

TCP/11/16(332)**Planning Application 14/00468/FLL – Erection of a wind turbine and ancillary infrastructure, Colliston Farm, Drunzie, Glenfarg, PH2 9PE**

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TCP/11/16(332)
Planning Application 14/00468/FLL – Erection of a wind turbine and ancillary infrastructure, Colliston Farm, Drunzie, Glenfarg, PH2 9PE

**PAPERS SUBMITTED
BY THE
APPLICANT**



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Applications cannot be validated until all necessary documentation has been submitted and the required fee has been paid.

Thank you for completing this application form:

ONLINE REFERENCE 000107549-001

The online ref number is the unique reference for your online form only. The Planning Authority will allocate an Application Number when your form is validated. Please quote this reference if you need to contact the Planning Authority about this application.

Applicant or Agent Details

Are you an applicant, or an agent? * (An agent is an architect, consultant or someone else acting on behalf of the applicant in connection with this application)

☐ Applicant ☒ Agent

Agent Details

Please enter Agent details

Company/Organisation:	Green Cat Renewables Ltd
Ref. Number:	
First Name: *	Graham
Last Name: *	Donnachie
Telephone Number: *	01314406155
Extension Number:	
Mobile Number:	
Fax Number:	
Email Address: *	graham@greencatrenewables.co.uk

You must enter a Building Name or Number, or both:*

Building Name:	Stobo House
Building Number:	
Address 1 (Street): *	Midlothian Innovation Centre
Address 2:	
Town/City: *	Roslin
Country: *	UK
Postcode: *	EH25 9RE

Is the applicant an individual or an organisation/corporate entity? *

☒ Individual ☐ Organisation/Corporate entity

Applicant Details

Please enter Applicant details

Title: *	<input type="text" value="Mr"/>
Other Title:	<input type="text"/>
First Name: *	<input type="text" value="Gavin"/>
Last Name: *	<input type="text" value="Baillie"/>
Company/Organisation:	<input type="text" value="D A Baillie and Sons"/>
Telephone Number:	<input type="text"/>
Extension Number:	<input type="text"/>
Mobile Number:	<input type="text"/>
Fax Number:	<input type="text"/>
Email Address:	<input type="text"/>

You must enter a Building Name or Number, or both:*

Building Name:	<input type="text" value="Colliston Farm"/>
Building Number:	<input type="text"/>
Address 1 (Street): *	<input type="text" value="Drunzie"/>
Address 2:	<input type="text"/>
Town/City: *	<input type="text" value="Glenfarg"/>
Country: *	<input type="text" value="Scotland"/>
Postcode: *	<input type="text" value="PH2 9PE"/>

Site Address Details

Planning Authority:	<input type="text" value="Perth and Kinross Council"/>
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Full postal address of the site (including postcode where available):

Address 1:	<input type="text" value="Colliston Farm"/>	Address 5:	<input type="text"/>
Address 2:	<input type="text" value="Drunzie"/>	Town/City/Settlement:	<input type="text" value="Perth"/>
Address 3:	<input type="text" value="Glenfarg"/>	Post Code:	<input type="text" value="PH2 9PE"/>
Address 4:	<input type="text"/>		

Please identify/describe the location of the site or sites.

Northing	<input type="text" value="708507"/>	Easting	<input type="text" value="313542"/>
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Description of the Proposal

Please provide a description of the proposal to which your review relates. The description should be the same as given in the application form, or as amended with the agreement of the planning authority: *
(Max 500 characters)

Erection of a single wind turbine of 46m to tip and ancillary infrastructure.

Type of Application

What type of application did you submit to the planning authority? *

- ☒ Application for planning permission (including householder application but excluding application to work minerals).
- ☐ Application for planning permission in principle.
- ☐ Further application.
- ☐ Application for approval of matters specified in conditions.

What does your review relate to? *

- ☒ Refusal Notice.
- ☐ Grant of permission with Conditions imposed.
- ☐ No decision reached within the prescribed period (two months after validation date or any agreed extension) – deemed refusal.

Statement of reasons for seeking review

You must state in full, why you are seeking a review of the planning authority's decision (or failure to make a decision). Your statement must set out all matters you consider require to be taken into account in determining your review. If necessary this can be provided as a separate document in the 'Supporting Documents' section: * (Max 500 characters)

Note: you are unlikely to have a further opportunity to add to your statement of appeal at a later date, so it is essential that you produce all of the information you want the decision-maker to take into account.

You should not however raise any new matter which was not before the planning authority at the time it decided your application (or at the time of expiry of the period of determination), unless you can demonstrate that the new matter could not have been raised before that time or that it not being raised before that time is a consequence of exceptional circumstances.

See attached 'Appeal Statement'.

Have you raised any matters which were not before the appointed officer at the time the determination on your application was made? *

☐ Yes ☒ No

Please provide a list of all supporting documents, materials and evidence which you wish to submit with your notice of review and intend to rely on in support of your review. You can attach these documents electronically later in the process: * (Max 500 characters)

Full list of productions provided within Appeal Statement.

Application Details

Please provide details of the application and decision.

What is the application reference number? *

14/00468/FLL

What date was the application submitted to the planning authority? *

13/03/14

What date was the decision issued by the planning authority? *

09/10/14

Review Procedure

The Local Review Body will decide on the procedure to be used to determine your review and may at any time during the review process require that further information or representations be made to enable them to determine the review. Further information may be required by one or a combination of procedures, such as: written submissions; the holding of one or more hearing sessions and/or inspecting the land which is the subject of the review case.

Can this review continue to a conclusion, in your opinion, based on a review of the relevant information provided by yourself and other parties only, without any further procedures? For example, written submission, hearing session, site inspection. *

☒ Yes ☐ No

In the event that the Local Review Body appointed to consider your application decides to inspect the site, in your opinion:

Can the site be clearly seen from a road or public land? *

☒ Yes ☐ No

Is it possible for the site to be accessed safely and without barriers to entry? *

☒ Yes ☐ No

Checklist - Application for Notice of Review

Please complete the following checklist to make sure you have provided all the necessary information in support of your appeal. Failure to submit all this information may result in your appeal being deemed invalid.

Have you provided the name and address of the applicant? *

☒ Yes ☐ No

Have you provided the date and reference number of the application which is the subject of this review? *

☒ Yes ☐ No

If you are the agent, acting on behalf of the applicant, have you provided details of your name and address and indicated whether any notice or correspondence required in connection with the review should be sent to you or the applicant? *

☒ Yes ☐ No ☐ N/A

Have you provided a statement setting out your reasons for requiring a review and by what procedure (or combination of procedures) you wish the review to be conducted? *

☒ Yes ☐ No

Note: You must state, in full, why you are seeking a review on your application. Your statement must set out all matters you consider require to be taken into account in determining your review. You may not have a further opportunity to add to your statement of review at a later date. It is therefore essential that you submit with your notice of review, all necessary information and evidence that you rely on and wish the Local Review Body to consider as part of your review.

Please attach a copy of all documents, material and evidence which you intend to rely on (e.g. plans and drawings) which are now the subject of this review *

☒ Yes ☐ No

Note: Where the review relates to a further application e.g. renewal of planning permission or modification, variation or removal of a planning condition or where it relates to an application for approval of matters specified in conditions, it is advisable to provide the application reference number, approved plans and decision notice (if any) from the earlier consent.

Declare - Notice of Review

I/We the applicant/agent certify that this is an application for review on the grounds stated.

Declaration Name: Graham Donnachie

Declaration Date: 18/12/2014

Submission Date: 18/12/2014



Green Cat Renewables

Colliston Farm Wind Turbine

Appeal Statement

D A Baillie and Sons

December 2014

Appeal Statement
Prepared for:
D A Baillie and Sons

Colliston Farm Wind Turbine

December 2014

Prepared By:
Green Cat Renewables Ltd.



Edinburgh Office
Stobo House
Midlothian Innovation Centre
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EH259RE

Tel: 0131 440 6155

Checked By: Glen Moon	Date: 11/12/2014
Approved By: Cameron Sutherland	Date: 16/12/2014

EXECUTIVE SUMMARY

This Statement has been prepared by Green Cat Renewables Ltd (The Agent) on behalf of D A Baillie and Sons (the Appellant) to support an Appeal against the refusal by Perth and Kinross Council of the planning application for the erection of a single 46m to tip wind turbine and associated infrastructure at Colliston Farm, Drunzie.

The application was determined under delegated powers by Perth and Kinross Council and as such this appeal is to the Local Review Body of Perth and Kinross Council.

Perth and Kinross Council gave the following reasons to support the refusal of this application (**B04**):

- 1. 'As the proposed scale of the turbine would not be absorbed by the existing landscape framework surrounding the site, which in turn will lead to the turbine becoming a dominant feature within the landscape which would have a significant adverse impact on the visual amenity and landscape character of the area (in isolation and in combination with other wind energy proposals), the proposal is contrary to Policy 6 of the Tay Plan 2012 and Policies ER1A and ER6 of the adopted Local Development Plan 2014, all of which seek to ensure that all new developments do not have a significant impact on existing landscapes; and'*
- 2. 'An approval of the proposal would contravene the recommendations contained within the Tayside Landscape Character Assessment 1999 and Kinross-shire Landscape Character Assessment 1995, in relation to tall structures on the landscape surrounding Loch Leven Basin'*

The Appellant contends that the proposed turbine:

1. Is of a suitable scale for this location and within a broad area of search as outlined by Perth and Kinross Council's Supplementary Planning Guidance. The proposal also does not raise significant cumulative effects; and
2. In line with the more recent Tayside Landscape Character Assessment, a full and robust landscape assessment was carried out as part of the planning process which concluded that the impacts of the proposed turbine were not significant. The proposed turbine would not represent a dominant or prominent feature in the landscape, and is in a location that was agreed with the Planning Officer as the most suitable location on the land holding.

Furthermore, the proposed turbine will meet electricity demands of the farming business, safeguarding the local business from rising electricity costs and allowing them to remain competitive in a global market place. This follows the main principles of Scottish Planning Policy (published 23rd June 2014), in relation to sustainability (paragraphs 24-35) and promoting rural development (paragraphs 74-83).

Therefore, it is the Appellant's view that the proposed development is compliant with national, regional and local policies and that the Planning Officer's decision did not reflect the Council's own policy framework. As such, the project should have been granted consent in accordance with the Tay Plan and the Council's own Local Development Plan and Supplementary Guidance.

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LIST OF PRODUCTIONS

Applicant's documents

Reference	Description	Posted/Uploaded
A01	Environmental Report	Uploaded
A02	Landscape and Visual Figures	Posted
A03	Planning Application and Elevation Drawing	Uploaded
A04	Additional Landscape and Visual Information	Uploaded

Council & Consultee documents

Reference	Description	Posted/Uploaded
B01	Application Validation Notification	Uploaded
B02	Planning Officer and Landscape Architect Correspondence	Uploaded
B03	Report of Handling	Uploaded
B04	Decision Notice	Uploaded

Other documents electronic copy available on request from Committee Services

Reference	Description	Posted/Uploaded
C01	TAYplan Strategic Development Plan	Uploaded
C02	Perth and Kinross Local Development Plan	Posted
C03	Supplementary Planning Guidance for Wind Energy Proposals in Perth & Kinross	Uploaded
C04	Tayside Landscape Character Assessment (TCLA) 1999	Posted
C05	Kinross Landscape Character Assessment (KCLA) 1995	Uploaded

Note:

All Productions have been provided in accordance with good practice and to ensure consistency with versions.

1 INTRODUCTION

- 1.1 This Appeal is against the refusal by Perth and Kinross Council of the planning application for the erection of a single turbine 46m to tip wind turbine and associated infrastructure at Colliston Farm, Drunzie.
- 1.2 The application was submitted on 13th March 2014 and validated by Perth & Kinross Council on 20th March 2014. The Planning Officer determined the application under delegated powers on the 3rd October 2014, with the decision issued on the 9th October 2014.
- 1.3 The planning application reference is **14/00468/FLL**.
- 1.4 This document:
 - Briefly describes the proposed development;
 - Presents the procedural history of the application;
 - Sets out the grounds for refusal by the Council;
 - Summarises comments from Consultees;
 - Summarises the public comments received; and
 - Appraises the Council's stated reasons for refusing the development.
- 1.5 A number of supporting documents ('Productions') are referred to throughout this Appeal Statement. They are referenced by parenthesis within the text.
- 1.6 This document focuses on the reasons for refusal (**B04**), with other material considerations being covered by the Environmental Report (**A01**) and other documents submitted with the planning application (**A02, A03**). Should other parties to the appeal raise other issues, the Appellant reserves the right to respond to these.

2 THE PROPOSED DEVELOPMENT

- 2.1 The proposed development site lies approximately 2.5km to the south of Glenfarg and would comprise the installation and operation of a single three bladed wind turbine no greater than 46m to blade tip.

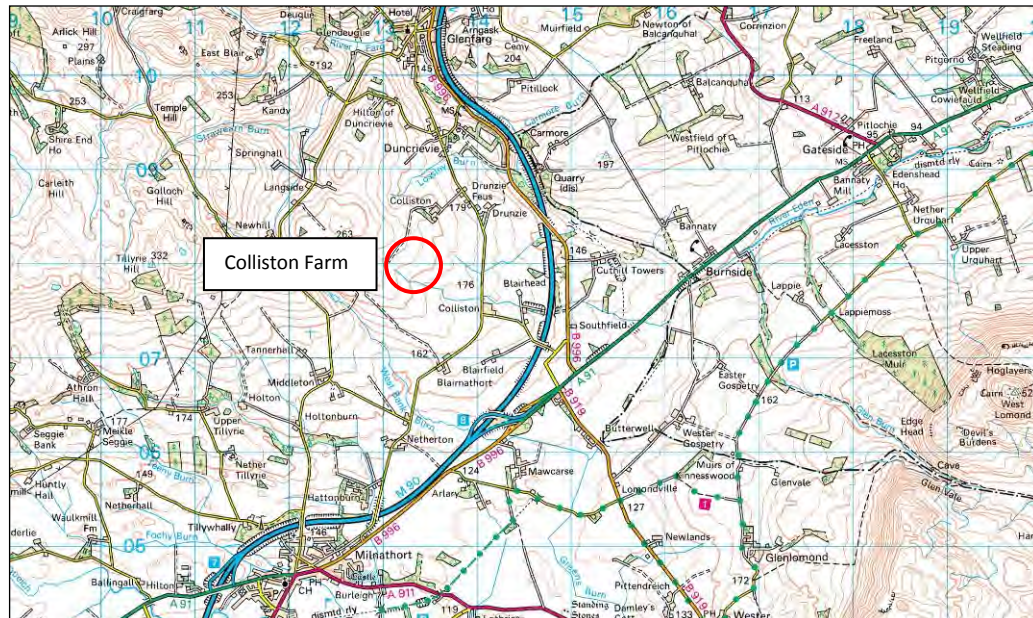


Figure 2.1 – Proposed Development Location

- 2.2 The land at Colliston Farm is owned by D. A. Baillie and Sons, who have farmed at Glenfarg since the 1950s. The business farms approximately 2,000 acres of land and has eight full time employees, with a further four to nine seasonal workers employed for ten months of the year. Despite being described as a “small hill farm” in the Report of Handling, Colliston produces around 11,000 tonnes of potatoes each year, which are sold and distributed throughout the UK and globally.
- 2.3 The stores in which the potatoes are stored are extremely energy intensive and require just over 500,000kWh of electricity per year, meaning that electricity costs comprise a significant proportion of the businesses’ outgoings. The main driver behind the construction of a farm scale wind turbine is the opportunity to generate this electricity on-site. The proposed turbine is estimated to generate in the region of 520,000kWh annually, closely matching the farm’s demand.
- 2.4 The main aims of the proposed development are to:
- Reduce the businesses’ carbon footprint and boost their ‘green credentials’, which is of increasing importance to the farm’s major suppliers.
 - Generate clean electricity. The majority of the generated electricity will be used to power the farm’s cold stores and any unused electricity will be exported to the National Grid.

- 2.5 An access track and hardstanding will be required for the construction of the turbine, and subject to consultation with Scottish & Southern Energy, a small building is likely to be required to house the necessary metering and protection equipment.
- 2.6 At the end of its operational life, the wind development would be decommissioned, the principal elements removed, and the site restored leaving little, if any, visible trace.
- 2.7 Please refer to **Section 2** of the Environmental Report (**A01**) for further details of the proposed development.

3 PROCEDURAL HISTORY

- 3.1 The application followed the refusal of a previous application (12/01727/FLL) for a wind turbine of up to 86.5m in height on a more elevated part of the same site, submitted in September 2012. This application was refused by Perth and Kinross' Planning Authority under delegated powers in November 2012 on the grounds of unacceptable landscape and visual impacts, and cumulative effects.
- 3.2 Following consultation with Perth and Kinross Council, and a detailed consideration of the reasons for refusal, an Environmental Report was prepared to support the planning application for a single wind turbine of up to 46m in height.
- 3.3 As well as reducing the overall height of the development, the turbine was also relocated to a lower altitude than the previous proposal, in accordance with discussions between the Agent and Perth and Kinross Council Planning Department. This had the effect of significantly reducing the theoretical visibility of the proposed turbine and ensuring the turbine would appear in scale with the existing features present in the local and wider landscape.
- 3.4 Consultees responded as detailed in **Section 5** of the present Appeal Statement.
- 3.5 A delay in the determination of the planning application was agreed to allow for comments from the Council's Landscape Architect, as Landscape and Visual Impact was a key element in the determination of the application. On the 16th of July 2014, the Agent received an email (**B02**) from the Planning Officer who was passing on the Landscape Architect's comments which had been received by the Planning Officer on the 1st of July 2014.
- 3.6 A detailed response was formulated by the Agent in response to the general comments received from the Landscape Architect, discussed further in Paragraphs 6.14 and 6.15. No further response from the Landscape Architect was received following this.
- 3.7 The Planning Officer moved to refuse the application under delegated powers. The Report of Handling was dated 3rd October 2014 (**B03**).

4 SUMMARY OF CONSULTEE COMMENTS

- 4.1 The Report of Handling (**B03**) summarises the consultee responses to the application:

Consultee	Response
Environmental Health	No Objection, subject to conditions
Scottish Water	No Objection
Shell UK	No objection
BP Consultations	No objection
Ministry of Defence	No objection
Civil Aviation Authority	No objection
Historic Scotland	No objection
The Environment Service (Conservation)	No objection
Transport Planning	No objection, subject to conditions

Community Councils

- 4.2 Glenfarg Community Council raised an objection to the original planning application 12/01727/FLL citing visual impact as the main reason for the objection. The objection comment concludes by stating *“a smaller turbine would be sufficient for the farm needs. The Community Council might be more inclined to support such a proposal”* (**B05**).
- 4.3 The Appellant has since presented the revised proposal to both the Glenfarg Community Council and the Milnathort Community Council. No objections have been received from any Community Councils in relation to the revised proposal.

Public Representations

- 4.4 In total five public comments were received in relation to the planning application.
- 4.5 All five letters offered support of the application. There were no public objections received.
- 4.6 Supporting comments stated that the project:
- Is an appropriate scale to meet the needs of the current farming operations, allowing for a significant cut in CO₂ emissions;
 - Will safeguard the business against the raising of electricity prices; and
 - Is a response to market pressure to become more energy efficient.

Summary

- 4.7 No objections were raised by any of the statutory consultees, community councils or members of the public in relation to this application.

5 APPRAISAL OF COUNCIL'S REASONS FOR REFUSAL

Refusal Reason 1

'As the proposed scale of the turbine would not be absorbed by the existing landscape framework surrounding the site, which in turn will lead to the turbine becoming a dominant feature within the landscape which would have a significant adverse impact on the visual amenity and landscape character of the area (in isolation and in combination with other wind energy proposals), the proposal is contrary to Policy 6 of the Tay Plan 2012 and Policies ER1A and ER6 of the adopted Local Development Plan 2014, all of which seek to ensure that all new developments do not have a significant impact on existing landscapes'.

Policy 6 of the Approved TAYplan – Managing TAYplan's Assets

5.1 The parts of Policy 6 that are relevant to this proposal are Parts A and C. Part A states:

Local development plans should identify areas that are suitable for different forms of renewable development and electricity infrastructure and for waste/resource management infrastructure or criteria to support this; including, where appropriate, land for process industries.

Part C (points 3, 5 and 7) note:

Local development plans and development proposals should ensure that all areas of search, allocated sites, routes and decision on development proposals for energy and waste/resource management infrastructure have been justified, at a minimum, on the basis of these considerations:

- 3. Proximity of resources (e.g. woodland, wind or waste material); and to users customers, grid connections and distribution networks for the heat, power or physical materials and waste products, where appropriate;*
- 5. Sensitivity of landscapes (informed by landscape character assessments and other work), the water environment, biodiversity, geo-diversity, habitats, tourism, recreational access and listed/scheduled buildings and structures; and*
- 7. Cumulative impacts of the scale and massing of multiple developments, including existing infrastructure.*

5.2 With regards to **Part A** the Local Authority, by means of the 'Supplementary Planning Guidance for Wind Energy proposals in Perth & Kinross' has identified broad search areas that are suitable for renewable energy development. Wind Energy Policy 2, within the 'Supplementary Planning Guidance for Wind Energy proposals in Perth & Kinross', it states that "in the Broad Area of Search, Community and Commercial wind energy developments will be supported

where they would be consistent with the Council's detailed Policy Guidelines and it has been demonstrated that they utilise turbines of a size and a scale appropriate to their location, are in locations least damaging to settlements, landscape character, visual amenity, habitats, and will not have unacceptable cumulative impacts".

- 5.3 The Colliston Farm site is within one of those broad areas, as shown below in **Figure 6.1**.

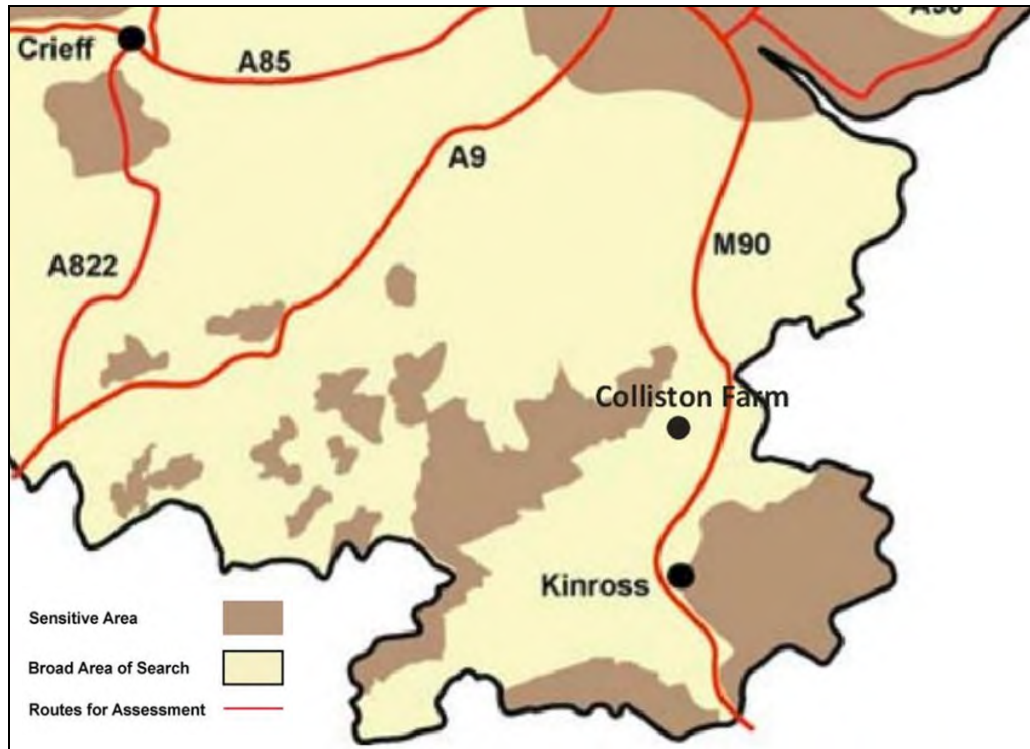


Figure 6.1 Broad Area of Search Diagram – Supplementary Planning Guidance for Wind Energy proposals in Perth & Kinross

- 5.4 The report of handling acknowledges that the local landscape *"has been identified in the TLCA as perhaps being one of the most suitable areas for wind turbine development in the old Tayside region."*
- 5.5 With regards to **Part C**, the proximity of the resource to the end user is one of the key considerations for the development. The proposed turbine will generate in the region of 520,000kWh annually, closely matching the annual energy demand of the farming business, which has been calculated at around 500,000kWh. The majority of the energy generated by the proposed turbine will be utilised on-site as detailed in the Environmental Report.
- 5.6 The area is characterised by improved grassland, surrounded by a landscape that is undulating with several small knolls, with a rolling character. The sensitivity of this local landscape has been considered in detail as part of the Environmental Report (**A01**) and was found to be 'medium'. The LVIA focusses on both the local landscape and the wider landscapes, including the Igneous Hills and Lowland Basins Landscape Character Area's (LCA) as defined by the TCLA.

- 5.7 The Report of Handling notes that *“Wind farm developments should be steered away from exposed and steep ridgelines and summits, and away from locations where their visual influence would extend both north and south. Areas with shallow bowls and valleys away from ridges should instead be considered and new development steered towards areas already affected by masts, roads or forestry.”*
- 5.8 The proposal has been designed with these statements in mind, particularly moving the turbine away from the hilltop of the previous application. This, in turn with the reduction in overall height of the turbine, has significantly reduced the theoretical visibility, particularly to the north. The site is also in an area which is already affected by masts (masts are present less than 500m to the north of the proposed turbine), roads (the M90 is located approximately 1.5km to the east of the site) and forestry (there are clusters of mature trees surrounding the site in most directions, as is visible in the photomontages).
- 5.9 Cumulative impacts are thoroughly considered within the Environmental Report (A01). Whilst there is likely to be a degree of impact arising from cumulative effects, as acknowledged in the environmental report, these were not found to be of key concern for this development. The assessment found that the Colliston turbine is rarely viewed alongside any other developments, and where views do occur, these are not considered significant.

Policy ER1A of the Perth & Kinross Local Development Plan (2014)

- 5.10 *Proposals for the utilisation, distribution and development of renewable and low carbon sources of energy will be supported subject to the following factors being taken into account:*
- *(a) The individual or cumulative effects on biodiversity, landscape character, visual integrity, the historic environment, cultural heritage, tranquil qualities, wildness qualities, water resources, aviation, telecommunications and the residential amenity of the surrounding area.*
 - *(b) The contribution of the proposed development towards meeting carbon reduction targets.*
 - *(c) The effects on the elements listed in criterion (a) of the connection to the electricity distribution or transmission system*
 - *(d) The transport implications, and in particular the scale and nature of traffic likely to be generated, and its implications for site access, road capacity, road safety, and the environment generally.*
 - *(e) The hill tracks and borrow pits associated with any development.*
 - *(f) The effects on carbon rich soils*

- *(g) Any positive or negative effects they may have on the local or Perth & Kinross economy including tourism and recreation interests either individually or cumulatively.*
- *(h) In the case of large-scale onshore wind energy developments, their fit with the spatial framework for wind energy developments.*

5.11 It is outlined in the Report of Handling that contravention of policy ER1A is of key concern in relation to the proposed development, however, it is the opinion of the appellant that the Colliston Farm turbine is entirely in keeping with the policy as quoted above. In terms of effects on landscape, biodiversity etc, a full and robust Environmental Report has been prepared (**A01**), this found no significant effects arising from the development. Indeed it is the appellant's belief, demonstrated through assessment that the development will help to reduce the carbon emissions of a local business, thus aiding the overall reduction in carbon emissions across the county, while boosting the local economy through the safeguarding the business from rising electricity costs and helping to retain employment at the farm.

Policy ER6 of the Perth & Kinross Local Development Plan (2014)

5.12 *Development and land use change should be compatible with the distinctive characteristics and features of Perth and Kinross's landscapes. Accordingly, development proposals will be supported where they do not conflict with the aim of maintaining and enhancing the landscape qualities of Perth and Kinross. They will need to demonstrate that either in the case of individual developments, or when cumulatively considered alongside other existing or proposed developments.*

5.13 The Report of Handling specifically refers to section (a), which states:

- *(a) They do not erode local distinctiveness, diversity and quality of Perth and Kinross's landscape character areas, the historic and cultural dimension of the area's landscapes, visual and scenic qualities of the landscape, or the quality of landscape experience.*

5.14 The key places of concern are highlighted in the Report of Handling as those areas to the south of the development around the Loch Leven Basin.

5.15 As demonstrated within **Viewpoints 6 & 9 (A02)** of the viewpoint assessment prepared for the application, the turbine is a minor feature. When viewed from Loch Leven (**Viewpoint 9**), it is seen against the sky in the same general view as the larger scale Green Knowes development, while from **Viewpoint 6** the turbine appears predominantly against the landscape, in keeping with the other features within the view.

5.16 Both the Landscape and Visual Impact Assessment (LVIA) and the Cultural Heritage Assessment carried out demonstrated that no significant adverse impacts are expected on any features of cultural heritage importance or any landscape qualities of the area.

Summary

- 5.17 The proposed development at Colliston Farm would be located in a general area suitable for turbine development, would use a turbine in scale with the receiving landscape, would be located in a position which minimises any adverse visual impact, would contribute little to cumulative impacts in the wider area and, as such, would not have a significant impact on existing landscapes. Far from being contrary to Policy 6 of Tay Plan 2012 and Policies ER1A and ER6 of the Local Development Plan 2014, the proposal is entirely appropriate to the terms of these policies. As such the Council's first refusal reason should be set aside.

Refusal Reason 2

An approval of the proposal would contravene the recommendations contained within the Tayside Landscape Character Assessment 1999 and Kinross-shire Landscape Character Assessment 1995, in relation to tall structures on the landscape surrounding Loch Leven Basin.

Tayside Landscape Character Assessment (TCLA) 1999

- 5.18 A full and robust landscape appraisal has been conducted as part of the Environmental Report, the baseline of which is drawn from the landscape assessment from the TLCA. The TLCA (**C04**) provides a number of recommendations regarding tall structures within the Igneous Hills LCA in which Colliston Farm is situated. The relevant comments are summarised below along with a comment on how this proposal complies each (see Paragraph 5.8.19 on pages 185 to 187):

- 5.19 *"Restrict the development of tall structures to those absolutely essential for operational reasons"*

The proposed development has been designed to meet the high electricity demand of the farm and is an essential part of reducing the business' overall carbon footprint. Supplier demands and global market pressure are meaning local farming businesses are forced to take measures in order to remain competitive. The addition of the turbine will protect the farm against the rising costs of electricity, securing jobs and the operational future of the farming business.

- 5.20 *"Avoid new masts on undeveloped hilltops and ridges".*

The revised turbine location is in a less prominent area than previously proposed, located at a lower elevation, away from the local summit, thus minimising the impact on the surrounding landscape. As can be seen in **Viewpoint 1**, the turbine is situated a reasonable distance away from the summit and is situated on part of the horizon which does not form a ridge but forms a gently sloping valley side. There is also an existing mast located on this hilltop, less than 500m to the north of proposed turbine location.

- 5.21 *“Where possible, encourage masts and other tall structures to achieve backclothing. Particularly for associated infrastructure and buildings so that skyline features are minimised”.*

Every attempt has been made through the redesign of the proposal to increase the amount of backclothing of the development. Of the ten viewpoints with visibility of the turbine, four locations are fully backclothed, and three are partially backclothed including the view from the Loch Level Basin. The remaining three viewpoints, where skylining is unavoidable, the turbine is viewed alongside other vertical features such as woodland and electricity pylons. In these views, the turbine does not dominate or diminish the scale of the vista. Associated infrastructure such as the substation will be fully backclothed from everywhere, outwith the site area.

- 5.22 *“Explore the potential to steer wind farm developments away from exposed and steep ridgelines and summits and from locations where their visual influence would extend both north and south”.*

The turbine is not located on either an exposed or steep ridge; rather, it is situated on a gently sloping valley side. As can be seen from the ZTV, the predicted visibility is almost exclusively to the south, with almost no views to the north illustrating that the site offers some visual containment.

- 5.23 *“Consider potential areas with shallow bowls and valleys away from ridges. Maximise the amount of backclothing provided by the natural landform. Consider steering development to areas already affected by masts, roads or forestry”.*

Although not located within a shallow bowl, the turbine is situated on the side of a shallow valley which is not part of a prominent ridge. The development is afforded considerable backclothing from a number of different angles. As well as this, the turbine is situated on part of the landscape which has already been affected by the addition of a telecommunications mast, less than 500m to the north of the proposed turbine, and the M90, approximately 1.5km to the east.

- 5.24 *“Assess proposals for aerials, pylons and masts in terms of their visual and landscape impact on the local landscape of the hills and surrounding areas”.*

The proposal was fully assessed in terms of landscape and visual impact in the Environmental Report accompanying the planning application. Significant effects were found to be isolated to occur within around 1km of the proposed turbine, with effects outside this distance quickly diminishing.

The local landscape is contained by the hill ranges at the Ochils to the north and west and the Lomond Hills to the east. The ZTV illustrates the minor areas of potential visibility from within both of these hill ranges. The impact on the views from the Lomond Hills is considered in detail in **Viewpoint 8** from the Bonnet Stane, taken from the lower lying slopes of West Lomond. The turbine appears completely backclothed from this location. The views from the more elevated summit areas would be even less distinct, with the turbine a relatively

minor feature in the wider landscape. From the north, **Viewpoint 3** highlights the potential views from the southern slopes of the Ochils, the turbine appearing again completely backclothed in this view, as well as partially screened by the intervening landscape.

- 5.25 *“New infrastructure (e.g. access roads) should be minimised by locating any new facilities close to existing roads”.*

The proposed access makes use of existing roads within the landholding, with approximately 190m of new access tracks required. The site is also located in relative proximity to the Duncraevie Road, M90 and the B996.

Kinross Landscape Character Assessment (KLCA) 1995

- 5.26 The KLCA (**C05**) puts the application site in the ‘West Bank Burn’ LCA, within the Loch Leven Basin Low Hills LCT. Within the document no reference is made to the impacts of tall structures within the LCA. Rather, the document highlights, in paragraph E.4.15, the impact of the M90 on the LCA as a linear feature.
- 5.27 The adoption of the TLCA in 1999, which incorporates the area previously considered by the 1995 KLCA, is presumed to have superseded and developed the themes contained within the KLCA. Therefore, greater weighting has been given to the more recently published TLCA.

Summary

- 5.28 The site itself is not located on a prominent ridge or summit, sitting on the side of the hill as it slopes down towards the valley.
- 5.29 Attempts have been made to backcloth the turbine where possible, while the ancillary infrastructure will always appear against the landscape.
- 5.30 It is not considered that the proposed turbine would add a dominant or prominent feature within the local or the wider landscape, or significantly alter the character or visual amenity of the area. Where views do occur the turbine appears as a relatively minor feature, more in keeping with other manmade vertical elements within the wider landscape such as wooden and metal electricity pylons, communication masts and farm infrastructure such as grain silos.
- 5.31 The impacts on the Loch Leven basin are considered to be negligible, with the turbine a barely visible feature from the southern shores, as demonstrated in **Viewpoint 9**.
- 5.32 Following this review of the recommendations contained within the TLCA and KLCA, regarding tall structures within the LCA, it is the view of the Appellant that the proposed turbine does meet with the criteria as recommended. As such the Council’s second refusal reason should be set aside.

6 BENEFITS OF PROPOSAL

National Benefits

- 6.1 The Scottish Government through the 2020 Routemap for Renewable Energy in Scotland have set a target for 500MW in community and locally owned development. The proposed scheme will contribute towards this target.

Local Benefits and Business Need

- 6.2 The proposed scheme has been significantly reduced in scale to better meet the site constraints, addressing consultee concerns identified through the planning process for a larger turbine, particularly those relating to landscape and visual impacts.
- 6.3 The main driver of this development is the opportunity to generate electricity on-site. This has the twin advantage of reducing overall business costs (making the farm more competitive, allowing re-investment and securing employment) and lowering the firm's carbon footprint.
- 6.4 The project will generate in the region of 520,000kWh annually, closely matching the annual demand of the farm's climate controlled cold stores of around 500,000kWh. This addresses a key concern raised by Glenfarg Community Council, as detailed in paragraph 4.2, in relation to the previous application, suggesting that the turbine should be reduced to a scale in keeping with the farms demands. This revised development will deliver the energy required at Colliston Farm and in turn reduce overheads and provide energy security for a local business.
- 6.5 The construction of the proposed development would represent a sizeable investment in the local area, with a range of contracts being placed preferentially with various local contractors, including electrical and civil engineering companies.

