

# **European Offshore Wind Deployment Centre Environmental Statement**

## **Appendix 19.2: Seascape, Landscape and Visual EIA Technical Report**



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

EIA Technical Report  
21st June 2011

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## 1.0 Introduction

The Seascape, Landscape and Visual Impact Assessment (SLVIA) considers the potential effects that the EOWDC will have on the existing seascape, landscape, and visual environment. The purpose of the assessment is to determine the sensitivity, magnitude, and therefore significance of any change to the character of the regional seascape, landscape, and any areas of designated landscapes, as well as the potential effect upon views, visual amenity and receptor groups within the overall Zone of Theoretical Visibility (ZTV).

The Baseline Report (see Appendix xxx) sets out the existing seascape, landscape and visual baseline environment and identified its sensitivity to the type of change proposed. This impact assessment section describes the nature of the anticipated change upon the regional seascape units, landscape character areas and landscape designations within the study area and upon a number of agreed representative visual receptors and assesses the magnitude and significance of the anticipated changes.

The cumulative seascape, landscape, and visual effects of the proposed development with the existing, consented and in-planning wind farms are assessed for the study area. The ‘in-planning’ wind farms are those that have had a planning application submitted which has not yet been determined at the time of writing the assessment (18th March). The report also discusses the cumulative effects of the potential Ocean Laboratory structure, although this would be subject to a separate planning application.

### 1.1. Consultation

Consultation to agree upon the assessment methodology and a number of other important parameters regarding the scope of the SLVIA took place with Scottish Natural Heritage, Aberdeen City Council, and Aberdeenshire Council. The Baseline Report and its Appendix 1 provides a summary of the key stages of consultation and also provides a detailed record of all consultation which took place on the SLVIA throughout the project.

### 1.2. 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), published in 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 Designing Windfarms in the Landscape (SNH, December 2009).

### 1.3. Data Information and Sources

Table 1.1 below records the main survey information and site study data that were used in this assessment. Please also see the Baseline Report for additional baseline assessment survey information.

**Table 1.1 Summary of data and sources**

<b>Survey/Study</b>	<b>Date of Survey</b>	<b>Description</b>
Seascape/landscape and visual receptor assessment work	February 2011	Land based driving and walking seascape and landscape receptors and viewpoints assessment
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 and Buchan Landscape Assessment (SNH)	1994	Landscape Character Assessment

## 2.0 Impact Methodology

The full assessment methodology is set out in the Appendix 2 of the Baseline Report and a summary of the methods used to assess impacts is discussed below.

### 2.1. Sensitivity

The sensitivity to the proposed change was assessed in the baseline report for both seascape and landscape receptors such as regional seascape units, landscape character areas, landscape designations and for visual receptors (people) at agreed viewpoints. It identified the sensitivity of those receptors to the type of development proposed and thus gives an indication of the likelihood of unacceptable effects on those receptors.

### 2.2. Magnitude

The magnitude of effect is assessed for all seascape, landscape and visual receptors and identifies the degree of change arising as a result of the proposed development. It is 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; and
- 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.

The spatial extent of the effect for the purposes of the SLVIA is assessed at a regional scale for seascape and landscape effects, and local effects for specific viewpoints.

The duration of effects is also a consideration, and the lease for the EOWDC site is for 22 years. Given this, the lifespan is not taken into account in determining the magnitude of any effects within the SLVIA. The reversibility of effects is, however, a material consideration and will be referred to within the assessment.

### 2.3. Significance

The process of forming a judgment regarding the significance of effect is based upon the assessments of magnitude of effects and the sensitivity of the receptor. Professional judgment of how the importance is then used to assess the importance of the impact is informed by Table 2.1.



**Table 2.1 Matrix for Significance of Effect**

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

### 2.3.1. Implications of Significance

The Significant effects (in terms of the EIA (Scotland) Regulations 1999) are those that are Major or Major-Moderate. 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 effect 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.

### 2.4. Cumulative and In-combination

As set out in Appendix 2 of the Baseline Report, 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.’

The assessment of cumulative effects for the SLVIA of the EOWDC takes into consideration the large number of other wind farms (existing, consented or in-planning) within a 60 km radius study area. As of March 18th 2011, there are 48 existing or consented and 24 in-planning wind farms or single turbines (over 50 m hub height) within the study area. Please see Appendix 1 which lists the name, number of turbines and height of each wind farm considered in the cumulative assessment. Figure 12 shows the wind farm locations.

Cumulative landscape and seascape effects will be assessed for each receptor/character unit where there is potential for more than one wind farm to have an effect. As set out 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 wind farms in that area and the overall size and shape of the receptor/character area.

Please refer to Appendix 2 of the Baseline Report which details the agreed methodology for the assessment of cumulative effects of EOWDC with one or more turbines.

Due to the large number of wind farms within the study area (none of which are closer than 10km to the EOWDC), the process for producing the ZTVs has undergone much research and development for this project. The ZTVs of all 72 wind farms have been processed and overlaid with the EOWDC ZTV. The resulting images are shown in Figures 13 to 18. Figures 13 and 14 show the existing and consented wind farms overlaid with the in-planning wind farms and EOWDC. Figures 15 to 18 show a more detailed analysis by illustrating the number of sites or the number of turbines visible with the EOWDC. Through colour grading of the number of turbines or number of sites visible (on separate figures) a clearer picture is given of the main areas of 'in combination' effects with the EOWDC. To increase the legibility of this information the ZTVs of the other wind farms are only shown where they overlap with the EOWDC ZTV and the other areas without EOWDC are shown as a beige colour. Due to the number of sites and as they are all further than 10km away from the EOWDC it is not practical to identify individual site ZTVs but the locations of wind farms are identified on the plans for reference.

The potential sequential cumulative effects upon receptors along the main roads within the study area are illustrated using diagrammatic graphs which show the distance to each relevant wind farm and the length of road from which these wind farms will be theoretically visible. Please refer to section 4.3 in this report, Figure 19 and Appendix 2 of this report.

## 2.5. Worst Realistic Case

For the purposes of the SLVIA it was agreed with the consultees that the worst case scenario dimensions of the turbines would be eleven 10 MW turbines with a hub height of 120 m and blade tip height of 195 m above the lowest astronomical tide (LAT). The nature of the deployment centre is that it will be used to test first of run wind turbines which may result in turbines of different heights. It is not envisaged that any final mix of turbine heights will result in height difference that is greater than 20-35 m between turbines. This difference, however, may be potentially noticeable at specific locations and the assessment will take this into consideration through the production of wireframes modelled with the different turbine heights from a selection of viewpoints. Please see section 5.1 of this report.

### 3.0 Seascape and Landscape Effects

Whilst it also considers construction and decommissioning effects, the SLVIA is primarily concerned with the operational effects as these will have the most potentially significant effects due to the duration of this stage. The potential impacts during operational phases on the seascape and landscape are discussed below. Each impact has been assessed in its own subsection taking into consideration direct and indirect impacts as well as cumulative impacts.

Please refer to section 6.0 of this report for discussion on the seascape, landscape and visual effects during construction and decommissioning.

For the purposes of establishing intervisibility of the EOWDC with the seascape units and landscape character areas the Zone of Theoretical Visibility (ZTV) plans were reviewed. Please refer to Figures 7, 8, and 9 for the EOWDC ZTVs and also Figures 12 to 18 for the cumulative ZTVs.

The magnitude and subsequent significance of any effects arising from the proposed EOWDC upon the existing seascape and landscape resource is related to the capacity of the regional seascape unit or landscape character area to accommodate the type of change proposed and its sensitivity to the proposed change. As explained in section 2 of this report and Appendix 2 of the Baseline Report, this is assessed using the recognised Landscape Institute / Institute of Environmental Management and Assessment evaluation process, which looks at the physical form and attributes of the seascape, its quality, its sensitivity and the range of visual receptor groups that characterise the individual seascape units or character areas. The magnitude of effect upon seascape and landscape character takes into account the scale, extent and duration of the effect. Please refer to Figures 4, 5, and 6 which shows the seascape unit locations and landscape character areas.

#### 3.1. Seascape Effects

##### 3.1.1. Inverbervie to Stonehaven Regional Seascape Unit

This regional seascape unit (RSU) embraces the rocky coastline from Stonehaven to Inverbervie which lies just beyond the study area. It lies approximately 30 km at its closest point to the nearest turbine of the EOWDC. The ZTVs indicate that the theoretical extent of visual exposure to the proposed development is limited to the sea and a short coastal stretch from Stonehaven to Crawton. There are also limited areas of intervisibility on local high ground. The convex curve of the coastline beyond Crawton prevents any intervisibility with the coast or inshore waters.

The coastal area south of Stonehaven with intervisibility has the characteristic large scale agricultural land sloping towards the tops of the cliffs with a few isolated farms and houses. At this specific point the ground opens out towards the north and east and views of the coastline to Girdle Ness can be seen. Elsewhere in the RSU, the expansive sea views are generally focussed towards the east. Within the sea element, the EOWDC will be seen more clearly than on land, but with a backdrop of the Aberdeen Bay coastline and rolling farmland.

Taking account of the distance to the EOWDC development, the limited intervisibility from the majority of the landward element, the open and large scale character including existing onshore wind farms, this will reduce the potential for the EOWDC to affect the character of the seascape unit. Where visible it will only be a minor indistinct and distant element.

As a result the magnitude of impact upon the Inverbervie to Stonehaven RSU is considered to be Negligible. When combined with a Medium sensitivity to the proposed change, the

overall significance of effect is assessed to be Negligible, with no direct effects upon the attributes of this seascape unit, and only a limited effect upon distant views from a short stretch of coastline and sea area.

### Cumulative Impacts

The cumulative ZTVs show that visibility of wind farms is a baseline characteristic of this seascape unit. St John's Hill and Tullo Wind Farm, as closest to the RSU, will be dominant in views inland. There are only minor areas on land from where the EOWDC will be seen in combination with other wind farms which as shown on Figure 17 could be up to 10 existing or consented wind farms. There are no in-planning wind farms visible from this RSU. The majority of these other wind farms are closer in proximity to the seascape unit than the EOWDC and they will be only potentially seen together from a few areas on land and to a larger extent at sea. However, the EOWDC will continue to be a minor, indistinct element in these views and therefore the significance of cumulative effects on the Inverbervie to Stonehaven RSU will be Negligible.

#### 3.1.2. Stonehaven to Girdle Ness Regional Seascape Unit

Extending approximately 20 km north of Stonehaven to Girdle Ness, this regional seascape unit is at closest 8 km from the nearest turbine of the EOWDC. The ZTVs indicate that the shape of the coastline and also the landform around Kincorth and Tullos Hills prevent much of the land and coastal elements of the RSU having intervisibility with the proposed development. Visibility is therefore limited on land to the local high points along the coast and at the edge of Aberdeen, including Girdle Ness. Due to the slight curve in the coastline between Stonehaven and Girdle Ness most of the inner shore area will not have any intervisibility but further offshore the vast open sea will afford views back to land with the EOWDC in views to the north.

At the south of the RSU, the areas of intervisibility on land are limited to sporadic, high, open agricultural land which will predominantly have views toward the east. Moving closer to Aberdeen, the coast and land element of the RSU becomes more densely settled and it is only from the open Tullos Hill and Girdle Ness that views of the development will be clearly visible.

Any visibility of the proposed development would be seen in context with the heavily built up settlement and transport corridors which lie inland from the RSU. Effects on the sea element of the RSU will potentially be greater nearer the northern extents of the unit. However, overall intervisibility from the sea with the EOWDC will not alter the perception of scale and the key characteristics of this seascape unit, which already include distant views of existing wind farms.

It is therefore assessed that there will be a Low magnitude of effect on the character of this regional seascape unit. As the level of sensitivity to the proposed change is judged to be Medium to Low, the significance of effect on this RSU is assessed as Moderate-Minor to Minor with no direct effects upon the attributes of this seascape unit, and only a limited effect upon views from the northern extents.

### Cumulative Impacts

The existing baseline of this RSU includes views of wind farms, with the recently consented Meikle Carewe wind farm closest at 5km from the coastline. Clusters of existing and consented wind farms to the south and also to the north of the RSU are theoretically visible, with those to the south more dominant in views due to their closer distance. The addition of the EOWDC will add to combined visibility within the offshore extents of the RSU and only very small areas on land. Figure 16 shows that the combined visibility of the in-planning

turbines with the EOWDC is very limited within this RSU both offshore and onshore. This is due to the nearest in-planning turbines (Woodlands Farm) being located at over 20km from northern extents of the RSU.

It is judged that the magnitude of cumulative effect on the Stonehaven to Girdle Ness regional seascape unit is Low given that the majority of the area has potentially existing views of wind farms and the presence of the EOWDC will only marginally increase the areas visible to wind farms and at a considerable distance. As the level of sensitivity to the proposed change is judged to be Medium to Low, the significance of cumulative effect on this RSU is assessed as Moderate-Minor to Minor.

### 3.1.3. **Aberdeen Beach Regional Seascape Unit**

This regional seascape unit is approximately 5 km at its nearest point from the closest turbine of the EOWDC. It is short stretch of deposition coastline which is characterised by the influence of Aberdeen city and its harbour. The ZTV illustrates that the majority of this area will have intervisibility with the proposed development. Only localised areas such as behind the Beach Boulevard and areas behind settlements and beach development will have limited views.

This seascape unit is typically dominated by the wide variety of seafront development, including the harbour and sea defences and the movement of sea traffic to and from the harbour. Often large numbers of ships sit for several days or weeks within the Maritime and Coastguard Agency (MCA) designated anchorage area which lies within the inshore waters. These factors all combine to make it a dynamic and slightly chaotic seascape which will assist in reducing the visual influence of the proposed development.

It is therefore judged that the magnitude of impact on the character of the Aberdeen Beach RSU is High to Medium. As the level of sensitivity to the proposed change is judged to be Medium, the significance of effect on the visual aspects of this RSU is assessed as Major-Moderate to Moderate, with no direct effect on the attributes of this seascape unit.

#### **Cumulative Impacts**

There are no wind farms within this seascape unit, however there is an existing baseline of distant views of existing and consented wind farms from the offshore part of the unit. The cumulative ZTV (Figure 17) shows that between 1 and 6 km offshore, there is the potential for combined visibility of up to six other existing and consented wind farms with EOWDC, the closest at Tillymaud and Hill of Fiddes, approximately 15km from the coastline within the RSU. The number of wind farms visible increases gradually the further offshore so that at the sea limits of the unit (24 km offshore, GSA, 2001), the ZTV shows that there is potential to see up to 30 existing or consented wind farm sites.

A similar pattern applies to the in-planning wind farms (Figure 18) where combined visibility with EOWDC starts approximately 6km from the coastline and gradually increases to over 12 sites at the offshore extents of the RSU. The closest in-planning turbines at Woodlands Farm are also approximately 15km from the coastline.

All of the existing and consented and in-planning wind farms except EOWDC will be at considerable distances from the areas of shown combined visibility and they will not be prominent elements in views from offshore.

The ZTVs show that the majority of the seaward extents of this unit have existing intervisibility with onshore wind farms but at some distance so the addition of EOWDC in close proximity to the unit has individual effects as identified above but it is judged will only have a Low to Negligible magnitude of cumulative effect due to the scale and distance of the

existing, consented and in-planning turbines. As the level of sensitivity to the proposed change is judged to be Medium, the significance of cumulative effect on this RSU is assessed as Moderate-Minor to Negligible.

#### 3.1.4. **Aberdeen Bay Regional Seascape Unit**

The proposed development lies within the southern part of the Aberdeen Bay regional seascape unit. This RSU stretches along the sandy coast from Donmouth to the Ythan estuary. The southern extents of the unit are more influenced by Aberdeen and its suburbs and the seascape becomes more remote towards Forvie Sands.

The ZTVs show that almost all this seascape unit will have intervisibility with the proposed development. However, the undulating sand dunes, which are a key characteristic of the area, will have marginally less intervisibility.

The proposed turbines will be a dominant feature of the seascape unit and will become a new characteristic within the sea aspect, although distant views of existing and consented onshore wind farms are possible from the RSU. The northern section of the seascape unit will remain more remote from the turbines but a visual link will exist. It is therefore considered that the magnitude of impact on the character of the Aberdeen Bay is High. Elements such as the A90, drilling platform, observation tower and views of the city, combined with the active sea traffic will assist in reducing the effect to some degree. As the sensitivity to the proposed change is judged to be Medium in the south and High to Medium in the north, the significance of effect on this RSU is assessed as Major-Moderate in the south, and Major to Major-Moderate in the north.

#### **Cumulative Impacts**

The EOWDC will be the only wind farm within the Aberdeen Bay seascape unit and the existing and consented sites ZTV (Figure 17) shows that the majority of the land, coastline and inshore waters of the Aberdeen Bay seascape unit will only have views of the EOWDC. Just beyond 1km offshore the ZTV shows that there is potential for combined views of 1 or more existing and consented wind farms which gradually increase to 28 other wind farms at the sea extents of the unit. The closest existing wind farm is the Hill of Fiddes which lies approximately 7km from the coastline within this RSU.

The in-planning wind farms will increase the number of wind farms visible with the EOWDC by potentially 12 sites at the sea extents of the unit, but does not alter the overall areas of wind farm visibility. Woodlands Farm is the closest in-planning wind farm at over 10km from the coastline.

Within an approximate 30 km radius from this seascape unit there are 24 existing and consented wind farms and 15 in-planning wind farms. The majority of these wind farms are single turbines or three turbine schemes, with the exception of a couple which have five turbines, and Meikle Carewe which will have 12 turbines.

Hill of Fiddes, Ardgrain, Tillymaud, Mains of Bogfechel, and the in-planning Woodlands Farm and Hill of Fechel turbines are the closest wind farms to the seascape unit.. They will have the potential to have the greatest cumulative effects combined with the EOWDC in views from the offshore areas of this seascape unit. Also, the in-planning Peterhead Harbour turbines will be the nearest turbines to the coast and although approximately 22km from this seascape unit, there is potentially a greater link with the EOWDC given the location.

The majority of the wind farms sites identified have a hub height of around approximately 60 m and blade tip of 100 m. As the EOWDC will have a maximum hub height of 120 m, the scale difference may be more apparent in this seascape unit than the other units due to the

closer proximity of the sites. Given this size difference, the existing and consented wind farms will be much more recessive in views from the sea element of the unit and focus will be on the EOWDC.

It is judged that as potential views of wind farms from the outer sea element of the seascape unit is already a characteristic of the unit albeit at some distance, the presence of the EOWDC will mostly be confined to individual effects and the magnitude of cumulative effects will be Low to Negligible. As the sensitivity to the proposed change is judged to be Medium in the south and High to Medium in the north, the significance of cumulative effect on this RSU is assessed as Moderate-Minor to Negligible in the south, and Moderate to Moderate-Minor to Negligible in the north.

### 3.1.5. Collieston to Peterhead Regional Seascape Unit

This regional seascape unit is approximately 15 km north of the proposed development at its closest point and consists of the rocky stretch of coastline extending from the north of Forvie Sands to Peterhead, including Cruden Bay. The ZTVs illustrate that there will be intervisibility with the proposed development across the majority of the seascape unit except for Cruden Bay due to its sheltered nature from the surrounding higher land. To the north of Cruden Bay the inshore coastal waters will be screened from views of the EOWDC due to the orientation of the coastline and intricate cliffs.

This RSU has a large open scale which already includes large vertical features such as the power station stack and onshore turbines, and has an active outer sea element. The EOWDC will therefore not be a fundamental change to the character of the seascape unit and views of the proposed turbines will be accommodated to some degree by the vast scale of the seascape.

It is therefore judged that the magnitude of impact on the character of the RSU is Medium to Low. As the sensitivity to the proposed change is considered Medium, the significance of effect on the Collieston to Peterhead RSU is assessed as Moderate to Moderate-Minor with no direct effects upon the attributes of this seascape unit, and only limited effects upon views towards the south.

#### Cumulative Impacts

The cumulative ZTVs illustrate that the majority of the Collieston to Peterhead RSU already has potential views of onshore existing and consented wind farms. However, there are no wind farms within the unit itself. The ZTVs also show that only a sliver of coastline and inner coastal waters will have views of EOWDC only.

Figure 12 shows that Ardgrain, West Knock Farm, and Bruxiehill are the closest existing wind farms to the seascape unit, lying approximately 5 to 10 km from the land extents. The in-planning turbines at Peterhead Harbour and single turbine at Middleton of Rora lie close to the northern extents of the seascape unit.

On the land element of the unit where EOWDC is potentially visible, Figure 17 shows that combined views of up to 28 existing and consented wind farms may be possible. This is mainly on small areas of higher open exposed coastal land. In these areas, which lie to the south of the seascape unit, the greatest cumulative effects would be with Ardgrain and Hill of Fiddes as the closest wind farms to the area and EOWDC. The other wind farms further inland such as Skelmonae, Bruxiehill and West Knock Farm may be visible but will be more recessive in views. The in-planning wind farms will also affect a similar land area to the existing and consented turbines with EOWDC with up to 10 wind farms visible on the higher points.



The sea element of the seascape unit is less exposed to existing and consented wind farms in the inner waters but theoretical views of turbines gradually increases up to 28 sites towards the sea extents of the unit. The in-planning wind farms will slightly increase this number in the same areas as shown on Figure 18 with the exception of Peterhead Harbour turbines. These turbines will be visible with the EOWDC in the inner coastal waters (1 to 5km offshore) from the northern extents of the seascape unit.

The EOWDC will be at a similar distance to the seascape unit as the other closest wind farms in the area (except for the in-planning Peterhead Harbour turbines), but will be more visible due to its size and offshore location. Views of wind farms are a characteristic of the seascape unit and the addition of EOWDC will add another wind farm which, at this distance from the unit, will be noticeable in the southern extents but not a dominant feature.

It is therefore judged that the magnitude of cumulative impact on the character of the RSU is Medium to Low. As the sensitivity to the proposed change is considered Medium to Low, the significance of cumulative effect on the Collieston to Peterhead RSU is assessed as Moderate to Moderate-Minor to Minor.

### 3.1.6. Peterhead to Fraserburgh Regional Seascape Unit

This seascape unit lies at the outer extents of the study area, 35 km from the nearest EOWDC turbine, and embraces the north eastern corner deposition coastline of Aberdeenshire between Peterhead and Fraserburgh. The ZTV shows that the regional seascape unit would have no intervisibility with the proposed development except for the outer sea area. It can be considered at the distance from the proposed development that it would appear as a minor element within the expansive views from within the outer sea extents, where views of closer onshore existing and consented wind farms may also be possible.

Therefore it is judged that the magnitude of impact on the character of the Peterhead to Fraserburgh RSU is Negligible. As the sensitivity to the proposed change is considered Low, the significance of effect on this RSU is assessed as Negligible.

#### Cumulative Impacts

As judged in the above assessment, the extent of theoretical visibility of the EOWDC only affects the offshore regions of the seascape unit. Within this area the cumulative ZTVs show that up to 18 existing and consented and up to 12 in-planning wind farms would be also visible in the offshore waters with the EOWDC. As the EOWDC will be a minor, if discernable, element within this sea area, the cumulative impacts of the EOWDC on the Peterhead to Fraserburgh regional seascape unit, can also be judged as being of Negligible significance.

### 3.2. Landscape Effects

The following paragraphs discuss the effects of the EOWDC on the landscape character areas within the study area. As outlined in the Baseline Report there were several character areas identified which do not have any intervisibility with the site and these have not been included in the assessment. The EOWDC ZTVs (Figures 7 to 9) and cumulative ZTVs (Figures 13 to 18) have been referred to in the assessment of the effects. Please refer to Figures 5 and 6 for location of the character areas.



## South and Central Aberdeenshire LCA

### 3.2.1. **Agricultural Heartlands: Formartine Lowlands** (LCA No.4, Figure 5)

The Formartine Lowlands landscape character area is the closest of the Agricultural Heartland landscape type to the proposed development, at just over 3 km from the nearest EOWDC turbine, extending inland approximately 20 km. The ZTV shows that the majority of the area up to 15 km inland will have intervisibility with the proposed turbines, becoming patchy at the western extents as the undulating landscape becomes more pronounced.

The EOWDC will be dominant in the characteristic expansive views for much of the eastern side of this character area but overall the generally large open scale of the Formartine Lowlands character area gives an ability to accommodate such views. Aims for increasing woodland cover as suggested in the Aberdeenshire LCA, and existing vertical features such as existing wind farms and pylons will also reduce any effects.

It is therefore judged the magnitude of impact on the Formartine Lowlands is High to Medium. As the sensitivity to the type of development proposed is Medium to Low, the significance of effect on this character area is Major-Moderate to Moderate to Moderate-Minor.

#### **Cumulative Impacts**

The cumulative ZTVs illustrate that almost all of the Formartine Lowlands has existing exposure to wind farms. However, the addition of EOWDC will extend the potential visibility of wind farms to the south eastern edge and corner of the character area where no wind farms are currently visible. Within the character area there are four existing and consented small wind farms at Hill of Fiddes, Ardgrain, Tillymaud (single turbine), and Mains of Bogfechel (single turbine) and in-planning single turbine at Mosseye, Hill of Fechel and two turbines at Woodlands Farm. There are also many other small wind farms and single turbines to the north west of this character area which will have a theoretical visual influence on this area.

The ZTV in Figure 17 shows that towards the north west of the Formartine Lowlands, there would be areas of potential combined visibility of EOWDC with up to 30 existing and consented wind farms on the local high points, but the majority of the visibility with EOWDC would be up to 6 wind farms. Figure 18 shows that up to 12 in-planning wind farms may also be visible from the same areas.

The addition of the EOWDC will increase the number of turbines visible from a large part of this character area. The three turbine wind farms at Hill of Fiddes and Ardgrain are quite noticeable existing features and it is these two sites which will potentially have the greatest cumulative effect with EOWDC on the character area due to their proximity to each other.

It is judged that the magnitude of cumulative effect on the Formartine Lowlands character area is Medium due to EOWDC extending the number of turbines visible in an area which already has a large exposure to wind farms. As the sensitivity to the type of development proposed is Medium to Low, the significance of cumulative effect on this character area is Moderate to Moderate-Minor.

### 3.2.2. **Agricultural Heartlands: Central Wooded Estates** (LCA No.5, Figure 5)

The enclosed nature of this character area is confirmed by the ZTV as there are very limited areas of intervisibility with the EOWDC, the nearest turbine of which lies 7.5 km away. The largest of these areas is on the east facing slopes of Auchronie Hill, north west of Westhill, at approximately 20 km from the EOWDC. Taking into account this is the only considerable

area of intervisibility within the wider character area, it is considered on the whole, the magnitude of impact on the Central Wooded Estates is Negligible. As the sensitivity to the proposed change is Low, the significance of effect on this character area is Negligible.

### Cumulative Impacts

The cumulative ZTV figures confirm that there is very little existing visibility of wind farms within the Central Wooded Estates in comparison to the wider study area. The few very small areas of intervisibility with the EOWDC also have visibility of up to 20 other existing and consented wind farms and 12 in-planning wind farms. As above, whilst there is potential for cumulative effects within these small areas, the majority of the character area would not have any, and as such the significance of effect on the Central Wooded Estate character area can be judged as Negligible.

#### 3.2.3. **Agricultural Heartlands: Kincardine Plateau** (LCA No.6, Figure 5)

This triangular character area which lies between the upland areas of the Mounth and edge of Aberdeen is approximately 14.5 km from the nearest turbine of the EOWDC at its closest point. The ZTVs illustrate that there will be some intervisibility with the proposed development on the exposed inland north facing slopes around Muirskie and Auchlunies.

