seascape Assessment' (GSA, March 2001).
- 'An assessment of the sensitivity and capacity of the Scottish Seascape in relation to wind farms', (SNH commissioned Report 103, 2005).
- Guidance on the Assessment of Effect of Offshore Wind Farms: Seascape and Visual Effect Report (DTI – November 2005).
- Guidelines for Landscape and Visual Effect Assessment (Institute of Environmental Management and Assessment (IEMA) and the Landscape Institute's (LI), second edition 2002).
- Visual Representation of Windfarms Best Practice Guidance (SNH 2006, albeit published in 2007).
- Cumulative Effects on Windfarms, (SNH, 2005).
- Siting and Design of Windfarms, (SNH, December 2009).

1.5. Data Information and Sources

Table 1.2 below records the main survey information and site study data which were used in this baseline assessment.

Table 1.2 Summary of data and sources

Survey/Study	Date of Survey	Description
Seascape/landscape baseline assessment and viewpoint search.	April and October 2010	Land based driving and walking landscape character assessment of study area and establishment of locations of appropriate viewpoints.
Beaches of Northeast Scotland (SNH Commissioned Report)	1977	Environmental inventory of sand beaches, dunes and associated coastal areas of the coastline of the Moray Firth from Inverness eastwards and of the North Sea coast northwards from Inverbervie.
Landscape Character Assessment of Aberdeen (SNH)	1996	Landscape Character Assessment
South and Central Aberdeenshire: Landscape Character Assessment (SNH)	1998	Landscape Character Assessment
Banff & Buchan Landscape Assessment (SNH)	1994	Landscape Character Assessment

2.0 Landscape and Seascape Policy Context

The proposed site is located within offshore coastal waters under the jurisdiction of The Crown Estate. Within the 40 km study area there are only two councils; Aberdeenshire Council and Aberdeen City Council. Please refer to Figure 1 for the site location plan.

This section of the report identifies the relevant national and local planning policy and those statutory and non-statutory designations that apply to the study area that may be relevant to the development and landscape/seascape and visual issues. Refer to Figures 2 and 3 for an illustration of the landscape policy context

2.1. Renewable Energy

The Scottish Government has recently revised its planning statements. Scottish Planning Policy (SPP) is now one document that encompasses all the nationally important land use planning matters, including renewable energy, coastal planning, natural heritage, and historic environment. Relevant to the scheme as a whole, the extracts of the policy document discussed below provide an important overview with reference to more detailed areas pertinent to the SLVIA.

Scottish Planning Policy 'Renewable Energy' (paras. 182 – 192) sets out how the planning system should support the development of renewables and the development of spatial frameworks taking into consideration the many relevant factors including landscape and visual effects. Specifically under the heading Wind Farms, it states that '*Planning authorities should support the development of wind farms in locations where the technology can operate efficiently and environmental and cumulative impacts can be satisfactorily addressed' and 'the design and location of any wind farm development should reflect the scale and character of the landscape. The location of turbines should be considered carefully to ensure that the landscape and visual impact is minimised*'.

At a more local scale, Aberdeen Local Plan (2008) identifies its renewable energy policies under **Policy 22: Energy and Development**:

'Renewable energy development is acceptable in principle provided that …there is no significant impact on the character and amenity of the surrounding landscape or residential properties or on the ecology of the area'

2.2. Green Belt

The purpose of Green Belt allocations is to maintain landscape setting, leisure, recreation and green space. The location of the green belt in relation to Aberdeen and its setting is important, but for the purposes of this assessment it is not a consideration as the EOWDC will have no direct impact upon the green belt nor result in any compromise of its 'openness'.

2.3. Landscape Designations

SPP 'Landscape and Natural Heritage' (paras 125 – 141) gives guidance on how the Government's policies for the conservation and enhancement of Scotland's natural heritage should be reflected in land use planning. It outlines the aims of national and local landscape and natural heritage designations.

'Different landscapes will have a different capacity to accommodate new development, and the siting and design of development should be informed by local landscape character.'

'Landscapes and the natural heritage are sensitive to inappropriate development and planning authorities should ensure that potential effects, including the cumulative effect of incremental changes, are considered when preparing development plans and deciding planning applications. While the protection of the landscape and natural heritage may sometimes impose constraints on development, with careful planning and design the potential for conflict can be minimised and the potential for enhancement maximised.'

Under the above national policy the Aberdeenshire Local Plan (2006) has identified National Scenic Areas and Areas of Landscape Significance with the following policies;

Policy Env 5A, National Scenic Areas

Policy Env 5B states that *'Development that would have an adverse effect on a National Scenic Area will be refused unless the developer demonstrates:*

a) any significant adverse effects on the quality for which the area has been designated are clearly outweighed by social and economic benefits of national importance;

b) the objectives of the designation and overall integrity of the area will not be compromised.'

There are no National Scenic Areas within the study area, but two National Scenic Areas lie just beyond at Deeside & Lochnagar; and the Cairngorm Mountains. These areas are now part of the Cairngorms National Park so will be protected under the National Park designation. The areas are not included within the assessment but they are important to acknowledge with regards to the adjacent Areas of Landscape Significance which lie within the study area.

Policy Env 5B, Areas of Landscape Significance

Policy Env 5B states that *'Development within or adjacent to an Area of Landscape Significance will not be permitted where its scale, location or design will detract from the quality or character of the landscape, either in part or as a whole*.'

The closest Area of Landscape Significance (ALS) to the proposed development is on the coast, extending from Balmedie to south of Peterhead, and extending from Peterhead along the north coast. The coast to the south of Aberdeen, from Findon beyond Stonehaven is also designated as an ALS. Inland there are several ALSs, most of which are concentrated at the western edge of the study area adjacent to the Cairngorms National Park. However, there are some smaller inland ALS closer to the coast such as at Hatton of Fintray, north of Dyce, north west of Methlick, and along Deeside to the south of Aberdeen. To the south west limits of the study area an ALS covers a large area around Drumtochty Forest. The Areas of Landscape Significance within the study area are identified on Figure 2.

Aberdeen Local Plan (2008) Policy 31 – Landscape Protection outlines the objectives for retaining the landscape setting of Aberdeen.

Policy 31: Landscape Protection

Policy 31 states that: '*One of the objectives of planning for future development will be to maintain and manage aspects of Aberdeen's unique landscape setting. Development will not be acceptable unless it avoids:*

1. adversely affecting landscape character and elements which contribute to, or provide, a distinct 'sense of place' which point to being either in or around "Aberdeen" or a particular part of it;

2. obstructing views of the City's townscape, landmarks and features when seen from publicly accessible vantage points such as roads, railways, recreation areas and pathways and particularly from the main city approaches or 'gateways';

3. disturbance, loss or damage to recognised recreation, wildlife or woodland resources or to the physical links between them;

4. sprawling onto green spaces or buffers between places or communities with individual identities, and those which can provide opportunities for countryside activities.

'All developments shall respect the quality of the local landscape character and contribute towards its maintenance and enhancement in terms of siting, scale, massing, colour, design, density, orientation, materials, planting/ landscaping and boundary treatment. They should otherwise be capable of being absorbed within sites without significant adverse impacts upon existing landscape elements, including linear and boundary features or other components, which contribute to local amenity, and provide opportunities for conserving, restoring or enhancing them.'

These are key points relating to any development including the EOWDC and as part of this SLVIA the potential effects that the development may have on the landscape character will be assessed.

2.4. Historic Environment

The scope of this assessment does not cover the effects of the proposed development on individual Conservation Areas and other historic built features or their settings. These are discussed in the Cultural Heritage Assessment of the EOWDC. The general distribution of historic features and landscapes are however considered, as collectively they contribute to informing judgments on the character, historic importance and quality of the landscape. The overall effect of the development on the historic environment in so far as it contributes to defining the character of the landscape resource is also assessed. Coordination with the Cultural Heritage consultants was also undertaken so as to ensure clear separation of areas of responsibility and assessment of effects where relevant.

Conservation Areas and Gardens and Designed Landscapes within Aberdeenshire and Aberdeen are illustrated on Figure 2 and 3.The conservation areas are mostly contained to historic village centres and within Aberdeen, a large part of the town centre, Old Aberdeen, and also coastal areas such as Footdee. There are 19 registered Gardens and Designed Landscapes within the 40 km study area, the majority of which lie beyond 15km from the EOWDC. As discussed above, the Cultural Heritage chapter will assess the potential effects on these areas.

2.5. Summary of Landscape Designations and Planning Context

Table 1.3 below summarises the Areas of Landscape Significance within the 40km radius study area. Please refer to the Cultural Heritage chapter for assessment of the historic environment.

Summary Table 1.3 Landscape Designations

Landscape Designations **Areas of Landscape Significance (Aberdeenshire Policy Env 5B)**	**Approximate closest distance from nearest turbine**	**Sensitivity to proposed change**
Balmedie to Longhaven	3.5 km	High
Peterhead to Inverallochy	33 km	High
Findon to Catterline	15 km	High
River Dee Valley	13 km	High
River Don Valley	7 km	High
West of Inverurie	24 km	High
North West of Methlick	30 km	High
Drumtochty to Torphins and surrounds	36 km	High

3.0 Baseline Description

As set out in the DTI (2005) Seascape and Visual Impact Report, every seascape comprises three components: an area of sea (the marine component), a length of coastline (the coastline component); and an area of land (the landward component). Landscape starts at the coastline and includes all areas inland. The landward component of a seascape is the main factor determining the character of the seascape. Whilst landscape assessments are useful in setting out the character of the hinterland, they concentrate on the characterisation of the landward component only and do not generally address the relationship between landward elements and the sea. The seascape units at national and regional scale are therefore discussed below and show the integration of the marine coastline and the hinterland components. The landscape character areas are also discussed in reference to the wider study area.

3.1. Overview of the Wider Study Area

The study area includes a large part of the North East of Scotland which extends along the coast from Kinneff, south of Stonehaven to Crimond, near Peterhead in the north, and inland west to the Grampian Mountains. The city of Aberdeen is the main settlement within the study area on the North Sea coast approximately 5km south west at its closest point to the proposed turbines. Stonehaven and Peterhead are the main coastal towns within the study area and Ellon, Inverurie and Banchory are the main inland towns.

There are three key rivers within the study area; the Dee, Don, and Ythan. The River Dee descends from the Cairngorms to Strathdee (Deeside), and flows to the south west of Aberdeen before finally reaching the North Sea at Aberdeen Harbour. The mouth of the River Don lies to the north of Aberdeen centre between Old Aberdeen and Bridge of Don settlements. Its source is also in the Cairngorms and it winds down to Inverurie where its main tributary, the River Urie joins it. The Ythan River, a shorter course than the Dee and Don, is well known for its bird populations at its estuary which is located approximately halfway between Aberdeen and Peterhead.

The western extents of the study area consist of the fringes of the Cairngorms. This elevated landscape gradually lowers to a gently undulating topography towards the east coast. Large tracts of commercial forestry lie on the higher land and river valleys to the west and south west of the outer limits of the study area. To the north and north west there is predominantly open gently rolling agricultural land with some areas of woodland along river valleys and around estates.

The coastline varies within the study area. To the south of Aberdeen the coast rises to sea cliffs and rocky beaches. Between Aberdeen and the Ythan estuary there are long sandy beaches and sand dunes. Beyond, to the north, the land rises again to give rocky cliff coastline.

3.2. National Seascape Units

There is one national seascape unit 'Area 4: North East Coast' within the study area as identified by the SNH commissioned report (Scott et al, 2005). This comprises two seascape character types 'Mainland Rocky Coastline with Open Sea Views' and 'Deposition Coastline with Open Sea Views'.

The key characteristics of this national seascape unit are stated as;

- *Long, east-facing generally straight coastline with many small indentations and few significant headlands and with open views out to the North Sea;*
- *Mix of long broad sandy beaches backed by dunes and low cliffs/rocky coastline;*
- *Farmland predominantly backs coast; flat and low lying against deposition coast; gently rolling against rocky headlands/cliffs – some remnant heathland in places;*
- *Frequent fishing villages and harbours and several sizable urban settlements; and*
- *Industry is infrequent but large scale where it occurs.*

The SNH document identifies that the openness of sea in views gives a huge scale which turbines could relate well to. It also states that views are largely focused up and down the coast and out to sea rather than inland. However, the study discusses that although generally not a complex landform,

in some localised places turbines could conflict with the natural forms of distinctive coastal features.

In conclusion the study gives the 'North East Coast' seascape unit a Low to Medium sensitivity to wind farms. It states '*Although there are a few large scale industrial features on land and the area has locally distinctive and natural coastal features, the simple landform, relatively linear coastline, general absence of focal features and expansive scale of the sea are key factors in limiting sensitivity to development. Turbines would need to be carefully sited to avoid intrusion on the setting of settlements*'

3.3. Regional Seascape Units

In order to understand the seascape in more detail for the assessment, a regional scale of seascape units is considered appropriate. At a regional scale there are no published seascape units. However, as part of this SLVIA, through a combination of fieldwork and desk based study, six regional seascape units have been identified within the 40km study area. Please refer to Figure 4. These units are primarily dictated by the change in coastal features between a deposition coastline and a rocky cliff coastline. In addition, taking into consideration marine, coastal, and coastal hinterland components, the seascape characteristics were defined and are discussed below for each regional unit as well as the key elements that combine to make the overall character distinctive from adjoining seascapes. The visual characteristics are also defined.

To the south of Aberdeen a rocky coastline extends for approximately 35 km to Inverbervie. The 'Beaches of Northeast Scotland' (SNH 1977) report describes this area as having '*high rock forms...stretches of precipitous rock faces...some of the most spectacular coastal scenery to be found anywhere in Scotland*'. The beaches can be described as '*small sandy inlets and strip beaches... often associated with rock platforms and cliff-foot situations*.'

Geologically this part of the rocky north east coast is divided where the red sandstone cliffs to the south are separated from the granite and quartzite cliffs to the north as a result of the Highland Boundary Fault which lies just north of Stonehaven. This is not easily perceivable along the coastline as it remains as steep rough slopes and cliffs alternating with small shingle bays. However, there is a more distinct change in the landform adjacent to the coast at this point. This also coincides with differing settlement patterns and therefore has divided the coastline south of Aberdeen into two seascape units, which are discussed below.

To the north, the national seascape guidance recognises the area between Girdle Ness and Collieston as deposition landscape. For the purposes of this assessment this section of coastline can be divided into two regional seascape units as the influences of Aberdeen city on the southern extents of the coast separates it from the north. North of Collieston the rocky coastline line begins and extends to Peterhead, where is becomes a deposition coastline once again.

3.3.1. Inverbervie to Stonehaven Regional Seascape Unit

This regional seascape unit lies at the southern extents of the study area, approximately 30 km at its closest point to the nearest turbine of the EOWDC and extends approximately 15 km between the towns of Stonehaven and Inverbervie. The coastline between Stonehaven and Catterline has been designated as an Area of Landscape Significance by Aberdeenshire Council (see Figure 2).

Its character is defined by an intermittently settled and often inaccessible rugged coastal edge, with open agricultural land extending inland from the precarious cliff edges. Villages and isolated houses and farms sit on the cliff tops overlooking small shingle bays. The village of Catterline is one of the few settlements which have access to the sea. The old main north-south road (A92) lies close to the coastline (between 1 km and 500 m), and a network of minor roads extends between this and the coast connecting the scattered farms and hamlets.

Although the agricultural land extends beyond 10 km inland to the slopes of the Mounth, the landward extent of this seascape unit only extends up to 2-3 km inland where the topography becomes more rolling and an increase in woodland cover prevents intervisibility with the coast. As a

result the landward extent is characterised more frequently by landscape elements rather than by seascape or coastal elements. The rolling landform contributes to restricting views and intervisibility between landscape, coastal edge and the sea. Wind turbines such as the recently built Tullo Wind Farm are visible in views looking back from the coastline but they are beyond the landward extents of the seascape unit.

The rocky cliff coastline with its roughly convex shape gives exposed expansive views out to sea which gives a vast sense of scale. There are limited areas of more intimate enclosed sea views from the small inlets and bays where access is possible.

On the whole, the open, elevated character is generally harmonious although the intricate craggy cliff coastline contrasts with the relatively simplistic agricultural and settlement pattern. It is considered that, with the generally large scale landscape and expansive seaward views, this seascape unit has a Medium sensitivity to the type of change proposed.

3.3.2. **Stonehaven to Girdle Ness Regional Seascape Unit**

This regional seascape unit extends approximately 20 km north from Stonehaven to Girdle Ness which is a small headland at the eastern edge of Aberdeen city. Girdle Ness lies approximately 8 km from the nearest turbine of the EOWDC. The coastline within this seascape unit from Findon to Stonehaven has been designated as an Area of Landscape Significance by Aberdeenshire Council (see Figure 2).

This seascape unit has an intricate cliff coast similar to that to the south although as it is north of the Highland Boundary fault the coastal geology consists of granites and quartzite. Stacks and arches are common along the cliffs, more so than to the south of Stonehaven due to the different geology. The cliffs are also in places less severe and have a more gradual slope towards the sea.

Also, differentiating it from the seascape unit to the south, it has a much narrower landward extent and is more heavily influenced by settlement and the edge of Aberdeen. North of Stonehaven the foothills of the Grampians extend almost to the coastline and this topography has influenced the settlement pattern to exist within a narrow corridor of land along the coast, with houses right up to the cliff edges. This rolling topography of the foothills close to the coastline also prevents extensive intervisibility of the coast to considerable distances inland.

