

Chapter 5

Updated Cumulative Landscape Assessment for the Logiealmond Wind Farm Proposal

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5 UPDATED CUMULATIVE LANDSCAPE AND VISUAL ASSESSMENT

5.1 Introduction

- 1 This presents an updated assessment of the potential cumulative landscape and visual effects of the proposed Logiealmond Wind Farm when considered in the context of other operational, consented and proposed wind farm developments taking account of changes to the baseline since the original Logiealmond Environmental Statement submitted in July 2007. These effects are assessed within an area which extends to 30 km radius from the outer turbines of the proposed Logiealmond Wind Farm.
- 2 Cumulative landscape and visual effects can arise in three reasonably distinct ways:
 - There are the potential effects associated with an extension to an existing development, or the positioning of a new development such that it would give rise to an extended and/or intensified impression of the original wind farm in the landscape as seen from fixed locations;
 - Secondly through an increase in the number of wind farm developments visible from fixed viewpoints, from which more than one wind farm would now be seen in different parts of the landscape;
 - Thirdly, through recurrent images of wind farms encountered when moving through a landscape, relating to the potential effects experienced by road and rail users in addition to the views experienced from established walking routes.
- 3 Consideration has also been given to the potential cumulative effects arising from the Logiealmond proposal in the context of the proposed Beaulieu Denny Transmission Line, as described in Section 1.7 of this assessment.

5.2 Methodology

5.2.1 General Approach

- 4 The Cumulative Landscape and Visual Assessment is organised in the following sections:
 - Methodology – a brief outline of general methodology, with reference to established guidance;
 - Scope of Assessment – outlining the study area, projects for assessment, selection of receptors for assessment and sources of information;
 - Cumulative Landscape and Visual Effects - which considers the potential overall cumulative effects assuming all projects where applications have been submitted are consented and constructed;
 - Conclusions
- 5 The assessment is undertaken with reference to figures showing: the Location of Wind Farms within a 60km radius (CLVIA-01); Landscape Designations (CLVIA-02); Regional Landscape Character (CLVIA-03); Cumulative Zone of Theoretical Visibility (ZTV) diagrams and Cumulative Visualisations for 14 viewpoints (All presented in Volume 2).

- 6 This Cumulative Landscape and Visual Impact Assessment (CLVIA) has been based on the following best practice guidance:
- Guidelines for Landscape and Visual Assessment (Landscape Institute and Institute of Environmental Management and Assessment 2002);
 - Landscape Character Assessment: Guidance for England and Scotland (The Countryside Agency and Scottish Natural Heritage 2002).
- 7 It also takes account of advice within the following documents:
- SNH Guidance: Cumulative Effect of Wind farms, Version 2, Revised 13.04.05 (Scottish Natural Heritage, 2005);
 - A Guide to Assessing the Cumulative Effects of Wind Energy Development ETSU Report W/14/00538/REP (2000);
 - Visual Representation of Wind farms Good Practice Guidance prepared for Scottish Natural Heritage, Scottish Renewables Forum and Scottish Society of Directors of Planning (2006).
- 8 The approach adopted by this assessment relates particularly to the SNH Guidance: Cumulative Effect of Wind farms. This guidance establishes that the focus of a cumulative assessment should be the proposed wind farm, i.e. Logiealmond. The guidance states that:
- “The purpose of a Cumulative Landscape and Visual Impact Assessment ... is to describe, visually represent and assess the ways in which a proposed wind farm would have additional impacts when considered together with other existing, consented or proposed wind farms.”*
- 9 It is important to differentiate between the assessment of cumulative effects arising from the proposed development with projects that are built or constructed and can therefore be considered as part of a scenario with some certainty and those that are proposed about which there can be little certainty. Accordingly the viewpoint analysis distinguishes between firstly predicted cumulative effects arising from Logiealmond with operating/ consented projects and secondly the effects arising from Logiealmond with other proposed wind farms set out in section 1.3 of this assessment.

5.2.2 Assessing Cumulative Effects

5.2.2.1 Stage One: Baseline Assessment

- 10 The first stage of the assessment is to review the existing landscape and visual amenity of the Study Area. This establishes the baseline against which to review the magnitude and significance of cumulative landscape and visual effects. The baseline information includes landscape planning policy overview, designations, and description of landscape character types and potential visual receptors within the Study Area. The baseline landscape and visual assessment was presented within the Landscape and Visual Impact Assessment (LVIA) in Chapter 6 of the Logiealmond Wind Farm Environmental Statement and has not been repeated here, but is of equal relevance to this cumulative study.

5.2.2.2 Stage Two: Prediction of Cumulative Effects

- 11 The prediction of landscape and visual effects involves analysis from fixed positions and sequential views from route corridors passing through the Study Area.

Study of Fixed Positions

- 12 The analysis of potential cumulative effects from fixed positions involved consideration of the predicted visibility of other wind farm developments from 14 selected viewpoints used in the Logiealmond Wind Farm LVIA (EIA Chapter 6). These viewpoints were selected to be representative of potential cumulative effects experienced at different distances and directions from the site, as well as from the various landscape character types within the study area and include:

- Locations where simultaneous or combined visibility may occur. This is where two wind farms may be visible in the same field of view;
- Locations where successive or repetitive visibility occurs. This is where the observer may be able to see two wind farms from one viewpoint, but has to move his or her head to do so.

- 13 The viewpoint analysis includes description of the predicted view, analysis of magnitude of change and the effects on landscape character and visual amenity with reference to Cumulative Wireframe visualisations.

Sequential Visual Assessment

- 14 Sequential or recurring visual effects occur in the changing views from route corridors passing through the Study Area where movement results in changing visibility of other developments or different views of the same development. The study of such effects is considered with reference to field observations from travelling along the main routes within a 30 km Study Area. This involves consideration of the sequential effects experienced by road users and users of long distance footpaths (where applicable), and may also include the effects experienced by users of cycleways and other recreational routes. The assessment of potential sequential visual effects has been undertaken in respect of Logiealmond and each of the other built, consented and submitted developments forming part of this cumulative assessment.

Assessment of Cumulative Landscape Effects

- 15 Cumulative landscape effects consist of direct effects on the physical landscape and the landscape character of the site of the proposed developments, and indirect, perceived effects on the landscape character of other areas within the study area from which the developments would be visible. SNH Guidance: Cumulative Effect of Wind farms identifies landscape effects as follows;

“These affect the physical fabric or character of the landscape, or any special values attached to the landscape.

- *Cumulative effects on the physical fabric of the landscape arise when two or more developments affect landscape components such as woodland, dykes or hedgerows. Although this may not significantly affect the landscape character, the cumulative effect on these components may be significant – for example, where the last remnants*

of former shelterbelts are completely removed by two or more developments.

- *Cumulative effects on landscape character arise from two or more wind farm developments. Wind farms introduce new features into the landscape. In this way, they can so change the landscape character that they can create a different landscape character type, in a similar way to large scale afforestation. That change need not be adverse; some derelict or industrialised landscapes may be enhanced as a result of such a change in landscape character.”*

5.2.2.3 Stage Three: Assessment of Significance

- 16 The aim of the assessment is to identify, predict and evaluate potential cumulative effects arising from the proposed development in the context of other proposed wind energy developments in the study area. Wherever possible, identified effects are quantified, but the nature of landscape and visual assessment requires interpretation by professional judgement. In order to provide a level of consistency to the assessment, the prediction of magnitude and assessment of significance of the residual landscape and visual effects have been based on pre-defined criteria. The approach adopted in this study follows the assessment criteria set out in Section 6.3 of the LVIA presented in Chapter 6.
- 17 The parameters used to evaluate the cumulative magnitude of change at representative viewpoints includes consideration of:
- Number of proposed wind farms in the view;
 - Distance to each of the submitted wind farms;
 - Direction of the submitted wind farms relative to the viewpoint;
 - Horizontal angle of view occupied by each of the submitted developments;
 - Relative composition and scale of the submitted wind farms.
- 18 The viewpoint assessment makes reference to the number of quadrants in which wind farms may be visible, where a quadrant equates to 90 degrees of the total 360 degree view. The first quadrant is generally centred on Logiealmond Wind Farm. This has been used as a tool to assist in the evaluation of the extent to which wind farms would be visible in different directions from any viewpoint position.
- 19 The significance of any cumulative landscape and visual effect has been assessed in terms of major, moderate, minor or none. These categories have been based on combining viewpoint or landscape sensitivity and predicted magnitude of change to determine significance of effects. The following table identifies the relationship between these two factors in the assessment of significance.