The magnitude of impact on the Kincardine Plateau is judged as Low to Negligible as the lack of strong characteristics and influence of the suburbs of Aberdeen reduce the impact of any views of the proposed development. As the sensitivity to the type of development proposed is Low, the significance of effect on this character area is assessed as Minor to Negligible.

### Cumulative Impacts

The cumulative ZTVs show that there would be very little cumulative impacts in the Kincardine Plateau character area given the few areas of intervisibility with the EOWDC. There are no existing or consented wind farms within the area but there will be the potential for some combined views of the EOWDC with up to 18 existing and consented and up to 6 in-planning wind farms. As these areas of intervisibility are on mostly north east facing slopes it is judged that the wind farms will be those in the north, the nearest of which are the cluster of turbines around Udney at just over 20 km from the character area. It may also include Meikle Carewe Wind Farm which is the closest to the character area but lies to the south.

The addition of the EOWDC will have limited cumulative effects mostly confined to the elevated north east facing land at the south of the area where the majority of the wind farms will be at a considerable distance that they would be minor elements in the views. Therefore it is judged that the magnitude of cumulative impact on the Kincardine Plateau is Low to Negligible. As the sensitivity to the type of development proposed is Low, the significance of cumulative effect is assessed as Minor to Negligible.

#### 3.2.4. **Agricultural Heartlands: Ythan Strath Farmland** (LCA No.7, Figure 5)

The ZTVs illustrate that the exposed hill tops of the Ythan Strath Farmland, will have intervisibility with the EOWDC which lies approximately 17 km at its closest point to the nearest turbine and 30 km at its furthest. Views of the EOWDC will be within a wider context at this distance and elevation. The sheltered wooded estates and small scale field patterns with diverse vegetation cover will preclude large areas of this character area from extensive views out towards the EOWDC.

Taking the above into account, and the existing turbines already included in views, reduces the magnitude of impact on the Ythan Strath Farmland to Medium to Low. As the sensitivity to the type of proposed development is Low, the significance of effect on this character area is assessed as Moderate-Minor to Minor.

### Cumulative Impacts

Figure 12 shows that Ythan Strath Farmland has a single turbine at Courtstone, four existing turbines at Skelmonae, with a three turbine extension to Skelmonae currently in planning. There are also other existing wind farms that surround the area.

The cumulative ZTVs show that the entire Ythan Strath Farmland already has exposure to existing, consented and in-planning wind farms. The addition of the EOWDC does not expose any new areas to wind farms but will add to the combined views on the exposed hill tops. Figure 17 illustrates that within these areas up to 30 existing and consented and up to 14 in-planning wind farms will potentially be seen with the EOWDC.

As the EOWDC lies between 17km and 30km from this character area and will be potentially seen from only the exposed hill tops where wind farms are very much an existing characteristic and in closer proximity, it is judged that the magnitude of cumulative impact is Low. As the sensitivity to the type of proposed development is Low, the significance of cumulative effect on this character area is assessed as Minor.

#### 3.2.5. **Agricultural Heartlands: Northern Rolling Lowlands** (LCA No.8, Figure 5)

The Northern Rolling Lowlands character area lies approximately 22 km at its closest point to the nearest turbine of the EOWDC. The ZTV illustrates that the characteristic long distant views from the elevated farmland will potentially include the proposed development. Turbines are a feature of this landscape and at this distance it is unlikely the EOWDC turbines would be seen within the sea but as a minor feature in the horizon behind the undulating landforms and within an expansive view.

It is therefore judged the magnitude of impact on the Northern Rolling Lowlands is Low. As the sensitivity to the type of development proposed is Low, the significance of effect on this character area is assessed as Minor.

### Cumulative Impacts

The cumulative ZTVs show that similar to the adjacent Ythan Strath Farmland, the whole of this character area has intervisibility with wind farms. Within the Northern Rolling Lowland, there are existing and consented small wind farms or single turbines at Balquhindachy, Haddo, St Johns Well, Denhill, and Hill of Easterton. St Johns Well Extension and Hillhead are the only wind farms in planning within the character area.

The Northern Rolling Lowlands is also surrounded by a large number of wind farms on all sides especially to the north and west. The addition of the EOWDC does not increase the area exposed to wind farms but will add to the combined cumulative views on the small areas of elevated areas. Figures 17 and 18 show that in these limited areas up to 30 existing and consented and up to 20 in-planning wind farms could potentially be seen. All of these wind farms lie closer to the area than the EOWDC and, as concluded above, views of the EOWDC would be limited and at some distance.

Taking into account the above and that a large part of the area will not have any visibility of the EOWDC, it is judged the magnitude of cumulative impact on the Northern Rolling Lowlands is Low to Negligible. As the sensitivity to the type of development proposed is Low, the significance of cumulative effect on this character area is assessed as Minor to Negligible.

### 3.2.6. **Agricultural Heartlands: Garvock and Glenbervie** (LCA No.9, Figure 5)

This character area lies just south west of Stonehaven, 27 km from the nearest EOWDC turbine at its closest point and extends beyond the 40 km study area. The ZTV illustrates that intervisibility will be limited to a few northern elevated slopes specifically at Bruxie Hill (which has existing transmitters) and also St John's Hill, which will soon support 9 turbines. Overall, the majority of the study area will not have any intervisibility with the EOWDC, and the key characteristics of views towards the Mounth and Howe of Mearns will be unaffected by the proposed development. Therefore, the magnitude of impact on the Garvock and Glenbervie character area is judged as Negligible. As the sensitivity to the type of development proposed is Medium to Low, the significance of effect on this character area is assessed as Negligible.

#### **Cumulative Impacts**

The cumulative ZTVs show that where there is limited intervisibility with the EOWDC, there will also be views of up to 14 consented and existing and up to 6 in-planning wind farms. These are limited to the highest points where the closer St Johns Hill, Hillhead of Auquhirie, Clochnahill, Jacksbank, and Droop Hill will be potentially dominant in view and the EOWDC will be recessive in comparison. It is therefore concluded that the significance of cumulative effects of the EOWDC on the Garvock and Glenbervie character area is Negligible.

### 3.2.7. **Moorland Plateaux: Grampian Outliers** (LCA No.12, Figure 5)

The ZTV illustrates that only the exposed upland areas of the Grampian Outliers will have intervisibility with the proposed development. The majority of the areas are forested which will prevent any views out to the wider area, but the extensive panoramic views from the promontories will have clear views of the proposed development. As these wide ranging views are elevated but at closest approximately 27 km from the nearest turbine of the EOWDC, the turbines will only be a minor element in often 360 degree views and will not be a dominant feature.

Therefore, the magnitude of impact on the Grampian Outliers can be judged as Negligible. As the sensitivity to the type of development proposed is High to Medium, the significance of effect on this character area is assessed as Negligible.

#### **Cumulative Impacts**

The cumulative ZTVs illustrate that at the highest points of the Grampian Outliers, over 30 existing and consented and up to 14 in-planning wind farms could potentially be visible. The majority of these wind farms will be closer to the character areas than the EOWDC and potentially be more noticeable in the available views. The addition of EOWDC would be a minor element, if discernable, within panoramic views where large numbers of turbines are already an existing characteristic.

Therefore, it can be judged that there will be Negligible cumulative effects on the Grampian Outliers character area.

### 3.2.8. **Moorland Plateaux: The Mounth** (LCA No.13, Figure 5)

The Mounth lies approximately 25km at its closest point to the nearest turbine of the EOWDC and extends beyond the study area. As it is a heavily forested area the only areas of intervisibility with the proposed development as illustrated on the ZTVs are the exposed north and north east facing slopes. The EOWDC may be a noticeable element from the nearest of these areas, but from the majority of views it will be minor if discernable at all.

As the majority of the character area will not have any visibility of the EOWDC it is considered that overall the wild and exposed character will not be changed by the proposed development. An existing wind farm at Mid Hill and the consented Meikle Carewe turbines will also be characteristics of this landscape, reducing any impact the EOWDC might have. Therefore, the magnitude of impact on The Mounth is judged as Negligible. As the sensitivity to the type of development proposed is High to Medium, the significance of effect on this character area is assessed as Negligible.

#### Cumulative Impacts

Figure 17 illustrates that there is potential for combined visibility of the EOWDC and up to 30 existing and consented and up to 14 in-planning wind farms within The Mounth. These are limited to small areas of high open exposed ground, in particular an area north of Mid Hill wind farm, and also the immediate surroundings to Meikle Carewe. The majority of the wind farms visible will be at a considerable distance to the north and it is most likely that the several existing and consented wind farms which lie to the south of The Mounth will be those potentially with the greater cumulative effect. As discussed above, the EOWDC may be a noticeable element from some of these areas, but given the distance and proximity of other wind farms, it will be recessive within any views.

For the same reasons as identified above, the significance of cumulative effect on The Mounth character area is assessed as Negligible.

#### Banff and Buchan LCA

##### 3.2.9. **Agricultural Heartlands: Agricultural Heartlands (area)** (LCA No.18, Figure 5)

This character area lies approximately 22.5 km at its closest point to the nearest turbine of the EOWDC, extending to beyond 40 km. The ZTVs show that there is a continuous area of intervisibility with the proposed development extending from north of the Ythan river to just south of Cuminestown. The ZTVs also show another area of potential intervisibility to blade tip only which lies between Brucklay Castle, and New Pitsligo. These areas consists of the characteristic large field patterns with frequent farmstead and houses scattered across the elevated south east facing slopes with open views of the surrounding landscape. Any views of the EOWDC will be seen within these expansive views.

The majority of the character area however will not have any intervisibility with the proposed development and combined with the distance from the coast and existing wind farms in the area, the magnitude of impact on the Agricultural Heartland character area is judged as Low to Negligible. As the sensitivity to the type of development proposed is Low, the significance of effect on this character area is assessed as Minor to Negligible.

#### Cumulative Impacts

The ZTVs illustrate that the majority of the Agricultural Heartlands character area has existing exposure to wind farms. Within the 40 km study area there are existing turbines at Skelmonae, Newstead, Auchtygills Farm, and Clayfords Farm, with a further four sites in planning. Figures 17 and 18 illustrate that up to 30 existing and consented and up to 14 in planning wind farms will be potentially visible with EOWDC from the limited areas identified above.

The addition of the EOWDC gives the potential for combined effects on a small part of the overall character area. As the EOWDC lies beyond 22 km from the character area, it is considered that whilst it may be seen in views from this area, it will be a minor element and any cumulative effect would be minimal.

Therefore, the magnitude of cumulative impact on the Agricultural Heartland character area is judged as Low to Negligible. As the sensitivity to the type of development proposed is Low, the significance of cumulative effect on this character area is assessed as Minor to Negligible.

### 3.2.10. **Coastal Farmland: Eastern Coastal Agricultural Plain** (LCA No.21, Figure 5)

The Eastern Coastal Agricultural Plain with open views to the surroundings is approximately 17 km at its closest point to the nearest turbine of the EOWDC and extends north to beyond Fraserburgh. This character area overlaps with the land extents of the Collieston to Peterhead seascape unit. The ZTVs show that the southern extent of the Eastern Coastal Agricultural Plain up to Peterhead has a high level of intervisibility with the proposed development except for an area around and west of Cruden Bay. The proposed development will be clear in views to the south from this area albeit at over 17 km away. However, it is only a small area of the overall character area which will have intervisibility with the proposed development.

It is therefore judged that the magnitude of impact on the Eastern Coastal Agricultural Plain is Medium to Negligible. As the sensitivity to the type of development proposed is Medium to Low, the significance of effect on this character area is assessed as Moderate to Moderate-Minor to Negligible.

#### **Cumulative Impacts**

The cumulative ZTV illustrates that the Eastern Coastal Agricultural Plain is theoretically exposed to wind farms across the entire area except for around Cruden Bay. The southern end of the Eastern Coastal Plain has sporadic combined theoretical visibility of up to 20 existing and consented and up to 10 in-planning wind farms with the EOWDC. There are no wind farms within the southern extents of the Eastern Coastal Plain but within the 40 km study area, there are three existing and consented and four proposed wind farms.

The addition of EOWDC will expose some new areas to wind farms in the southern part of the character area but these are limited and adjacent to areas where combined views of other wind farms may be possible. As the character area lies near the coast, the views of the EOWDC will most likely take in the sea and potentially the turbines will be viewed as a separate element to the onshore wind farms in this case.

Taking into account the above, the distance between the EOWDC and the character area, and also that the majority of the character area will not have any intervisibility with the EOWDC, it is judged that the magnitude of cumulative impact on the Eastern Coastal Agricultural Plain is Low to Negligible. As the sensitivity to the type of development proposed is Medium to Low, the significance of cumulative effect on this character area is assessed as Moderate-Minor to Minor to Negligible.

#### **Aberdeen LCA**

### 3.2.11. **Major River Valleys: The Upper Don Valley (Aberdeen)** (LCA No.23, Figure 6)

The enclosed wooded valley of the upper Don area is approximately 12 km at its closest point to the nearest turbine of the EOWDC. The ZTVs illustrate that the Upper Don Valley has limited intervisibility with the proposed development and these areas of intervisibility are restricted to blade tip views only on the higher east facing valley sides. As much of the valley is inward looking and elements such as the sand extraction and pylons lines are dominant, it is judged that the key characteristics of this area will not be affected by the limited blade tip views of the EOWDC and the magnitude of impact on the Upper Don Valley is assessed as Negligible. As the sensitivity to the type of development proposed is Low, the significance of effect on this character area is assessed as Negligible.



### Cumulative Impacts

The cumulative ZTVs show that except for a tiny sliver of land, there will be no cumulative effects within this character area. It is therefore considered that overall there will be negligible cumulative effects on the Upper Don Valley.

#### 3.2.12. **Major River Valleys: Dyce Plain** (LCA No.24, Figure 6)

The open flat characteristics of the Dyce Plain, which lies approximately 10 km from the nearest turbine of the EOWDC, allow distant views across the landscape. The ZTV shows that the majority of this area will have intervisibility with the EOWDC with some blade tip only visibility adjacent to Dyce. The industrial and commercial activities around Aberdeen Airport will distract and will reduce the prominence of any visibility of the turbines within views to the east.

Therefore, the magnitude of impact on the Dyce Plain character area is judged as Medium. As the sensitivity to the proposed development is Low, the significance of effect on this character area is assessed as Moderate-Minor.

### Cumulative Impacts

The cumulative ZTV shows that there are no views of other wind farms except for a small area south of the airport runway where 1 to 2 other consented and existing wind farms and 1 to 2 in-planning wind farms may be seen in combination with the EOWDC. These will most likely be the cluster of turbines in-planning and existing and consented at Udney and the Hill of Fiddes turbines, which lie approximately 10 km to the north.

Given that the majority of the character area will only have visibility of EOWDC the cumulative effects on the character will be limited. It is therefore judged the magnitude of cumulative effect is Low to Negligible. As the sensitivity to the proposed development is Low, the significance of cumulative effect on this character area is assessed as Minor to Negligible.

#### 3.2.13. **Hills: Tyrebagger Hill/Kirkhill** (LCA No.27, Figure 6)

Tyrebagger Hill and Kirkhill lie at their closest point approximately 12.5 km from the nearest turbine of the EOWDC. As much of this landscape character area is covered by woodland it is only the lower open slopes to the east and to the north where the ZTV illustrates that there would be potential intervisibility with EOWDC. The hills lie directly west of the EOWDC and views of the turbines would be seen behind a foreground of the industrial and commercial development around the airport, which would reduce the impact to some degree.

Taking into account the above and that as the woodland is the main characteristic of this area which would remain unaffected by the presence of the EOWDC, it is judged that the magnitude of impact on Tyrebagger and Kirkhill is Low. As the sensitivity to the proposed development is High to Medium, the significance of effect on this character area is assessed as Moderate to Moderate-Minor.

### Cumulative Impacts

The cumulative ZTVs show that there is a small area of potential cumulative visibility on the northern open slopes of Kirkhill. Figure 17 shows that up to 14 existing and consented and up to 12 in-planning wind farms are potentially visible from this area. Within this number, the closest turbines, at approximately 8 – 10 km to the north, will be at Mains of Bogfechel, Tillymaud, Hill of Fiddes, and in-planning turbines at Woodlands Farm, Hill of Fechel, and

Mosseye. Views of these wind farms would be to the north of the character area and the EOWDC would lie to the east in a different part of the view.

As this area of potential combined visibility is limited and covers only a small part of the character area, it is judged that the magnitude of cumulative effects is Low. As the sensitivity to the proposed development is High to Medium, the significance of effect on this character area is assessed as Moderate to Moderate-Minor.

#### 3.2.14. **Hills: Brimmond Hill** (LCA No.28, Figure 6)

The ZTV illustrates that the north and eastern slopes of Brimmond Hill, and only the northern slopes of the adjacent Elrick Hill will be exposed to the proposed development. This character area lies approximately 14 km from the nearest EOWDC turbine. Extensive 360 degree panoramic views are experienced from the top of Brimmond Hill and the EOWDC turbines would be discernable and part of the view but would not dominate. The expansive views also include other wind farms in the wider area, and the masts and pylons on Brimmond Hill which are a strong feature. Also, the ZTVs show a large part of the character area will not have any intervisibility with the EOWDC.

It is therefore judged that the overall magnitude of impact on Brimmond Hill character area is Low. As the sensitivity to the proposed development is Medium, the significance of effect on this character area is assessed as Moderate-Minor.

##### **Cumulative Impacts**

The cumulative ZTVs show that from the top of Brimmond Hill there is the potential to see over 30 consented or existing wind farms, and potentially up to 16 in-planning wind farms in combination with the EOWDC. On the lower north and east slopes this number gradually reduces to up to 4 sites for both consented and existing and in-planning wind farms.

The addition of EOWDC will not increase the areas on Brimmond Hill exposed to wind farms due to the elevated nature. However, the EOWDC will become visible in part of the 360 view where no other existing, consented or in-planning wind farm will be seen and as the closest, will be the most discernable. The EOWDC will add to the perception of wind farms being a strong characteristic of the surrounding area but will not fundamentally alter the key elements of the Brimmond Hill character area.

Therefore it is judged that the magnitude of cumulative impact on Brimmond Hill character area is Medium to Low. As the sensitivity to the proposed development is Medium, the significance of effect on this character area is assessed as Moderate to Moderate-Minor.

#### 3.2.15. **Hills: Kincorth and Tullos Hills** (LCA No.30, Figure 6)

The Kincorth and Tullos Hills lie approximately 9 km from the nearest turbine of the EOWDC. The open northerly aspects of this area of elevated land to the south of Aberdeen will have intervisibility with the proposed turbines as shown on the ZTV. The characteristic heathland cover of Tullos Hill enables clear views towards the sea, however, Kincorth Hill is more enclosed with young woodland planting and there are only a few open areas where long distant views can be seen. The turbines will be a discernable feature within the view but will not alter the key characteristics of Kincorth and Tullos Hills.

It is therefore judged that the magnitude of impact on the visual aspects of the Kincorth and Tullos Hills character area is Medium. As the sensitivity to the proposed development is Medium, the significance of effect on this character area is assessed as Moderate.

##### **Cumulative Impacts**



The cumulative ZTVs show that Kincorth and Tullos Hills may have views of up to 4 existing and consented and up to 2 in-planning wind farms combined with EOWDC. The areas of combined visibility are predominantly on the north facing slopes which indicate that the other wind farms in view are to the north, rather than those to the south of Aberdeen.

Therefore, the closest existing and consented wind farms to the character area Hill of Fiddes, Tillymaud, and Mains of Bogfechel which lie approximately 20 km to the north. The in-planning Woodlands Farm and Hill of Fechel will also be at a similar distance. The relatively small size and scale of these turbines will mean at this distance that they will not be easily perceived in views where the EOWDC in comparison will be a noticeable feature.

It is therefore judged that the magnitude of cumulative impact is Low. As the sensitivity to the proposed development is Medium, the significance of effect on this character area is assessed as Moderate-Minor.

### 3.2.16. **Open Farmland: Perwinnes** (LCA No.31, Figure 6)

The ZTV illustrates that except for the lower land surrounding Corby Loch, the whole of the Perwinnes open farmland will potentially have intervisibility with the proposed turbines. Long distance views can be afforded to the surrounding landscape and at approximately 7 km from the nearest turbine of the EOWDC, the turbines will be a dominant feature in views towards the east.

The EOWDC will be a noticeable change in views out from the Perwinnes Open Farmland. Other strong visual elements such as sand extraction, and the radar station, will help to some degree in reducing the effects of the EOWDC on the character area.

It is therefore judged that the magnitude of impact on the visual aspects of the Perwinnes character area is High to Medium. As the sensitivity to the proposed development is Medium, the significance of effect on this character area is assessed as Major-Moderate to Moderate.

#### **Cumulative Impacts**

The cumulative ZTVs illustrate that there is potential for combined intervisibility with up to 18 existing and consented and up to 4 in-planning wind farms within the Perwinnes Open Farmland. These areas are located on the higher land to the east of the B997, near the radar station, and also south east of Corby Loch. The closest visible wind farms are most likely to include the cluster around Udney and Hill of Fiddes turbines, at approximately 10 km north of the character area and also Meikle Carewe which is 20 km to the south. However, the potential for cumulative effects with Meikle Carewe are limited due to distance and intervening settlements.

The EOWDC will be a relatively dominant feature in views from this character area in comparison to the smaller turbines identified above, which although theoretically visible will not be particularly noticeable features.

It is judged that the overall magnitude of cumulative impact on the visual aspects of the Perwinnes character area is Low. As the sensitivity to the proposed development is Medium, the significance of cumulative effect on this character area is assessed as Moderate-Minor.

### 3.2.17. **Open Farmland: East Elrick** (LCA No.34, Figure 6)

East Elrick open farmland is defined as a small area on the eastern slopes of Brimmond Hill between Newhills and Craibstone character areas. It lies approximately 13 km from the nearest turbine of the EOWDC. The ZTV shows that there will be visibility of the EOWDC across the whole area except for where a woodland block on higher land precludes views

behind. Although the turbines will potentially be noticeable in the view, the foreground elements such as the suburbs of Dyce, Bucksburn and Bridge of Don will be active and distracting elements.

It is therefore judged that the magnitude of impact on the visual aspects of the East Elrick character area is Medium. As the sensitivity to the proposed development is Medium to Low, the significance of effect on the visual characteristics of this area is assessed as Moderate to Moderate-Minor.

#### **Cumulative Impacts**

The cumulative ZTVs show that there is potentially some combined visibility with EOWDC and up to 4 existing and consented and up to 4 in-planning wind farms. As the land gently slopes towards the EOWDC, the closest wind farms within the views are most likely to be those in the north at Hill of Fiddes, Tillymaud, Mains of Bogfechel, Hill of Fechel and Woodlands Farm. EOWDC would potentially be seen with these wind farms within a 90 degree view but given their relatively small size and at approximately 15 km away, they would only be minor elements with the view with EOWDC a much more noticeable element.

It is therefore judged that the magnitude of cumulative impact on East Elrick character area is Low. As the sensitivity to the proposed development is Medium to Low, the significance of cumulative effect on the visual characteristics of this area is assessed as Moderate-Minor to Minor.

#### **3.2.18. Open Farmland: Newhills (LCA No.35, Figure 6)**

The elevation of the Newhills character area allows views towards the coast. It lies approximately 10 km from the nearest turbine of the EOWDC. The ZTV illustrates that the majority of this area will be exposed to views of the EOWDC with some areas sheltered by development at Bucksburn and Northfield. The Bucksburn valley is also sheltered from views. The surrounding landscape and urban and industrial influences are a characteristic of the views from this area and the EOWDC turbines will be a noticeable feature behind.

However, it will not fundamentally change the overall character of the area, and it is therefore judged that the magnitude of impact on Newhills is Medium to Low. As the sensitivity to the proposed development is Low, the significance of effect on this character area is assessed as Moderate-Minor to Minor.

#### **Cumulative Impacts**

As this area is relatively open and elevated with views predominantly towards the east and north, the ZTV shows that there is potential for combined visibility of up to four other wind farms and the EOWDC. Assessing the ZTV, the closest wind farms to the north and east are Hill of Fiddes, Mains of Bogfechel, Ardgrain and Courtstone turbines, at approximately 15 km, 15 km, 22 km and 22 km respectively from the character area.

At these distances and due to the size and number of turbines they will not be a strong feature within the view in comparison to the EOWDC, and it is judged that the magnitude of cumulative impact would be Low. As the sensitivity to the proposed development is Low, the significance of cumulative effect on the Newhills character areas is assessed as Minor.

#### **3.2.19. Open Farmland: Maidencraig (LCA No.36, Figure 6)**

The Maidencraig open farmland lies approximately 12.5 km at its closest point to the nearest turbine of the EOWDC. The ZTV illustrates that the western and southern extent of the Maidencraig character area will not have any views of the development. The higher open

land to the east of Kingswells will be more exposed and therefore views of the turbines will be available. They will be noticeable features, but seen behind the active foreground of the city. Views may include the Woodend Hospital tower and the turbines but they will not be in the same portion of view.

It is therefore judged that the magnitude of impact on the Maidencraig character area is Medium to Low. As the sensitivity to the proposed development is Low, the significance of effect on this character area is assessed as Moderate-Minor to Minor.

### **Cumulative Impacts**

The cumulative ZTV shows that there is potential for combined visibility of up to 11 existing and consented and up to 2 in-planning wind farms on a small area of high ground east of Kingswells within this character area. The closest wind farms to this area are approximately 20 km away to the north and south and given the small turbine height of the majority of the wind farms in the area, it is unlikely that any of these would be major elements in the view.

Taking the above into account and the small part of the character area which is potentially exposed to combined views, the magnitude of cumulative impact is judged as Low. As the sensitivity to the proposed development is Low, the significance of effect on this character area is assessed as Minor.

#### **3.2.20. Open Farmland: Kingshill/Bogskeathy (LCA No.37, Figure 6)**

The Kingshill/Bogskeathy character area has north/north east facing slopes which opens the area up to views towards the proposed development. It lies approximately 14 km from the nearest turbine of the EOWDC. The ZTV shows that the turbines will be visible for the majority of this area where woodland does not preclude views. These views are wide ranging and will encompass a variety of elements of which the EOWDC turbines will be one part.

It is therefore judged that the magnitude of impact on the Kingshill/Bogskeathy character area is Low. As the sensitivity to the proposed development is Medium to Low the significance of effect on this character area is assessed as Moderate-Minor to Minor.

### **Cumulative Impacts**

The cumulative ZTVs illustrate that there will be only a small part of this character area exposed to combined views of EOWDC with up to 2 consented and existing wind farms and 2 in-planning wind farms. As with the character areas above, the cumulative wind farms lie beyond 12 km from the area, and given the height and number of turbines, they will be small elements within the view if discernable at all.

Therefore, the overall magnitude of cumulative impact on the Kingshill/Bogskeathy character area is judged as Negligible. As the sensitivity to the proposed development is Medium to Low the significance of cumulative effect on this character area is assessed as Negligible.

#### **3.2.21. Open Farmland: Den of Leggart (LCA No.38, Figure 6)**

The Den of Leggart character area lies approximately 12.5 km south of the nearest turbine of the EOWDC. The ZTV illustrates that views from this narrow character area will be sporadic due to the roads and developments which enclose this area to some degree. The area is most exposed at its northern extents as the landform descends to the River Dee and also at a high point at the southern end at the A90/A956 junction. The turbines may be a noticeable feature but will not dominate views from this area.

It is therefore judged that the magnitude of impact on the Den of Leggart character area is Low. As the sensitivity to the proposed development is Low the significance of effect on this character area is assessed as Minor.