7 FURTHER CONSIDERATIONS

- 7.1 The Agent engaged with Perth & Kinross Council following the previous application, with the aim of designing a more sympathetic scheme which can balance the impacts on the local landscape, with a viable wind development to meet the needs of the business at the farm. The Appellant contends that this balance has been achieved, particularly as the Planning Officer had an input in determining the location of the revised turbine.
- 7.2 When the reductions in turbine height and elevation from the original application are considered, it is evident how the project redesign has addressed the concerns of that application. The turbine has reduced approximately 45m in elevation and approximately 40m in turbine height, giving an overall reduction of 85m. This results in a significant reduction on impact of the surrounding landscape and visual impacts, as demonstrated in **Figures 7.1, 7.2 and 7.3.**



Figure 7.1 – VP03 (Minor road between Newhill and Path of Condie)



Figure 5.2 – VP06 (B919) Comparison of Original & Revised Applications



Figure 5.3 – VP09 (Loch Leven Cottages) Comparison of Original & Revised Applications

7.3 It is acknowledged in the Report of Handling that the local landscape is not protected by any specific local, regional or national designations nor is it of exceptional quality in landscape terms. It is also acknowledged that the issue of impact on a landscape is a subjective matter and this is not disputed. As it is a subjective matter, and a matter of vital importance in this application, the Council sought the views of their Landscape Architect.

7.4 However, as stated in the Report of Handling:

“It has not been possible due to workloads issues to obtain a detailed response from the Council’s landscape architect on this issue, he has nevertheless made some general comments on the proposal which I consider to hold significant weighting.

The general view of the Council’s Landscape Architect is that the location of the proposed turbine, high on the south facing slopes of the Ochils will result in the turbine being prominent from views from the south, which in turn will have a significant effect on character of the Loch Leven Basin.”

7.5 Given the detailed Landscape and Visual Assessment that has been conducted for both the original and the revised application, there is an issue of concern that the Planning Officer has given significant weighting to comments which they have acknowledged were, general comments. This is particularly poignant as the issue of Landscape and Visual Impacts is one of vital importance to this application.

7.6 It would not be unreasonable to expect that the Landscape Architect would have been significantly involved in the determination process and would have given the application thorough and detailed consideration.

7.7 Rather, it is true that general comments were offered due to workload issues. Given length of the determination period (approximately thirty weeks), thorough consideration from the Landscape Architect, and full consideration of the additional Landscape Assessment submitted in response (A04), should have been given.

8 CONCLUSION

- 8.1 It is contended that the proposed height and scale of the turbine at Colliston Farm is suitable for this location. It has been demonstrated through assessment that the revised development is in line with the relevant Perth & Kinross Council guidance and has addressed concerns raised in the previous application for a larger turbine. The scheme has been significantly reduced in terms of scale from the previous application, reducing potential impacts on the key sensitive receptors, including around the Loch Leven Basin.
- 8.2 The primary aim of the development is to support and sustain a local business, which is consistent with the overarching aims of Perth and Kinross Local Development Plan, in particular Policy ED3 Rural Business and Diversification. The energy need for the business has been clearly demonstrated within the Environmental Report.
- 8.3 In general landscape terms the proposed development sits within a Landscape Character Type that the Council acknowledges has some capacity for development of wind energy, through the Perth & Kinross Supplementary Planning Guidance. The TLCA acknowledges this area as *“one of the most suitable areas for wind turbine developments in Tayside”*. It is therefore contended that the development should be supported by Perth and Kinross Council.
- 8.4 With regards to the local landscape character, it is the view of the appellant that the re-design of the proposal, as well as the change in location allows the turbine to be accommodated well within the local area. This follows on from the robust and professional assessment carried out by the agent. Unfortunately, despite allowing a significant amount of time to determine the application, only generic comments were received from the councils own landscape architect.
- 8.5 Visual amenity has been assessed in detail as part of the supporting Environmental Report. The findings of this support the application, highlighting the reduction in altitude as well as the reduction in overall height as significant in terms of accommodating the turbine within the local and wider landscape.
- 8.6 The proposed scheme has been refused on the same grounds as the previous application for a much larger scale development. It is difficult to understand, given the reduction in scale and altitude, how the revised proposal will have the same impact as the previous scheme, which is suggested by the stated refusal reasons. Specifically, potential impacts on the landscape character and visual amenity.
- 8.7 It is the Appellant’s view that the Planning Officer’s decision did not reflect the findings of the professional assessments and the views of the statutory consultees in addition to the Council’s own policy framework and, as such, the project should be granted consent.



Green Cat Renewables

Colliston Farm Wind Turbine

Environmental Report

D A Baillie and Sons

March 2014



Prepared for:
D A Baillie and Sons

Colliston Farm Wind Turbine

Environmental Report

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Preface

This Environmental Report (ER) assesses the local environmental impacts of a proposed wind turbine at Colliston Farm, near Glenfarg in Perth and Kinross.

This application follows the refusal of a previous application (12/01727/FLL) for a wind turbine of up to 86.5m in height on the same site, submitted in September 2012. This application was refused by Perth and Kinross under delegated powers in November 2012 on the grounds of unacceptable landscape and visual impacts, and cumulative effects.

Following consultation with Perth and Kinross Council and a detailed consideration of the reasons for refusal, this revised planning application seeks planning permission for a single wind turbine of up to 46m in height.

This significantly smaller turbine would be located at a lower altitude than the previous proposal, and its visual impacts would therefore be much reduced.

This ER presents a comprehensive assessment of the environmental impacts of the proposed turbine, and covers many of the same areas as a formal Environmental Impact Assessment. It is not a formal Environmental Statement for the purposes of the Planning EIA Regulations (the Environmental Impact Assessment (Scotland) Regulations 2011) but nevertheless comprehensively assesses the potential effects arising from the proposal.

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Appendix 1 - Landscape and Visual Impact Viewpoint Analysis

Appendix 2 –Ecological Assessment

Appendix 3 – Hydrological Context of the Site

1 Project Summary

1.1 Introduction

The development would comprise the installation a single wind turbine, no greater than 46m to blade tip height. The turbine would be located on land to the south west of Colliston Farm, approximately 2.5km to the south of the village of Glenfarg in Perth and Kinross.

1.2 The Applicant

The land at Colliston Farm is owned by D. A. Baillie and Sons, who have farmed at Glenfarg since the 1950s. D. A. Baillie and Sons farm 2,000 acres of land and have eight full time employees, with a further four to nine seasonal workers employed for ten months of the year.

Around a quarter of the farm is set aside for potatoes, with the remainder used for cereal production. Colliston produces around 11,000 tonnes of potatoes each year, which are sold to a Scottish pre-packer and then distributed throughout the UK. Scottish potato seed is known for its quality throughout the world, and the seed that is not reused is also sold locally.

1.3 Rationale for the Proposed Development

The main aims of the proposed development are to:

- Reduce the businesses' carbon footprint and boost their 'green credentials', which is of increasing importance to the farms major suppliers.
- Generate clean electricity. The majority of the generated electricity will be used to power the farm's cold stores and any unused electricity will be exported to the National Grid; and

Customer demands require the business to be able to supply potatoes for 10-11 months of the year, which means that the farm's storage systems are a crucial part of its viability. Colliston Farm has made a significant investment in climate controlled stores, which can accommodate 10,000 tonnes of potatoes. These stores are extremely energy intensive and require just over 500,000kWh of electricity per year, meaning that electricity costs comprise a significant proportion of the businesses' outgoings.

The number of potato growers has fallen significantly in recent decades and is now at just over 200 in Scotland, 3% of the level of growers in the 1960s. This demonstrates the unprecedented pressure on the industry in which farmers now have to compete on a European level. Scotland is an exporter of potatoes and it is important to remain competitive in the in industry.

D. A. Baillie & Sons works closely with Sainsbury's whose main objectives include ensuring its suppliers are sustainable and renewable energy conscious. They have demonstrated this by setting their own 2020 targets. D. A. Baillie & Sons is working hard to meet the targets set by Sainsbury's and the importance of the proposed wind turbine development is vital to the farming business.

Another of the main drivers behind the construction of a farm scale wind turbine is the opportunity to generate this electricity on-site. This would have the twin advantage of reducing overall business costs (making the farm more competitive, allowing re-investment and securing employment) and lowering the firm's carbon footprint. The large supermarkets that make up the farm's customers place an increasing importance on their suppliers being able to demonstrate green credentials, so the generation of clean energy on-site would be of major benefit to the business. The turbine will generate in the region of 520,000kWh annually, closely matching the farm's demands. This demonstrates that the scale of the proposed turbine is in keeping with the requirements of the business.

1.4 Policy Overview

The Scottish Government is committed to reducing emissions through requirements set down in the Climate Change (Scotland) Act 2009 and the 2020 Route Map for Renewable Energy in Scotland. The Annual Routemap Update, published in December 2013, includes the latest targets for renewable electricity generation in Scotland.

The targets (and implications) set out within the document include:

100% electricity demand equivalent from renewables by 2020 – the Routemap recognises that this is a 'formidable' goal but states the Scottish Government's determination to pursue this for economic and carbon benefits. The Routemap acknowledges that this potential will need to be recognised in a UK-wide regulatory framework.

500MW community and locally-owned renewable energy by 2020 – The Routemap states that the Feed in Tariff and the Renewable Heat Incentive should be used as a springboard to increase the scale of local ownership of renewable projects, allowing communities and rural businesses to take advantage of the significant potential revenue streams.

Every wind turbine in a rural area contributes to the farming economy with the provision of additional income. However, a project such as this where the rural business is the developer rather than simply a landlord will give an even greater benefit to both the business and the local economy.

Overall, this project will create a benefit to a local farming business, when agriculture is under significant pressure to diversify, and aid in the delivery of the Scottish Government's renewable energy targets.

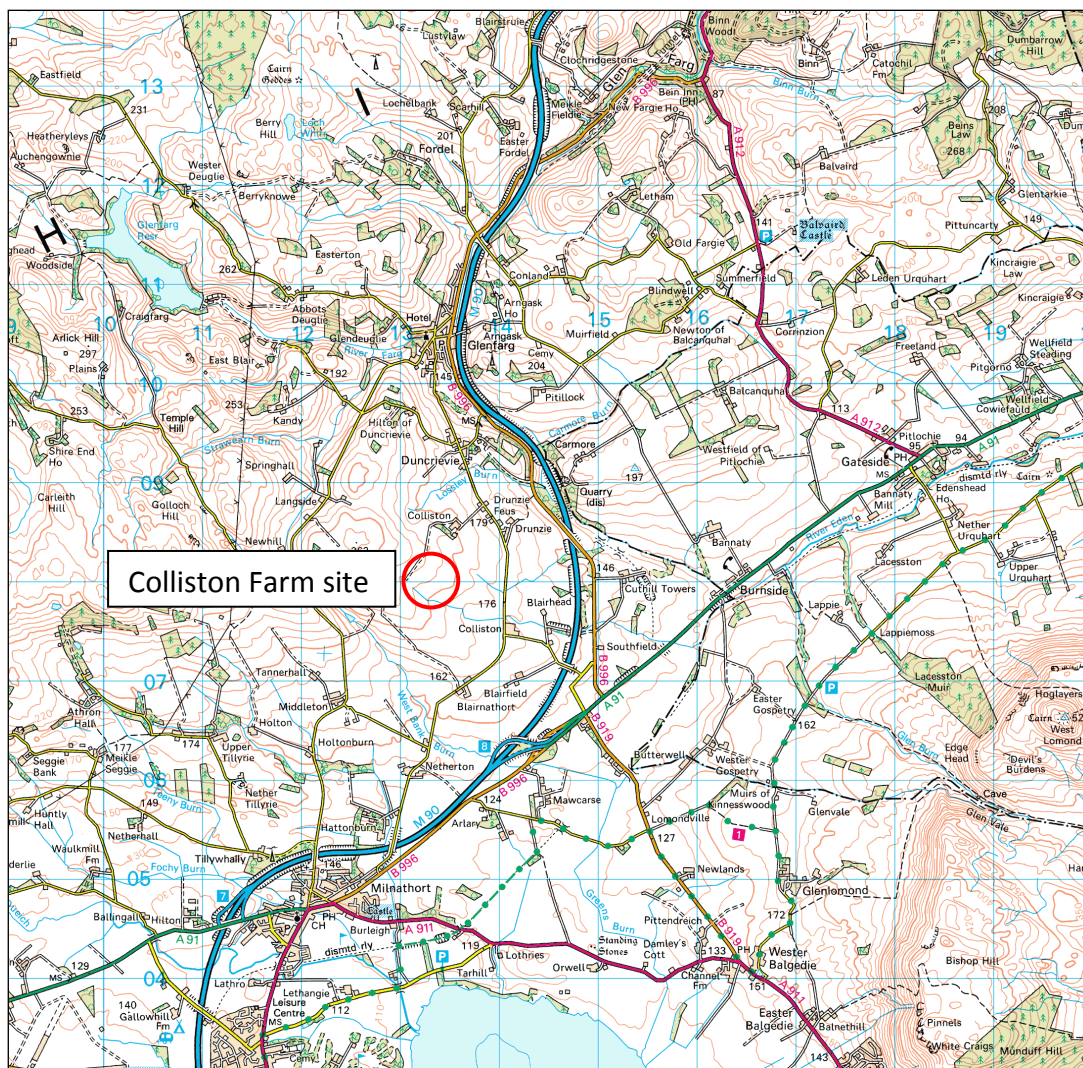
1.5 Scope of the Report

This report assesses the environmental impacts likely to result from the proposal for a single wind turbine of 46m to tip. It provides a level of detail appropriate to the scale of the development, and has been produced in line with relevant environmental policies and planning guidance.

2 The Proposed Development

2.1 Site Location and Project Layout

The Colliston Farm site is located approximately 2.5km south of Glenfarg in Perth and Kinross, as shown on **Figure 2.1** below.



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Figure 2.1 – Proposed Development Location

The project would comprise the installation and operation of one wind turbine up to a maximum height of 46m to blade tip with a hub height of 32m.

The proposal requires the construction of a new section of track, an area of hardstanding and a small control building as shown on **Figure 2.2**. The Ordnance Survey grid reference for the proposed turbine is **E313200 N707920**.

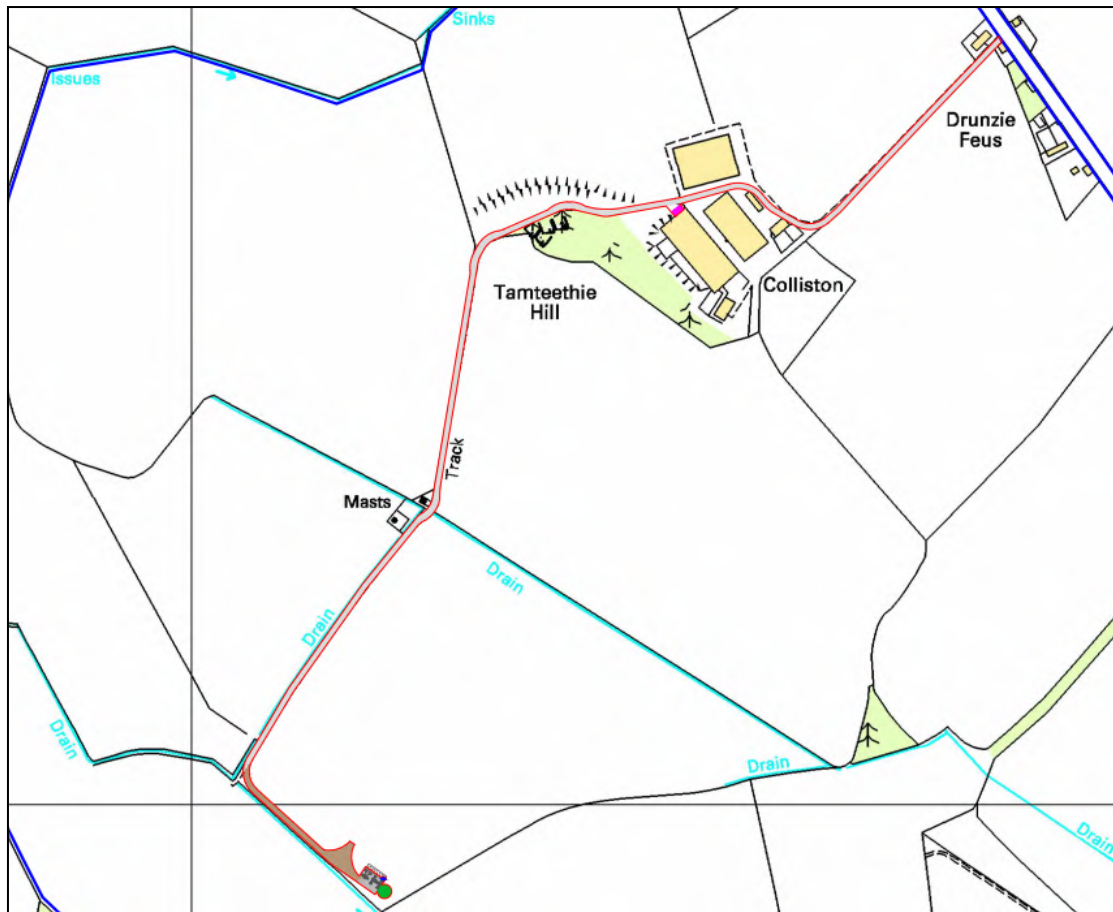


Figure 2.2 - Site layout

The site is an area of undulating farmland to the south of Glenfarg and north of Milnathort. The site is predominantly arable fields with a paucity of hedgerows and the occasional mature tree line. There are two small dense coniferous plantations on site and some mature beech trees near the Colliston farm house. The turbine has been located close to the field edge in order to minimise the disruption to the ongoing use of the field.

The proposed turbine location has been chosen as it is considered to represent the best compromise between the technical and environmental considerations. The turbine has been relocated ~650m to the south-east of the original proposal, away from the local summit, which results in a 45m loss in elevation. The elevation of the original turbine location was approximately 255m AOD and the revised turbine location sees the elevation drop to approximately 210m AOD, allowing the turbine to integrate with the immediate landscape surrounding the site. Taking into account the drop in turbine height from the original application and the reduced turbine height, the overall reduction in the height of the proposal is approximately 85m.

The associated infrastructure of site access tracks and substation have been designed and located sensitively to minimise visual impact. The access track is proposed to make use of the existing farm track which reduces the length of new access required. The proposed substation has been located adjacent to the existing farm buildings to avoid unnecessary clutter on the site.

2.2 Description of the Proposed Wind Turbine

Figure 2.3 shows the principal dimensions of the turbine.

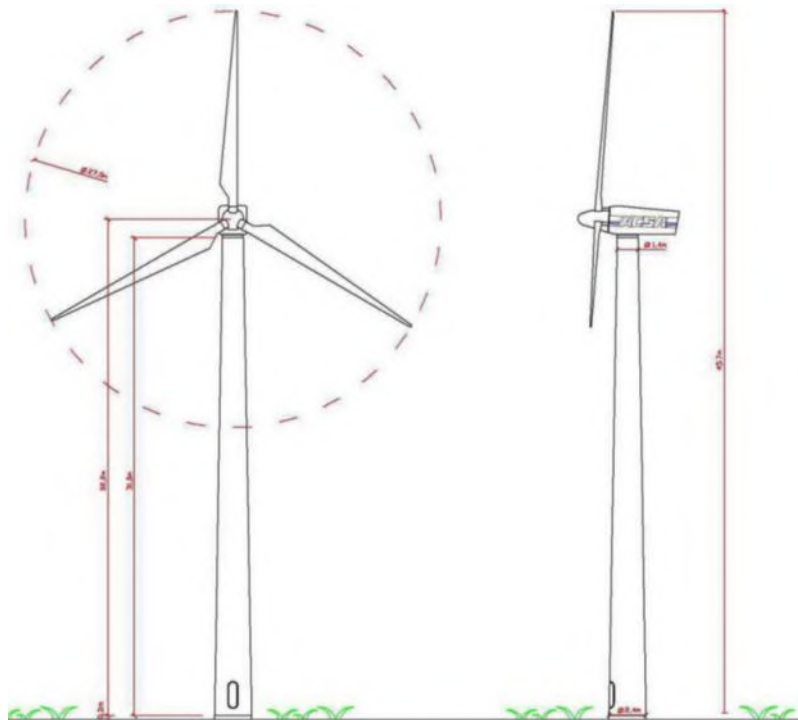


Figure 2.3 - Elevation drawings of candidate turbine

The turbine will be of a modern, quiet design, incorporating tapered tubular tower with three blades attached to a nacelle housing. The control unit is contained inside a small control cabin at the base of the turbine. It is proposed that the finish of the wind turbine, blades and tower should be semi-matt and a pale grey in colour.

In line with all modern wind turbines the machine would start generating when wind speeds rise to the 'cut-in' wind speed (in this case 3.5 m/s). The level of generation would increase with wind speed to the rated wind speed (225kW at approximately 14m/s), and generation would then be limited to that rated level at higher wind speeds. The turbine is programmed to stop when the wind speed exceeds 25 m/s ('cut-out' wind speed).

2.3 Purpose of the Development

Electricity generation

The production, packing and storage of fresh vegetables requires significant levels of energy consumption by the business. The business operates three on-site cold stores, which are required to maintain the freshness and quality of produce. These contribute to the farms annual electricity consumption of ~500,000kWh, which is one of the businesses' largest costs. The proposed turbine is intended to supply 'green' electricity directly to the farm, resulting in an efficient use of a natural resource, and significant financial savings.

Business Diversification

The development of the wind turbine will lead to a significant reduction in current business expenditure which will help to cushion it from market volatility caused by significant annual factors such as changes in the weather and fluctuating commodity prices. An increase in the

sustainability and stability of the business will also help support both the existing employment and help to create new employment as the business continues to expand.

Carbon footprint

As a high energy user involved in the supply of fresh produce to the leading supermarkets, the business is seeking to improve its sustainability and reduce its carbon footprint. The need to demonstrate commitment to sustainability is increasing as supermarket customers demand higher environmental standards from their suppliers. Thus the development of renewable energy should increase the attractiveness of the farm's produce to suppliers through its sustainable production.

Without taking into account other facilities on the farm, the three cold stores alone are estimated to emit 216 tonnes of CO₂ annually, based upon grid mix electricity usage. The turbine is expected to directly offset the emission of approximately 224 tonnes of CO₂ for every year of operation. This is around 104% of the carbon footprint emitted by the cold stores, dramatically boosting the business' green credentials and sustainability.

Summary

The development of wind energy at Colliston Farm will provide the business with a source of renewable energy to meet its growing energy demand whilst at the same time significantly reducing the business' carbon footprint. The savings made from the reduction of electricity costs would provide a significant boost to the businesses financial models which will provide stability to the business in a changeable marketplace.

2.4 Infrastructure

Site tracks and crane hardstanding

Access to the site would be taken from the existing Colliston Farm access, which joins Duncreavie Road to the north of Drunzie. This utilises the existing farm access track which is in good condition and prevents the need for the construction of an entirely new access route.

Approximately 190m of new access track will be required to provide access to the wind turbine. The track would be typically 4.0m wide with 0.5m shoulders on each side and made up of crushed stone to an average depth of up to 350mm. On corners, it will be necessary to construct wider areas of track to reflect the minimum bend-radii for the longest construction loads. Approximately 800m of existing track would also need a minor upgrade, if deemed necessary by the turbine manufacturer.

Appropriate drainage requirements would be incorporated where the site specific conditions make this necessary. If any areas of softer ground are encountered, the depth of crushed rock may need to increase to approximately 700mm and a layer of geotextile material embedded within the structure would be used. Construction of site tracks would preferably utilise stone from an on-site borrow pit. A site survey will be carried out at a later stage to confirm the potential for this. The borrow pit would be subject to a separate planning application.

The crane platform would be of similar construction to the access track, designed to withstand the maximum load bearing applied by the crane during the construction process.

Construction compound

It is anticipated that the local ground works contractor would set up a small compound for site offices, welfare facilities and the storage of tools, which would be located near to the site entrance.

Turbine foundations

Ground investigations will be carried out to gain site information in order to validate the suitability of the foundation design normally specified by the wind turbine manufacturer.

Much of the material removed during excavation would be replaced following the construction of the foundation to leave only the plinth at the surface with the turbine bolted on to it. The original excavated area would be reinstated to ground level following the construction of the foundation, with the removed topsoil replaced and reseeded.

2.5 Grid / Local Electrical Connection

There are two basic methods of exporting electricity onto the grid:

- A simple stand-alone project where 100% of the electricity is exported onto the local electrical grid;
- The turbine supplies the on-site facility with electricity, with any excess of power being exported onto the local electrical grid.

It is the intention of the application to use the electricity generated on-site, with any surplus energy being exported to the national grid. Around 502,000kWh of energy per year is currently consumed by the farm business, primarily relating the potato storage facilities. A monthly breakdown is provided in **Table 2.1**.

Month	Number of units (kWh)
Jan	45,731
Feb	48,309
Mar	52,188
Apr	58,210
May	51,406
Jun	39,380
Jul	26,220
Aug	26,268
Sep	19,531
Oct	38,383
Nov	54,017
Dec	42,425
Total (kWh)	502,068

Table 2.1 – Colliston Farm electricity usage

Based upon the calculated average windspeed on site, a 225kW turbine on site would be expected to generate in the region of 520,000kWh of electricity per year. This means that **the turbine will generate the equivalent of 104% of the energy demand of the farm.**

Grid connection options are currently being investigated, and will be agreed with Scottish Power. It is anticipated that no overhead lines will be used and that the turbine will be connected to the site substation and meters by underground cables.

2.6 Access from the Public Highway

It is envisaged that the turbine will be transported via the M90, exiting at Junction 8 and continuing along the A91 before joining the unclassified road between Milnathort and Duncruevie to arrive at Colliston Farm. The Turbine Delivery Vehicles (TDV) would then access the site through the farm itself.

The turbine would be delivered on a standard articulated lorry and off loaded by a crane on site.

2.7 Construction Programme

The construction phase would involve approximately 3 to 4 months of onsite activity, from construction of the new access tracks through to construction and commissioning of the wind turbine.

2.8 Development Traffic

There are three distinct phases of the development:

- Construction;
- Operation; and
- Decommissioning.

Construction traffic

The traffic involved throughout the project construction phase includes lorries with deliveries of the turbine, concrete, reinforcement steel and cabling, as well as personnel commuting. No upgrades to the existing road network will be necessary and the volume of traffic will not be noticeably increased. This is a short phase of the project of up to a maximum of three months.

Operational traffic

Once erected the wind turbine would be operated and monitored remotely. Between two and four short maintenance visits are required per year, with longer visits for scheduled servicing every three to five years. These visits would be undertaken in light commercial vehicles.

Decommissioning traffic

The amount of site traffic during decommissioning would be similar to that required during construction.

2.9 Decommissioning

At the end of the project's operational life, the wind turbine would be decommissioned, the principal elements removed, and the site restored leaving little if any visible trace.

The wind turbine would be removed from the site and the foundation, track and hardstanding covered over with topsoil and reseeded. The cables would be de-energised and left in place, with any cables marker signs removed.

3 Planning and Environmental Policy Context

An application for the development of a wind project should be assessed in the context of:

- National policy and guidance;
- The Local Planning Authority Development Plan; and
- Supplementary Planning Guidance.

The following section summarises the planning guidance and policies relevant to the determination of the Colliston Farm Wind Turbine proposal.

3.1 National Planning Policy

National planning policy and guidance is set out in the National Planning Framework (NPF); the Scottish Planning Policy (SPP); Circulars; the Scottish Historic Environment Policy (SHEP); Planning Advice Notes (PANs); and Design Advice Guidance.

A brief summary of national policy is presented below.

National Planning Framework

The National Planning Framework for Scotland 2 (NPF2) 2009, expresses the spatial aspect of the Government's Economic Strategy and confirms the importance of renewable energy to Scotland's energy mix.

It states that the, *'Government is committed to establishing Scotland as a leading location for the development of renewable energy technology and an energy exporter over the long term'* and that *'the aim of national planning policy is to develop Scotland's renewable energy potential whilst safeguarding the environment and communities.'*

Scottish Planning Policy

Scottish Planning Policy (SPP) is the statement of the Scottish Government's policy on nationally important land use planning matters. SPP aims to ensure the delivery of national renewable energy targets, and states that *'the commitment to increase the amount of electricity generated from renewable sources is a vital part of the response to climate change'*.

Following publication of the SPP, Scotland's renewable electricity target for the next decade was increased from 50% to 100% by First Minister Alex Salmond in July 2011. The Scottish Government has calculated that significantly higher levels of renewables could be deployed by 2020 with little change to the current policy, planning or regulation framework in Scotland. A separate study for industry body Scottish Renewables, published in September 2010 reported similar conclusions.

SPP states that Development plans are required to guide development to appropriate locations and should *'support all scales of development associated with the generation of energy and heat from renewable sources, ensuring that an area's renewable energy potential is realised and optimised in a way that takes account of relevant economic, social, environmental and transport issues and maximises benefits.'*

2020 Routemap for Renewable Energy in Scotland

This action plan, published in July 2011, includes the latest targets for renewable electricity generation in Scotland. It is an update and extension to the Scottish Renewables Action Plan 2009.

It states that 100% of Scotland's electricity demand should be generated by renewable means by 2020. The targets (and implications) set out within the document are:

100% electricity demand equivalent from renewables by 2020 – the Routemap recognises that this is a 'formidable' goal but states the Scottish Government's determination to pursue this for economic and carbon benefits. The Routemap acknowledges that this potential will need to be recognised in a UK-wide regulatory framework.

11% heat demand from renewables by 2020 – currently Scotland generates 2.8% of heat demand from renewable sources.

At least 30% overall energy demand from renewables by 2020 – the 100% electricity demand target by 2020 allows this update to the overall energy demand target figure.

500MW community and locally-owned renewable energy by 2020 – The Routemap states that the Feed in Tariff and the Renewable Heat Incentive should be used as a springboard to increase the scale of local ownership of renewable projects, allowing communities and rural businesses to take advantage of the significant potential revenue streams.

The Routemap states that, *"The Government is committed to the continued expansion of portfolio of onshore wind farms to help meet renewables targets, with a robust planning system providing spatial guidance, a clear policy framework and together with a timely and efficient processing of Section 36 Electricity Act and planning applications"*.

One of the main challenges identified in meeting these targets relates to 'Planning and Consents', with the Routemap identifying that there is a *'need to continue to streamline systems and work for greater speed and transparency, without sacrificing proper consideration of the impacts on the local environment'*.

A Low Carbon Economic Strategy for Scotland

The Low Carbon Economic Strategy (LCES) is an integral part of the Scottish Government's Economic Strategy to secure sustainable economic growth, and a key component of the broader approach to meet Scotland's climate change targets and secure the transition to a low carbon economy in Scotland.

The Strategy states that, *"Opportunities exist for every business and industry to adapt to and exploit low carbon markets, and these should be reflected in business plans and industry-led strategies, focussing on two areas: saving money through efficiencies; and making money through new market opportunities"*.

Two of the objectives within the Strategy are particularly relevant to this application:

Objective 1: Sustainable and resource-efficient businesses. Helping all businesses in Scotland become more competitive by using resources more efficiently, proactively adapting to climate change impacts and generally adopting sustainable business practices.

Objective 2: Sustainable and competitive industries. Supporting Scotland's industries to exploit low carbon business opportunities to accelerate industry growth, build low carbon supply chains, diversify into new markets and technologies and promote long-term ambition and resilience.

Conserve and Save: Energy Efficiency Plan for Scotland

The Scottish Government published "**Conserve and Save: The Energy Efficiency Action Plan for Scotland**" in October 2010. This plan introduced, for the first time, a headline target to reduce final energy (end-use) consumption **by 12% by 2020** using a 2005-7 baseline as published by the Department of Energy and Climate Change (DECC).

The 2009 Consultation Document states that, "increasing energy costs are a significant business risk and affect both the direct energy costs for business and the cost of materials bought in. However, energy consumption is not on all management agendas".

The Plan identifies that energy efficiency can also indirectly assist with other targets including:

- **Reducing emissions** - Reduced energy consumption in the non-traded sector (i.e. excluding electricity consumption and heat use from large power stations) will lead to direct emission reductions that will contribute towards the 42% emission reduction target by 2020.
- **Renewable electricity targets** - As these are measured against gross consumption, reductions in energy use will mean that they can be met with lower levels of installed capacity. Therefore, the more expensive projects may not be required to meet our renewables targets, with a positive effect on energy bills as the costs from these projects will not be passed through to consumers.
- **Long-term decarbonisation** - Power generation is included within the EU- ETS and is therefore traded. However, reductions in consumption, combined with development of energy smart technologies, will result in the most efficient path toward full decarbonisation.

Other Relevant National Policy Documents

Circulars provide statements of the Scottish Government's policy, and contain guidance on policy implementation through legislative or procedural change. PANs provide advice and information on technical planning matters.

Circulars

- 3/2011 The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2011.

Advice and Guidance Notes

- PAN 1/2011 Noise and Planning;
- PAN 2/2011 Planning and Archaeology;
- PAN 45 (Renewable Energy) was superseded in February 2011 by Scottish Government web-based guidance on renewables;
- PAN 51: Environmental Protection 1999;
- PAN 58: Environmental Impact Assessment;
- PAN 60: Planning for Natural Heritage 2000; and
- Managing Change in the Historic Environment guidance note series.

Scottish Government Web-Based Renewable Guidance

This online guidance replaced PAN 45 in February 2011. The two most relevant documents are:

- ‘Onshore Wind Turbines’, which sets out clear planning guidelines for local authorities, presenting technical information on wind turbine and assessment procedures; and
- ‘Process for preparing spatial frameworks for wind farms’, which provides guidance to local authorities on how to guide development through the production of spatial frameworks.

3.2 Local Planning Policy

The proposal is located within the Perth and Kinross Council area. The key local development plans are:

- TAYplan Strategic Development Plan 2012; and
- Perth and Kinross Local Development Plan (2014);
- The Perth & Kinross Wind Energy Policy & Guideline 2005.

TAYplan Strategic Development Plan (2012)

The TAYplan is the Dundee, Perth, Angus and North Fife Strategic Development Planning Authority which has replaced the Structure Plans.

The plan embraces sustainability stating in the foreword ‘*We want to provide future generations with opportunities to improve their lives; what better legacy to leave our children. Therefore the mitigation of and adaptation to climate change, as the single greatest challenge facing humankind, is central to this Plan. We must shift to a low carbon and zero waste economy by using our land and resources more efficiently.*’

This is embodied in the Vision and Objectives which aims to ‘support the switch to a low carbon and zero waste economy’ and to ‘*strengthen the economic base to support the renewable energy and local carbon technology sectors*’.

Policy 6: Energy and Waste/Resource Management Infrastructure requires the Local Development Plans to identify areas suitable for different forms of renewable heat and

electricity infrastructure with areas of search, allocated sites and decisions on proposals taking into account:

- *‘The specific land take requirements associated with the infrastructure technology and associated statutory safety exclusion zones where appropriate;*
- *Proximity of resources (e.g. woodland, wind or waste material); and to users/customers, grid connections and*
- *distribution networks for the heat, power or physical materials and waste products, where appropriate;*
- *Anticipated effects of construction and operation on air quality, emissions, noise, odour, surface and ground water pollution, drainage, waste disposal, radar installations and flight paths, and, of nuisance impacts on off-site properties;*
- *Sensitivity of landscapes (informed by landscape character assessments and other work), the water environment, biodiversity, geo-diversity, habitats, tourism, recreational access and listed/scheduled buildings and structures;*
- *Impacts of associated new grid connections and distribution or access infrastructure;*
- *Cumulative impacts of the scale and massing of multiple developments, including existing infrastructure;*
- *Impacts upon neighbouring planning authorities (both within and outwith TAYplan); and,*
- *Consistency with the National Planning Framework and its Action Programme’.*

Perth and Kinross Local Development Plan (2014)

Adopted on the 3rd of February 2014, the local development plan (LDP) is a statutory document that aims to guide all future development and shapes the environment of Perth & Kinross. It addresses a wide range of topics from recreation to housing. Policy ER1: Renewable and Low Carbon Energy Generation sets out the framework in which each proposal will be assessed against and lists a number of factors to be considered, including:

- The individual or cumulative effects on biodiversity, landscape character, visual integrity, the historic environment, cultural heritage, water resources, aviation, telecommunications and residential amenity;
- The contribution of the proposed development towards meeting carbon reduction targets; and
- Any positive or negative effects they may have on the local or Perth & Kinross economy including tourism and recreation interests.