Table 1 Correlation of Sensitivity and Magnitude of Effect to Determine Significance of Effects

| Landscape and Visual Sensitivity | Magnitude of Change | | | |
|----------------------------------|---------------------|------------------|------------------|------------------|
| | Substantial | Moderate | Slight | Negligible |
| High | Major | Major / Moderate | Moderate | Moderate / Minor |
| Medium | Major / Moderate | Moderate | Moderate / Minor | Minor |
| Low | Moderate | Moderate / Minor | Minor | Minor / none |
| Negligible | Moderate / Minor | Minor | Minor / none | None |

- 20 Where the potential landscape or visual effect has been classed as Major or Major/Moderate this is considered to be equivalent to likely significant effects referred to in the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 1999. The conclusion that some effects are significant must not be taken to imply that they are necessarily adverse or should warrant refusal. As with many aspects of landscape and visual assessment, significance of effect also needs to be qualified with respect to the scale over which it is experienced. An effect may be locally significant, or significant with respect to a small number of receptors, but not significant when judged in a wider context.

5.2.3 Illustrative Tools

5.2.3.1 Cumulative Visualisations and ZTV Analysis

- 21 The viewpoint analysis is illustrated with reference to cumulative wireframe visualisations. Map inserts including viewpoint location and indicative directions of view are included on each of the visualisations, however the directions shown on each map insert are indicative only and bearings have been included at the base of each wireframe for further clarification on the direction of each view. All photographs and wireframes have been prepared using the same technical methodology as the visualisations presented in the LVIA contained in Chapter 6 of the Logiealmond Wind Farm ES (July 2007).
- 22 The assessment has been undertaken with reference to computer generated Cumulative Zone of Theoretical Visibility (ZTV) plans, prepared in accordance with the methodology detailed in Section 6.4.1 of the ES. This includes ZTV plans illustrating the interaction of Logiealmond with the baseline operational and consented projects (CLVIA 04-05), individual ZTV plans for all operational and consented projects (CLVIA 06-15) and other proposed wind farms (CLVIA 16-18), overall composite ZTV plans (CLVIA 19-20); and Beaully Denny transmission line ZTV (CLVIA21) presented in Volume 2.

5.3 Scope of Assessment

5.3.1 Study Area

- 23 The study area for the cumulative landscape and visual assessment covers a 30 km radius from the outer edge of the proposed Logiealmond turbines as defined within the Landscape and Visual Assessment LVIA Chapter 6 of the Logiealmond ES. In accordance with SNH Guidance 'Cumulative effect of

wind farms' (2005) the assessment has considered all built, consented and submitted wind farm proposals within 60 km of the Logiealmond wind farm proposal, 'so that any potential cumulative effects towards the edge of a 30km zone of influence can be identified' (SNH, 2005).

5.3.2 Selection of Projects for Assessment

24 The criteria used to define projects to be included in the Cumulative Assessment follow the current SNH guidance on Cumulative Assessment of Wind Farms, and are as follows:

- Built wind farms within 60 km of Logiealmond Wind Farm
- Consented wind farms within 60 km of Logiealmond Wind Farm
- Proposed wind farms within 60 km of Logiealmond Wind Farm which have been submitted as planning applications.

25 The following table identifies the wind farm projects which have been considered by this assessment.

Table 2 Built, Consented and Submitted Wind Farm Projects within 60 km of Logiealmond Wind Farm included in the Cumulative Landscape and Visual Assessment

| Wind Farm | No. of Turbines | Hub Height (M) | Rotor Diameter (M) | Tip Height (M) | Distance From Logiealmond Wind Farm to Nearest Turbine (Km) |
|-----------------------------|-----------------|----------------|--------------------|----------------|---|
| Built Wind Farms | | | | | |
| Green Knowes | 18 | 60 | 70 | 95 | 27.9 |
| Drumderg | 16 | 67 | 80 | 107 | 30.3 |
| Braes of Doune | 36 | 60 | 80 | 100 | 32.5 |
| Michelin Tyre Factory | 2 | 85 | 73 | 121.5 | 48.5 |
| Consented Wind Farms | | | | | |
| Griffin | 68 | 77(67) | 94 | 124(114) | 6.2 |
| Lochelbank | 12 | 60 | 62 | 91 | 27.2 |
| Burnfoot Hill | 13 | 60 | 84 | 102 | 32.3 |
| Ark Hill | 8 | 49 | 58 | 78 | 40.5 |
| Little Raith | 9 | 60 | 80 | 100 | 48.0 |
| Earlsburn | 14 | 75 | 80 | 115 | 52.0 |
| Proposed Wind Farms | | | | | |
| Calliachar 3 | 14 | 60 | 80 | 100 | 11.0 |
| Greenscares | 4 | 60 | 80 | 100 | 23.5 |
| Gathercauld | 5 | 49 | 62 | 80 | 51.5 |

26 All Planning Authorities within the 60km study area were consulted to confirm which projects met these criteria. At the time of preparing this assessment these comprised the projects listed above.

5.3.3 Selection of Receptors for Assessment

27 A range of landscape and visual amenity receptors are located within a 30km radius Study Area. A baseline assessment has been carried out to identify these receptors, involving desk study and field work as detailed within Chapter 6 of the Environmental Statement.

5.3.3.1 Landscape Receptors

- 28 Cumulative landscape receptors are defined as all landscape character areas in the study area, from where the Logiealmond wind farm may be visible (refer to Figure CLVIA.03). The following landscape types are defined within the Landscape and Visual Assessment:
- Upper Highland Glens (1a)
 - Mid Highland Glens (1b)
 - Lower Highland Glens (1c)
 - Mid Highland Glens with Lochs (2b)
 - Lower Highland Glens with Lochs (2c)
 - Highland Summits and Plateau (3)
 - Highland Foothills (5)
 - Lowland Hills (6)
 - Lowland River Corridors (7)
 - Igneous Hills (8)
 - Broad Valley Lowlands (10)
- 29 Designated landscapes within the Study Area, where Logiealmond Wind Farm may be visible are also included as potential cumulative landscape receptors (Figure CLVIA.02).
- 30 It is considered that the main cumulative effects arising from the Logiealmond proposal would potentially occur at distances within a 15km radius of the site, based on the Logiealmond Wind Farm LVIA and in the context of the Study Area. The predicted visibility of wind farms is considered within each landscape character type. Distance is a key factor in determining the prominence (and magnitude of effect) of a wind farm in any particular landscape character type (i.e. the nearest wind farm would generally give rise to the greatest effects).

5.3.3.2 Visual Amenity Receptors

- 31 Visual amenity receptors within the Study Area include individuals and groups of people who may have views of two or more developments from a static position, and those who experience sequential visual effects from routes crossing the Study Area. In the context of the Logiealmond Wind Farm, the main groups of visual receptors from static locations are defined as follows (receptors not experiencing views of the proposed development are excluded from this list):
- Residents of the settlements within the Study Area from where Logiealmond Wind Farm and one or more other wind farms would be visible, including: Harrietfield, Chapelhill, Methven, Luncarty, Murthly, Stanley, Perth, Scone, Muthill, Auchterarder, Dunning, Blairgowrie, Coupar Angus and dispersed dwellings within Strathbraan, Glen Cochill, Glen Almond and the wider area.
- 32 Sequential visual effects are considered with reference to the following routes crossing the Study Area where views may be gained of the Logiealmond proposal and one or more other cumulative wind farm:

- A9(T) from Stirling to Inverness, passing Dunkeld and Pitlochry to the south east and northeast of the site;
- A822 from Crieff to Dunkeld passing through Sma' Glen and Strathbraan north and west of the proposed development;
- A826 from Aberfeldy to Cablea, passing through Glen Cochill;
- A827 from Killin to the A9(T) at Ballinluig, passing through Aberfeldy to the north;
- A923 from Dunkeld to Dundee passing through Blairgowrie;
- A984 Dunkeld to Coupar Angus;
- A93 Perth to Braemar, A924 Pitlochry to Bridge of Cally;
- A85 Perth to Lochearnhead passing through Crieff.