#### **Cumulative Impacts**

The cumulative ZTV shows that the elevated southern section of the Den of Leggart character area will have potential combined views of EOWDC with up to 4 existing and consented wind farms and up to 4 in-planning wind farms. The closest wind farms lie at Hill of Fiddes, approximately 20 km to the north and Meikle Carewe approximately 10 km to the south. Hill of Fiddes and nearby other wind farms will be minor elements in the view at their scale and distance from the character area. Views of Meikle Carewe will be in the opposite direction to the EOWDC, and given both their distances from the character area, the cumulative effect would not compromise the character of the area.

It is therefore judged that the overall magnitude of cumulative impact on the Den of Leggart character area is Negligible. As the sensitivity to the proposed development is Low the significance of effect on this character area is assessed as Negligible.

#### **3.2.22. Open Farmland: Loirston (LCA No.39, Figure 6)**

The Loirston study area is enclosed by Kincorth Hill residential development and the A90 on its west, north and east sides. It lies approximately 12 km to the south of the nearest turbine of the EOWDC. The ZTV shows that there is potentially some intervisibility with EOWDC but this is mostly limited to the high land adjacent to the A90 where views across the city will be seen and the turbines will be a noticeable but not dominant part of this view.

It is therefore judged that the magnitude of impact on the Loirston character area is Low. As the sensitivity to the proposed development is Low the significance of effect on this character area is assessed as Minor.

#### **Cumulative Impacts**

The Loirston Open Farmland has potential combined visibility with up to 20 existing and consented and up to 2 in-planning wind farms. These are limited to the raised area south of Loirston Loch. As with the Den of Leggart character area, the closest wind farms lie at Hill of Fiddes to the north and Meikle Carewe to the south, and similarly the cumulative effects are limited to a small area where any views of wind farms will be at some distance and will not detract from the character of the area.

It is therefore judged that the magnitude of cumulative impact on the Loirston character area is Negligible. As the sensitivity to the proposed development is Low the significance of cumulative effect on this character area is assessed as Negligible.

#### **3.2.23. Wooded Farmland: Braes of Don (LCA No.42, Figure 6)**

The Braes of Don area lies approximately 7 km at from the nearest turbine of the EOWDC. The ZTV illustrates that, due to its wooded nature and lower valley, the Braes of Don has only a limited area to the south from where there would be potential intervisibility with the proposed development. As views out to the wider landscape are not a key characteristic, the limited available views of turbines would not fundamentally affect the wooded character.

It is therefore judged that there would be Low to Negligible magnitude of impact. As the sensitivity to the type of development proposed is Low, the significance of effect on the Braes of Don will be Minor to Negligible.

#### **Cumulative Impacts**

The cumulative ZTV shows that the majority of the area has no intervisibility with other wind farms and EOWDC. However there is a strip of land near Whitestripes where Figures 17 and 18 show that there could be combined visibility of up to 12 existing and consented wind farms and up to 4 in-planning wind farms with EOWDC.

Given the small size of area potentially affected and the closest wind farm to the character area is approximately 15 km away, it is judged that the magnitude of cumulative impact is Negligible. As the sensitivity to the type of development proposed is Low, the significance of cumulative effect on the Braes of Don will be Negligible.

#### 3.2.24. **Wooded Farmland: Craibstone** (LCA No.43, Figure 6)

Craibstone wooded farmland lies approximately 11 km from the nearest turbine of the EOWDC. Intervisibility with the proposed development as demonstrated by the ZTV is sporadic given the generally wooded nature of the character area. On the more open northern side of this character area there will be views of the EOWDC which will also include the Aberdeen Airport, Dyce and Perwinnes radar station in the foreground. The turbines will be a noticeable feature in these views but will not fundamentally change the characteristics of the area.

It is therefore judged that the magnitude of impact on the Craibstone character area is Medium to Low. As the sensitivity to the proposed development is Medium the significance of effect on this character area is assessed as Moderate to Moderate-Minor.

##### **Cumulative Impacts**

The cumulative ZTVs illustrate some very small areas of combined views of up to 2 other existing and consented wind farms with the EOWDC in the Craibstone character area. There are no in-planning wind farms visible. Similar to the adjacent areas where combined visibility is possible, it is most likely to be views of Hill of Fiddes and Mains of Bogfechel turbines, which lie approximately 13 km to the north of the area.

As these areas of combined visibility are very limited and the turbines lie at a considerable distance away where they will not be clearly discernable given the foreground elements, the magnitude of cumulative impact is judged as Negligible. As the sensitivity to the proposed development is Medium the significance of effect on this character area is assessed as Negligible.

#### 3.2.25. **Wooded Farmland: Kingswells** (LCA No.44, Figure 6)

The Kingswells wooded farmland lies approximately 13.5 km from the nearest turbine of the EOWDC. This character area is shown by the ZTV to have intervisibility with the proposed development on the open northern and eastern areas. The sporadic woodland cover will prevent some views and where the turbines are visible, they will be a noticeable feature but the foreground of the city and its suburbs will reduce their prominence.

It is therefore judged that the magnitude of impact on the Kingswells character area is Medium to Low. As the sensitivity to the proposed development is Low the significance of effect on this character area is assessed as Moderate-Minor to Minor.

##### **Cumulative Impacts**

The cumulative ZTVs illustrate that within the Kingswells character area there is a limited area of combined visibility of EOWDC with up to 4 other existing and consented wind farms and up to 6 in-planning wind farms. Analysis of the ZTV shows that the closest wind farms are the cluster around Udney and Hill of Fiddes, and Mickle Carewe to the south all

approximately 15 km from the character area. At this distance and given the size and number of turbines they will be difficult to discern in views from this area.

Given the above and as it is only a limited areas of combined visibility it is judged that the magnitude of cumulative impact is Negligible. As the sensitivity to the proposed development is Low the significance of cumulative effect on this character area is assessed as Negligible.

#### 3.2.26. **Wooded Farmland: Hazlehead** (LCA No.45, Figure 6)

The Hazlehead wooded farmland lies approximately 12 km from the nearest turbine of the EOWDC. The ZTV illustrates that this area will have limited intervisibility with the proposed development, restricted to the open recreational fields where woodland doesn't preclude views out. In these views the turbines will be noticeable but not prominent due to the city and surrounding development in the foreground.

It is therefore judged that the magnitude of impact on the Hazlehead character area is Low to Negligible. As the sensitivity to the proposed development is Low the significance of effect on this character area is assessed as Minor to Negligible.

#### **Cumulative Impacts**

As the cumulative ZTVs illustrate that there are no views of other wind farms within this area there are no cumulative effects.

### 3.3. **Areas of Landscape Significance**

Eight 'Areas of Landscape Significance' within the 40 km study area were identified in the baseline report. The effect of the EOWDC on these areas is discussed below. Please refer to Figure 2 for the location of these areas, and also ZTV Figures 7, 8 and 12 to 18.

#### 3.3.1. **Coastal: Balmedie to Longhaven ALS**

This area lies within the Aberdeen Bay and Collieston to Peterhead seascape units. It is approximately 3.5 km at its closest point to the nearest turbine of the EOWDC and over 25 km away at the northern extents. Views of the sea and coastline are an important characteristic of this ALS. The ZTV illustrates that this coastal ALS will have intervisibility with the proposed development for most of its length, excluding the area around Cruden Bay, where surrounding high land precludes views. There will be also some patchy areas where sand dunes and local high points preclude views. The EOWDC lies to the south of this area, so only those views looking towards the south will include the turbines and this, in most locations will also take into account the backdrop of Aberdeen and its suburbs.

The EOWDC will not directly affect the physical characteristics of the ALS, but will have an impact on the visual characteristics, mainly towards the south of the ALS where the turbines will be more dominant in views. The magnitude of impact will ease with distance from the site and it is therefore considered the magnitude of impact will vary from High to Negligible. As the sensitivity to the proposed development is High, the significance of effect on this ALS is assessed as Major to Negligible.

#### **Cumulative Impacts**

The cumulative ZTVs illustrate that the coastal ALS area from Balmedie to the Ythan estuary will only have views of the EOWDC.

North of the Ythan estuary within the Forvie Sands area of the ALS there are potentially combined views of up to 22 existing and consented and up to 10 in-planning wind farms

with the EOWDC. Hill of Fiddes and Ardgrain are the closest existing wind farms to this specific part of the ALS, at approximately 7 km and 10 km respectively. Ardgrain and Hill of Fiddes are noticeable elements but will be seen in a different portion of the view to the EOWDC. The large numbers of other wind farms potentially visible (including in-planning) from this part of the ALS lie over 15 km to the north west and therefore not particularly noticeable given also the relatively small size and number of their turbines. The nearest turbine of the EOWDC to the area of high cumulative intervisibility at Forvie Sands is approximately 10 km away.

As there is an existing cumulative baseline, the addition of the EOWDC will not add a new feature, but will potentially extend the area where wind farms are visible so that the perception of wind farms increases from this part of the ALS.

At the northern extents of the ALS there are some limited areas of combined visibility with the EOWDC of up to 6 existing and consented wind farms and up to 6 in-planning wind farms. Within this part of the ALS, the closest wind farms are at Ardgrain, West Knock Farm, Bruxiehill, and in-planning Middleton of Rora and Peterhead Harbour turbines, all approximately 15 km away except for Peterhead Harbour which will be 5 km from the ALS. The EOWDC at this point will be approximately 21 km to the south. Given the greater distances to the wind farms, whilst the turbines may be visible, they will be minor elements within the view and the addition of the EOWDC will not significantly increase cumulative effects in this area.

Overall, cumulative effects within the Balmedie to Longhaven ALS are limited to the area around the Ythan estuary and Forvie Sands. The addition of the EOWDC will extend the area currently exposed to wind farms and in combination with Ardgrain and Hill of Fiddes turbines there is the potential for wind farms to become a characteristic of this part of the ALS. However, given the size and location of the existing wind farms, they will not be dominant elements in views from this area.

Therefore, the magnitude of cumulative impact on the ALS as a whole is considered to be Low. As the sensitivity to the proposed development is High, the cumulative significance of effect on this ALS is assessed as Moderate.

### 3.3.2. **Area of Landscape Significance – Coastal: Peterhead to Inverallochy ALS**

The ZTV illustrates that there would be no intervisibility with the EOWDC within this ALS and therefore there will be no magnitude of impact and no significant effects.

#### **Cumulative Impacts**

As there is no intervisibility with the EOWDC, there will be no cumulative effects on this ALS.

### 3.3.3. **Coastal: Findon to Catterline ALS**

This area of landscape significance consists of the coastal strip between the railway line and the cliffs from Findon to Catterline which at its closest will be just over 15 km from the nearest turbine of the EOWDC. It lies within both the Inverbervie to Stonehaven and Stonehaven to Girdle Ness seascape units. The ALS will have sporadic areas of intervisibility with the EOWDC. These areas are the open exposed elevated parts of the coastline within which the turbines will be visible in views to the north seen behind Girdle Ness headland.

Views of the sea and coastline are important to this ALS which is on an elevated rocky coastline but the EOWDC will not be sited within the main field of view i.e. it is not directly located off this part of the coast. Taking this into account and that there are only small areas



of intervisibility over 15 km in distance from the EOWDC, it is judged that overall the magnitude of impact on the ALS is Negligible. As the sensitivity to the proposed development is High, the significance of effect on this ALS is assessed as Negligible.

#### **Cumulative Impacts**

The cumulative ZTVs show that there are only very limited areas of combined visibility of EOWDC and existing and consented wind farms along this coastal ALS. The majority of these small areas lie to the south of the ALS, beyond 30 km from the EOWDC, and include views of up to 12 existing and consented wind farms but no in-planning wind farms.

As the EOWDC lies at a distance from the southern extents of the ALS where the turbines would only be just discernable, and there are only very limited areas of combined visibility, it is judged the magnitude of cumulative impacts would be Negligible. As the sensitivity to the proposed development is High, the significance of cumulative effect on this ALS is assessed as Negligible.

#### **3.3.4. Inland: River Dee Valley ALS**

The ZTV illustrates that there would be no intervisibility with the proposed development within this ALS which follows the sheltered River Dee valley. Therefore it is judged that there will be no magnitude of impact and no significant effects.

#### **Cumulative Impacts**

As there is no intervisibility with the EOWDC, there will be no cumulative effects on this ALS.

#### **3.3.5. Inland: River Don Valley ALS**

This area of landscape significance lies within the Central Wooded Estates landscape character areas, along the northern side of the River Don valley. Its eastern extents lie approximately 7 km from the nearest turbine and at furthest is approximately 17 km west. The ZTV illustrates that for the majority of the area there will be limited or no visibility with the proposed development. The main area of intervisibility is the eastern extents on the open farmland close to Corby Loch.

As only a small area of this ALS would be exposed to the proposed development and views in and along the valley will remain unchanged, it is judged that overall the magnitude of impact on the ALS would be Negligible. As the sensitivity to the proposed development is High, the significance of effect on the ALS is Negligible.

#### **Cumulative Impacts**

The cumulative ZTVs illustrate that there is only a tiny sliver of combined visibility with up to 2 existing and consented wind farms, but the majority of the ALS has no visibility of other wind farms within this ALS, therefore it is judged there will be Negligible cumulative effects on this ALS.

#### **3.3.6. Inland: West of Inverurie ALS**

This area consists of mostly high ground within the Grampian Outliers and Central Wooded Valleys landscape character areas. It lies approximately 24 km at its closest point to the nearest turbine of the EOWDC and extends beyond the 40 km study area.

The intervisibility with the EOWDC is limited to the highest open areas and much of the forestry cover on the lower slopes precludes long distant views out to the coast. Where views are available they are expansive and include many natural and manmade features such as



wind farms. The EOWDC will be a minor element within the view and will not alter the character of this ALS.

It is therefore judged that the magnitude of impact on this ALS is Negligible. As the sensitivity to the proposed development is High, the significance of effect on this ALS is assessed as Negligible.

#### **Cumulative Impacts**

The cumulative ZTVs illustrate that most of the ALS is exposed to views of wind farms and the addition of EOWDC will add to small areas of combined visibility from the high promontories and some open elevated land near Inverurie. There are a large number of existing, consented and in-planning wind farms and single turbines which surround this ALS and the addition of the EOWDC will potentially extend the visibility of wind farms to a portion of views where no other wind farm currently lies.

However, as the EOWDC lies at closest 24km from the ALS, and will be a minor element within overall views which include closer wind farms and a large numbers of turbines, it is judged that the magnitude of cumulative impact is Negligible. As the sensitivity to the proposed development is High, the significance of cumulative effect on this ALS is assessed as Negligible.

#### **3.3.7. Inland: North West of Methlick ALS**

This small ALS covers a short stretch of the Ythan river valley and two of its small tributaries north west of Methlick. It lies approximately 30 km north west of the nearest turbine of the EOWDC.

The ZTV shows that this is a wooded valley area and that there is no intervisibility with the EOWDC, except for a small area of blade tip visibility on a valley slope. Taking this into account, distance from the EOWDC, and that views within the valley will remain unchanged, it is judged that the magnitude of impact is Negligible. As the sensitivity to the proposed development is High, the significance of effect on this ALS is assessed as Negligible.

#### **Cumulative Impacts**

The cumulative ZTVs show that there will be combined visibility of up to 26 other wind farms in the small area of intervisibility with the EOWDC in this ALS. However, as it is a very limited area and given the river valley character will not be altered, there will be Negligible cumulative effects on this ALS.

#### **3.3.8. Inland: Drumtochty to Torphins and Surrounds ALS**

This Area of Landscape Significance lies 36 km from the nearest EOWDC turbine at its closest point and covers much of The Mounth character area, extending beyond the 40 km study area. The ZTV show that intervisibility with the EOWDC is limited to the open highest points of the north east facing slopes, and much of this is blade tip visibility only. It is considered at this distance that if seen, the EOWDC will be a very minor element within extensive views. Therefore, it is judged that the overall magnitude of impact is Negligible. As the sensitivity to the proposed development is High, the significance of effect on this ALS is assessed as Negligible.

#### **Cumulative Impacts**

The cumulative ZTVs show that where there is potential intervisibility of the EOWDC, views of over 30 existing and consented and up to 16 in-planning wind farms are theoretically visible. Mid Hill and Meikle Carewe are the closest wind farms at approximately 1km and

10km respectively at their closest point. However, the majority of the wind farms potentially seen in combination with EOWDC will be further than 30 km to the north. Taking these distances into consideration and that EOWDC will only be a minor element if seen at all; it is judged that there will be a Negligible magnitude of cumulative effect. As the sensitivity to the proposed development is High, the significance of cumulative effect on this ALS is assessed as Negligible.

### 3.4. Summary of Seascape and Landscape Effects

Receptor	Approx. Distance to nearest EOWDC turbine	Sensitivity of Receptor	Magnitude of Impact	Significance of Effect	Magnitude of Cumulative Impact	Significance of Cumulative Effect
Regional Seascape Units						
Inverbervie to Stonehaven	30 km	Medium	Negligible	Negligible	Negligible	Negligible
Stonehaven to Girdle Ness	8 km	Medium to Low	Low	Moderate-Minor to Minor	Low	Moderate-Minor to Minor
Aberdeen Beach	5 km	Medium	High to Medium	Major-Moderate to Moderate	Low to Negligible	Moderate-Minor to Negligible
Aberdeen Bay	0 km	Medium (south) High to Medium (north)	High	Major-Moderate (south) Major to Major-Moderate (north)	Low to Negligible	Moderate-Minor to Negligible (south) Moderate to Moderate-Minor to Negligible (north)
Collieston to Peterhead	15 km	Medium	Medium to Low	Moderate to Moderate-Minor	Medium to Low	Moderate to Moderate-Minor to Minor
Peterhead to Fraserburgh	35 km	Low	Negligible	Negligible	Negligible	Negligible
Aberdeenshire and Banff & Buchan LCA						
Formartine Lowlands	3 km	Medium to Low	High to Medium	Major-Moderate to Moderate to Moderate-Minor	Medium	Moderate to Moderate-Minor

<b>Receptor</b>	<b>Approx. Distance to nearest EOWDC turbine</b>	<b>Sensitivity of Receptor</b>	<b>Magnitude of Impact</b>	<b>Significance of Effect</b>	<b>Magnitude of Cumulative Impact</b>	<b>Significance of Cumulative Effect</b>
Central Wooded Estates	7.5 km	Low	Negligible	Negligible	Negligible	Negligible
Kincardine Plateau	14.5 km	Low	Low to Negligible	Minor to Negligible	Low to Negligible	Minor to Negligible
Ythan Strath Farmland	17 km	Low	Medium to Low	Moderate-Minor to Minor	Low	Minor
Northern Rolling Lowlands	22 km	Low	Low	Minor	Low to Negligible	Minor to Negligible
Garvock and Glenbervie	27 km	Medium to Low	Negligible	Negligible	Negligible	Negligible
Grampian Outliers	27 km	High to Medium	Negligible	Negligible	Negligible	Negligible
The Mounth	25 km	High to Medium	Negligible	Negligible	Negligible	Negligible
Agricultural Heartlands (area)	22.5 km	Low	Low to Negligible	Minor to Negligible	Low to Negligible	Minor to Negligible
Eastern Coastal Agricultural Plain	17 km	Medium to Low	Medium to Negligible	Moderate to Moderate-Minor to Negligible	Low to Negligible	Moderate-Minor to Minor to Negligible
Aberdeen LCA						
Upper Don Valley (Aberdeen)	12 km	Low	Negligible	Negligible	Negligible	Negligible
Dyce Plain	10 km	Low	Medium	Moderate-Minor	Low to Negligible	Minor to Negligible
Tyrebagger Hill/Kirkhill	12.5 km	High to Medium	Low	Moderate to Moderate-Minor	Low	Moderate to Moderate-Minor
Brimmond Hill	14 km	Medium	Low	Moderate-Minor	Medium to Low	Moderate to Moderate-Minor
Kincorth and Tullos Hills	9 km	Medium	Medium	Moderate	Low	Moderate-Minor

<b>Receptor</b>	<b>Approx. Distance to nearest EOWDC turbine</b>	<b>Sensitivity of Receptor</b>	<b>Magnitude of Impact</b>	<b>Significance of Effect</b>	<b>Magnitude of Cumulative Impact</b>	<b>Significance of Cumulative Effect</b>
Perwinnes	7 km	Medium	High to Medium	Major-Moderate to Moderate	Low	Moderate-Minor
East Elrick	13 km	Medium to Low	Medium	Moderate to Moderate-Minor	Low	Moderate-Minor to Minor
Newhills	10 km	Low	Medium to Low	Moderate-Minor to Minor	Low	Minor
Maidencraig	12.5 km	Low	Medium to Low	Moderate-Minor to Minor	Low	Minor
Kingshill/Bogskeathy	14 km	Medium to Low	Low	Moderate-Minor to Minor	Negligible	Negligible
Den of Leggart	12.5 km	Low	Low	Minor	Negligible	Negligible
Loirston	12 km	Low	Low	Minor	Negligible	Negligible
Braes of Don	7 km	Low	Low to Negligible	Minor to Negligible	Negligible	Negligible
Craibstone	11 km	Medium	Medium to Low	Moderate to Moderate-Minor	Negligible	Negligible
Kingswells	13.5 km	Low	Medium to Low	Moderate-Minor to Minor	Negligible	Negligible
Hazlehead	12 km	Low	Low to Negligible	Minor to Negligible	None	None
Areas of Landscape Significance						

<b>Receptor</b>	<b>Approx. Distance to nearest EOWDC turbine</b>	<b>Sensitivity of Receptor</b>	<b>Magnitude of Impact</b>	<b>Significance of Effect</b>	<b>Magnitude of Cumulative Impact</b>	<b>Significance of Cumulative Effect</b>
Balmedie to Longhaven	3.5 km	High	High to Negligible	Major to Negligible	Low	Moderate
Peterhead to Inverallochy	33 km	High	None	None	None	None
Findon to Catterline	15 km	High	Negligible	Negligible	Negligible	Negligible
River Dee Valley	13 km	High	None	None	None	None
River Don Valley	7 km	High	Negligible	Negligible	Negligible	Negligible
West of Inverurie	24 km	High	Negligible	Negligible	Negligible	Negligible
North West of Methlick	30 km	High	Negligible	Negligible	Negligible	Negligible
Drumtochty to Torphins and surrounds	36 km	High	Negligible	Negligible	Negligible	Negligible

## 4.0 Visual Effects

The approach to undertaking the visual assessment is to first establish the extent of the ZTV for the development and then to determine how visible the proposals would be from a range of representative viewpoints and visual receptor groups and the extent of effects upon general visual amenity within the visual envelope. The methodology for this is detailed within Appendices 2 and 4 of the Baseline Report. The ZTVs illustrated in Figures 7, 8 and 9 indicate the theoretical worst case scenario in terms of the extent of visual exposure. Figure 7 shows the ZTV produced with a bare ground model whilst the ZTVs in Figure 8 and 9 have modelled in settlement and woodlands to give a more realistic scenario. However, in reality, the extent of visual effects arising from the proposed development over land will be greatly reduced due to the subtleties of intervening landform (including, for example, the sand dunes), built form (e.g. all settlements) and localised vegetation (including hedgerows and other blocks of woodland) which are not picked up on the data sets used for ZTV construction. A built model of Aberdeen city and its suburbs has been included within the ZTVs (Figures 8 and 9) which provides a more detailed picture of the visual effects across the city but, as above, the visual effects from the proposed development will still be reduced to some extent by localised details. Prevailing weather conditions will also further influence the actual extent of visibility (please see section 4.0 of the Baseline Report for further information on the average visibility distances).

### 4.1.1. Overview of Visual Effects on the 40km Study Area

The areas of greatest theoretical visual effect arising from the proposed EOWDC will be along the stretch of coastline and sea adjacent to the turbines within a 5 km radius. Within a 10 km radius the ZTVs show that the majority of the landscape and seascape will have theoretical visibility of the EOWDC. Visibility on land becomes patchier between 10 and 15 km. In the north west, where the land becomes more undulating, there is a linear stretch along the A947 where there is no visibility of the EOWDC at all. The 15km radius includes the whole of Aberdeen and the ZTV shown in Figure 9 gives a greater understanding of the theoretical effects on the city and is discussed later.

Beyond the 15 km radius, theoretical visibility on land is much more intermittent between the south and west and is limited to the local high areas and parts of the more elevated Mounth. To the north and north east there are larger swathes of theoretical visibility which stop at approximately 27 km from the EOWDC. In the north west, the main areas of theoretical visibility extend to just within the 40 km radius study area on the elevated farmland areas. Directly to the east, the visibility is more intermittent and mainly centred on the areas of high ground of the Grampian Outliers.

Beyond the 40 km radius study area, theoretical visibility is very limited and is mostly on small areas of exposed high ground.

The larger scale ZTV in Figure 9 shows that the city centre and harbour area are shown to have very limited theoretical visibility of the EOWDC due to the dense built up nature of the city.

The northern suburbs of Denmore, Middleton Park and Bridge of Don are closest to the EOWDC and most of the open areas and houses with aspects to the coast will have theoretical visibility of the EOWDC. The residential areas of Hilton, Kittybrewster, Rosehill, Middlefield, Cummings Park, Northfield, and Heathryfold which lie on the elevated land on the northern side of Aberdeen which slopes towards the EOWDC will also have theoretical visibility of the turbines.

The coastal edge of Seaton, and obviously the tower blocks, will have views out towards the proposed turbines, but there will be more restricted views within Old Aberdeen and Tillydrone.

The southern elevated side of Aberdeen including Seafield, Garthdee, Kaimhill, Ferryhill, Kincorth and Torry also are shown by the ZTV to have theoretical visibility of the EOWDC.

In reality, due to the densely built up nature of cities there will be few places within Aberdeen, except the coast and views from tower blocks, where clear views of the turbines will be seen. Visibility will be generally limited to glimpsed views between buildings and where roads are aligned with the EOWDC and to those areas where there are no added screening effects from roadside trees and other existing vegetation.

#### 4.1.2. Overview of Cumulative Visual Effects on the 60km Study Area

The cumulative effects for a 60 km study area have been illustrated by the ZTVs in Figures 13 to 18. Figure 12 shows the locations of the 72 wind farms/single turbines within the study area at the time of writing. There are no wind farms within 10 km of the EOWDC and within 20 km there are only four existing and consented and two in-planning sites, none of which are over 3 turbines in size and are not higher than 62 m to hub and 102 m to blade tip. Between 20 and 30 km the number of turbines increases in the north, and there is one wind farm in the south at Meikle Carewe which is the largest in turbine number at this distance with 12 turbines, but is only 70 m high to blade tip. There are a broad cluster of wind farms in the south between 30 and 45 km from the EOWDC which include the 25 turbines at Mid Hill and 7 and 9 turbine farms at Tullo and St John's Hill respectively. To the north west of the EOWDC between 20 and 60 km there is an even spread of wind farms, mostly single turbines or small wind farms up to 5 turbines. The exceptions to this are the larger wind farms at Glens of Foudland (20 turbines), Mains of Dummie (7 turbines), Clashindarroch (18 turbines) and Kildrummy (8 turbines) which all lie in the more remote areas of Aberdeenshire, beyond 40 km from the EOWDC. The vast majority of all the wind farms in the study area, existing, consented, or in-planning, have a maximum hub height of approximately 80 m and maximum blade tip height of approximately 100 m.

Figure 13 shows the combined effects of EOWDC with the existing and consented wind farms and the in-planning wind farms. Figure 14 shows this at a larger scale for an approximate 20 km radius study area. These ZTVs indicate that the majority of the study area has theoretical visibility of one or more wind farms, however only a relatively small area has visibility of the EOWDC on its own (see the blue areas on the ZTVs). This is confined to the immediate coastal areas within 10 km and some patchier areas west of Aberdeen and north east of Ellon. Figure 13 also shows that the west and south west parts of the study area are exposed mainly to existing or consented wind farms with limited areas of combined visibility with the EOWDC. The north east corner of Aberdeenshire is illustrated as having almost complete coverage of theoretical visibility of both existing, consented and in-planning wind farms which the EOWDC will add to, but not significantly increase the area.