The LDP is supportive of renewable energy and states that *“increasing the amount of energy from renewable and low carbon technologies will help to make sure that Scotland has a secure energy supply, reduce greenhouse gas emissions to slow down climate change and stimulate investment in new jobs and businesses. Planning has an important role in the delivery of new renewable and low carbon energy infrastructure in locations where the local environmental impact is acceptable.”*

Climate change also features in the LDP as it recognises that “coping with a changing climate is likely to be one of the greatest challenges of the 21st century and it is recognised that the

climate of Scotland is already changing affecting many aspects of our society environment and economy and therefore our day-to-day lives.

Perth and Kinross Wind Energy Policy and Guidelines (WEPG) 2005

In addition to the local plans, Perth and Kinross Council issued Supplementary Planning Guidance (SPG) for wind energy projects in 2005. The WEPG contains a schematic diagram illustrating 'Strategically Sensitive Areas' and 'Broad Area of Search' for Wind Developments in Perth and Kinross. These areas are shown in Diagram 1 of the SPG and in **Figure 3.1**. The Colliston Farm project is situated within a Broad Area of Search.

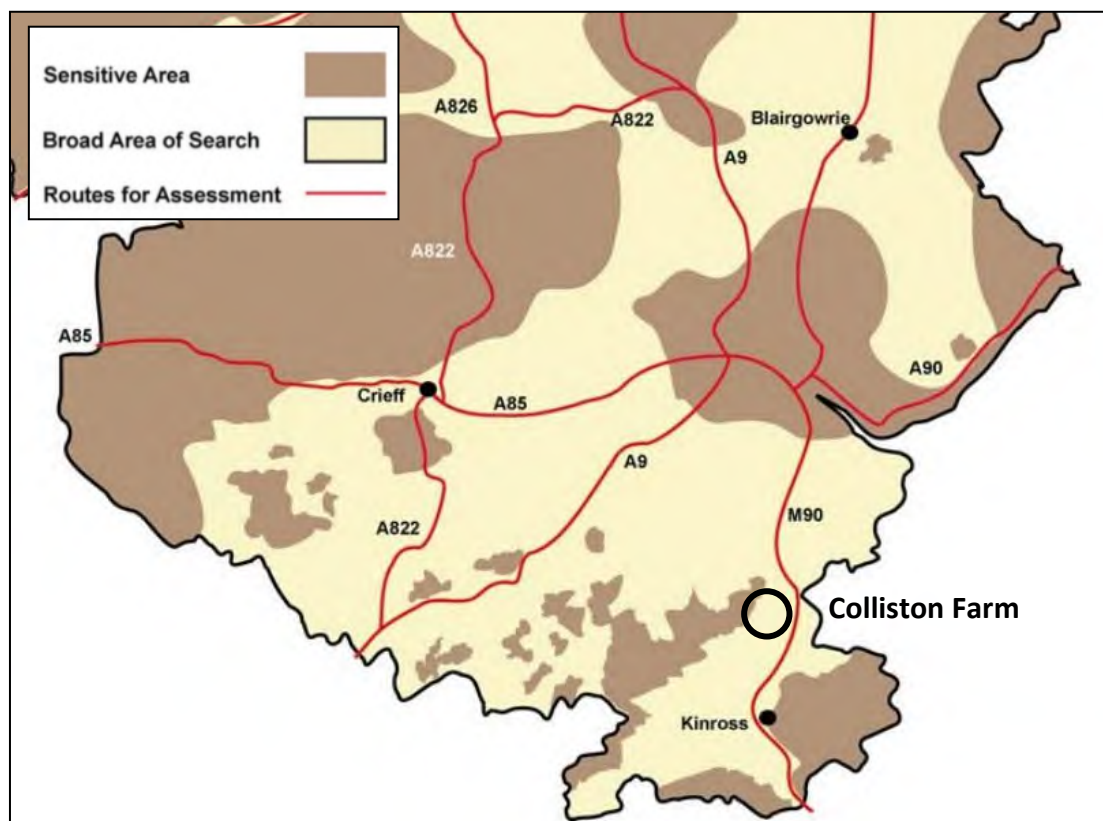


Figure 3.1 – Broad Area of Search and the project location.

The SPG details that developments in the Broad Area of Search will be supported when they are consistent with the Council's other detailed policies.

3.3 Conclusion

The Scottish Government is supportive of this scale of renewable projects, particularly where these are locally owned and will support a rural business.

In terms of Local Policy, Perth & Kinross Council are supportive of renewable energy development where they are considered to be environmentally acceptable, their energy represents a beneficial contribution and they also contribute positively to the local economy. It is contended that the proposed Colliston turbine satisfies all these criteria.

The proposed development site is located in the Broad Area of Search for Wind Energy Developments and with that respect is consistent with the TAYplan Strategic Development Plan and the Local Development Plan's key environmental policies. It is our opinion that the

Colliston Farm proposal is consistent with local and national planning policy and that the potential local benefits, of supporting an established rural business diversification, will outweigh any, localised negative environmental effects.

The remainder of this document aims to demonstrate that the proposal is appropriate in terms of its size, scale and location and that it can be accommodated without significant environmental adverse impact.

4 Project Design Considerations

4.1 Original Application

An application for a single 86.5m to tip wind turbine located on the Colliston Farm site was submitted in September 2012. This application was refused by Perth and Kinross under delegated powers in November 2012 for the four reasons detailed below:

1. *As the proposed scale of the turbine will not be absorbed by the existing landscape framework surrounding the site, which in turn will lead to the turbine becoming a dominant feature within the landscape resulting in a significant adverse impact on the visual amenity and landscape character of the area), the proposal is contrary to Policy 2 of the Kinross Area Local Plan 2004 which seeks to ensure that all new developments have a good landscape framework and will not adversely impact on the amenity of existing areas and Policy 5 of the Kinross Area Local Plan 2004, which seeks to conserve the existing landscape character;*
2. *As the proposal will potentially result in a significant cumulative, adverse visual impact on the landscape of the area by virtue of it being viewed in combination with both existing and proposed wind turbines in the surrounding area, the proposal is contrary to Policy 2 of the Kinross Area Local Plan 2004, which seeks to ensure that new developments do not adversely impact on the amenity of existing areas and Policy 5 of the Kinross Area Local Plan 2004 which seeks to conserve the existing landscape character;*
3. *The approval of this proposal would establish an undesirable precedent for similar sized developments within the local area, which would be to the detriment of the overall visual character of the area, and which in turn could potentially undermine (and weaken) the Councils established relevant Development Plan policies; and*
4. *An approval of the proposal would contravene the recommendations contained within the Tayside Landscape Character Assessment 1999 and Kinross-shire Landscape Character Assessment 1995, in relation to tall structures on the landscape surrounding Loch Leven Basin.*

4.2 Re-designed Application

The refusal of the original application prompted a reconsideration of the development at Colliston Farm and a re-evaluation of the project against business needs. A detailed analysis of the farm's electricity usage is discussed in **Section 2.5**.

The dual aim of the original application was to provide the farm with all its energy, and any excess electricity can be exported back to the national grid, creating a new stream of revenue for the business to utilise and reinvest. The decision was made that rather than exporting electricity, the farm would pursue a reduced scale project focused on providing electricity for the farm itself. It was identified that a turbine with a capacity of approximately 225kW would achieve this.

On this basis, a revised site design process was undertaken which reconsidered the following:

Turbine Scale Selection

Based upon the calculated average windspeed for the site, a 225kW turbine on site would be expected to generate in the region of 521,000kWh of electricity per year. As the demand of the farm including the cold stores is just over 500,00kWh a year, this scale of turbine was the logical choice for the site as the turbine would generate the equivalent of 104% of the energy demand of the farm.

Wind resource

A Vortex wind analysis report was commissioned to ensure the predicted wind speeds would be suitable for a turbine of this scale. The report calculated that the site is forecast to be subject to a mean wind speed of 7.4m/s at a height of 40m above ground level. In accordance with these results, the candidate turbine was selected: ACSA A27/225kW (32.2m hub height, 45.7m tip height).

Access

The majority of the proposed access follows an existing track in order to minimise adverse visual effects and minimise the impact on agricultural land.

Ecology

A series of ecology surveys was undertaken for the original assessment. These were updated in accordance to the latest proposal, with results presented in **Section 7**. No significant impacts on any species or habitats are expected.

Landscape and Visual Impact

The previous application was refused on Landscape and Visual grounds and therefore this was a major consideration in the re-designing process. A number of potential turbine locations were presented to the Case Officer between June and September 2013, who advised which of these would have the least impact on the surrounding landscape. This suggested position for the turbine was carried forward into the final site layout.

This proposed turbine location is in a less prominent area than previously proposed, thus minimising the impact on the surrounding landscape, being located of lower elevation, away from the local summit. The loss in elevation from the original location is approximately 45m. When taking into account the drop in turbine height from the original application, which is approximately 40m, the overall reduction in the height of the proposal is approximately 85m. This results in a significant reduction on impact of the surrounding landscape and visual impacts, as demonstrated in **Figures 4.1 and 4.2**.



Figure 4.1 – VP03 (Minor road between Newhill and Path of Condie) Comparison of Original & Revised Applications

Figure 4.1 shows that the revised turbine location is much less prominent when viewed from the minor road looking east towards West Lomond. The turbine will be backdropped by the hills to the east, as opposed to appearing on the skyline to the left of the hill.



Figure 4.2 – VP06 (B919) Comparison of Original & Revised Applications

Figure 4.2 demonstrates the views from the opposite direction. Again the new turbine is backdropped by the hills to the rear, and is much less prominent than the previous proposal.

The impact of the turbine on landscape character, designation and specific viewpoints is considered in detail in **Section 5**. The visual impact on the closest residential properties is also discussed within this section.

Noise

Noise impacts have been reassessed for the latest candidate machine in the revised turbine location, although no concerns were raised with this aspect of the previous application. The turbine is located significantly further than 10 rotor diameters distance (270m) from the nearest residential properties, and respects the noise tolerances set out in the ETSU-R-97 guidelines. The results of the noise impact assessment are presented in **Section 6**, and show that the turbine can comfortably meet the identified noise constraints at the nearest properties.

Cultural heritage

The original application did not raise significant concerns relating to Cultural Heritage. The assessment has been revised to consider the reduced proposal and is discussed in **Section 7**.

Communication Links

Communication links operated by BT and JRC were identified within 1000m of the proposed turbine location. The turbine has been located at a suitable separation distance from these links so that it will not interfere with their operation.

Shadow flicker

The former PAN45¹, now replaced by the Scottish Government's web based renewables advice, suggests that shadow flicker should not pose problems beyond a distance of 10 rotor diameters from a wind turbine. In this instance this equates to a maximum of 270m. The nearest property is approximately 560m to the proposed turbine location. Based on this guidance, no shadow flicker impacts are therefore predicted at any of the properties in the area due to their proximity to the turbine, and this aspect has not been considered further.

All of these factors were taken into account when finalising the project design. **Figure 5.1** below displays the project infrastructure in the context of the identified site specific constraints.

1 ¹ Scottish Executive Planning Advice Note, PAN45 (revised 2002): Renewable Energy Technologies, Wind Power, <http://www.scotland.gov.uk/library/pan/pan45-04.asp>, para. 64, 01/11/05

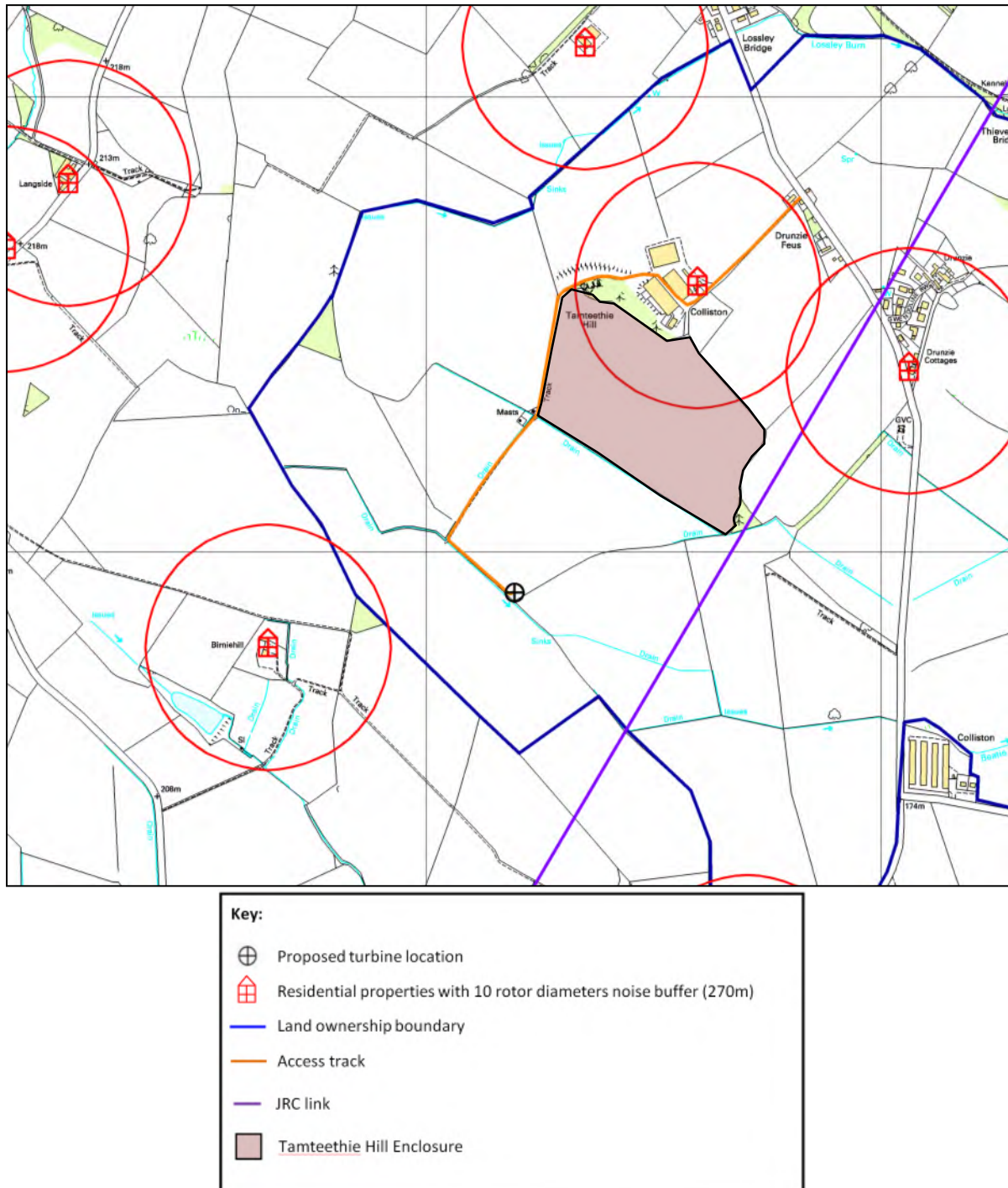


Figure 4.1 – Project layout and constraints

5 Landscape and Visual Impact

5.1 Introduction

This section reports on the potential landscape and visual effects of the Colliston Farm Wind Turbine. The proposed development is a single turbine scheme, 46m to blade tip located on privately owned farmland at Colliston farm ~2km south-west of Glenfarg, Perth and Kinross.

The aim of the design and assessment process is to promote the best “environmental fit” for the development through consideration of the existing landscape resource, the potential landscape and visual effects and design alternatives. This assessment process will refer to landscape value, and in particular landscape designations and related planning policy, as well as landscape character and the capacity for wind turbine development at this site. Included as part of this chapter are accompanying figures, illustrating potential visibility and, photomontaged examples from a range of receptors, descriptions of which can be found in **Colliston Farm Wind Turbine Landscape Figures** which accompany the Environmental Statement.

Summary of Scope

The scope of the assessment has been established on the basis of professional judgement and through the consultation process and is set out in **Table 5.1**.

Table 5.1 Scope of the Landscape and Visual Assessment

Landscape Issues	Description
Landscape Character	The effects of the proposed development on the landscape character and quality of the site area, as defined by the <i>Tayside Landscape Character Assessment</i> , <i>Fife Landscape Character Assessment</i> , <i>Clackmannanshire Landscape and Assessment</i> , <i>The Lothians landscape Character Assessment</i> and site survey.
Landscape Elements	Direct or physical effects on landscape elements.
Landscape Designations	Views from the National Scenic Areas, Areas of Great Landscape Value, Gardens and Designed Landscapes as well as views from other areas of landscape character as perceived by people
Visual Issues	Description
Local Community	Views from the local rural community, particularly from residential properties near the site and from local settlements which lie within the ZTV. Views from roads and popular tourist / walker destinations and hilltops will also be taken into consideration.
Tourist Destinations	Views from popular outdoor tourist destinations which entail an appreciation of the landscape tourist destinations, and the setting of features and the visitor experience.
Major Transport Routes	Transport routes including the M90 and A91.
Cumulative Issues	Description
Cumulative Assessment	The cumulative assessment includes viewpoint assessment within the Study Area where simultaneous and/or successive views of more than one wind energy development may be achieved, and sequential cumulative assessment, where more than one wind energy development may be viewed along transport routes (simultaneous or successive).

5.2 Guidance

The methodology for the landscape and visual impact assessment (LVIA) and the cumulative landscape and visual assessment (CLVIA) has been undertaken in accordance with the methodology set out below and conforms with *The Guidelines for Landscape and Visual Impact Assessment*, Third Edition (Landscape Institute and IEMA, 2013).

Additional guidance has been taken from the following publications:

- *The Tayside Landscape Character Assessment*, Land Use Consultants, 1999;
- *Fife Landscape Assessment*, SNH Review No. 113, David Tyldesley and Associates, 1999;
- *ASH Consulting Group 1998. The Lothians landscape character assessment. Scottish Natural Heritage Review No 91.*
- *ASH Consulting Group 1998. Clackmannanshire landscape character assessment. Scottish Natural Heritage Review No 96.*
- *Wind Energy, Planning Supplementary Guidance, June 2013 – Fife Council*
- *Siting and Designing Windfarms in the Landscape*, Scottish Natural Heritage, Version 1, December 2009;
- *Visual Representation of Windfarms Good Practice Guidance*, prepared by Horner + MacLennan and Envision for Scottish Natural Heritage, The Scottish Renewables Forum and the Scottish Society of Directors of Planning, March 2007
- *Landscape Character Assessment: Guidance for England and Scotland* (Countryside Agency and Scottish Natural Heritage publication, produced by the University of Sheffield and Landuse Consultants), 2002;
- *Guidance: Cumulative Impacts of Onshore Wind Developments*, Scottish Natural Heritage Advisory Service, Version 3, March 2012;
- *Landscape Character Assessment Topic Paper 6 - Techniques and Criteria for Judging Capacity and Sensitivity*, Countryside Agency and Scottish Natural Heritage, 2004;
- *Photography and Photomontage in Landscape and Visual Assessment*, Landscape Institute Advice Note 01/2011, 2011;

5.3 Assessment Methodology

Defining the Study Area

An overall Study Area of 20km radius from the site centre has been established following consultation with Perth & Kinross Council. This is also in line with SNH recommended study area for a proposal of this size.

Landscape and Visual Impact Assessment (LVIA) – the study area was restricted to the application site, access routes, and the potential Zone of Theoretical Visibility (ZTV) from

where there may be a view of the development at up to 20km distance from the site centre. The main focus of the assessment is on the area within 10km, which would be the distance within which significant effects of the proposed development are most likely to be experienced. This has been informed with reference to the findings of field surveys and viewpoint analysis, as well as from professional experience by previous assessments. This allows the assessment to focus on the issues most relevant to the application.

Cumulative Landscape and Visual Impact Assessment (CLVIA) - considers existing wind energy development proposals that have permissions, and those that are currently the subject of undetermined applications within a search area of 50km radius of the site centre. An initial assessment of the cumulative visibility of these windfarms within the Cumulative Search Area was then undertaken in order to determine which have the potential to contribute to a significant cumulative effect following addition of the Colliston Farm Wind Turbine. Many of the more remote developments were scoped out of the assessment at this stage due to the lack of combined visibility or their distance to the site. The detailed assessment focuses on those sites with potential for significant cumulative effects in combination with the Colliston Farm turbine. These windfarms are considered to be those within a 10km radius from the site, as mapped on **Figure 5.6**.

A Zone of Theoretical Visibility (ZTV) was created using the ReSoft © Wind Farm computer software to identify areas that have potential visibility of any part of the proposed wind Turbine calculated to blade tip and hub-height. The ZTV however, does not take account of built development and vegetation, which can significantly reduce the area and extent of actual visibility in the field and as such provides the limits of the visual assessment study area.

Figure 5.5a, b illustrates the ZTV to a tip height of 45.7m at 1:100,000 scale. **Figure 5.5c, d** illustrates the ZTV to a hub height of 32.2m at this scale.

Baseline Landscape and Visual Resource

This part of the LVIA refers to the existing landscape character, quality or condition and value of the landscape and landscape elements on the site and within the surrounding area, as well as general trends in landscape change across the study area. A brief description of the existing landscape character and land use of the area which includes reference to settlements, transport routes, vegetation cover, as well as landscape planning designations, local landmarks, and tourist destinations.

Assessing Landscape Effects

Landscape Effects are defined by the Landscape Institute as “*changes to landscape elements, characteristics, character, and qualities of the landscape as a result of development*”. The potential landscape effects, occurring during the construction and operation period, may therefore include, but are not restricted to, the following:

- Changes to landscape elements: the addition of new elements or the removal of trees, vegetation, and buildings and other characteristic elements of the landscape character type;

- Changes to landscape quality: degradation or erosion of landscape elements and patterns, particularly those that form characteristic elements of landscape character types;
- Changes to landscape character: landscape character may be affected through the incremental effect on characteristic elements, landscape patterns and qualities and the cumulative addition of new features, the magnitude of which is sufficient to alter the overall landscape character type of a particular area; and
- Cumulative landscape effects: where more than one wind farm may lead to a potential landscape effect.

The development may have a direct (physical) effect on the landscape as well as an indirect effect or effect perceived from out with the landscape character area. Landscape effects are assessed by considering the sensitivity of the landscape against the degree of change posed by the development. The sensitivity of the landscape to a particular development is based on factors such as its quality and value and is defined as high, medium or low. Examples of landscape sensitivity and criteria are described below:

High Sensitivity – This would primarily be rare landscapes, or landscapes which have been afforded either a national or local designation such as National Parks, National Scenic Areas or Areas of Great Landscape Value. These landscapes can be fairly dramatic in terms of scale and may feature a number of attractive landscape features, including mature woodland, intricate gorges and river valleys, prominent summits or features of cultural heritage. Man-made features or modifications to the landscape will be minimal and the landscape may have a wild or remote feeling to it;

Medium Sensitivity – This would include landscapes which are still relatively attractive and generally rural but do contain some man-made elements. It may be landscapes which have been modified to accommodate farming practices and landscapes which include more prominent settlement pattern and road networks. These landscapes may also contain woodland including plantation forestry and shelterbelts; and

Low Sensitivity – This would only be reserved for landscapes which may be deemed unattractive due to heavy modification and prominent man made features, such as industrial units.

The magnitude, or degree of change, considers the scale and extent of the proposed development, which may include the loss or addition of particular features, and changes to landscape quality, and character. Magnitude can be defined as high, medium, low or negligible, examples of magnitude are shown below:

High Magnitude – This would be a major change to baseline conditions, where the character of the landscape may be altered from its existing state into a landscape with windfarms;

Medium Magnitude – This would be a noticeable change in the baseline condition but not necessarily one which would be enough to alter the character of the landscape and will generally diminish with distance;

Low Magnitude – This would be a minor change to the baseline conditions where the development would be readily missed by a casual viewer and any character of the landscape would remain intact; and

Negligible Magnitude – This would be a change which would be difficult to notice and the baseline conditions are likely to remain almost as they were.

The level of effect is determined by the combination of sensitivity and magnitude of change as shown in **Table 5.2**.

Table 5.2 Magnitude and Sensitivity Matrix for assessing Overall Level of Effect

Sensitivity	Magnitude of Change			
	High	Medium	Low	Negligible
High	Major	Major/Moderate	Moderate	Moderate/Minor
Medium	Major/Moderate	Moderate	Moderate/Minor	Minor
Low	Moderate	Moderate/Minor	Minor	Minor/Negligible

Assessing Visual Effects

Visual effects are recognised by the Landscape Institute as a subset of landscape effects and are concerned wholly with the effect of the development on views, and the general visual amenity. The visual effects are identified for different receptors (people) who will experience the view at their places of residence, during recreational activities, at work, or when travelling through the area. These may include:

- Visual effect: a change to an existing view, views or wider visual amenity as a result of development or the loss of particular landscape elements or features already present in the view; and
- Cumulative visual effects: the cumulative or incremental visibility of similar types of development may combine to have a cumulative visual effect. Either:
 - Simultaneously - where a number of developments may be viewed from a single fixed viewpoint simultaneously within the viewer's field of view without moving;
 - Successively - where a number of developments may be viewed from a single viewpoint successively by turning around at a viewpoint, to view in other directions; and
 - Sequentially - where a number of developments may be viewed sequentially or repeatedly from a range of locations when travelling along a route.

The general principles adopted for the assessment of visual effects were taken from *The Guidelines for Landscape and Visual Impact Assessment* Third Edition, produced by the Landscape Institute, 2013. This guidance outlines the approach to define a ‘sensitivity’ for a given view and a ‘magnitude of change’ that would be caused by the development in question over its lifetime. A matrix in the Guidance is then used to assess the overall ‘level of effect’. This matrix is the same format as used to understand landscape effects and can be seen in **Table 5.2**. Examples of visual sensitivity are highlighted below:

High Sensitivity – These include residential receptors, such as views from individual properties or views from within settlements. Views from both recreational locations, such as hill summits, long distance footpaths, cycle paths and tourist locations such as castles and visitor centres are also considered to be of high sensitivity;

Medium Sensitivity – This would include most other visual receptors such as views from roads, other areas of landscape which would not be classed as recreational areas and views from areas within settlements which would not be considered residential; and

Low Sensitivity – This would cover views experienced by people at work and views where the existing view is already dominated by significant man made features.

In the context of this project, the effects during operation are always direct and long term (reversible after 25 years). Effects may also be non-cumulative or cumulative. None of the visual effects relating to this project have been considered positive in order to present a worst case view of any effects, although it should be noted that surveys have consistently shown that the majority of people are positively disposed to wind farm development once it is built.

Viewpoint Analysis Method

Viewpoint analysis is used to assist the LVIA from selected viewpoints within the study area. The purpose of this is to assess both the level of visual impact for particular receptors and to help guide the assessment of the overall effect on visual amenity and landscape character. The assessment involves visiting the viewpoint location in good weather and viewing wireframes and photomontages prepared for each viewpoint location. Illustrated turbines always face the viewer to give a worst case impression of the development under consideration. As far as possible the viewpoints have been selected to meet the following criteria:

- A balance of viewpoints to the north, south, east and west;
- A range of near middle and distance views of the development;
- A proportion representing areas known locally where people use the landscape, such as prominent hill tops or footpaths; and
- A proportion representing designated areas.

A wide range of viewpoints have been studied as part of this assessment and 12 viewpoints have been illustrated with photomontages to assist the assessment for the proposed development. **Table 5.3** below provides a summary of the viewpoint locations and rationale for their selection. Viewpoints highlighted in green no longer have any visibility of the proposed turbine.

Table 5.3 Summary of locations selected for Viewpoint Assessment

Viewpoint	Reason for Initial Selection	Distance
1. Close in from the south	Located at the side of the minor road which serves as access for Birniehill Farm. The view is representative of the closest residential properties to the south.	1km
2. Close in from the north-east	Located on the south-east edge of the Duncruevie. The view is representative of local residents of Duncruevie, other residences to the east and road users on the minor road.	1.2km
3. Minor Road between Newhill and Path of Condie	The viewpoint was taken at the side of the minor road between Newhill Farm and Path of Condie. The viewpoint was selected to represent road users and residences to the west.	1.3km
4. M90 at Blairfield	The viewpoint is located near to the M90 motorway, by the over-bridge to the north of Junction 8. The viewpoint was selected to represent motorists travelling on the M90.	2.2km
5. Burleigh Castle	The viewpoint was taken from the grounds of Burleigh Castle on the eastern edge of the settlement of Milnathort. The viewpoint was selected to represent visitors to the castle as well as the residents of Milnathort.	3.8km
6. B919 at Wester Balgedie	The viewpoint was taken at the side of the B919 between Newlands and Pittendreich Farms. The viewpoint was selected to represent road users heading north.	4.9km
7. Kinross Services	The viewpoint was taken from the service station and Travelodge on the western edge of Kinross. The viewpoint was chosen to represent visitors to the Service Station and road users.	5.9km
8. Bonnet Stane	The viewpoint was taken by the Bonnet Stane. The viewpoint was selected to represent visitors to the stone.	6.4km
9. Loch Leven Lodges	The viewpoint was taken from the edge of Loch Leven, near to the Holiday Cabins located on the south eastern edge of the Loch. The viewpoint is representative of visitors to the area, holidaymakers and recreational visitors to the Loch.	10.1km
10. Kinnoull Hill	The viewpoint is located near the summit of Kinnoull Hill to the east of Perth. Kinnoull Hill is a popular destination with walkers and runners as well as other recreational users	14.6km
11. Knock Hill	The viewpoint was taken from the summit of Knock Hill, one of the most prominent peaks in Western Fife. The view was selected to represent recreational visitors to Knock Hill.	16.0km
12. M90 overbridge at Glenfarg	The viewpoint was taken from the bridge over the M90 to the north of Glenfarg. The viewpoint was chosen to represent road users travelling on the M90 heading south.	3.6km

The ‘M90 overbridge at Glenfarg’ Viewpoint was included in the previous application, following the project redesign is no longer visible from this location. The Viewpoint has been included in the Landscape Graphics to illustrate this.

Methodology for Production of Visualisations

With the view selected, the locations were confirmed and then photographed with a digital Single Lens Reflex (SLR) camera set to produce photographs equivalent to that of a manual 35 mm SLR camera with a fixed 50mm focal length lens. In accordance with the SNH guidance *Visual Representation of Windfarms Good Practice Guidance*, panoramic images were produced from these photographs to record a 76° angle of view illustrating the typical

extent of view that would be experienced by the viewer at the viewpoint when facing in one direction and also provides an indication of the visual context of the proposed development. The wider 360° of each view were also taken into account, particularly for the hill summit viewpoints. As well as these photomontages, single frame visualisations equivalent to those of a 70mm manual SLR which have been included in the visualisation production.

Each view was illustrated using a panoramic photograph, a wireline and, in some cases, a photomontage. Wirelines and photomontages were produced using Resoft© WindFarm software and utilising 50m² Ordnance Survey Digital Terrain Mapping (DTM) height data covering the study area.

Visual Assessment of Settlements

All settlements within the study area have been assessed with regards to the level of visual impact the development will have on them. The sensitivity for each of the settlements is considered to be high in accordance with Guidelines for Landscape and Visual Impact Assessment, 2013. In line with the guidance from the Landscape Institute², the views from upper floor windows are considered to be of lesser importance. Views from gardens and public areas have also been considered. In addition to this all settlements within the study area have been assessed and level of effect noted.

Visual Assessment of Main Transport Routes

A route assessment has been undertaken which explores the visual impact of the development on views experienced by road users along major transport routes in the area and assumes that the viewer would be travelling at speed.

It also includes assessment of any National Cycle Routes, Long Distance Footpaths and locally valued footpaths which fall within the study area. This part of the assessment has been considered cumulatively along with all other wind energy development within the study area.

Cumulative Landscape and Visual Assessment

In addition to the Landscape Institute methodology for LVIA, the cumulative landscape and visual assessment (CLVIA) has considered the emerging guidance from Scottish Natural Heritage's *Assessing the Cumulative Impact of Onshore Wind Energy Developments*, Scottish Natural Heritage, March 2012. The CLVIA is however, not a substitute for individual wind farm landscape and visual impact assessment.

Predicting Cumulative Landscape Effects

The assessment considers the extent to which the proposed development, in combination with others, may change landscape character through either incremental effect on characteristic elements, landscape patterns and quality, or by the overall cumulative addition of new features. Identified cumulative landscape effects are described in relation to each individual Landscape Character Area and for any designated landscape areas that exist within the study area.

² Paragraph 6.36 page 114 in 'Guidelines for Landscape and Visual Impact Assessment'. Third Edition.' Landscape Institute and Institute of Environmental Management and Assessment. April 2013.

Predicting Cumulative Visual Effects

The assessment of cumulative visual effects involves reference to the cumulative visibility ZTV maps and the cumulative viewpoint analysis. Cumulative visibility maps are analysed to identify the residential and recreational locations and travel routes where cumulative visual effects on receptors (people) may occur as a result of the proposed development.

With potential receptor locations identified, cumulative effects on individual receptor groups are then explored through viewpoint analysis, which involves site visits informed by wireline illustrations that include other wind developments. Travel routes are driven to assess the visibility of different wind developments and inform the assessment of sequential cumulative effects that may occur along a route or journey.

Cumulative Viewpoint Analysis

Each viewpoint has been assessed cumulatively in order to understand whether or not the proposed development introduces a cumulative impact on the view from that location. All visible operational, consented and undetermined planning application wind energy projects are considered along with the Colliston Farm Wind Turbine development and a level of cumulative magnitude is assigned. The level and significance of cumulative visual effects is determined in the same manner as the main LVIA, using the previous matrix shown in **Table 5.2**.

5.4 Landscape Design Considerations

Project Description

The Colliston Farm Wind Turbine would include the construction of a single turbine in the Igneous Hills landscape. The turbine would be 32.2m in height to hub and 45.7m to blade tip.

Landscape Design Considerations

In accordance with SNH's *Strategic Locational Guidance for Onshore Wind Farms*, the site location would lie within Zone 1, which is described as follows:

Zone 1: Lowest natural heritage sensitivity identifies areas at the broad scale with least sensitivity to wind farms, with the greatest opportunity for development, within which overall a large number of developments could be acceptable in natural heritage terms, so long as they are undertaken sensitively and with due regard to cumulative impact.

However, this assessment is the result of a broad based study and provides an indication only. The Colliston Farm Wind Turbine site has been subject to LVIA in accordance with the relevant EIA Regulations.

Supplementary Planning Guidance for Wind Energy Proposals in Perth & Kinross (SPG)

The SPG, which was approved on 18 May 2005, seeks to clarify existing development plan policy and to assist in considering proposals against those policies. The SPG also provides a map highlighting broad areas of search along with more sensitive areas as a guide.

The proposed Colliston Farm turbine is located within a broad area of search as shown below in **Figure 5.1**.

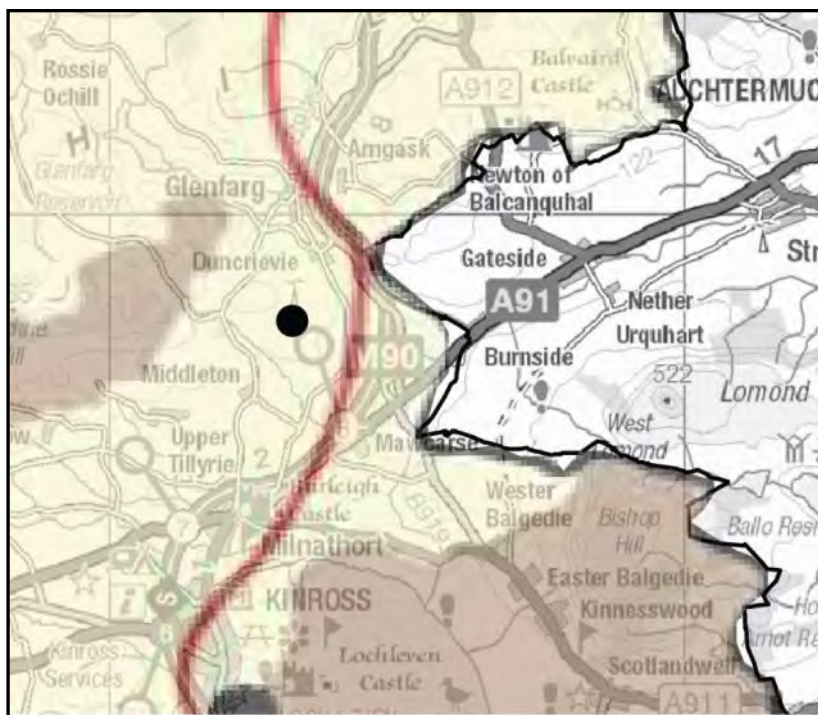


Figure 5.1 Broad Area of Search Diagram – Supplementary Planning Guidance for Wind Energy proposals in Perth & Kinross

The document sets out a number of guidelines relevant to the Landscape and Visual Assessment, these have been followed as well as guidance from SNH and the Landscape Institute.