Railways

- Main Line from Perth to Inverness

Recreational Walking Routes

- Including views from footpaths leading towards the summit of hills in the local and wider area such as; King's Seat Birnam Hill, Ben Vrackie, Farragon Hill and Schiehallion.

5.3.4 Selection of Viewpoints for Cumulative Assessment

- 33 The viewpoints were selected to be representative of the potential cumulative effects experienced at different distances and directions from the site as well as the various landscape character types within the study area. The viewpoint selection process was informed by an analysis of the visibility of the wind farms under consideration from each of the viewpoints assessed by the LVIA presented in the submitted Logiealmond Wind Farm ES. Wind farms within 30 km of each viewpoint were identified and their visibility from the viewpoints analysed from preliminary wireframes prepared for all of these viewpoints, and ZTVs (Zones of Theoretical Visibility) for each wind farm considered. The final selection was made on the basis of this exercise, with viewpoints chosen to illustrate the visibility of Logiealmond in combination with other wind farms within the study area.
- 34 The following table presents a summary of the potential cumulative visibility from each of the LVIA assessment viewpoints, indicating the distance from the nearest visible turbine, within a 30 km radius of the viewpoint. Wind farms which are not visible from each of the viewpoints are indicated by a strikethrough of the figures for distance from the viewpoint. The selected cumulative assessment viewpoints are shown highlighted in grey, and their locations are shown in Figure CLVIA.01.

Table 3 Cumulative Visibility at Viewpoint Locations

| Viewpoints | | Logiealmond | Operational and Consented Wind Farms | | | | | | | | Proposed Wind Farms | | | |
|------------|---|-------------|--------------------------------------|------------|--------------|----------|---------------|----------------|----------|--------------|-----------------------|------------|-------------|-------------|
| | | | Griffin | Lochelbank | Green Knowes | Drumderg | Burnfoot Hill | Braes of Doune | Ark Hill | Little Raith | Michelin Tyre Factory | Calliachar | Greenscares | Gathercauld |
| 1 | View From A822 At Milton | 3.3 | X | X | X | X | X | X | X | X | X | X | X | X |
| 2 | View From A822 At Borelick | 3.7 | 3.1 | X | X | X | X | X | X | X | X | X | X | X |
| 3 | View From Amulree | 4.3 | X | X | X | X | X | X | X | X | X | X | X | X |
| 4 | View From Minor Road South East Of Glenshee | 4.5 | X | 21.8 | 25.5 | X | - | X | X | X | X | X | X | X |
| 5 | View From Harrietfield | 4.7 | X | 20.5 | 22.1 | X | 27.3 | - | X | X | X | X | X | X |
| 6 | View From Glen Cochill | 5.2 | 2.8 | X | X | X | X | X | X | X | X | X | X | X |
| 7 | View From Trochry Ballinlick Junction | 5.3 | 3.7 | X | X | X | X | X | X | X | X | X | - | X |
| 8 | View From Minor Road In Glen Almond | 5.9 | X | 19.7 | X | X | X | X | - | X | X | X | X | X |
| 9 | View From Minor Road In Strathbraan | 6.4 | X | X | X | X | X | X | X | X | X | X | - | X |
| 10 | View From King's Seat Birnam Hill | 8.6 | 7.1 | 27.3 | - | 20.2 | - | X | - | X | X | 17.9 | - | X |
| 11 | View From Minor Road Within Glen Quaich | 8.7 | X | X | X | X | X | X | X | X | X | 3.2 | X | X |

| Viewpoints | | Logiealmond | Operational and Consented Wind Farms | | | | | | | | | Proposed Wind Farms | | |
|------------|-------------------------------------|-------------|--------------------------------------|------------|--------------|----------|---------------|----------------|----------|--------------|-----------------------|---------------------|-------------|-------------|
| | | | Griffin | Lochelbank | Green Knowes | Drumderg | Burnfoot Hill | Braes of Doune | Ark Hill | Little Raith | Michelin Tyre Factory | Calliachar | Greenscares | Gathercauld |
| 12 | View From Bankfoot | 10.3 | X | 21.2 | X | X | X | X | X | X | X | X | X | X |
| 13 | View From A9(T) Near Bankfoot | 10.5 | X | 22.5 | - | 21.0 | - | X | 28.9 | X | X | X | X | X |
| 14 | View From A923 East Of Dunkeld | 11.0 | X | X | X | X | X | X | X | X | X | X | X | X |
| 15 | View From Knock Of Crieff | 13.7 | X | 25.9 | 18.4 | X | 19.4 | 18.3 | X | X | X | X | 10.7 | X |
| 16 | View From A9(T) South West Of Perth | 15.6 | 23.7 | 9.6 | X | - | X | X | X | X | X | X | X | X |
| 17 | View From Ben Chonzie | 17.0 | 18.8 | - | - | - | 29.8 | 19.6 | - | X | - | 13.6 | 17.1 | X |
| 18 | View From Drummond Castle | 19.3 | X | 27.4 | 16.7 | X | 15.4 | X | - | X | X | X | 4.5 | X |
| 19 | View From Kinnoull Hill | 20.6 | 26.6 | 9.0 | 21.9 | - | 30.2 | - | X | X | X | - | X | X |
| 20 | View From Farragon Hill | 21.8 | 12.6 | - | - | - | - | X | - | X | X | 11.5 | X | X |
| 21 | View From A823 Near Gleneagles | 22.1 | X | X | 7.1 | - | 8.7 | 18.5 | X | X | X | X | 10.2 | X |
| 22 | View From Ben Vrackie | 27.2 | 16.8 | - | - | 23.5 | - | X | - | X | X | 22.1 | X | X |
| 23 | View From Schiehallion | 29.6 | 22.3 | - | - | - | - | - | - | X | X | 17.3 | X | X |

5.3.4.1 Viewpoints

35 Fourteen viewpoints have been selected to illustrate the potential cumulative landscape and visual effects and the reasons for selection of the viewpoints may be summarised as follows:

- Viewpoint 2, View from A822 at Borelick
Representative of the potential cumulative effects within the Mid Highland Glen landscape type of Strathbraan, experienced by residents of dispersed dwellings and road users on the A822.
- Viewpoint 6, View from Glen Cochill
Representative of the potential sequential cumulative effects on the margins of the Highland Summits and Plateau landscape type, as experienced by road users travelling south on the A826.
- Viewpoint 7, View from Trochry, Ballinlick junction
Representative of the potential cumulative effects experienced by residents and road users travelling west on the A822 in the vicinity of Trochry.
- Viewpoint 10, View from King's Seat. Birnam Hill
Representative of the potential cumulative effects from the River Tay (Dunkeld) NSA located within the Highland Summits and Plateau landscape character type, as experienced by walkers in views from the summit of King's Seat, Birnam Hill.
- Viewpoint 11, View from minor road within Glen Quaich
Representative of the potential sequential cumulative effects by road users travelling towards Amulree on the minor road within Glen Quaich.
- Viewpoint 15, View from Knock of Crieff
Representative of the potential cumulative effects within the popular summit of Knock of Crieff, offering panoramic views south towards the Ochils with glimpsed views in a northerly direction.
- Viewpoint 16, View from A9(T) south west of Perth
Representative of the potential sequential cumulative effects within the Lowland Hills landscape character type of the Gask ridge, as experienced by users of the A9(T) travelling towards Perth.
- Viewpoint 17, View from Ben Chonzie
Representative of the potential cumulative effects in views from the summit of Ben Chonzie within the Highland Summits and Plateau landscape type, to the west of the site.
- Viewpoint 19, View from Kinnoull Hill
Representative of the potential cumulative effects experienced by walkers visiting the summit of Kinnoull Hill within the Igneous Hills landscape character type, east of Perth.