Figures 15 and 16 have been produced to show the number of existing, consented or in-planning turbines theoretically visible from any one point where the EOWDC is also theoretically visible. This varies between one turbine to over 125 turbines for existing and consented sites and between 1 turbine and over 50 turbines for in-planning sites. Figures 17 and 18 illustrate the number of wind farm sites visible with the EOWDC, which varies between 1 and over 30 existing and consented sites and between 1 and 26 in-planning sites. All four figures show clearly where the highest areas of theoretical combined visibility are possible. On land, these areas are typically located on higher ground, where slopes are facing towards the site. These areas include the coastal farmland south of Cruden Bay, the elevated



land either side of the River Ythan, a ridgeline south east of Old Meldrum, and sporadic areas on promontories within the wider extents of the study area.

The ZTVs illustrate that a large proportion of the greatest combined visibility is located offshore, where visibility theoretically increases to a point where almost all sites could be visible approximately 30km from the coast, directly east of the EOWDC. It is however considered very unlikely that the majority of the turbines would be seen at this distance given that in reality their average size will reduce their prominence and intervening vegetation or buildings which are not modelled into the ZTVs will preclude some views.

#### 4.2. Viewpoints

The following analysis refers to the 20 agreed representative viewpoints referred to in the baseline conditions. Reference should be made to the existing panoramas and wireframes (Figures WF1-10) and to the photomontages (Figures PM1-20) which illustrate the existing and proposed view for each viewpoint.

Cumulative impacts are discussed for each viewpoint (see also Figures 12-18) and cumulative wireframes were created for viewpoints 13, 15, 16, 18 and 19 (CW Figures). As there are many wind farms shown within some of these wireframes to avoid text obscuring the visuals only some of the wind farms have been identified by name to aid orientation. Please also refer to Figure 12 which shows the wind farm locations.

Please note that the timing of the on-site survey work driven by project programme and inclement weather meant that the photographs for viewpoints were taken on two separate occasions in November and January. Unfortunately light levels are limited at this time of year and the location of EOWDC in relation to viewpoints has meant that photographs of those viewpoints in the north and north west were unavoidably taken into low sun.

##### 4.2.1. Viewpoint 1: Balmedie Beach (WF-01 and PM-01)

The wireframe and photomontage illustrate that the 11 turbines will be clearly visible from this viewpoint and will occupy 51 of the illustrated 200 and 135 degree views to the south. The closest turbine will be 3.51 km from the viewpoint. The turbines will have a fairly regular arrangement across the horizon but there is an overlap of two turbines in the centre of the group, and the northern turbine appears slightly separate from the other turbines.

The turbines will be dominant in views to the south towards Aberdeen and Girdle Ness. They will be seen on the horizon with open sea behind, approximately 20 degrees to the left of Girdle Ness. On a clear day the proposed development could give an impression of enclosing Aberdeen Bay as there is a relatively small gap of open horizon between the southern turbine and Girdle Ness headland. When visibility is not good enough to see Girdle Ness or Aberdeen Beach, Balmedie Beach becomes more remote in nature and the turbines may appear more dominant. However, the constant movement of ships to and from the harbour and within the designated anchorage area does distract the eye and give scale to the seascape. Walking along the beach from Balmedie towards Forvie Sands, the turbines will not be visible and the view of the more remote sands and coastline will remain intact.

The magnitude of visual impact arising from the proposed development is assessed as High. When combined with the High sensitivity to the change proposed of the key receptor group of walkers on the coastal trail and beach users, the significance of effect is assessed to be Major.

#### Cumulative Impacts

There will be no other wind farms visible from this location and therefore no cumulative effects.

#### 4.2.2. **Viewpoint 2: A90 -Harehill turn off** (WF-02 and PM-02)

The wireframe and photomontage show that the turbines will occupy 30 degrees of the illustrated 135 and 90 degree views and be a prominent element within the view. The nearest turbine will be 4.44 km from the viewpoint. The turbines will have a regular composition with no overlapping or large spaces between them. The photomontage shows that the three northern turbines will have their bases obscured by the landfill area. Farmsteads and shelterbelts also break up a clear view of the turbines.

At the relatively close distance the turbines lie from the viewpoint they will be a prominent feature of the view and although there are some intervening elements, at this close distance the magnitude of visual impact arising from the proposed development is judged as High. When combined with a Medium to Low sensitivity to the change proposed on the key receptor group of travellers on the A90, the significance of effect is assessed to be Major-Moderate to Moderate.

It should be noted that if the proposed AWPR is constructed, it will be a dominant feature in the foreground of this view. The road position won't obscure views of the turbines, but it will be a significantly distracting element.

##### **Cumulative Impacts**

There are no other wind farms visible from this viewpoint and therefore no cumulative effects.

#### 4.2.3. **Viewpoint 3: Jesmond Drive, Middleton** (WF-03)

The wireframe shows that the turbines occupy 18 degrees of the illustrated 135 degree view shown and the bases would be partially obscured by landform. The nearest turbine would be 7.14 km from the viewpoint. The turbines would appear in two groups with a regular arrangement and no overlapping. However, the photograph shows that the turbines are not likely to be visible above the trees with only potential for the very tips of the blades to be seen during the winter months. For this reason, a photomontage was not constructed for this viewpoint.

As the turbines will be screened from view the magnitude of visual impact arising from the proposed development is assessed as Negligible. As the key receptor group of local residents have a High sensitivity to the proposed change, the significance of effect is assessed to be Negligible.

As the ZTV (Figure 9) illustrates, the Middleton area has a high theoretical visibility with the EOWDC and although at this specific viewpoint there would be Negligible effects, it is acknowledged that the turbines may be clearer in views nearby.

##### **Cumulative Impacts**

There are no other wind farms visible from this viewpoint and therefore no cumulative effects, however, it is noted that in nearby locations up to 4 existing and consented and up to 2 in-planning wind farms may theoretically be visible. This is likely to include the closest existing and consented wind farms at Hill of Fiddes, Tillymaud, and Mains of Bogfechel and in-planning wind farms at Woodlands Farm and Hill of Fechel. They all lie between 13-15 km away from the viewpoint, and given the built up nature and existing mature trees which surround the area, it is unlikely that they will be noticeable elements.

#### 4.2.4. **Viewpoint 4: B999 Whitecairns** (WF-04 and PM-04)

The wireframe illustrates that the turbines will sit just below the horizon and partially behind the raised landform that lies between the viewpoint and the site. The turbines will occupy 26 degrees of the illustrated 135 and 90 degree views and appear in six groups consisting of 1, 2, 2, 3, 2, and 1 turbine, left to right. The turbines in the middle four groups will be overlapping. The closest turbine is 8.1 km from the viewpoint.

The photomontage shows that the existing shelterbelts and other vegetation will obscure most of the column length of the turbines but the hub and blades will be a noticeable element in the view. The hillside to the left of the turbines, and the coniferous trees to the right, frame the view of the turbines to some extent, potentially slightly increasing their prominence. However, existing features such as the quarried hillside, and closer vertical elements such as pylons and telegraph poles distract the viewer to some degree.

It is therefore judged that the magnitude of visual impact arising from the proposed development is assessed as Medium. As the key receptor groups of travellers on the B999 sensitivity to the proposed change is Medium to Low, and the residents have a High sensitivity, the significance of effect is assessed to be Moderate to Moderate-Minor for road users, and Major-Moderate for local residents.

##### **Cumulative Impacts**

There are no other wind farms visible from this viewpoint and therefore no cumulative effects. However it is noted that Hill of Fiddes and Tillmaud Wind Farms lie within 10 km of the viewpoint and may be seen from nearby locations in succession with the EOWDC as they lie in opposite directions.

#### 4.2.5. **Viewpoint 5: Aberdeen Beach** (WF-05 and PM-05)

The wireframe and photomontage show that the turbines will occupy approximately 12.5 degrees of the illustrated 200 and 135 degree views and will be arranged in a relatively tight group with some overlapping and the outer turbines slightly separated from the main group. The closest turbine is 7.52 km from the viewpoint.

The turbines will appear in the open sea with the distant coastline to Peterhead just left of the wind farm. They will be a prominent feature on the horizon and like the many ships which sit or travel through the bay they will give a sense of scale and feeling of slight enclosure to the bay area. The presence of the turbines will not alter the immediate view of the beach and views of Balmedie beach and more distant coastline can be experienced without the turbines in the frame. Although prominent, the turbines will not feel incongruous within this active coastal view.

It is therefore assessed that the magnitude of visual impact arising from the proposed development is High to Medium. As the key receptor group of visitors to the beach have a High sensitivity to the proposed change, the significance of effect is assessed to be Major to Major-Moderate.

##### **Cumulative Impacts**

There are no other wind farms visible from this viewpoint and therefore no cumulative effects.

#### 4.2.6. **Viewpoint 6: A90 -West Pitmillan turn off** (WF-06 and PM-06)

The turbines are illustrated in the wireframe as occupying 17 degrees of the illustrated 135 and 90 degree views. They appear in distinct groupings of 2, 3, 3 and 3 turbines with only the

last group showing some overlapping of blades. The closest turbine is 9.31 km from the viewpoint.

The photomontage shows that the three turbines to the right of view will be almost completely obscured by the gently rising landform and also the adjacent three turbines will be partially obscured so that only the hubs and blades are visible. The bases of the other turbines will be screened but top of the column and blade tips will be visible appearing over the open fields and sporadic trees. The visible turbines will be a discernable moving element within the large scale, relatively uniform view. However, the view is not devoid of existing movement with the traffic on the A90 and also the three Hill of Fiddes turbines nearby.

It is therefore judged that as the view will remain largely unchanged, the magnitude of visual impact arising from the proposed development is Medium to Low. As the sensitivity of travellers on the A90 to the proposed change is Medium to Low, the significance of effect is assessed to be Moderate to Moderate-Minor to Minor.

### Cumulative Impacts

The cumulative ZTVs illustrate that there is up to 4 existing and consented wind farms visible from the viewpoint location. The existing three Hill of Fiddes turbines lie approximately 3 km to the west of this viewpoint and the three Ardgrain turbines lie approximately 9 km to the north. The consented Tillymaud single turbine will be 9 km to the west. From site visits there are no wind farms visible with EOWDC in the angle of view shown, but the Hill of Fiddes turbines are evident appearing behind the viewpoint and Ardgrain are potentially visible to the north.

The addition of the EOWDC to the 360 view available from this viewpoint will extend the presence of turbines to a new part of the view. The four wind farms will only be visible in succession and not in the same portion of view. As the Hill of Fiddes Wind Farm is much closer to this viewpoint and a prominent element, the more distant and obscured EOWDC and Ardgrain turbines will be less conspicuous.

The magnitude of cumulative visual impact is therefore judged as Low. As the sensitivity of travellers on the A90 to the proposed change is Medium to Low, the significance of cumulative effect is assessed to be Moderate-Minor to Minor.

#### 4.2.7. Viewpoint 7: Torry Battery (WF-07 and PM-07)

The wireframe and photomontage show that the turbines will appear in five groups spread evenly across the horizon occupying 12 degrees of the illustrated 200 and 135 degree views. The closest turbine is 7.89 km from the viewpoint. The viewpoint is almost directly in line with the rows of the turbines so that the central group's three turbines overlap very closely. The turbine groups on either side gradually fan out, and the western turbine will be seen on its own.

The proposed development lies within a sea space framed by the harbour entrance walls. The turbines could therefore be perceived as having more of a visual relationship with the harbour and shipping activity than the coastline beyond. The turbines are prominent in the view but not considered out of place with the active seascape. They cover a small section of the expansive view and views of the sandy coastline to the west and also the more open remote sea to the east can be experienced without the turbines in the focal point.

Therefore, the magnitude of visual impact arising from the proposed development is assessed as High to Medium. As the key receptor group of visitors and coastal walker's sensitivity is High to Medium, the significance of effect is assessed to be Major to Major-Moderate to Moderate.

### Cumulative Impacts

The cumulative ZTVs show that up to 6 existing and consented wind farms may theoretically be visible from this viewpoint at Torry Battery. The closest wind farms to the viewpoint are at Hill of Fiddes, Tillymaud, Mains of Bogfechel, Ardgrain and Meikle Carewe. There is unlikely to be views of Meikle Carewe given the orientation of the viewpoint and intervening landform. The three turbines of Hill of Fiddes are closest at 20 km, which given the relatively small size of turbine and as shown by the lack of visibility in the photograph, would be minor elements within the view. It is therefore judged that the magnitude of cumulative effect would be Negligible. As the key receptor group of visitors and coastal walker's sensitivity is High to Medium, the significance of effect is assessed to be Negligible.

#### 4.2.8. Viewpoint 8: South College Street, Aberdeen (WF-08)

The wireframe shows that the turbines are evenly arranged in seven groups with overlapping turbines and single turbines occupying 10.5 degrees of the illustrated 135 degree view. The closest turbine is 9.19 km from the viewpoint. The wireframe also shows that half of the turbines will be partially obscured by landform. In reality the photograph shows that the buildings and structures in the city centre will obscure views of all the turbines, and for this reason a photomontage has not been constructed. It may however, be possible to see blade tips from the higher floors of the adjacent flats and offices.

Therefore, the magnitude of visual impact arising from the proposed development is assessed as Negligible. As the key receptor group of workers, travellers and shoppers has a Low sensitivity to the proposed change, the significance of effect is assessed to be Negligible.

### Cumulative Impacts

There are no other wind farms visible from this viewpoint and therefore no cumulative effects.

#### 4.2.9. Viewpoint 9: Forvie Nature Reserve (WF-092 and PM-09)

The wireframe illustrates that the turbines will occupy 11.5 degrees of the illustrated 200 and 135 degree views and the bases of nine of the turbines will be obscured by the landform. The closest turbine will be 10.27 km from the viewpoint. The wind farm will be arranged in three groups of 2, 3, and 6 turbines. The two turbines at the left of view will appear separate from the other two groups and will be fully visible on the horizon.

The photomontage shows that all but two of the turbines will be clearly seen above the sand dunes. The remaining 9 turbines will have just the hub and blades visible. Those turbines that are visible will be a prominent vertical feature appearing above the simple dune landscape and will be a noticeable change. The turbines will appear in the same general portion of view as the Seaton tower blocks and coastal development at Aberdeen (when seen on a clear day) so the EOWDC will not extend the influence of manmade elements to other more remote parts of Forvie Sands within this view. It should also be noted that the ever evolving nature of sand dunes will mean that over time the turbines may become more visible or more hidden from this viewpoint.

Taking into account the above it is judged that the visible turbines are a noticeable feature but the view will largely remain unchanged, therefore the magnitude of visual impact arising from the proposed development is Medium. As the key receptor group of visitors and walkers have a High sensitivity to the type of change proposed, the significance of effect is assessed to be Major-Moderate.

### Cumulative Impacts

At this specific viewpoint within Forvie Sands there are no other existing and consented or in-planning wind farms visible. However, within nearby areas of the sand dunes there is potential for views up to 18 existing and consented wind farms and up to 4 in-planning sites. The closest of these are at Hill of Fiddes and Ardgrain, with a larger number beyond 10 km to the north and east of Forvie Sands. The wind farms will be seen in a different portion of view to the EOWDC turbines, so that any cumulative effects would be in succession. As discussed above, the EOWDC will be a noticeable feature and whilst there would be no cumulative effects from the viewpoint itself, the addition of EOWDC in views from the Forvie Sands will potentially increase the perception of wind farms as a feature of the surrounding landscape.

#### 4.2.10. **Viewpoint 10: Midstocket Road/North Anderson Drive** (WF-10 and PM-10)

The wireframe shows that the turbines appear in three distinct groups evenly arranged across 9 degrees of the illustrated 135 and 90 degree views. The closest turbine is 10.47 km from the viewpoint.

The photomontage shows that the group of three turbines to the right will be clearly visible above the hospital buildings in the gaps between the foreground housing and trees. The other turbines will potentially be seen interspersed between chimneys and trees and as a result will be less noticeable. Overall, the turbines will be discernable but will be a minor element within a busy and fragmented view and the view will remain largely unchanged.

It is therefore assessed that the magnitude of visual impact is Low. As the key receptor groups of local residents and travellers on the A90 have a High and Medium to Low sensitivity, respectively, to the proposed change, the significance of effect is assessed to be Moderate for residents and Moderate-Minor to Minor for travellers.

##### **Cumulative Impacts**

There are no other wind farms visible from this viewpoint and therefore no cumulative effects.

#### 4.2.11. **Viewpoint 11: Leslie Road (A978), Aberdeen** (WF-11 and PM-11)

Leslie Road is aligned with the turbine site and the wireframe shows the wind farm as three groups occupying 11 degrees of the illustrated 95 and 90 degree views. The closest turbine will be 8.07 km from the viewpoint.

The photomontage shows that the buildings at the end of the street will obscure all but the blade tips of the turbines. The gap created by the hipped roofs of the buildings in the background will potentially allow more of the blades to be seen and the movement will be discernable.

Given that only the tips of the blades will be seen but movement may be a distracting visual element, it is assessed that the magnitude of visual impact is Low. As the key receptor group of local residents and travellers have a High and Medium sensitivity to the proposed change respectively, the significance of effect is assessed to be Moderate for residents, and Moderate-Minor for travellers along Leslie Road.

##### **Cumulative Impacts**

There are no other wind farms visible from this viewpoint and therefore no cumulative effects.

#### 4.2.12. Viewpoint 12: Kincorth Hill (WF-12 and PM-12)

The wireframe illustrates that the eleven turbines will appear as almost one group across 8.5 degrees of the illustrated 135 and 90 degree views, with the three turbines to the west slightly apart from the rest. There will be some overlapping of blades and the turbine bases will be below the horizon. The closest turbine will be 11.56 km from the viewpoint.

The turbines lie beyond the end of the distant coastline and into the open sea and will be a noticeable element within the busy active view. The landform and vegetation to the left and right of the view frames Aberdeen Bay so that the turbines are a central focus thus increasing their prominence to some degree. However, there are also many distracting elements in views of the city and the consistent shipping activity to and from the harbour.

As the turbines will be a noticeable feature which will cause a partial alteration to the view the magnitude of visual impact is judged as Medium. As the key receptor group of walkers and visitors have a High to Medium sensitivity to the proposed change, the significance of effect is assessed to be Major-Moderate to Moderate.

##### Cumulative Impacts

There are no other wind farms clearly visible from this specific point on Kincorth Hill, however the cumulative ZTVs illustrate it should be possible to see up to 4 existing and consented and up to 2 in-planning wind farms. The closest wind farm will be the consented Meikle Carewe which lies approximately 15 km to the south of the viewpoint. However, the surrounding vegetation and landform at the viewpoint doesn't allow views to the south. The closest wind farms to the north are beyond 20 km away and given the relatively small scale of turbines, they will be difficult to discern.

It is therefore judged that the magnitude of cumulative visual impact at this viewpoint is Negligible. As the key receptor group of walkers and visitors have a High to Medium sensitivity to the proposed change, the significance of effect is assessed to be Negligible.

#### 4.2.13. Viewpoint 13: Udney Station (WF-13 and PM-13)

The wireframe illustrates that the turbines will occupy 17 degrees of the illustrated 200 and 135 degree views and will be in a generally regular arrangement with the northern three turbines slightly further apart. The closest turbine will be 12.63 km from the viewpoint.

The photomontage shows that only the hub and blades of three of the turbines and blades from five of the turbines will be visible above the rolling agricultural landscape. The other three turbines will be screened completely by existing vegetation. The visible turbines will be a minor element within the expansive view but at this relatively close distance the movement of the blades will be detectable and potentially draw the eye towards them. However, overall it will be a minor alteration to the view which already has views of the closer turbines at Hill of Fiddes.

It is therefore assessed that the magnitude of visual impact is Medium to Low. As the key receptor group of local residents have a High sensitivity to the proposed change, the significance of effect is assessed as Major-Moderate to Moderate.

##### Cumulative Impacts (CW-13)

The wireframe in Figure CW13 shows the existing situation of Hill of Fiddes turbines and the EOWDC, with no other turbines visible in the view. The existing three turbines at Hill of Fiddes lie just over 1 km from the viewpoint, two of which can be seen emerging from a coniferous shelterbelt to the left of the view. The cumulative ZTVs shows that from very close to the viewpoint up to 12 existing and consented and up to 6 in-planning wind farms



may theoretically be visible. These will include the single turbines at Mains of Bogfechel and Tillymaud, and in-planning turbines at Woodlands Farm and Hill of Fechel, which lie to the west, between approximately 4 km and 8 km away from the viewpoint. The other wind farms potentially seen from this area lie beyond 10 km away to the north and west. In reality local vegetation around the viewpoint will obscure clear views of many of these turbines given their relatively small size.

Therefore the main potential for cumulative effect from this viewpoint lies with the addition of the EOWDC with the existing Hill of Fiddes turbines. Whilst not visible at the exact viewpoint, there is also potential for the Tillymaud turbine as the next closest turbine to be a noticeable feature within the immediate area. The EOWDC will increase the perception of wind farms being part of the landscape and within a new section of view that does not already have views of turbines. However, as the wireframe shows, the EOWDC turbines will be partially obscured which will reduce cumulative visual effects.

Therefore, the magnitude of cumulative visual impact is judged as Low. As the key receptor group of local residents have a High sensitivity to the proposed change, the significance of effect is assessed as Moderate.

#### 4.2.14. **Viewpoint 14: A96/Kirkhill Forest** (WF-14 and PM-14)

The wireframe illustrates that the turbines will occupy 12 degrees of the illustrated 135 and 90 degree views and will be in a regular arrangement. They will sit slightly below the horizon with the blades protruding above. The closest turbine will be 14.13 km from the viewpoint.

The landform naturally opens up to show the sea from this area, but at this specific point, the photomontage shows that the forestry will obscure views of the northern six turbines. The remaining visible turbines will be seen with two partially obscured by vegetation. The turbines will appear as if they were on land at this point with views of the sea behind. They appear in a separate section of the view to the city which, with prominent tower blocks, is potentially more of a focus in the view than the turbines.

It is considered that the views of the turbines from the adjacent A96 would be more obscured at this point and due to the direction of the road will be more focused on Aberdeen but further south clearer views could be possible.

As the turbines will be noticeable, albeit half of them and the view will remain largely unchanged, it is assessed that the magnitude of visual impact is Low. As the travellers have a Medium to Low sensitivity to the proposed change, the significance of effect is considered Moderate-Minor to Minor.

#### **Cumulative Impacts**

The cumulative ZTVs show that there are no other wind farms visible from this viewpoint and therefore there will be no cumulative effects.

#### 4.2.15. **Viewpoint 15: Brimmond Hill** (WF-15 and PM-15)

The wireframe shows that the turbines will appear below the horizon across 10 degrees of the illustrated 200 and 135 degree views. They will be regularly spaced with the three southern turbines slightly further apart from the others. The closest turbine will be 14.41 km from the viewpoint.

The photomontage shows that the turbines will be clearly visible within the inshore waters and will lie between Aberdeen city and Perwinnes radar station, a small but prominent point in the view. The turbines will appear beyond the open rolling farmland between the visible settlements at Aberdeen and Dyce.



There are many elements in this part of the view which includes the frequent movement of helicopters and planes to and from Dyce. The turbines will add to this dynamic landscape as a noticeable feature in the sea. Overall, as this viewpoint encompasses a 360 degree view, the majority of the view will remain unchanged, and elements such as the masts on top of Brimmond Hill will still be a dominant feature.

It is therefore judged that the magnitude of visual impact of the proposed development is no more than Medium. As the key receptors of walkers have a High to Medium sensitivity to the proposed change, the significance of effect is judged as Major-Moderate to Moderate.

#### **Cumulative Impacts (CW-15)**

The cumulative ZTVs show that from this viewpoint there is the potential to see over 30 consented or existing wind farms, and potentially up to 16 in-planning wind farms in combination with the EOWDC. The cumulative wireframe (Figure CW15) illustrates the existing, consented and in-planning wind farms which are dotted across the landscape in views to the north. Please note that only a selection of the wind farms in the wireframe have been named to aid orientation. Views to the south are obscured to some degree by intervening forestry.

In the views to the west, north and north east from this elevated position the wireframe shows that theoretically the large majority of the in-planning and existing and consented wind farms are visible. However, most of these will not be discernable with the naked eye and lie below the horizon where existing vegetation and settlement will obscure views.

The most noticeable turbines, albeit only just visible in the photograph and in site visits are the existing Hill of Easterton three turbines which are on a similar elevation to Brimmond Hill and are just clear in the skyline, above Kirkhill Forest, at 24 km to the north west. The Hill of Fiddes turbines lie closest to the viewpoint at 17.5 km and the hub and blades can be just made out appearing behind the undulating landform to the left of one of the Brimmond Hill masts. The wireframe and photograph shows that although there are many existing wind farms in the landscape, there is limited visibility with the majority of them. Given this limited intervisibility of the existing wind farms, the in-planning wind farms most likely to be visible at this point would be the single turbines at Mosseye, Hill of Fechel, Mains of Balquhain and the two turbines at Woodlands Farm.

The extensive views from Brimmond Hill encompass a wide variety of land use and the existing turbines visible are not prominent features. Although a large number of turbines are theoretically visible, the relatively small height, small turbine numbers and distance from the viewpoint reduce cumulative visual effects. The addition of the EOWDC will be seen in a separate part of the view to any other wind farms and as the turbines will be viewed entirely in the sea, this further disconnects it to any other views of turbines. Taking this into account and the larger scale of turbines, the magnitude of cumulative impact of EOWDC within existing and consented and in-planning wind farms at this viewpoint is judged as Low. As the key receptors of walkers have a High to Medium sensitivity to the proposed change, the significance of cumulative effect is judged as Moderate to Moderate-Minor.

#### **4.2.16. Viewpoint 16: Formartine and Buchan Way, nr Quilquox (WF-16)**

The wireframe shows that the turbines will occupy 7.5 degrees of the illustrated 200 degree view. They will appear at similar heights and an arrangement of groupings of 2, 3, 3 and 3 will be discernable elements in the view. The closest turbine will be 25.98 km from the viewpoint.

The photograph illustrates that intervening landform is likely to obscure the bottom of the turbine columns but they will be a noticeable element in the horizon but within a small part

of an expansive panoramic view. The wireframe illustrates that the turbines would be seen with a backdrop of the sea, but due to the visibility on the day the photograph was taken, the sea and coastal landform is not discernable in the photograph and the turbines appear as if on land. Wind farms at Ardgrain and Hill of Fiddes are prominent in the view and lie either side of the EOWDC. The EOWDC turbines, if visible, will appear at a similar height to the Hill of Fiddes at this distance.

The magnitude of visual impact of the proposed development is therefore assessed as Low. As the key receptors of local residents and cyclists have a High and a Medium sensitivity respectively to the proposed change, the significance of effect is judged as Moderate for local residents and Moderate-Minor for cyclists.

### Cumulative Impacts

Figure CW16 presents a cumulative wireframe which illustrates the many wind farms theoretically and actually visible from this viewpoint. The cumulative ZTVs illustrate that up to 18 existing and consented and up to 4 in-planning wind farms may theoretically be visible from this viewpoint.