According to the document the proposed turbine be classed as a single Community Scale development which is described in Table 1 of the SPG as:

A single ‘standard’ turbine (typically more than 20m to hub height and blade diameter more than 20m).

Design Objectives

SNH’s guidance ‘*Siting and Designing Windfarms in the Landscape*’ has been used to inform the layout and design of the scheme and it is considered that the proposed development is in accordance with its key principles, as laid out below:

Scale – The turbine size and number has been chosen to ‘fit’ with the scale of the landscape and not diminish the scale and setting of the surrounding countryside. Reducing the overall size of the turbine to sub 50m has allowed the development to interact with the features already present in the landscape including woodland, farm buildings and electricity pylons.

Skylines – As a single turbine less than 50m the development avoids dominating the major proportion of skyline and maintains a consistent position where it is

rarely a prominent feature of the skyline. The majority of views would see the turbine backdropped by the large scale upland landscapes to the east and west, an important consideration, particularly when viewed from Loch Leven.

Aesthetics – The location was chosen to work best with the surrounding landscape, appearing lower in the surrounding landscape than the surround prominent hill summits there is little confusion between the development and the wider landscape.

Layout Design

The proposed, broad location has been chosen as it is considered to represent the best compromise between the technical and environmental considerations set out above. The turbine has been moved ~650m to the south-east away from the local summit, allowing it to integrate with the immediate landscape surrounding the site. The overall height of the development was also substantially reduced.

Turbine Selection

The LVIA has been assessed on the basis of one turbine up to a maximum height of 45.7m. Other likely design considerations include the following:

- A modern turbine will be used that has a simple and balanced appearance with three blades and tapered, non-lattice towers; and
- The turbine will be semi-matt and pale grey in colour to reduce its contrast with the background sky under most weather conditions;

Construction Activities

Temporary landscape and visual effects would occur during the construction period, and would result from the visibility of construction activity, use of lay down areas, and site compounds. The landscape and visual effects would be of a low to negligible magnitude of change and not significant.

The lay down area and compound would be located in a field adjacent to the proposed turbine. During the construction period the landscape and visual effects would be significant due to the movement and contrast of workers and machinery in this area. These effects would be temporary and fully restored on completion.

All disturbed areas resulting from the construction (around the turbine bases, access tracks and on site compounds and lay-down areas) will be restored upon completion of the construction period. Specific mitigation measures necessary during construction would include:

- Colour and finish of substation/control building to be agreed with Perth & Kinross Council prior to construction;
- Land clearance and occupation will be limited to the minimum necessary for the works;
- Vegetation removal will be minimised as far as possible; and

- Valued features, such as peat land, wetland, historic features and field boundaries are protected and fencing will be used to keep contractors out of areas where damage could result.

Decommissioning

All of the visible, above-ground structures (turbines, transformer, substation and grid connection) will be removed upon decommissioning, thus rendering the landscape and visual effects of the development as reversible. There would therefore, be no landscape and visual effects remaining after decommissioning.

5.5 Baseline Conditions

Broad Landscape Context

The study area for the proposed development is located within the Tayside Landscape Character Assessment. The Tayside area stretches inland from the coast and Tay Estuary encompassing the city of Dundee and the route of the River Tay until it meets the Cairngorms National Park in the north and Fife to the south. The area features a number of settlements, including Perth, Kinross, Bridge of Earn, Glenfarg and Milnathort. The settlements are located close to the M90 motorway corridor which runs from Edinburgh in the south to Aberdeen in the north. Perth, Dundee and other larger settlements such as Dunfermline further out from the site are not predicted to have any views of the project. The area includes a variety of landscapes, ranging from large areas of intensively farmed arable land to the coastal areas of Fife and the Lothians as well as the hill ranges of the Ochils and Lomonds. **Figure 5.3** illustrates the various landscape character types, which have been classified and assessed by Scottish Natural Heritage and their consultant landscape architects. It can be seen from **Figure 5.3** that the site study area is covered by four different area reports: the Tayside Landscape Character, Fife Landscape Character, The Lothians Landscape Character and the Clackmannanshire Landscape Character.

The proposed development site is located in the Tayside Lowlands Landscape Character Area as defined by the Tayside Landscape Character Assessment document. Within the Tayside Lowlands the site is within the Igneous Hills character type, the Igneous Hills cover two areas, the Ochils and the Sidlaws. The proposed development is located in the Ochils.

In addition to this landscape there are also a number of other landscape character areas that lie within the study area. **Table 5.4** summarises all the landscape character areas that are situated within the study area. Any areas highlighted in green are not within the ZTV.

Table 5.4 - Key Characteristics of Landscape Character Types

Name	Key characteristics
Tayside Landscape Character Assessment	
Firth lowlands	Lying along the northern side of the Firth of Tay, between Perth and Dundee, Bound to the north by the steep Sidlaw Hills, the area forms one of the most fertile parts of Scotland. The area is principally an agricultural area and the landscape is dominated by large, geometric fields. Field boundaries within parcels of land are often absent, the distinction between different fields being marked by drainage ditches or simply changes in crop.

Name	Key characteristics
Broad Valley Lowland	Located south of the Highland boundary Fault lie five broad lowland valleys or straths. These share a range of common characteristics which set them apart from other valleys and glens. The five areas of Broad Valley lowland are: Strathmore, Strathearn, Strathalan, Lower south and north Esk river valleys and the Pow Water Valley between Gask Ridge and Keillour Forest. Valleys such as Strathmore had comprised extensive areas of rough grazing, scrub woodland and unproductive wetland. Overtime large rectilinear fields were created as the area became predominant in agriculture.
Dolerite Hills	A series of hills rise along the southern boundary of Tayside, enclosing the Loch Leven basin. These are fragments of landscape character areas which extend beyond the region in Fife. The hills divide into three groups, the Lomond Hill to the east, and Benarty Hill and the Cleish Hills to the south.
Lowland Hills	The Lowland Hills form the transition between the Highlands to the north and west and the lowlands to the south and east. In contrast to the areas of true upland to the north, these hills are generally smooth and well-rounded. The transitional nature of the hills is reflected in landcover and vegetation. Pastoral and even arable fields on the lower slopes give way to rough grazing and then to open moorlands as height is gained. There is a considerable amount of coniferous forestry in this landscape type, though this is concentrated on less fertile land.
Lowland River Corridors	This area is characterised by a well-defined river corridors in broader lowland landscapes. It features meandering rivers often incising through softer sandstone with semi-natural woodland on steeper slopes.
Fife Landscape Character Assessment	
Coastal Hills	Located around the coast of Fife, the Coastal Hills are mainly located above the Coastal Cliffs, Braes and terraces, which slope gradually towards the sea offering panoramic views of the Firths. They are characterised by their strong association with the sights, sounds and smells of the coast and usually comprise large, undulating, regular, open, arable landscapes with few hedges but some linear shelterbelts and policy plantings. These are medium to large-scale, often open or exposed coastal landscapes where the character is always influenced by the sea. Generally a simple, sloping, balanced, active, organised, tended, farming landscape with regular or geometric patterns. These hills mark the transition between coastal and landward areas of Fife sharing characteristics of both.
Coastal Terrace	The Coastal Terraces are mostly flat or gently sloping towards the coast. They are extensively built upon or relatively undeveloped comprising large, open, undulating, arable fields with infrequent or more regular steadings. They have little vegetation cover except policy planting and shelter-belts around the large houses and designed landscapes, or on the steeper slopes often above burns. There are few field boundaries, limited to some hedgerows, stone dykes or post-and-wire fencing primarily around the larger houses and farmsteads. These are coastal landscapes where the character is always influenced by the sea and typically they are a simple, undulating, balanced landscape with muted colours, varied textures and slow movement.
Coastal Flats	The Coastal Flats on the south coast are very flat, low-lying coastal landscapes claimed from the Firth of Forth. On the north east coast they are developed on blown sands and old dune systems and covered by a variety of land uses such as the afforestation at Tentsmuir Forest, the airfield at Leuchars and the world famous golf courses at St Andrews. Therefore they have a diversity of landscape character but their close association with the sea is ever present in these very flat, low-lying, horizontal, open, large-scale, exposed coastal landscapes. Typically, intensively cultivated, geometrically laid out, large to medium-scale, predominantly arable fields or forestry plantations with rectilinear, fenced enclosures.
Lowland Hills and Valleys	The Upland Foothills of the Ochils, Lomond and Cleish Hills are very conspicuous, often defining the edge of other landscape types and the extent of views across the lowlands. The natural slopes of the landform of the Foothills are gentler and less pronounced than the Upland Slopes but usually steeper and higher than the Lowland Hills. They too form distinctive backdrops to other landscape types. The Foothills have several conspicuous point features, providing each area with its own identity. They are characterised by a combination of steep sided, rugged, open landform and land cover on the upper foothills, and shallower, smoother, more vegetated or developed landform lower down.
Lowland Glacial Meltwater Valleys	The Lowland Glacial Meltwater valleys are 'U' shaped, flat bottomed channel-like valleys with distinctive often pronounced and frequent eskers, kames and mounds deposited by melting glaciers. Typically used for intensive arable cultivation, the valley floor and lower slopes contrast with the mixed farming or grazing land on the rising slopes. There are medium to large-scale geometric field patterns enclosed by low, gappy hedges or post and wire fences. Steadings are located along distinct lines of transition from fertile valley soils to the poorer soils of hill slopes. They have small, sinuous often inconspicuous burns or small rivers which appear to be too small for the size of the valley. In parts, there are extensive conspicuous sand and gravel quarries disrupting an otherwise generally well organised, tended, balanced, open, locally busy and diverse landscape with regular patterns, smooth textures and seasonally variable colours.
Upland Slopes	The steep Upland Slopes of the Lomond, Cleish and Benarty Hills with their pronounced, vertical landform are very conspicuous, often defining the edge of other landscape types and the extent of views across the lowlands. They are distinctive backdrops, edges and skylines to other landscape types. They are typically open

Name	Key characteristics
	and exposed with semi-natural land cover, including woodlands often strongly related to landform. The burns and occasional waterfalls, gullies and folds and steep-sided, narrow glens are important features in these balanced, harmonious, colourful, many-featured, vertical, open, semi-natural landscapes. The ruggedness and rocky outcrops of some of the slopes contrast with the sweeping patchwork of gentler, smoother more regular landform and land cover of the slopes elsewhere.
Upland Foothills	The Upland Foothills of the Ochils, Lomond and Cleish Hills are very conspicuous, often defining the edge of other landscape types and the extent of views across the lowlands. The natural slopes of the landform of the Foothills are gentler and less pronounced than the Upland Slopes but usually steeper and higher than the Lowland Hills. They too form distinctive backdrops to other landscape types. There is a lack of settlements but a general abundance of farmsteadings which, along with the many types of woodland are well related to landform, often in association with the frequent burns running down gullies or folds or narrow glens. The Foothills have several conspicuous point features, providing each area with its own identity. They are characterised by a combination of steep sided, rugged, open landform and land cover on the upper foothills, and shallower, smoother, more vegetated or developed landform lower down. These are medium to large-scale, open, simple, sloping, curved, quiet and balanced landscapes with smooth or varied textures and muted colours.
Pronounced Volcanic Hills & Craigs	The Pronounced Volcanic Hills and Craigs form conspicuous, pronounced, often distinctive and recognisable hills or hill ranges sometimes protruding high above the lowlands or extending the uplands or foothills. They form important backdrops to the lowlands. Their distinctive shapes, silhouettes and skylines, with recognisable shapes, peaks and slopes give Fife a strong sense of place and direction. The farmsteadings and woodlands are well related to landform and there is a variety of other individual buildings and structures, sometimes associated with the burns and contributing to the identity of the area. The upper slopes of these Hills and Craigs can be steep sided, rugged and open, contrasting with the shallower, smoother, more open, simple, sloping, curved, quiet and balanced landscapes with smooth or varied textures and muted colours.
Uplands	The Uplands of the Ochil, Lomond, Cleish and Benarty Hills have an elevated, massive, pronounced physical landform with distinctive silhouettes and skylines often with recognisable shapes, peaks and slopes. They are open large-scale, rolling hills of upland pastures with peaks, knolls and ridges mainly covers in a green and brown patchwork of grasses, bracken, sedge and rush with pockets of heather. Stone dykes, burns and occasional minor roads flow over and along the contours and patterns are irregular, responding to the landform. The Uplands are a landscape of vast scale, exposure, openness, peacefulness and simplicity. They are typically quiet, calm, harmonious, semi-natural, enduring landscapes.
Lowland River Basins	The lowland River Basins of the Rivers Leven and Ore are flat, wide, relatively low-lying valley basins contained by distant foothills or volcanic hills with an open, medium to large-scale, regular pattern of intensively cultivated arable fields with few animals. In some parts there are extensive coniferous plantations on poorer soils but elsewhere many mature, narrow, linear, straight, predominantly coniferous shelterbelts form strong visual features and patterns. Dominated by straight or angular horizontal lines and geometric patterns formed by cropping, and a dense network of narrow, straight ditches and lanes with bridges and sharp corners. This is a diverse, flat, active, planned, organised, tended and regular landscape.
Lowland Loch Basins	Lochs Ore, Fitty and Gelly comprise low lying land with freshwater lochs surrounded by gently rising agricultural land. The Loch Leven Basin is edged by the volcanic Redwell Hills along the minor road running from Ballingry to Auchmuirbridge which is relatively steep and wooded in parts. The Leven basin is in intensive arable production. Kilconquhar loch basin, in contrast, is heavily wooded.

Clackmannanshire Landscape Character Assessment

Middle Devon Water	Strongly undulating low hills, bluffs and spurs which enclose and conceal the middle stretches of the River Devon. The river is deeply incised within the hummocky landform, and is at its most dramatic on the outskirts of the area where waterfalls, gorges and frothy pools have been gouged out of the rock. The field network of improved grassland is thickly punctuated by deciduous trees which stud the numerous hedgerows. Blocks and drifts of small-scale coniferous and mixed woodland thickets and shelterbelts are scattered throughout the farmland, merging with ribbons of birch, ash, oak and alder along the river and its tributaries.
Lower Devon Carselands	The small, vigorously twisting watercourse occupies an oversized, flat, valley, bounded by rolling farmland to the south and by the abrupt escarpment of the Ochils to the north. It forms a large-scale grid of rectilinear arable fields predominantly divided by the lines of post-and-wire fences or, more occasionally, drainage channels, the broken lines of low hawthorn hedgerows, or widely scattered hedgerow trees. There are a few small isolated blocks of trees dispersed across the notably unwooded river floodplain, contrasting with the mixture of arable crops, pasture and dense fringes of broadleaved and mixed woodland along the valley edges.
Devon/Forth	The valley of the Devon Water to the north is separated by this broad area of elevated, strongly rolling ground from the Forth estuary and adjacent plains to the south. The farmland of the area is varied, the undulating fields including rough grassland, lush pasture and crops. Field boundaries include clipped, well-maintained hedgerows, scattered hedgerow trees, post-and-wire fences and neat stone walls. Several large

Name	Key characteristics
Ochil Hills	coniferous blocks, integrated within the undulating landform, merge with fringes of mixed woodland, farm woodlands and tree clumps, and several areas of policy landscape. Forming the highest ground within the Lowlands of Central Region, the hills reach a peak in Ben Cleuch. The tightly-knit hill plateau is capped by smooth, rounded tops, strongly fissured by the deep cuts of minor watercourses. Across the rolling upper hill summits, peaty ground and extensive stretches of grass and heather moorland are the dominant land cover, from which afforestation is absent. Panoramic views of the glinting coils of the Forth, as it journeys to the sea, are gained from the southern edge of the Ochils, becoming absorbed and localised within the rolling hill plateau to the north.

Land use and Landscape Change

The study area is dominated by arable and pasture land particularly around the site. To the north the Ochil Hills serve to form a barrier between the site and the north-west of the study area. To the south the land is generally flatter around Kinross with Loch Leven one of the main features of the area, there are areas of higher ground further east with the Lomond Hills forming two distinctive peaks. Generally speaking, over time, the fields have become larger with the removal of hedgerows, woodland, wetland and traditional field boundaries to increase farm productivity.

Igneous Hills Landscape Character Type

The site is completely located within the Igneous Hills landscape area as defined by SNH in the Tayside Landscape Character Assessment. The Igneous Hills landscape character type occurs in two distinct areas within the Tayside assessment. The proposed development is located within the Ochils and is described below:

“The Ochils are the larger of the two hill ranges, rising to over 500 metres and extending up to 12 kilometres in width in places. Though there are areas of improved pasture and even some cultivation within the more sheltered glens, the land is generally low fertility and the bulk of the agricultural land takes the form of unimproved rough grazing. The Ochils also have a considerable amount of coniferous forestry. Along the lower slopes in Strathalan, this generally takes the form of geometric plantations and shelterbelts which are prominent in this open, large-scale landscape. Further west, in Strathearn, the woodland is less formal. However, the most extensive woodlands are located in the heart of the eastern Ochils, particularly Innerdouny Hill where a large expanse of Sitka spruce covers a series of upper catchments. The effect is to transform the sparse, open landscape of the Ochil summits, and to create a sense of enclosure which is absent elsewhere on the hills. New planting is more sensitive, incorporating broad-leaf fringes and better reflecting the natural flow of the landform. Nevertheless, it will result in a significant change in the upland landscape.

Much of the Ochils and Sidlaws are given over to pastoral uses, and in places the land is so poor it supports little more than rough grazing. This pattern of agricultural land use sits comfortably with the Igneous Hills’ upland, exposed character and contrasts effectively with more fertile areas of lowland to the north and south. In a few areas better soils and a degree of shelter allow arable cultivation to take place, often at some altitude. As in other areas, the influence of estate ownership is evident in the maintenance of the farming landscape. The area falling within the Gleneagles Estate can be determined from less well maintained areas around.

Woodland makes an important contribution to the landscape of the Ochils and Sidlaws, clothing many of the steepest slopes and lining some of the more sheltered valleys and glens. However, a number of commercial woodlands, planted in the first half of the 20th century, have had a significant adverse impact on the landscape. Extensive ranks of Sitka spruce and Douglas fir cover large areas of the Ochils in particular in an even aged monoculture of conifers. Such plantations have created a uniform, enclosing landscape where before there would have been an open and varied landscape of pastures, burns and small glens. The negative effect of these early plantations has tainted attitudes towards commercial forestry in these areas even though forestry practice has long since moved on. As the existing plantations reach maturity, there will be opportunities to implement a phased programme of felling and replanting which will allow a more varied and ‘natural’ woodland form to be created, with a much more varied species and age mix, and a higher proportion of open space.

The low fertility of the Igneous Hills and the suitability of their climate to tree growing mean that there is still some interest in establishing new woodlands within the Ochils and Sidlaws. The Tayside Forestry Strategy suggests that areas to the south and east of Auchterarder fall into the ‘preferred’ category for new planting, together with smaller areas in the eastern Sidlaws.

The elevation of the Ochils and Sidlaws and their proximity to centres of population makes them technically well-suited as locations for telecommunications masts and aerials. Several of the hilltops are crowned with one or more masts, introducing strong vertical and industrial structures into the upland landscape. The masts are frequently visible over a considerable distance. It is possible that the growth of the telecommunications industry will be reflected in pressure for additional masts and aerials.”

Immediately to the south of the proposed site lies an area of landscape referred to as the Lowland Loch Basin predominantly the Loch Leven Basin, part of the Tayside Lowlands regional character area. This area is the location where the majority of the theoretical visibility is predicted and is described as:

“Historically Loch Leven has been a focus for human settlement and land use. The earliest signs of settlement included a crannog which was destroyed during the 19th century. Loch Leven has a number of other historic sites including Kinross House, Loch Leven Castle on Castle Island and the Priory on St Serf’s Island. Several villages and hamlets grew around the fringes of the loch, their industries of weaving, paper making and fishing reliant on the supply of water. The largest of these settlements, particularly Kinross, Milnathort and Kinnesswood have expanded over the last century, the latter pushing up the slopes of the Lomond Hills.

Both Basins include considerable areas of arable and grazing land around the fringes of the waterbodies. This is generally of a semi-open character, enclosed by hedges. There appear to be few pressures acting upon agriculture in these areas.

Commercial woodland is absent from this landscape type. However, semi-natural woodland is found around the edges of the waterbodies.”

Local Landscape Character

The site is located in the Igneous Hills landscape character area and is located in an area of arable farmland at ~255m AOD. The site is currently in an area of pastureland consisting of improved grassland. The surrounding landscape is fairly undulating with several small knolls and has a rolling feel. The area is fairly open and of a medium to large scale, with views towards the more conspicuous peaks of the Lomond Hills which rise from the flatter landscapes of Fife. The rise in topography to the west tends to limit views in this direction. To the east of the site runs the M90, with the Ochil Hills lying to the north-west. Within the site itself, the ground rises to form a small peak rising to a reasonable height. Built features adjacent to the proposed site include Colliston Farm and associated infrastructure.

Landscape Elements and Features

Landscape elements are the component parts of the landscape, such as trees, woodland and ponds that combine to form areas of landscape character. Often these characteristic elements may be distinctive to a particular regional area of landscape character or more localised area of landscape character type. The main elements of landscape character across the region include forestry plantations, arable fields and pastureland with some dry stone dykes. The area is heavily defined by the Ochil Hills which lie to the north-west of the site. There is also a significant man-made feature in the M90, which serves to connect Aberdeen, Perth and Dundee with Edinburgh in the south.

Broad Visual Context

The visual character of the landscape in the vicinity of the site is of rolling agricultural land, with rolling hills to the north-west of the site. To the west of the site the land takes on the appearance of a valley as it rolls away from the higher ground in the north-west. The valley runs from north-east to south-west and is dominated by large arable and pasture land. To the north-west the views give way to the mountainous terrain of the Ochil Hills. To the south-east of the study area is rolling agricultural land which contains settlements, roads, Lochs and a patchwork of fields and woodland. Despite several major built features, notably the M90, overall the area retains a rural feel for the majority with large arable fields and rolling hills forming large portions of the views.

Weather conditions

Changing weather patterns and local climatic conditions will influence the visibility of the turbine in terms of the extent of view, the colour and contrast of the turbines and the number of turbines visible and thus the perceived visual impact. There will be periods of low visibility (fog, low cloud, and bright sunny conditions that are accompanied by haze generated by temperature inversions) as well as periods of high visibility in clear weather. In some instances and from some locations they may be ‘back-lit’ (e.g. appearing darker in colour during sunset/sunrise and periods of pale or white blanket cloud) and in other circumstances may appear to be ‘up-lit’ (e.g. during stormy periods that combine dark clouds and bright sunshine).

Landscape Planning Designations

The study area for the proposed development as shown in **Figure 5.4** is primarily located within Perth and Kinross Council although there is also part of the study area within the Fife Council and Clackmannanshire Council areas. The local development plans contain a number of policies which seek to protect landscape resources, and although there are no designations on the site itself, the study area includes a number of designated landscapes that are relevant to this assessment. The key landscape planning designations are illustrated in **Figure 5.4**.

Landscape planning designations and policies are considered in the determination of the sensitivity of landscape receptors as they provide an indication of value ascribed to the landscape resource.

Those designated landscapes that overlap the ZTV (and may potentially have views of the proposed development) have been considered as part of this assessment and are listed in **Table 5.5**. Other planning policies and designated landscapes located out with the ZTV have been excluded from further study as they will not experience any effects from the proposed development.

Table 5.5 Landscape Planning Designations

Designation	Description
Areas of Great Landscape Value (AGLV)	<p>Ochil Hills. This AGLV covers the Ochils Hills to the west and south-west of the proposed development, the most prominent hill range in the region. The designation covers the hills of Innerdouny and Dochrie to the north west of Kinross as well as the hills to the north of Alva, Tillicoultry and Dollar. The AGLV is situated ~1km distance from the turbine to the west at its closest point and covered by Policy 54 in the Kinross Area Local Plan and Policy EN2 in the Clackmannanshire Plan.</p> <p>Cleish Hills. This designation covers the Cleish Hills to the south of Kinross which sit to the south of the proposed development. The designation is situated ~10.5km distance from the turbine to the south west and covered by Policy 54 in the Kinross Area Local.</p> <p>Perth Greenbelt. These smaller designated landscapes surround the settlement of Perth acting a green belt to the city. They are situated 10.4km distance from the turbine to the north and covered by Policy 11 in the Perth Area Local Plan.</p> <p>Lomond Hills. This designation covers the landscape area between Loch Leven and the western slopes of the Lomond Hills and the Regional Park to the southern boundary between Perth & Kinross and Fife. The AGLV is situated ~4.1km to the south-east of the proposed turbine and is covered by Policy 54 in the Kinross Area Local.</p>
Fife Council - Special Landscape Areas (SLA)	<p>Lomond Hills. This area lies to the north west of Glenrothes and is centred on the main hill summits West and East Lomond and upland slopes. The area to the north and the area of upland out with this SLA extends into the neighbouring local authority area of Perth and Kinross. The boundaries selected include the eastern, southern and northern slopes. The southern boundary reaches the northern edge of Glenrothes and Leslie and in the west at Auchmuirbridge heads north to East Feal and along the boundary with Perth & Kinross to the B919 and A91. The north boundary then extends to the A912 along the course of the River Eden to the west and the minor road which runs along the foot of the Lomond Hills to Gateside and Strathmiglo before joining the A912 and thence on to Falkland and the A92. It is situated 3.6km distance from the development to the east and covered by Policy E19 in the Fife Local Plan.</p> <p>Cleish Hills This extensive area is located on north western edge of West Fife and borders Perth and Kinross to the north. The minor road east of Loch Glow forms the eastern boundary and the B914 forms the southern boundary as far as Saline where the west boundary follows the foot of Saline Hill north to and Cult Hills. The designation is located ~14km to the south and covered by Policy E19 in the Fife Local Plan.</p> <p>Benarty Hill and Loch Ore. The area extends from the B996 (NE of Kelty) east to the settlements of Ballingry and Lochore. To the north and west the boundary adjoins Perth and Kinross Council</p>

Designation	Description																				
	<p>area. The area includes the summit of Benarty Hill, the south facing slopes including Benarty Hill and Harran Hill Wood and the basin of Loch Ore with the southern boundary at the Lochfitty Burn. The designation is situated 10.9km to the south of the turbine and covered by Policy E19 in the Fife Local Plan.</p> <p>Cullaloe Hills and Coast. This landscape covers a large area stretching from the eastern edge of Dalgety Bay to the western edge of Kirkcaldy, and extending down toward the coastal edge. The north boundary follows the minor road from Newliston on the perimeter of Kirkcaldy where it then continues along a ridge which is further defined by shelterbelts and woodland planting, and to the north of Camilla Loch. From here the boundary follows the minor road to Auchtertool, and then follows the route of the B925. The boundary then passes to the south of Mossmorran to Pitmethven Wood and joins the A909. The boundary extends along the B9157 and then follows the minor road to Goat Quarry where it extends west along a minor water course, taking in the policies of Fordell to the east of Clockluine Road and north of the A921, extending along the coastal edge to Aberdour. The designation is situated 19.7km to the south of the turbine and covered by Policy E19 in the Fife Local Plan.</p> <p>Tay Coast. This extensive area comprises a long band of low hills and coastal landscapes bordering the southern shores of the Firth of Tay, extending from Tayport to Newburgh. The western boundary includes the slopes which contain the basin of Lindores Loch. The boundary then extends east along the foot of Dunbog Hill then along the A92 before heading north towards the coast at the foot of hills to Wormit. East of Wormit the north boundary extends to Tayport south of the B946 and then the southern boundary follows the lower hill slopes around St Fort and minor roads on the boundary of the Scotsraig Estate to the western edge of Tayport. The designation is situated 15.2km to the north east of the turbine and covered by Policy E19 in the Fife Local Plan.</p>																				
Regional Parks	<p>Lomond Hills Regional Park. This is one of only three regional parks in Scotland and is designated for both its scenic qualities and its recreational value. The designation covers the Lomond Hills and landscape north west of Glenrothes. The Regional Park is and situated ~3.6km to the south of the turbine.</p>																				
Gardens and Designed Landscapes (GDL)	<p>(Listed in the Inventory of GDL for Scotland) are designated for their unique combinations of horticultural, landscape, scenic and historic interest.</p> <p>There are 20 Gardens and Designed Landscapes within the study area these are located within the various council areas. The GDL's are covered by Policy E11 in the Fife Local Plan, Policy 17 in the Perth Area Local Plan, Policy 33 in the Kinross Local Plan and Policy EN9 in the Clackmannanshire Local Plan. A list of all GDL's within the study area is provided below:</p> <table> <tr> <td>Kinross House</td><td>Inchyra House</td></tr> <tr> <td>Blair Adam</td><td>Glendoick House</td></tr> <tr> <td>Cleish Castle</td><td>Megginch Castle</td></tr> <tr> <td>Castle Campbell</td><td>Errol Park</td></tr> <tr> <td>Invermay</td><td>Melville House</td></tr> <tr> <td>Dupplin Castle</td><td>House of Falkland Palace</td></tr> <tr> <td>Methven Castle</td><td>Balbirnie</td></tr> <tr> <td>Scone Palace</td><td>Leslie Hall</td></tr> <tr> <td>Balmano</td><td>Raith House and Beveridge</td></tr> <tr> <td>Kinfauns Castle</td><td>Park</td></tr> </table>	Kinross House	Inchyra House	Blair Adam	Glendoick House	Cleish Castle	Megginch Castle	Castle Campbell	Errol Park	Invermay	Melville House	Dupplin Castle	House of Falkland Palace	Methven Castle	Balbirnie	Scone Palace	Leslie Hall	Balmano	Raith House and Beveridge	Kinfauns Castle	Park
Kinross House	Inchyra House																				
Blair Adam	Glendoick House																				
Cleish Castle	Megginch Castle																				
Castle Campbell	Errol Park																				
Invermay	Melville House																				
Dupplin Castle	House of Falkland Palace																				
Methven Castle	Balbirnie																				
Scone Palace	Leslie Hall																				
Balmano	Raith House and Beveridge																				
Kinfauns Castle	Park																				

Visual Baseline and Receptors

Visual receptors would include anyone who may have visibility of the turbine, such as people who may work in the area, residents or tourists. **Table 5.6** identifies all the visual receptors that were considered as part of the assessment.

Table 5.6 Visual Receptors

Visual Receptor	Description
Settlements	Settlements that will be assessed include Duncruevie, Milnathort and Drunzie. Photomontages have been produced for a number of these settlements. Settlements outwith 10km are unlikely to experience significant visual effects.
Road Users	The M90 has been assessed both with regards to the impact of Colliston Farm Wind Turbine and any potential sequential cumulative effects.
Recreational	Recreational receptors in the area mostly refer to hill walkers using the Lomond Hills in the area, as well as The Ochils.

Construction Stage: Assessment of Landscape and Visual Effects

The visual effects of the development during the construction period would mostly be limited to ‘close-range views’ from where it would be possible to view noticeable ground-based activities and the movement of construction vehicles. The main receptors with visibility of ground-based construction activities would be limited to the immediate properties such as Colliston and Birniehill which will see construction vehicles accessing the site.

The visual effects of the construction would begin with the establishment of a Contractor’s compound and increase incrementally over the construction period with the most obvious effects associated with the erection of the turbine. The construction activity would be limited to a relatively small area. The specific construction activities have been assessed earlier as part of the Landscape Design Considerations and no significant negative residual effects are anticipated on any receptors.

5.6 Assessment of Landscape Effects

Landscape Effects are defined by the Landscape Institute as “*Change in the elements, characteristics, character, and qualities of the landscape as a result of development.*” These effects are assessed by considering the landscape sensitivity against the magnitude of change. The matrix used to guide the evaluation or level of effect as illustrated in **Table 5.2**. The type of effect may also be described as temporary or long term/permanent, direct or indirect, cumulative and positive, neutral, or negative.

Direct Effects on Landscape Fabric

Landscape Sensitivity of Local Landscape Character

The landscape is somewhat man-modified with large arable fields dominating the surrounding areas. There are some small areas of shelterbelt woodland to the north-west, with most of the area comprising of an undulating topography with a series of small hill summits. The general landcover for much of the area is rough and improved grassland used for grazing and the overall feel is one of a fairly uniform landscape with little or no significant features. The quality of the landscape is generally medium.

In terms of landscape value, within the study area, the landscape area is not covered by any designations but may be valued locally. Overall the landscape value is medium.

The overall sensitivity of the local landscape character is considered to be medium.

Magnitude of Change

During operation and construction, the Colliston Wind Turbine would occupy and directly affect a small area of the local landscape character leading to a medium overall magnitude of change. The addition of a single turbine to the local area would result in the loss of a minimal area of improved pastureland. The overall level of direct landscape effects on the local landscape character resource would be **medium** and not significant, long term (reversible) and negative.

Indirect Effects on Igneous Hills LCA*Landscape Sensitivity of Igneous Hills LCA*

The Igneous Hills Landscape Character Area runs across the centre of the study area. The character area predominantly covers the Ochil Hills of Perth and Kinross and comprises areas of upland.

The landscape has been slightly man-modified with plantation forestry and farm steadings the noticeable features throughout the area, and more recently the introduction of communication masts over some of the higher peaks. The area has a slightly remote feel to it, although views south do look over a more developed valley and the landscape always feels part of that or connected to it. There are no significant settlements within the area but a number of scattered dwellings, farmsteads and hamlets can be found across the landscape. The quality of the landscape is generally medium.

In terms of landscape value, within the study area, the landscape area is covered in part by the Ochil Hills landscape designations. Overall the landscape value is high.

The overall sensitivity of the Igneous Hills LCA is considered to be high.

Magnitude of Change

During operation, the Colliston wind turbine would occupy and directly affect a small area of the Igneous Hills, resulting in the loss of a minor area of farmland. However it may be visible from across the landscape area indirectly affecting its character. The ZTV shows that visibility would cover a small area close to the site, affecting a small extent of a fairly large character area. Due to the large scale nature of the hilltops, views from the west and north-west are limited. There are very small areas of visibility from within the character area, with visibility limited to areas of higher ground to the north-west in the summits surrounding Glenfarg Reservoir. These effects are not expected to be significant. The remainder of the character area will have little or no views of the development and when visible from occasional summits and ridges further to the south-west the development is likely to be only a minor feature. From these more remote areas and hill tops the development appears in the more developed lower lying areas as opposed to the more natural wilder areas of this landscape area. The overall level indirect effects on the whole of the Igneous Hills LCA would be Negligible and not significant, long term (reversible) and negative.

Indirect Effects on Lowland Basin LCA

Landscape Sensitivity of Lowland Basin LCA

The Lowland Basin Character type covers a large expanse of the landscape to the immediate south of the proposed Colliston Farm turbine. The character area predominantly covers the lowland landscape around the settlements of Milnathort and Kinross and the landscape around Loch Leven.

The landscape has been significantly man-modified with the M90 running through the area linking Edinburgh with the north, the settlements of Milnathort and Kinross are located within this landscape as well as a number of smaller settlements and hamlets. The area does not feel particularly remote with these features present within the wider landscape although the areas around Loch Leven and the western slopes of the Lomond Hills slightly more remote, although the landscape always feels part of the more developed areas of the landscape. The quality of the landscape is generally medium.

In terms of landscape value, within the study area, the landscape area is covered in part by the Lomond Hills landscape designations. Overall the landscape value is high.

The overall sensitivity of the Lowland Basin LCA is considered to be high.