The main north-south road (A90) and the railway line lie side by side in close proximity to the coastline offering some spectacular cliff and sea views, albeit intermittent due to the rolling topography. From Stonehaven to Muchalls there are very few developments on the seaward side of this transport corridor. It is a slightly more open, flatter landscape here with connections to the sea extending further inland than elsewhere within this unit. North of Muchalls the main road tracks slightly further inland but the railway line remains along the tops of the cliffs before curving round at Nigg Bay to the centre of Aberdeen. Historic fishing villages such as Portlethen and Newtonhill have expanded in size from the cliff edges to now lie between the railway line and A90.

The northern extent of this seascape unit is considerably urban and industrial in nature and combined with the landform the landward extent is still confined to a relatively narrow area. Quarrying, industrial estates, and golf courses are present between Cove Bay and Girdle Ness. The cliffs gradually decline to an open broad sweeping shingle beach at Nigg Bay. Historic elements such as the remains of St Fittick's Church, Torry Battery, and Girdle Ness Lighthouse sit side by side industry and settlements.

Overall, this seascape unit is a relatively densely settled and urbanised area with a narrow landward element due to topography and also elements such as the railway and main A90 road. The unit gets increasingly chaotic towards the north with the industry and settlement dominating. The elevated settlements on the cliff edges are separated directly from the sea but are connected visually. Although there are no wind farms within this RSU, distant views of wind farms are available. Taking into account all these factors it is judged that this regional seascape unit has a Medium to Low sensitivity to the type of change proposed.

3.3.3. Aberdeen Beach Regional Seascape Unit

The Aberdeen Beach seascape unit extends from Girdle Ness to the mouth of the River Don. It is approximately 5 km at its nearest point to the proposed turbines of the EOWDC.

The coastal component of the seascape unit between Girdle Ness and Bridge of Don is heavily influenced by the city of Aberdeen. The harbour is located at the mouth of the River Dee and is sheltered naturally by the Girdle Ness headland. The headland provides elevated viewpoints looking across Aberdeen Bay. Engineering works across the seafront of Aberdeen such as sea walls and groynes have controlled the beach in contrast to the more natural beach and dune systems beyond the Don mouth. However, Aberdeen beach is still very accessible and used all year round, with a variety of facilities and amusements along the beach esplanade.

Behind Aberdeen beach, the Kings Links and what is left of the Queens Links are remnants of the former dune systems and are now a golf course and recreational area respectively. Between the two links areas there is a ridge called Broad Hill which appears as a grassy knoll, as surrounding settlement has reduced its prominence. However, it does provide elevated views across Aberdeen Beach. The landward extent of this seascape unit is mainly confined to the immediate edges of the city and harbour area where views across the coast are predominantly east except from Girdle Ness.

The seaward extent of this unit is linked to the harbour and as such it is a busy shipping area; commercial, industrial, large and small scale with some recreational uses. Large ships travelling to and from Aberdeen, and also those that lie within the Maritime and Coastguard Agency (MCA) designated anchorage area can be seen across the horizon from many points within the unit. These provide scale and interest to the expansive North Sea. Surfing and Windsurfing are also not uncommon along Aberdeen beach.

It is a dynamic and busy seascape which can't really be separated from the city of Aberdeen. The city influences extend from the shipping channels, groynes along the beach to the tower blocks which overlook the coast. It is judged that due to the city influences and the slightly chaotic nature, but also the visible links with the sea and land, the seascape unit has a Medium sensitivity to the type of change proposed.

3.3.4. Aberdeen Bay Regional Seascape Unit

This regional seascape unit is defined by the large crescent of sandy beaches, dunes and links that lie between the mouths of the rivers Don and Ythan. The unit extends from the mouth of the River Don approximately 18 km to Forvie Sands where the deposition coastline ends. The proposed turbines lie within the southern extents of this seascape unit.

Donmouth represents the end of Aberdeen Beach. This area has been designated as a Local Nature Reserve due to the presence of a range of birds and sea life such as grey seals. To the north, the beach changes from a narrow irregular width at Balgownie to a broad expansive beach area at Balmedie extending approximately 14 km to the Ythan estuary. Dunes and links also change further north and become gradually less modified by development pressures. Examples of development on the links and dunes areas can be found at the Royal Aberdeen and Murcar golf courses, tips, quarries and MOD firing range at Blackdog. The change can also be noted in the designation of the area of coastline from Balmedie to the north as an Area of Landscape Significance.

Visitor access to the beaches is relatively contained to the Bridge of Don, Balmedie and Newburgh areas so there are large stretches of beach and dunes which are rarely used for recreation. Balmedie Country Park is a well-used facility which includes parking, visitor centre, and decked walkways through the dunes to the beach. The dunes and links along this seascape unit generally prevent clear views to the beach from inland except from local high points. On the north side of the Ythan estuary there is an extensive triangular area of complex dune systems called The Sands of Forvie. These are a National Nature Reserve and also have Site of Special Scientific Interest (SSSI) and Special Protection Area (SPA) designations. A dynamic landscape they offer an ever changing place with localised high points offering views across the sea and inland, where there are intermittent views of the Hill of Fiddes Wind Farm.

The landward element of this part of the unit includes the coastal urban residential settlement at Bridge of Don which peters out to the industrial estates and Exhibition facilities which lie either side of the A90. This includes two vertical features; a demonstration oil drilling platform and also an observation tower which is 43 m high. Beyond these buildings to the north, the landscape becomes more open with scattered settlement; however landfill and industrial uses are common. The farmland with an open windswept character encroaches into the sandy coastal fringe where views are available across the sea. The land rises to the west to gently undulating lowlands.

The sea element of the unit is perceived as having some containment to the south and north by the visible headlands at Girdle Ness and Buchan Ness (near Peterhead), although this is beyond the unit extents. The eastern extents extend to the horizon and appear at a vast open scale. The sea within this unit is active with many large fishing vessels, container ships, and ferries travelling through the outer waters.

In contrast to Aberdeen Beach, this Regional Seascape Unit is relatively remote and harmonious, with only the industrial and commercial elements to the south of Balmedie adding a discordant element. The landscape and nature designations also need to be taken into consideration and it is judged that overall the sensitivity to the type of change proposed varies from Medium to the south of Balmedie and High to Medium in the northern extents.

3.3.5. **Collieston to Peterhead Regional Seascape Unit**

This regional seascape unit is predominantly defined by a rocky cliff coastline which extends from Collieston 18 km north to Peterhead. It lies approximately 15 km from the proposed development.

Its coastal component is similar to the rocky coast to the south of Aberdeen with rugged and sculpted granite cliffs and includes features such as the Bullers of Buchan blowhole. The exception to this is Cruden Bay which is a large sheltered sandy bay which lies in the centre of the unit. There are also some smaller bays such as at Collieston, at the south of the seascape unit. Much of this coastal stretch has been designated as an Area of Landscape Significance.

The landward area reaches to beyond 10 km inland where a high plateau of generally open farmland relates to the coastline. There is an area of high open land surrounding Cruden Bay which gradually declines towards Peterhead. This seascape unit has a larger, consistently open and exposed landward area than the other seascape units to the south.

Settlement is sparse along the immediate coastline and consists of mainly individual farms and hamlets along the roads. The only villages along the coast are at Collieston, Cruden, Whinneyfold and the larger Boddam which lies just south of Peterhead. Transport routes in this area include the A975 and slightly further inland the A90. The Peterhead Power Station at Boddam has two large chimneys the highest of which is 170m high and is visible from a large area, including as far as Girdle Ness. Views of distant wind farms are also possible from the landward elements of the unit. Historic elements such as the remains of Slains Castle just north of Cruden Bay are also a noticeable feature of the landscape.

The sea element to the seascape unit is active with local fishing boats inshore and larger ships and ferries travelling across the outer waters.

This unit is generally a simple, open and large scale seascape with expansive sea views. Strong vertical features such as the Peterhead Power Station, although very visible, do not dominate the whole seascape. Due to the presence of vertical features and the overall simplicity of the seascape, but also the locally designated coastline, it is considered to have a Medium sensitivity to the type of change proposed.

3.3.6. **Peterhead to Fraserburgh Regional Seascape Unit**

The Peterhead to Fraserburgh seascape unit consists of a stretch of dunes and beaches covering approximately 25 km on the north east corner of Aberdeenshire. The unit extends beyond the 40 km study area.

Descending from the rocky cliff line surrounding Peterhead, the coastal element of this seascape unit consists of over eight separate shallow bays of various lengths broken up by the different

directions of tides. Behind the beaches the land consists of huge expanses of vegetated sand dunes. The Loch of Strathbeg, a large water body which lies in the centre of this seascape unit, is enclosed by the sand dunes and therefore quite separate from the sea. The coastal areas north of Peterhead have few if any settlements except for the prominent St Fergus Gas Terminal and the Ron lighthouse. Coastal settlements appear further round the coast at St Combs and Inverallochy near Fraserburgh.

The landward element consists of large coastal plains of farmland which due to the flat nature are not as visually connected to the sea as some of the more elevated areas. The A90 lies inland within the open plains and although the sea is generally not visible, the dune systems behind the beaches can be seen and related to, as also one is aware of the sea by the windswept landscape and exposure to coastal air.

Lying in between two large coastal industrial towns, this seascape unit, whilst having remote sandy stretches and dune systems, is heavily influenced by the industrial developments at St Fergus and the busy A90. It is therefore considered to have a Low sensitivity to the type of change proposed.

Table 1.4: Regional Seascape Unit Baseline

	Regional Seascape Unit	Approximate closest distance of coastline from nearest turbine	Sensitivity to type of change proposed
1	Inverbervie to Stonehaven	30km	Medium
2	Stonehaven to Girdle Ness	8km	Medium to Low
3	Aberdeen Beach	5km	Medium
4	Aberdeen Bay	0km	Medium (south) High to Medium (north)
5	Collieston to Peterhead	15km	Medium
6	Peterhead to Fraserburgh	35km	Low

3.4. Landscape Character

The EOWDC will not have any direct effects on the landscape character areas of the onshore parts of the study area. However, on account of the fact that turbines are tall, vertical and moving features, there is the potential for some landscape character areas to have a visual sensitivity towards them. Given this, the character areas within the study area have been assessed only on the basis of their visual sensitivities towards wind farms and on the extent to which the visual characteristics of a character area contribute to defining that landscape character. This takes into consideration '*the probability of change in the landscape being highly visible, based particularly on the nature of the landform and the extent of tree cover both of which have a major bearing on visibility*' (Countryside Agency and SNH, 2004. Topic Paper 6).

Scottish Natural Heritage commissioned landscape character assessments to cover the whole of Scotland in the early 1990s. Of relevance to this SLVIA are the South and Central Aberdeenshire Landscape Character Assessments (LCA), Aberdeen City LCA, and Banff and Buchan LCA. The following paragraphs discuss the key characteristics of the character areas identified within these assessments that lie within the study area and assesses their visual sensitivity towards the type of change proposed. In cross referencing the ZTV of the proposed development with the landscape character areas it is clear that there are entire areas which do not have any potential intervisibility with the site and therefore these have not been included in the baseline assessment.

Figures 5 and 6 illustrate all the landscape character types within the 40 km radius study area of the proposed development, including those which will not have any intervisibility with the EOWDC.

As the seascape units include the coast and relating landscape, in order to avoid duplication and confusion, the relevant landscape character areas will not be assessed separately. This therefore

includes; all Coast landscape types and areas, and Potterton and Murcar landscape character areas. It is acknowledged that parts of the Eastern Agricultural Plain, Formartine Lowlands, and Garvock and Glenbervie landscape character areas also overlap with the seascape units but as these are large character areas covering an area beyond the seascape units they will still be included in the assessment.

South and Central Aberdeenshire LCA

This LCA identifies five landscape types within south and central Aberdeenshire. The 'Coastal Strip' lies closest to the development and the majority of the adjacent area is classified as 'Agricultural Heartlands'. Further to the west and south west the 'Moorland Plateaux' extends into the farmland. 'Farmed Moorland Edge' and 'Straths and Valleys' landscape types lie at the edge of the study area.

Within the 40 km study area, the main landscape type is Agricultural Heartlands which comprise of the Formartine Lowlands, Central Wooded Estates and Kincardine Plateau landscape areas which surround Aberdeen, and also the Ythan Strath Farmland, Northern Rolling Farmlands, Howe of Alford, and Garvock & Glenbervie landscape areas which are at the outer extents of the study area.

The Moorland Plateaux landscape type extends into the Agricultural Heartlands with The Mounth landscape area at the south west of the study area and the Grampian Outliers to the west.

The following paragraphs discuss the key characteristics of the Agricultural Heartland landscape areas and the Moorland Plateaux landscape areas. As only small areas of the Straths & Valleys, and Cromar Uplands landscape character types lie within the study area and when cross referencing them with the ZTV it is clear there is no intervisibility with the EOWDC, they will not be included in the assessment.

3.4.1. Agricultural Heartlands

Described as intensive farming on large fertile fields, the Agricultural Heartlands landscape type covers an extensive area between the coast and Grampian Mountains within the study area. The Howe of Alford character area within this type is the only one within the study area which is shown on the ZTV to have no intervisibility with the EOWDC and therefore will not be assessed.

Formartine Lowlands (LCA No.4, Figure 5)

This landscape area lies to the north of Aberdeen, east of the Formartine links and dunes. The character area extends beyond the South and Central Aberdeenshire survey to the Banff and Buchan character assessment which is discussed later.

The gently undulating and open agricultural character of this area gives expansive views across the landscape. However, plans outlined in the LCA to increase woodland cover in this area and also objectives to increase the diversity of landscape features and promote a more coherent landscape structure will reduce this existing openness in places. Existing turbines at Hill of Fiddes and Ardgrain and to a lesser degree the small single turbines at Mains of Bogfechel and Tillymaud combined with transmission lines across the area are strong vertical elements in the otherwise open landscape which lacks any significant landscape features. It is a well settled area including the large town of Ellon and also the main north south road (A90). Taking into account the above, the visual sensitivity of the Formartine Lowlands to the type of change proposed is considered Medium to Low.

Central Wooded Estates (LCA No.5, Figure 5)

This area lies between the Don and Dee valleys at the edge of the suburbs of Aberdeen extending west to the edge of the Grampian hills. As indicated by the character area's name, the wooded estates are a strong feature of this rolling landscape. There are some areas of open farmland which allow long views within the area which contrast with enclosure by woodland. Two Areas of Landscape Significance lie within this character area – one at the north eastern extents of the character area along the River Don valley, and the other to the south along the River Dee. There are a large number of towns and villages and a busy network of roads. The enclosure created by the woodland and rolling landscape and lack of any significant views out of the character area reduce the visual sensitivity to the type of change proposed to Low.

Kincardine Plateau (LCA No.6, Figure 5)

The Kincardine Plateau is an area of land to the south west of Aberdeen which is a transitional landscape between the upland areas of The Mounth and the coastal cliffs around Portlethen and Newtonhill.

This is a landscape area that does not have a strong character; it has a diverse and complex landscape pattern which is often neglected and lacks cohesion. Views out of the character area are not a key characteristic although there are exposed mounds and hills across the landscape which will provide opportunities for wider views. There is strong development pressure extending from the industrial and residential areas of southern Aberdeen. Taking the above into consideration it is judged that the visual sensitivity of the Kincardine Plateau character area to the type of change proposed is Low.

Ythan Strath Farmland (LCA No.7, Figure 5)

This landscape area is a small area which lies to the north of the Formartine Lowlands and to the east of the Northern Rolling Lowlands.

The Ythan Strath Farmland is a rural landscape with exposed hill tops and rocky outcrops contrasting with the more intensely farmed pockets. Settlement is scarce and is mainly scattered farmsteads. The area has a relatively small scale field pattern with diverse vegetation cover which adds to the rural character. The undulating landform, blocks of coniferous woodland and the large areas of estate planting at Haddo give some enclosure to the area .This intricate structure reduces the opportunities and importance of views out to the wider landscape. A three turbine wind farm at Skelmonae and a single turbine at Courtstone lie within the character area. It is judged that the Ythan Strath Farmland will have a Low visual sensitivity to the type of change proposed.

Northern Rolling Lowlands (LCA No.8, Figure 5)

The Northern Rolling Lowlands lie north east of the Formartine Lowlands and extend into the Banff and Buchan Agricultural Heartlands landscape type. It is a simple landscape consisting of a rolling landform covered by large geometric fields and woodland blocks. Settlements and farms lie in the sheltered valleys. A key characteristic is long distance views from the elevated areas out to the wider landscape. This simplistic landscape is now dotted with wind farms varying from single turbines to five turbines. They are a distinctive vertical element seen in the skyline from many areas within and outside the character area, although the undulating landscape curtails some views. The visual sensitivity to the type of change proposed is considered Low as wind farms and views of wind farms are now an established characteristic of this landscape character area.