- Viewpoint 20, View from Farragon Hill
Representative of the potential cumulative effects experienced by walkers in views from the southern edge of the Loch Tummel NSA, within the Highland Summits and Plateau landscape type, to the north of the site.
- Viewpoint 21, View from A823 near Gleneagles
Representative of the potential sequential cumulative effects experienced by road users on the A823 adjoining the Gleneagles Gardens and Designed Landscape (GDL).
- Viewpoint 22, View from Ben Vrackie
Representative of the potential cumulative effects experienced by walkers from the summit of Ben Vrackie within the Highland Summits and Plateau landscape type, to the north east of the site.
- Viewpoint 23, View from Schiehallion
Representative of the potential cumulative effects experienced by walkers from the summit of Schiehallion within the Loch Rannoch and Glen Lyon NSA, Highland Summits and Plateau landscape character type.

5.3.5 Sources of Information

- 36 Data used in the cumulative assessment has been based on the following sources of information:
- Ark Hill Wind farm Environmental Statement, Renewable Energy Systems Limited (2003);
 - Braes of Doune Wind farm Environmental Statement, Airtricity (2002);
 - Burnfoot Wind Farm Environmental Statement, Wind Prospect LTD (2006);
 - Calliachar 3 Wind farm Environmental Statement, I&H Brown Ltd (2008);
 - Drumderg Wind farm Environmental Statement, Scottish and Southern Energy plc (2004);
 - Gathercauld Wind Farm Environmental Statement, EnergieKontor (2006);
 - Green Knowes Wind farm Environmental Statement, Scottish Power (2005);
 - Greenscares Wind Farm Environmental Statement, Eco 2 (2007);
 - Griffin Wind Farm Environmental Statement, Addendum, Green Power Ltd (2005);
 - Little Raith Wind Farm Environmental Statement, West Coast Energy (2005);
 - Lochelbank Wind farm Environmental Statement, National Wind Power (2006);
- 37 Further information on projects forming part of the cumulative assessment has been obtained through consultation with the local authorities and project developers.

5.4 Viewpoint Analysis

- 38 The following text provides an overview of the potential composite cumulative effects at the fourteen cumulative assessment viewpoints, assuming all other proposed projects where applications have been submitted are constructed.

5.4.1 Viewpoint 2, View from A822 at Borelick

- 39 The Cumulative Wireframe Visualisations 2a and 2c indicate that the following consented and proposed wind farms would be visible at this viewpoint.

| Wind farm | Distance (km) | Direction | Bearing to outer turbines | Horizontal angle | Turbines visible (Tips/Hubs) |
|-------------|---------------|-----------|---------------------------|------------------|------------------------------|
| Logiealmond | 3.6 | S | 166° to 199° | 33° | 7 / 6 |
| Griffin | 3.8 | NW | 311° to 324° | 13° | 35 / 24 |

- 40 Assuming the prior presence of the consented Griffin wind farm the magnitude of turbine presence would be substantial, with turbines seen to the north in oblique views from the A822. The addition of Logiealmond turbines would appear in a different sector of the view at a distance of 3.6km, in the opposite direction, would reinforce an already significant effect. The layout of the Logiealmond turbines forms a regular, even distribution, consistent with the Griffin proposal.

5.4.2 Viewpoint 6, View from A826 within Glen Cochill

- 41 The Cumulative Wireframe visualisations 6a and 6c indicate that the following proposed wind farms would be visible at this viewpoint.

| Wind farm | Distance (km) | Direction | Bearing to outer turbines | Horizontal angle | Turbines visible (Tips/Hubs) |
|-------------|---------------|-----------|---------------------------|------------------|------------------------------|
| Logiealmond | 5.2 | SE | 132° to 149° | 17° | 11 / 8 |
| Griffin | 2.8 | N | 001° to 046° | 45° | 35 / 24 |

- 42 Assuming the prior presence of the consented Griffin wind farm the magnitude of turbine presence experienced by road users travelling in both directions on the A826 would be substantial. The addition of the Logiealmond turbines, at a distance of 5.2km seen by road users travelling in a southerly direction would represent an increase in an already significant effect. The Logiealmond turbines would appear in a different sector of the view and appear as a smaller scale, more informal cluster when compared with Griffin.

5.4.3 Viewpoint 7, View from Trochry, Ballinlick junction

- 43 The Cumulative Wireframe visualisations 7a and 7b indicate that the following consented and proposed wind farms would be visible at this viewpoint.

| Wind farm | Distance (km) | Direction | Bearing to outer turbines | Horizontal angle | Turbines visible (Tips/Hubs) |
|-------------|---------------|-----------|---------------------------|------------------|------------------------------|
| Logiealmond | 5.4 | SW | 215° to 222° | 7° | 3 / 1 |
| Griffin | 3.7 | NW | 299° to 324° | 25° | 36 / 26 |

- 44 Assuming the prior presence of the consented Griffin wind farm the magnitude of turbine presence would be substantial, with up to 36 turbines visible at a distance of 3.7km, representing a significant effect on road users travelling to the west on the A822 and in residential amenity within Trochry. The addition of the Logiealmond proposal would lead to a negligible increase in an already significant effect, with no visibility of the Logiealmond proposal

predicted in views from this position, given the screening effect of intervening mixed woodland cover.

5.4.4 Viewpoint 10, View from King's Seat, Birnam Hill

- 45 The Cumulative Visualisations 10 c-e indicate that the following operational, consented and proposed wind farms would be visible at this viewpoint.

| Wind farm | Distance (km) | Direction | Bearing to outer turbines | Horizontal angle | Turbines visible (Tips/Hubs) |
|--------------|---------------|-----------|---------------------------|------------------|------------------------------|
| Logiealmond | 8.6 | SW | 228° to 245° | 17° | 14/14 |
| Griffin | 7.4 | W | 279° to 306° | 27° | 68/64 |
| Drumderg | 20.2 | NE | 041° to 046° | 5° | 16/16 |
| Calliachar 3 | 17.9 | W | 277° to 281° | 4° | 12/9 |

- 46 In considering the baseline cumulative effects related to operational and consented projects at King's Seat Birnam Hill (404m AOD) the presence of the consented Griffin scheme will lead to a significant cumulative effect, related primarily to the Griffin project in isolation given the distant nature of the other operational projects including Drumderg situated at a distance of 20.3km to the north east and Green Knowes located to the south at over 30km from the viewpoint. Assuming the prior presence of Griffin the additional presence of Logiealmond would reinforce an already significant effect, with the Logiealmond turbines seen in a different sector of the view and comprising a simple balanced composition, appropriate to the scale of the existing landform, following a similar grain of topography to the Griffin proposal.
- 47 The Calliachar 3 proposal would occupy a narrow portion of the view within a horizontal angle of 4 degrees at a distance in excess of 17.9km with the majority of turbines screened by topography, as shown in Cumulative Wireframe 10d. The Calliachar proposal would appear in a similar sector of the view to the Griffin scheme and relate well to each other reflecting the similar approach to layout design. Assuming the prior presence of Griffin and Calliachar the additional presence of Logiealmond would reinforce an already significant effect, as described above.

5.4.5 Viewpoint 11, View from minor road within Glen Quaich

- 48 The Cumulative Wireframe visualisations 11c and 11d indicate that the following proposed wind farms would be visible at this position.

| Wind farm | Distance (km) | Direction | Bearing to outer turbines | Horizontal angle | Turbines visible (Tips/Hubs) |
|-------------|---------------|-----------|---------------------------|------------------|------------------------------|
| Logiealmond | 8.7 | E | 100° to 111° | 11° | 7/3 |

- 49 No operational or consented wind farms would be visible from this position.
- 50 The amended Calliachar 3 proposal eliminates potential visibility of the Calliachar turbines within this section of Glen Quaich. Accordingly the cumulative effects arising from the addition of the Logiealmond wind farm would relate to the appeal site seen in isolation.