As shown in the photograph and wireframe, the existing wind farms at Ardgrain and Hill of Fiddes are the most visible of existing wind farms in the area and sit either side of the EOWDC turbines. The wireframe also indicates that Tillymaud, Mains of Bogfechel, and the in-planning turbines at Woodlands Farm, Mains of Balquhain and Hill of Fechel will be seen to the right of the view. Mid Hill and even Meikle Carewe Wind Farms are shown to be theoretically visible, but at over 50 km away it is very unlikely. The four turbines at Skelmonae although not shown in the wireframe, lie at close proximity to the north west of the viewpoint. There are also other wind farms such as St John's Well and Hill of Easterton which are visible nearby

Within this area of Aberdeenshire wind farms have now become a characteristic feature of the landscape as demonstrated by the wireframe and photograph. The addition of the EOWDC at this viewpoint which will be at a similar scale in the view to the existing turbines will contribute to this character and sit comfortably within the view. Therefore it is judged that the magnitude of cumulative impact is Low. As the key receptors of local residents and cyclists have a High and a Medium sensitivity respectively to the proposed change, the significance of cumulative effect is judged as Moderate for local residents and Moderate-Minor for cyclists.

#### 4.2.17. Viewpoint 17: Minor road near Netherley and Durris Forest (WF-17 and PM-17)

The wireframe illustrates that the turbines will occupy 4 degrees of the illustrated 135 and 90 degree views and appear in an evenly spaced line of turbines on the horizon. The closest turbine will be 24.99km from the viewpoint.

The photomontage shows that at this distance from the proposed development, the turbines will be noticeable but not dominant within the wider panoramic view. The landform obscures most of the columns of the turbines and the power lines in the foreground lie across some of the turbines at this point. The tower blocks seen on the horizon are more prominent than the turbines due to their mass, but will be slightly smaller in height than the turbines.

Taking into account the above, and as the turbines will be a relatively minor element within an expansive and fragmented view, it is judged that the magnitude of visual impact is Low to Negligible. As the key receptor group of local residents have a High sensitivity to the proposed change, the significance of effect is assessed to be Moderate to Negligible.

### Cumulative Impacts

The cumulative ZTV illustrates that there are up to 2 existing and consented and up to 2 in-planning wind farms theoretically visible from this viewpoint. This will most likely include the consented Meikle Carewe Wind Farm which lies 3 km to the south of this viewpoint. Although the turbine size is not particularly large (70 m blade tip), at 3 km away, the Meikle Carewe Wind Farm will be a dominant feature. The addition of the EOWDC which as discussed above will be noticeable, but not in the same portion of view, and therefore cumulative effects with Meikle Carewe would be limited to successional views only.

The nearest in-planning wind farm is Woodlands Farm at just under 30 km to the north, and it is unlikely given the scale of turbines that they would be a discernable element.

It is therefore considered that overall the magnitude of cumulative visual impact on this viewpoint is Low to Negligible. As the key receptor group of local residents have a High sensitivity to the proposed change, the significance of effect is assessed to be Moderate to Negligible.

#### 4.2.18. Viewpoint 18: A975 near Slains Castle (WF-18 and PM-18)

The wireframe illustrates that the turbines will occupy 5 degrees of the illustrated 135 and 90 degree views. They will appear in front of the headland in five separate groups with overlapping turbines. The closest turbine will be 22.23 km from the viewpoint.

The photomontage shows that the turbines will be a noticeable feature within the view appearing above the distant headland but not taller than the intervening landform to the right of view. This landform will partially obscure the columns of the three turbines to the right of view. The turbines will be a similar height to the ruins of Slains Castle but will be recessive in comparison to the bulk of the ruins.

The generally simplistic nature of the view with large open fields and strong features such as Slains castle and the cliff coastline, increases the prominence of the EOWDC turbines within a small section of the overall view, but the majority of the view will remain unchanged.

Therefore the magnitude of visual impact is considered overall to be Low. As the key receptor group of visitors to Slains Castle and the coastline have a High sensitivity to the proposed change, the significance of effect is assessed to be Moderate.

#### Cumulative Impacts

The cumulative ZTVs illustrate that up to 4 existing or consented and up to 2 in-planning wind farms may be theoretically visible from this viewpoint. The wireframe in Figure CW18 identifies that Ardgrain Wind Farm is the closest existing turbines within this portion of the view at just over 12 km away, but as shown on the photograph they are not easily discernable. The wind farms shown behind the EOWDC are all beyond 50 km from the viewpoint and in reality would not be seen due to distance and intervening vegetation and built form.

The other wind farms in close proximity to the viewpoint but which lie behind the viewpoint (not shown on wireframe) are the three turbines at West Knock Farm 14 km to the north west, and the single turbine at Bruxiehill, 14 km to the north of the viewpoint. The in-planning Peterhead Harbour and Middleton of Rora turbines lie beyond 10 km to the north.

The existing, consented, and in-planning wind farms lie at considerable distances from this viewpoint and due to their relatively small scale they are not easily visible. The EOWDC will not be seen in combination with the other wind farms, and even in succession other wind farms will not be a noticeable feature of the view.

The addition of the EOWDC will increase the number of wind farms theoretically visible but given the separation and distance to each wind farm at this viewpoint, the magnitude of cumulative impact is judged to be Low to Negligible. As the key receptor group of visitors to Slains Castle and the coastline have a High sensitivity to the proposed change, the significance of cumulative effect is assessed to be Moderate to Negligible.

#### 4.2.19. Viewpoint 19: Mither Tap, Bennachie (WF-19)

Due to the time of year the assessment was undertaken, photographs were not able to be taken from this viewpoint, so only a wireframe was constructed.

The wireframe shows that the turbines would appear spread in six groups across 7 degrees of the illustrated 200 degree view. The closest turbine will be 32.02km from the viewpoint. Only the very tips of the blades will be visible above the horizon, with the majority of the turbines seen with the backdrop of the sea.

Site visits have shown that the surrounding landuse and development will most likely obscure much of the turbines in views on a clear day when the coast is visible. They will also be a very minor element within the expansive 360 degree views possible from this high viewpoint, where existing turbines are a common feature.

It is therefore judged that the magnitude of visual impact will be Low to Negligible. As the key receptor group of walkers have a High to Medium sensitivity to the proposed change, the significance of effect is assessed to be Moderate to Moderate-Minor to Negligible.

#### Cumulative Impacts

The wireframe (Figure CW19) clearly shows the number of wind farms within the distant landscape that are theoretically visible from this viewpoint. The cumulative ZTVs also show that over 30 existing and consented and up to 18 in-planning wind farms theoretically could be visible from this promontory.

However, site visits have shown that it is only the closest of these turbines which are discernable with many of the single turbines and small wind farms recessive within the undulating farmland landscape. The vast majority of the wind farms lie to the west, north and north east of the viewpoint, the closest of which are approximately 11 km away. Those to the south lie closest at 30 km to the viewpoint.

The EOWDC will lie beyond an area of landscape (Central Wooded Estates character area) to the east of the viewpoint which does not have any wind farms, existing or proposed. If seen, the EOWDC can be perceived as having a stronger relationship with the northern wind farms and that it is quite separated from the southern wind farms, closest of which is Meikle Carewe (approximately 35 km away), which will also be difficult to discern at this distance.

As it has been assessed that the EOWDC will be a minor element within the overall view when visible, the addition of the EOWDC with the existing, consented and in-planning turbines will not significantly alter the expansive views available at Bennachie, so that the magnitude of cumulative impact is judged to be Negligible. As the key receptor group of walkers have a High to Medium sensitivity to the proposed change, the significance of cumulative effect is assessed to be Negligible.

#### 4.2.20. Viewpoint 20: A95 near Uras (WF-20 and PM-20)

The wireframe illustrates that the turbines will appear just above the headland, with blade tips only visible, and will occupy 3.5 degrees of the illustrated 135 and 90 degree views. The closest turbine will be 33.58 km from the viewpoint.

The photomontage shows that it is very difficult to see the turbine blades above the headland and perhaps only on days when the sun is shining on the blades will they be discernable, and then they will be a very minor element within the open landscape.

The large scale landscape with relatively simple components will remain unchanged by the presence of the turbines and therefore the magnitude of visual impact is assessed as Negligible. As the key receptor group of travellers on the A92 have a Medium sensitivity to the proposed change, the significance of effect is considered Negligible.

## **Cumulative Impacts**

The cumulative ZTVs illustrate that there will be no other wind farms visible from this view point and as such, there will be no cumulative effects.

### **4.3. Effects upon Visual Receptor Groups**

The Baseline Report provides an outline of the range of visual receptor groups who can reasonably anticipated to be affected by the proposed EOWDC development. The effects upon these receptors are discussed below.

#### **4.3.1. Local Residents**

The closest residents to the proposed EOWDC site are those living in Blackdog and Balmedie. There are also individual properties at Tarbothill Farm, Wester Hatton and Hatton which lie along the section of coast between the A90 and the turbines. The turbines will lie at just over 3 km from all of these settlements. The EOWDC turbines will be a prominent feature for residents when travelling to and from their homes. Only those houses with outlooks towards the sea are likely to see the turbines consistently. Many of the houses in these areas are orientated to shelter from the cold east coastal winds and therefore will be less affected by views of the turbines.

However, at this close distance, the turbines will fundamentally alter any available views of those residents whose properties are orientated towards the sea and the magnitude of visual impact on these residents is judged to be High. As they have a High sensitivity to the proposed change, the significance of effects is assessed as Major.

## **Cumulative Effects**

There are no existing, consented or in-planning wind farms which lie in close proximity to the settlements identified above and therefore there would be no significant cumulative effects of the EOWDC with another wind farm on the local residents.

#### **4.3.2. Travelling Public - Rail**

Passengers on trains arriving at Aberdeen will potentially have intermittent views of the EOWDC where it is visible above and in-between the city's buildings, as illustrated by the ZTVs. Cuttings and embankments are not modelled into the ZTV so although theoretically there may be visibility around Tullos Hill, this is most likely curtailed by the cuttings. Rail passengers are also restricted to some degree in their angle of view and it is only where the rail line curves around the coastline before Aberdeen that the side of the train would face the direction of the EOWDC.

It is therefore judged that there will be an overall Negligible magnitude of impact on rail passengers. As their sensitivity to the type of development proposed is Medium to Low, the significance of effect is assessed as Negligible.

## **Cumulative Effects**

Where it has been identified above that there is potential visibility of the EOWDC, there will be no combined views of other wind farms. Whilst there is potential for the rail passengers to view wind farms along the stretches of rail line south of Aberdeen, the potentially short intermittent views of the EOWDC will not significantly add to any sequential cumulative effects and it is therefore considered that the magnitude of cumulative impact would be Negligible. As their sensitivity to the type of development proposed is Medium to Low, the significance of cumulative effect is assessed as Negligible.

#### 4.3.3. **Public Paths**

The Aberdeenshire Coastal Path will be exposed to the EOWDC for much of its length between Girdle Ness and Peterhead. The turbines will become a consistent feature when travelling along the route, as the path generally keeps close to the coastline. Local topography and coastal features may interrupt views to some extent but overall the magnitude of visual effect on the walkers on the coastal path will be High within the areas around Aberdeen Beach and Aberdeen Bay, but will reduce to Low and Negligible with distance. As they have a High to Medium sensitivity to the proposed change, the significance of effect will be Major to Major-Moderate reducing to Moderate-Minor to Negligible with distance from the EOWDC.

##### **Cumulative Effects**

It can be expected that the main focus of the users of the coastal path will be the sea and coastline, with any long views inland a secondary aspect to the experience of the route. Within the areas identified above where the EOWDC will potentially have a High magnitude of effect there will be no other wind farms visible in the coastal views. There is potential for the inland existing, consented and in-planning wind farms to be seen but these will not be dominant in views from the coast as most lie beyond 7km from the coast. It is only the north east corner between Peterhead and Fraserburgh where existing, consented and in-planning turbines lie closer to the coast and the flatter coastal plain allows clearer views. However, in these areas, views of the EOWDC are limited if visible at all.

It is therefore judged that the magnitude of cumulative effect on the walkers on the coastal path will be Negligible. As they have a High to Medium sensitivity to the proposed change, the significance of cumulative effect will be Negligible.

#### 4.3.4. **Travelling Public - Sea Routes**

The Orkney/Shetland passenger ferries leave Aberdeen on a regular basis. The route will pass in close proximity to the turbines and the EOWDC will be a prominent feature at the start or end of the passage. The overall magnitude of impact is judged as Low as it will be a temporary visual impact, and for a small proportion of the ferry's overall route. As the passengers on the Ferry will have a Medium to Low sensitivity to the proposed change, the overall significance of effect is considered Moderate-Minor to Minor although it is accepted that, on passing the EOWDC the magnitude of effect will be temporarily High, and therefore the significance of effect would temporarily be Major-Moderate to Moderate.

There are many fishing, commercial, and industrial ships which use Aberdeen Harbour and these will have views of the turbines when leaving or arriving. Many of the ships sit out for lengths of time in MCA designated anchorage area in the vicinity of the proposed EOWDC site, so they will be potentially the closest visual receptors to the proposed development. Smaller fishing vessels from the local village harbours may be more affected as they do not travel as far offshore as the larger ships and may have visibility of the EOWDC for the duration of their fishing trips. However, as they will be focussed on their line of work and due to their generally transient nature, effects would be reduced. It is judged that the



magnitude of effect is overall Medium. As the workers on the ships would have a generally Low sensitivity to the type of change proposed, the significance of effect is assessed as Moderate-Minor.

Recreational sailing and yachting are not common in the immediate waters around the EOWDC, mainly due to the amount and size of harbour traffic in the area. Those sailors using the cruising routes in the wider area may have some visibility of the turbines. They would have a Medium sensitivity to the type of development proposed as they although they may have an interest in their surroundings, which already include a relatively high level of marine activity; they also will be concentrating on the sailing or racing. The magnitude of effect is overall judged as Medium, but it is accepted that there may be a temporarily High magnitude of effect when the vessels pass in close proximity to the EOWDC. The significance of effect is therefore overall Moderate, and temporarily Major-Moderate when in close proximity to the EOWDC.

### **Cumulative Effects**

The EOWDC will be the only wind farm within the North Sea in the study area. Existing and consented onshore turbines are already potentially seen at a distance from offshore but are not prominent or easily discernable features. The proposed in-planning wind farms slightly increase the number of wind farms potentially visible but apart from the turbines at Peterhead Harbour and those in-planning between Peterhead and Fraserburgh, they are not any closer to the coast than existing wind farms. The combined effects of EOWDC and the existing, consented and in-planning wind farms is therefore limited by this distance and the smaller scale of the onshore wind farms. It is judged that the cumulative effects of EOWDC on offshore receptors will be Negligible. Taking into account the various sensitivities of the offshore receptors, the magnitude of cumulative effect will still be Negligible.

#### **4.3.5. Visitors to the Area**

Apart from those using the coastal path (as discussed above), visitors to the area with greatest potential to be affected by the EOWDC would be those visiting Aberdeen Beach, Balmedie Beach, and Forvie Sands. The effects on receptors at these locations are discussed in the viewpoint assessment.

#### **4.4. Sequential Visual Effects on Main Roads**

The theoretical sequential cumulative visual impact on a selection of main roads, as agreed with the consultees, has also been assessed using data obtained from the ZTV and transferred to graphs. These illustrate the number of wind farm sites that may theoretically be visible at mile intervals along the routes and indicate the distances from these locations to the various identified wind farms. These graphs are shown in Appendix 2 and should be read in conjunction with Figure 19 which identifies the agreed routes.

Each graph is necessarily at a different scale that relates to the distance to the various wind farms within the vicinity of each particular route. Miles are indicated along the horizontal axis on the graphs, rather than kilometres, as the majority of people more readily relate to these when travelling. However, kilometre distances have also been shown for ease of reference.

It should be noted that the graphs only illustrate point data at discrete mile intervals. They do not record continuous visibility along the routes and as such there remains the possibility that further views of the EOWDC and other wind farms may also, although not necessarily, be available between these mile intervals. In these instances where the graph does not show a wind farm as visible, there is most likely no visibility, or the visibility could be

intermittent, or, if continuous, it will be for less than a mile. Where visibility is shown, the graphs present a worst case scenario of theoretical visibility as represented by the ZTVs. In reality this visibility will be limited due to distance, intervening local vegetation, road cuttings and embankments which would not have been modelled in the ZTV, and the orientation of the particular wind farm in relation to the direction of travel.

#### 4.4.I. A90

The A90 is the main road from the south to Aberdeen, and to Peterhead and Fraserburgh in the north. The ZTV shows that within the study area to the south of Aberdeen, visibility of the EOWDC is limited until the junction with the A956 where the road occupies a high point and views of Aberdeen city are very clear. Visibility will be intermittent as the A90 goes through Aberdeen with only glimpse views of EOWDC available from a few high points (such as where the A90 runs to the west of Kincorth and the Anderson Drive section of the A90 between Mastrick and Middlefield). As the A90 reaches the northern side of Aberdeen (at Bridge of Don) clear views of the EOWDC will be seen. This visibility when travelling north extends to just beyond Balmedie.

Travelling south from Peterhead, the first stretches of potential visibility will occur at Longhaven to just east of Auchiries, approximately 25 km from the EOWDC. Visibility is then limited until Toll of Burness where views of EOWDC will potentially be clear until a lower stretch of road east of Ellon where the topography limits any views. As the road rises again just after the roundabout with the B9005, views of the EOWDC are again potentially possible and, apart from a few dips in the road precluding views, the visibility of the EOWDC continues all the way to Balmedie.

In reality, site assessment has shown that localised cuttings and roadside vegetation will reduce visibility of the EOWDC from a number of areas where the ZTV suggests potential visibility. Both distance to the proposed development and the orientation of the view will also play a part in reducing any visual effects. It is therefore judged that overall the magnitude of impact on the users of the A90 is High for the section of road in the immediate vicinity of the proposed development (approximately < 5 km) reducing to Medium around Ellon in the north and Aberdeen in the south, and Low to Negligible elsewhere. As the sensitivity of road users to the type of development is Medium to Low, the significance of effect is Major-Moderate to Moderate within approximately 5 km, Moderate to Moderate-Minor around Ellon and Aberdeen, and Minor to Negligible elsewhere.

#### Cumulative Impacts

Reference should be made to graphs 01 to 06, and Figure 19 which illustrate the sequential cumulative effects on the A90 of the proposed development with other wind farms within a 60 km radius. For the purposes of clearly showing the effects, the A90 has been split into three sections; South, Aberdeen Trunk Road, and North. There are also separate graphs for existing, consented and in-planning wind farms.

##### A90 South (Graphs 01 and 02)

As described above, the south section of the A90 will have limited, if any, views of EOWDC and the graph illustrates that there will be no other wind farms visible at two points where the EOWDC is theoretically visible. The graph suggests however that, travelling on the A90 from the limits of the 60 km radius study area which starts at Stracathro Services, there will be potentially views of 11 existing or consented wind farms and 1 in-planning wind farm at various points along the road and therefore there is the potential for EOWDC adding to the sequential cumulative effects that already arise from the existing wind farms. The in-planning wind farm is the extension to Skelmonae which is potentially only visible at one



point, approximately 38 km north of the A90 and at this distance will be most unlikely to be seen from the road.

The existing or consented wind farm graph suggests that around Laurencekirk to Stonehaven there may be potential combined and sequential visibility of up to eight sites for most of this stretch between distances of 1 and 15 km from the road. Beyond 2 miles north of Stonehaven the graph shows that views of wind farms decreases and it is only Meikle Carewe that is potentially visible within 15 km of the A90 between Stonehaven and the A93 Junction before Aberdeen.

#### A90 Aberdeen (Graphs 03 and 04)

The 3 mile section of the A90 which routes through Aberdeen is shown by the graphs to have theoretically combined views of Mid Hill, Hillhead of Auquhirie (and extension), Clochnahill, Meikle Carewe wind farms, and EOWDC. Clochnahill, Mid Hill and Hillhead of Auquhirie (and extension) will lie beyond 25 km from the road and will be seen in the opposite direction to the EOWDC. Meikle Carewe will also be seen in the opposite direction to the EOWDC, but will be between 15 and 20 km from the road.

However, the experience on site indicates that at present there is no obvious visibility of the more distant existing wind farms and views towards EOWDC will be intermittent and limited.

#### A90 North (Graphs 05 and 06)

On the northern stretch of the A90, the graphs suggest that there could be up to 20 existing and consented wind farms and up to 9 in-planning wind farms not including the EOWDC theoretically visible along the length, although eight existing and consented, and one in-planning wind farms will be beyond 40 km from this stretch of the A90 and can therefore safely be presumed to be unlikely to be detected by those travelling the route. The graphs also suggest that, from Peterhead to Bridge of Don, there will theoretically almost be a continuous view of wind farms. Those most likely to be seen along the road in conjunction with the EOWDC include Ardgrain, Hill of Easterton, Hill of Fiddes, Tillymaud, and Mains of Bogfechel. The in-planning Peterhead Harbour, Woodlands Farm, Mosseye and Hill of Fechel turbines will also be theoretically visible from a large stretch of the A90 and will also contribute to the overall sequential effects.

#### A90 Overview

The graphs and ZTVs show that whilst there is little combined visibility of the EOWDC with other wind farms for the majority of the A90 the EOWDC will extend the potential sequential visibility of wind farms to stretches of the road which currently do not have views of wind farms. This is more pronounced in the northern section of the A90, compared to the southern section where the EOWDC has limited intervisibility with the road.

Overall, the graphs indicate that there theoretically will be views of wind farms for the majority of the A90 route identified in the graphs. However, the majority of the onshore turbines are not higher than 60 m hub/100 m blade tip and site assessment has found that in reality the existing wind farms do not have a large visual envelope or presence when travelling the route. Whilst the graphs are helpful in understanding the theoretical scenario they do show the worst case scenario. Site investigation along the routes indicated that, when travelling at the appropriate road speed, it is only those turbines within a reasonably close distance of the route that will really be perceived.

It is therefore judged that the overall magnitude of sequential cumulative impact of the EOWDC on the A90 is Medium. As the sensitivity of travellers on the A90 to the type of

development proposed is Medium to Low, the significance of sequential cumulative effect is assessed as Moderate to Moderate-Minor.

#### 4.4.2. **A920**

The A920 has been assessed as one continuous road, 39 miles long, from Cairnborrow to Ellon. The graphs and ZTVs show that visibility of EOWDC is not theoretically possible until 2 miles east of Old Meldrum, at which point it will be 20 km away and along the course of the road to the east it will not be closer than 15 km. The ZTV shows there will be intermittent visibility and at some points this will be limited to blade tip only. Site assessment also confirmed that much of this road is enclosed by roadside vegetation and in reality views of EOWDC would be much more restricted than is shown by the ZTV.

It is therefore judged that the magnitude of sequential impact on the travellers using the A920 is Low to Negligible. As the sensitivity of the travellers to the type of development proposed is Medium to Low, the significance of sequential cumulative effect is assessed as Moderate-Minor to Minor to Negligible.

#### **Cumulative Impacts** (Graphs 07 and 08)

The graphs show that there are 30 existing and consented wind farms potentially visible along this stretch of road, and a further 15 in-planning wind farms, not including the EOWDC. In the eastern stretch where the EOWDC is potentially visible, the graph shows that there could be combined views of Hill of Fiddes, Ardgrain, Hill of Easterton, Tillymaud, and Skelmonae. These wind farms would lie considerably closer to the A920 than the EOWDC, at distances of between 3 and 15 km. The in-planning wind farms which would be seen in combination with the EOWDC include Hill of Fechel, Mosseye, Woodlands Farm, Skelmonae Extension, and Hillhead, Oldmeldrum turbines. Again, these would all lie noticeably closer to the route than the EOWDC.

The A920 is potentially exposed to wind farms along its entire length with very few gaps. The addition of EOWDC will not extend the sequential views but will potentially give combined cumulative effects. As judged above, however, views of EOWDC are limited and therefore combined cumulative effects would also be limited.

It is therefore judged that the magnitude of cumulative impact on the travellers on the A920 is Low to Negligible. As the sensitivity of the travellers to the type of development proposed is Medium to Low, the significance of cumulative effect is assessed as Moderate-Minor to Minor to Negligible.

#### 4.4.3. **A93**

The A93 is a main road which follows the River Dee for much of its length towards Ballater. The ZTV shows that due to its sheltered valley enclosure there is no intervisibility of the EOWDC along any of the A93 within the study area and therefore no visual effects.

#### **Cumulative Impacts**

As there are no visual effects arising from EOWDC along this road there will be no cumulative effects. Although not included in the appendix, graphs were produced and they confirmed that only Mid Hill and Meikle Carewe would be seen along the A93 with no visibility of EOWDC.

#### 4.4.4. **A947**

The A947 is the main road that links Banff and Aberdeen via the towns of Turriff and Oldmeldrum. The ZTVs suggest that there are only a few locations along this road which will

have potential intervisibility with the EOWDC. These are located at a couple of local high points just north of Oldmeldrum and some high land between Oldmeldrum and Newmachar. There is also potential visibility at Dyce, although local residential and industrial development will obscure some views.

As the visibility of the EOWDC is from very limited areas and for short stretches of the route, the magnitude of impact on travellers along the A947 is considered Low to Negligible. As the sensitivity of travellers to the proposed type of change is Medium to Low, the significance of effect is assessed as Moderate-Minor to Minor to Negligible.

#### **Cumulative Impacts** (Graphs 09 and 10)

The graphs illustrate that there are potentially 36 existing and consented wind farms, and 18 in-planning wind farms theoretically visible along the A947, not including the EOWDC. Ardgrain, Hill of Fiddes, Mains of Bogfechel, Skelmonae, and Tillymaud will potentially be seen in combined views with the EOWDC. The in-planning Hill of Fechel, Skelmonae Extension, Bogenjohn Farm, St Fergus Moss and Woodlands Farm turbines are also shown on the graphs to be visible with the EOWDC.

The majority of the A947 is shown by the graphs to have visibility of wind farms, especially the stretch between Fyvie and Oldmeldrum which has the potential to see up to 21 wind farms at once. However, site assessment has shown that while there are views of some of these wind farms, roadside vegetation and development obscures clear views from long stretches of the road.

The sequential cumulative effect along the A947 can already be judged to be high without the EOWDC turbines. The addition of EOWDC will potentially extend the sequential effects for a short length of the eastern section of the road. This short stretch of visibility is considered to be insignificant enough that the sequential cumulative effect arising from the inclusion of EOWDC is not overall increased. Therefore it can be concluded that the magnitude of cumulative impact of the EOWDC is Negligible. As the sensitivity of the traveller on the A947 to the proposed change is Medium to Low, the significance of cumulative effect is assessed as Negligible.

#### **4.4.5. A948**

The A948 connects New Deer with Ellon and is 14 miles long. The ZTV and graphs show that the EOWDC will be visible for the southern 3 miles before it joins the A90 at Ellon. The proposed turbines will be approximately 15 km at their closest to the road. There will be no intervisibility with the site along the rest of the route.

As the EOWDC will be clearly visible in views along only the southern extents of the road, where roadside vegetation and development permits, the magnitude of effect on travellers on the A948 is considered Medium for this stretch and Negligible elsewhere. As the sensitivity of travellers to the proposed change is Medium to Low, the significance of effect is assessed as Moderate to Moderate-Minor to Negligible.

#### **Cumulative Impacts** (Graphs 11 and 12)

The graphs suggest that the A948 is theoretically exposed to 26 existing and consented wind farms and 13 in-planning sites, not including the EOWDC. The majority of these sites are potentially visible between Auchnagatt and Ellon, with up to 20 wind farms theoretically visible at once within a short stretch, 4 miles north of Ellon.