Garvock and Glenbervie (LCA No.9, Figure 5)

This area lies to the south of the Kincardine Plateau and east of The Mounth. The Garvock and Glenbervie character area is primarily characterised by the large scale sweeping open rolling hills that give distant views across the area to The Mounth and Howe of the Mearns. There is a scattered settlement pattern and radio masts are prominent on high points. The large fields of arable and pasture are divided by fencing and there is a scarcity of hedges and dykes. There are several wind farms in the area both near the coast and in the shelter of The Mounth. The views out to the wider landscape are a key characteristic which may or may not include wind farms and other vertical features. The visual sensitivity is therefore considered to be Medium to Low to the type of change proposed.

3.4.2. Moorland Plateaux

The Moorland Plateaux has a 'Highland' character of exposed heather moorland with coniferous plantations. It has been divided into two main areas which are discussed below.

Grampian Outliers (LCA No.12, Figure 5)

The Grampian Outliers consists of several high points to the west of Aberdeenshire at the transition between the high mountains of the Cairngorms and the lower farmland of the north east. The outcrops at Bennachie, Hill of Fare, and the eastern edge of the Ridge of Foudland are included at the extents of the study area.

The Grampian Outliers have a generally high undulating landform with some dramatic outcrops such as at Bennachie. The mountains are mostly covered with conifer plantations with the upper slopes more open with heather moorland giving a rural and wild character. The agricultural lands on the lower slopes provide a distinct edge to the mountains. The few settlements are restricted to the lower sheltered areas. Telecommunication masts are dominant on some of the high points and wind farms lie on some of the areas outside the study area, although views of wind farms are possible to the north. The extensive panoramic views available from the promontories are an important characteristic of these areas. Therefore, these expansive elevated views, moderated by the fact that turbines are already a feature in some views, are judged to give a visual sensitivity to the type of proposed change of High to Medium.

The Mounth (LCA No.13, Figure 5)

The eastern half of The Mounth character area lies within the study area. It is surrounded by the Agricultural Heartland landscape type. The Mounth is a substantial undulating ridge that is a dominant presence in views from the south of Aberdeen. The areas within the study area are heavily forested with some exposed higher areas of heather moorland. The landscape becomes higher and more open towards the south west of the study area. The LCA describes it as having a 'wild and exposed character with commanding views into tranquil farmed lowland'. The Mid Hill Wind Farm lies within a forested part of The Mounth and there are several wind farms in the adjacent lowland areas to the south. Taking into consideration the importance of the views into the 'tranquil farmed lowland' and the presence of wind farms in some views, the visual sensitivity to the type of change proposed can be judged as being High to Medium.

Banff and Buchan Landscape Character Assessment

This LCA covers the northern extents of the study area. Within this area there are four landscape types identified; Coast, Coastal Farmland, Agricultural Heartlands, and River Valleys. The River Valley type and two areas of Agricultural Heartlands are not included as the ZTV shows there is no intervisibility with the site from these areas. The Coast is covered by the seascape units and so will not be assessed separately here.

3.4.3. Agricultural Heartlands

This landscape type continues from the Agricultural Heartlands type set out in the South and Central Aberdeenshire LCA. There are three character areas of this type within the study area. Wooded Areas around Old Deer, and Upland Ridges South of the Deveron character areas have not been assessed as the ZTV shows that there will be very limited if any intervisibility with the EOWDC. It is only the Agricultural Heartlands character area which will potentially have intervisibility and is discussed below.

Agricultural Heartland (Landscape Area) (LCA No.18, Figure 5)

The Agricultural Heartland landscape area is a large area of gently rolling farmland which extends to the coastal plains. It has many small settlements and also some larger villages and frequent farmsteads. The large field pattern is defined by a variety of boundary types such as fences, hedges and stone walls. It is also interspersed with small coniferous blocks and broad leaved trees. This relatively simple and large scale landscape contains several small wind farms with many more consented and lodged in the planning process. Open views of the surrounding landscape are a key characteristic of the Agricultural Heartlands. The visual sensitivity to the type of proposed change is considered Low given it is a large scale landscape with existing turbines already a feature in views within and outside of the character area.

3.4.4. Coastal Farmland

The Coastal Farmland type extends from the Agricultural Heartlands to the coast. There is just one area identified within our study area which is discussed below.

Eastern Coastal Agricultural Plain (LCA No.21, Figure 5)

This area links with the South and Central Aberdeenshire LCA Formartine Lowlands character area. It is a low coastal plain which gently undulates, but overall it can be described as an open and windswept area. It is predominantly agricultural land with some areas of boggy land at St Fergus Moss, Rora Moss and Moss of Cruden. There are constant views of the sea with only a few intervening conifer blocks and shelterbelts. Several small wind farms exist in this area with several more in planning. It is judged that due to the openness and characteristic views beyond the character area to the sea, the visual sensitivity to the type of proposed change is Medium to Low.

3.5. Aberdeen LCA

The Aberdeen LCA identifies five landscape character types; Major River Valley, Hills, Open Farmland, Wooded Farmland and Coast. These have been divided into 27 character areas, six of which do not have any intervisibility with the site following review of the ZTV. The three coastal areas and Murcar and Potterton areas are not discussed as they are covered by the seascape units. Therefore, the key visual characteristics of the remaining 16 character areas are described below.

3.5.1. Major River Valleys

The river valleys of the Don and the Dee are significant landscape features within the Aberdeen area. The Don valley up to where it is channelled through the city has been divided into three separate character areas, namely; Upper Don Valley, Dyce Plain, and Lower Don Valley. The ZTV shows that there is no intervisibility between the site and the Dee Valley and the Lower Don Valley character areas. The remaining valley areas are discussed below.

The Upper Don Valley (LCA No.23, Figure 6)

This area of the Don valley has a large scale valley landform which is generally enclosed with considerable areas of woodland. There are local confined views along the River Don and also short views east towards the edge of Dyce and Aberdeen. Longer distant views of hills to the west can also be seen. It is a sparsely settled area and pylon lines are dominant through the valley, as well as a large sand extraction site. The visual sensitivity of the Upper Don Valley to the type of proposed change is therefore considered Low due to the inward looking unobtrusive nature of much of the valleys length.

Dyce Plain (LCA No.24, Figure 6)

The Dyce Plain, is a more open part of the river Don valley and affords distant views from higher parts which also feature the extensive industrial estates, airport, and heliport. The visual sensitivity of the Dyce Plain to the type of proposed change is considered Low, as although it is more open, it is a chaotic area with many distracting elements in the foreground such as the airport and industrial estates.

3.5.2. Hills

Gently rounded hills form a distinctive edge to the west of the city and a small section to the south east. There are four specific character areas; Tyrebagger Hill/Kirkhill, Brimmond Hill, Gairnhill and Kincorth & Tullos hills. Gairnhill is not included in the assessment as the ZTV shows that this low hill west of Aberdeen will not have any intervisibility with the EOWDC.

Tyrebagger Hill/Kirkhill (LCA No.27, Figure 6)

Tyrebagger Hill and Kirkhill rise to 233m above ordnance datum(AOD) and lie at the north west limits of Aberdeen. The rounded hill is predominantly covered by coniferous woodland on the hill top and farmland on the lower slopes. The elevation of this area has meant it has become a landmark and it terminates views from many viewpoints from within the city and surrounding areas. Long distant views in all directions are available from the open areas around the woodland. These views include Aberdeen and the sea as well as towards the more rural west. The visual sensitivity to the type of proposed change is therefore considered to be High to Medium, taking on board the diverse elements which will exist with the views.

Brimmond Hill (LCA No.28, Figure 6)

Located to the west of Aberdeen, south of Tyrebagger and Kirkhill, Brimmond Hill rises to 266m AOD and nearby Elrick hill is 200m AOD. Their lower slopes are mostly agricultural land which opens out to moorland on the summit of Brimmond Hill, with some mixed woodland leading up to Elrick Hill's summit. Brimmond Hill has a cluster of masts on its summit which are dominant man-made features in this area and can be seen for some distance. Overall the area forms a strong, visible contrast, especially with the open moorland summits, with the adjacent urban areas. Views from the hilltops are expansive and include the Grampian Outliers to the west and across the city to the sea in the east. Distant existing wind turbines can be seen within these views to the north and north west. The character area's visual sensitivity to the type of proposed change is considered to be Medium given the characteristic hilltop views and presence of large manmade structures within the area.

Kincorth and Tullos hills (LCA No.30, Figure 6)

Kincorth and Tullos hills are a gently rounded ridge line of elevated ground to the southeast of Aberdeen which forms the southern skyline in views from the city. They have an open character dominated by heath vegetation and although predominantly used for recreation there is landfill waste on the northern side of Tullos hill and the hills are surrounding by industrial parks and residential areas. Views across the city are a key characteristic and especially towards the River Dee and Aberdeen Bay. These views take in a variety of natural and manmade elements including the vertical tower blocks at Seaton and Stockethill. Therefore, the visual sensitivity to the type of proposed change is considered Medium.

3.5.3. Open Farmland

Broadly corresponding with the adjoining Aberdeenshire LCA's Agricultural Heartland landscape type, the Open Farmland forms much of the immediate hinterland of the city. Murcar and Potterton character areas are not included as they lie within the Aberdeen Bay seascape unit. Also, Clinterty/West Brimmond Farmland and Anguston/Leuchar/Easter Ord character areas are not assessed as the ZTV shows there will be no intervisibility of the EOWDC with these areas.

Perwinnes (LCA No.31, Figure 6)

This area has a gently rolling landform with shallow basins at Perwinnes Moss and Corby Loch which are local nature conservation areas. It is generally higher than adjacent areas so affords distance views across the farmland and to the edges of Aberdeen. The farmland consists of mainly pasture and rough grazing with post and wire fencing with small areas of woodland. Settlement is sparse but manmade elements such as sand extraction and the radar station at Perwinnes are very visible elements within the landscape. It is judged that the visual sensitivity to the type of proposed change is Medium due to the possibility of views outside of the character area but also taking into account dominant elements such as the radar.

East Elrick (LCA No.34, Figure 6)

The East Elrick open farmland character area lies at the edge of the eastern slopes of Brimmond Hill, but is a relatively flat landscape. There are very few distinguishing elements; it is a simple agricultural landscape with sporadic trees, sparse settlement, and a network of minor roads. Extensive views out to the north are a key characteristic but landform and forest cover prevents views to the wider landscape in other directions. In addition, the masts are visible on Brimmond Hill and also the industrial estates at Dyce. Therefore, it is considered the visual sensitivity to the type of proposed change is considered Medium to Low.

Newhills (LCA No.35, Figure 6)

This is a relatively large character area which lies at the western edge of the city and extends to the slopes of Brimmond and Elrick Hills. The landform is 'saucer-shaped' which is predominantly agricultural with marshland in the lower central part. Hedgerows and extensive shelterbelts are a characteristic. Views are enclosed by the rising landform which surrounds the area but the elevation of the area does allow views towards the urban edge, Dyce industrial estate and radar station at Perwinnes. The visual sensitivity of the character area towards the type of proposed change is

considered Low due to the generally enclosed nature and dominant manmade features within the long distant views that are available.

Maidencraig (LCA No.36, Figure 6)

This linear character area comprises the shallow valley of the Denburn. The open farmland includes a local nature reserve at Den of Maidencraig which has large areas of woodland planting. The landscape has a more intricate smaller scale than other areas of open farmland and some distinctive lines of trees along the main roads. It is a well settled area with the encroachment of residential developments from the edge of Aberdeen. The landform encloses the area which restricts long distant views to beyond, except for the clock tower of Woodend Hospital which is prominent in views towards the east. Therefore, the visual sensitivity of Maidencraig to the type of proposed change is considered Low.

Kingshill/Bogskeathy (LCA No.37, Figure 6)

Kingshill/Bogskeathy character area is a gently sloping plateau which is enclosed by the higher ground to the north, and coniferous plantations to the west and east. However, views to the south east towards the hills at Kincorth and Tullos are available, and the tower blocks at Stockethill can also be seen. Within the area, it is open pasture/grazing land, with some intervening blocks of coniferous woodland. The few buildings in the area are mostly located along the minor roads or edges of the character area. Taking into account the above it is considered that the visual sensitivity to the type of proposed change is Medium to Low.

Den of Leggart (LCA No.38, Figure 6)

Den of Leggart is a shallow valley landscape located on the western side of the A90 and Kincorth Hill. The open farmland consists of small scale fields bounded by stone dykes often overgrown with scrub and grasses. Views are restricted by the higher valley sides except to the north where views are directed to the western extents of Aberdeen. Long distance views beyond Northfield and Mastrick are limited. Due to the restricted and relatively short distance views, the visual sensitivity to the type of proposed change is considered Low.

Loirston (LCA No.39, Figure 6)

This character area is the southernmost area in the Aberdeen study area. It lies to the east of the A90 and south of Kincorth Hill. It has a gently rising landform which includes a lower area at Loirston Loch. There are industrial and residential areas to the north and east but elsewhere it is open farmland which lies between the A90 and the development. The urban influences are dominant and restrict any views to the wider area. Therefore it is judged the visual sensitivity to the type of proposed change is Low.

3.5.4. Wooded Farmland

There are five Wooded Farmland landscape areas identified within the LCA, four of which have potential intervisibility with the proposed development.

Braes of Don (LCA No.42, Figure 6)

The Braes of Don is a gently rolling landscape with a mix of woodland and pasture with distinctive shelterbelts. Grandholme moss is a natural feature on the lower ground. There is some residential development extending into the area from the south. Power lines cross the landscape from north to south and there is a network of roads across the area. Glimpsed views of the edges the Lower Don valley are available but views out are not a characteristic. Therefore the visual sensitivity towards the type of proposed change is considered Low.

Craibstone (LCA No.43, Figure 6)

This is a strongly undulating landscape which forms a distinctive approach to the city from the north west from the A96. It lies on the eastern side of Tyrebagger hill extending towards the urban edge of Dyce. This high ground restricts views towards the west but where woodland allows, views of the sea are possible, and to the city and coast to the east. Settlement is sparse and the Macaulay

Institute buildings are quite dominant. The visual sensitivity towards the type of proposed change is considered Medium given the characteristic views towards the coast.

Kingswells (LCA No.44, Figure 6)

Kingswells wooded farmland landscape area lies around the suburb of Kingswells and on the lower slopes of Brimmond Hill. There are not any large areas of woodland but it is identified as wooded due to the presence of tree clumps, boundary trees and shelterbelts. Since the LCA was written Kingswells has developed significantly and the rural nature has now become more of an urban edge character. Views to the surroundings are limited due to the surrounding higher ground except to the east where they extend further towards the city centre. Also the masts on Brimmond Hill are prominent in views. It is therefore judged that the visual sensitivity to the type of proposed change is Low.

Hazlehead (LCA No.45, Figure 6)

Hazlehead has a gently undulating landform which lies at the western extents of Aberdeen. It consists of Hazlehead woodlands, open areas of golf courses, a public park, recreational areas, school playing fields, garden centre, and also a riding school. There are few buildings and many footpaths, bridleways and minor roads. The woodland encloses the areas and views out to the wider landscape are not a characteristic. Therefore the visual sensitivity to the type of proposed change is considered Low.

Table 1.7: Landscape Character Areas Baseline

Character type	**Character area**	**Approximate closest distance to nearest turbine**	**Visual sensitivity to type of proposed change**
South and Central Aberdeenshire LCA			
Agricultural Heartlands	Formartine Lowlands	3km	Medium to Low
	Central Wooded Estates	7.5km	Low
	Kincardine Plateau	14.5km	Low
	Ythan Strath Farmland	17km	Low
	Northern Rolling Lowlands	22km	Low
	Gavock and Glenbervie	27km	Medium to Low
	Insch Basin	23km	Not within ZTV
	Howe of Alford	37km	Not within ZTV
Moorland Plateaux	Grampian Outliers	27km	High to Medium
	The Mounth	25km	High to Medium
Straths and Valleys	Deeside	30km	Not within ZTV
Farmed Moorland Edge	Cromar Uplands	33km	Not within ZTV
Coastal Strip	Formartine Links and Dunes	3km	Included within Seascape Units
	Kincardine Cliffs	10km	
	Kincardine Links	25km	
Banff and Buchan LCA			
Agricultural Heartlands	Agricultural Heartlands (area)	22.5km	Low

Character type	Character area	Approximate closest distance to nearest turbine	Visual sensitivity to type of proposed change
	Wooded Areas around Old Deer	25km	Not within ZTV
	Upland Ridges South of the Deveron	25km	Not within ZTV
Coastal Farmland	Eastern Agricultural Coastal Plain	17km	Medium to Low
River Valleys	Deveron and Upper Ythan Valley	28km	Not within ZTV
Coast	Dunes and Beaches from Fraserburgh to Peterhead	33km	Included within Seascape Units
	Cliffs of the North and South East Coasts	17km	
Aberdeen LCA			
Major River Valleys	Upper Don Valley	12km	Low
	Dyce Plain	10km	Low
	Lower Don Valley	5km	Not within ZTV
	Dee Valley	12km	Not within ZTV
Hills	Tyrebagger Hill/Kirkhill	12.5km	High to Medium
	Brimmond Hill	14km	Medium
	Gairnhill	15.5km	Not within ZTV
	Kincorth/Tullos Hills	9km	Medium
Open Farmland	Perwinnes	7km	Medium
	Potterton	4.5km	Included within Seascape Units
	Murcar	3km	
	East Elrick	13km	Medium to Low
	Newhills	10km	Low
	Maidencraig	12.5km	Low
	Kingshill/Bogskeathy	14km	Medium to Low
	Den of Leggart	12.5km	Low
	Loirston	12km	Low
	Clinterty/West Brimmond Farmland	16km	Not within ZTV
	Anguston/Leuchar/Easter Ord	17km	Not within ZTV
Wooded Farmland	Braes of Don	7km	Low
	Craibstone	11km	Medium
	Kingswells	13.5km	Low
	Hazlehead	12km	Low
	Countesswells / Milltimber / Kennerty	13km	Not within ZTV

Character type	Character area	Approximate closest distance to nearest turbine	Visual sensitivity to type of proposed change
Coast	Doonies/Cove Coast	9km	Included within Seascape Units
	Girdle Ness/Nigg Bay	8km	
	Aberdeen Links	3km	

3.5.5. **City of Aberdeen**

The heart of Aberdeen lies approximately 8km from the nearest turbine of the proposed development. The character of the landscape surrounding the city has been described above but it is also important to look at the character of the city itself. Again, the proposed development will not have a direct material effect on the city itself but only on those aspects which could potentially have a visual sensitivity. The setting of historic buildings and features within the city is discussed in Chapter 7.6 Cultural Heritage.