5.4.6 Viewpoint 15, View from Knock of Crieff

- 51 The Cumulative Wireframe visualisations 15a, 15b & 15c indicate that the following operational, consented and proposed wind farms would be visible at this viewpoint.

| Wind farm | Distance (km) | Direction | Bearing to outer turbines | Horizontal angle | Turbines visible (Tips/Hubs) |
|----------------|---------------|-----------|---------------------------|------------------|------------------------------|
| Logiealmond | 13.7 | NE | 031° to 037° | 6° | 5/2 |
| Braes of Doune | 18.3 | SW | 225° to 234° | 9° | 17/8 |
| Green Knowes | 18.4 | SE | 143° to 147° | 4° | 18/18 |
| Burnfoot Hill | 19.4 | S | 168° to 171° | 3° | 13/13 |
| Lochelbank | 25.9 | SE | 109° to 111° | 2° | 12/12 |
| Greenscares | 10.7 | SW | 209° to 215° | 6° | 4/4 |

- 52 The operational wind farms of Braes of Doune and Green Knowes are visible on the skyline in views to the south at a distance in excess of 18km and partly screened by local tree cover on the upper slopes of the Knock of Crieff. The consented scheme of Burnfoot located in the Ochils will also be visible to the south east, at 19 km from the nearest turbine. In the context of the baseline operational and consented projects the additional effects arising from the Logiealmond proposal which would be well screened by tree cover and intervening topography would not represent a significant effect in views from Knock of Crieff.

- 53 The other proposed scheme of Greenscares would potentially be visible on the skyline in views to the south at a distance of 10.7km. Logiealmond lies in the opposite direction and given the limited nature of potential visibility, no significant cumulative effects are predicted.

5.4.7 Viewpoint 16, View from A9(T) south west of Perth

- 54 The Cumulative Visualisations 16b & 16c indicate that the following proposed wind farms would be visible at this viewpoint.

| Wind farm | Distance (km) | Direction | Bearing to outer turbines | Horizontal angle | Turbines visible (Tips/Hubs) |
|-------------|---------------|-----------|---------------------------|------------------|------------------------------|
| Logiealmond | 15.5 | NW | 320° to 328° | 8° | 13/13 |
| Griffin | 23.7 | NW | 330° to 331° | 2° | 8/4 |
| Lochelbank | 9.5 | SE | 137° to 139° | 2° | 4/0 |

- 55 Assuming the prior presence of the consented Griffin project the magnitude of turbine presence would be slight, given the nature of limited visibility at over 23km from the viewpoint, with views in the opposite direction towards Lochelbank obscured by forestry. Green Knowes is not visible at this location. The Logiealmond proposal would be seen on the skyline in views to the north, at over 15km and would not represent a significant cumulative effect.

5.4.8 Viewpoint 17, View from Ben Chonzie

- 56 The Cumulative Visualisations 17b & 17c indicate that the following operational, consented and proposed wind farms would be visible at this viewpoint.

| Wind farm | Distance (km) | Direction | Bearing to outer turbines | Horizontal angle | Turbines visible (Tips/Hubs) |
|----------------|---------------|-----------|---------------------------|------------------|------------------------------|
| Logiealmond | 17.0 | E | 072° to 080° | 8° | 14/14 |
| Griffin | 19.2 | NE | 045° to 056° | 11° | 44/27 |
| Braes of Doune | 19.6 | S | 190° to 197° | 7° | 23/16 |
| Burnfoot Hill | 29.8 | SE | 154° to 155° | 2° | 13/13 |
| Green Knowes | 30.4 | SE | 138° to 140° | 3° | 18/18 |
| Calliachar 3 | 13.6 | NE | 029° to 035° | 7° | 14/13 |
| Greenscares | 17.1 | S | 166° to 169° | 4° | 4/4 |

- 57 The baseline position comprises the operational wind farms of Braes of Doune and Green Knowes seen to the south at distances of 19.6km and 30km respectively in addition to the consented proposals of Griffin at 19.2km north east and Burnfoot Hill 29.8km to the south east. Assuming the prior presence of Griffin in views to the east, the magnitude of turbine presence would be moderate/minor. The addition of the Logiealmond turbines at a distance of over 17km to the east, partially screened and backgrounded against distant topography would not result in a significant cumulative effect.
- 58 Assuming the prior presence of the Calliachar 3 proposal in views to the east, the combined magnitude of turbine presence would be moderate. Given the separation distance in excess of 17km to the Logiealmond site the addition of this proposal would not represent a significant cumulative effect.

5.4.9 Viewpoint 19, View from Kinnoull Hill

- 59 The Cumulative Visualisation 19b indicates that the following wind farms would be visible at this position.

| Wind farm | Distance (km) | Direction | Bearing to outer turbines | Horizontal angle | Turbines visible (Tips/Hubs) |
|-------------|---------------|-----------|---------------------------|------------------|------------------------------|
| Logiealmond | 20.6 | NW | 300° to 304° | 4° | 14/14 |
| Griffin | 26.6 | NW | 312° to 322° | 10° | 54/25 |

- 60 Assuming the prior presence of the consented Griffin wind farm, located at a distance in excess of 26km in views to the north west, the magnitude of turbine presence would be slight and not significant. The addition of Logiealmond at a distance of 20km would not give rise to a significant cumulative effect.

5.4.10 Viewpoint 20, View from Farragon Hill

- 61 The Cumulative Visualisation 20b indicates that the following proposed wind farms would be visible at this viewpoint.

| Wind farm | Distance (km) | Direction | Bearing to outer turbines | Horizontal angle | Turbines visible (Tips/Hubs) |
|--------------|---------------|-----------|---------------------------|------------------|------------------------------|
| Logiealmond | 21.8 | SE | 148° to 154° | 6° | 14/14 |
| Griffin | 12.6 | SE | 129° to 148° | 19° | 64/60 |
| Calliachar 3 | 11.5 | S | 173° to 179° | 7° | 14/14 |

62 The view from the summit of Farragon Hill (783mAOD) is representative of the views experienced by hill walkers from high ground north of Strath Tay on the edge of the Loch Tummel NSA as illustrated in the Cumulative Wireframe 20b. The consented wind farm of Griffin 12.6km to the south east would give rise to a visually significant effect at this location. Assuming the prior presence of Griffin, the addition of Logiealmond would be seen beyond the western edge of the Griffin site appearing as a distant cluster on the far horizon, at over 21km from the nearest turbine, contributing to an existing significant effect, associated primarily with the Griffin proposal.

63 The Calliachar proposal would be seen in views to the south at a distance of 11km resulting in significant cumulative effects when considered in combination with the consented Griffin scheme. In this context the addition of Logiealmond would reinforce an existing cumulative effect, but at over 21km the effect would be slight.

5.4.11 Viewpoint 21, View from A823 near Gleneagles

64 The Cumulative Visualisations 21a-d indicate that the following operational, consented and proposed wind farms would be visible at this location.

| Wind farm | Distance (km) | Direction | Bearing to outer turbines | Horizontal angle | Turbines visible (Tips/Hubs) |
|----------------|---------------|-----------|---------------------------|------------------|------------------------------|
| Logiealmond | 22.1 | N | 005° to 012° | 8° | 9/14 |
| Braes of Doune | 18.4 | W | 262° to 269° | 7° | 24/17 |
| Green Knowes | 7.1 | SE | 128° to 136° | 8° | 8/2 |
| Burnfoot Hill | 8.7 | S | 184° to 191° | 149° | 8/3 |
| Greenscares | 10.2 | W | 276° to 278° | 3° | 4/4 |

65 The combined presence of the operational and consented projects of Braes of Doune, Green Knowes and Burnfoot Hill would be limited by the screening effect of topography and local tree cover. The combined magnitude of turbine presence is assessed as moderate, not significant and it is considered that the addition of Logiealmond seen in the opposite direction at over 22km would not result in a significant cumulative effect.

66 The focus of views is in an easterly direction and the combined presence with the other proposal of Greenscares at 10km to the west well screened at this location by intervening woodland is considered to be potentially significant. Assuming the prior presence of other proposals, the addition of Logiealmond at a distance in excess of 22km, seen in the opposite direction to the other existing, consented and proposed wind farms, would make a limited contribution to an existing cumulative effect.