EOWDC is first visible at 11 miles from New Deer, and the graphs suggest that there would also be combined visibility of Mains of Bogfechel, Hill of Fiddes, Ardgrain, Tillymaud, and Haddo Wind Farms. Hill of Fechel, Mossey, Skelmonae Extension, and Woodlands Farm

would be the only in-planning wind farms seen in combination with the EOWDC. These would all, except Haddo and Hill of Easterton, lie closer to the road than the EOWDC.

The addition of the EOWDC does not expose new stretches of the A948 to visibility of wind farms. There will be combined visibility of EOWDC at the southern end of this road which will add to the number of wind farms sequentially viewed. It is therefore judged that the magnitude of cumulative effects on travellers is Low. As the sensitivity of travellers to the proposed change is Medium to Low, the significance of cumulative effect is assessed as Moderate-Minor to Minor.

#### 4.4.6. A96

The A96 is the main road linking Inverness and Aberdeen via Inverurie and Huntly. The ZTV shows that the EOWDC will only be visible at the southern extents of this road from Dyce to the edge of Aberdeen city centre. Apart from potential blade tip visibility within an area around Kintore, there will be no visibility of the EOWDC from the A96.

Given this, it is judged that the magnitude of visual impact upon travellers along the A96 will be Medium from the identified southern extents only but Negligible from all other sections of the route. As the sensitivity of travellers to the proposed change is Medium to Low, the significance of visual effect is assessed as Moderate to Moderate-Minor to Negligible.

#### **Cumulative Impacts** (Graphs 13 and 14)

The graphs suggest that views are theoretically available of up to 17 existing and consented wind farms and 8 in-planning sites, not including the EOWDC at various points along the A96's length. The graphs also suggest that the EOWDC will be potentially visible in the southern section of the road where no other wind farms will be visible except for a short section where combined views may be possible with the single turbine at Mains of Bogfechel.

Starting at Huntly, the existing large wind farms at Glens of Foudland and Mains of Dummie are very visible as well as the smaller Hill of Tillymorgan Wind Farm. Beyond these wind farms the in-planning graph shows that Newton of Fortrie, Hospital Wood, Auchinderran, Backhill of Yonderton and Hillhead (Bonnykelly) wind farms will be visible within a 2 miles stretch.

Travelling south east, between Kirkton of Culsalmond and Inverurie the smaller wind farms at Hill of Easterton, Gordonstown Hill and single turbines at Hill of Burns and Cowhill become visible within 20km from the road. In addition, the in-planning Hillhead (Old Meldrum) and Mains of Balquhain will be visible within 20km of the road.

From Inverurie the existing, consented and in-planning turbines gradually diminish and it is only the existing Mains of Bogfechel which is potentially seen within 15 km of the road before the EOWDC starts to become visible.

The addition of the EOWDC will thus result in limited combined cumulative effects on the A96 but, as it will be visible along a stretch of the A96 where no existing, consented or in-planning wind farms will be visible, it can be considered that it will extend the existing sequential cumulative effects for the length of the road within the study area. However, the visibility of wind farms between Kirkton of Culsalmond and Dyce is limited as the smaller wind farm sites gradually lie beyond 10 km from the road and site assessment confirmed that roadside vegetation and development will prevent extensive continuous views across the surrounding landscape.

It is therefore judged that the magnitude of sequential cumulative impact on the travellers on the A96 is Medium. As the sensitivity of travellers to the proposed change is Medium to Low, the significance of effect is assessed as Moderate to Moderate-Minor.

#### **4.5. Visual Effects at Night**

The turbines at EOWDC will be marked to be visible by day and by night, with prevailing visibility conditions, and will be lit in accordance with the International Association of Lighthouse Authorities (IALA) standards and as specified by Trinity House. For aviation purposes it is proposed that turbines will be lit in accordance with the Civil Aviation Authority (CAA) requirements.

The turbine lighting has a visible range of 5 nautical miles (NM) (approximately 9 km). As a result the coastal areas from Newburgh to Girdle Ness will potentially have additional visual glare or night glow where views of the EOWDC are available. However, views out to sea will be compromised to a degree, within most of this area, by the light spillage from existing lighting associated with the urban areas, road lighting, harbour, and lighthouses and especially the ships in the designated anchorage area. At the time of the assessment site visit, it was noted that there were over 20 large ships in the designated anchorage area and at night their lighting was very prominent where views of the bay are possible. The lighting of the turbines would therefore not be isolation and would only extend the existing presence of lights in the sea.

The significance of visual effects of the EOWDC at night is therefore considered not to exceed what has already been assessed for the daytime.

#### 4.6. Summary Table of Visual Effects

Receptor	Approx. Distance to nearest EOWDC turbine	Sensitivity of Receptor	Magnitude of Impact	Significance of Effect	Magnitude of Cumulative Impact	Significance of Cumulative Effect
Vpt 1 Balmedie Beach	3.51 km	High	High	Major	None	None
Vpt 2 A90 (Harehill)	4.44 km	Medium to Low	High	Major-Moderate to Moderate	None	None
Vpt 3 Jesmond Drive, Middleton	7.14 km	High	Negligible	Negligible	None	None
Vpt 4 B999 Whitecairns	8.1 km	High (residents) Medium to Low (travellers)	Medium	Major-Moderate (residents) Moderate to Moderate-Minor (travellers)	None	None
Vpt 5 Aberdeen Beach	7.52 km	High	High to Medium	Major to Major-Moderate	None	None
Vpt 6 A90 (West Pitmillan)	9.31 km	Medium to Low	Medium to Low	Moderate to Moderate-Minor to Minor	Low	Moderate-Minor to Minor
Vpt 7 Torry Battery	7.89km	High to Medium	High to Medium	Major to Major-Moderate to Moderate	Negligible	Negligible
Vpt 8 South College Street, Aberdeen	9.19 km	Low	Negligible	Negligible	None	None
Vpt 9 Forvie Nature Reserve	10.27 km	High	Medium	Major-Moderate	None	None
Vpt 10 Midstocket Road/North Anderson Drive	10.47 km	High (residents) Medium to Low	Low	Moderate (residents) Moderate-Minor to	None	None

Receptor	Approx. Distance to nearest EOWDC turbine	Sensitivity of Receptor	Magnitude of Impact	Significance of Effect	Magnitude of Cumulative Impact	Significance of Cumulative Effect
		(travellers)		Minor (travellers)		
Vpt 11 Leslie Road (A978) Aberdeen	8.07 km	High (residents) Medium (travellers)	Low	Moderate (residents) Moderate-Minor (travellers)	None	None
Vpt 12 Kincorth Hill	11.56 km	High to Medium	Medium	Major-Moderate to Moderate	Negligible	Negligible
Vpt 13 Udney Station	12.63 km	High	Medium to Low	Major-Moderate to Moderate	Low	Moderate
Vpt 14 A96/Kirkhill Forest	14.13 km	Medium to Low	Low	Moderate-Minor to Minor	None	None
Vpt 15 Brimmond Hill	14.41 km	High to Medium	Medium	Major-Moderate to Moderate	Low	Moderate to Moderate-Minor
Vpt 16 Formartine and Buchan Way, near Quilquox	25.98 km	High (residents) Medium (cyclists)	Low	Moderate (residents) Moderate-Minor (cyclists)	Low	Moderate (residents) Moderate-Minor (cyclists)
Vpt 17 Minor Road near Netherley and Durrus Forest	24.99 km	High	Low to Negligible	Moderate to Negligible	Low to Negligible	Moderate to Negligible
Vpt 18 Slains Castle	22.23 km	High	Low	Moderate	Low to Negligible	Moderate to Negligible
Vpt 19 Mither Tap, Bennachie	32.02 km	High to Medium	Low to Negligible	Moderate to Moderate- Minor to Negligible	Negligible	Negligible
Vpt 20 A92, Mill of Uras	33.58 km	Medium	Negligible	Negligible	None	None

Receptor	Approx. Distance to nearest EOWDC turbine	Sensitivity of Receptor	Magnitude of Impact	Significance of Effect	Magnitude of Cumulative Impact	Significance of Cumulative Effect
Visual Receptor Groups						
Local Residents	Within 5 km	High	High (if orientated towards the EOWDC)	Major	None	None
Travelling Public - Rail	> 9 km	Medium to Low	Negligible	Negligible	Negligible	Negligible
Travelling Public – Coastal Path	> 3 km	High to Medium	High to Low to Negligible with distance	Major to Major-Moderate reducing to Moderate-Minor to Negligible with distance	Negligible	Negligible
Travelling Public - Ferry	> 1 km	Medium to Low	Low (overall) High (when passing in close proximity)	Moderate-Minor to Minor (overall)  Major-Moderate to Moderate (when passing in close proximity)	Negligible	Negligible
Shipping/Fishing	> 1 km	Low	Medium	Moderate-Minor	Negligible	Negligible
Recreational Sailing	> 1 km	Medium	Medium (overall) High (when passing in close proximity)	Moderate (overall) Major-Moderate (when passing in close proximity)	Negligible	Negligible
Sequential Effects on Roads						



<b>Receptor</b>	<b>Approx. Distance to nearest EOWDC turbine</b>	<b>Sensitivity of Receptor</b>	<b>Magnitude of Impact</b>	<b>Significance of Effect</b>	<b>Magnitude of Cumulative Impact</b>	<b>Significance of Cumulative Effect</b>
A90	4 km	Medium to Low	High within 5 km, reducing to Medium around Ellon and Aberdeen, and Low to Negligible elsewhere.	Major-Moderate to Moderate within approximately 5 km, Moderate to Moderate-Minor around Ellon and Aberdeen, and Minor to Negligible elsewhere.	Medium	Moderate to Moderate-Minor
A920	15 km	Medium to Low	Low to Negligible	Moderate-Minor to Minor to Negligible	Low to Negligible	Moderate-Minor to Minor to Negligible
A93	12 km	Medium to Low	None	None	None	None
A947	10 km	Medium to Low	Low to Negligible	Moderate-Minor to Minor to Negligible	Negligible	Negligible
A948	15 km	Medium to Low	Medium to Negligible	Moderate to Moderate-Minor to Negligible	Low	Moderate-Minor to Minor
A96	11 km	Medium to Low	Medium to Negligible	Moderate to Moderate-Minor to Negligible	Medium	Moderate to Moderate-Minor

## 5.0 Other Assessment Considerations

### 5.1. Varying Turbine Heights

As the nature of the deployment centre is that it will be used to test emerging wind turbine technologies the turbines erected may be of varying heights. At this stage, two potential indicative scenarios of heights have been identified; Turbines 1 to 6 could have a hub height of 100 m and blade tip height of 160 m above LAT, Turbines 7 to 11 could have a hub height of 120 m and blade tip height of 195 m above LAT (as per the worst case scenario). This would give a hub height difference of 20 m and blade tip difference of 35 m. To understand the visual impacts of these height variations, wireframes were also created for Viewpoints 1, 2, 5, 7, 12 and 15. Please see Figures TH1-3.

The wireframes illustrate that the height difference will be difficult to discern at even the closest distance and that the identified variations in turbine height will not significantly alter the view. As is shown in Viewpoint 7 and 12 which show the eastern five turbines being larger, it is mostly in views from the south or north where the turbines height difference will be seen. Elsewhere, the distance between the turbines will offset the turbine height difference and, due to the influences of perspective, it will not be a noticeable difference. It is therefore concluded that the potential height variations would not increase the significance of impacts already identified in the assessment of the worst case scenario.

### 5.2. Potential Ocean Laboratory

The potential Ocean Laboratory would be subject to a separate planning application but has been included in this section as there may be cumulative impacts. The potential Ocean Laboratory could consist of a 120 m high mast and platform unit (20 x 20 x 4 m) and which could lie in the water south of the EOWDC turbines. Whilst the exact potential Ocean Laboratory details had yet to be confirmed at the time of this assessment, the dimensions given above were used to model the structure into wireframes for viewpoints 1, 2, 5, 7, 12 and 15 (Figures OL1-3) as locations where it could potentially be seen in full at relatively close distances. Please note that in reality the mast element of the Ocean Lab structure would be less dominant than shown on the wireframes.

The following paragraphs discuss the visual impacts of the Ocean Laboratory in combination with the EOWDC turbines at the aforementioned viewpoints.

#### 5.2.1. Viewpoint 1 (OL-01 top)

The top wireframe in Figure OL-01 illustrates the location and approximate structure of the potential Ocean Laboratory in views from Balmedie Beach, viewpoint 1. It slightly extends the extent of the EOWDC development across the view but, due to distance it will appear as the smallest element. The base platform has the potential to draw the eye to a lower section of the view than the adjacent turbine blades. As a static structure in comparison to the movement of the turbines, it will appear as a separate but not incongruous element to the view.

#### 5.2.2. Viewpoint 2 (OL-01 bottom)

The bottom wireframe in Figure OL-01 illustrates the proposed location and approximate structure of the potential Ocean Laboratory from the A90 – Harehill turn off, viewpoint 2. The platform will be the main focus of the laboratory and as the wireframe shows it will be seen below the horizon line with a backdrop of sea. The structure will extend the extent of the EOWDC across the view consistent with the spacing of the turbines. By its nature, the potential Ocean Laboratory will be seen as a separate element to the turbines, but at this

viewpoint the distance to it and spacing with the turbines allow it to sit comfortably within the view.

#### 5.2.3. **Viewpoint 5** (OL-02 top)

The top wireframe in Figure OL-2 illustrates the location and approximate structure of the potential Ocean Laboratory from Aberdeen Beach, viewpoint 5. The wireframe illustrates that the potential Ocean Laboratory will be nearer the viewpoint than the turbines and lie in front of the centre of the turbine group. It will therefore not extend the visible development across the view but will interrupt the rhythm of turbines and blades as the platform structure is a strong element below the adjacent turbine blades.

#### 5.2.4. **Viewpoint 7** (OL-02 bottom)

The bottom wireframe in Figure OL-2 illustrates the location and approximate structure of the potential Ocean Laboratory from Torry Battery, viewpoint 7. The wireframe illustrates that the potential Ocean Laboratory will lie within a gap of the evenly spaced turbine group. The platform will be seen with a backdrop of land, just above the sea level. As in Viewpoint 5, the Ocean Laboratory will interrupt the rhythm of the turbine spacing and the platform will potentially be a noticeable feature in contrast to the turbines.

#### 5.2.5. **Viewpoint 12** (OL-03 top)

The top wireframe in Figure OL-3 illustrates the location and approximate structure of the potential Ocean Laboratory from Kincorth Hill, viewpoint 12. The wireframe illustrates that from this viewpoint the potential Ocean Laboratory will sit between two turbines in the centre of the group. The platform will be seen with a backdrop of sea and due to the spacing of the turbines seen from this viewpoint; the structure will be less noticeable than if it were separate from the group.

#### 5.2.6. **Viewpoint 15** (OL-03 bottom)

The bottom wireframe in Figure OL-3 illustrates the location and approximate structure of the potential Ocean Laboratory from Brimmond Hill, viewpoint 15. The wireframe illustrates that the potential Ocean Laboratory will lie at the southern end of the turbines and will be seen with a backdrop of the sea, with no protrusion into the skyline. At this viewpoint which is looking down on to the proposed development, the platform of the potential Ocean Laboratory will blend into the seascape, reducing its visual impact.

### 5.3. **Menie Estate**

Although a private estate, due to the high profile of the proposed developments at the Menie Estate the impacts of the EOWDC on the estate have been discussed by EOWDC with Trump Estates in October and November 2010 with further discussion in March 2011. A brief summary of the potential visual and landscape effects are set out below. These have been informed by both desk based study and the proximity of the Balmedie viewpoint (viewpoint 1).

The Menie Estate lies to the north west of the turbines, approximately 4 km at its southern extents from the nearest turbine of the EOWDC. Views from the estate to the south east will include views of the turbines, which will be similar to those illustrated for Viewpoint 1 – Balmedie Beach. However, whilst at 4km the turbines will be a feature in views from within the estate, the turbines are not anticipated to result in any unacceptable effects upon residential amenity or the immediate setting of the Estate.

In terms of any perceived potential effects upon residential amenity within the Estate, findings at recent Public Inquiries indicate that any potentially significant (i.e. oppressive or overbearing views) are only likely to exist within 1 km of a proposed development.

## 6.0 Construction, Decommissioning, and Mitigation

### 6.1. Construction Phase

During the construction phase the effect of increased activity of construction vessels travelling to the site, the presence of jack-up barges and the progressive construction of the wind turbines will constitute the main effect, albeit temporary. During this phase there will be some minor effects on the surrounding seascape. There will also be minor effects on the associated visual receptors and general visual amenity, during construction operations, which although temporary may be more significant than during the operational stages due to the increase in activity and vessel movements.

The additional effects arising from marine vessel activity associated with the cable installation, cargo barges or transportation of materials, including land based or harbour construction activity, are also considered to be relatively insignificant as there is an existing baseline of marine activity in the area.

### 6.2. Decommissioning Phase

During the decommissioning phase, there will also be visual effects associated with the decommissioning activity. This will be similar to that of the construction phase and relatively insignificant due to the existing baseline of marine activity in the area. As the anticipated length of decommissioning will be slightly less than for the construction phase, these impacts will be more temporary than for the construction period. Following the decommissioning stage there would be no residual effects on the seascape, landscape or visual receptors.

### 6.3. Mitigation

The inherent characteristics of the proposed development suggest that there are very limited opportunities for incorporating mitigation measures for seascape, landscape and visual effects. However, beneficial mitigation is included in the layout of the turbines and the size of the proposed development. The scheme incorporates integral mitigation measures to minimise the risk of aesthetically visually uncomfortable turbine arrangements.

Also, careful consideration is given to the colour of the turbines in order to ensure that they remain moderately recessive visually, albeit within the parameters of ensuring sufficient visibility for vessels out at sea. There is a need to balance the objective of reducing their visibility with the existing standard requirements for ensuring visibility of structures out at sea. Thus, the need to paint the lower sections of the turbine columns yellow, in accordance with Trinity House Lighthouse Service requirements, is unavoidable.

## 7.0 Summary

### 7.1. Seascape Effects Summary

The scale and extent of the proposed EOWDC, located just over 2 km east off the coast, will inevitably affect the surrounding seascape and landscape environments. The primary source point of the effects will be the eleven turbines.

The turbine columns are necessarily large structures which will be introduced into the existing seascape character of the area which currently does not include any offshore wind structures.

Being sited out at sea, the turbines are to be placed within an immediate receiving environment that has both the scale and simplicity of form to, not only accommodate the development, but also to provide it with an appropriate contextual setting. Thus, although the turbines are in themselves of a substantial scale, visual aesthetics and the nature of the receiving environment, that includes an expansive horizon line, big skies, simple composition and linear form of views, and the general scale of the seascape, indicates that they are not inappropriate to offshore locations.

Whilst any direct physical effects arising from the principal offshore components will be limited for the majority of the seascape and landscape resource, there will be a range of indirect visual effects upon the various identified regional seascape units, landscape character areas, and designated coastal landscapes within the study area.

The proposed EOWDC site will be located within the Aberdeen Bay regional seascape unit which will thus, carry the greatest effect arising from the EOWDC development. The EOWDC will be a prominent feature within the seascape unit and will become a defining characteristic. However, the scale of the seascape unit and the presence of existing marine activity and prominent man made elements along the coast will assist with reducing the overall extent of the effect locally to Major to Major-Moderate in the north and Major-Moderate in the south of the seascape unit.

Given the distance between the proposed site and the coastline, the wind turbines will also be theoretically visible from the five other regional seascape units and will thus have a degree of indirect effect upon the visual attributes of their character. A combination of distance; the nature and scale of these units; and, the fact that effects are confined to visual influence only; will, however, assist with reducing the overall extent of effect to Major-Moderate to Moderate at Aberdeen Beach, no more than Moderate between Stonehaven to Girdle Ness and Collieston to Peterhead, with Negligible effects beyond.

The landscape character areas defined for the study area will also experience a range of effects on their visual characteristics. The most significant effects of Major-Moderate to Moderate will be upon the Perwinnes Open Farmland and Major-Moderate to Moderate to Moderate-Minor on the Formartine Lowlands which both lie adjacent to the coastline, and due west of the EOWDC, where views across the sea are a key characteristic. The more elevated inland character areas encompass far ranging and expansive views within which the EOWDC will be a noticeable element, but not dominant, and therefore will not result in any significant effects.

The EOWDC will have a Major to Negligible effect on the locally designated Area of Landscape Significance which lies along the coast from Balmedie to Longhaven, extending to, at its closest, 3 km from the nearest turbine. However, significant effects will reduce to Negligible the further north within this ALS and it is noted that there will be no effects on the ALS at Cruden Bay due to the surrounding topography.

## 7.2. Visual Effects Summary

The proposed eleven turbines have a maximum nacelle height of 120 m above LAT, with a maximum height to blade tip of 195 m. They will thus be seen, both individually and collectively, as large visual elements set within a simple open setting, comprised predominantly of sea, coastal edge and sky. As they are close to land, in the wider study area, where visible, they will be seen with or without the sea context rising above the predominantly undulating landscape. The turbines will also be seen; admittedly by a far fewer number of visual receptor groups, in views from the sea where they will be seen against a backdrop of either the Aberdeenshire deposition coastline with farmland behind or against the complex and dynamic coastline extending from Aberdeen city and Girdle Ness headland.

Inland, theoretical visibility is highest primarily to the north and north west of the site from within the more open undulating landscape. The city and its suburbs, combined with the more pronounced landform to the south and west, substantially limit views of the EOWDC from within these areas of Aberdeenshire. The visual effects arising from the offshore turbines will be greatest when seen in exposed views within an approximate 15 km radius of the site and extending north along the coast from those locations where there are clear views of the EOWDC. This is demonstrated by the assessment of Major and Major-Moderate effects upon many of the receptors at the representative viewpoints within this distance. However, as the viewpoint assessment also illustrates, there are not necessarily significant effects at close distances as views of the turbines can be easily obscured by local topography, vegetation, and buildings.

The visual effects will ease considerably with distance from the site. However, given the size of the turbines, they will still be a noticeable feature from the northern coastline at distances of up to 20 km as demonstrated by Viewpoint 18. At similar distances inland from the EOWDC the landform and components of the landscape will obscure or reduce the prominence of the turbines so that they will only be a minor element in the view. The significant number and diversity of built elements sited intermittently along the coastline near the EOWDC site will also help to absorb the visual profile of the proposed turbines within distant views.

The magnitude and extent of visual effects is also reduced as the proposed development will be seen to shift from being the main focus of view (such as at Viewpoint 1 at Balmedie Beach) to occupying a more peripheral or oblique position within the field of view from other viewpoints.

The visual impact on Aberdeen is limited by the densely built up nature of a city and only in the more open elevated areas are the turbines likely to be visible, but then with a busy and complex foreground which will help to moderate any significant effects.

Any visual effects on receptors within the sea will be temporary due to the generally transient nature of views available from marine vessels making passage. There will, however, be temporary Moderate effects on those receptors out at sea, such as recreational sailors, who have an interest and enjoyment in the surrounding seascape.

Upon evaluation, the visual effects arising from the proposed EOWDC development have not been found to be inappropriate. Although the presence of the turbines will fundamentally change the views from the nearby coastline, and where visibility permits, they will be a noticeable but minor feature in views for distances of up to approximately 20 km on land, the extent of visibility of the EOWDC is relatively constrained as evidenced by the ZTV plans. Offshore, the EOWDC will be a noticeable feature for a considerable distance

across the expansive open sea and will thus provide an identifiable focal point and visual reference within the maritime setting.

Upon consideration the overall visual effect is therefore considered to be Moderate with only localised and isolated areas of more significant effect.

Due to the individual turbine spacing, the potential height differences of the turbines as proposed will not be significantly noticeable even at the closest viewpoints.

### 7.3. Cumulative Effects Summary

The assessment of cumulative effects found that, due to the offshore location of the EOWDC, and that the majority of the many wind farms within Aberdeenshire are located beyond 20 km from the site, the combined and successional cumulative effects were mostly Minor or Negligible and no more than Moderate in significance for visual, seascape and landscape cumulative effects.

As a consequence of being the closest (11-19 km) to the EOWDC, the existing and consented Hill of Fiddes, Ardgrain, Tillymaud, Mains of Bogfechel turbines and the in-planning Woodlands Farm and Hill of Fechel are the most frequent existing or consented wind farms to be seen in theoretical views with the EOWDC. However, these wind farms, at approximately half the height of EOWDC and with only between 1 and 3 turbines, have a relatively confined visual envelope which reduces the cumulative effect.

Although there are no significant combined cumulative effects, the sequential cumulative effects of EOWDC are potentially greater given the large number of wind farms in the study area.

The sequential assessment of visibility from the main roads within the study area showed that the EOWDC would potentially extend the visibility of turbines further than currently exists along the A90 and A96 thus creating Moderate to Moderate-Minor sequential effects along these roads. Along the other key routes studied, the EOWDC will become part of an existing sequential effect and not significantly add to it.

The proposed Ocean Laboratory will potentially bring about greater cumulative effects with the EOWDC turbines than any of the other wind farms within the study area. Due to the depth of the platform structure, it will be a noticeable, but not incongruous, element in views from the coastline, and from elevated positions where the base of the turbines can be seen. As illustrated by the viewpoints beyond 10 km, the platform will become less of a discernable feature at further distances. Please note that the potential Ocean Laboratory will be subject to a separate planning application.



## 8.0 Appendices

### Appendix 1. Cumulative Wind Farm List

Cumulative Wind Farm Data 60 km radius study area			
Existing and Consented Wind Farms*	Hub Height	Blade Tip Height	Number of Turbines
Hill of Fiddes	62	102	3
Ardgrain	55.6	79.6	3
Mains of Bogfechel	53	79	1
Hill of Easterton	49	75	3
Skelmonae	55	77	4
Mid Hill	110	125	25
Hill of Tillymorgan	55.6	79.6	3
Haddo	55	93.5	2
St John's Well	55.6	79.6	3
Balquhindachy	49	75	3
Courtstone	56.5	93.5	1
Cowhill	55.6	79.6	1
Hill of Burns	55.6	79.6	1
Kildrummy	60	93	8
Little Byth	56	80	3
Old Maud	55.6	79.6	1
Denhill	55	93.5	1
Gordonstown Hill	59	100	5
Glens of Foudland	48	78	20
West Knock Farm	55.6	79.6	3
Newstead	56	80	1
Cairn Hill	46	76	3
Mains of Hatton	46	76	3
West Cockmuir	54.5	79.6	1
Clochnahill	50	81	4
Redbog	54.5	79.6	2
Hillhead of Auquhirie	57	92.5	3
St John's Hill	60	100	9
Cairnmore	50	81	4
Gairnieston	62.5	99.5	1
Mains of Drummie	47	80	7
Strath of Brydock	62.5	99.5	3

Cumulative Wind Farm Data 60 km radius study area			
Existing and Consented Wind Farms*	Hub Height	Blade Tip Height	Number of Turbines
Tullo	60	100	7
Toux Farm	50	74	1
Upper Wheedlemont Farm	55	81	2
Bruxiehill	49	80	1
House O'Hill	54.5	79.6	3
Droop Hill	64.5	100	2
Herscha Hill	49	80	1
Mickle Carewe	46	70	12
Clashindarroch	70	110	18
Clayfords Farm	65	100	1
Auchtygills Farm	65	100	1
Jacksbank (Drumlithie)	60	100	3
Hillhead of Auquhirie extension	57	92.5	3
Castle of Auchry	50	74	3
Greenhill Croft	64	99.5	2
Tillymaud (Udny Community)	56	80	1
*Data current on March 18 <sup>th</sup> 2011 to the best of our knowledge.			