The Aberdeen LCA (SNH, 1996) has helpfully assessed the setting of Aberdeen as a city. It has looked at the perception of Aberdeen and its relationship to the surrounding landscape, and the landmarks of the city.

The built-up nature of cities means that long distant views out to the surroundings are often not available except from elevated areas. The LCA identifies that within the city centre there are few, if any views out to the wider area and the main visual sensitivities would be confined to those areas within the outer elevated edges of the city and the coastal edges. It is from these areas that there are opportunities for views across the whole city and the landscape setting can be appreciated. The elevated urban areas include parts of the local areas of Tullos, Kincorth, Torry, and Kaimhill at the south of Aberdeen, and Seafield, Stockethill, Northfield and Hilton to the west and north-west. Within these areas, main roads such as the A96 near Tyrebagger Hill and the A90 near Kincorth Hill allow views across the city within its setting between hills and the sea. These roads give a sense of arrival to the city. The A90 to the north of Aberdeen gives less of an overview of the whole city but the association of the coast to parts of the city is strong when approaching from the north. Other gateways can be found at the city bridges crossing the rivers Dee and Don. The coastal railway route from the south also has a sense of arrival with the contrast of the coastal cliffs to the built up area of southern Aberdeen with views across the River Dee.

Landmarks include the hills which have been discussed in the landscape character above, but also the many historic spires and towers within the city centre and also Girdle Ness lighthouse. Other more modern landmarks include several 1960's and 70's tower blocks, one cluster near the coast at Seaton and another inland at Stockethill and Northfield. These are very prominent in most views of the city. Telecommunication masts at Northfield, Brimmond Hill and radar station at Perwinnes are also features within the views of Aberdeen. Expanding large industrial areas including office developments mostly lie at either the southern side of Aberdeen at Altens and also to the north at the airport and Bridge of Don areas. Also prominent in views of the city, there is a demonstration oil drilling platform which lies on the coastal area beside the Exhibition centre, north of the city.

The visual sensitivity of Aberdeen city to the type of proposed change is judged to vary between negligible and high across the city depending on density and orientation of buildings, elevation, and existing features within open views. Specific areas will be addressed in the visual assessment.

4.0 Meteorological Context

The degree, extent and likelihood of visual effects arising from the proposed development is an amalgam of a variety of different factors, not least the prevailing weather conditions that occur at any one time and can determine changes in character and visibility with varied wind, light, tidal movements and the clarity or otherwise of the atmosphere.

Two visibility data sets were obtained from the MET Office and these are presented in Appendix 2. These show the average distances of visibility over a 30 year period taken from Dyce (Aberdeen Airport) and also offshore locations from ships in the North Sea, east of Aberdeen beyond the 60 km study area. The locations of these data sets provide a good indication of the local conditions but it is acknowledged that they cannot represent the visibility from the whole of the study area. In particular, along the coastline of the North Sea, visibility can be affected by 'haar' between April and September which may not have been picked up in the presented data sets due to their source location. Haar is a sea fog caused when warm continental air is cooled and moistened by the North Sea. These fogs are normally shallow in depth and often lift inland where it is burnt off by the sun. Haar has been recorded as present along the east of Scotland within the spring and summer of up to 14 days per month in exceptional years (North Sea Pilot, 1997; DTI, 2004).

Analysing the data sets presented in Appendix 2, the following tables (4.1 and 4.2) provide a summary of the percentage of time of visibility at the various distances listed. Please note that the offshore ship sourced data and the Dyce data are not recorded with the same distance intervals so there is limited direct comparison that can be made.

Tables 4.1 and 4.2

Dyce Meteorological Station Data	
Kilometres Visible	**% of time**
<10	19
10-15	8
15-20	9
20-25	11
25-30	13
30-35	16
35-40	8
40-45	10
>45	6

Offshore Ship Sourced Data	
Kilometres Visible	**% of time**
<10	13
10-20	22
20-50	61
>50	4

Analysing the data sets shows that there are no noticeably strong trends and, as would be expected, the percentage incidence of visibility decreases to some degree with increasing distance, notably beyond 35 km onshore at Dyce and beyond 50 km offshore, although the offshore data does not provide a detailed breakdown between 20 km and 50 km. At Dyce, 19% of the time visibility is less than 10 km which is not an insignificant period (1 day in 5), and almost 50% of the time visibility is less than 25km (every other day). However, it is acknowledged that visibility is also possible beyond 25km for 50% of the time, albeit to varying distances.

Overall, it is clear that the visibility from these particular points in the study area varies considerably and that the EOWDC will not be seen 100% of the time, even at the closer distances, and this is an important factor that should be taken into account in the assessment of the effects upon land/seascape character and visual amenity.

5.0 Baseline Visual Environment

The inherent visibility of wind farm developments and the resulting effect on the visual environment are often cited as a concern for local residents and visitors alike. The purpose of the visual assessment is to determine the visibility of the proposed development and to establish what the anticipated visual effect of the proposals would be from a range of representative viewpoints within the study area.

5.1. Zone of Theoretical Visibility

The computer generated ZTVs to nacelle and blade tip (Figures 7, 8 and 9) identify key stretches of the coastline and hinterland from which the proposed offshore wind farm development may theoretically be visible. At the baseline stage, reviewing the ZTV is important to understand the potential areas from where the development could be visible, and equally, where it won't be visible. Appendix 4 details the methodology used for creating the ZTVs.

5.2. Key Visual Receptors

A wide variety of visual receptors will be potentially affected by the proposed development. These receptors will vary considerably depending on the intricacies of the coastline and will include local residents, those travelling through the area and those visiting the area for recreational and amenity purposes. Most of these will be onshore receptors, but there is potential for offshore receptors such as those travelling or working on boats or even oil platforms. This report focuses on the following three key categories of visual receptors: local residents, the travelling public and visitors to the area. It is acknowledged that one person can fall into more than one of the three categories. Please also refer to the assessment methodology in Appendix 2.

5.2.1. Residents

Local residents are judged to have a generally High level of sensitivity to the type of change proposed where views of the proposed site are available to them. The ZTVs indicate that residents within the coastal edges and elevated areas of Aberdeen and its suburbs, with coastal villages and towns to the north of Aberdeen, are those most likely to have views of the proposed development. The coastal settlements of Blackdog and Balmedie are the nearest to the development.

5.2.2. The Travelling Public

This category of visual receptors includes both residents/commuters and those who travel to or through the study area, both on land and at sea. It is considered that this group will have an average Medium to Low level of sensitivity to the type of proposed change, depending upon the purpose and objective of the traveller, on account of the transitory nature of views in any one direction.

Roads

There are several main roads throughout the study area. The A90 is the key road which links Aberdeen to the south and also links Fraserburgh and Peterhead in the north. The A90 is the closest road to the EOWDC, running parallel to the coast, 1 km inland. The section of the A90 between Balmedie and Tipperty, to the north of the EOWDC has planning permission to be dualled, although timescales for construction are not known at this time. The A96 is the main road between Aberdeen and Inverness and extends to the north west of the city. Along Deeside, the A93 extends from Aberdeen to Banchory within the study area. The A920, A948, A947 are other main roads within the northern area of the study area and the A944 to the west of the city. There is also a network of many B roads and minor roads which cross the open farmland, becoming slightly sparser towards the western and south western extents of the study area where it is more remote and mountainous.

The proposed Aberdeen Western Periphery Route (AWPR) lies inland from Stonehaven, around the western extents of Aberdeen and turns east at Dyce to join the A90 at Blackdog, directly opposite the EOWDC. Although recently consented is it currently subject to legal challenges and therefore can't be assumed that it will be constructed. It therefore will not be included in the assessment, although reference may be made if appropriate.

Rail

The main east coast railway line terminates at Aberdeen after following the dramatic cliff coastline from Stonehaven to Nigg. At Nigg the line curves inland towards Aberdeen station to the west of the Harbour. Where cuttings and vegetation allow, the stretch of line from Stonehaven to Aberdeen allows extensive eastern views across the North Sea.

Public Paths

There are many accessible public paths and cycle routes around Aberdeenshire and the coast. Aberdeenshire Coastal Path is part of the North Sea Trail which is a route that links parts of the North Sea exposed coasts of Scotland, England, Norway, Sweden, Denmark, Germany and the Netherlands. The trail covers almost the entire Aberdeenshire coast and Aberdeenshire Council has produced 38 separate maps (of which maps 6-23 cover the study area) (The North Sea Train, undated) which detail the route and provide information on features of interest. These have been taken into consideration in the description of the seascape units and also several of the viewpoints are located on the route. The coastal routes include parts of the main roads where walking paths are not available.

Sea Routes

Aberdeen is a busy harbour, as is Peterhead, and many of the other smaller coastal villages also have frequent marine activity. Passenger ferries to Orkney and Shetland are also regular from Aberdeen. The Shipping and Navigation Assessment details the routes across the North Sea.

The Royal Yachting Association (RYA) UK Coastal Atlas of Recreational Boating (RYA, 2009) illustrates the cruising routes in the study area which are all 'medium' recreational use which means that they are '*popular routes on which some recreational craft will be seen at most times during summer daylight hours*.' Within the study area routes are shown between Stonehaven, Aberdeen and Peterhead, with other routes from further afield in the outer waters.

In RYA's response to the scoping opinion request (Aug 2010) they explain that recreational sailing within the study area mainly follows an inshore route from the Firth of Forth to Peterhead, often at night to avoid the busy harbour traffic at Aberdeen and Peterhead.

Also of importance, the RYA Position Statement of Offshore Renewable Energy Developments (RYA, 2005) recognises *'recreational activity is important to the health and wellbeing of the community as well as economic support for the local coastal economies. Retaining the undisturbed remoteness of some waters will be important in terms of its wilderness and amenity value*.' However, with the busy shipping and fishing activities in the surrounding waters of the EOWDC, the terms 'remoteness and wilderness' are not so relevant for the character of the sea in the immediate study area.

Visitors and the Tourism/Amenity Resource

This category embraces a wide variety of individual visual receptor groups whose principal preoccupation is with the enjoyment of the outdoor environment, the open countryside and the tourism / amenity resource the coastline offers. These visual receptor groups will have different objectives, and thus differing levels of sensitivity to any change in the fabric or the character of the seascape units and visual effect arising from the proposed development. On average, the sensitivity of this receptor group is likely to vary between Medium and High.

People in this receptor group include users of footways and cycle routes and visitors to coastal facilities and beaches; golfing; accommodation including hotels, caravan and camp sites; car parking; water sports, boating, and country parks.

5.3. Viewpoint Description

To help define the existing visual baseline environment, it is accepted practice to select and agree upon a number of representative viewpoints within the visual envelope of the development. The representative viewpoint locations as agreed with the consultees are illustrated on Figures 10 and 11.

The character of the existing view from the 20 representative viewpoints is described below (in approximate order of distance from the development) and the sensitivity of the identified visual receptor group to the type of proposed change is described. A synopsis of the baseline sensitivity is also detailed in the summary table at the end of the EIA Technical Report. Photographic panoramas for each viewpoint are shown in Figures WF 01-20.

5.3.1. **Viewpoint 1 – Balmedie Beach**

Balmedie Beach is a popular coastal country park located 3.51 km north west from the nearest turbine of the EOWDC, and lies within the Aberdeen Bay seascape unit. The view is representative of that available to visitors to the beach. A 180 degree view can be seen clockwise from the north round to the south, with the sand dunes precluding any views to the west. The foreground is simply a sand beach with marram grass topped dunes behind. The North Sea is the main feature of the view with often large ships travelling across the horizon which can also be static features in anchorage areas which lie in the vicinity. To the north views include the coastline curving round to the Ythan Estuary and Forvie Sands. This northern view is generally very harmonious with few obvious human influences. Views to the south extend around to the headland at Girdle Ness where the lighthouse is visible in the horizon. Aberdeen city is clear extending to the developments on the beach front. The drilling platform at the Technology Park near Bridge of Don is also visible. Overall the panoramic views from Balmedie Beach offer contrasting views to the north and south. There is a tranquil feel with only the sound of the waves and intermittent noise from helicopters and airplanes flying overhead. The immediate surroundings are unspoilt and the sand dunes shelter views inland. Therefore the sensitivity to the type of proposed change on the key receptor group of visitors to the beach is considered High.

5.3.2. **Viewpoint 2 – A90 (Harehill turn off)**

This viewpoint is 4.44 km south west from the nearest turbine of the EOWDC. It is representative of views available to travellers on the A90 and lies within the Aberdeen Bay seascape unit. The view towards the coast is generally of flat rough grazing land with manmade landfill mounds either side of the A90 breaking up open views of the North Sea. There is quite an industrial presence mostly associated with the landfill. There are scattered houses and farms within the coastal plain which has a gradual descent towards the sea. Although beyond the photographic panorama shown in Figure WF-02 Murcar Golf Club house is visible to the east at the edge of the links course and views towards Aberdeen extend across the sea to Girdle Ness. The Girdle Ness lighthouse is prominent in the skyline as are the drilling platform and tower blocks, and large industrial buildings in the foreground. It is quite a discordant view with the A90 and adjacent landfill and developments dominant in this part of the view. Therefore the sensitivity to the type of proposed change on the key receptor group of travellers on the A90 is considered to be Medium to Low.

It is also noted that the proposed AWPR would join the A90 just north of the Harehill turn off and would potentially be a dominant feature in the area.

5.3.3. **Viewpoint 3 – Jesmond Drive, Middleton Park**

This viewpoint is 7.14 km south west of the nearest turbine of the EOWDC. The viewpoint is on Jesmond Drive, just north of Oldmachar Academy and looks over a recreation ground. The view is representative of that available to local residents within Middleton Park, a residential area to the north of Aberdeen. There are building works at the edge of the recreation ground and large deciduous trees encompassing the area. The high open land at Perwinnes is just visible behind the trees. It is a relatively simple view, but active with the surrounding school, sports pitches and residential area. The sensitivity of the key receptors of local residents to the proposed type of change is therefore judged to be High.

5.3.4. **Viewpoint 4 –Whitecairns (B999)**

This viewpoint is located 8.10 km west of the nearest turbine of the EOWDC. The view is representative of that available to local residents and travellers on the B999. The viewpoint is located on a layby on a minor road at Whitecairns just off the B999, and is within the Formartine

Lowlands character area. Pasture in regular medium sized fields bounded by post and wire fencing lie in the foreground gently sloping towards the B999. The land on the east of the B999 rises considerably to a local high point of 130m AOD. This elevated land has been quarried in one area and is covered by a mix of open pasture, scrub and woodland. Settlement and industrial/farm buildings are visible on the lower enclosed land along the main road with shelterbelts and small areas of woodland. The landscape scale is medium to large with some enclosure given by the undulating land. The view, although relatively simple in components, has a discordant feel. The sensitivity of the key receptors of travellers and local residents to the type of proposed change is judged to be Medium to Low for travellers and High for residents.

5.3.5. **Viewpoint 5 – Aberdeen Beach**

This viewpoint is located on the Beach Boulevard from a point just south of the Codonas Amusement Park and is representative of views available to visitors to the beach and lies within the Aberdeen Beach seascape unit. It is 7.52 km from the nearest turbine of the EOWDC. The development along the beach front lies at a considerable height above the sand and sea. A grass embankment with occasional stepped and ramped access takes the level down from the road to another wide boulevard which lies a few meters above the beach. The beach is accessed at specific points and is divided by timber groynes at regular intervals for the length of beach to the mouth of the Don. There are also some sea defences consisting of large rocks visible at the end of the groynes. Street lighting along the beach road pulls the eye around the curved bay past the Beach Ballroom, Leisure Centre and towards the football stadium. Further around the beach the demonstration drilling platform intersects the skyline beyond the Bridge of Don. Views extend past Balmedie to Peterhead where the power station stack is just visible in the skyline. To the south the view is curtailed by Girdle Ness and the harbour. It is a diverse and active view with expansive views to the north and east. It is a large scale seascape incorporating many elements and long distant views. It is considered that the receptor group of visitors to the beach would have a High sensitivity to the type of change proposed.