Magnitude of Change

The ZTV indicates theoretical visibility over much of the eastern half of this large scale character area, around the settlements of Kinross, Milnathort and Loch Leven, this is primarily due to the areas flatter nature. As the closest neighbouring character area to the proposed development the views and impacts on the area have been considered in **Viewpoints 5, 6, 7 & 9**. This area of landscape contains a number of settlements and manmade features as well as the scenic setting around Loch Leven. There are no significant views predicted from within this area of landscape and as highlighted by the accompanying viewpoints. Where visible the turbine is often viewed on the distant horizon, backdropped by the sky, alongside other vertical features such as electricity pylons and areas of woodland. The overall level indirect effects on the whole of the Lowland Basin LCA would be Low and not significant, long term (reversible) and negative.

Indirect Effects on Neighbouring Landscape Character Areas

The wind turbine may be visible from neighbouring Landscape Character Areas, and as such could indirectly affect the landscape character where particular views or scenic qualities are noted as a key characteristic of the landscape. Alternatively, the wind turbine could be frequently visible and particularly prominent in the landscape such that the addition of this new feature affects the character of an area.

The closest neighbouring area of landscape character is the Lowland Loch Basins area, a large portion of which has theoretical visibility of the turbine. The Lowland Loch Basin around Kinross and Milnathort would experience some indirect impact from the development, due to the proximity of the character type to the project.

The Lowland Loch Basins area would not be directly affected by the wind turbine and there would be no direct effects on the key physical characteristics that form the area's landscape character or its quality and integrity.

The indirect impact on the Lowland Loch Basins area and other neighbouring Landscape Character Areas is discussed in **Table 5.7** below.

Table 5.7 - Indirect Landscape Effects on Neighbouring Landscape Character Areas

Name	Assessment
Tayside Landscape Character Assessment	
Firth lowlands	There are no views of the development from within this landscape character area. Therefore there would be no indirect effects on its character.
Broad Valley Lowland	There are no views of the development from within this landscape character area. Therefore there would be no indirect effects on its character.
Dolerite Hills	<p>The Dolerite Hills character type occurs in three distinct areas to the south of the Tayside assessment around the border with Fife, forming part of the Cleish Hills, the Lomond Foothills around Bishop Hill and Benarty Hill between Loch Leven and Loch Ore, the closest area is located ~4.7km to the south-east of the turbine. Due to the elevated nature of these character areas the ZTV indicates that there may be some visibility of the development. Where views do occur from the south the turbine would appear on the distant horizon, viewed solely against the sky, it is not predicted that it would be a prominent feature in the view from this location. Views from the south-east around Bishop Hill would see the turbine viewed solely against the surrounding landscape, again the turbine would not become a prominent feature in these views with the scale of the landscape absorbing the development slightly.</p> <p>The landscape character area is considered to be of high sensitivity as it contains a number AGLV's around the Cleish Hills and Lomond Hills. Overall the magnitude of change would be negligible and the overall level of effect would be moderate/minor, indirect, negative and reversible.</p>
Lowland Hills	There are no views of the development from within this landscape character area. Therefore there would be no indirect effects on its character.
Lowland River Corridors	There are no views of the development from within this landscape character area. Therefore there would be no indirect effects on its character.
Fife Landscape Character Assessment	
Coastal Hills	There are no views of the development from within this landscape character area. Therefore there would be no indirect effects on its character.
Coastal Terrace	There are no views of the development from within this landscape character area. Therefore there would be no indirect effects on its character.
Coastal Flats	There are no views of the development from within this landscape character area. Therefore there would be no indirect effects on its character.
Lowland Hills and Valleys	<p>The Lowland Hills and Valleys landscape area occurs within two distinct areas within the study area, to the east of the proposed turbine ~1.7km away, around Auchtermuchty, Strathmiglo and Burnside and to the south of the area ~11.3km from the turbine between the settlements of Cowdenbeath, Kirkcaldy and Glenrothes, covering a large area of the landscape. Where views occur from this area the turbine is visible on the horizon, viewed against the sky. The area itself is heavily screened with bands of shelterbelt and policy woodland limiting potential views from this section of the landscape. As well as this area, there are some patches of theoretical visibility within the large area to the south to the west of Kirkcaldy, located over 15km from the proposed development potential views are not predicted to be prominent with a turbine of this scale unlikely to be a dominant feature.</p> <p>The landscape character area is considered to be of high sensitivity, with parts of the landscape in the north covered by the Lomond Hills SLA and the Lomond Hills Regional Park. Overall the magnitude of change would be low although the more distant areas would be negligible and the overall level of effect would be moderate, indirect, negative and reversible.</p>
Lowland Glacial Meltwater Valleys	There are no views of the development from within this landscape character area. Therefore there would be no indirect effects on its character.

Name	Assessment
Upland Slopes	<p>The Upland Slopes landscape area occurs in two distinct locations within the study area, covering the northern slopes of the Lomond Hills and the fringes of the Cleish Hills. The closest area is located ~5.1km to the east around West Lomond. This is also the only area predicted to experience any visibility of the proposed turbine. The view from this area is shown by Viewpoint 8 which is taken from the Bonnet Stane and shows the turbine would appear against the landscape. With open views the turbine is not a dominant or controlling feature visible from a fairly small portion of this character area.</p> <p>The landscape character area is considered to be of high sensitivity, with parts of the landscape covered by the Lomond Hills SLA and the Lomond Hills Regional Park, as well as the Cleish Hills SLA. Overall the magnitude of change would be negligible and the overall level of effect would be moderate/minor, indirect, negative and reversible.</p>
Upland Foothills	There are no views of the development from within this landscape character area. Therefore there would be no indirect effects on its character.
Pronounced Volcanic Hills & Craigs	<p>The Pronounced Volcanic Hills & Craigs character areas occur in several locations throughout Fife, located over 10km from the proposed development. The ZTV indicates that most of the outlying areas will receive little or no views of the proposed development with minimal areas of theoretical visibility predicted. Where views do occur the turbine is viewed at considerable distance, appearing in a setting with prominent upland landscapes and the distinguishable summits of the Lomond and Ochil Hills it is unlikely that the proposed turbine will be an easily discernible feature within the wider view.</p> <p>The landscape character area is considered to be of high sensitivity. Overall the magnitude of change would be negligible and the overall level of effect would be moderate/minor, indirect, negative and reversible.</p>
Uplands	<p>The Uplands Landscape occurs in several areas across the Fife landscape around Pitmedden Forest, Lomond Hills, Benarty Hill and the southern edge of the Cleish Hills. The closest area is located ~5.9km to the east covering the Lomond Hills. Despite the elevated topography of these areas the ZTV indicates that visibility is extremely limited, occurring only around the most elevated summits of West Lomond. The long distance views from these areas are unlikely to be affected by the addition of a single 45.7m tip turbine to the views, visible solely against the landscape below the viewer.</p> <p>The landscape character area is considered to be of high sensitivity, forming part of the Lomond Hills SLA and the Regional park. Overall the magnitude of change would be negligible and the overall level of effect would be moderate/minor, indirect, negative and reversible.</p>
Lowland River Basins	<p>The Lowland River Basins landscape occurs in two distinct areas to the east of the study area around Markinch and the Howe of Fife, the closest area is located ~9.5km from the proposed turbine. The ZTV indicates an area of theoretical visibility around Ladybank across the Howe of Fife. Where views occur the turbine will be visible predominantly against the landscape, in the setting with the Lomond Hills. The landscape itself is peppered with woodland and other man made features such as electricity pylons. It is unlikely that the turbine will be an easily discernible feature from this landscape area.</p> <p>The landscape character area is considered to be of medium sensitivity as an area of intensive farming practise. Overall the magnitude of change would be negligible and the overall level of effect would be minor, indirect, negative and reversible.</p>
Lowland Loch Basins	<p>The Lowland Loch Basins character type occurs in several areas across Fife around the lochs of Fitty, Lumphannan, Ore and to the south of Loch Leven. The closest character area to the proposed development is located ~9.6km to the south-east of the Colliston Farm turbine. Visibility is extremely limited from these areas with only the section of landscape to the south-east of Loch Leven experiencing any potential views. The turbine would be a minor feature in the view from this relatively small area of the larger landscape.</p> <p>The landscape character area is considered to be of medium sensitivity. Overall the magnitude of change would be negligible and the overall level of effect would be minor, indirect, negative and reversible.</p>

Clackmannanshire Landscape Character Assessment

Middle Devon Water	There are no views of the development from within this landscape character area. Therefore there would be no indirect effects on its character.
Lower Devon Carselands	There are no views of the development from within this landscape character area. Therefore there would be no indirect effects on its character.
Devon/Forth	There are no views of the development from within this landscape character area. Therefore there would be no indirect effects on its character.
Ochil Hills	There are no views of the development from within this landscape character area. Therefore there would be no indirect effects on its character.

Direct and Indirect Effects on Landscape Planning Designations

The site area is not designated and there would be no direct effects on designated landscape areas. Any landscape effects therefore would be limited to indirect effects on the views and visual character experienced from within these areas, whilst viewing towards the wind turbine. The assessment below considers if these effects on the views would lead to an indirect effect on the landscape character and valued features and characteristics for which these areas are designated.

The assessment of the overall indirect effects experienced by people viewing the wind farm from within these areas is provided in **Table 5.8**. The sensitivity of all designated landscapes considered as part of this assessment has been considered as high.

Table 5.8 - Indirect Landscape Effects on Landscape Planning Designations

Designation	Description
Areas of Great Landscape Value (AGLV)	
Ochil Hills	<p>The Ochil Hills AGLV is located ~1.7km from the proposed turbine at its closest point to the north-west. Despite this relative proximity this large designation which runs over the Ochil Hills to the south-west remains largely free from any views of the development. The ZTV indicates some patches of visibility around Craigow and Dalqueich to the west of the turbine and other intermittent areas around some summits such as Lendrick Hill. Viewpoint 3 is taken from within the closest area of the AGLV to the proposed turbine and highlights a worst case scenario for the area. The proposed turbine appears backdropped by the prominent and distinctive Lomond Hills from this area, absorbed slightly by the large scale of the landscape it is unlikely to be a prominent or controlling feature within the long distance views possible from these upland areas. When looking north-west towards the Ochils the proposed turbine may appear in view, however, the development would appear predominantly backdropped by the much larger landscape of the Ochils and would not interfere with or diminish the scale of the upland landscape beyond.</p> <p>The landscape designation is considered to be of high sensitivity. Overall the magnitude of change would be negligible as the majority of the designation is free from any potential views of the development, however some of the closer areas may be considered the magnitude of change to be low and the overall level of effect would be moderate and not significant.</p>
Cleish Hills	<p>The Cleish Hills AGLV is located ~10.7km to the south of the proposed turbine. The ZTV indicates theoretical visibility across much of the designation, however, at this distance the 45.7m turbine is unlikely to add a prominent or discernible feature to the view, with open and distant views occurring across the Ochils and Lomond Hills to the north and east.</p> <p>The landscape designation is considered to be of high sensitivity. Overall the magnitude of change would be negligible and the overall level of effect would be moderate/minor and not significant.</p>
Perth Greenbelt	<p>The Perth Greenbelt is located ~11km to the north of the proposed turbine. The ZTV indicates a small area of theoretical visibility to the east of Scone around Mains of Balthayock around the local summit. At this distance the turbine is partially screened by the intervening landscape, the visible portion would appear on the horizon against the sky. It would not be an easily discernible feature in the view, affecting a minimal portion of the wider designation which remains free of any views.</p> <p>The landscape designation is considered to be of high sensitivity. Overall the magnitude of change would be negligible and the overall level of effect would be moderate/minor and not significant.</p>
Lomond Hills	<p>The Lomond Hills AGLV covers the area of landscape between Loch Leven and the Regional Park, at its closest point it is ~4.1km from the proposed turbine. The ZTV indicates an area of theoretical visibility on the western slopes around Bishop Hill and the north-eastern shores of Loch Leven. The views from this area would be similar to those experienced in Viewpoint 6 taken from the local B919. The turbine appearing predominantly against the landscape from this area. It is not predicted that the turbine would be a dominant or controlling feature in the view, visible alongside many made features present within the wider landscape.</p>

Designation	Description
	The landscape designation is considered to be of high sensitivity. Overall the magnitude of change would be negligible and the overall level of effect would be moderate/minor and not significant.
Fife Council - Special Landscape Areas (SLA)	
Lomond Hills	<p>The Lomond Hills SLA sits ~2.5km to the east of the proposed turbine, the large area covers the Lomond Hills and surrounding area. The ZTV indicates that visibility is limited from these upland areas, restricted to the western fringes of the designation around the summit of West Lomond and the Bonnet Stane which is considered in greater detail in Viewpoint 8. The turbine would not inhibit the long distance views possible particularly from the summit of West Lomond, where it is possible to look over to Fife and East Lothian on a clear day.</p> <p>The landscape designation is considered to be of high sensitivity. Overall the magnitude of change would be negligible and the overall level of effect would be moderate/minor and not significant.</p>
Cleish Hills	There is no visibility of the development predicted from this designation and as such there will be no impact on its unique character as an ALS.
Benarty Hill and Loch Ore	There is no visibility of the development predicted from this designation and as such there will be no impact on its unique character as an ALS.
Cullaloe Hills and Coast	There is no visibility of the development predicted from this designation and as such there will be no impact on its unique character as an ALS.
Tay Coast	There is no visibility of the development predicted from this designation and as such there will be no impact on its unique character as an ALS.
Regional Parks	
Lomond Hills Regional Park	<p>The regional park covers the same area of landscape as the Benarty Hill and Lomond Hill SLA's the views from this area would be the same as previously assessed, the Lomond Hill area would have limited views covering a small portion of the regional park while the Benarty area to the south would experience no views of the development.</p> <p>The landscape designation is considered to be of high sensitivity. Overall the magnitude of change would be negligible and the overall level of effect would be moderate/minor and not significant.</p>
Gardens and Designed Landscapes (GDL)	
Kinross House	<p>Theoretical views are predicted from Kinross House on the north-western shores of Loch Leven. The GDL itself is bound by an area of mature woodland which would severely limit potential views to the north towards the turbine. The primary vista from the GDL would face out over the nearby Loch Leven, which is framed by the dramatic Lomond Hills situated on the eastern shores. It is unlikely that there will be any views of the turbine from within the GDL and the primary views towards the Loch would remain intact.</p> <p>The landscape designation is considered to be of high sensitivity. Overall the magnitude of change would be negligible and the overall level of effect would be moderate/minor and not significant.</p>
Blair Adam	There are no views from within the GDL, therefore there will be no impact on the unique character or setting of the designation.
Cleish Castle	<p>Cleish Castle is located ~10.9km to the south-west of the proposed turbine. The ZTV indicates theoretical visibility across the GDL, however, the surrounding area is bound by dense mature coniferous woodland and views are not predicted.</p> <p>The landscape designation is considered to be of high sensitivity. Overall the magnitude of change would be negligible and the overall level of effect would be moderate/minor and not significant.</p>
Castle Campbell	There are no views from within the GDL, therefore there will be no impact on the unique character or setting of the designation.
Invermay	There are no views from within the GDL, therefore there will be no impact on the unique character or setting of the designation.
Dupplin Castle	There are no views from within the GDL, therefore there will be no impact on the unique character or setting of the designation.

Designation	Description
Methven Castle	There are no views from within the GDL, therefore there will be no impact on the unique character or setting of the designation.
Scone Palace	There are no views from within the GDL, therefore there will be no impact on the unique character or setting of the designation.
Balmanno	There are no views from within the GDL, therefore there will be no impact on the unique character or setting of the designation.
Kinfauns Castle	There are no views from within the GDL, therefore there will be no impact on the unique character or setting of the designation.
Inchyra House	There are no views from within the GDL, therefore there will be no impact on the unique character or setting of the designation.
Glendoick House	There are no views from within the GDL, therefore there will be no impact on the unique character or setting of the designation.
Megginch Castle	There are no views from within the GDL, therefore there will be no impact on the unique character or setting of the designation.
Errol Park	There are no views from within the GDL, therefore there will be no impact on the unique character or setting of the designation.
Melville House	<p>Melville house is located over 16km from the proposed development to the north-east. At this distance it is unlikely that there will be any views of a turbine of this scale when considering built and naturally occurring features within the wider landscape such as settlements and woodland.</p> <p>The landscape designation is considered to be of high sensitivity. Overall the magnitude of change would be negligible and the overall level of effect would be moderate/minor and not significant.</p>
House of Falkland/Falkland Palace	There are no views from within the GDL, therefore there will be no impact on the unique character or setting of the designation.
Balbirnie	There are no views from within the GDL, therefore there will be no impact on the unique character or setting of the designation.
Leslie Hall	There are no views from within the GDL, therefore there will be no impact on the unique character or setting of the designation.
Raith House and Beveridge Park	There are no views from within the GDL, therefore there will be no impact on the unique character or setting of the designation.

5.7 Assessment of Visual Effects

Visual effects are recognised by the Landscape Institute as a subset of landscape effects and are concerned wholly with the effect of the development on views, and the general visual amenity. The assessment has been conducted in periods of fine weather and assumes good visibility and limited seasonal leaf cover.

ZTV and Visual Receptors

A blade tip ZTV is illustrated in **Figure 5.5a, b** and indicates the maximum potential visibility of the wind turbine, assuming there are no trees, woodland or buildings within the area (i.e. a bare earth scenario). It is likely that this visibility would be reduced further by the screening effect of trees, woodland, and buildings on the ground, particularly in relation to settlements.

The pattern of ZTV coverage is influenced by the larger scale topography to the north-west and west of the development, with the landscape becoming more elevated as it rises from the lowland landscapes into the Ochil Hills which restricts visibility in these directions. The

most prominent areas of visibility would be in the immediate ~5km to the south, east and south-east around the site, with visible areas spreading out to the north-east towards the Howe of Fife.

The key visual effects to be addressed include the following:

- Visual effects on the views experienced by local communities;
- Visual effects on the views experienced by users of footpaths and general recreational areas/ tourist destinations; and
- Visual effects on the views experienced by road users along the main transport routes.

Viewpoint Analysis

Viewpoint analysis has been undertaken for each of the viewpoints and is reported in **Appendix 1**. A summary of the results of the viewpoint analysis is provided in **Table 5.9** and this analysis reveals that significant visual effects would only occur from one viewpoint; this would be from some of the closest visual receptors within 1km.

Table 5.9 Summary of Viewpoints Analysis

Location	Assessment			Distance from Development
	Sensitivity	Magnitude	Overall Impact	
1. Close in from the south	High	Medium	Major/Moderate	Viewpoint located at ~930m distance
2. Close in from the north-east	High	Negligible	Moderate/Minor	Viewpoint located at ~1.3km distance
3. Minor Road between Newhill and Path of Condie	Medium	Low	Moderate/Minor	Viewpoint located at ~1.9km distance
4. M90 at Blairfield	Medium	Low	Moderate/Minor	Viewpoint located at ~1.5km distance
5. Burleigh Castle	High	Low	Moderate	Viewpoint located at ~3.3km distance
6. B919 at Wester Balgedie	High	Low	Moderate	Viewpoint located at ~4.2km distance
7. Kinross Services	Medium	Negligible	Minor	Viewpoint located at ~5.6km distance
8. Bonnet Stane	High	Low	Moderate	Viewpoint located at ~5.8km distance
9. Loch Leven Lodges	High	Negligible	Moderate/Minor	Viewpoint located at ~9.4km distance
10. Kinnoull Hill	High	Negligible	Moderate/Minor	Viewpoint located at ~14.6km distance
11. Knock Hill	High	Negligible	Moderate/Minor	Viewpoint located at ~16.0km distance

Visual Effects during Operation

Post construction and during operation, the appearance of the site would recover a calmer visual character with negligible levels of maintenance activity visible on site from the nearest visual receptors, and no significant visual effects likely.

The visibility of the turbine would extend over the study area affecting a range of visual receptors including residents, road users, tourists, and people undertaking recreational activity. The visual effects of the wind turbine on views and visual amenity during operation are assessed in the following sections.

Settlements

The following assessment considers the views from settlements, and the likely visual effects that could be experienced from the main living rooms and garden areas of residential properties, but excludes rooftops and upper windows. The illustrated viewpoints have been selected to represent views from where the wind turbine would be most visible within the villages or along the edges of the villages. All settlements and residential properties have been judged to be of high sensitivity.

Many of the settlements within the study area will experience very limited, or have no views of the turbine due to the concentration of buildings and other urban features and the landform of the area. Of the 19 settlements within 15km that were assessed, 11 of these are not within the ZTV and will therefore receive no views of the development. Settlements that have been predicted to receive views are likely to only get views of the development from open areas, prominent hill tops within the settlement or from the edges of the settlement, as it is likely that woodland and the built environment will screen outward views.

Table 5.10 Visual effects on settlements within the ZTV

Settlement	Distance	Visual Assessment
Settlements <10km from Colliston Farm		
Drunzie	1.0km	<p>Drunzie is a small cluster of properties located ~1km to the east of the proposed development. The ZTV indicates theoretical visibility across the whole of the hamlet. The properties that make up the hamlet are orientated generally to the south. The gardens which back onto the local Duncrievie road are bound by hedgerows and intermittent trees. The views from this area of the settlement would see the turbine on the horizon, partially screened and alongside a number of vertical features most prominently several runs of wooden electricity pylons. The single turbine would not be a dominant or overbearing feature from this area of the settlement remaining in scale with the other vertical features in the local area.</p> <p>The settlement is considered to be of high sensitivity, overall the magnitude of change would be Low and the overall level of effect would be Moderate, direct, negative and reversible.</p>
Duncrievie	1.3km	<p>Duncrievie is located ~1.3km to the north-east of the proposed turbine. The ZTV indicates theoretical visibility across the small hamlet. As one of the closest visual receptors the views from the open edge of the settlement to the south are considered in Viewpoint 2, the viewpoint shows that much of the turbine will in fact be screened by the intervening landscape, limiting views to blades only, the intervening vegetation will provide screening of the visible portion of the turbine. There are no predicted significant effects on the settlement.</p> <p>The settlement is considered to be of high sensitivity, overall the magnitude of change would be Negligible and the overall level of effect would be Moderate/Minor, direct, negative and reversible.</p>
Glenfarg	2.2km	<p>Glenfarg is one of the closest settlements to the development. Much of the settlement lies outwith the ZTV, with only the very northern fringes of the settlement predicted to have any theoretical views towards the proposed turbine. Views from this area of the settlement would be extremely limited with the intervening landscape screening all but the very tips of the blades from view. The intervening vegetation and other built features within the settlement would screen any potential views towards the development from this area of Glenfarg.</p> <p>The settlement is considered to be of high sensitivity, overall the magnitude of change would be Negligible and the overall level of effect would be Moderate/Minor, direct, negative and reversible.</p>
Milnathort	3.1km	<p>The ZTV indicates theoretical visibility around the fringes of the settlement with the lower lying central areas remaining free from any potential views. Viewpoint 5 is taken from the eastern edge of the settlement by Burleigh Castle, the turbine is not an overly prominent feature in this view, with a number of other more prominent man made features present in</p>

Settlement	Distance	Visual Assessment
		the wider landscape. The viewpoint presents a worst case for the settlement with the majority of the settlement experiencing no views of the proposed development
		The settlement is considered to be of high sensitivity, overall the magnitude of change would be Negligible and the overall level of effect would be Moderate/Minor , direct, negative and reversible.
Kinross	4.7km	Similar to Milnathort, the settlement of Kinross is located on the opposite side of the M90 and as such is subject to screening features put in place to form a barrier between the road and the settlement. Viewpoint 7 is taken from the service station on the opposite side of the road to the west of the settlement and shows the potential views experienced by the settlement if there was no intervening vegetation.
		The settlement is considered to be of high sensitivity, overall the magnitude of change would be Negligible and the overall level of effect would be Moderate/Minor , direct, negative and reversible.
Strathmiglo	8.5km	The ZTV indicates an overall visibility from Strathmiglo, however views are most likely to occur on the edge of the village facing towards the turbine site, and with the introduction of vegetation to the intervening views, and views of a turbine of this size are unlikely to occur. Other residents will have any potential views screened by buildings and trees from the village.
		The settlement is considered to be of high sensitivity, overall the magnitude of change would be Negligible and the overall level of effect would be Moderate/Minor , direct, negative and reversible.
Abernethy	8.6km	No views are predicted from Abernethy
Bridge of Earn	8.7km	No views are predicted from Bridge of Earn
Settlement between 10-15km from Colliston Farm		
Auchtermuchty	10.7km	The ZTV indicates an overall visibility from Auchtermuchty, however views are most likely to occur on the edge of the village facing towards the turbine site and at this distance are unlikely to be significant. Other residents will have any potential views screened by buildings and trees from the village.
		The settlement is considered to be of high sensitivity, overall the magnitude of change would be negligible and the overall level of effect would be moderate/minor , direct, negative and reversible.
Ballingry	11.6km	No views are predicted from Ballingry
Dunning	12.8km	No views are predicted from Dunning
Falkland	12.1km	No views are predicted from Falkland
Perth	12.6km	No views are predicted from Perth
Kelty	13.1km	The ZTV indicates an overall visibility from Kelty, however, views are most likely to occur on the edge of the village facing towards the turbine site and at this distance are unlikely to be significant. Other residents will have any potential views screened by buildings and trees from the village.
		The settlement is considered to be of high sensitivity, overall the magnitude of change would be negligible and the overall level of effect would be moderate/minor , direct, negative and reversible.
Glenrothes	13.1km	No views are predicted from Glenrothes
Newburgh	13.4km	No views are predicted from Newburgh
Kinglassie	14.1km	No views are predicted from Kinglassie
St Madoes	14.1km	No views are predicted from St Madoes
Lochgelly	14.3km	No views are predicted from Lochgelly
Settlement over 15km from the development are unlikely to experience any effects		

Assessment of Major Tourist and Transport Routes

The ZTV indicates theoretical visibility over the M90, with visibility theoretically occurring primarily between Junction 5 and Junction 9. Due to the nature of the route visibility is likely to be extremely limited - the motorway is heavily lined with vegetation as well as being set into the landscape with steep embankments on each side of the road for large portions of the route.

An assessment of the potential for visual effects from the M90 has been undertaken.

The M90 motorway runs from the northern side of the Forth Road Bridge where it emerges from the A90, serving the settlements of Dunfermline, Kinross, Kelty, Milnathort, Glenfarg, Bridge of Earn and Perth, where the route becomes re-classified as the A90 as it travels northwards toward Dundee and then on to Aberdeen. For the purpose of the assessment the route has been split into intervals between each junction to assess the potential views of the Colliston Farm on this important transport link. Due to the lack of visibility to the north of the proposed development views for southbound traffic was found to be extremely limited. The route as a whole is considered to be of Medium sensitivity.

- M90 from Junction 4 Kelty to Junction 5 Ballingry;
- M90 from Junction 5 Ballingry to Junction 6 Kinross;
- M90 from Junction 6 Kinross to Junction 7 Milnathort;
- M90 from Junction 7 Milnathort to Junction 8 Mawcarse;
- M90 from Junction 8 Mawcarse to Junction 9 Bridge of Earn;

From Junction 4 Kelty to Junction 5 Ballingry

As the M90 passes the settlement of Kelty it is travelling in a generally north-westerly direction, the route is heavily screened by areas of woodland particularly to the west and north-west by Blairadam Forest. To the east, roadside vegetation on the embankment limits views of the road from Kelty. Views in front of the road users are occupied by part of the Lomond Hills Regional Park. Passing Blairadam, the woodland which screened the roadside gives way to a more open view, with the Ochils appearing in front of the road user to the north, travelling south the route begins to enter the area of significant screening and views would be limited. The gently undulating farmland and over bridges serve to limit the view for a short period on approach to Junction 5.

The proposed Colliston Farm turbine would remain significantly screened for the majority of this section of the route. It may be possible to view the turbine for a small period on the horizon as the road emerges from the woodland and the surrounding landscape flattens, however, the development is located ~12km from this section of the route any views would not be significantly felt by road users travelling between Kelty and Ballingry. Road users travelling southwards would experience no views of the development over this section of the route. The turbine is likely to be visible for around 2km along this section of the route and when visible, views would be direct and the turbine would be seen on the horizon, viewed solely against the sky.

The magnitude of change would be **Negligible**, resulting in a negligible level of effect which would not be significant.

From Junction 5 Ballingry to Junction 6 Kinross

The M90 passes under the bridge at Junction 5 continuing its course northwards on the same north-westerly trajectory. The land either side of the road flattens out slightly allowing for oblique views over the landscape, long distance views to the north are limited by the introduction of intermittent areas of shelterbelt and bridges passing overhead. Passing over the bridge for Gairney Bank, the view opens up slightly, allowing for views of the Ochil Hills to the north and north-west. As the road approaches Kinross, oblique views occur across Loch Leven and the Lomond Hills to the east, with the Ochil Hills visible to the north and north-west. The views remain as the route approaches Junction 6. **Viewpoint 7** is taken from the service station located at the top of the off ramp at this junction.

The Colliston Farm turbine would appear on the horizon line, featuring slightly more prominently in the view of road users travelling northwards along this section of the route. Remaining theoretically visible throughout the section, the turbine would only be intermittently visible due to the introduction of shelterbelts and other built features such as bridges, masts and buildings in the landscape. The turbine is ~6.6km from the road at its closest point through this section of the route and is predicted to be visible for 5km of this route. During this time visibility will be intermittent but on the occasional sections where visibility will occur, view will be direct and the turbine seen on the horizon, viewed solely against the sky. The magnitude of change would be **Low**, resulting in a low level of effect which would not be significant.

From Junction 6 Kinross to Junction 7 Milnathort

Passing Junction 6 the route begins to move in a northerly direction. This is a short section of the M90. Views remain fairly open to the north, surrounded by farmland to the west and north, with Loch Leven to the east. As the route passes under a bridge to the west of Milnathort, a large area of shelterbelt comes into view on both sides of the carriageway, coupled with the rising embankment on both sides of the road, visibility is very limited.

The Colliston Farm turbine would appear in a similar view to the previous section over the opening part of the route, where views remain slightly more open, looking over farmland towards the Ochil Hills to the north, the turbine would be viewed on the horizon solely against the sky. As the route travels north, views of the turbine would be completely screened as it passes by the settlement of Milnathort by thick areas of vegetation. The turbine is located ~3.9km to the north of the road at its closest point. The turbine will be visible for 1km of the route and when visible, views are likely to be direct during this short section before becoming screened by the vegetation. The magnitude of change would be **Negligible**, resulting in a negligible level of effect which would not be significant.

M90 from Junction 7 Milnathort to Junction 8 Mawcarse

Passing by the settlement of Milnathort to the east, the road begins to travel in a more north-easterly direction. Visibility is limited along this part of the route by bands of mature woodland located either side of the carriageway, this gives way on the eastern side after a time allowing for oblique views towards the Lomond Hills. To the south of junction 8 the views open up again slightly with the woodland giving way to views over large arable fields.

As the route approaches the junction the off ramp is lined with a band of mature trees which again restrict views.

The Colliston turbine would be screened by the woodland as the route passes Milnathort and would remain screened for a large part of this section of the route, due to intervening vegetation. The turbine would appear for a short time, although views over this time would be oblique to the road users, but would be felt by traffic travelling in both directions over this section. Where visible the turbine would be viewed on the horizon line, viewed solely against the sky occupying a minor extent of the view and being visible in context with large metal road signs, electricity pylons which run through the countryside to the east and west of the road, Communications masts and occasional farm steadings with grains silos and associated outbuildings. The magnitude of change would be **Low**, resulting in a low level of effect which would not be significant.

M90 from Junction 8 Mawcarse to Junction 9 Bridge of Earn

This is the longest section the route, as it passes by Junction 8 the M90 begins to travel in a more generally northerly direction once again. Views remain fairly open save for areas of shelterbelt around bridges and across the arable fields which line the route. Passing the settlement of Mawcarse, the embankments on either side of the road rise again, restricting views and focussing the eye in the general direction of travel, to the north or south. Passing to the east of Duncricvie, the road begins to travel in a generally north-westerly direction, remaining heavily wooded on both sides of the route views remain concentrated in the travelling direction of the road user. Passing by the settlement of Glenfarg to the west, the embankment on the south carriageway remains, restricting any views. Shelterbelts run alongside the northern carriageway screening the road from the settlement of Glenfarg. As the route makes its way towards Bridge of Earn, it begins to reduce in height as the surrounding landscape lowers to the River Basin surrounding the River Tay.

There are no significant views along this section of the route with the turbine remaining screened for southbound traffic over this section of the route. Views for north bound traffic would be brief at the beginning of the route and views would be oblique. The magnitude of change would be **Negligible**, resulting in a negligible level of effect which would not be significant.

Summary

Overall visibility would be very limited when travelling along the M90, due to areas of woodland located at the roadside as well as across the landscape shelterbelts lining field boundaries and property markers, roadside embankments and bridges as well as road signs and communications masts all form features which would limit potential views towards the Colliston Farm turbine. The speed with which commuters would be travelling along the M90 also has a bearing on the areas of predicted visibility, as road users are typically travelling at higher speeds along motorways. Predominantly views of the Colliston turbine would be limited to those travelling northwards; these views were found to be extremely limited and would not be open for significant periods of time before being subject to screening from woodland, embankments or the built environment. Road users travelling southwards from Perth would experience no significant views of the proposed development due to the significant amounts of screening features around Glenfarg and the surrounding area. Where

the views do open slightly the turbine is already to the rear of the view. Overall the magnitude of change for the motorway was found to be **Negligible**, resulting in a negligible level of effect which would not be significant. Although there were isolated areas of higher visibility these tended to be rare and oblique.

5.8 Assessment of Cumulative Visual Effects

Wind Energy Development Included in the CLVIA

The cumulative assessment includes existing wind energy developments (those operating or under construction), proposals with planning permission, and those that are currently the subject of undetermined applications within a 50km radius of the Colliston Farm site. Other known pre-application wind energy development proposals have been identified as part of the assessment process and considered in outline only, due to the more limited information available in connection with these proposals.

For the purpose of the assessment, consideration was given to turbines over 50m to blade tip, in line with SNH guidance.

The list of other wind energy development sites to be included in the assessment has been confirmed with Perth & Kinross Council and SNH and compiled from known wind energy development planning applications and formal requests for scoping opinions held by the various planning authorities.

All wind energy developments included or referred to in this assessment out to 50km are illustrated on a plan in **Figure 5.6**. Listed below in **Table 5.12** are the key projects, primarily within 15km of the development, which are likely to have some level of cumulative impact with Crofts Farm Turbine, potentially appearing simultaneously or successively in views. The information available on the Perth & Kinross website excludes turbines less than 25m to blade tip, as such they have been excluded from this study also. There were no turbines between 25 to 50m found within 5km of the proposed development.

Table 5.11 Summary of key Wind Energy Projects within 15km

Development Name	Scale of Project (Single turbine, Cluster or Windfarm)	Tip Height (m)	Distance to Project (approx. in km)
Operational Projects			
Lochelbank	Wind Farm	80	5.4
Green Knowes	Wind Farm	93	14.5
Westfield	Wind Cluster	110	12.3
Consented Projects			
East Blair Farm	Wind Cluster	55	3.1
Pitcarlie	Wind Turbine	84	11.5
Projects in Planning			
Temple Hill	Wind Turbine	104	2.7
Demperston	Wind Turbine	54	8.8
Blair Adam Forest	Wind Farm	115	13.9
Cleish Hills	Wind Farm	110	14.3

Two or more windfarms are required for the occurrence of a cumulative visual effect. This assessment has therefore considered the development of Colliston Farm turbine in addition to the other windfarm sites in the landscape in order to test the landscape capacity of the area and provide conclusions for the CLVIA relevant to this proposal.

Figure 5.6 shows the location of all of the windfarms currently operational, consented and in planning within a 50km radius of the proposed turbine locations at Colliston Farm.

From this, it can be observed that there are only four operational developments within 20km of the proposed development site, these are larger developments at Lochelbank, Green Knowes, Westfield and Little Raith. To the south-east, there are a number of single turbines and clusters located within the lowland areas of Fife.

A series of potential cumulative ZTV's (based on submission status) is illustrated in **Figure 5.7, 5.8 and 5.9** showing the potential cumulative ZTV for each of the key windfarms. The findings from the analysis of the cumulative visibility maps and cumulative viewpoint assessment have been used to form a conclusion as to the level of overall cumulative visual effects during operation as experienced by various receptors.