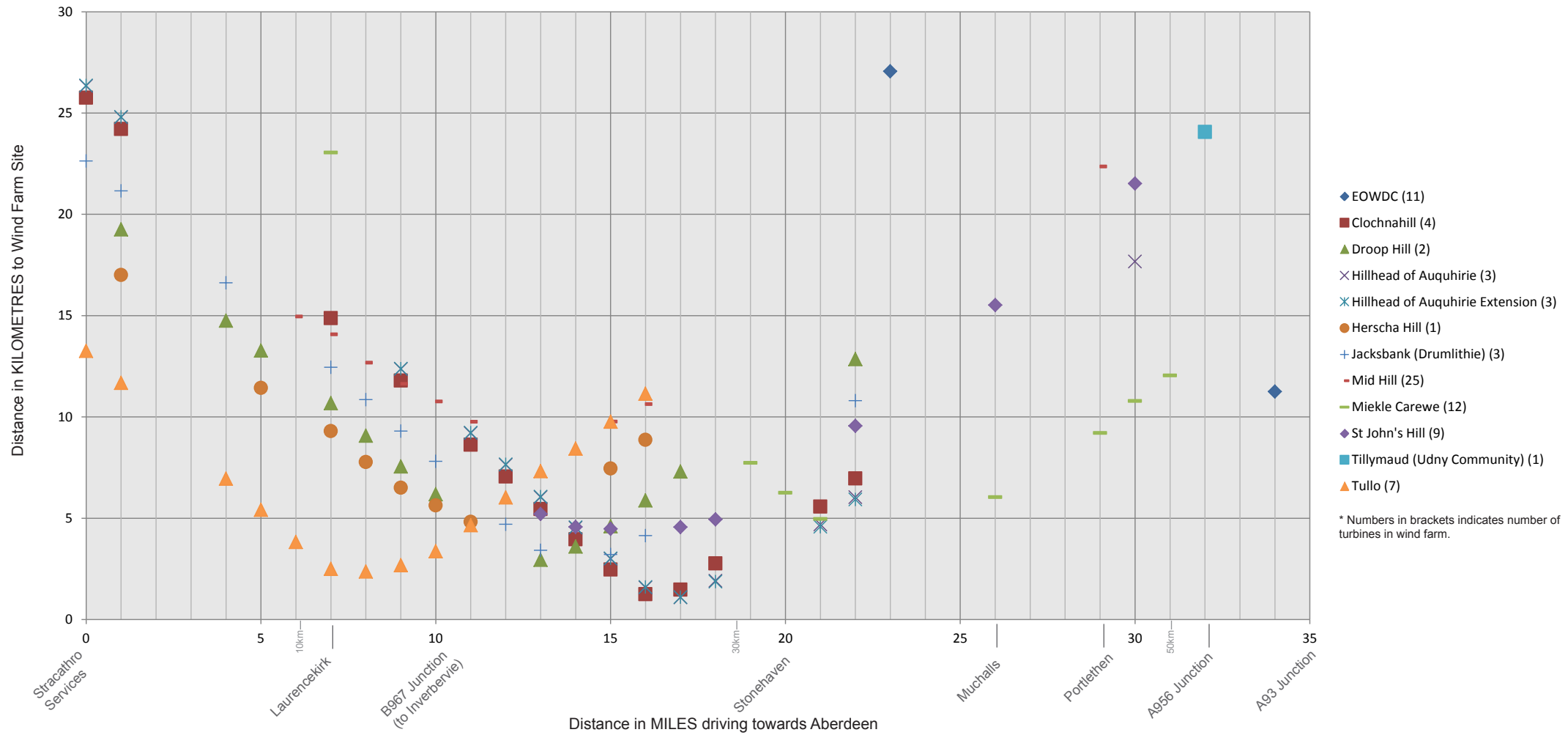
Cumulative Wind Farm Data 60 km radius study area			
In-Planning Wind Farms*	Hub Height	Blade Tip Height	Number of Turbines
Mosseye	38	55	1
Cairncake	55	80	2
Gellybrae and Royston	57	92.5	3
Oldwhat Mains	57	92.5	1
Mains of Balquhain	54	80	1
St Fergus Moss	60	100	3
Middleton of Rora	55	81	1
Gowanfold Farm	55.6	79.6	2
Hallmoss Farm	55.6	79.6	1
Hill of Fechel	55	79	1
St John's Wells Extension	55	79	3
Newton of Fortrie	64	98	3
Redbog Extension	54.5	79.6	2
Woodlands Farm	54	80	2
Bogenjohn Farm	64	99.5	3
Auchinderran Farm	55.6	79.6	3
Backhill of Yonderton, Turriff	64	99.5	2
Hillhead, Oldmeldrum	61	99.5	1
Hillhead, Bonnykelly	61	99.5	2
Blackhills, Cushnie	71	99.5	3
Cairnmore Extension	50	81	5
Skelmonae Extension	60	93.5	3
Peterhead Harbour	64	99.5	2
Hospital Wood, Auchterless	64	99.5	1
*Data current on March 18 <sup>th</sup> 2011 to the best of our knowledge.			

## **Appendix 2. Sequential Graphs and Plan**

# EOWDC - CUMULATIVE SEQUENTIAL ROAD ANALYSIS GRAPHS

## EXISTING AND CONSENTED WIND FARMS

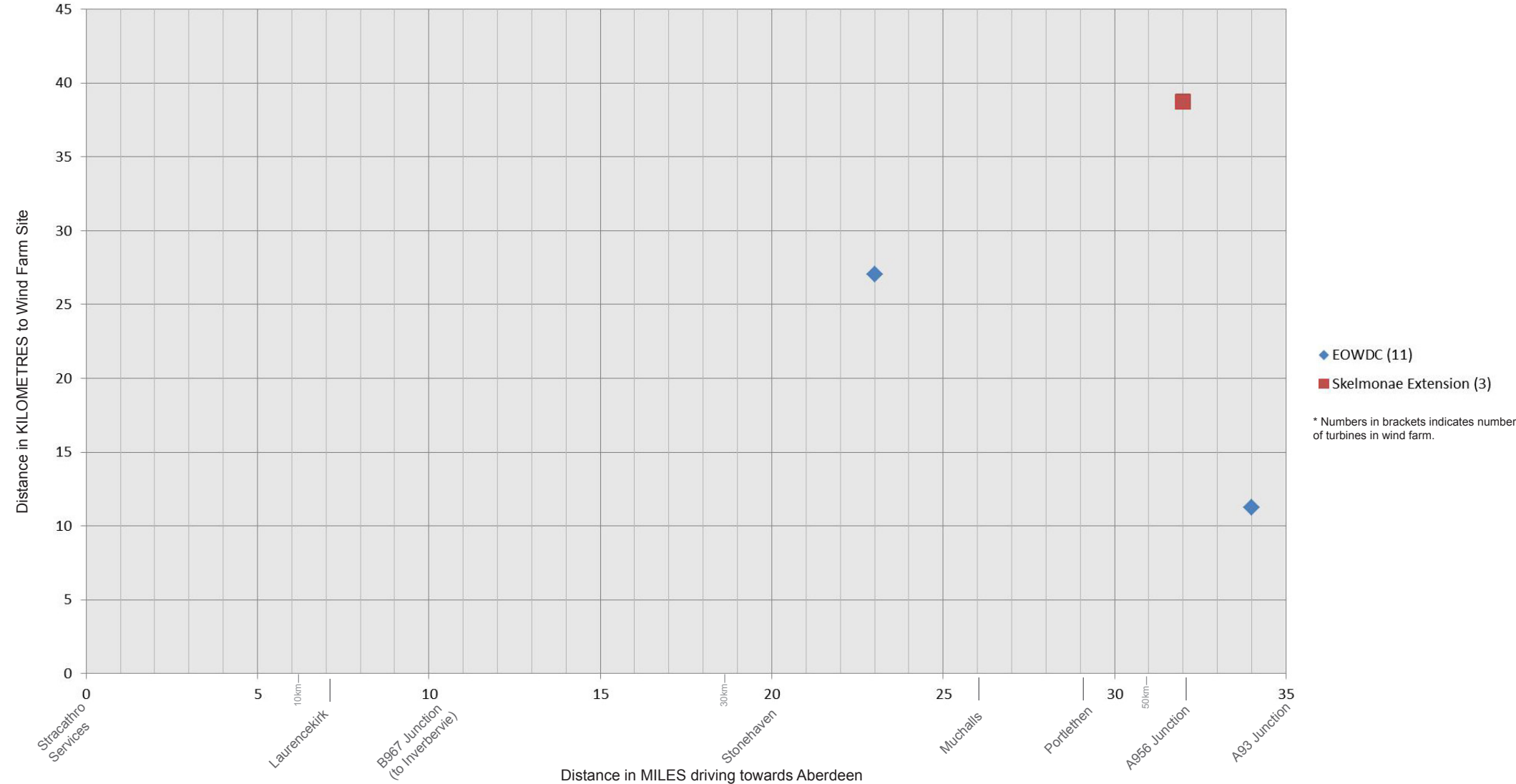
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EOWDC - CUMULATIVE SEQUENTIAL ROAD ANALYSIS GRAPHS

IN-PLANNING WIND FARMS

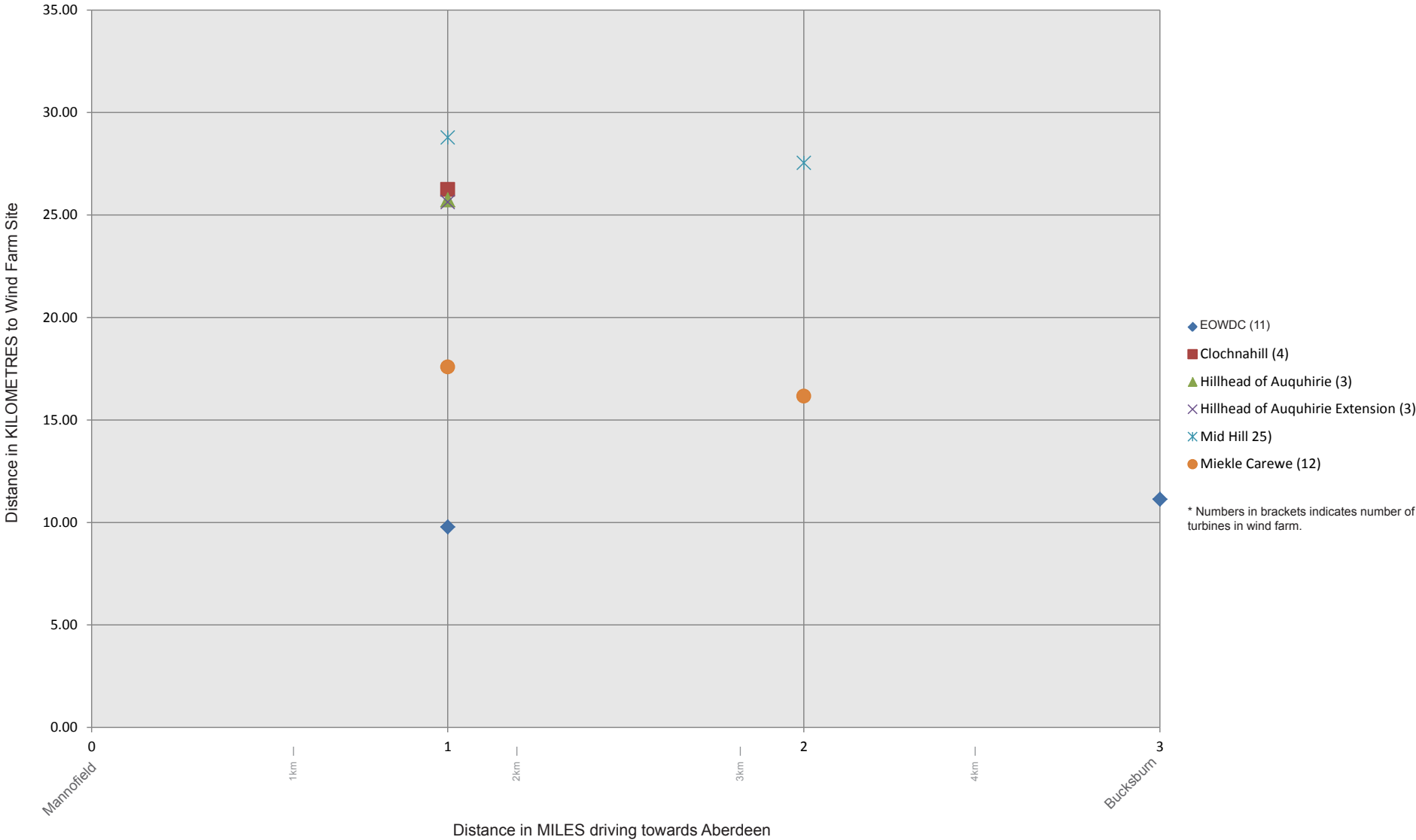
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EOWDC - CUMULATIVE SEQUENTIAL ROAD ANALYSIS GRAPHS

EXISTING AND CONSENTED WIND FARMS

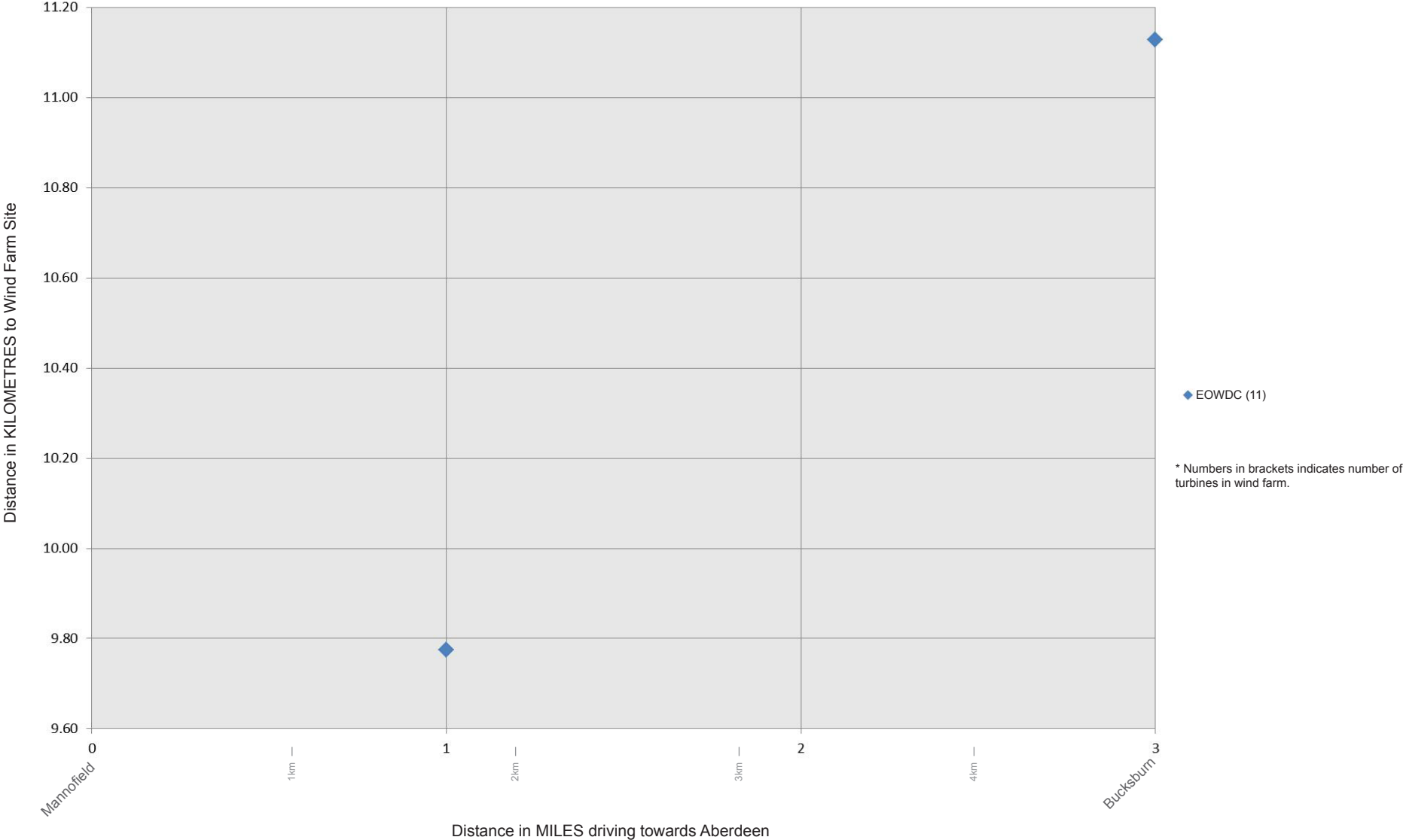
A90  
Aberdeen  
Trunk Road



EOWDC - CUMULATIVE SEQUENTIAL ROAD ANALYSIS GRAPHS

IN-PLANNING WIND FARMS

A90  
Aberdeen  
Trunk Road

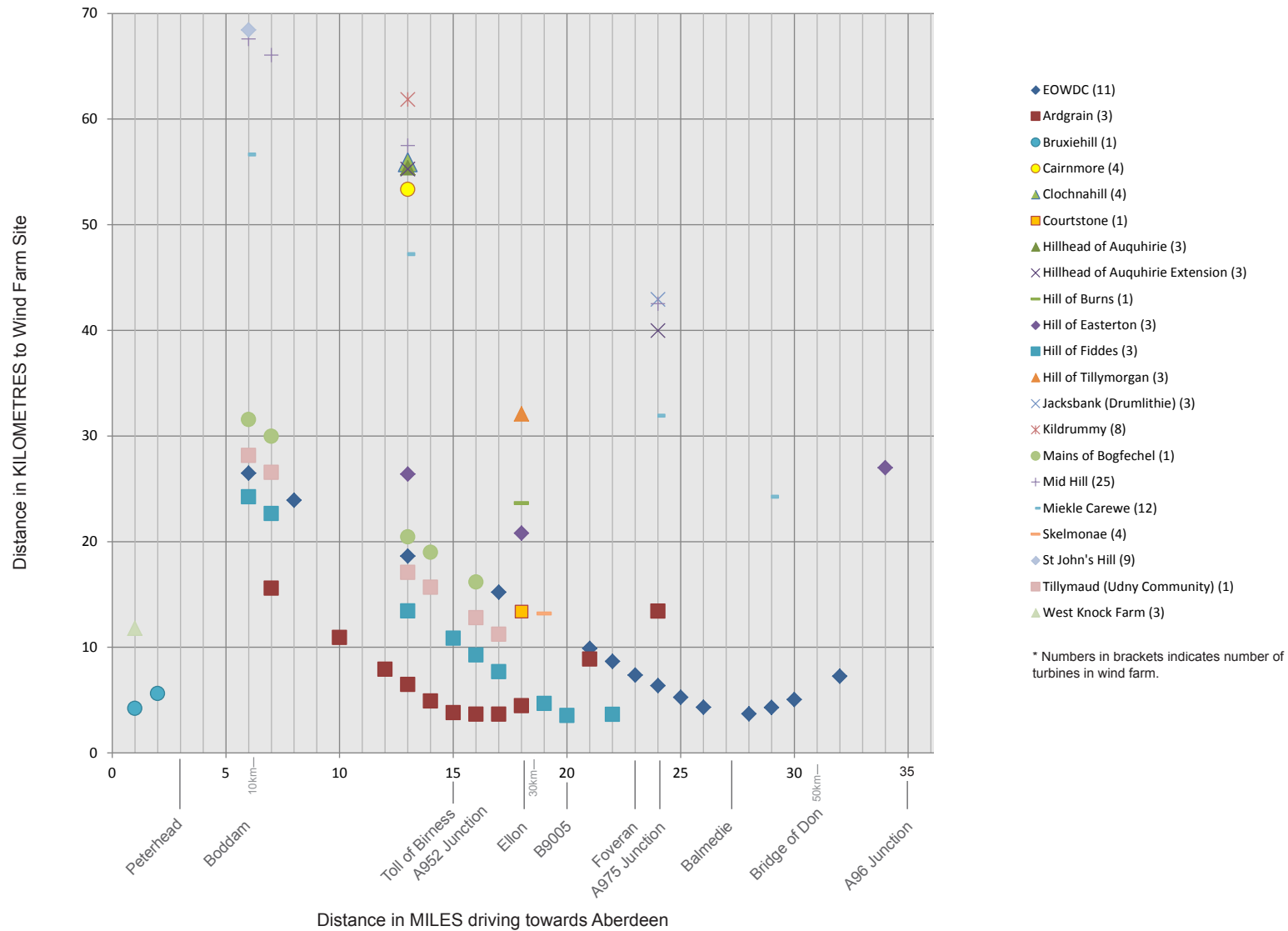




# EOWDC - CUMULATIVE SEQUENTIAL ROAD ANALYSIS GRAPHS

## EXISTING AND CONSENTED WIND FARMS

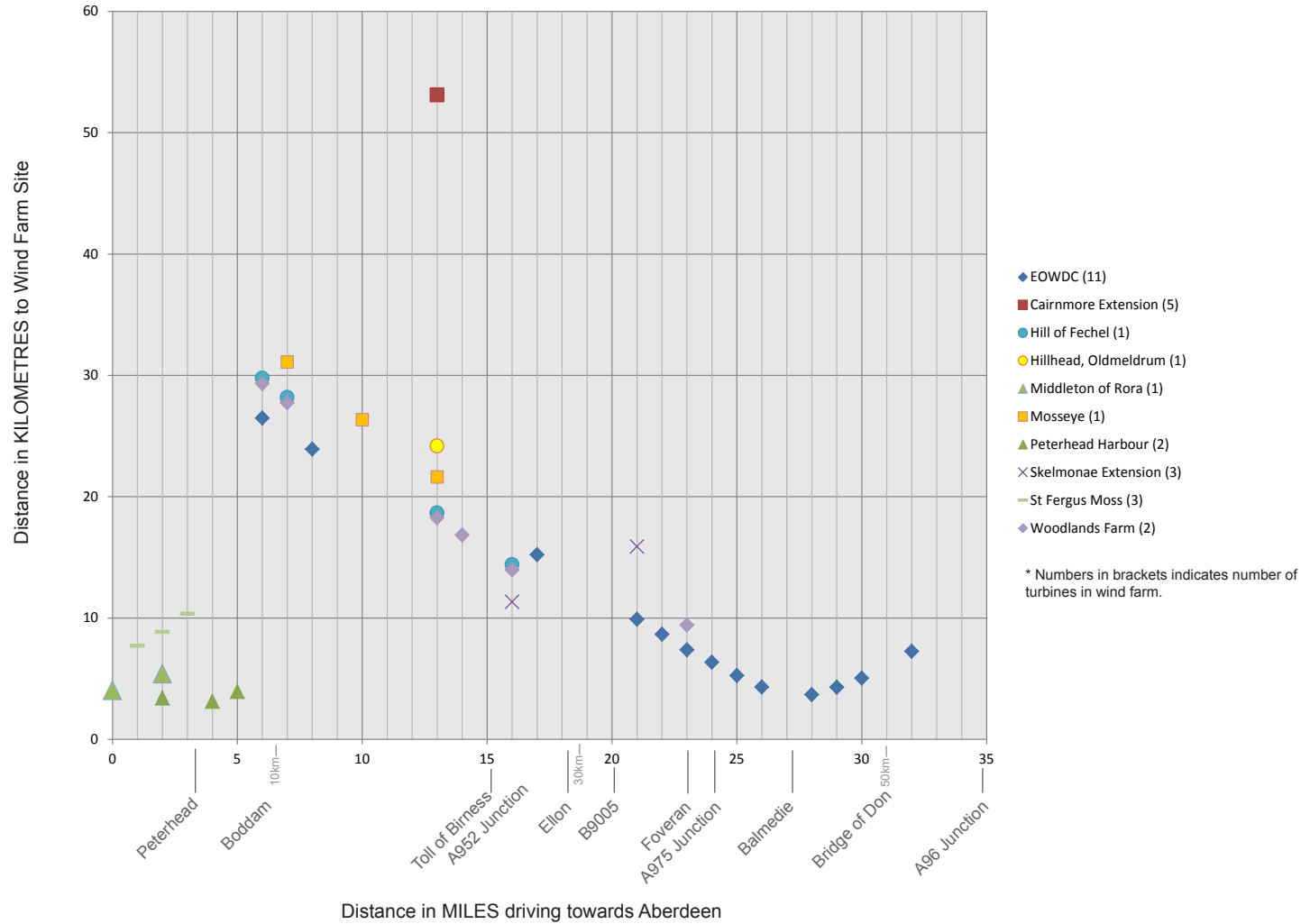
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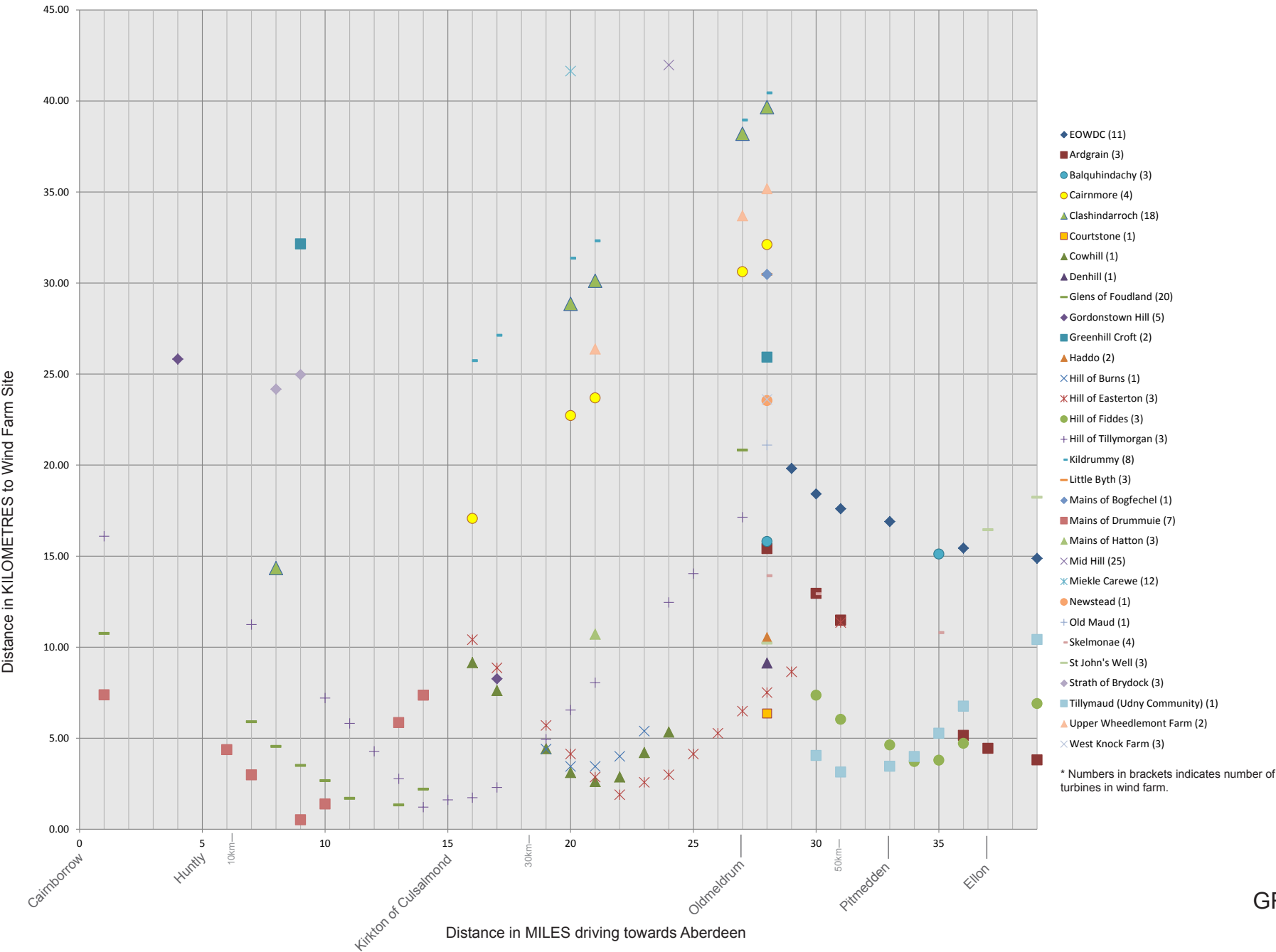
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A90N