5.3.6. **Viewpoint 6 – A90 (West Pitmillan turn off)**

This viewpoint is located just off the A90 at the turn off to West Pitmillan, approximately 9.31 km north west from the nearest turbine of the EOWDC. It is representative of views available to travellers on the A90. This stretch of the A90 is located on a plateau of high, gently rolling land within the Formartine Lowlands character area. There is an exposed feel with views of the sea and sand dunes at the coast available through the gentle undulations. There is a large farm at Pitmillan which is set into the landscape with shelterbelt planting behind. The agricultural land which lies either side of the road consists of large regular fields both arable and grazing with post and wire fencing. There are houses dispersed across the landscape with associated shelterbelts. The landscape here has a large open scale and is relatively uniform. The Hill of Fiddes wind turbines are visible on approach to the viewpoint but at the viewpoint are just hidden behind the hill to the west. The A90 is a busy main road and is a key part of the view, which will become a more significant feature following the planned dualling of this section of the road. The sensitivity of the key receptors of travellers on the A90 to the type of proposed change is judged to be Medium to Low.

5.3.7. **Viewpoint 7 – Torry Battery**

This viewpoint is taken from the public car park at Torry Battery on the headland which overlooks Aberdeen Harbour and the beach beyond. It is located 7.89 km south of the nearest turbine of the EOWDC. It is representative of views available to visitors to the headland and walkers on the coastal path and lies within the Aberdeen Beach seascape unit. The view encompasses the whole of Aberdeen Bay and beyond to the power station stack just visible at Peterhead. In the foreground the view is across the entrance to the Harbour and its associated industrial buildings. Aberdeen Beach is visible behind the harbour entrance wall and the city with the developments along the coast including the tower blocks at Seaton which are very visible. The rolling hills that surround Aberdeen in the west are visible behind the cityscape. As the view moves across to the east, the exhibition centre and demonstration oil drilling platform are visible in the skyline. Balmedie and the dunes can be seen extending eastwards across the horizon where the large expanse of the North

Sea becomes dominant with frequent movement of ships and boats giving some scale to the view. There is a diversity of elements within the view including a very active foreground. Therefore the sensitivity of the key receptors of visitors to the headland and coastal path walkers to the type of proposed change is considered High to Medium.

5.3.8. **Viewpoint 8 – South College Street, Aberdeen**

This city centre viewpoint is located on South College Street which runs parallel to the train station. It is located 9.19 km south west of the nearest turbine of the EOWDC and is representative of views available to workers, shoppers, and travellers. An advertising board lies alongside the footpath. The other side of the road is bounded by a concrete block wall approximately 2 m high. A ten storey office building is the main element in the view, with a red brick multi-storey car park for the Union shopping centre in the middle ground. A tall hotel building stands to the left of the car park. Thereafter, to the left of the view, just the tops of various buildings are visible above the wall. The Salvation Army Citadel granite tower is quite prominent between the tops of the buildings. Also visible is the spire of Kirk of St Nicholas. The view consists of a variety of materials and types of buildings giving a slightly discordant character. It is an active area with constant traffic and train movements. The sensitivity of the key receptors of workers, shoppers and travellers to the type of proposed change is therefore considered Low.

5.3.9. **Viewpoint 9 – Forvie Nature Reserve**

Forvie Nature Reserve is a large expanse of sand dunes on the northern side of the Ythan estuary. There are marked walking routes around and across the dunes. The viewpoint is located within the centre of the dune system on one of the paths and lies within the Aberdeen Bay seascape unit. It is approximately 10.27 km north of the nearest turbine of the EOWDC. The viewpoint is representative of those available to visitors to the nature reserve. The sand dunes are mostly colonised by grasses and in some of the more sheltered areas there are small wind sculpted trees. There is a remoteness and almost bleakness when within the dunes although the noise of the nearby main road is discernable and the helicopter flight path to the airport is directly overhead. The dunes do provide some enclosure which opens out in places and at the viewpoint location the view opens out to the curve of Aberdeen Bay to Girdle Ness and the Seaton tower blocks are visible in the horizon, although detail is hard to discern at this distance. Walking towards the west, to the visitor car park, there are some views of the Hill of Fiddes turbines. Due to the remote and generally unspoilt landscape the sensitivity of the key receptors of visitors to the type of proposed change is considered High.

5.3.10. **Viewpoint 10 – Midstocket Road/North Anderson Drive (A90)**

This viewpoint, which is 10.47 km south west of the nearest turbine of the EOWDC, is located in an area of public open space to the south of housing at Raeden, just south of Woodhill House and the Aberdeen Royal Infirmary. It is representative of the views available to local residents, and travellers on North Anderson Drive (A90). This elevated part of Aberdeen affords intermittent long distant views across Aberdeen to the coast. The foreground of the view is mostly grass with some young tree planting. Four storey housing lies at the edge of the open space and the tower blocks at Stockethill are very prominent in the skyline behind. Some of the hospital buildings are visible behind the trees including a large chimney and the tower blocks of Seaton on the coastline are visible behind. It is an active and noisy area with the main road, schools and hospital in the area. Therefore the sensitivity of the key receptors of local residents and travellers on the A90 to the type of proposed change is considered High for residents and Medium to Low for travellers.

5.3.11. **Viewpoint 11 – Leslie Road (A978), Aberdeen**

Leslie Road is aligned in a north east – south west direction which is in line with the proposed development. There are no views of the coast but the elevated position suggests that the proposed development may be visible. This viewpoint is located 8.07 km from the nearest turbine of the EOWDC and is representative of views available to local residents and travellers on the road. The road is a busy thoroughfare but it is also a well-kept residential street with terraced two storey

granite houses and some bungalows. The view looks towards a busy roundabout with commercial granite properties on the other side. It is considered that the sensitivity of the key receptors of local residents and travellers to the type of change proposed is High for residents and Medium for travellers.

5.3.12. **Viewpoint 12 – Kincorth Hill**

This viewpoint is located in a local nature reserve 11.56 km from the nearest turbine of the EOWDC and is representative of the view available to walkers and visitors. It lies within the Kincorth and Tullos Hills character area. It is a local high point at 105m AOD and is surrounded by Kincorth residential area to the north, Altens industrial estate to the east and Cove Bay to the south east. The A90 runs along the western boundary. The paths around Kincorth Hill are mostly enclosed by mixed woodland and scrub with some localised clearings. The viewpoint was taken from one such clearing with a bench on the high point which overlooks Aberdeen and to the north. Trees interrupt clear views but the curve of Aberdeen Bay is visible with Torry, and harbour buildings clear in view. The tower blocks at Seaton and other dominant buildings are just visible behind the trees. The tower of Nigg Kirk unexpectedly rises from the trees into the skyline to the right of view alongside the large office buildings of Altens. The viewpoint is very much influenced by the settlement and noise of traffic from the A90, although the vegetation gives some seclusion. The sensitivity of the key receptors of visitors and walkers to the type of proposed change is therefore considered High to Medium.

5.3.13. **Viewpoint 13 – Udny Station**

This viewpoint is located east of the small village of Udny Station on a local high point. It is 12.63 km north west of the nearest turbine of the EOWDC, and is representative of the views available to local residents. The landscape is characteristic of the Formartine Lowlands agricultural land, and includes wind turbines. The Hill of Fiddes turbines are located within a kilometre of the viewpoint but are partially hidden behind coniferous shelterbelt planting. Although not visible within the photographic panorama in Figure WF-13, distant views to Ardgrain wind farm can also be seen to the north of the viewpoint. Farm buildings and a cottage are visible in the foreground. The view extends across the agricultural lands with dispersed farms and houses and areas of woodland. Wooden telegraph poles lie across the view. It is generally a harmonious view with a large open scale. It is considered that the key receptors of local residents will have a High sensitivity to the type of proposed change.

5.3.14. **Viewpoint 14 –A96 at Kirkhill Forest**

This viewpoint is representative of the views available to travellers approaching Aberdeen from the A96. Due to the lack of a safe place to stop on the carriageway the entrance to Kirkhill Forest provides a comparative view. It is 14.13 km west of the nearest turbine of the EOWDC and lies within the Kirkhill and Tyrebagger Hill landscape character area. The view extends to the North Sea and provides an approximate 90 degree view enclosed by Kirkhill Forest to the north and the embankment planting along the A96. The foreground consists of small undulating rough grazing fields with stone wall and post and wire boundaries. Farm buildings and the tops of the houses at Chapel of Stoneywood appear from behind the undulating field. The woodland at Tyrebagger is visible in the middle ground with views of the taller buildings of Aberdeen city visible in the skyline to the right of view and within the sea in the centre of view. There is a small two blade turbine clear in middle ground. The residential areas on the higher ground north of Bridge of Don are visible to the left of view with agricultural land encroaching. The sea can be seen between the Bridge of Don and Kincorth Hill, and then a short stretch from Blackdog where coniferous trees in the foreground prevent further views. There are many telegraph poles also crossing the view. The mast at Northfield is very visible behind and above the tower blocks at the right of view. It is quite a discordant view with a variety of long and short distance elements. The sensitivity of the key receptors of travellers on the A90 to the type of proposed change is therefore considered Medium to Low.

5.3.15. **Viewpoint 15 – Brimmond Hill**

This elevated viewpoint is 14.41 km west south west of the nearest turbine of the EOWDC. It is representative of the views available to walkers and visitors and is within the Brimmond Hill landscape character area. Brimmond Hill is 266 m AOD and has several telecommunication masts on its summit. There are several paths which traverse around and ascend the hill. The hill is mostly covered by heather, gorse and scrub with some grass clearings. There is a vehicle track to the top to access the masts. There is a 360 degree available view extending to the Cairngorms and the foothills in the west and south west, and the rolling agricultural heartlands to the north. In the foreground, to the north Aberdeen Airport, Tyrebagger and Kirkhill forest are clearly visible. The coastline and boats far off in the North Sea are also visible to the east. The views are far ranging and encompass rural, agricultural and city scenes. Existing wind farms are visible to the north west. Due to the expansive views and diversity of elements within the view the sensitivity of the key receptors of walkers and visitors to the type of proposed change is considered High to Medium.

5.3.16. **Viewpoint 16 – Formartine and Buchan Way nr Quilquox**

The national cycle route runs along local roads in this area. The viewpoint is located on a road near Savoch and Quilquox. It lies on elevated land which affords expansive views across the landscape. The location is 25.98 km north west of the nearest turbine of the EOWDC and is representative of the views available to local residents and cyclists. It is within the Ythan Strath Farmland landscape character area. The view is of a large scale undulating landscape with large fields with stone walls and post and wire fencing. Wind turbines are common in this area and three turbines can be seen in this view. Four turbines lie just behind the viewpoint and three are obscured by the farm in the foreground. Bennachie is clearly visible to the south with other hills in the background. The coast is not visible. There is a uniform and cohesive character to the view with consistent elements across the landscape including wind turbines. The sensitivity of the key receptors of local residents and cyclists to the type of proposed change is considered High for residents and Medium for cyclists.

5.3.17. **Viewpoint 17 –Near Netherley, east of Durris Forest**

This viewpoint is 24.99 km south west from the nearest turbine of the EOWDC. It is located at the southern end of the Kincardine Plateau character area before the land rises to become the 'The Mounth' moorland plateau. It is representative of views available to local residents. The land surrounding the viewpoint is gently undulating. The land use is mainly agricultural with permanent pasture, arable, with some scrub and shelterbelt woodland. Durris Forest lies to the south west of the viewpoint. The fields are irregular, medium to large sized bounded by either stone walls or post and wire fencing. There are many individual farms and houses dispersed across the landscape accessed by a network of minor roads. There are prominent pylons in the skyline which run north south just in front of the viewpoint. The suburbs of Aberdeen are just visible with the tower blocks at Stockethill clear in the skyline, albeit at a distance. Woodland at Maryculter and Banchory Devenick are visible on the rolling hills to the right of view. It is a slightly fragmented landscape with scrub and rough grazing breaking up the medium to large fields, and with large pylons dissecting the scene. The sensitivity to of the key receptors of local residents to the type of proposed change is therefore considered High.

5.3.18. **Viewpoint 18 – A975 near Slains Castle**

This viewpoint is located at a public car park off the A975, north of Cruden Bay. It is representative of views available to visitors to the ruins of Slains Castle. It is located 22.23 km north of the nearest turbine of the EOWDC and lies within the Collieston to Peterhead seascape unit. The view looks across large open fields with the silhouette of the ruins of Slains castle in the skyline. The south of Cruden Bay is just visible within the craggy cliffs. Open large scale fields surround the view to the west and north. There is a simplistic nature to the view but this is punctuated by dramatic elements such as the Slains ruins and the cliff coastline. The key receptors of visitors are considered to have a High sensitivity to the type of proposed change.

5.3.19. **Viewpoint 19 –Mither Tap, Bennachie,**

Bennachie is a hill range in western Aberdeenshire. The distinctive peak of Mither Tap can be seen from the coast on clear days. It is a very popular walking destination in Aberdeenshire and can take as short as an hour to get to the summit. The viewpoint is located at the top of Mither Tap and is representative views available to walkers and visitors to the area. It is 32.02 km west of the nearest turbine of the EOWDC and lies within the Grampian Outliers character area. 360 degrees views are available from this viewpoint. The views extend inland across the top of Bennachie to the Cairngorms. On a clear day it is possible to see the coast and sea, although at some distance, and beyond an expansive view of the agricultural heartlands of Aberdeenshire. There are views of other wind farms dotted around in the surrounding landscape but they appear as small elements within the wider view. The key receptors of walkers are considered to have a High to Medium sensitivity to the type of proposed change due to the elevated nature and expansive views including existing wind farms. Please note that it was not possible to take a photograph panorama from the viewpoint due to adverse weather conditions at the time of the assessment.

5.3.20. **Viewpoint 20 - A92 near Uras**

This viewpoint is 33.58km from the nearest turbine of the EOWDC. The viewpoint was chosen as representative of views available to travellers on the A92, the coastal road. The landscape lies within the 'Inverbervie to Stonehaven' seascape unit. The land is gently undulating arable and pasture which slopes towards the coast and to the extents of the cliff tops. The fields are medium to large scale surrounded by stone walls and post and wire fencing. There is dispersed settlement across the area which includes cottages and a farm within the view. Wooden telegraph poles run across the left of the view. The cliffs north of Stonehaven to Girdle Ness are visible with the farmland and coastal settlements on top. It is, overall, a simple, intact and relatively large scale landscape with expansive views across the North Sea. The sensitivity of the key receptors of travellers on the A92 to the type of proposed change is considered Medium.

Table 1.8 Representative Viewpoint Baseline

	Location	**Grid Ref**	**Distance to Nearest Turbine (EOWDC)**	**Seascape Unit / Landscape Character Area**	**Main Receptors**	**Sensitivity of receptor to the type of change proposed**
1	Balmedie Beach	398035, 818190	3.51km	Aberdeen Bay ALS	Visitors/Walkers Coastal Trail	High
2	A90 (Harehill turn off)	395061, 813041	4.44km	Aberdeen Bay/Murcar Open Farmland	Travellers	Medium to Low
3	Jesmond Drive	392533, 811500	7.14km	(Aberdeen suburbs)	Residents	High
4	Whitecairns (B999)	391988, 818158	8.1km	Formartine Lowlands	Travellers Residents	Medium to Low High
5	Aberdeen Beach	395404, 806706	7.52km	Aberdeen Beach	Visitors/Walkers Coastal Trail	High
6	A90 (West Pitmillen turn off)	397470, 824886	9.31km	Formartine Lowlands	Travellers	Medium to Low
7	Torry Battery	396465,	7.89km	Aberdeen	Visitors/Walkers	High to

	Location	Grid Ref	Distance to Nearest Turbine (EOWDC)	Seascape Unit / Landscape Character Area	Main Receptors	Sensitivity of receptor to the type of change proposed
		805730		Beach	Coastal Trail	Medium
8	South College Street	394113, 805572	9.19km	Aberdeen City	Workers, Shoppers, Travellers	Low
9	Forvie Nature Reserve	401546, 826795	10.27km	Aberdeen Bay ALS	Visitors/Walkers Coastal Trail	High
10	Midstocket Road/North Anderson Drive	391188, 806645	10.47km	(Aberdeen city)	Residents Travellers	High Medium to Low
11	Leslie Road (A978), Aberdeen	392980, 808269	8.07km	(Aberdeen city)	Residents Travellers	High Medium
12	Kincorth Hill	394033, 802824	11.56km	Kincorth and Tullos Hills	Visitors/Walkers	High to Medium
13	Udny Station	391203, 824423	12.63km	Formartine Lowlands	Residents	High
14	A96 at Kirkhill Forest	385467, 811435	14.13km	Tyrebagger Hill/ Kirkhill	Travellers	Medium to Low
15	Brimmond Hill	385634, 809120	14.41km	Brimmond Hill	Visitors/Walkers	High to Medium
16	Formartine and Buchan Way nr Quilquox	391363, 839091	25.98km	Ythan Strath Farmland	Cyclists Residents	Medium High
17	Near Netherley, east of Durris Forest	382565, 794645	24.99km	Kincardine Plateau	Residents	High
18	A975 near Slains Castle	410210, 837001	22.23km	Collieston to Peterhead ALS	Visitors/Walkers Coastal Trail	High
19	Mither Tap, Bennachie	368227, 822362	32.02km	Grampian Outliers ALS	Visitors/Walkers	High to Medium
20	A92, near Uras	387626, 781595	33.58km	Inverbervie to Stonehaven ALS	Travellers Coastal Trail	Medium

6.0 Summary

The baseline landscape, seascape and visual environments within the 40 km study area have been defined and sensitivity to the proposed development assessed.