5.4.12 Viewpoint 22, View from Ben Vrackie

- 67 The Cumulative Visualisations 22b-c indicate that the following consented and proposed wind farms would be visible at this viewpoint.

| Wind farm | Distance (km) | Direction | Bearing to outer turbines | Horizontal angle | Turbines visible (Tips/Hubs) |
|--------------|---------------|-----------|---------------------------|------------------|------------------------------|
| Logiealmond | 27.2 | S | 176° to 182° | 6° | 14/14 |
| Griffin | 16.7 | S | 174° to 192° | 18° | 68/58 |
| Drumderg | 23.5 | E | 106° to 111° | 5° | 16/16 |
| Calliachar 3 | 22.0 | SW | 204° to 208° | 5° | 14/14 |

- 68 The consented Griffin wind farm would be seen on the intermediate skyline in views to the south at a distance of 16km. Distant views are obtained in an easterly direction towards Drumderg situated in excess of 23km from the summit of Ben Vrackie. Given the separation distance in excess of 27km to the appeal proposal, the addition of the Logiealmond turbines would not result in significant cumulative effects in views from this position.
- 69 Assuming the prior presence of the Calliachar proposal the cumulative magnitude of turbine presence would be moderate and not significant. The addition of Logiealmond would not represent a significant effect.

5.4.13 Viewpoint 23, View from Schiehallion

- 70 The Cumulative Visualisation 23b indicates that the following proposed wind farms would be visible at this location.

| Wind farm | Distance (km) | Direction | Bearing to outer turbines | Horizontal angle | Turbines visible (Tips/Hubs) |
|--------------|---------------|-----------|---------------------------|------------------|------------------------------|
| Logiealmond | 29.6 | SE | 128° to 131° | 3° | 14/14 |
| Griffin | 22.3 | E | 110° to 120° | 10° | 68/64 |
| Calliachar 3 | 17.3 | SE | 129° to 133° | 4° | 14/14 |

- 71 The consented Griffin scheme would appear in views to the east at 22.3km seen backgrounded against distant topography, forming a reasonably balanced composition. The cumulative effect on visual amenity arising from the additional presence of Logiealmond would not represent a significant effect, given the separation distance of 29.6km to the Logiealmond site.
- 72 The revised Calliachar 3 proposal lies 17km to the south east at a distance of 17km and the combined presence with Griffin is considered to represent a moderate effect and not significant. In this context the addition of the Logiealmond wind farm proposal would not give rise to a significant cumulative landscape and visual effect.

5.5 Cumulative Effects on Landscape Receptors

- 73 The direct effects on the character of the landscape surrounding each of the operational and consented wind farms will result in areas where the turbines will become the defining element in local landscape character. Each wind farm would generate an area of 'wind farm landscape' where wind turbines will be the principal defining element of landscape character. As for

Logiealmond, this effect would extend for approximately 1km distance from the nearest turbine. A new landscape subtype 'Highland Summits and Plateau with Wind Turbines', where wind turbines would have a locally characterising influence on the landscape would be formed extending up to 2km south west, visually contained by the ridgeline of Meall nan Caorach (623m AOD) to Creag Lea (532m AOD); 3.5km to the east defined by the ridgeline of Creag Liath (426m AOD); and 2-3km to the north and south, defined by the valleys of Strathbraan to the north and Glen Almond to the south. Given the separation distance in excess of 27km between Logiealmond and the nearest operational projects at Lochelbank and Green Knowes, it is considered there is sufficient distance between the Logiealmond site and the other operational projects for there to be no conjoining of landscape sub-types, with no significant cumulative landscape effects.

- 74 The consented Griffin wind farm located 6.2km to the north would give rise to a wind farm landscape and landscape sub-type Highland Summits and Plateau with Wind Farm limited to the individual sphere of influence of the proposed development. Given the Logiealmond proposals separation distance in excess of 6km from Griffin and intervening topography of Strathbraan it is considered that there is sufficient separation distance for the two sites to co-exist without coalescence of landscape character at a local or regional scale.
- 75 The revised Calliachar 3 proposal lies 11km to the north west would give rise to a wind farm landscape and landscape sub-types Highland Summits and Plateau with Wind Farm limited to the individual sphere of influence of the proposed development. Given the intervening topography of Glen Cochill combined with forestry plantation and limited intervisibility within Glen Cochill it is considered there would be sufficient distance between the Griffin and Calliachar sites for there to be no conjoining of sub-types and that the two projects would not lead to the merging or loss of distinction between these adjoining areas. Given the Logiealmond proposals separation distances in excess of 11km from Calliachar and intervening topography of Strathbraan it is considered that there is sufficient separation distance for the three proposed sites to co-exist without coalescence of landscape character at a local or regional scale.
- 76 No significant cumulative landscape effects are predicted in relation to the other wind farm proposals of Greenscares and Gathercauld, given the separation distance in excess of 23km from Logiealmond to the other proposals.

5.6 Cumulative Effects on Visual Amenity Receptors

5.6.1 *Static Cumulative Effects*

Residents

- 77 Assuming the prior presence of the consented Griffin scheme significant cumulative effects may occur in views within a 9km radius of both projects. In many cases significant effects would arise from the effects of either scheme in isolation. The most significant effects would arise in Strathbraan.
- 78 A number of dispersed dwellings within Strathbraan may experience views of both Griffin and Logiealmond, seen in opposite directions: including Little Trochry, Newton of Ballinloan, Ballinloan Farm, Borelick and Tomnagarw,

with views from dwellings frequently partially or fully restricted by tree cover. The Logiealmond turbines would not be visible in views from dwellings within Trochry.

- 79 The only dwellings within Strathbraan where combined visibility of both Griffin and Calliachar may theoretically be obtained is in the views from two properties Tomgarrow and Balhomish at the eastern end of Strathbraan over 9km from Calliachar (visibility limited to 1-5 blade tips) and 4.3-5.7km from Griffin. The potential for cumulative effects within Strathbraan would relate primarily to the effects of the Logiealmond proposal combined with the Griffin project.
- 80 More distant cumulative effects in views from settlement to the east of the study area may be experienced from parts of Blairgowrie, Coupar Angus and settlement within the foothills of the Sidlaw Hills to the north east of Perth generally at distances over 20km from Griffin and 30km from the Calliachar site with no significant cumulative effects.
- 81 No significant cumulative effects on residential amenity are predicted in relation to the other wind farm proposals at distances in excess of 24km from Logiealmond.

5.6.2 Sequential Cumulative Effects

- 82 Sequential cumulative effects are experienced by people travelling through the study area. These include users of major and minor roads, railways, footpaths, bridleways and cycle routes.

5.6.2.1 Road Users

- 83 The existing and potential effects of wind farms on road users within the study area has been assessed with reference to the ZTV maps, viewpoint analysis and visual survey of the following key routes:
- 84 **A9(T):** Visual analysis indicates the potential for visibility of up to four operational or consented projects from sections of the A9(T), as illustrated on CLVIA 04. Travelling in a northerly direction oblique views are obtained towards the operational Braes of Doune wind farm seen to the west, from south of Greenloaning on the outer edge of the study area (CLVIA 11). This is followed by glimpsed views towards the Green Knowes project with potential visibility between Greenloaning and Auchterarder generally limited to 1-4 blade tips and frequently totally screened by intervening topography and local woodland cover (CLVIA 08), passing within 5km of the site at Auchterarder. To the north of Perth distant, intermittent views may be experienced towards Drumderg seen in views to the north east, at distances in excess of 19km. Ark Hill would theoretically be seen from a short section of the route in the vicinity of Bankfoot, with up to 6 blade tips at c.29km from the site. The potential visibility of Griffin would be limited as illustrated in CLVIA 06. Travelling in the opposite direction from Pitlochry towards Perth, no baseline operational or consented projects would be visible until south of the forestry at Muir of Thorne, with potential for intermittent visibility of Green Knowes, at distances in excess of 22km, to the north of Perth. Recurring intermittent views towards Green Knowes, Lochelbank, Burnfoot and Braes of Doune will be experienced south of Perth to the edge of the study area. The