Cumulative Viewpoint Assessment

Each viewpoint assessed as part of the viewpoint assessment has also been considered cumulatively with all other wind energy projects identified within the 50km cumulative study area. A summary of potential cumulative visibility assessment from each of the viewpoints is provided in **Table 5.13**. Further detail can be found in the viewpoint assessment located in **Appendix 2**.

Table 5.12 Summary of Cumulative Viewpoint Analysis

Viewpoint No.	Sensitivity	Magnitude	Level of Effect
Viewpoint 1: Close in from the south			
Colliston Farm Wind Turbine and Operational Wind farms	High	-	-
Colliston Farm Wind Turbine and Operational, Consented Wind farms		-	-
Colliston Farm Wind Turbine and Operational, Consented, Planned Wind farms		-	-
Viewpoint 2: Close in from the north-east			
Colliston Farm Wind Turbine and Operational Wind farms	High	-	-
Colliston Farm Wind Turbine and Operational, Consented Wind farms		-	-
Colliston Farm Wind Turbine and Operational, Consented, Planned Wind farms		-	-
Viewpoint 3: Minor Road between Newhill and Path of Condie			
Colliston Farm Wind Turbine and Operational Wind farms	Medium	-	-
Colliston Farm Wind Turbine and Operational, Consented Wind farms		-	-
Colliston Farm Wind Turbine and Operational, Consented, Planned Wind farms		-	-
Viewpoint 4: M90			
Colliston Farm Wind Turbine and Operational Wind farms	Medium	-	-

Viewpoint No.	Sensitivity	Magnitude	Level of Effect
Colliston Farm Wind Turbine and Operational, Consented Wind farms		Negligible	Minor
Colliston Farm Wind Turbine and Operational, Consented, Planned Wind farms		Negligible	Minor
Viewpoint 5: Burleigh Castle			
Colliston Farm Wind Turbine and Operational Wind farms		-	-
Colliston Farm Wind Turbine and Operational, Consented Wind farms	High	-	-
Colliston Farm Wind Turbine and Operational, Consented, Planned Wind farms		Negligible	Moderate/Minor
Viewpoint 6: B919			
Colliston Farm Wind Turbine and Operational Wind farms		Negligible	Moderate/Minor
Colliston Farm Wind Turbine and Operational, Consented Wind farms	High	Negligible	Moderate/Minor
Colliston Farm Wind Turbine and Operational, Consented, Planned Wind farms		Negligible	Moderate/Minor
Viewpoint 7: Kinross Services			
Colliston Farm Wind Turbine and Operational Wind farms		-	-
Colliston Farm Wind Turbine and Operational, Consented Wind farms	Medium	-	-
Colliston Farm Wind Turbine and Operational, Consented, Planned Wind farms		Negligible	Minor
Viewpoint 8: Bonnet Stane			
Colliston Farm Wind Turbine and Operational Wind farms		Negligible	Moderate/Minor
Colliston Farm Wind Turbine and Operational, Consented Wind farms	High	Negligible	Moderate/Minor
Colliston Farm Wind Turbine and Operational, Consented, Planned Wind farms		Negligible	Moderate/Minor
Viewpoint 9: Loch Leven Lodges			
Colliston Farm Wind Turbine and Operational Wind farms		Negligible	Moderate/Minor
Colliston Farm Wind Turbine and Operational, Consented Wind farms	High	Negligible	Moderate/Minor
Colliston Farm Wind Turbine and Operational, Consented, Planned Wind farms		Negligible	Moderate/Minor
Viewpoint10: Kinnoull Hill			
Colliston Farm Wind Turbine and Operational Wind farms		Negligible	Moderate/Minor
Colliston Farm Wind Turbine and Operational, Consented Wind farms	High	Negligible	Moderate/Minor
Colliston Farm Wind Turbine and Operational, Consented, Planned Wind farms		Negligible	Moderate/Minor
Viewpoint 11: Knock Hill			
Colliston Farm Wind Turbine and Operational Wind farms		Negligible	Moderate/Minor
Colliston Farm Wind Turbine and Operational, Consented Wind farms	High	Negligible	Moderate/Minor
Colliston Farm Wind Turbine and Operational, Consented, Planned Wind farms		Negligible	Moderate/Minor

Cumulative Assessment of Major Tourist and Transport Routes

An assessment of the potential for cumulative effects from the M90 has been undertaken. The route has been split into the following sections;

- M90 from Junction 4 Kelty to Junction 5 Ballingry;
- M90 from Junction 5 Ballingry to Junction 6 Kinross;
- M90 from Junction 6 Kinross to Junction 7 Milnathort;
- M90 from Junction 7 Milnathort to Junction 8 Mawcarse;

- M90 from Junction 8 Mawcarse to Junction 9 Bridge of Earn;

A summary of significance of impact is outlined in **Table 7.14**.

M90 from Junction 4 Kelty to Junction 5 Ballingry

Operational

The operational development of Lochelbank appears theoretically visible just over the horizon line as the route passes Blairadam, emerging from the surrounding woodland. It would be viewed in the same direction as Colliston Farm but due to its location in the landscape visibility would be limited to blade tips and in reality would be further reduced by the distance to the development and areas of vegetation.

Oblique views are theoretically possible with Green Knowes for a short section as the route approaches Junction 5, in reality the development will not be visible. Travelling southwards there are theoretical sequential views with Westfield and Little Raith along this section of the route, views would be restricted by the areas of shelterbelt and the settlement of Kelty along this part of the route, the Colliston Farm turbine would be to the rear of the view. Overall, the cumulative magnitude of impact on this route would be **Negligible**.

Consented

There are theoretical views when travelling northwards with the Pitcarlie turbine, although at this distance from the turbine it is unlikely to be an easily discernible feature in the view. Travelling south the cluster of developments around the operating turbines at Westfield and Little Raith appear on the horizon such as Mossmorran, Noble Foods and Skeddoway Farm, these developments only appearing in the view when the Colliston turbine is to the rear. Overall, the cumulative magnitude of impact on this route would remain **Negligible**.

Planning

There are no significant views of any planning developments over this section of the route, the single turbines to the south-east such as Shawsmill would be theoretically visible to road users travelling south, viewed in the opposite direction to the Colliston turbine, appearing in a landscape with more prominent operating turbines. Overall, the cumulative magnitude of impact on this route would remain **Negligible**.

M90 from Junction 5 Ballingry to Junction 6 Kinross

Operational

There are no operational developments visible through this section. Overall, the cumulative magnitude of impact on this route would be **none**.

Consented

There are no significant cumulative views between any consented developments and the Colliston Farm turbine over this section of the route. Overall, the cumulative magnitude of impact on this route would remain **none**.

Planning

There are no significant cumulative views towards any planning projects along this section of the route, the views which are theoretically possible are restricted to blade tips and due

to intervening screening features visibility is unlikely. Overall, the cumulative magnitude of impact on this route would become **Negligible**.

M90 from Junction 6 Kinross to Junction 7 Milnathort

Operational

There are no operational developments visible through this section. Overall, the cumulative magnitude of impact on this route would be **none**.

Consented

There are no consented developments visible through this section of the route. Overall, the cumulative magnitude of impact on this route would remain **none**.

Planning

There are no planning projects visible through this section of the route. Overall, the cumulative magnitude of impact on this route would remain **none**.

M90 from Junction 7 Milnathort to Junction 8 Mawcarse

Operational

There are no operational developments visible through this section. Overall, the cumulative magnitude of impact on this route would be **none**.

Consented

There are no consented developments visible through this section of the route. Overall, the cumulative magnitude of impact on this route would remain **none**.

Planning

There are no planning projects visible through this section of the route. Overall, the cumulative magnitude of impact on this route would remain **none**.

M90 from Junction 8 Mawcarse to Junction 9 Bridge of Earn

Operational

There are no significant views of any operational developments along this section of the route, fleeting glimpses of Lochelbank and the more distant Griffin Forrest as the route rounds Balmano hill and begins its decent into the Tay basin although these are unlikely to be keenly felt by road users. The Colliston Farm turbine has long since passed to the rear of the view. Overall, the cumulative magnitude of impact on this route would be **Negligible**.

Consented

There are no consented developments visible through this section of the route. Overall, the cumulative magnitude of impact on this route would remain **Negligible**.

Planning

Due to screening features and the lack of visibility of Colliston Farm through this section, there are no cumulative effects. Overall, the cumulative magnitude of impact on this route would remain **Negligible**.

The overall cumulative effect upon the M90 was found to be negligible. There are no significant views of any operational, consented or planning developments from the road,

with potential views limited to oblique views of the two operational windfarms within the lowlands of Fife and fleeting views of the Green Knowes windfarm on approach to Bridge of Earn and Perth. The Colliston Farm turbine itself is only fleetingly visible over a short section of the overall route and would predominantly appear in oblique rather than direct views for road users regardless of direction of travel, as such the cumulative effects on the M90 between Colliston Farm and other developments would be **Negligible**.

Table 7.14 - Summary of Cumulative Viewpoint Analysis

Route	Sensitivity	Magnitude	Level of Effect
M90			
Colliston Farm and Operational Wind Farms	Medium	Negligible	Negligible
Colliston Farm and Operational, Consented Wind Farms		Negligible	Negligible
Colliston Farm and Operational, Consented, Planned Wind Farms		Negligible	Negligible

5.9 Summary of Assessment Conclusions

Introduction

The proposed Colliston Farm turbine is located in an area of arable farmland which is predominantly characterised by the agricultural nature of the landscape. The surrounding landscape has been identified in the *Supplementary Planning Guidance for Wind Energy Proposals in Perth & Kinross* as a broad area of search. The Colliston Farm development has been designed to minimise the visual impact on the surrounding landscape and visual receptors. The methodology for the landscape and visual impact assessment (LVIA) adopted the guidelines set out by the Landscape Institute and the Institute for Environmental Management and Assessment.

Landscape Design

The project comprises a single turbine with a typical hub height of 32.2m and a typical turbine height of 46m to blade tip.

The associated infrastructure of site access tracks and substation have been designed and located sensitively to minimise visual impact. There will be no significant effects resulting from the construction and operation of the associated infrastructure, although negative effects are anticipated during the construction period. These would be restored and mitigated on completion of the construction period.

Landscape Assessment

The proposed Colliston Farm Wind development is located within the Igneous Hills Character Type, within the Tayside Landscape Character Assessment and would affect a proportion of this area. As an area of intensive farming practice, this area has a medium to low landscape sensitivity and there would be no unacceptable effects on the wider landscape character area.

Considering the wider area, the assessment has concluded that there would be no significant indirect effects from any of the other landscape character types or within the study area.

Effects on Designated Landscapes

The landscape of the site area is not designated and as such there will be no direct effects on any designated landscape and any effects would be as a result of indirect landscape effects from designated areas within the study area. The assessment has concluded that there would be no significant indirect landscape effects on designated landscape areas including Areas of Great Landscape Value, Special Landscape Areas and Gardens and Designed Landscapes.

Visual Assessment

The viewpoint analysis is contained in **Appendix 1** and indicates that there would be no significant visual effects occurring beyond ~1km from the proposed turbine. Out of the nine viewpoints assessed only one was found to have significant effects. As well as these nine viewpoints there were three longer distance viewpoints from the previous submission which were omitted due to the reduction in visibility of the scheme. The conclusions from the viewpoint assessment have been used to form a view as to the level of overall visual effects within the study area.

Visual Effects: Construction Period

There will be no significant visual effects resulting from the construction period and visibility of the ground based activity. Views of concentrated areas of construction could however lead to a temporary and negative effect that in some cases may appear more disruptive than the finished development. Post-construction, the appearance of the site would recover a calmer visual character with negligible levels of activity visible on site from the nearest visual receptors.

Visual Effects: Operational Period

The nearby hamlet of Drunzie may experience some effects, with the turbine appearing on the horizon to the west of the settlement as well as some of the nearby properties. The views however, were not found to be overbearing or dominant; the effects arise from the addition of two tall, vertical features into the local landscape. Visual effects were found to quickly diminish beyond 1km of the proposed development with settlements such as Duncricvie and Glenfarg receiving no views of the proposed turbine.

Cumulative Landscape and Visual Effects

The Colliston Farm turbine would rarely be seen in conjunction with other wind turbines, the operating windfarms in the local area tend to be sited in the more upland landscapes to the north-west and within the flatter basins of Fife to the south-east. Cumulative views do occur from the more elevated areas and hill tops in the region, however, from these locations the Colliston Farm Wind Turbine will rarely appear as significant or prominent feature in these views.

Certain Impact

The operating windfarm of Lochelbank is the closest development to the Colliston Site. Due to the intervening feature such as topography and vegetation, intervisibility and cumulative effects between the developments are rare. The operating developments to the south-east do not appear in the same views as the Colliston turbine, appearing in the opposite direction to the proposed turbine from most of the potential visible areas. It is considered that the overall level of cumulative effect due to Colliston Farm would be negligible, which would not be significant.

Likely Impact

Considering the introduction of the proposed Colliston Farm Wind Turbine and the effects it will have on operational and consented projects in the study area, it is considered that the overall level of cumulative effect due to Colliston Farm would remain negligible, due again in part to the small numbers of development in proximity to the proposed turbine. The nearest consented project is located ~3-4km to the north-west of the Colliston Farm turbine and any cumulative effects would not be significant.

Uncertain Impact

In addition to the above, when considering all the currently planned developments, levels of intervisibility would be low, with development in the immediate vicinity limited to single turbine development larger in size to the proposed Colliston Farm development.

5.10 Summary of Effects

The single turbine proposed within the arable landscape near to Colliston Farm would rarely be seen as a prominent feature, appearing in views alongside a significant number of manmade features and other naturally occurring features. Typically the turbine at would relate well to both the scale of the landscape and the form of the topography. Assessed significant effects are isolated, only occurring within ~1km of the turbine. These relate to the visual impact at one of the assessed viewpoints. Effects outside this distance quickly diminish, which indicates localised impacts that are not widespread. The views from the more sensitive locations around Loch Leven were found to be limited with the scale of the turbine having little visual impact on the setting of the Loch. It would not limit views or add an easily discernible feature to the horizon around the area.

The turbine would be introduced to an area of landscape which is already busy and does not have a wild or remote nature, being characterised by its agricultural nature as well as by the upland landscape to the north-west. This area of the Igneous Hills has been identified by the *Supplementary Planning Guidance for Wind Energy Proposals in Perth & Kinross* as being within a broad area of search for wind development. The turbine scale has been specifically chosen to fit with the surrounding area and was found to have a limited impact on both the local landscape and the wider region.

6 Noise

6.1 Introduction

This section considers the potential noise impacts and effects associated with the proposed ACSA A27 wind turbine.

6.2 Potential Impacts

Noise can have an effect on the environment and on the quality of life enjoyed by individuals and communities. The impact of noise can therefore be an important consideration in the determination of planning applications. Noise impacts can arise from three distinct areas of the development:

- The construction of the wind turbine;
- During operation of the wind turbine; and
- Resulting from increased traffic flow during the construction and operation stages.

Given the scale of the development, construction noise will be short term and generally will not increase background noise levels beyond the recommended limits set out by the World Health Organisation and the former Department of the Environment. As such, a construction phase noise assessment has been scoped out. Due to the scale of the development, increased traffic flow is also unlikely to be significant, and an assessment of the noise impact of traffic has been scoped out.

There are currently no projects within the area that are built, consented or in planning that would contribute to cumulative noise levels at the properties considered within this assessment. As such, a cumulative noise assessment has been scoped out.

6.3 Terminology

The symbols used for noise levels in this report are:

- L_{WA} is the A-weighted sound power level, a measure of the total sound energy emitted by a source of noise;
- $L_{A,eq}$ is the A-weighted equivalent continuous sound pressure level, which is a measure of the total ambient noise at a given place at a given time; and
- $L_{A90,10min}$ is the A-weighted sound pressure level exceeded for 90 per cent of the time in the averaging time period specified, in this case 10 minutes, and is the normal index used for background noise level measurements.

The wind speeds referred to in this report:

- v_{10} are standardised wind speeds at 10m height above ground level and used to determine the correlation between wind speed and noise levels.

6.4 Guidance

Guidance for assessing operational noise from wind farms is given in:

- 'ETSU-R-97: the Assessment and Rating of Noise from Wind Farms (1997), The Department of Trade and Industry (usually referred to as the Noise Working Group Recommendations); and
- 'A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise', May 2013, IOA.

6.5 Methodology

Assessment Methodology

The ETSU-R-97 guidelines indicate that for single turbines or turbines located far from the nearest properties, a simplified approach can be taken. If it can be demonstrated that the noise levels due to the turbine would not exceed 35dB(A) $L_{A90,10min}$ at the nearest sensitive receptors, then that in itself would provide sufficient protection of amenity for those receptors.

Choice of Propagation Model

The International Standard ISO 9613, 'Acoustics – Attenuation of Sound During Propagation Outdoors - Part 2', noise propagation model has been used for the turbine noise calculations. L_{Aeq} noise propagation was modelled using WindFarm v4.2.1.7 by ReSoft. L_{A90} levels were derived by subtracting two decibels from the L_{Aeq} values as per the ETSU-R-97 guidance.

The input parameters shown in **Table 6.1** have been used and are consistent with the IOA good practice guidance.

Table 6.1 – Propagation input parameters

Atmospheric Attenuation Assumptions	
Temperature (°C)	10
Humidity (%)	70
Ground Attenuation Assumptions	
Attenuation factor, G	0.5 (semi-soft ground)
Receptor height (m)	4.0

The attenuation of noise as it travels through the air varies with frequency. The atmospheric attenuation coefficients used in the assessment, corresponding to the assumptions in **Table 6.1**, are tabulated in **Table 6.2**.

Table 6.2 – Attenuation coefficients used for the noise propagation model

Octave Band (Hz)	63	125	250	500	1000	2000	4000	8000
Attenuation Coefficient	0.0001	0.0004	0.0010	0.0019	0.0037	0.0097	0.0328	0.1170

6.6 Summary of Previous Noise Assessment

The previous proposal assessed the operational noise impacts associated with an Enercon E53 rated at 800kW with an overall sound power level of 102.5dB(A).

A broadband calculation was undertaken to determine the noise levels at the nearest properties from the previous proposal, which was in accordance with guidance at the time of submission. A 1dB(A) safety factor was added to give a maximum sound power level of 103.5d(A).

The outcome of the noise assessment for the previous application was that the predicted wind turbine noise levels met the simplified ETSU-R-97 fixed noise limit of 35dB(A) at all properties and, as such, the development could be accommodated in terms of noise.

6.7 Updated Assessment

The current proposal consists of a single ACSA A27 – 225kW wind turbine. As the development has been scaled down significantly and was previously assessed as acceptable in terms of noise impact, this suggests that the development will remain acceptable in terms of noise.

Baseline

Four properties have been identified within a 1km study radius of the proposed turbine location. These are shown on the map in **Figure 6.1**. Although the residential dwelling and amenity areas of property H4 is out-with the 1km study radius, a significant part of the land holding is within the study area and as such, has been included within this assessment. Operational noise levels have been predicted from the nearest part of the amenity area to the turbine, in accordance with the ETSU-R-97 guidelines.

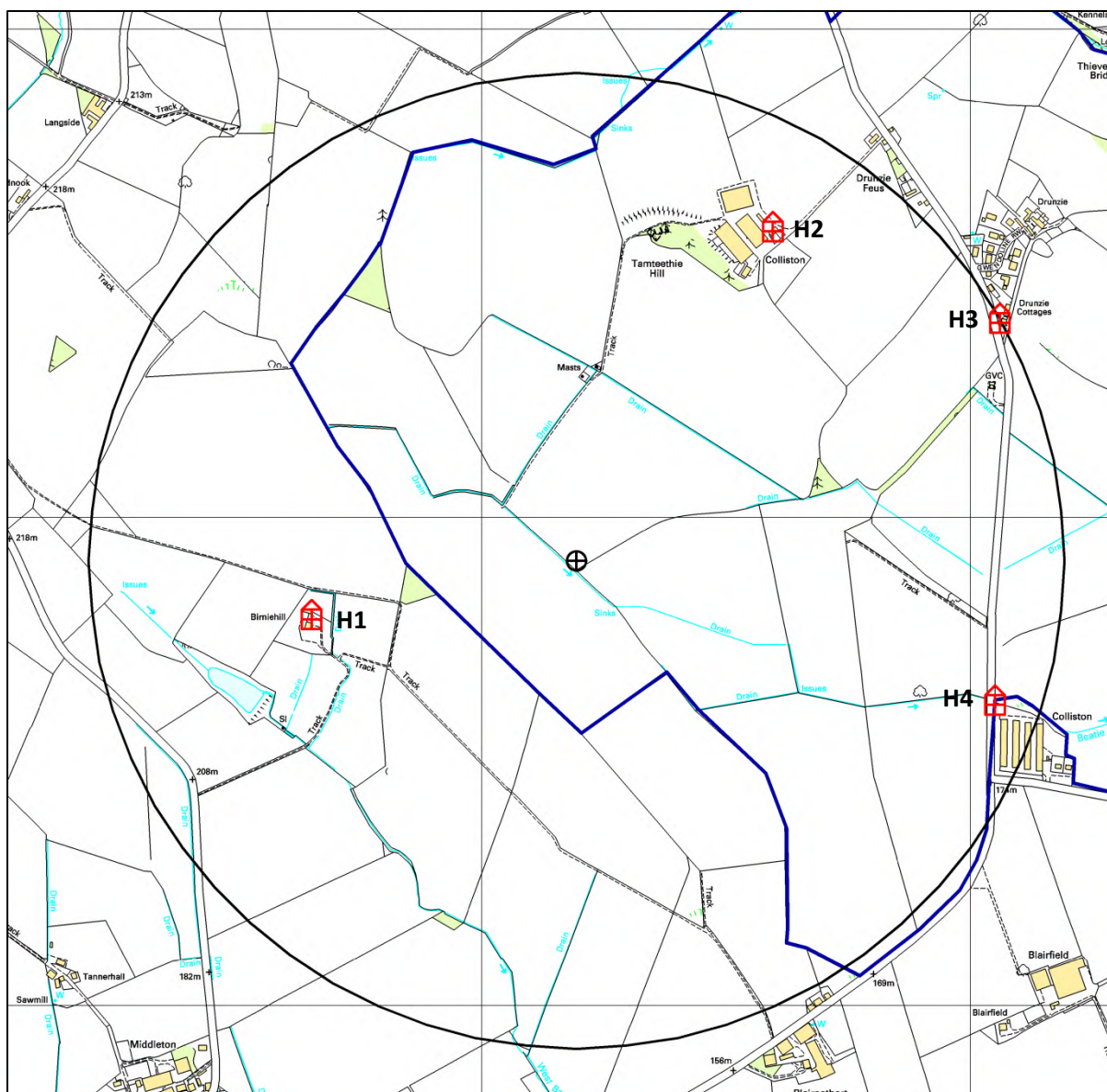






Figure 6.1 - Site layout showing proposed turbine location and nearest noise sensitive receptors

Key:		Proposed turbine location		Land ownership boundary
		Noise sensitive receptors		1km study area

Wind Turbine Sound Power Levels

Octave band sound power levels were available at a v_{10} wind speed of 8ms^{-1} . A measured slope regression of 0.417 was supplied as part of the test report, allowing the octave band levels to be scaled up to 10ms^{-1} .

The IOA recommends that a margin of 1.645 times the measurement uncertainty value at each wind speed should be used as a clear indication that suitable uncertainties have been incorporated. The test report for the ACSA A27 states that the measurement uncertainty is estimated at 2-3dB(A) assuming a 90% confidence interval. A measurement uncertainty of

3dB(A) has been used for this assessment, resulting in an uncertainty factor of 4.9dB(A). This will give result in conservative levels because the manufacturer warrants that the wind turbine will not exceed the levels provided in their documentation.

The octave band sound power levels for a v_{10} wind speed of 8ms^{-1} are given in **Table 6.3**

Table 6.3 – Octave band sound power levels for the ACSA A27 at v_{10} wind speed of 8ms^{-1}

Octave Band (Hz)	63	125	250	500	1000	2000	4000	8000
Sound Power Level (dB(A))	71.4	80.5	86.3	91.6	93.1	89.0	76.3	65.1
Total [dB(A)]	97.0							
Uncertainty [dB(A)]	3.0							
Uncertainty Factor [dB(A)]	4.9							

The extrapolated octave band sound power levels a v_{10} wind speed of 10ms^{-1} , using a slope regression of 0.417, are given in **Table 6.4**.

Table 6.4 – Octave band sound power levels for the ACSA A27 at v_{10} wind speed of 10ms^{-1}

Octave Band (Hz)	63	125	250	500	1000	2000	4000	8000
Sound Power Level (dB(A))	72.2	81.3	87.1	92.4	93.9	89.8	77.1	65.9
Total [dB(A)]	97.8							
Uncertainty [dB(A)]	3.0							
Uncertainty Factor [dB(A)]	4.9							

6.8 Predicted Impacts & Effects

The calculated $L_{A90,10\text{min}}$ levels, including uncertainty factor, are shown in **Table 6.5**.

Table 6.5 - Predicted noise levels at nearby properties

ID	Property Name	Easting (to 10m)	Northing (to 10m)	Distance from Turbine (to 10m)	Wind turbine noise level $L_{A90, 10\text{min}}$ [dB(A)]
1	Birniehill	312650	707790	560	34.1
2	Drunzie Cottages	314060	708400	990	27.8
3	Colliston	313600	708580	780	30.5
4	Blairnathort	314050	707615	910	28.8

As can be seen, none of the properties are expected to experience noise levels greater than the ETSU-R-97 guidelines fixed noise limit of 35dB(A).

6.9 Mitigation

No mitigation is proposed as the 35dB(A) fixed noise limit set out by the ETSU-R-97 guidelines is not predicted to be breached at any of the assessed properties.

6.10 Conclusions

Wind turbine noise calculations have been carried out to assess the significance of noise impact from the proposed scheme on residential amenity.

Wind turbine noise levels at all third party properties meet the ETSU-R-97 fixed noise limit of 35dB(A).

It is concluded that this proposal can be accommodated in terms of noise.

7 Ecology

7.1 Introduction

A full set of ecological surveys and assessments were conducted in relation to the original 2012 submission. These considered the potential effects of the proposed wind turbine on the nature conservation interests on and around the proposed site, sets out the findings of the various surveys carried out and provides an assessment of impact on key sensitive species. These assessments were carried out by GLM Ecology, an established consultancy with extensive experience of ecological assessments at wind farm sites.

The surveys conducted for the original assessment have been revised and updated by GLM Ecology, the full report of which can be found in **Appendix 1**.

This section sets out the findings of the original surveys, considers the comments of statutory consultees to the original application and provides an assessment of how a single turbine of a significantly reduced height will impact on the results of the surveys and therefore the overall nature conservation interests on and around the proposed site.

7.2 Summary of Original Surveys

Appendix 2 sets out in detail the regulations, methodology and guidance in which the surveys have been conducted. The following information summarises what was identified and concluded during the original surveys.

Site Background and Context

The site is predominantly arable fields with a paucity of hedgerows and the occasional mature tree line. There are two small dense coniferous plantations on site and some mature beech trees near Colliston Farm. Photographs of these features can be found in **Appendix 2**. There is no standing or running water on site apart from ditches.

There are farmhouses in the area consisting of the usual mixture of older outbuildings and newer barns. To the east and southeast lies the Lomond Hills and Loch Leven.

Scope of Ecological Assessments

The scope of the EcIA was derived from the initial site background and context study, the local knowledge and experience of the ecologist. The EcIA considers the following issues:

- Breeding Birds;
- VP Surveys;
- Winter Walkover Surveys;
- Badger;
- Bats; and
- Phase 1 habitat.

Summary of Predicted Impacts

Breeding Birds

There was a poor breeding species list due to the majority of the habitat being arable fields. The majority of species recorded were in the small wooded areas near the farm well away

from the turbine location. Considering the observations noted above, no significant impact on high sensitivity species could be expected.

Schedule 1 Raptors

No Schedule 1 species were recorded breeding on any surveys and the habitat present would not be suitable for breeding and very limited for foraging.

Wintering Birds

The three SPAs within the 20km zone around Colliston are all designated for wintering geese species and it is known that there is regular connectivity between the three sites. No geese or wildfowl or species of concern were recorded foraging on site during surveys at any time. Flights of geese were recorded in the general area, however these flights were predominately at a high level and none were in the collision risk zone.

Badgers

No signs of badger were recorded.

Bats

No bats were recorded within 500m from the turbine. Very small numbers of soprano pipistrelles were recorded at the farm. No roosts are present within a 500m zone of the turbine location as no buildings or suitable trees are present.

Otters/Water Voles

No signs of otters or water voles were recorded.

Habitats

A total of eight habitats are present within the site survey areas, of which the majority is arable fields, within which the turbine is located. No nationally or internationally protected habitats were identified in this assessment. The habitat around the proposed access tracks and turbine location is arable fields.

7.3 Statutory Consultees Comments

No external consultees were consulted as part of the original application, however the Case Officer offered the following comments in the Report of Handling:

“In terms of the impact on protected species/habitats, I have no immediate concerns regarding this development which could not be adequately addressed or mitigated via appropriate planning conditions. I therefore consider the proposal to be consistent with the relevant Development Plan policies which relate to protected species/habitats, insofar as the proposal would not have an adverse impact on either element.”

7.4 Predicted Impact of Revised Proposal

All surveys and assessments have been updated in relation to the revised proposal by GLM Ecology. The revised report can be found in **Appendix 2**.

Given that the proposed development has been significantly reduced in size and scale, it is anticipated that the turbine will have a lesser impact on ecological and ornithological interests.

7.5 Conclusion

It is proposed to construct a single wind turbine of 46m in tip height and associated infrastructure on an area of improved grazing land near Glenfarg. A range of ecological assessments have been undertaken and revised to investigate the ornithological and other ecological interest of the site and it is concluded that potential for this to be adversely affected by the current proposal is extremely unlikely.

The EclA was conducted as part of the original application and has been updated for the revised proposal. The updated report can be found in **Appendix 2**.

8 Cultural Heritage/Archaeology

8.1 Introduction

Cultural heritage is represented by a wide range of features, both above and below ground, which result from past human use of the landscape. These include standing buildings, many still in use, sub-surface archaeological remains and artefact scatters. These also include earthwork monuments as well as landscape features such as field boundaries and industrial remains.

This chapter addresses any concerns raised during the original application and re-assesses the potential impacts of a turbine of reduced size and scale on surrounding features of cultural heritage interest.

8.2 Consultation & Consultee Responses

As part of the pre-planning consultation for the previous application, Historic Scotland and Perth and Kinross Council's Heritage Officer were contacted regarding the original development. Historic Scotland identified the Scheduled Monuments (SMs) at Arlary and Nether Tillyrie as being closest to the site, and asked that the setting of Burleigh Castle be paid particular attention.

The Council's Heritage Officer highlighted the potential direct impact upon the Tamteethie Hill enclosure, and asked that any disturbance as a result of the upgrade to the existing access track in this area be kept to a minimum.

These issues were given through consideration in the assessment, to which Historic Scotland provided comment on the original application: *"there is unlikely to be a significant adverse impact upon either of their settings [Burleigh Castle and Kinross House GDL] due to the distance between the turbine and the historic assets, and the nature of the surrounding topography. Historic Scotland thus does not object to this application"*.

The case officer wrote the following in the Report of Handling relating to Cultural Heritage impacts: *"There are several listed buildings and SAM potentially affected by the proposal, however any impact on their settings will not be of particular significance. In addition, Historic Scotland have raised no concerns in terms of the potential impact that the turbine will have on HGDL associated with Kinross House."*

8.3 Guidance

- SPP – Historic Environment
- Scottish Historic Environment Policy (SHEP) 2009
- Managing Change in the Historic Environment guidance note series –Setting
- Pan 2/2011 – Planning and Archaeology

8.4 Methodology

In the preparation for the original assessment, a range of historical and technical data was collected and analysed. It is normal practice to include a review of other potential issues that fall under the umbrella term of cultural heritage, such as historic buildings and

landscapes, in addition to purely archaeological factors. The following sources were consulted:

- Sites and Monuments Record (SMR);
- National Monuments Record Scotland (NMRS);
- National Library of Scotland (Map Library); and
- Aerial photograph collection held by the Royal Commission on the Ancient and Historical Monuments of Scotland (RCAHMS).

A phased approach to the assessment was adopted:

- Direct Impact: The area most at risk of direct impact was assessed to be all land within the application area, land 50m either side of the access track and within 200m from the turbine location.
- Indirect Impact on the setting, character and historical integrity of known cultural heritage sites: 'B' listed buildings were considered up to 2km from the turbine.
- Indirect Impact on the setting, character and historical integrity of known cultural heritage sites: Nationally designated features such as Scheduled Monuments (SMs), 'A' listed buildings, and Gardens and Designed Landscapes (GDLs) were further considered within a 5km study radius (**Figure 8.4**).

Analysis of a computer model of the proposed wind cluster and existing landform (DTM) to produce a zone of theoretical visibility (ZTV) was used to assess what the potential indirect visual impact of the wind turbine may be from a number of cultural heritage sites within the study area.

Historic Maps

Historic maps held at the National Library of Scotland (Map Library) were consulted via the internet. No significant changes to the immediate area were discernible from these maps, other than those already noted.

Aerial Photographs

A selection of aerial photography within the site boundary was viewed online. No features of potential cultural heritage interest, other than those already identified from other sources, were visible within the proposed development area on those aerial photographs viewed.

Information Gaps

An attempt has been made to consult all readily available documentary sources. However, it is possible that there may be other documentary sources held by RCAHMS and the National Archives of Scotland, which have not been consulted as part of this assessment. The site has not been visited by a qualified Archaeologist as part of this assessment.

Assessment Criteria

The criteria presented in **Tables 8.1 and 8.2** have been used in the assessment of significance of any direct or indirect impact on any site of cultural heritage importance.

Table 8.1– Sensitivity of built and cultural heritage features

Sensitivity	Definition
High	Category A listed buildings Scheduled Monument Non-statutory List of sites likely to be of national importance Gardens and Designed Landscapes World Heritage Sites
Medium	B & C(S) listed building Archaeological sites on the Sites and Monuments Record (of regional and local importance) Conservation Areas
Low	Archaeological sites of lesser importance Non-Inventory Gardens and Designed Landscapes

Table 8.2- Magnitude of built and cultural heritage effects

Magnitude	Definition
High	Any number of wind turbines and/or ancillary development that would result in: <ul style="list-style-type: none"> the removal or partial removal of key features, areas or evidence important to the historic character and integrity of the site, which could result in the substantial loss of physical integrity; and/or a substantial obstruction of existing view by the addition of uncharacteristic elements dominating the view, significantly altering the quality of the setting or the visual amenity of the site both to and from. <i>where the noise intrusion (mechanical or aerodynamic) is likely to detract from the amenity of a built or cultural heritage site</i>
Medium	Any number of wind turbines and/or ancillary development that would result in: <ul style="list-style-type: none"> the removal of one or more key features, parts of the designated site, or evidence at the secondary or peripheral level, but are not features fundamental to its historic character and integrity; and/or a partial obstruction of existing view by the addition of uncharacteristic elements which, although not affecting the key visual and physical relationships, could be an important feature in the views, and significantly alter the quality of the setting or visual amenity of the site both to and from. <i>where the noise intrusion (mechanical or aerodynamic) may detract from the amenity of a built or cultural heritage site</i>
Low	Any number of wind turbines or ancillary developments that may result in: <ul style="list-style-type: none"> a partial removal/minor loss, and/or alteration to one or more peripheral and/or secondary elements/features, but not significantly affecting the

	<p>historic integrity of the site or affect the key features of the site; and/or</p> <ul style="list-style-type: none"> • an introduction of elements that could be intrusive in views, and could alter to a small degree the quality of the setting or visual amenity of the site both to and from. • where the noise intrusion (mechanical or aerodynamic) is unlikely to detract from the amenity of a built or cultural heritage site
Negligible	<p>Any number of wind turbines or ancillary developments that may result in:</p> <ul style="list-style-type: none"> • a relatively small removal, and/or alteration to small, peripheral and/or unimportant elements/features, but not affect the historic integrity of the site or the quality of the surviving evidence; and/or • an introduction of elements that could be visible but not intrusive in views, and the overall quality of the setting or visual amenity of the site would not be affected both to and from. • where the noise intrusion (mechanical or aerodynamic) will not detract from the amenity of a built or cultural heritage site

The level of an effect is determined by the combination of sensitivity and magnitude of change. The following matrix is used to determine the overall significance of effect.