Within the study area there are no national designated landscapes except for 19 Gardens and Designed Landscapes, two of which are within 15 km of the site. Local designations include Areas of Landscape Significance which cover a large proportion of the coast line and inland areas adjacent to the Cairngorms.

Six seascape units were defined from Inverbervie to Fraserburgh with varying sensitivities towards the proposed development. The north part of Aberdeen Bay at Forvie Sands has the highest sensitivity, assessed at High to Medium due to the remote and unspoilt dune landscape. There are however views from some places within this coastal area of existing onshore turbines and of the developed seafront of Aberdeen which reduce its sensitivity.

The sensitivity of the 38 landscape character areas within the 40 km study area to the proposed development was also assessed with regards to their visual characteristics. Those areas where views out to the sea and coastline are a key characteristic have the highest sensitivity. This includes the higher Moorland Plateau areas at the extents of the study area, and open farmland adjacent to the coastline.

The visual baseline identified key receptors of residents, travelling public (including sea travel), and visitors and tourists. Twenty viewpoints were selected through a consultation process, based on the ZTV plan, to help define the visual environment. The sensitivity to the proposed development of the main identified visual receptor group at each viewpoint was described. Fifteen of the viewpoints are located within 15 km of the site, with seven of these in and around Aberdeen. Those with highest sensitivity to the proposed development are those viewpoints where residents or visitors are the key receptors. This includes the viewpoints at Balmedie Beach, Jesmond Drive, Aberdeen Beach, Forvie Nature Reserve, Udny Station, near Netherley, and near Slains Castle.

7.0 Appendices

Appendix 1. Consultation Record

Aberdeen City Council (Robert Forbes)	
Date of Consultation	**Type and Purpose of Consultation**
24th November 2009	Letter enclosing methodology, viewpoints and ZTV, and cumulative sites for review and agreement.
18th December 2009	Requesting response to earlier letter to agree methodology, viewpoints and cumulative sites.
14th April 2010	Meeting at SNH Offices, Aberdeen to agree approach to assessment.
29th September 2010	Email to advise on upcoming consultation material to be issued shortly.
19th October 2010	Email issuing detailed ZTV, large scale ZTV and viewpoint list for review.
28th October 2010	Email from ACC confirming agreement to viewpoints and requesting a viewpoint at Girdle Ness Lighthouse.
5th November 2010	Phone call with ACC discussing the inclusion of the lighthouse as part of the cultural heritage section and retaining Torry Battery viewpoint within the SLVIA.
13th December 2010	Email issuing proposed cumulative methodology.
13th December 2010	ACC replied querying assessment of land based elements. Reply sent on same day referring to client and informing Mr Forbes we are not involved in the assessment of onshore works.
25th January 2011	Email from ACC in response to SNH comments and requesting additional viewpoints.
25th January 2011	Email to ACC to confirm that requested viewpoints are covered by nearby agreed viewpoints and within the landscape assessment.
28th January 2011	Email from ACC in response to SNH emails stating ACC was not aware of an agreed study area.

Aberdeenshire Council (Peter Fraser)	
Date of Consultation	**Type and Purpose of Consultation**
24th November 2009	Letter enclosing methodology, viewpoints and ZTV and cumulative sites for review and agreement.
14th December 2009.	Letter from AC giving other viewpoint options and further cumulative sites.
23rd December 2009	Email to AC, responding to the earlier assessment suggestions and request to join SNH for a meeting.
14th April 2010	Meeting at SNH Offices, Aberdeen to agree approach to assessment.

Aberdeenshire Council (Peter Fraser)	
Date of Consultation	**Type and Purpose of Consultation**
29th September 2010	Email to AC to advise on upcoming consultation material to be issued shortly.
19th October 2010	Email issue of detailed ZTV, large scale ZTV and viewpoint list for review.
22nd October 2010	Phone Call to AC enquiring as to any feedback to the information previously sent. Mr Fraser replied he was happy to refer to SNH.
29th October 2010	Email issue of revised viewpoint list for information.
13th December 2010	Email issue of proposed cumulative methodology for information.

Scottish Natural Heritage (Sue Lawrence)	
Date of Consultation	**Type and Purpose of Consultation**
24th November 2009	Letter to SNH enclosing methodology, viewpoints and ZTV for agreement.
14th December 2009	Email/letter from SNH giving advice on various parts of the methodology, viewpoint options and study area.
23rd December 2009	Response to SNH letter and request for meeting to discuss issues raised.
14th April 2010	Meeting at SNH Offices, Aberdeen to agree approach to assessment.
29th September 2010	Email to advise on upcoming consultation material to be issued shortly.
19th October 2010	Email issue of detailed ZTV, large scale ZTV and viewpoint list for review.
29th October 2010	Email issue of revised viewpoint list.
9th November 2010	Email response from SNH advising on further cumulative viewpoints and clarity on viewpoint locations.
9th November 2010	Email to SNH confirming viewpoint locations and agreement of including additional cumulative viewpoints.
13th December 2010	Email issue of proposed cumulative methodology
24th January 2011	Email from SNH agreeing to the cumulative methodology, querying study area size, agreeing to Bennachie viewpoint as wireframe only due to weather constraints, and suggestion of Menie Estate viewpoint.
25th and 28th January 2011	Discussion emails on study area.
22nd February 2011	SNH response requesting 40km study area.
March 2011	Phone calls - attempts to discuss requested 40km study area

Scottish Natural Heritage (Sue Lawrence)	
Date of Consultation	**Type and Purpose of Consultation**
25th March 2011	Email to SNH for confirmation of agreement to methodologies and study area.
7th April 2011	SNH response confirming receipt of information and acceptance of 40km study area.

Marine Scotland (Michael Bland)	
Date of Consultation	**Type and Purpose of Consultation**
13th December 2010	Email introduction and enquiry as to any input required from them.
7th January 2011	Email from MS requesting that they would like to see any consultation but input is left to SNH, ACC and AC.
7th January 2011	Email issue of recent consultation material.

Appendix 2. SLVIA Methodology

Introduction

LDA Design has an established methodology for carrying out Seascape, Landscape, and Visual Impact Assessments (SLVIAs) for proposed offshore wind farm developments. The methodology may be varied slightly to address site or development / context specific situations, and the terms used to describe particular levels of effect may be varied (e.g. the use of the word Substantial instead of Major – see below) at the request of the EIA coordinator in order to correlate with other assessments in an ES. The standard methodology, including likely variations, is described below along with any variations specific to this particular assessment.

Overview

The methodology employed has 4 key stages, which are described in more detail in subsequent sections, as follows:

- **Baseline** – includes the gathering of documented information; scoping of the assessment and agreement of that scope with the client, EIA coordinator and local planning authority; site visits; and, initial reports to client and/or EIA coordinator of any issues that may need to be addressed within the design.
- **Design** – where appropriate, review of initial layout/ options, turbine choice(s), and mitigation options.
- **Assessment** – includes an assessment of the seascape, landscape and visual effects of the full scheme, requiring site based work and the completion of a full report and supporting graphics.
- **Cumulative Assessment** – assesses the effects of the proposal in combination with other wind farm developments.

The general assessment methodology draws upon the established Countryside Agency methodology (Landscape Character Assessment Guidance, 2002) and other recognised guidelines, in particular the Institute of Environmental Assessment and the Landscape Institute's Guidelines for Landscape and Visual Impact Assessment, second edition 2002; Scottish Natural Heritage's 'Visual representation of Wind Farms Best Practice Guidance' (2006, albeit published in May 2007); the Guidance on the Assessment of the Impact of Offshore Wind Farms (DTI, 2005); and, the Companion Guide to PPS22 (ODPM, 2004).

Specific methodologies relevant to offshore wind farm developments are particularly relevant and the proposed methodology for the seascape assessment broadly follows the guidance set out in the Maritime Ireland/Wales Interreg 1994 – 1999 Guidance 'Guide to Best Practice in Seascape Assessment', (GSA), published in March 2001. This sets out a clear methodology for undertaking seascape characterisation and for the evaluation process, and subsequent judgements arising. The guidance document is the result of joint pilot studies carried out between Wales and Ireland and sets out a clear process for undertaking a seascape assessment. It also provides practical guidance for undertaking field survey work and the field study forms are utilised during site assessment work.

Scottish Natural Heritage commissioned a report; no.103 'An assessment of the sensitivity and capacity of the Scottish seascape in relation to wind farms' (Scott et al, 2005) to contribute to strategic guidance on identifying the Scottish seascape areas where offshore wind energy development is likely to have least effects. Based largely on the GSA guidance but with some modifications that take in to account the complex seascapes of Scotland, it identifies 33 seascape units in Scotland and describes their character and sensitivity to wind farm development.

These methodologies commonly aim to systematically appraise the existing landscape / seascape condition, to identify all the significant physical and visual characteristics and assess their quality or value as well as the perceived, visual amenity value. These then provide a baseline against which the key Seascape / Landscape and Visual effects can be predicted and evaluated and their magnitude and significance assessed in a logical and well reasoned fashion. The assessment is necessarily iterative, with stages overlapping in parts.

Methodology for Identification of Seascape Units

The Guide to Best Practice in Seascape Assessment (GSA) states clearly that:

'Seascape assessment is an extension of landscape character assessment rather than a specialism in its own right. It does not replace the need for a thorough landscape assessment on land (para 1.6).'

It is therefore important to recognise the interrelationship between, and interdependency of, the sea and land. Identified seascape units will thus, whatever their scale and extent, straddle segments of the coastline with their character being defined by both seaward and landward elements. The GSA then highlights that, whilst some key elements in seascape assessment are common to landscape assessment, there are others that are noticeably different or wholly absent from landscape character assessment work. The key differences are identified as:

- The effects of historic and cultural issues related to the marine environment
- The coastline acting as a clearly defined edge
- Variability and dynamism associated with the marine and coastal components
- Difficulties associated with understanding the scale and distance of elements set within the marine component
- Different principals of visual movement arising from the coastline and marine components
- Amenity functions and uses of the seashore
- Functions and uses of the sea

Paragraphs 2.1 – 2.7 of the GSA, review each of these in turn, in further detail, highlighting key characteristics and issues. All elements, quite correctly, need to be considered during the process of defining the geographical extent of seascape units. Worthy of particular highlight are the issues associated with visibility, both from the land towards the sea, and vice versa. Clarity of visibility is in turn determined by prevailing weather conditions including such aspects as air moisture content and air pressure. Visibility in turn, influences the visual receptor's perception of distance and there are inherent difficulties in judging both scale and distance when looking across expanses of sea. Perspective can often be condensed and misread due to an absence of reference points to provide a sense of scale. Moreover, where the immediate coastline shelves gently, a further dynamic is introduced into the view, varying according to the state of the tide and the resultant extent of exposed foreshore. This both changes the character of local areas on a regular basis and also further alters visual judgments. To accommodate all of these various elements the seascape assessment process requires sufficient time to be spent on site to enable a proper understanding of the local environment.

Chapter 4 of the GSA provides clear guidance on the identification of the spatial extent of seascape units. The GSA proposes three tiers of units, namely: national, regional and local, and notes that the smaller units will effectively 'reside' within the larger regional and national units. Clear guidance is given on both the seaward and landward extent of the various scaled seascape units as well as suggestions as to their likely lateral extent along the coastline. Whilst the landward extent of seascape units can be more readily defined due to the multitude of physical elements and the complexity of landform, it is far more difficult to define a seaward extent. Thus, visibility becomes a key component in defining the seaward extent of the seascape units which can overlap as they 'bleed out' along the coastline.

National Seascape Unit

The GSA advises that national seascape units will cover extensive sections of the coastline where there is an overriding common defining characteristic such as coastal orientation or landform. It suggests that such units will be defined by major headlands of national significance. The units are then defined as extending for up to 24km offshore and inland to the full extent of the Zone of Visual Influence (ZVI). Coastal orientation and the topography of the coastline are identified as key defining characteristics.

Regional Seascape Units

The GSA advises that the most appropriate scale for undertaking seascape characterisation in association with coastal developments, such as offshore wind farms, is the regional unit. It sets out the main recommended parameters for defining regional seascape units, which are noted as generally extending for up to 15 km offshore and inland for up to 10km. It is noted that the landward extent of the regional seascape unit may well include areas of visually dead ground i.e. areas of land that are not intervisible with the sea component of the unit.

Defining Capacity for Change

The Guide to Best Practice in Seascape Assessment defines the evaluation process, and the issues to be considered as seeking to define the capacity of a seascape unit to accommodate the changes arising from the proposed offshore wind farm development. The GSA states that 'Seascape evaluation is defined as the judgement and ranking of seascapes according to their quality, value or capacity to accommodate change'. The GSA provides key guidance as to how quality, value and the capacity to accommodate change should be evaluated and this process has been followed and applied to the identified regional seascape units.

Baseline

The baseline study establishes the planning policy context, the scope of the assessment and the key landscape/seascape and visual receptors. It includes the following key activities:

- A desk study of relevant current national, regional and local planning policy for the site and surrounding areas.
- Agreement of the main study area radius with the local planning authority and SNH. Typically this is 30 - 35km, but in the case of the EOWDC 40km study area has been requested by SNH.
- A desk study of nationally and locally designated landscapes within the agreed study area.
- A desk study of existing landscape and seascape character assessments and capacity and sensitivity studies for the site and surrounding areas, both at national, regional and local level.
- Draft Zone of Theoretical Visibility (ZTV) studies to assist in identifying potential viewpoints and to indicate the potential visibility of the proposed offshore wind farm, and therefore the scope of receptors likely to be affected. The methodology used by LDA Design in the preparation of ZTV studies is described separately within Appendix 4.
- The identification of and agreement upon, through consultation, the scope of assessment for cumulative effects.
- The identification of and agreement upon, through consultation, the number and location of representative viewpoints within the study area.
- Identification of the range of other visual receptors within the study area.
- Site visits to become familiar with the site and surrounding seascape / landscape and to identify viewpoints and receptors.

During this stage, the scheme design may not yet have been finalised and there may be a degree of iteration between this stage (particularly in respect of preparing ZTV studies and consequent changes to likely effects on receptors) whilst the design is finalised.

Design

The degree of 'design fix' for offshore schemes coming forward for assessment can vary. Often there is the need to consider a number of alternative schemes and, through consultation, to reach agreement as to which of the scheme options constitutes the worst case scenario scheme in accordance with the 'Rochdale Envelope' principals. For some sites, the turbine layout may already be fixed, in which case input to the design may be limited to advising on mitigation or an indication that adjustments to particular turbine arrangements would be desirable. In other cases, it may be that no decisions have yet been made, and therefore a range of options by way of turbine numbers, sizes and layouts could be considered, and reviewed with the client and EIA team in order to arrive at an optimum proposal that best addresses the balance between potentially conflicting issues, which will include both beneficial and adverse effects. However, it will be appreciated that

proposals located within the more challenging offshore environments cannot always afford a significant degree of fine tuning to turbine layout.

Beyond design changes to the arrangement of turbines, including the number and size of turbines, opportunities for significant mitigation measures are inevitably limited due largely to the nature of the proposed development and the character of the receiving marine environment. The scale of development and distance from the coastline means that there are no real meaningful opportunities for incorporating other mitigation measures. However, within the evident constraints of the proposed development, mitigation measures are considered and, wherever possible, incorporated into the evolving scheme in order to best address potential effects.

The design, siting and mitigation of potential effects of the offshore substations and monitoring mast(s) will also be considered whilst the onshore grid connection routes are usually the subject of a separate application and thus do not form part of the assessment.

The documented assessment will include:

- A description of the proposed wind farm development.
- A description of the design process and any iterations of the design.
- A description of any mitigation measures incorporated within the proposals to help reduce identified potential landscape and visual effects.

Assessment

The assessment of effects includes further desk and site based work, covering the following key activities:

- The preparation of ZTVs based on the finalised design for the development.
- The preparation of computer generated wireframes showing the proposed development from the agreed representative viewpoints
- An assessment of the magnitude and significance of effects upon the seascape regional units, landscape character, landscape designations and the existing visual environment arising from the proposed development during construction, operational and decommissioning stages.
- The production of photomontages from a selection of the agreed viewpoints showing the anticipated view following construction of the proposed wind farm development.

Preparation and use of Visuals

The preparation of the ZTVs, wireframes and photomontages complies with the SNH 'Visual Representation of Wind Farms Best Practice Guidance'. The ZTVs and wireframes are used to inform the field study assessment work, providing additional detail and accuracy to observations made on site. In line with the SNH guidance, photomontages are produced in order to assist readers of the assessment in visualising the proposals, but are not used in reaching judgements of effect.

The following points should be borne in mind in respect of the ZTV study:

1. Areas shown as having potential visibility may have visibility of the development obscured by local features such as trees, hedgerows, embankments or buildings.
2. Since only the turbine hubs and blade tips have been modelled, this may be all that is visible – rather than the turbine tower. This is particularly true of areas near the edges of potential visibility.

A detailed description of the methods by which ZTVs, wireframes and photomontages are prepared is included within appendix 4.

Assessment Terminology and Judgments

The key terms used within assessments are Sensitivity, Magnitude and Significance.