- magnitude of turbine presence is assessed as moderate and not significant. Additional effects arising from the Logiealmond proposal would generally only be experienced by road users travelling in a northerly direction and would not give rise to significant cumulative effects.
- 85 In terms of other proposals, no views of Calliachar are predicted (CLVIA 16). Greenscares would be seen when travelling in both directions on the A9(T) between Dunblane and Perth, passing within 6.5km of the route in the vicinity of Greenloaning. Overall the potential cumulative effects arising from the addition of Logiealmond are not considered significant.
- 86 **A822:** The visibility analysis indicates it may be possible to view up to 4 existing or consented projects from a short section of the A822 south of Crieff, including potential visibility of Braes of Doune, Green Knowes, Burnfoot and Earlsburn. When travelling north from Greenloaning, oblique views may be experienced in a westerly direction towards Braes of Doune at a distance of 10.5km, at right angles to the direction of travel. The Green Knowes wind farm and consented Burnfoot scheme may be seen to the east, at a distance of 7.5km to Burnfoot and over 12km to Green Knowes. Continuing north of Crieff distant glimpsed views of Burnfoot and Green Knowes may occur between Crieff and Glen Almond. Continuing in a north easterly direction the consented Griffin wind farm will be visible on the skyline in views in a north easterly direction beyond Newton and approaching Amulree, with the potential for intermittent visibility in oblique views to the north over sections of the route within Strathbraan. The Logiealmond proposal would not be visible from the A822 until the route passes Amulree, approaching Milton with the potential for open views in a south easterly direction towards the appeal site seen on the skyline. Significant effects would be experienced in views from a section of the A822 within Strathbraan related to the effects of Logiealmond in its own right and combined with Griffin seen from intermittent sections of the route in views to the north, as illustrated with reference to the cumulative wireframe visualisations for viewpoints 2 and 7. No other operational or consented wind farm would be visible north of the B8063 junction to Dunkeld, except for the slight possibility of glimpsed views towards Drumderg from Strathbraan, screened by tree cover.
- 87 When travelling in a southerly direction from Dunkeld the Logiealmond proposal the potential effects would be the reverse of the route described above and beyond Strathbraan and cumulative visual effects would relate to the combined visibility of Braes of Doune, Burnfoot, Green Knowes and Earlsburn. The additional effects associated with Logiealmond would occur in the context of already significant effects associated with the consented Griffin wind farm, but this should be qualified given the limited nature of visibility of the Logiealmond proposal in views from the A822, illustrated in the cumulative visualisations for the ES LVIA viewpoints 2, 3 and 7.
- 88 In considering the potential for cumulative effects in the context of other proposals it should be noted that the potential for combined visibility of both Calliachar and Griffin would be limited to two short sections of the entire route between Crieff and Dunkeld. This includes a section approximately 700 m in length south of Corrymucklock at a distance of c.7km from Calliachar and 9km from Griffin, with a further glimpsed view towards both projects south of Amulree. The Calliachar project would not be visible in views from the A822 between Amulree and Dunkeld, with visibility of Griffin limited to short sections of the route to the south of the A826 junction at Milton, in the vicinity

of Borelick Farm and east of Trochry. The Greenscares proposal would be visible when travelling in a northerly direction on the A822 from Greenloaning towards Muthill in oblique views to the north and west, passing within 3.5km of the proposed turbines in the vicinity of Garrick. When travelling in a southerly direction on the A822 the four proposed turbines comprising the Greenscares proposal would be visible over intermittent sections of the route commencing south of Glen Almond, continuing south towards Greenloaning.

- 89 **A826:** The A826 forms part of the Perthshire National Tourist Route, between the A822 junction at Milton and Aberfeldy. Assuming the prior presence of the Griffin project, wind turbines would be experienced when travelling in both a northerly and southerly direction on the A826. Travelling in a southerly direction, significant cumulative effects would relate primarily to potential visibility of the Griffin project over a 4km section of the A826 between Milton and Aberfeldy, at a distance of 2-3km from the nearest turbine, as illustrated in the ZTV for the Griffin project (CLVIA06) and cumulative visualisation 6c. The Griffin project would have a significant effect but only for a short section in terms of the overall route between Milton and Aberfeldy comprising a total distance of 15km.
- 90 The Logiealmond proposal would only be seen in views experienced by road users travelling in a southerly direction from Aberfeldy towards the A822 at Milton. Initial views would be experienced as the route emerges from plantation woodland to the north of Scotston, with potential visibility of up to 14 turbines on the far horizon at a distance of 10km, with the separation distance reducing to 3km at the A822 junction. The proposed wind farm would become progressively less visible as the route descends towards Milton with forestry screening limiting visibility over the section 2km north of the Milton junction. The effects arising from the Logiealmond proposal would be to reinforce an existing significant effect as experienced by users of this route. Potential visibility of the site would be limited to a section of the route 5km in length within Glen Cochill where the Logiealmond turbines would be seen when travelling to the south in a different direction to the Griffin development.
- 91 Assuming the prior presence of the other proposals, there is the potential for glimpsed views towards Calliachar wind turbines when travelling in both a northerly and southerly direction on the A826. The ZTV for Calliachar shows the potential for combined visibility of Griffin and Calliachar over a 3km section of the route north of Scotston. The effects arising from the Logiealmond proposal would be to reinforce an existing significant effect as experienced by users of this route.
- 92 **A827:** The ZTV plan for the consented Griffin scheme (CLVIA14) indicates the potential for recurring images of this proposal in the views experienced by road users travelling in an easterly direction. The ZTV for Logiealmond indicates there would be no turbines visible from the A827 between Killin and Ballinluig and the addition of Logiealmond would give rise to no cumulative effects in views experienced from the A827.
- 93 Assuming the prior presence of the Calliachar 3 proposal recurring images would be experienced by motorists travelling in a westerly direction towards both Griffin and Calliachar. No cumulative effects would arise from the addition of Logiealmond.

- 94 **A923:** The route of the A923 is considered in terms of a journey from the eastern edge of the study area passing through Coupar Angus and Blairgowrie to Dunkeld. The ZTV analysis presented in CLVIA 04 illustrates that up to three operational/consented wind farms may be visible from sections of this route. When travelling in a westerly direction views of Drumderg may be experienced at 14-21km on the approach to Coupar Angus and west of the town (CLVIA 09). Distant views towards Griffin may be experienced from a section to the south east of Blairgowrie, over 23km from the site, with further intermittent visibility of 1-13 turbine blade tips west of Blairgowrie. The Logiealmond proposal may be visible over this section of the route, at over 25km to the west, with further sequential views of Logiealmond seen in isolation further to the west, but given the limited nature of potential views and distance in excess of 10km, the potential cumulative effects are not considered significant. No visibility of Logiealmond would be experienced by those travelling in an easterly direction and CLVIA 12 indicates the potential for intermittent visibility of the consented Ark Hill project, seen to the east at a distance of 12-30km.
- 95 The potential visibility of other proposals would be limited to Calliachar 3 and ZTV analysis indicates less than 5 blade tips may be visible at c.28km from the site, probably eliminated by intervening tree cover. The magnitude of turbine presence arising from the combined presence of consented projects and Griffin/ Calliachar would be moderate/minor and the addition of Logiealmond would not result in significant effects on the visual amenity of road users on the A923.
- 96 **A924:** The route of the A924 is considered in terms of a journey between Bridge of Cally and Pitlochry. ZTV analysis indicates the consented Griffin wind farm would be seen in views from a section of the A924 when travelling in a south westerly direction towards Pitlochry. Assuming the prior presence of Griffin at distances over 13.5km the magnitude of turbine presence would be moderate/minor and not significant. The cumulative effect arising from the additional presence of Logiealmond, located 23-26km to the south would not give rise to significant cumulative effects. The potential visibility of Calliachar 3 would be limited to distant views in excess of 20km and would not change the analysis set out above.
- 97 **A93:** The route of the A93 is considered in terms of a journey from Perth in a northerly direction to Blairgowrie and continuing north towards Braemar, beyond the study area. Travelling north from Perth, intermittent views of the Drumderg project are experienced over sections of the route between Perth and Blairgowrie at distances of 10km from the site. Closer range views with significant effects on the visual amenity of road users may occur beyond Blairgowrie to Bridge of Cally and in places within Glen Shee, passing within 3.5km of the nearest proposed turbine. Distant views towards the consented Ark Hill wind farm may occur on the A93 south of Blairgowrie, situated to the east, at a distance over 17km. In terms of other consented proposals the Griffin ZTV analysis (CLVIA 14) indicates the potential for intermittent views of up to 27 turbines, with views frequently filtered by local woodland, at distances over 19km. The ZTV visibility map for Logiealmond indicates potential visibility of up to 14 turbines over much of this route corridor, however field verification has indicated the intermittent nature of much of this visibility seen oblique to the direction of travel and frequently filtered by local woodland cover within Strath Tay. No significant cumulative effects are

predicted in views from the A93 in the context of the baseline situation. No other proposed schemes would be visible from this route corridor.