Table 8.3 – Significance of impact matrix

Magnitude	Sensitivity		
	High	Medium	Low
High	High	High	Medium
Medium	High	Medium	Low
Low	Medium	Low	Negligible
Negligible	Low	Negligible	Negligible
Key:		Significant in terms of the EIA Regulations	
		Not Significant	

The potential indirect impacts of the proposed wind turbine are temporary. After the 25 year life span of the development, the project will be de-commissioned and the surrounding landscape will be returned to its original state. Therefore, any adverse impacts upon historic features are considered to be temporary and reversible.

8.5 Baseline Data

Features of Historical Significance within 200m

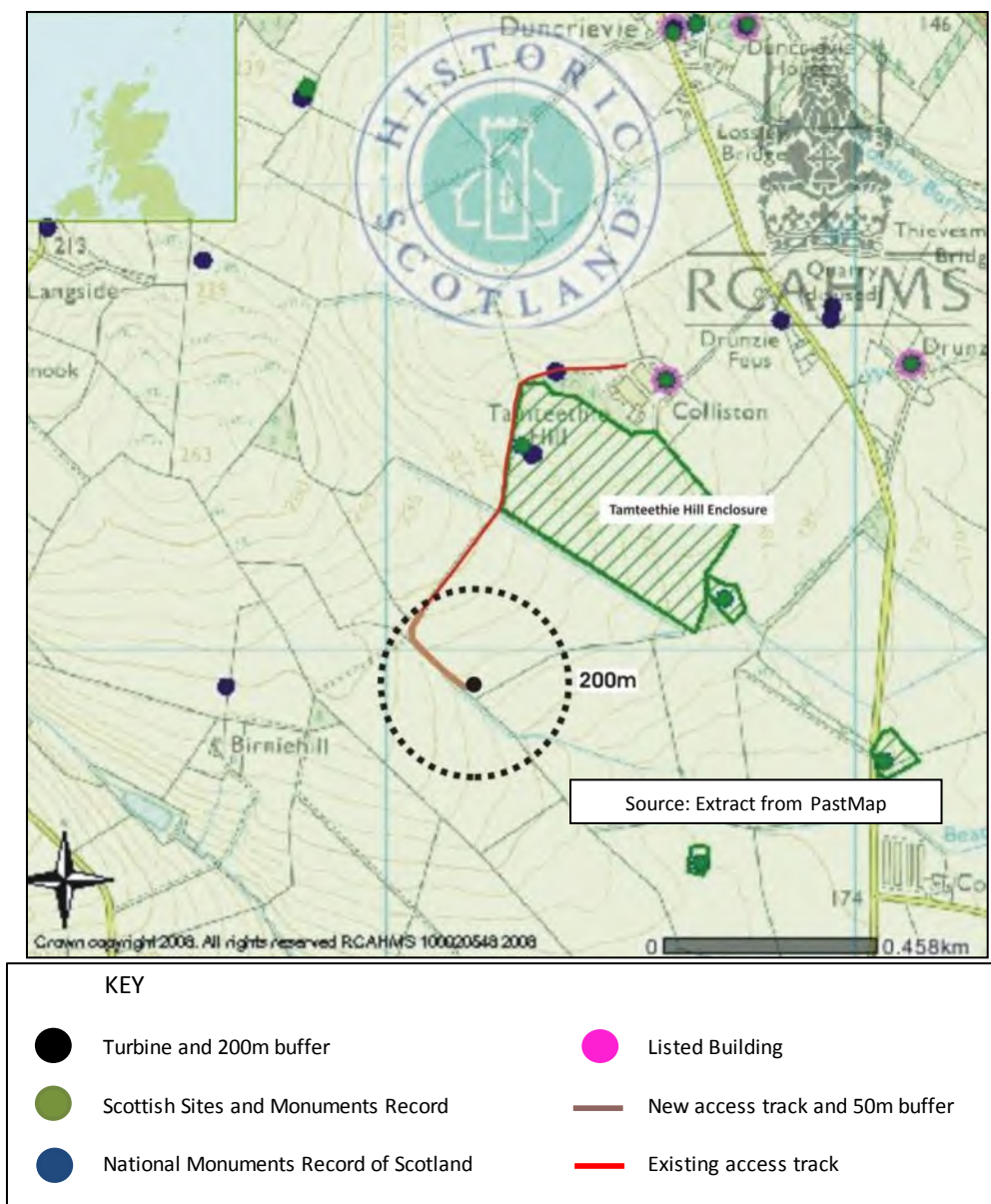


Figure 8.1 – Features of historical significance within 200m (Pastmap extract)

As is evident from **Figure 8.1** there is only one known feature of cultural heritage interest within the vicinity of the site, located near to the existing access track. The feature is known as Tamteethie Hill (SMR Ref: MPK15446), a post-medieval rectilinear enclosure showing possible rig and furrow markings. The fields that this feature is located in are subject to rigorous farming practices and are cultivated annually. The existing access track follows the western edge of the field containing the Tamteethie enclosure and is currently used by farm vehicles. The proposed new section of access track will be constructed to the west of the Enclosure, and is unlikely to have any direct impact upon the feature itself.

Features of Historical Significance 2km

Within 2km of the turbine location, two 'B' listed buildings were found. These features are briefly described in **Table 8.5** below.

Table 8.5 – Cultural heritage features within 2km

LB/SAM no.	Index no./ HBNUM	Distance	Name	Listing & Description	
LB 1	17650	~0.8km	Collieston Farmhouse and Steadings	'B'	A traditional 2-storeyed house, 3 bays wide with a slated roof. The Steading has a pantiled roof. Dating from the early 18th Century
LB2	17651	~1.4km	Drunzie Farmhouse and Steadings	'B'	Traditional rubble-built house with piended slated roof. Front court flanked by Steadings.

The setting of each of these features is discussed below:

- Colliston Farmhouse: the Farmhouse sits in an elevated position to the west of the hamlet of Drunzie, with its main aspect facing in a south-easterly direction. There are also long distance views from the side of the property in a north-easterly direction. Three large barns lie in close proximity to the west of the house, and the rear of the property looks out towards a farm yard and more outbuildings.
- Drunzie Farmhouse and Steading: the farmhouse is situated in the hamlet of Drunzie, to the north of a small estate of new houses which sit between the farmhouse and the minor road which runs to Duncreavie. The farmhouse faces into a courtyard flanked by the steadings, creating an enclosed setting. Immediately to the west of the farmhouse is a large farm building which further screens views in this direction. There are likely to be open views in a north-westerly direction from the rear of the Farmhouse.

'A' Listed Buildings, SMs and GDLs within 2-5km

Between 2km and 5km of the project, 12 SMs and 1 'A' listed building (which is also a SM) SAMs were identified. Brief details are given in **Table 8.6**. A portion of one GDL, Kinross House, was located within the study area.

Table 8.6 – 'A' listed buildings and SMs within 2-5km of project

LB/SM no.	HBNUM/ Index no.	Distance	Name	Listing & Description	
LB3 / SM7	351618 / 90045	3.9km	Burleigh Castle	'A'	The monument comprises Burleigh Castle, a now ruined towerhouse of medieval date, which is in the care of the Secretary of State for Scotland. The early 16th century tower house and a wall of a later courtyard with an arched gateway still survive.

LB/SM no.	HBNUM/ Index no.	Distance	Name	Listing & Description
				To the west of the castle are the remains of a substantial ditch, which survive as an irregular turf-covered depression some 25m long by up to 8m wide.
SM1	7610	2.9km	Nether Tillyrie, Settlement and Souterrain	The monument comprises the remains of an unenclosed settlement of prehistoric date, visible as cropmarks on oblique aerial photographs. To the south-west is a ring-ditch representing the remains of a timber roundhouse.
SM2	7634	3.0km	Nether Tillyrie, Souterrain	The monument comprises the remains of a single curved souterrain, ~11m long and of prehistoric date. This is visible as a cropmark on oblique aerial photographs.
SM3	7612	2.9km	Arlary, Square barrow	The monument comprises the remains of a square barrow of prehistoric date. It encloses an area of 12m by 12m and is defined by a narrow ditch. It is visible as a cropmark on oblique aerial photographs
SM4	7612	2.9km	Arlary, Barrow	The monument comprises the remains of a ploughed-down barrow of prehistoric date, visible as a cropmark on oblique aerial photographs. It comprises a single round barrow measuring about 22m in internal diameter, defined by a single ditch measuring about 2m in width
SM5	7609	3.3km	Mawcarse, Enclosure	The monument comprises the remains of an enclosed settlement of prehistoric date, visible as a cropmark on oblique aerial photographs. It comprises a D-shaped enclosure defined by a single ditch, measuring about 280m by 150m. The SE corner of the enclosure has been slightly truncated by a gas pipeline.
SM6	7611	3.6km	Mawcarse Cottage, Barrow	The monument comprises the remains of a square barrow and a round barrow, both of prehistoric date, visible as cropmarks on oblique aerial photographs. The square barrow measures about 10m by 10m, and is defined by a ditch measuring about 1m wide. A cropmark at the centre of the barrow indicates the position of a central grave pit. The round barrow measures about 12m in diameter. Again the position of a central grave pit is marked by a small cropmark
SM8	7623	4.5km	Orwell, Rectilinear enclosure	The monument comprises the remains of an enclosed settlement of prehistoric date, visible as a cropmark on oblique aerial photographs. It comprises a rectilinear enclosure measuring approximately 110m by 80m. The enclosure is defined by a single ditch measuring some 2m in width.
SM9	993	4.6km	Orwell, Two standing stones	The monument comprises two standing stones of prehistoric date. Both are substantial undressed boulders. Although no other stones are visible their disposition and topography suggests that they may represent the remains of a former stone circle.
SM10	9459	4.8km	Cairn Geddes	The monument comprises a cairn of prehistoric date, visible as a turf-covered mound. It comprises a turf-covered, flat-topped mound 21m in diameter and 0.5m high.
SM11	7614	4.9km	Lathro Cottage, Enclosure	The monument comprised the remains of an enclosed settlement of prehistoric date and was visible as cropmarks on oblique aerial photographs. However a community centre has been built at this location and there are no visible remains of the SAM.

LB/SM no.	HBNUM/ Index no.	Distance	Name	Listing & Description
SM12	7620	4.2km	Ballingall, Enclosure	<p>The monument comprises the remains of an enclosure of prehistoric date, visible as a cropmark on oblique aerial photographs.</p> <p>It comprises a rectilinear enclosure with rounded corners, which is defined by double ditches. The enclosed area measures approximately 50m by 40m. It is thought to date from the Iron Age c.500 BC to AD 500.</p>
GDL 1		4.7km	Kinross House	<p>Kinross House is a late 17th Century Palladian mansion designed by Sir William Bruce. It lies to the east of Kinross on the shores of Loch Leven, with its main aspect deliberately orientated over its formal gardens towards the 14th century Lochleven Castle situated on an island to the east.</p> <p>The house is situated in 54 acres of designed landscape, and is one of Scotland's earliest country houses. The house and formal gardens are located in the south of the GDL, which includes the Kinross golf courses to the north, which cover the majority of the designation.</p>

All the identified features within 5km of the project were found to be within the ZTV for the original application and therefore have theoretical visibility of the project. As the revised application comprises a reduced turbine height, the extent of the ZTV is reduced which results in SM 1, 2 and 10 no longer experiencing theoretical visibility of the project. These features are not considered to experience an indirect visual impact of the turbine and therefore have not been taken forward in the assessment.

SMs 3, 4, 5, 6, 8 and 12 are visible only as cropmarks when viewed from the air. Therefore their setting is not considered to be affected by the proposed development.

8.6 Evaluation of Effects

Direct Effects

Table 9.7 - Effects and Evaluation of Significance: Direct Effects

Effect	Probability	Sensitivity	Magnitude	Significance	Comment
Direct effects on known features within the site	Unlikely	Medium	Low	Low	The Tamteethie Hill enclosure is the only known cultural feature within the vicinity of the site. The upgraded access track will run to the west of the field that contains the enclosure, meaning that there is predicted to be no direct impact upon the feature itself.
Direct effect on presently unrecorded archaeology	Unlikely	Unknown	Unknown	Unknown	Given the small area of intrusive works and the lack of known features in the immediate area; the turbine is unlikely to have a significant impact on unknown archaeological remains.

Indirect Effects within 2km

Table 9.8 - Effects and Evaluation of Significance: Indirect Effects Features within 2km

Name	Distance	Sensitivity	Magnitude	Significance	Comment
LB1 – Collieston Farm-House and Steadings, 'B'	~0.8km	Medium	Low	Low	The hub and blade tips are predicted to be visible from Collieston Farm House. The main views from the house are to the south-east,

listed					away from the turbine. There are possible views of the turbine from one upper storey window on the side of the house, but it is likely that the turbine will be screened by the farm outbuildings immediately to the west of the farm house, or by the mature woodland which lies on higher ground 160m to the west.
LB2 - Drunzie Farm-House and Steadings, 'B' listed	~1.4km	Medium	Low	Low	<p>The blades of the turbine are predicted to be theoretically visible from this feature.</p> <p>The farm-house and steading form a self-contained courtyard, with all of the buildings facing into the centre, creating an enclosed sense of space. The mature trees that sit adjacent to Colliston Farm are likely to fully screen the turbine from views from the vicinity of the farmhouse.</p>

Indirect Effects within 2-5km

Table 9.9- Effects and Evaluation of Significance: Indirect Effects Features 2-5km

Name	Distance	Sensitivity	Magnitude	Significance	Comment
LB3 / SM7 - Burleigh Castle	3.9km	High	Negligible	Low	<p>The turbine tower, hub and tips will visible from the castle, viewed against the sky. A photomontage from the Castle has been produced, and is included as Figure 8.9 of the Landscape Graphics.</p> <p>The single turbine of this scale will occupy a small portion of the horizontal view, and views from ground level will be partially screened by intervening vegetation. No significant adverse impact on the setting of the SAM or its historical integrity and appreciation is predicted.</p>
SMs 3, 4, 5, 6, 8 & 12	2.9km – 4.5km	High	Negligible	Low	The remains of these SAMs are visible from aerial photography or from the air as cropmarks only. The historical understanding of these remains will not be adversely impacted upon by the proposed turbine.
SM 9 –Orwell Standing Stones	4.6km	High	Negligible	Low	The turbine and hub will be visible as part of the wider landscape from this feature. It will take up a small portion of the available 360 degree view. No significant adverse impact on the current settings or historical integrity of the standing stones is predicted.
GDL1 – Kinross House	4.7km	High	Negligible	Low	Only the northern portion of the GDL is within the 5km study area, which contains part of the Kinross Golf Course. Mature trees both within and bordering the GDL to the north are likely to screen the majority of views of the turbine. Where the turbine is viewed it will be glimpsed through gaps in the trees, and more noticeable during the winter months. No significant adverse impact on the current settings or historical integrity of the GDL is predicted.

With regard to cultural features beyond 5km, it is not expected that the project will have a significant detrimental impact on their setting. The turbine will appear as part of the wider landscape.

8.7 Summary of Predicted Impacts and Effects

Direct Impact

One known feature of cultural heritage interest was identified within the vicinity of the existing access track which will require upgrading. The new section of access track will be constructed to the west of the field that contains the feature, and therefore there will be no direct construction impact.

Indirect Impact

The study has identified 2 'B' listed buildings, 12 SMs (one of which is an 'A' listed building) and one GDL within the study area.

The revised findings do not differ significantly from the previous assessment conducted as part of the application for a 86.5m turbine, with the exception that three SMs that will no longer experience views of the turbine. The magnitude of change has reduced to from low negligible in the case of LB3/SM7 Burleigh Castle and SM9 Orwell Standing Stones.

The reduction in the magnitude of change is a direct result of the reduction in scale of the turbine. From these particular features, the turbine appears as small scale, occupying a very minor extent of the horizontal and vertical extents and is no longer the tallest feature in the view. The landscape to the west of the turbine from each feature rises to an elevation taller than the proposed turbine therefore reducing the impact visual impact of the turbine. From these features the turbine would be neither dominant nor prominent and would have a negligible impact on the setting of each.

8.8 Mitigation Incorporated into the Proposed Development

Planning guidance (SPP – Historic Environment) states that it is Government policy to protect and preserve archaeological sites and monuments *in situ* wherever feasible. Where preservation *in situ* is not possible planning authorities should ensure that an appropriate level of excavation, recording, analysis, publication and archiving is carried out before and/or during development.

Permanent Land-take and Operation

Current proposals indicate that the turbine location, road routes and other aspects of development avoid the locations of known features of cultural heritage interest and as such no direct impact has been identified.

While this assessment has found no indication of the survival of any archaeological features or deposits that are not visible above ground level, it is nevertheless possible that such features do exist within the application area.

In the event that archaeological features are encountered, a suitable program of archaeological works will be implemented to the satisfaction of the planning authority.

Restoration

No restoration measures are currently proposed.

8.9 Conclusion

No objections or concerns were raised from consultees or Perth and Kinross Council in relation to the cultural heritage impact of the previous application for a turbine of up to 86.5m in height.

The assessment has been revised and updated to assess the impact that a significantly reduced turbine of 46m in height may have on cultural heritage interests. The assessment has found that the revised proposal does not raise any concerns in relation to impact on features of cultural heritage interest.

9 Surface and Groundwater Hydrology

9.1 Introduction

This chapter presents the impact assessment of the proposed development on the water environment. The assessment has considered the development impacts on water quality, drainage and flood risk.

Understanding surface and groundwater environments is critically important to designing a successful project. Surface water includes watercourses, water bodies and runoff. Surface water provides important water resources for potable and other supply, amenity, aesthetic value, conservation, ecological environments and recharge to groundwater systems. Groundwater includes all water stored in permeable underground strata (or aquifers). Groundwater is also an important resource, providing more than a third of the potable water supply in the UK. In addition it provides essential baseflow to rivers and wetland areas, often supporting important ecological systems.

Although hydrological issues are likely to be relatively minor at this site, the risk of pollution or disruption of watercourses, groundwater bodies and private water sources within or near the site needs to be assessed and appropriately mitigated where necessary.

9.2 Potential Impacts

The potential impacts this development could have on the water environment of the site and the area around are broadly summarised as follows:

- Disruption to surface and subsurface runoff and watercourses;
- Sedimentation, erosion, and production of silt-laden runoff;
- Chemical pollution of watercourses or groundwater;
- Increase in run-off; and
- Lowering of the water table.

These impacts could occur during the construction, operational lifetime, and decommissioning of the development. They can potentially have many adverse effects to ecology and human amenity.

9.3 Guidance

Statutory, general, national and local guidance consulted during this assessment is listed as follows:

- SPP7: Flooding & Drainage
- SEPA Policy No.19: Groundwater Protection Policy for Scotland
- SEPA Pollution Prevention Guidance Notes (PPG):
 - PPG 1: General guide to the prevention of water pollution;
 - PPG 2: Above Ground Oil Storage Tanks;
 - PPG 5: Works in, near or liable to affect watercourses;

- PPG 6: Working at construction and demolition sites;
- PPG 21: Pollution incident response planning;
- SEPA Water quality classification interactive database (2009 data);
- CIRIA Report C532: Control of Water Pollution from Construction Sites; and
- CIRIA Report C502: Environmental Good Practice on Site.

9.4 Methodology

The method adopted to assess the impact on the water environment was:

- Determination of the baseline hydrological conditions and the sensitivity of the site and adjacent receptors;
- Review of the proposed development to determine the predicted impacts posed by the development itself;
- Evaluation of the significance of predicted impacts, taking into account impact magnitude (before and after mitigation) and baseline environmental sensitivity.

The assessment is primarily a desk-based study using qualitative assessment based on professional judgement and published material. The assessment also included consultations with statutory bodies, principally SEPA, the Local Planning Authority, and the land owner's own knowledge of the site were also utilised. A site walkover was also conducted by a suitably qualified engineer to support these findings and to check for any hydrological features that may be missing from the desk-based study.

Sources of information consulted included:

- Ordnance survey 1:10,000 map data;
- BGS – Hydrogeological Map of Scotland 1:625,000;
- BGS – Groundwater Vulnerability Map of Scotland 1:625,000;
- Consultation with statutory and non statutory organisations.

Given the scale of the development, a conservative study boundary of 1km radius around the turbine, has been used for this assessment. All sensitive receptors within this 1km study boundary, which can be seen in **Figure 9.1 (Appendix 3)**, have been identified and the impacts assessed.

The analysis of the significance of each impact is based on its magnitude, scale and the likelihood of occurrence. A significance rating of 'High', 'Medium', 'Low' or 'Negligible' is then given to each impact. By conducting this analysis before and after mitigating factors are taken into account, the significance of the predicted impact and the residual impact is determined.

9.5 Baseline

This section presents an overview of the baseline water environment at the site, including: the location and quality of surface and groundwater resources, drainage, and flood risk. **Figure 9.1** (attached as an appendix) shows the local context of the site.

Terrain description

The site is in a hilly area approximately 1.1km in south west of Duncricvie, Fife. The land around the site comprises a mix of arable fields and forestry. Tamteethie Hill, the summit of which lies 820m to the northwest of the proposed turbine location at an elevation of 263m above sea level, is the dominant terrain feature in the area. The site is positioned on the southeast facing slope with downwards slopes of up to 10%. The track and turbine lie at elevations of between approximately 209m and 220m above sea level.

Hydrology

Any runoff generated by rainfall on the proposed track hard standing areas currently tends to flow downhill to the southeast, as can be seen in the runoff catchment area shown on **Figure 9.1**. The runoff flows towards a system of field drains which combine to form the Beatie Burn. The Beatie burn, which flows to the south east, is located approximately 20m west of the proposed turbine location and the Lossley Burn which flows to the north east is located approximately 900m to the north of the proposed turbine location. The Beatie burn merges with other burns to form the River Eden, approximately 3km downstream to the east. The Greens Burn, also known as the West Bank Burn, issues approximately 935m directly west of the proposed turbine location and flows to the south east. The soil in the area of the site is boulder clay and generally of poor permeability.

From the OS 1:10,000 map data, and through discussions with the landowner and the local council, it has been established that there are no private water supplies within the study boundary. This was supported by the site walkover.

Local water supplies

All properties within 1km of the proposed development have been identified. It was determined that none of the properties in the study boundary draw from the water table, all are mains-fed. The properties considered are tabulated below.

Table 9.1. Properties within 1km of development

<i>ID</i>	<i>Property</i>	<i>NGR</i>
1	Grieves House	313600, 708590
2	Colliston Farmhouse	313540, 708500
3	Drunzie Cottages	314070, 708400
4	Birniehill	312640, 707780

Surface and Groundwater Classification

The Scottish Environment Protection Agency (SEPA) classifies all significant waters in Scotland. The nearest classified surface water features have been identified as the Beatie Burn located approximately 20m west of the proposed turbine location and the Greens Burn located approximately 935m directly south of the proposed turbine location.

SEPA have classified the Beatie Burn as ‘Bad’. This means SEPA have “classified this water body as having an overall status of Bad ecological potential with Medium confidence in 2008 with overall ecological status of Bad and overall chemical status of Pass”. The Greens Burn has been classified “as having an overall status of Poor ecological potential with Low confidence in 2008 with overall ecological status of Poor and overall chemical status of Pass”.

SEPA also classifies significant groundwater bodies, which, at the proposed site, are Glenfarg bedrock and localised sand and gravel aquifers. The quality of this groundwater has been classified as Poor with High confidence and the quantity of groundwater has been classified as Good with High confidence in 2008.

Flooding Risk

From the Indicative River & Coastal Flood Map (available on the SEPA website) it can be seen that there is no areas deemed to be at risk from flooding within the study boundary. The nearest area deemed to be at risk from flooding is small areas along the banks of the Lossley Burn approximately 1.5km to the east of the proposed turbine location. The project is unlikely to have any impact on the flooding risk of these areas.

Hydrogeology

The BGS groundwater Vulnerability Map of Scotland 1995 (1:625000) indicates that the strata beneath the site are classified as weakly permeable.

The BGS Hydrogeological Map of Scotland 1988 (1:625000) indicates that the project is located in a region underlain by extrusive rocks which are “*generally impermeable to groundwater, but rare springs may occur from systems of near surface dilated joints*”. The “Geology of Britain viewer” available on the BGS website (www.bgs.ac.uk) indicates that, more specifically, the site is underlain by Ochil Volcanic Formation - Pyroxene Andesite, which is lithologically described as: “*Pyroxene andesite and olivine basalt lavas and rhyodacite, trachyandesite, hornblende andesite and volcaniclastic rocks*”.

The “Geology of Britain viewer” indicates that there is superficial layer in region, and that it is diamicton, specifically Devensian Till.

Confirmation of baseline conditions

Intrusive ground investigations will be completed prior to turbine construction to gain site specific information such as groundwater levels, soil permeability and geology.

9.6 Predicted Impacts

This section presents an assessment of impacts on the water environment which may occur during the construction, operational and decommissioning phases of the development. The sensitive receptors are identified and the predicted impacts are assessed and their significance rated.

Details of the site and the works to be conducted can be found in Chapter 2: The Proposed Development. **Figure 9.1** (attached as an appendix) provides a plan of the development.

Sensitive Receptors

The identification of sensitive receptors, taking into account baseline conditions, is summarised in **Table 9.2** below. It should be noted that a distinction has been made between properties that draw water from the water table, and the overall condition of the water table itself.

Table 9.2. Sensitive Receptors

Receptor	Comment
Watercourse	The Beatie Burn and the Greens Burn which are classified by SEPA of bad and poor water quality respectively. The Newhill Burn and the Lossley Burn have local ecological significance, but are diminutive watercourses and have not been classified by SEPA.
Groundwater	The region is located in an area underlain by weakly permeable strata.

Predicted Construction Impacts

The most disruption, and therefore the greatest risk of impact to the water environment, will occur during the construction phase of the project.

Disruptions to flow paths

The development does not require the crossing of any streams or other surface watercourses, and so there is no risk of a watercourse being hydraulically impeded. As such, a drop in hydraulic gradient of a watercourse is predicted to be of negligible significance.

However, there could be active subsurface field drains around the site which may be affected during track excavation and construction. Furthermore, the track and associated drainage could impede existing surface runoff routes, particularly during periods of heavy rainfall. The impact caused by these disruptions to flow is predicted to be of low significance.

Sedimentation and Erosion

It is predicted there may be an impact caused by erosion of track and hard-standing surfaces and of excavated spoil material. This could lead to sediment being carried with the runoff and reaching a watercourse. Cable laying also has the potential to damage soils and introduce new drainage pathways which could generate silt laden run-off. The amount of the resultant suspended solids pollution will be greater during heavy rainfall events, although the dilution potential of the watercourses is also at its greatest during these periods. At times of low flow, it is very unlikely that silt could reach a watercourse. The significance of this impact is considered to be low.

Increase in runoff

Construction of the access tracks, sub-station and crane hard-standings will result in localised changes to the surface water hydrology. The cambered tracks may interrupt natural flow paths. The new track will also shed water more quickly than the existing ground. An increase in runoff in the area can compound various other predicted impacts, such as chemical pollution, erosion and sedimentation. Furthermore, increased runoff could add to a flood risk in the area.

Due to the small area of tracks and hardstanding in the site, there will be only a very slight increase to runoff. It is unlikely any runoff would affect the small flood areas on the banks of the River Eden which is over 3km downstream. The magnitude of the impact is taken to be low.

Chemical Pollution

There are several potential sources of chemical pollution to both surface water and groundwater during the construction phase of the development. The spillage or leakage of construction associated oil, grease, fuel, concrete, cement, foul water or other chemicals can have a serious negative impact on the quality of surface water and/or groundwater. Runoff or groundwater could also carry spills or leakages resulting in pollution of a sensitive receptor. Local topography limits the potential for polluted runoff to travel, so polluted runoff contaminating a watercourse is predicted to be of medium significance.

Due to the low permeability of the strata beneath the site, groundwater travel is likely to be limited, so polluted runoff contaminating groundwater is predicted to be of medium significance.

Lowering of the water table

Given what is known about the ground conditions in the area and the extents of the excavation works, groundwater is not expected to enter the foundation excavations. As such, dewatering should not be required and therefore the groundwater table would not be affected by the works. Furthermore, General Binding Rule (GBR) 15 (from the Water Environment (Controlled Activities) (Scotland) Regulations 2005) states that “(d) groundwater shall not be abstracted from any excavations, well or borehole that are within 250 metres of any abstraction that is not for the sole purpose of dewatering an excavation”. Therefore, any private water supply outwith a 250m ‘dewatering boundary’ is not predicted to suffer an impact. There is a presumption that cable trenches and access roads may disrupt the groundwater flow directions by creating shallow drainage and preferential pathways and, as such, a further boundary of 100m around cable trenches and access tracks has been applied. Given that there are no private water supplies in the study boundary, there will be no impact due to dewatering.

Predicted Operational Impacts

There will be a few on-site activities during operation of the wind turbine relating to regular maintenance or repair of the machines. During these activities there will be a need to bring small quantities of oil, greases and other materials on to the site. The sub-station, access tracks and crane hard-standings will result in localised changes to the surface water hydrology for the duration of the project, with the potential effects of erosion, sedimentation and increased runoff as discussed in Construction Impacts.

Predicted Decommissioning Impacts

The activities during decommissioning are broadly similar to those during construction, however, the level of activity will be less as some of the roads and sub-surface elements will be left in place.

9.7 Mitigation

The potential impact of the project on water quantity is minimal, so the mitigation measures focus on preventing water pollution. There are a number of recognised best practices and measures to mitigate and eliminate the predicted impacts previously discussed. A full intrusive ground investigation will be carried out to provide data for designing appropriate mitigating measures before construction begins.

Construction

The following measures will be implemented to manage the predicted impacts at the site during the construction phase. Construction will be carried out according to SEPA and CIRIA guidance for site works.

Disruption to existing flow

There are no crossings of burns or streams required in the development, and there will be no impeding of a surface watercourse. Should subsurface field drains be discovered during track excavation, there will be a design in place for drains to run under the track, thereby minimising disruption to existing field drainage paths.

Sedimentation and Erosion

During construction of the track, drainage will be controlled by placing drainage ditches on the uphill slopes. All earth bunds, soil and waste material storage areas will be located as far as possible from site watercourses and will be well managed to minimise runoff and erosion. The project drainage will be designed such that access tracks will be cambered to shed surface water into a suitable drainage system.

Adoption of sustainable drainage principles, such as making use of vegetation to slow water flows and filter sediments, should minimise the risk of sediments reaching watercourses. The new drainage network will be kept separate from the existing field drain network to avoid any potentially contaminated runoff from the new infrastructure discharging into local watercourses. If this is not practical, drains will be installed along the length of the tracks which would feed into a soak-away. The soak-away would incorporate an overflow for periods of heavy rainfall. A possible drainage layout solution is shown on **Figure 9.1**. Methods incorporated are designed to be sustainable and to cope with storm events.

To minimise disturbance impacts, cables will be laid in small trenches along the side of the access tracks as far as possible. Trenches will be dug during drier periods, as far as practicable, and spoil material will be temporarily placed on the uphill slope to reduce the likelihood of runoff entering the excavations. The electric cables will be laid quickly and backfilled to minimise water ingress to the trenches. Their actual impact in terms of creation of new drainage pathways, or damage to soil profile, is likely to be negligible provided the best practice methods are followed.

Chemical Pollution

Construction traffic will use specified roads and parking areas at all times, where practicable, to reduce compaction and associated run-off in the wider area. Appropriate control measures, such as shallow vegetated channels, will be installed to convey haul road and hardstanding runoff and treat pollutants.

Concrete will be delivered in ready-mix wagons which will only be allowed to ‘wash-out’ in designated areas where suitable control measures are in place. Full details of the foundation construction will be provided in the construction method statement. We anticipate this being required as a planning condition. Once construction is complete and the soil has been replaced over the foundation and reseeded, the change to surface water runoff and risk of pollution is predicted to be negligible.

A pollution incident response plan will be developed in accordance with SEPA PPG 21. Spill response measures will be put in place to ensure that any accidental spillages at the surface can be contained and quickly removed from site.

All fuel and other chemicals will be stored and managed in accordance with best practice procedures. Best practice is included in SEPA Pollution Prevention Guidance Notes (PPGs). All fuel will be stored in a bunded container. Oil spill kits will be stored in the site office. All oils, greases and chemicals will be stored in a locked bunded container near the site office. Where oils and diesel are brought on to site for refuelling or maintenance, these operations will be carried out in designated areas of hardstanding located at least 20m from the nearest watercourse or drain. Standard methods will be adopted within these designated areas that minimise the risk of spillage. Contingency plans will also be in place for dealing with any spillage that may occur.

Any contaminated material encountered during construction will be dealt with according to environmental best practice, following suitable chemical analysis. Such material will be contained, treated, or disposed of, to a suitably licensed disposal facility.

Implementation of the procedures described above will mitigate the significance of a chemical pollution impact to low.

Increase in runoff

Adoption of sustainable drainage, as discussed in the Sedimentation and Erosion section above, will allow for the capture of runoff from the site, and render impacts caused by runoff negligible.

Lowering of the water table

Should planning permission be granted, an intrusive investigation will be carried out and groundwater monitoring standpipes installed at the location of the turbine. The investigation will include an assessment of the ground permeability and water potential. Mitigating measures for any potential dewatering and disposal of groundwater will be provided in a construction method statement.

Operation

The proposed mitigation for the construction of the access roads will continue to function through the life of the project. Routine maintenance for the roads will be carried out in summer months when the tracks are dry. Operational best practice procedures will continue to be adopted, with the risk of water pollution from such activities considered to be negligible.

The proposed mitigation for fuels and chemicals used during the construction phase would be applied at all relevant times during the lifetime of the project. The concrete used will be of a high grade that is not prone to leaching alkalis. As such the ongoing risk of pollution on the site after construction is considered to be very low.

Decommissioning

It is envisaged that detailed method statements, in compliance with relevant current legislation, will be drawn up prior to decommissioning. However, similar mitigation methods to those employed during construction (updated to take account of legislation current at the time of decommissioning) are likely to be appropriate.

9.8 Assessment of Residual Impact

The residual impacts after mitigating factors have been taken into account are analysed with respect to their significance. **Table 9.3** below includes a summary of the residual impacts, and it can be seen that there are no residual impacts of major significance expected to occur as a result of the development.

Table 9.3 - Summary of Impact Assessment

Project Element	Effect	Sensitive Receptor	Initial Significance	Description of Mitigation	Residual Significance
Crossing of a watercourse	Drop in hydraulic gradient	Watercourses	Negligible	No crossings of a watercourse are required - no mitigation required.	Negligible
Access Track & cabling; Hardstandings	Disruption to field drainage flow paths	Watercourses	Medium	Incorporating lateral drainage across tracks in design	Negligible
	Erosion and the generation of silty runoff	Watercourses	Low	Implementation of a Sustainable Drainage system to capture runoff. Adherence to best practice procedures.	Negligible
	Increase in runoff adding to flooding	Watercourses	Low	Implementation of a Sustainable Drainage system to capture runoff.	Negligible
Keeping and using concrete, chemicals/ fuel onsite; refuelling.	Polluted runoff contaminating a watercourse	Watercourses	Medium	Implementation of a Sustainable Drainage system to capture runoff. Adherence to best practice procedures in the handling, use and storage of fuel, oils and chemicals. Concrete will be delivered in ready mix wagons. Wagons only to 'wash-out' in areas where suitable control measures are in place.	Low
	Polluted runoff contaminating groundwater	Groundwater	Medium	Implementation of a Sustainable Drainage system to capture runoff. Adherence to best practice procedures in the handling, use and storage of fuel, oils and chemicals. Concrete will be delivered in ready mix wagons. Wagons only to 'wash-out' in areas where suitable control measures are in place.	Low

9.9 Conclusion

A desk-based study and site walkover were conducted to establish the baseline water environment of the site, whereby predicted impacts caused by the development were identified. The majority of potentially significant negative impacts on water quality are only predicted to occur in the short term through potential increased sedimentation and pollution during the construction phase. The same would apply to the risk of contamination of groundwater. It is anticipated that the adoption of best practice management and control procedures by all site personnel, and the implementation of the mitigation methods proposed, will bring these risks down to acceptable levels.