Sensitivity to change is assessed for both seascape/landscape receptors such as regional seascape units, designated areas and landscape character areas, and for visual receptors (people) at agreed viewpoints. It provides an indication of the sensitivity of those receptors to the development proposed and thus gives an indication of the likelihood of unacceptable effects on those receptors.

A description of how sensitivity is assessed for each receptor type is included below. It is rated on the following scale:

- **High** – material effects are likely to arise from a development of this nature.
- **Medium** – material effects may arise from a development of this nature.
- **Low** - material effects are unlikely to arise from a development of this nature.

The Guide to Best Practice in Seascape Assessment (GSA) indicates that the sensitivity of regional seascape units to change is an important factor in assessing the significance of effects upon a particular seascape. For example, a seascape of a grand and generous scale with a limited array of constituent elements may be deemed to have a greater capacity to accommodate change and hence have a lower level of sensitivity to a particular type of development, than a more intimate seascape that might become dwarfed by large-scale development. On the other hand, the GSA also intimates, a more fragmented seascape may have an increased capacity to accommodate change (and hence a lower level of sensitivity) on account of the existence of promontories and/or high landform that assists in intermittently concealing and revealing views of a particular offshore development. There is thus a clear need to consider both the scale of the seascape and its complexity, and the degree to which views towards offshore development change or broadly remain static.

Sensitivity of Regional Seascape Unit/Landscape Character Area

- **High** - Important components or zones of particularly distinctive character susceptible to relatively small change.
- **Medium** - A seascape or landscape of moderately valued characteristics reasonably tolerant of change.
- **Low** - A relatively unimportant seascape or landscape, potentially tolerant of substantial change.

The sensitivity of seascape units, landscape character areas and landscape designations is influenced by factors including their location in relation to the proposed development.

The appraisal also identifies the degree of sensitivity to change in representative views from key receptors and more generally within the 'visual envelope' of the proposed development.

Sensitivity of Representative Visual Receptors

This is primarily a function of the expectations and occupation or activity of the receptor and the importance of the view.

- **High** - Viewers which are highly attuned to their surroundings, with proprietary interest and prolonged viewing opportunities
- **Medium** - Viewers with a moderate awareness of their surroundings
- **Low** - Viewers with a passing awareness of their surroundings

Magnitude of Effect

Magnitude of effect is assessed for all seascape, landscape and visual receptors and identifies the degree of change. It is usually rated on the following scale:

- **High** – Total or major alteration to key elements, features or characteristics, such that post development the baseline situation will be fundamentally changed.
- **Medium** - Partial alteration to key elements, features or characteristics, such that post development the baseline situation will be noticeably changed.

- **Low** – Minor alteration to key elements, features or characteristics, such that post development the baseline situation will be largely unchanged despite discernable differences.
- **Negligible** – Very minor alteration to key elements, features or characteristics, such that post development the baseline situation will be fundamentally unchanged with barely perceptible differences.

Whilst the duration of effects is also a consideration, the normal lifespan of a wind farm, though temporary, is a period of up to 25 years (or less). As this is a reasonable length of time it is not taken into account in determining magnitude. The reversibility of effects is however, a material consideration and will be referred to within the assessment.

Significance of Effect

Significance indicates the importance of the effect, taking into account the sensitivity of the receptor and the magnitude of the effect. It is usually rated on the following scale:

- **Major**– indicates an effect that is very important in the decision making process.
- **Major-Moderate** - indicates an effect that is material in the decision making process.
- **Moderate** – indicates a noticeable effect that is not material in the decision making process.
- **Minor** - indicates an effect that is peripheral in the decision making process.
- **Negligible** - indicates an effect that is akin to no change and is thus not relevant to the decision making process.

Significant effects (in terms of the EIA regulations) are those that are Major-Moderate or Major. As stated within the EIA regulations, if an effect is not significant, it should not be considered as material to the decision making process. It should also be noted that whilst an effect may be significant, and therefore material in coming to a decision, that does not necessarily mean that such an impact would be unacceptable.

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

The process of forming a judgment of significance of effect is based upon the assessments of magnitude of effects and sensitivity of the receptor to come to a professional judgment of how important this effect is in terms of making a decision about whether consent should be granted. This judgment is illustrated by the table below:

	MAGNITUDE			
SENSITIVITY	Negligible	Low	Medium	High
High	Negligible	Moderate	Major-Moderate	Major
Medium	Negligible	Moderate-Slight	Moderate	Major-Moderate
Low	Negligible	Minor	Moderate-Minor	Moderate

Key criteria used in determining the extent of an effect include: the magnitude of the change, the spatial extent of the change, the duration of the change, the degree to which the change is reversible and, related to prevailing weather conditions, the percentage incidence of the change.

Limitations

The nature (or valency) of the effect (Positive, Neutral or Adverse) is not identified. In the case of wind farms, there are difficulties in indicating whether seascape/landscape and visual effects will be positive or adverse. Much depends upon the attitudes and predispositions of the individual. As has been shown in a number of opinion surveys, the attitudes of the general public vary widely from

those who think that wind farms blight the landscape to others who feel that they are a beautiful or positive addition, in some instances regardless of the natural beauty/value of the landscape in question. In general terms there appears to be a majority view that is positive towards wind energy generation and its appearance in the seascape / countryside and this is particularly so once a wind farm is built in a particular location. In examining visual effects, it is not realistic to ignore public opinion (nor the likelihood that professionally qualified landscape architects may have differing positions) when discussing the effect upon views perceived by the public and positive/adverse judgments are therefore not made within assessments.

Making positive/adverse judgments for effects of wind farms on landscape character based on current guidance would be of questionable value, particularly if using the conventional interpretation (which is implicit in many local plan policies) that any 'out of character' development should be considered adverse. This would effectively make all wind farm developments result in adverse effects on seascape / landscape character except if they were proposed near to another wind farm. For this reason, such judgments are not included in assessments.

Landscape Character

The European Landscape Convention (2000) provides the following definition:

"*Landscape means an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors.*"

The Landscape Character Assessment – Guidance for England and Scotland, CA/SNH, 2002 defines landscape character as:

"*the distinct, recognisable and consistent pattern of elements in the landscape that makes one area different from another.*"

It also notes that (para. 2.1):

"*Character makes each part of the landscape distinct, and gives each its particular sense of place. Whether we value certain landscapes for their distinctiveness, or for other reasons, is a separate question.*"

Landscape character assessment is defined as (Natural England website – credited as a quote from the guidance):

"*the tool that is used to help us to understand, and articulate, the character of the landscape. It helps us identify the features that give a locality it's 'sense of place' and pinpoints what makes it different from neighbouring areas.*"

The sensitivity of seascape regional units and landscape character areas judged is based on both the attributes of the receiving environment and the characteristics of the proposed development. Thus, the key characteristics of the seascape units / landscape character areas are considered, along with scale, openness, topography; the absence of, or presence, nature and patterns of development, settlement, landcover and land uses in forming the character. The condition of the receiving seascape / landscape, i.e. the intactness of the existing character will also be relevant in determining sensitivity. The likelihood of material effects on the seascape units / landscape character areas can be judged based on the scale and layout of the proposal and how this relates to the characteristics of the receiving seascape / landscape. Thus large-scale seascapes / landscapes are likely to be less sensitive to large scale wind farm developments, whilst some small scale, enclosed seascapes / landscapes may be highly sensitive to all but very small scale proposals.

Wind turbine developments are unusual in their effects upon seascape / landscape character as they primarily involve the addition of elements rather than any alteration to, or removal of, existing features. The introduction of a wind farm into an existing seascape / landscape adds a new feature which strongly affects the "sense of place" in its near vicinity, but with distance, the existing characteristics reassert themselves. At its most basic level, the magnitude of effect can best be understood by considering how one might perceive a particular place post-construction; i.e. If the baseline perception is "I am in a field.", then this may change to: "I am in, or at, a wind farm" (High

magnitude); "I am in a field near a wind farm" (Medium); "I am in a field and I can see a wind farm over there" (Low); or remain as "I am in a field" (Negligible).

It is specifically noted within Landscape Character Assessment – Guidance for England and Scotland, CA/SNH, 2002 (para 1.14) that:

"*Landscape Character Assessment is not a tool designed to resist changes that may influence the landscape. Rather it is an aid to decision-making - a tool to help understand what the landscape is like today, how it came to be like that, and how it may change in the future.*"

In para 6.32 it describes the purpose of Key Characteristics in landscape assessment, as follows:

"*Key characteristics are those combinations of elements which help give an area its distinct sense of place. They tend in many cases to be 'positive' characteristics but they may also, in some cases, be 'negative' features which nevertheless are important to the current character of the landscape. If the key characteristics which are identified were to change or be lost there would be significant consequences for the current character of the landscape. These would usually be negative but sometimes positive where some characteristics currently have a negative influence on the character (e.g. the effects of a busy road corridor). Key characteristics should therefore be the prime targets for monitoring change and for identifying landscape indicators.*"

It follows from the above that in order to assess whether seascape / landscape character is significantly affected by a development, it should be determined how each of the key characteristics would be affected. The judgment of magnitude therefore reflects the degree to which the key characteristics and elements which form those characteristics will be altered by the proposals. Based on recent appeal decisions in relation to onshore wind farm developments, there is a general consensus that significant effects on landscape character arising from wind farms are generally confined to the immediate vicinity, being of High magnitude within up to 1km of turbines (where the turbines may become the dominant characteristic of the landscape), reducing to Medium within up to 4km (where the turbines may become one of the key characteristics of the landscape) and decreasing further thereafter. The scale of the development, the nature and sensitivity of the receiving landscape, and local 'barriers' in the landscape (such as breaks of topography, woodlands, settlements, and roads or rivers) will determine the exact extent of effects for each development, but in practice significant landscape effects are unlikely beyond 10km.

Landscape Designations and Value

The sensitivity of designated landscapes is assessed based on their relative value. All landscapes are valued to a greater or lesser extent, and local people generally value open countryside regardless of whether or not it is designated. However, a despoiled or degraded landscape would generally be of Low value (and corresponding Low sensitivity in this respect). Undesignated, 'everyday' countryside would tend to be of Medium value. Nationally designated landscapes, which enjoy statutory protection (National Parks and Areas of Outstanding Natural Beauty), have a High value (and thus a high sensitivity in this respect). Locally designated landscapes would have High-Medium value and sensitivity, as would Heritage Coasts, which though nationally designated, are protected only via local plan policy.

In considering the effects on designated areas, a number of factors need to be considered. The effects on the component seascape / landscape character areas and the effects on views from within and towards the designated area need to be understood. These effects are then considered in light of the documented "special qualities" and purposes of the designation; and the proportion of the designated area that is affected, in order to arrive at a judgment of the magnitude of effects on the designated area.

Thus the judgment of the significance of effect on designated areas takes into account the value of the landscape (via the sensitivity rating) and the degree to which the purposes of designation are affected (via the magnitude). Allowing for their lower sensitivity, significant effects on local landscape designations are unlikely to occur beyond 10km from the turbines.

Viewpoints and Visual Receptors

A wide variety of visual receptors can reasonably be anticipated to be affected by a proposed wind farm development. The Guidelines for Landscape and Visual Impact Assessment indicate that the following factors affect the sensitivity of a viewpoint: The location and context of the viewpoint; the expectations and occupation or activity of the receptor and the importance of the view. These are all interlinked considerations, as the location, context and importance of the view will influence the likely activities and expectations of the receptor. The range of visual receptors will include pedestrians, and recreational users of the surrounding landscape such as walkers, cyclists and those otherwise engaged in the pursuit of leisure activities within the visual envelope of the site, local residents, motorists, those working outdoors and other workers. All categories of receptors can potentially be affected to a greater or lesser degree by a wind farm development. The four main visual receptor groups are considered in more detail below under the headings of residents, workers, the travelling public, and visitors.

Residents

Local residents tend to have a higher level of sensitivity to changes in their landscape and visual environment than those passing through. For residents, the most important views are those from their homes, although they will also be sensitive to other views such as those experienced when travelling to work or other local destinations. However, it is these latter views, from public areas nearby houses that are of relevance to the main body of the visual impact assessment (views from private properties are considered under the Residential amenity assessment – see below).

Workers

Workers are generally less sensitive to effects as they are focused on the tasks they are carrying out. Indoor workers generally have a Low sensitivity, and outdoor workers, such as farmers, fishermen and those offering outdoor pursuits are considered to have a Low to Medium sensitivity.

The Travelling Public

This category of visual receptor group overlaps to a degree with the other categories in that it embraces local residents, workers and those who come to visit the area. This group of visual receptors will include the following:

- Motorists - For major trunk routes and motorways, the sensitivity of users will be Low, as they will be travelling at speed and will be primarily focused on achieving their destination. Users of other A-roads will have a Low to Medium sensitivity, unless these are particularly scenic or slow routes, in which case the sensitivity may be assessed as Medium. The users of local roads will have a Medium sensitivity.
- Cyclists and footpath users – These groups are addressed under the heading of visitors as they are generally less concerned with the object of reaching their destination than with the enjoyment of being outside and enjoying the landscape and available views.
- Ferry Passengers – For regular services, ferry passengers will have a Low to Medium sensitivity as they will be travelling at a relatively fast speed and may or may not have an interest in their surroundings.

Users of the roads and ferries identified above will vary in their level of sensitivity to the proposed development depending primarily upon the purpose for which they are travelling. For example, local residents and those on business will be more preoccupied with achieving their destination than in enjoying the scenery and the views available along their route. In contrast, day trippers and longer term visitors to the area are likely to be more concerned with the views they enjoy as they travel, but the speed and direction of travel and the fact that they are in a vehicle or ferry will reduce their sensitivity compared to, for example, walkers or scenic boat trips.

Visitors

This category includes several visual receptor groups, each with different objectives and levels of sensitivity to any change in the fabric or character of the landscape and views arising from the proposed development. This group includes those who are mainly concerned with enjoyment of the outdoor environment but also those who may pursue indoor recreational pursuits and is anticipated to include the following (arranged in decreasing sensitivity):

- Those whose main preoccupation is the enjoyment of scenery (High sensitivity).
- Recreational walkers and equestrians (High sensitivity)
- Those visitors engaged in cultural pursuits (High-Medium sensitivity)
- Cyclists (High-Medium sensitivity)

Residential amenity

Views from private property are not a material consideration in determining planning applications unless the proposed change is sufficiently unpleasant or intrusive to cause unacceptable harm to residential amenity. For this reason, bearing in mind the distance from the coastline of offshore wind farm developments, the effects upon individual residential properties is not assessed.

Public Footpaths

Where applicable, the effects on the visual amenity on public footpaths in the vicinity of the site are assessed. Particular reference is made to effects on National and Regional Trails and Cycle routes. Assessments are informed by viewpoints which are located on public paths and by site visits and reference to aerial photography to ascertain the likely extent and nature of views available from the routes.

Settlements

The effects on settlements are not rated in terms of their magnitude or significance as there is no proper basis for forming such a judgement as each settlement will encompass a range of visual receptors which will be affected in different ways, which might vary from no view of the turbines to very clear, close views. Therefore, effects on settlements within 5km of the site are generally described in such a way as to identify where views towards the turbines are likely to arise and what the nature of those views are likely to be. In some cases this will be further informed by a nearby viewpoint and in others it will be informed with reference to the ZTVs, aerial photography and site visits.

Cumulative Assessment

The purpose of the cumulative effect assessment is to consider the potential effects upon the seascape and visual environments in relation to the existing wind farm developments and other known consented and proposed wind farm developments in the area. It raises questions over thresholds of acceptable change (spatial and temporal) and the landscape/seascape's capacity to accept change.

The Guidelines for Landscape and Visual Effect Assessment (IEMA, 2002, 2nd edition) advises that:

'*cumulative landscape and visual effects result from additional changes to the landscape or visual amenity caused by the proposed development in conjunction with other developments (associated with or separate to it), or actions that occurred in the past, present or are likely to occur in the foreseeable future.*'

A search area from the proposed offshore wind farm site is agreed with the local authority and statutory bodies. Within the agreed radius, all relevant local planning authorities and appropriate statutory consultees are contacted to identify existing and consented wind turbine developments, both on and offshore, as well as applications yet to be determined.

The cumulative assessment does not address the magnitude or significance of the effects arising from the individual developments themselves included within the cumulative assessment, but looks at the seascape and visual effects arising from the combination of turbines at proposed offshore wind farm with one or more other wind farm developments within the parameters identified.

The cumulative assessment examines the same groups of seascape / landscape and visual receptors as the assessment for the main scheme, though different viewpoints may be used in order to better represent the likely range of effects arising from the combination of schemes. The assessment is informed by cumulative ZTVs, showing the extent of visual effects of the schemes in different colours to illustrate where visibility of more than one development is likely to arise. Cumulative

wireframes are prepared which show each of the developments in different colours so that they are each readily identifiable. Cumulative photomontages are also prepared.

Cumulative Landscape and Seascape Effects

As set out above in the methodology for landscape and seascape effects, the magnitude and significance of cumulative effects on the identified landscape designations, landscape features and seascape character units are a function of the baseline sensitivity of each receptor, the number and scale of the proposed wind farms in that area and the overall size and shape of the receptor / character area. Cumulative Landscape and Seascape effects will be assessed for each receptor / character unit where they are affected by more than one of the proposed wind farms.