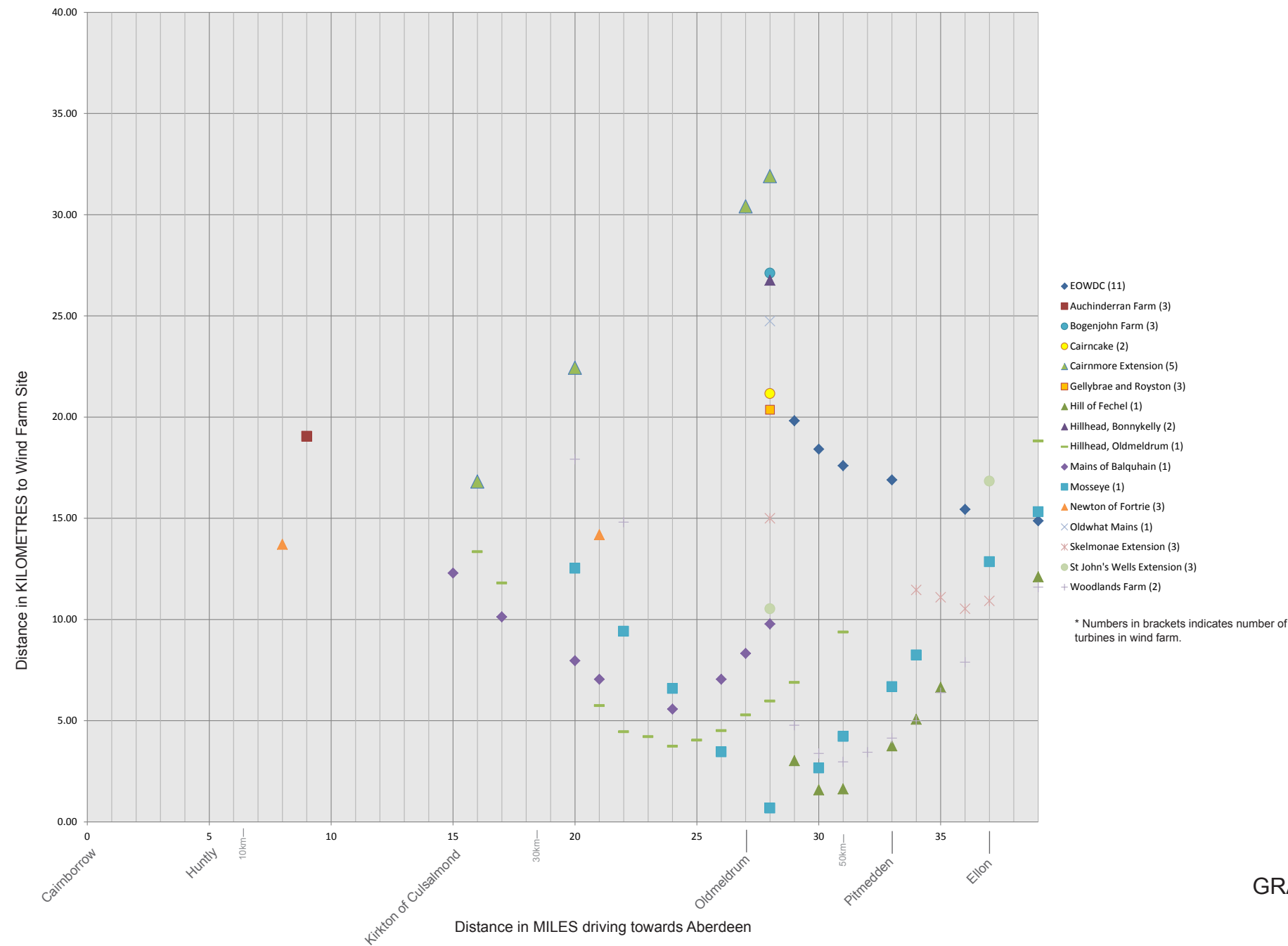
## IN-PLANNING WIND FARMS



EXISTING AND CONSENTED WIND FARMS



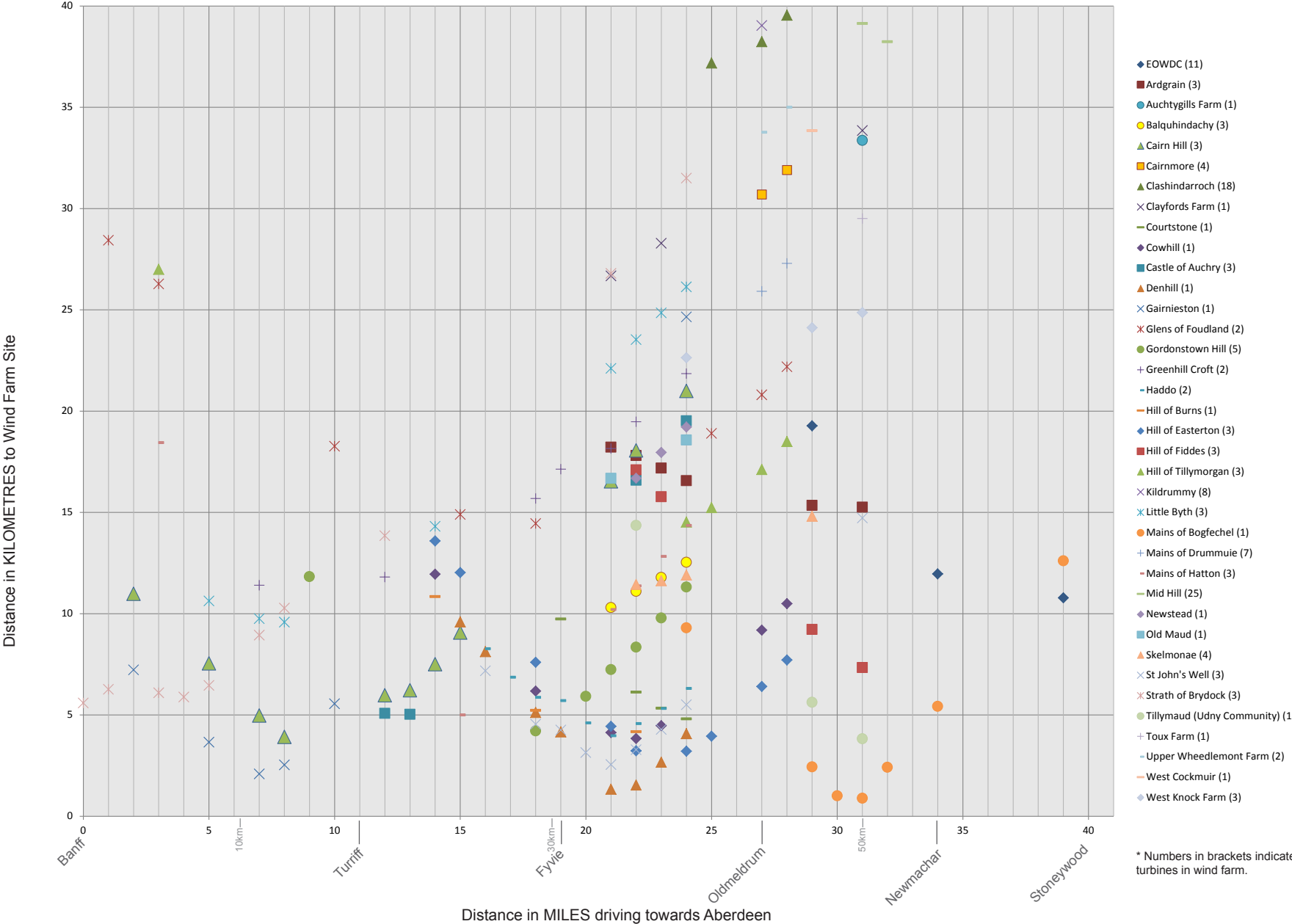
IN-PLANNING WIND FARMS



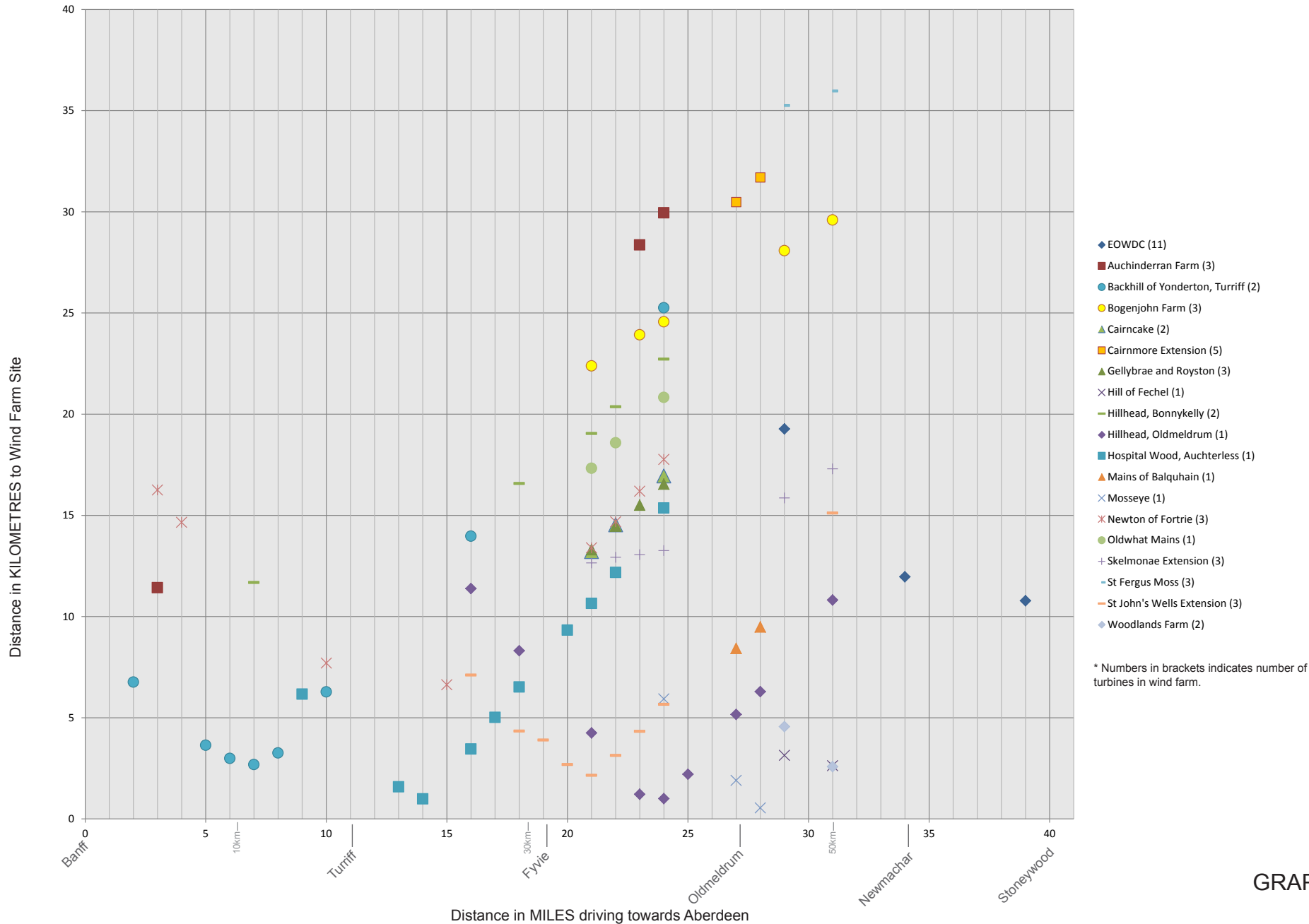
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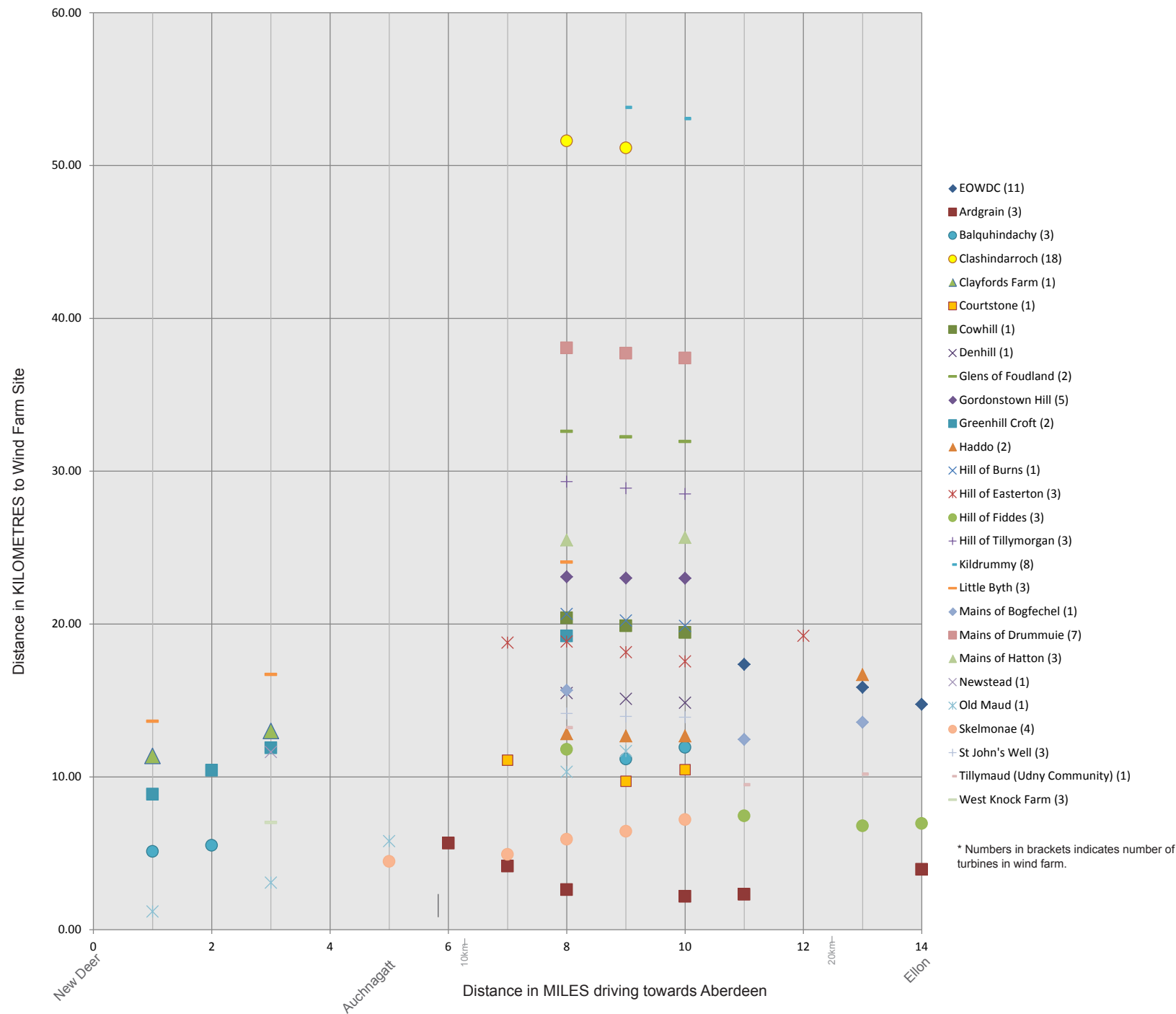
EXISTING AND CONSENTED WIND FARMS



IN-PLANNING WIND FARMS

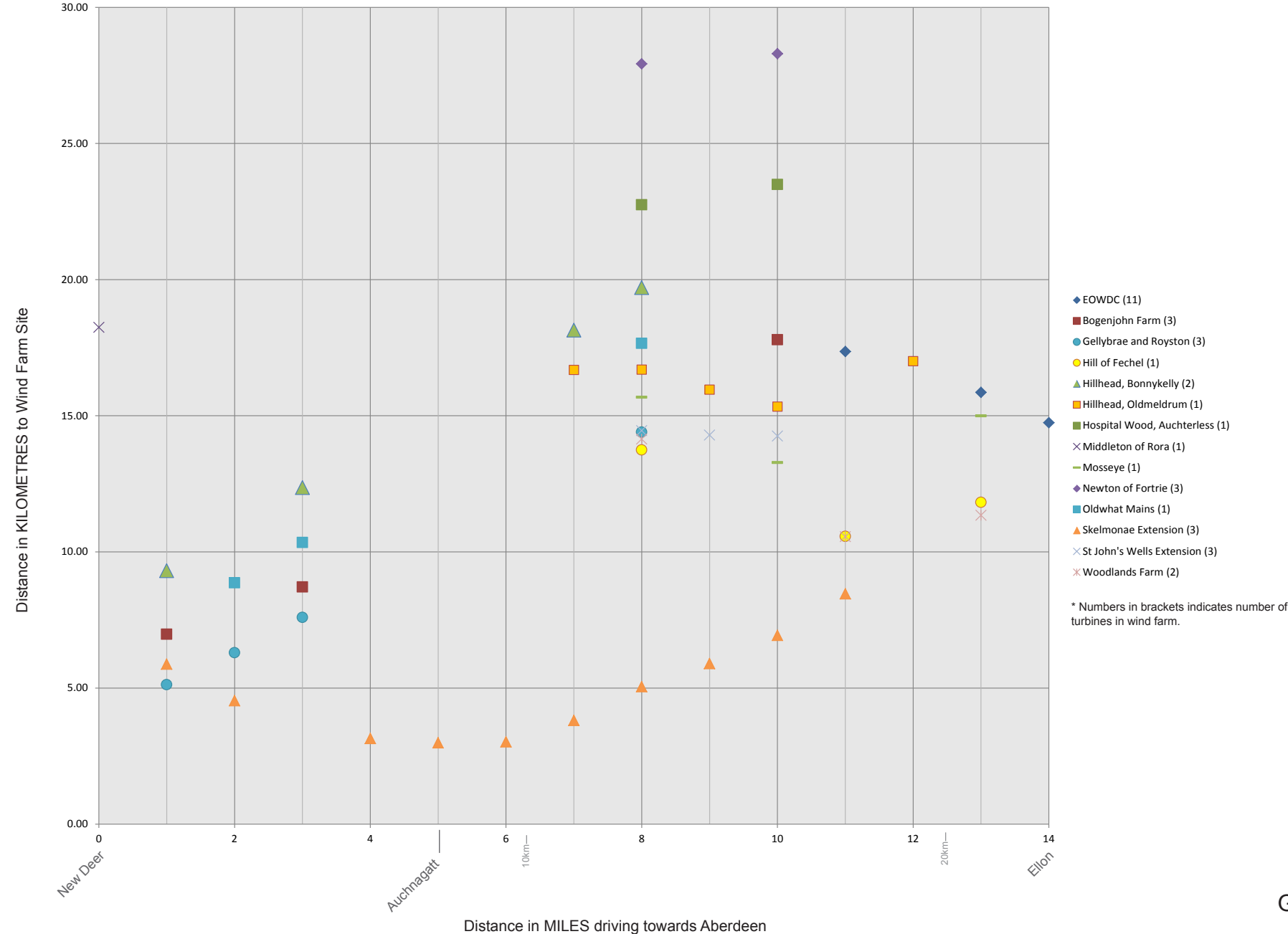


EXISTING AND CONSENTED WIND FARMS



GRAPH 11

IN-PLANNING WIND FARMS

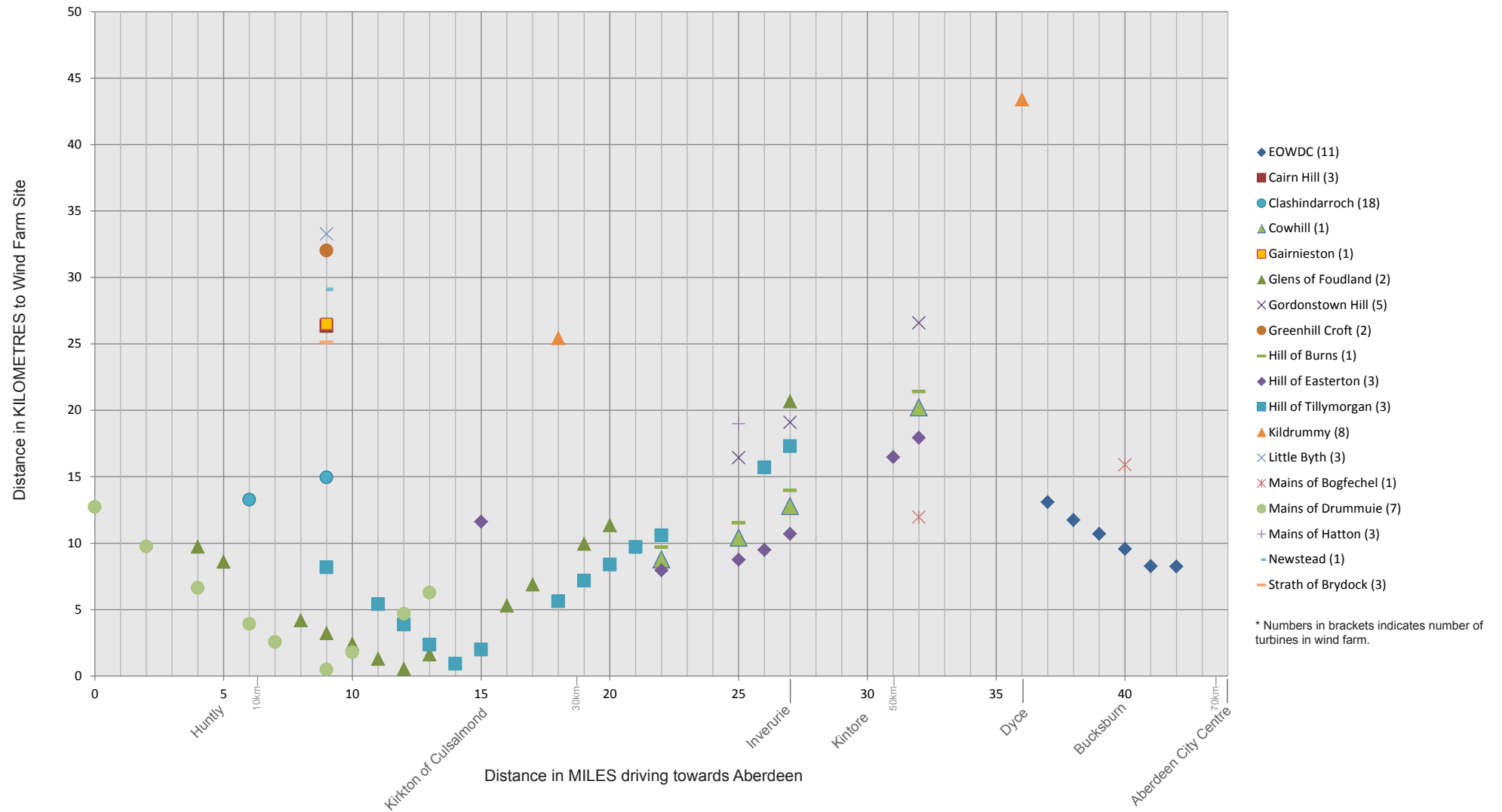




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## EXISTING AND CONSENTED WIND FARMS

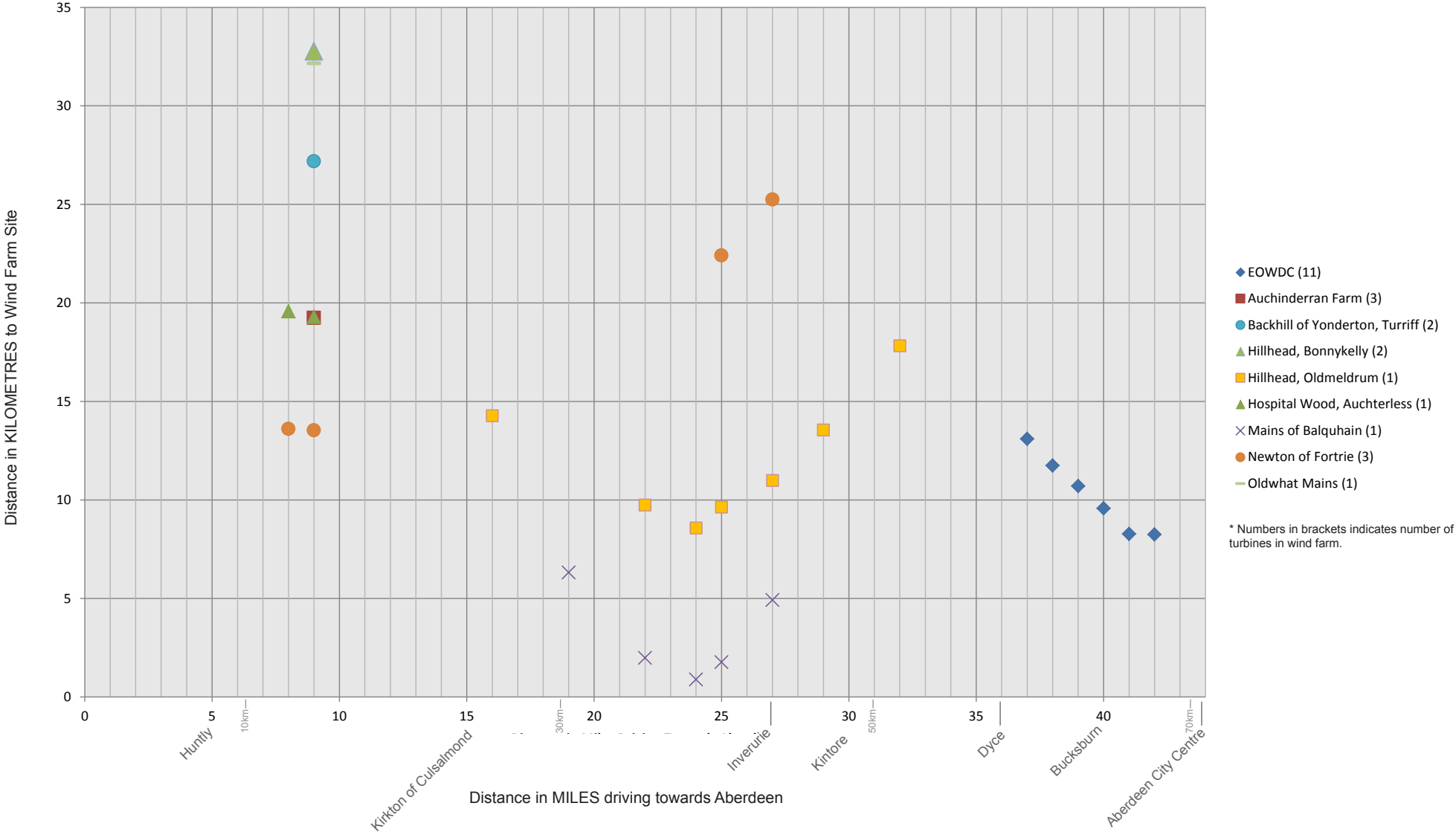
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IN-PLANNING WIND FARMS

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