- 98 **A85:** Visual analysis indicates up to 4 operational or consented projects may be visible from the A85 route corridor, including Braes of Doune, Green Knowes, Lochelbank and Burnfoot, all located to the south. Green Knowes is the closest project located 16.5km south and would be visible in oblique views experienced by motorists travelling in both directions. Potential visibility of Braes of Doune and Burnfoot would be at distances in excess of 20km experienced primarily by motorists travelling in a westerly direction and in part filtered or obscured by woodland cover. The Logiealmond turbines would be seen at distances of 10-16km in oblique views to the north in the opposite direction to the other baseline projects, from a section of the route west of Perth.
- 99 The only other proposed scheme potentially visible in views from the A822 corridor is the Greenscares proposal as illustrated with reference to CLVIA 17. Potential visibility of Greenscares would be experienced primarily by road users travelling in a westerly direction from Perth to Crieff at distances of 30-10km from the site, with the potential for glimpsed views to the west of Crieff. In this context it is considered that the Logiealmond scheme would not lead to significant cumulative effects on the visual amenity of road users travelling on the A85.

5.6.2.2 Railway passengers

- 100 The main line railway from Perth to Inverness crosses the study area passing to the east of the Logiealmond site through Perth, Dunkeld, Pitlochry and Blair Atholl. When travelling in a northerly direction between Dunblane and Perth the operational wind farm of Braes of Doune may be seen in views to the west, with glimpsed views in the opposite direction towards the upper blade tips of Green Knowes and potentially parts of the consented Burnfoot scheme. North of Perth oblique views may be experienced towards Drumderg and Ark Hill in limited views to the east. The addition of Logiealmond would not give rise to significant cumulative effects in the context of baseline and other proposals within the study area, in the views experienced from the main line railway.

5.6.2.3 Recreational Resources

- 101 Cumulative effects on visual amenity would include views from summits in the local and wider area including views from the summits of King's Seat Birnam Hill, Ben Chonzie, Kinnoull Hill, Farragon Hill, Ben Vrackie and Schiehallion, as described in the detailed analysis for viewpoints 10, 17, 19, 20 and 23. The viewpoint analysis identifies the potential for the combined effects of the consented Griffin wind farm and Calliachar proposal to lead to significant effects in views from uplands to the north, including Beinn Eagagach and Farragon Hill, as illustrated in viewpoint 19. The additional effect of Logiealmond seen at distances in excess of 22km in views from this upland area would lead to a slight increase in an already significant effect.
- 102 At King's Seat Birnam Hill, the combined effects of Griffin and the Calliachar proposal would give rise to a significant cumulative effect related primarily to the Griffin project in isolation, given the narrow portion of the view occupied

by the Calliachar scheme, within a horizontal angle of 4 degrees at a distance in excess of 16km. The addition of Logiealmond would reinforce an already significant effect.

- 103 The viewpoint analysis has considered the potential cumulative effects in views from the summits of Schiehallion, Ben Chonzie and Ben Vrackie and concludes the addition of Logiealmond would not give rise to significant cumulative effects.
- 104 Significant cumulative effects related to combined visibility of Griffin and Calliachar may occur in views from the footpath passing through Glen Shee, where sequential visual effects would occur with close range views obtained towards the eastern edge of the Logiealmond project when following this route in a northerly or southerly direction, with views from north facing slopes towards Griffin and Calliachar.

5.7 Beaully Denny Transmission Line

- 105 The assessment has considered the potential effects related to the Proposed Beaully Denny Overhead Transmission line.
- 106 The proposed 400kV route extends across the study area from north to south passing west of Tummel Bridge, crossing Strath Tay to the west of Aberfeldy, continuing south to Glen Quaich passing through the proposed Calliachar site then crossing the A822 at Corrymuckloch and continuing south to the east of Crieff. The entire route of the proposed line within the study area follows the alignment of an existing 132kV overhead line which is to be dismantled and removed. The proposed line comprises towers with a nominal height of 50-55m compared to the nominal height of towers to be removed of c.30m.
- 107 Consideration of the Cumulative ZTV map (CLVIA 21) illustrating combined visibility of the Logiealmond wind farm and the proposed 400kV transmission line shows overlapping of the ZTVs within the uplands to the north west including summit of Schiehallion, hills and south facing slopes north of Strath Tay, parts of Strathbraan and hills to the south in the vicinity of the Logiealmond site. The area offering the potential for close range views in the context of the Logiealmond proposal lies adjoining the A822 in the vicinity of Milton and within the valley of Glen Quaich to the north west of Amulree.
- 108 The cumulative wireframe 11d, illustrates the potential for combined cumulative effects related to the Beaully Denny 400kV transmission line in views from the minor road within Glen Quaich. In this view the existing 132Kv transmission line to be dismantled and removed lies on the eastern side of the valley and will be replaced by the taller towers of the 400kV line with a nominal height of 50-55m located further to the east. Landscape character within Glen Quaich is already influenced by the presence of the existing power line, and it is considered that the additional height of the proposed Beaully Denny line would not lead to a significant effect in relation to the Logiealmond proposal. The magnitude of effects associated with the proposed line as experienced by road users on the A822 would be most notable at the point where the line crosses the A822 beyond Corrymuckloch at a point where the Logiealmond site would not be visible.

5.8 Summary and Conclusions

- 109 This updated assessment has considered changes in the planning status of projects to be considered as part of the CLVIA including the potential cumulative effects related to all operational, consented and proposed schemes within a 60km study area.
- 110 In terms of landscape effects the proposed Logiealmond scheme would lead to a localised wind farm landscape and associated landscape sub-type Highland Summits and Plateau with Wind Farm limited to the individual sphere of influence of the Logiealmond site and in the context of other operational, consented and proposed schemes would not lead to a blurring or loss of distinction between the Highland Summits and Plateau in the vicinity of the proposed site and the surrounding landscape character types. It is considered that there is sufficient separation distance for the three proposed sites of Griffin, Calliachar and Logiealmond to co-exist without coalescence of landscape character at a local or regional scale.
- 111 No significant cumulative effects are predicted within designated landscapes including Gardens and Designed Landscapes.
- 112 The assessment concludes that in the context of the baseline operational and consented projects, significant effects on visual amenity may occur in the context of the consented Griffin proposal limited to the views experienced by a number of dispersed dwellings within Strathbraan, in views by road users on the A822 and A826 and views from hill summits and footpaths in the local area including views from Kings Seat Birnam Hill and the footpath passing through Glen Shee. The other operational/consented wind farms lie at a distance in excess of 27km and addition of the Logiealmond wind farm proposal would not give rise to any significant cumulative effects on visual amenity.
- 113 The assessment concludes that the significant cumulative landscape and visual effects arising from the additional presence of Logiealmond assuming the prior presence of the consented Griffin scheme and the Calliachar 3 proposal would be limited in extent and in landscape and visual terms is considered to be acceptable. No other significant cumulative effects are predicted in relation to the other proposals forming part of this assessment.

5.9 References

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