Cumulative Visual Effects

There are two types of cumulative effects on visual amenity, namely effects arising from combined and sequential views. In accordance with the Scottish Natural Heritage publication Cumulative Effect of Wind Farms version 2 (April 2005) these comprise:

- Combined views which 'occur where the observer is able to see two or more developments from one viewpoint. Combined visibility may either be in combination (where several wind farms are within the observer's arc of vision at the same time) or in succession (where the observer has to turn to see the various wind farms).'
- Sequential views which 'occur when the observer has to move to another viewpoint to see different developments.'

Cumulative visual effects will vary in degree depending on

- the number and sensitivity of visual receptors;
- the duration, frequency and nature of views;
- the relative effect of each individual wind farm with regard to visual amenity;

Distances

Where distances are given in the assessment, these are approximate distances between the nearest turbine and the nearest part of the receptor in question, unless explicitly stated otherwise.

Appendix 3. Meteorological Data

Met Office

Frequency analysis of Visibily for the location: 57.5N to 57.0N and 002.0w to 001.6W (offshore Aberdeen)
Period of data: January 1981 to December 2010

VISIBILITY

	0 TO 4	5 TO 19	20 TO 49	50 TO 99	100 TO 199	200 TO 399	400 TO 999	1000 TO 1999	2000 TO 4999	5000 or more	TOTAL
JAN	0	0	0	0	1	2	20	84	274	13	**394**
FEB	0	0	0	1	4	21	28	112	186	19	**371**
MAR	0	0	2	5	1	4	19	67	142	13	**253**
APR	5	2	2	4	2	4	24	64	141	16	**264**
MAY	0	1	5	5	3	11	34	92	268	15	**434**
JUN	5	4	2	5	4	25	65	121	259	15	**505**
JUL	5	8	6	11	2	19	33	100	242	28	**454**
AUG	4	13	6	12	2	11	52	134	546	20	**800**
SEP	0	2	0	12	4	6	51	141	404	13	**633**
OCT	0	0	1	0	4	9	24	88	253	29	**408**
NOV	0	0	0	0	0	12	41	124	288	18	**483**
DEC	0	0	0	1	0	1	13	53	268	14	**350**
ANNUAL	19	30	24	56	27	125	404	1180	3271	213	**5349**

VISIBILITY

	0 TO 4	5 TO 19	20 TO 49	50 TO 99	100 TO 199	200 TO 399	400 TO 999	1000 TO 1999	2000 TO 4999	5000 or more	TOTAL
JAN	0	0	0	0	0.254	0.508	5.076	21.320	69.543	3.299	**100**
FEB	0	0	0	0.270	1.078	5.660	7.547	30.189	50.135	5.121	**100**
MAR	0	0	0.791	1.976	0.395	1.581	7.510	26.482	56.126	5.138	**100**
APR	1.894	0.758	0.758	1.515	0.758	1.515	9.091	24.242	53.409	6.061	**100**
MAY	0	0.230	1.152	1.152	0.691	2.535	7.834	21.198	61.751	3.456	**100**
JUN	0.990	0.792	0.396	0.990	0.792	4.950	12.871	23.960	51.287	2.970	**100**
JUL	1.101	1.762	1.322	2.423	0.441	4.185	7.269	22.026	53.304	6.167	**100**
AUG	0.500	1.625	0.750	1.500	0.250	1.375	6.500	16.750	68.250	2.500	**100**
SEP	0	0.316	0	1.896	0.632	0.948	8.057	22.275	63.823	2.054	**100**
OCT	0	0	0.245098	0	0.980	2.206	5.882	21.569	62.010	7.108	**100**
NOV	0	0	0	0	0	2.484	8.489	25.673	59.627	3.727	**100**
DEC	0	0	0	0.286	0	0.286	3.714	15.143	76.571	4.000	**100**
ANNUAL	0.355	0.561	0.449	1.047	0.505	2.337	7.553	22.060	61.152	3.982	**100**

STATION: DYCE
LAT: 57 Deg 12 Min N
LON: 002 Deg 12 Min W
ALT: 65 metres A.M.S.L
PERIOD: 1991 TO 2010

FREQUENCY TABLE

	MONTHS												
VISIBILITY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ALL OBS
0 TO 9	0	1	21	24	10	3	5	9	4	5	1	2	85
10 TO 39	20	29	95	106	107	73	148	119	107	63	37	32	936
40 TO 99	44	72	120	158	125	132	223	211	207	119	79	77	1567
100 TO 199	104	151	179	154	133	126	204	186	234	175	107	124	1877
200 TO 299	132	219	253	239	146	127	215	229	288	215	161	140	2364
300 TO 399	199	323	369	335	230	182	284	290	294	282	215	220	3223
400 TO 499	309	338	401	373	321	242	333	295	375	355	304	341	3987
500 TO 599	383	311	422	386	314	272	303	277	404	351	369	388	4180
600 TO 699	401	315	410	399	300	267	294	259	341	376	334	412	4108
700 TO 799	370	294	339	355	236	279	252	256	284	363	305	374	3707
800 TO 899	417	367	441	406	373	342	344	340	390	410	425	482	4737
900 TO 999	173	138	171	205	149	144	155	122	136	200	160	240	1993
1000 TO 1499	1308	1014	1091	1294	1195	1124	1054	1028	1138	1233	1213	1427	14119
1500 TO 1999	1400	1156	1301	1388	1418	1282	1250	1320	1264	1500	1444	1549	16272
2000 TO 2499	1670	1425	1410	1568	1813	1752	1647	1781	1758	1701	1656	1707	19888
2500 TO 2999	1773	1642	1774	1870	2011	2077	2062	2339	2120	2027	1859	1972	23526
3000 TO 3499	2379	2126	2186	2027	2400	2335	2378	2399	2276	2345	2336	2208	27395
3500 TO 3999	1337	1186	1317	1050	1322	1355	1178	1132	847	1080	1222	1177	14203
4000 TO 4499	1657	1514	1375	1109	1335	1356	1424	1409	1204	1408	1488	1438	16717
4500 TO 4999	235	365	363	233	214	211	313	255	132	176	228	194	2919
5000 TO 5999	438	372	564	385	386	449	547	403	375	343	334	293	4889
6000 TO 6999	31	93	139	130	121	128	129	134	82	65	71	38	1161
7000 TO 29999	32	53	83	75	99	119	85	82	70	74	21	5	798
ALL OBS	**14812**	**13504**	**14824**	**14269**	**14758**	**14377**	**14827**	**14875**	**14330**	**14866**	**14369**	**14840**	**174651**

PERCENTAGE TABLE

	MONTHS												
VISIBILITY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ALL OBS
0 TO 9													
10 TO 39	0.1	0.2	0.6	0.7	0.7	0.5	1	0.8	0.7	0.4	0.3	0.2	0.5
40 TO 99	0.3	0.5	0.8	1.1	0.8	0.9	1.5	1.4	1.4	0.8	0.5	0.5	0.9
100 TO 199	0.7	1.1	1.2	1.1	0.9	0.9	1.4	1.3	1.6	1.2	0.7	0.8	1.1
200 TO 299	0.9	1.6	1.7	1.7	1	0.9	1.5	1.5	2	1.4	1.1	0.9	1.4
300 TO 399	1.3	2.4	2.5	2.3	1.6	1.3	1.9	1.9	2.1	1.9	1.5	1.5	1.8
400 TO 499	2.1	2.5	2.7	2.6	2.2	1.7	2.2	2	2.6	2.4	2.1	2.3	2.3
500 TO 599	2.6	2.3	2.8	2.7	2.1	1.9	2	1.9	2.8	2.4	2.6	2.6	2.4
600 TO 699	2.7	2.3	2.8	2.8	2	1.9	2	1.7	2.4	2.5	2.3	2.8	2.4
700 TO 799	2.5	2.2	2.3	2.5	1.6	1.9	1.7	1.7	2	2.4	2.1	2.5	2.1
800 TO 899	2.8	2.7	3	2.8	2.5	2.4	2.3	2.3	2.7	2.8	3	3.2	2.7
900 TO 999	1.2	1	1.2	1.4	1	1	1	0.8	0.9	1.3	1.1	1.6	1.1
1000 TO 1499	8.8	7.5	7.4	9.1	8.1	7.8	7.1	6.9	7.9	8.3	8.4	9.6	8.1
1500 TO 1999	9.5	8.6	8.8	9.7	9.6	8.9	8.4	8.9	8.8	10.1	10	10.4	9.3
2000 TO 2499	11.3	10.6	9.5	11	12.3	12.2	11.1	12	12.3	11.4	11.5	11.5	11.4
2500 TO 2999	12	12.2	12	13.1	13.6	14.4	13.9	15.7	14.8	13.6	12.9	13.3	13.5
3000 TO 3499	16.1	15.7	14.7	14.2	16.3	16.2	16	16.1	15.9	15.8	16.3	14.9	15.7
3500 TO 3999	9	8.8	8.9	7.4	9	9.4	7.9	7.6	5.9	7.3	8.5	7.9	8.1
4000 TO 4499	11.2	11.2	9.3	7.8	9	9.4	9.6	9.5	8.4	9.5	10.4	9.7	9.6
4500 TO 4999	1.6	2.7	2.4	1.6	1.5	1.5	2.1	1.7	0.9	1.2	1.6	1.3	1.7
5000 TO 5999	3	2.8	3.8	2.7	2.6	3.1	3.7	2.7	2.6	2.3	2.3	2	2.8
6000 TO 6999	0.2	0.7	0.9	0.9	0.8	0.9	0.9	0.9	0.6	0.4	0.5	0.3	0.7
7000 TO 29999	0.2	0.4	0.6	0.5	0.7	0.8	0.6	0.6	0.5	0.5	0.1	0	0.5
ALL OBS	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

Appendix 4. ZTV and Visuals Methodology

ZTV Studies

ZTV studies are prepared using the ESRI ArcGIS Viewshed routine. This creates a raster image that indicates the visibility (or not) of the points modelled. Each turbine is analysed at hub and blade tip height. Two studies are carried out, with the first using a topographic model alone, in accordance with SNH guidance. A second study is also prepared including settlements (generally mapped in at an assumed average of 7.5m above ground level) and woodlands (generally mapped in at an assumed average of 15m high above ground level). If significant deviations from these assumed heights are noted during site visits, for example young or felled areas of woodland, or significant areas of single storey development, the features concerned will be adjusted within the model. The areas of settlement and woodlands are based on the Ordnance Survey Vectormap District alpha version dataset (this equates to urban areas on a 1:25,000 Ordnance Survey plan and woodlands from the Ordnance Survey streetview 1:10,000 product).

The visibility is modelled taking into account both the curvature of the earth and light refraction, and an observer height of 2m, in accordance with SNH guidance. The ZTV also begins at 1m from the observation feature (for example the wind turbine) and will work outwards in a grid of the set resolution (generally 12.4 sq. m for Ordnance Survey Opendata Landform Panorama) until it reaches the end of the terrain map for the project.

For all plan production LDA Design will produce a ZTV that has a base and overlay of the 1:50,000 Ordnance Survey Raster mapping. The ZTV will be reproduced at a suitable recommended scale on an A1 template to encompass the study area. For printing purposes all A1 figures will be produced at 600 dpi to allow interpretation of the base map.

Ground model accuracy

Depending on the project and level of detail required, different height datasets may be used. Ordnance Survey Landform Profile (roughly linked to quality of 10K mapping) and Ordnance Survey Opendata Landform Panorama (roughly linked to the quality of 50K mapping) are supplied as raster dataset. Below is listed the different data products and their specifications:

Product	Distance Between Points	Vertical Error	Horizontal Error
LiDAR	50cm – 2m	up to +/- 10Cm	up to +/- 1cm
Derived Aerial Photography Heights	1m – 5m	up to +/- 25cm	up to +/-15cm
Ordnance Survey Landform Profile	10m	+/- 1.8m	+/- 1m
Ordnance Survey Opendata Landform Panorama	49.6m	+/- 5m	+/- 3m

For most purposes, the Ordnance Survey Opendata Landform Panorama data will be used, but on certain occasions more detailed analysis of areas close to the site may be required, in which case, ZTVs based on Ordnance Survey Landform Profile data with areas of vegetation and building footprints taken from the Ordnance Survey 1:10,000 mapping may be used. Similarly, where actual heights from obstructions and hedgerows might need to be assessed more detailed surface mapping products such as Derived Aerial Photography Heights (from Infoterra or Bluesky) or LiDAR can be used.

Wireframes

Wireframes are produced in 6 key stages:

1) Photography is undertaken by a professional photographer using a digital SLR camera and 50mm equivalent lens. A tripod (usually 1.6m high) is used to take overlapping (50%)

landscape format photographs which are joined together using Adobe Photoshop software to create a single panoramic image for each viewpoint. These are then saved at a fixed height and resolution to enable correct sizing when reproduced in the final images. The photographer also notes the GPS location of the viewpoint and takes bearings to visible landmarks whilst at the viewpoint.

2) Creation of a ground model and 3D Mesh to illustrate that model - This is created using OS landform panorama point data and KEY Terrafirma ground modelling software.

3) The addition of the turbine wireframes to the 3D model using AutoCAD- The turbines are correctly proportioned to match the nacelle height and blade lengths proposed for the development. They are also modelled to closely resemble the turbines proposed. The turbines are then inserted into the 3D model at the proposed locations, facing into the prevailing wind direction.

4) Wireframe generation – The viewpoints are added within the 3D AutoCAD model with each observer point being inserted at 2m above the modelled ground plane. The location of the landmarks identified by the photographer may also be included in the model. The view from the viewpoint is then generated using the AutoCAD camera function, creating a number of single frame images, which also include bearing markers. For cumulative wireframes, each wind farm will be shown in a different colour. As with the photographs, these single frame images are joined together using Adobe Photoshop software to create a single panoramic image for each viewpoint. These are then saved at a fixed height and resolution to ensure that they are the same size as the photographs.

5) Wireframe matching – The wireframes are matched to the photographs using a combination of the visible topography; bearings taken on site and the bearing markers; and the landmarks which have been included in the 3D model.

6) Reproduction – the wireframe images are presented on sheets which are 297mm high and the length needed to show the view. The photographs are shown at 140mm high (a viewing distance of 300mm) with the wireframes below. Data required by the SNH guidance and a location plan is also included on each sheet. Where very wide panoramas (more than 180 degrees) are required to show all of the schemes within a cumulative study, the view will be split across two sheets.

Photomontages

Photomontages are produced in 4 key stages:

1) Wireframe preparation, up to stage 5 above.

2) 3D Studio Max is used to produce a rendered 3D view of the turbines from the viewpoint. The rendering uses a pale grey colour (similar to that used for many turbines) and lighting conditions according to the time of day for the viewpoint photograph. These images are then saved at a fixed height and resolution to ensure that they are the same size as the photographs.

3) The rendered turbines are then added to the photographs in the positions identified by the wireframe (using Adobe Photoshop to overlay the photograph with both the wireframe and rendered turbines to ensure accuracy). The images are then layered to ensure that the turbines appear in front of and behind the correct elements visible within the photograph.

   Reproduction – the photomontage images are presented on sheets which are 297mm high and the length needed to show the view which is usually cropped to 90 degrees of the wireframe view, focussed on the wind farm location. The photographs are shown at 200mm high (a viewing distance of 435mm). Data required by the SNH guidance and a location plan is also included on each sheet. Where very wide panoramas (more than 135 degrees) are required to show all of the schemes within a cumulative study, the view will be split across two or more sheets.

8.0 References

- Countryside Agency and Scottish Natural Heritage (2004). Topic Paper 6: Techniques and criteria for judging capacity and sensitivity.
- DTI in association with Countryside Agency, Countryside Council for Wales and Scottish Natural Heritage (2005). Guidance on the Assessment of the Impact of Offshore Wind Farms: Seascape and Visual Impact Report.
- DTI (2004), SEA 5: Strategic Environmental Assessment of Parts of the Northern and Central North Sea to the East of Scottish Mainland, Orkney and Shetland. Department of Trade and Industry.
- Hill. M, Briggs. J, Minto. P, Bagnall. D, Foley. K, Williams. A (2001). Guide to Best Practice in Seascape Assessment (GSA). Maritime Ireland/Wales Interreg 1994 – 1999;
- Institute of Environmental Management and Assessment (IEMA) and the Landscape Institute (2002). Guidelines for Landscape and Visual Impact Assessment, Second edition.
- North Sea Pilot (1997)
- Scottish Natural Heritage (2005). Cumulative Assessment of Wind Farms, Version 2.
- Scottish Natural Heritage 103 (2005). An assessment of the sensitivity and capacity of the Scottish Seascape in relation to wind farms. Commissioned Report 103.
- Scottish Natural Heritage (2006). The Visual Assessment of Windfarms Best Practice.
- The North Sea Trail/NAVE North Sea Trail Project, Funded by Interreg 111b North Sea Programme. www.northseatrail.org . Aberdeenshire Coastal Path Guide and Maps www.aberdeenshire.gov.uk/outdooraccess/coastal_path/guide_maps
- Royal Yachting Association: Position Statement of Offshore Renewable Energy Developments (December 2009).
- Royal Yachting Association: UK Coastal Atlas of Recreational Boating (Jan 2009), Second Edition.