10 Existing Infrastructure, Telecommunications, Television, Aviation and Electromagnetic Safety

10.1 Introduction

By their nature, operational wind turbines have the potential to interfere with:

- Communications networks that utilise electromagnetic signals;
- Civil aviation radars;
- Safeguarding radars; and
- Other types of infrastructures including seismic monitoring stations.

The potential impact of the proposed turbine on these types of infrastructure is considered in this section.

10.2 Guidance

Guidance for assessing the potential impact of wind turbines on electromagnetic infrastructure is given in:

- Scottish Government, 2010. Scottish Planning Policy, Subject Policy: *Renewable Energy*;
- Ofcom, 2009. Tall structures and their impact on broadcast and other wireless systems; and
- BBC, Ofcom. The impact of large buildings and structures, including wind farms, on terrestrial television reception.

Guidelines and publication available for assessing potential impact on aviation activities are:

- Wind Energy and Aviation Interim Guidelines;
- CAP 428 - Safety Standards at Unlicensed Aerodromes; and
- CAP 764 – Policy and Guidelines on Wind Turbines.

10.3 Methodology

A list of consultees with telecommunications, television and other infrastructure interests in the area was identified based upon advice given in Scottish Planning Policy. These consultees are listed in **Table 11.1**. Those with aviation interests, such as MoD, NATS, BAA and CAA, no longer comment on pre-application developments but will provide a comment during the planning process.

Table 11.1 – Infrastructure and telecommunications consultation

Consultee	Response Received	Comments
Telecommunication		
Ofcom	Yes	Identified one link operated by BT
BT	Yes	No links affected
Atkins	Yes	No links affected
Joint Radio Company (JRC)	Yes	1 link identified (approx 365m away)

10.4 Assessment of Impact

Civil aviation

The site lies outside the official 30km consultation zone for the closest civil aviation airports, which are Edinburgh and Dundee.

The British Aviation Authority (BAA), the Civil Aviation Authority (CAA) and National Air Traffic Services (NATS) now no longer comment on proposals at the pre-application stage.

No objections were raised in regard to a single 86.5m turbine; therefore a turbine of 46m at a lower elevation is not predicted to raise any concerns.

Ministry of Defence (MoD)

The MoD raised no objections to the original application and the revised proposal is not anticipated to impact any infrastructure operated by the MoD.

Telecommunication

After contacting the major telecommunication providers, Ofcom responded highlighting that there was a link operated by BT which passed within 500m of the project. BT subsequently confirmed that the turbine would not interfere with this link.

JRC identified one link within 1km of the turbine. Analysis by Green Cat Renewables has shown that this is ~365m from the turbine location, and therefore unlikely to cause interference.

Television

The digital switchover for the whole of the UK has been completed.

A 2009 Ofcom report stated that:

“Digital television signals are much better at coping with signal reflections, and digital television pictures do not suffer from ghosting. However a digital receiver that has to deal with reflections needs a somewhat higher signal level than one that has to deal with the direct path only. This can mean that viewers in areas where digital signals are fairly weak can experience interruptions to their reception should new reflections appear.

Over time, this problem is expected to diminish as the power of transmitters is increased as digital switchover continues across the UK. However, higher transmitter powers will not be a

solution in all situations which means that reflections may still affect digital television reception in some areas, although the extent of the problem should be far less than for analogue television.”

There are a number of technical solutions available should interference be proven as an issue as a result of the turbine and if there are any impacts they are considered to be of temporary nature until a technical alternative can be put in place. Overall, any potential effects on television are considered to be negligible.

10.5 Impacts, Issues and Mitigating Actions

No issues have been identified which require imminent mitigation or action.

Appendix 1 - Landscape and Visual Impact Viewpoint Analysis

Figure 5.10	Viewpoint 1: Close in from the south	
Description	<p>Viewpoint 1 is taken from E312426 N707434 looking in a north-easterly direction towards the site which is located ~932km away.</p> <p>The view feels fairly enclosed from this location. The land undulates in front of the viewer, with a slope running from left to right across the foreground, the land falls away behind this before rolling up across the middle ground forming a rolling horizon line, limiting any long distance views from this location. The landcover is made up of several large rectilinear arable fields, with a mixture of rough and improved grassland providing the dominant coverings. The fields are bound by hedgerows and post-and-wire fencing. There are several small areas of plantation woodland, two areas sit on the horizon line, whilst the other bounds the Birniehill Farm property which is sited in the middle of the view.</p>	
Sensitivity	The viewpoint is representative of local residents and is therefore considered to be of High sensitivity.	
Magnitude of Change	<p>Receptors of this view would be 932km from the Colliston Farm turbine.</p> <p>From this location the turbine would appear on the horizon, the intervening landscape provides a little screening, hiding the lower tower section from view, reducing the vertical extents of the development slightly. The visible portion of the turbine would be viewed solely against the sky. To the left of the view there is a cluster of mature woodland, also viewed on the horizon, the woodland provides a significant scaling feature within the view. The visible extents of the turbine appear in keeping with the scale of the other vertical features in the view including the electricity pylons and trees. The turbine would occupy a low to medium extent of the horizontal and vertical view.</p> <p>The overall magnitude of change for the development is considered to be Medium, leading to a major/moderate level of effect which would be significant.</p>	
Cumulative Impact	<p><u>Operational</u></p> <p>There are no operational turbines visible from this location.</p> <p>The cumulative magnitude of change for consented projects would be none.</p> <p><u>Operational, Consented</u></p> <p>There are no consented turbines visible from this location.</p> <p>The cumulative magnitude of change for consented projects would remain none.</p> <p><u>Operational, Consented, In Planning</u></p> <p>There are no planning turbines visible from this location.</p> <p>The cumulative magnitude of change for consented projects would remain none.</p>	
Type of Effect	On completion of the development the visual effect from this viewpoint would be permanent (reversible) and direct. The development would lead to a medium magnitude of change and despite the careful design of the project a man made vertical structure in this area would always lead to a negative effect.	
Assessment of Visual Effects	Sensitivity:	<i>High</i>
	Magnitude:	<i>Medium</i>
	Type of Effect:	<i>Permanent, direct and negative</i>
	Level of Effect:	Major/Moderate

Figure 5.11	Viewpoint 2: Close in from the north-east	
Description	<p>Viewpoint 2 is taken from E313687 N709098 looking in a south-westerly direction towards the site which is located ~1.3km away. The viewpoint is located on the south-east edge of the settlement of Duncrievie at the side of the minor road which runs through the settlement.</p> <p>The view feels fairly enclosed from this location. The land rolls up quickly in front of the viewer with the formation of the hill to the rear of Colliston Farm limiting any further views over the landscape to the south-west. The view is dominated by several large arable fields, with a variety of field coverings ranging from rough grazing land to plantation crops. These large fields are bound by a mixture of Drystone Dykes and hedgerows. Running across the near ground of the view is a run down dry-stone dyke. There are several small areas of woodland visible, these tend to mark the boundaries of the two properties, as well as these small areas of shelterbelt, there is an area of mature deciduous woodland on the summit of the local hilltop. To the left of the view a solitary wooden electricity pylon is visible cutting the horizon.</p>	
Sensitivity	The viewpoint is representative of the residents of Duncrievie and is therefore considered to be of High sensitivity.	
Magnitude of Change	<p>Receptors of this view would be ~1.3km from the proposed turbine.</p> <p>From this location the intervening landscape would provide a significant amount of screening, with only the blades of the turbine theoretically visible over the horizon. The remainder of the turbine tower and hub would be completely hidden from view. Further to the landscape screening there are further features in the view including the built features at Colliston Farm and nearby woodland which would combine to completely screen the visible portion of the turbine from this location.</p> <p>The overall magnitude of change for the development is considered to be Negligible, leading to a Moderate/Minor level of effect which would not be significant.</p>	
Cumulative Impact	<p><u>Operational</u></p> <p>There are no operational turbines visible from this location.</p> <p>The cumulative magnitude of change for consented projects would be none.</p> <p><u>Operational, Consented</u></p> <p>There are no consented turbines visible from this location.</p> <p>The cumulative magnitude of change for consented projects would remain none.</p> <p><u>Operational, Consented, In Planning</u></p> <p>There are no planning turbines visible from this location.</p> <p>The cumulative magnitude of change for consented projects would remain none.</p>	
Type of Effect	On completion of the development the visual effect from this viewpoint would be permanent (reversible) and direct. The development would lead to a negligible magnitude of change and despite the careful design of the project a man made vertical structure in this area would always lead to a negative effect.	
Assessment of Visual Effects	Sensitivity:	<i>High</i>
	Magnitude:	<i>Negligible</i>
	Type of Effect:	<i>Permanent, direct and negative</i>
	Level of Effect:	Moderate/Minor

Figure 5.12	Viewpoint 3: Minor Road between Newhill and Path of Condie	
Description	<p>Viewpoint 3 is taken from E311400 N708373 looking eastwards towards Colliston Farm which is located ~1.9km away. The viewpoint was taken from the side of the minor road which links Newhill to Path of Condie.</p> <p>The view feels fairly enclosed from this location. The land slopes quite significantly over the foreground from left to right, limiting any views over the left hand side of the vista. To the right of the view, the slope of the landscape allows for longer distance views with the distinctive peak of West Lomond visible. The landcover over the near ground is predominantly rough grassland with areas of brush and scrub. An area of shelterbelt follows the contour of the hill to the right of the view, serving to limit the views in this direction. A post-and-wire fence bound the field running along the near ground of the viewpoint by the roadside.</p>	
Sensitivity	The viewpoint is representative of road users and is therefore considered to be of Medium sensitivity.	
Magnitude of Change	<p>Receptors of this view would be ~1.9km from proposed development.</p> <p>From this location the turbine would be viewed against the large scale landscape of the Lomond Hills which form the upland landscape across the central areas of this vista. The intervening landscape provides screening of the development with the majority of the turbine tower hidden from view. This has the effect, along with the large scale backdrop of reducing the vertical extents of the development. The proposed turbine would occupy a negligible extent of both the horizontal and vertical view, sitting well below the nearby hummocky peaks in the foreground. The development does not block views of the Lomond Hills or dominate or control the view.</p> <p>The overall magnitude of change for the development is considered to be Low, leading to a moderate/Minor level of effect which would not be significant.</p>	
Cumulative Impact	<p><u>Operational</u></p> <p>There are no operational turbines visible from this location.</p> <p>The cumulative magnitude of change for consented projects would be none.</p> <p><u>Operational, Consented</u></p> <p>There are no consented turbines visible from this location.</p> <p>The cumulative magnitude of change for consented projects would remain none.</p> <p><u>Operational, Consented, In Planning</u></p> <p>There are no planning turbines visible from this location.</p> <p>The cumulative magnitude of change for consented projects would remain none.</p>	
Type of Effect	On completion of the development the visual effect from this viewpoint would be permanent (reversible) and direct. The development would lead to a low magnitude of change and despite the careful design of the project a man made vertical structure in this area would always lead to a negative effect.	
Assessment of Visual Effects	Sensitivity:	<i>Medium</i>
	Magnitude:	<i>Low</i>
	Type of Effect:	<i>Permanent, direct and negative</i>
	Level of Effect:	Moderate/Minor

Figure 5.13	Viewpoint 4: M90	
Description	<p>Viewpoint 4 is taken from E314569 N707170 looking in a north-westerly direction towards the site which is located ~1.5km away. The viewpoint is located near to the M90 motorway, by the over-bridge to the north of junction 8. The viewpoint was selected to represent motorists travelling on the M90, although the views would not be as prominent from the roadside as they are in this viewpoint, due to it sitting lower in the landscape.</p> <p>The view has an open feel to it, despite this the land rolls up in front of the viewer forming a gently undulating horizon line across the centre and right of the view, which serve to limit any further views across the landscape beyond. To the far left of the view, the land slopes away across the middle ground allowing for a slightly longer distance view across the landscape. The middle ground of the view is dominated by a large arable plantation field, the field is bound by post-and-wire fencing with some areas of drystone dyke still visible and hedgerow running alongside the road to the right of the view, screening the road from view. The access road to Blairfield Farm is visible running across the near ground of the view. Across the middle ground of the view there are some small areas of shelterbelt visible, marking the field edges and surrounding the property to the right of the view. Several wooden pylons are observed in the view, to the right hand side the run up the landscape towards the horizon, as well as these pylons another series runs across the middle ground of the view. The pylons add a significant vertical man made element to the landscape, viewed predominantly against the sky from this location.</p>	
Sensitivity	The viewpoint is representative of road users of the M90 and is therefore considered to be of Medium sensitivity.	
Magnitude of Change	<p>Receptors of this view would be ~1.5km from the proposed turbine.</p> <p>From this location the proposed turbine appears on the horizon above the viewer. The lower portion of the turbine is screened from view behind the lip of the field which rises in front of the viewer. The turbine is viewed breaking the horizon with the upper tower sections, hub and blades viewed against the sky. The turbine appears in the view alongside several strong vertical features including a series of wooded electricity pylons, the fixed portion of the turbine the tower and hub appears similar in scale with these features in this view. The turbine would add another vertical feature to a view which already contains a number of vertical elements, appearing as a balanced and sympathetic addition to the view rather than dominating or controlling the view.</p> <p>The overall magnitude of change for the development is considered to be Low leading to a Moderate/Minor level of effect which would not be significant.</p>	
Cumulative Impact	<p><u>Operational</u></p> <p>There are no operational turbines visible from this location.</p> <p>The cumulative magnitude of change for consented projects would be none.</p> <p><u>Operational, Consented</u></p> <p>There are theoretical views behind the viewer towards Gevens from this location, the development would be viewed at some distance across the landscape. It is not expected that the development will be a particularly discernible feature from this location and will more than likely be screened by vegetation.</p> <p>The cumulative magnitude of change for consented projects would become negligible.</p> <p><u>Operational, Consented, In Planning</u></p> <p>There are successive views towards the Blair Adam Forest windfarm and the Cleish wind turbines to the south of the viewpoint. These turbines appearing on the distant horizon, located over 15km from the viewer.</p> <p>To the north-west theoretical views towards are possible, the development is screened by roadside vegetation from this location.</p> <p>The cumulative magnitude of change for consented projects would remain negligible.</p>	
Type of Effect	On completion of the development the visual effect from this viewpoint would be permanent (reversible) and direct. The development would lead to a low magnitude of change and despite the careful design of the project a man made vertical structure in this area would always lead to a negative effect.	
Assessment of Visual Effects	Sensitivity:	<i>Medium</i>
	Magnitude:	<i>Low</i>
	Type of Effect:	<i>Permanent, direct and negative</i>
	Level of Effect:	Moderate/Minor

Figure 5.13	Viewpoint 4: M90	
Description	<p>Viewpoint 4 is taken from E314569 N707170 looking in a north-westerly direction towards the site which is located ~1.5km away. The viewpoint is located near to the M90 motorway, by the over-bridge to the north of junction 8. The viewpoint was selected to represent motorists travelling on the M90, although the views would not be as prominent from the roadside as they are in this viewpoint, due to it sitting lower in the landscape.</p> <p>The view has an open feel to it, despite this the land rolls up in front of the viewer forming a gently undulating horizon line across the centre and right of the view, which serve to limit any further views across the landscape beyond. To the far left of the view, the land slopes away across the middle ground allowing for a slightly longer distance view across the landscape. The middle ground of the view is dominated by a large arable plantation field, the field is bound by post-and-wire fencing with some areas of drystone dyke still visible and hedgerow running alongside the road to the right of the view, screening the road from view. The access road to Blairfield Farm is visible running across the near ground of the view. Across the middle ground of the view there are some small areas of shelterbelt visible, marking the field edges and surrounding the property to the right of the view. Several wooden pylons are observed in the view, to the right hand side the run up the landscape towards the horizon, as well as these pylons another series runs across the middle ground of the view. The pylons add a significant vertical man made element to the landscape, viewed predominantly against the sky from this location.</p>	
Sensitivity	The viewpoint is representative of road users of the M90 and is therefore considered to be of Medium sensitivity.	
Magnitude of Change	<p>Receptors of this view would be ~1.5km from the proposed turbine.</p> <p>From this location the proposed turbine appears on the horizon above the viewer. The lower portion of the turbine is screened from view behind the lip of the field which rises in front of the viewer. The turbine is viewed breaking the horizon with the upper tower sections, hub and blades viewed against the sky. The turbine appears in the view alongside several strong vertical features including a series of wooded electricity pylons, the fixed portion of the turbine the tower and hub appears similar in scale with these features in this view. The turbine would add another vertical feature to a view which already contains a number of vertical elements, appearing as a balanced and sympathetic addition to the view rather than dominating or controlling the view.</p> <p>The overall magnitude of change for the development is considered to be Low leading to a Moderate/Minor level of effect which would not be significant.</p>	
Cumulative Impact	<p><u>Operational</u></p> <p>There are no operational turbines visible from this location.</p> <p>The cumulative magnitude of change for consented projects would be none.</p> <p><u>Operational, Consented</u></p> <p>There are theoretical views behind the viewer towards Gevens from this location, the development would be viewed at some distance across the landscape. It is not expected that the development will be a particularly discernible feature from this location and will more than likely be screened by vegetation.</p> <p>The cumulative magnitude of change for consented projects would become negligible.</p> <p><u>Operational, Consented, In Planning</u></p> <p>There are successive views towards the Blair Adam Forest windfarm and the Cleish wind turbines to the south of the viewpoint. These turbines appearing on the distant horizon, located over 15km from the viewer.</p> <p>To the north-west theoretical views towards are possible, the development is screened by roadside vegetation from this location.</p> <p>The cumulative magnitude of change for consented projects would remain negligible.</p>	
Type of Effect	On completion of the development the visual effect from this viewpoint would be permanent (reversible) and direct. The development would lead to a low magnitude of change and despite the careful design of the project a man made vertical structure in this area would always lead to a negative effect.	
Assessment of Visual Effects	Sensitivity:	<i>Medium</i>
	Magnitude:	<i>Low</i>
	Type of Effect:	<i>Permanent, direct and negative</i>
	Level of Effect:	Moderate/Minor

Figure 5.14	Viewpoint 5: Burleigh Castle	
Description	<p>Viewpoint 5 is taken from E312902 N704599 looking north towards the site which is located ~3.3km away. The viewpoint was taken from the grounds of Burleigh Castle on the eastern edge of the settlement of Milnathort.</p> <p>The view feels fairly enclosed from this vantage point. The topography starts of fairly flat in the near ground before rolling up across the middle ground, becoming more undulating. This change in the landscape serves to limit visibility in part, particularly to the right of the view. Where the landscape falls away, slightly longer distance views do occur towards Tillyrie Hill and the surrounding areas of higher ground. The landcover is dominated by large areas of rough grassland across the foreground. A number of vertical elements appear in the view, several areas of shelterbelt woodland appear across the middle ground to the left and centre of the view. As well as these woodland features a number of wooded electricity pylons appear across the view, these are viewed cutting the horizon line to the right of the view, while across the middle ground they appear against the landscape. Over the horizon a small number of metal pylons are visible, these tend to follow the undulating nature of the horizon. The M90 is not visible although some of the road signs can be seen across the middle ground. Two properties appear in the landscape visible at the far left and right of the view. The view houses a significant number of man-made features.</p>	
Sensitivity	The viewpoint is representative of visitors to the castle and residents of Milnathort and is therefore considered to be of High sensitivity.	
Magnitude of Change	<p>Receptors of this view would be ~3.3km from Colliston Farm.</p> <p>From this location the turbine would be viewed on the distant horizon, backdropped solely by the sky in this view. The turbine appears in the view alongside a significant number of vertical features, these features particularly the electricity pylons reduce the scale significantly of the proposed turbine in this view. The turbine would occupy a negligible extent of both the horizontal and vertical view from this area of the settlement.</p> <p>The overall magnitude of change for the development is considered to be low, leading to a Moderate level of effect which would not be significant.</p>	
Cumulative Impact	<p><u>Operational</u></p> <p>There are no operational turbines visible from this location.</p> <p>The cumulative magnitude of change for consented projects would be none.</p> <p><u>Operational, Consented</u></p> <p>There are theoretical views of the Pitcarlie turbine from this location, although the views are screened by the intervening landscape from this location.</p> <p>The cumulative magnitude of change for consented projects would remain none.</p> <p><u>Operational, Consented, In Planning</u></p> <p>The blades of the Temple Hill turbine appears to the left of the view, the intervening landscape screening the majority of the turbine from view. The views would be further reduced by the vegetation present in the wider view, it is unlikely that the turbine will be a prominent feature within this view.</p> <p>The cumulative magnitude of change for consented projects would become negligible.</p>	
Type of Effect	On completion of the development the visual effect from this viewpoint would be permanent (reversible) and direct. The development would lead to a low magnitude of change and despite the careful design of the project a man made vertical structure in this area would always lead to a negative effect.	
Assessment of Visual Effects	Sensitivity:	<i>High</i>
	Magnitude:	<i>Low</i>
	Type of Effect:	<i>Permanent, direct and negative</i>
	Level of Effect:	Moderate

Figure 5.15	Viewpoint 6: B919	
Description	<p>Viewpoint 6 is taken from E316003 N704745 looking north-west towards the site which is located ~4.2km away. The viewpoint was taken at the side of the B919 between Newlands and Pittendreich Farms.</p> <p>The view has an open feel from this location. The land falls away from the viewer across the foreground, before rolling up across the middle distance, with the formation of the Ochil Hills, forming a significant horizon line, restricting any potential views over the landscape in this direction. The land cover over the near and middle ground has a distinctly agricultural feel, with several large fields the dominant feature, ranging from plantation crops to areas of grazing land, although these tend to be found over the higher ground. The B919 itself runs through the centre of the view, before disappearing behind an area of woodland in the middle distance. A mixture of shrubbery runs along both sides of the road marking the field edges. The farm and outbuildings of Newlands appear at the roadside as well as another property on the opposite side of the road, both properties are surrounded by bands of mature trees. There are various areas of shelter belt across the remainder of the view, marking field edges as well as more uniform policy plantation over higher ground. The landscape is littered with a number of wooden electricity and telegraph poles, particularly across the foreground, these do not break the horizon and are viewed against the landscape, but bring a number of vertical elements to the view. Over the horizon a small number of larger metal electricity pylons are also visible, these are viewed solely against the sky. The pylons as well as the farm buildings bring a strong man modified element to the view.</p>	
Sensitivity	The viewpoint is representative of road users of the B919, primarily local residents and is therefore considered to be of Medium sensitivity.	
Magnitude of Change	<p>Receptors of this view would be ~4.2km from Colliston Farm.</p> <p>From this location the proposed turbine appears predominantly backdropped by the landscape, the blades visible over the horizon. The turbine would be viewed in an open section of the landscape occupying a negligible extent of both the horizontal and vertical view. Sitting well below the nearby summits the proposed turbine would not be a prominent feature in this view.</p> <p>The overall magnitude of change for the development is considered to be Low, leading to a Moderate/Minor level of effect which would not be significant.</p>	
Cumulative Impact	<p><u>Operational</u></p> <p>The operational development of Lochelbank is visible on the horizon line to the right of Colliston Farm from this location, the development is heavily screened by the intervening vegetation, limiting visibility.</p> <p>The cumulative magnitude of change for consented projects would be negligible.</p> <p><u>Operational, Consented</u></p> <p>There are no consented turbines visible from this location.</p> <p>The cumulative magnitude of change for consented projects would remain negligible.</p> <p><u>Operational, Consented, In Planning</u></p> <p>The Temple Hill turbine appears over the horizon beyond the Colliston Farm turbine. The intervening landscape screening the majority of this development from view.</p> <p>Successive views occur with the Blair Adam Forest and Cleish Hill developments, appearing on the horizon to the south-west of the view. The Blair Adam windfarm is fairly prominent located on the horizon from this location, although located ~15km from the viewer the potential effects would be diminished.</p> <p>The cumulative magnitude of change for consented projects would remain negligible.</p>	
Type of Effect	On completion of the development the visual effect from this viewpoint would be permanent (reversible) and direct. The development would lead to a low magnitude of change and despite the careful design of the project a man made vertical structure in this area would always lead to a negative effect.	
Assessment of Visual Effects	Sensitivity:	<i>Medium</i>
	Magnitude:	<i>Low</i>
	Type of Effect:	<i>Permanent, direct and negative</i>
	Level of Effect:	<i>Moderate/Minor</i>

Figure 5.16	Viewpoint 7: Kinross Services	
Description	<p>Viewpoint 8 is taken from E313687 N709098 looking in a north-north-easterly direction towards the Colliston Farm turbine which is located ~5.6km away. The viewpoint was taken from the service station and travel lodge on the western edge of Kinross.</p> <p>The view has a fairly enclosed feel from this location. The land across the foreground of the view remains flat before rolling up over the middle ground, with the local summit of Tillyrie Hill forming the focal point on the horizon, the land slopes away from the hilltop to the right leaving a uniform horizon line, which limits any potential views over the landscape to the north. The view feels fairly busy from this location, particularly in the foreground where the quality of landscape is generally low, with a small number of fields mostly covered in rough grassland with post-and-wire fencing and areas of shelterbelt marking the field boundaries across the foreground of the view. The M90 is fleetingly visible running through the middle of the view although the road is screened by shrubbery for the most part. Across the higher ground to the rear of the view, the landscape takes on a slightly calmer feel with a number of small areas of policy woodland visible. Across Tillyrie Hill there are more significant areas of plantation. The view houses several significant man made features, a lamppost and wooden electricity pylon are visible in the foreground, while several large road signs are visible across the middle distance. A small number of large metal electricity pylons are also visible on the horizon on the down slope of Tillyrie Hill.</p>	
Sensitivity	The viewpoint is representative of travellers using the service station and is therefore considered to be of Medium sensitivity.	
Magnitude of Change	<p>Receptors of this view would be ~5.6km from the proposed turbine.</p> <p>From this location the proposed turbine would be viewed on the distant horizon, appearing solely against the sky. The Colliston Farm turbine sits lower in the landscape than the surrounding summits and would occupy a negligible extent of both the horizontal and vertical view. There are a number of prominent features in the foreground of the view including street lighting and electricity pylons these features diminish further any impacts the proposed development may have on this vista.</p> <p>The overall magnitude of change for the development is considered to be Negligible, leading to a Minor level of effect which would not be significant.</p>	
Cumulative Impact	<p><u>Operational</u></p> <p>There are no operational turbines visible from this location.</p> <p>The cumulative magnitude of change for consented projects would be none.</p> <p><u>Operational, Consented</u></p> <p>There are no consented turbines visible from this location.</p> <p>The cumulative magnitude of change for consented projects would remain none.</p> <p><u>Operational, Consented, In Planning</u></p> <p>There are theoretical views towards the single turbine developments of Pitcarlie (approved) and Dempferston (Planning) from this location. The turbines would appear in the same general view as Colliston Farm. In reality all three developments would all be screened by vegetation</p> <p>The cumulative magnitude of change for consented projects would become negligible.</p>	
Type of Effect	On completion of the development the visual effect from this viewpoint would be permanent (reversible) and direct. The development would lead to a negligible magnitude of change and despite the careful design of the project a man made vertical structure in this area would always lead to a negative effect.	
Assessment of Visual Effects	Sensitivity:	<i>Medium</i>
	Magnitude:	<i>Negligible</i>
	Type of Effect:	<i>Permanent, direct and negative</i>
	Level of Effect:	<i>Minor</i>

Figure 5.17	Viewpoint 8: Bonnet Stane	
Description	<p>Viewpoint 8 is taken from E318987 N707062 looking westwards towards the site which is located ~5.8km away. The viewpoint was taken from the Bonnet Stane, near Gateside.</p> <p>The viewpoint was taken above the Bonnet Stane and due to the elevated location, the view in this direction feels very open with long distance views possible across the landscape. The fore and middle ground of the view remains relatively flat, a large scale farmland plateau with numerous large arable fields, intermittent shelterbelts, farm steadings and outbuildings scattered throughout. The other side of the valley sees the land begin to rise with the formation of the Ochil Hills forming a gently undulating horizon line. The large fields which dominate the land cover offer a variety of field coverings from plantation crops to rough and improved grazing land. The fields are bound in a variety of ways with, drystone dykes, post-and-wire fencing, hedgerows and shelterbelts all visible at field edges. As well as these large fields there are a number of significant areas of policy woodland scattered throughout the landscape, the most significant area appears in the foreground to the left of the view, flowing down the hillside from West Lomond to the rear of the view. There are a number of vertical elements present in the view, the operational turbines of Lochelbank appear on the horizon line alongside a number of metal electricity pylons.</p>	
Sensitivity	The viewpoint is representative of visitors to the Bonnet Stane and is therefore considered to be of High sensitivity.	
Magnitude of Change	<p>Receptors of this view would be ~5.8km from proposed development.</p> <p>From this location the Colliston Farm turbine would appear completely backdropped by the open farming landscape on the opposite side of the valley from the viewer. The open nature of the view allows the turbine to be absorbed slightly by the scale of the surrounding landscape. The proposed development would occupy a negligible extent of both the horizontal and vertical views. The turbine will not be a prominent feature in this view.</p> <p>The overall magnitude of change for the development is considered to be Low, leading to a Moderate level of effect which would not be significant.</p>	
Cumulative Impact	<p><u>Operational</u></p> <p>The operational turbines of Lochelbank, Green Knowes and Earlsburn appear in the same view as Colliston Farm. The most prominent development is Lochelbank due to its proximity to the viewpoint. The turbines are viewed predominantly against the landscape from this vantage point. The turbines of Green Knowes and Burnfoot Hill are heavily screen by the topography with only blade tips visible on the horizon line. Earlsburn is viewed at a significant distance and would not feature in views from this location.</p> <p>Sequential views occur with Braes O'Doune and Craigengelt to the west and Griffin Forrest to the north-west; however these developments are over 30km from the viewpoint and would not feature in the cumulative views from this location.</p> <p>The cumulative magnitude of change for consented projects would be negligible.</p> <p><u>Operational, Consented</u></p> <p>The single turbine at East Blair Farm is visible to the right of the view; viewed breaking the horizon it is a minor feature within the open view from this location.</p> <p>The cumulative magnitude of change for consented projects would remain negligible.</p> <p><u>Operational, Consented, In Planning</u></p> <p>The Temple Park Farm turbine appears in the same general view as the East Blair Farm and Colliston turbines. The larger scale turbine appearing as a slightly more prominent feature than the Colliston and East Blair developments.</p> <p>There are also theoretical successive views towards the Demperston turbine to the north of the view, the turbine would be viewed solely against the landscape from this location.</p> <p>The cumulative magnitude of change for consented projects would remain negligible.</p>	
Type of Effect	On completion of the development the visual effect from this viewpoint would be permanent (reversible) and direct. The development would lead to a low magnitude of change and despite the careful design of the project a man made vertical structure in this area would always lead to a negative effect.	
Assessment of Visual Effects	Sensitivity:	<i>High</i>
	Magnitude:	<i>Low</i>
	Type of Effect:	<i>Permanent, direct and negative</i>
	Level of Effect:	Moderate

Figure 5.18	Viewpoint 9: Loch Leven Lodges	
Description	<p>Viewpoint 9 is taken from E312902 N704599 looking north-north-west towards the site which is located ~9.4km away. The viewpoint was taken from the edge of Loch Leven, near to the Holiday Cabins located on the south eastern edge of the Loch.</p> <p>The view is very open from this location. The foreground is dominated by the large expanse of water of Loch Leven, with St Serf's Island visible in the middle of the Loch. The shoreline is heavily wooded with a mixture of vegetation lining the Loch side paths. The landscape on the opposite side of the loch rolls up from the water's edge, taking on a more upland feel. To the left of the view the skyline is dominated by the Ochil Hills, the horizon remains fairly uniform throughout the remainder of the view, with the Lomond Hills coming into the view to the far right of the view. The landcover is a mixture of arable fields with some significant areas of woodland visible over the areas of higher ground. The landcover is a mixture of plantation crops and rough and improved grazing land. A number of areas of shelterbelt also appear along the horizon line. The settlement of Kinross is visible on the opposite shore of the Loch as well as Kinnesswood partially visible on the far shore to the right of the view.</p>	
Sensitivity	The viewpoint is representative of visitors to the area and is therefore considered to be of High sensitivity.	
Magnitude of Change	<p>Receptors of this view would be ~9.4km from Colliston Farm.</p> <p>From this location the proposed turbine is viewed predominantly against the open landscape on the opposite side of the Loch. At this distance and viewed against the open landscape the turbine would be a barely discernible feature in the view. The open panorama would remain largely unaffected by the introduction of a single 45.7m to tip turbine from this location with the turbine occupying a negligible extent of both the horizontal and vertical view.</p> <p>The overall magnitude of change for the development is considered to be Negligible, leading to a Moderate/Minor level of effect which would not be significant.</p>	
Cumulative Impact	<p><u>Operational</u></p> <p>The Lochelbank development appears alongside the Colliston Farm turbine, the turbines are viewed on the horizon line to the right of the proposed turbine. The intervening topography provides screening over the lower section of the development with hubs and blades predominantly visible against the sky.</p> <p>There are theoretical successive views towards Green Knowes, however these views are heavily screened by areas of vegetation from this location.</p> <p>The cumulative magnitude of change for consented projects would be negligible.</p> <p><u>Operational, Consented</u></p> <p>There are theoretical views of the East Blair Farm turbine from this location, the single turbine is heavily screened by the intervening landscape, limiting potential views, and it is unlikely that it will be an easily discernible feature in this open vista.</p> <p>The cumulative magnitude of change for consented projects would remain negligible.</p> <p><u>Operational, Consented, In Planning</u></p> <p>The Temple Hill turbine also appears in this vista, the single turbine is also heavily screened by the landscape on the opposite banks of the Loch, appearing much smaller than the surrounding hill summits it is unlikely to be a prominent feature within the view and have a minimal impact on the setting of the views across the Loch.</p> <p>The cumulative magnitude of change for consented projects would remain negligible.</p>	
Type of Effect	On completion of the development the visual effect from this viewpoint would be permanent (reversible) and direct. The development would lead to a negligible magnitude of change and despite the careful design of the project a man made vertical structure in this area would always lead to a negative effect.	
Assessment of Visual Effects	Sensitivity:	<i>High</i>
	Magnitude:	<i>Negligible</i>
	Type of Effect:	<i>Permanent, direct and negative</i>
	Level of Effect:	Moderate/Minor

Figure 5.19	Viewpoint 10: Kinnoull Hill	
Description	<p>Viewpoint 10 is taken from E313655 N722709 looking south towards the site which is located ~14.6km away. The viewpoint is located near the summit of Kinnoull Hill to the east of Perth. Kinnoull Hill is a popular destination with walkers and runners as well as other recreational users.</p> <p>Due to its elevated position, the view to the south is very open, with long distance views possible. The peaks of east and west Lomond form the horizon line to the left of the view, while the Ochils form the skyline across the centre and right hand side of the view. Across the lower ground and in the foothills the land is dominated by large, predominantly rectilinear, arable fields. With a variety of field coverings on display ranging from rough and improved grassland to plantation crops. Over higher ground the arable farmland gives way to large areas of deciduous woodland with the land cover changing to a more upland moorland feel with rough grazing land and heather around the hilltops. Across the view there are several farms and associated outbuildings and infrastructure which reinforce the rural feel of the majority of the view. To the right of the view the edge of the settlement of Perth is almost visible, along with the River Tay and running alongside this the M90 motorway can be seen meandering through the landscape before disappearing over the middle distance behind the landscape. Along the horizon line the operational windfarm of Lochelbank is partially visible. Woodland screens views to the north from this location.</p>	
Sensitivity	The viewpoint is representative of the recreational users of Kinnoull Hill and is therefore considered to be of High sensitivity.	
Magnitude of Change	<p>Receptors of this view would be ~14.6km from the proposed turbine.</p> <p>The Colliston Farm turbine would be viewed on the horizon from this location, with the turbine viewed solely against the sky. The addition of a single turbine to this view would have little impact at this distance and would be a barely distinguishable feature in this wide open vista, occupying a negligible extent of both the horizontal and vertical view.</p> <p>The overall magnitude of change for the development is considered to be Negligible, leading to a low level of effect which would not be significant.</p>	
Cumulative Impact	<p><u>Operational</u></p> <p>Lochelbank appears on the horizon, sitting up in the landscape the development is a more noticeable feature than the Colliston Farm turbine from this location.</p> <p>Successive views occur with Green Knowes and Burnfoot Hill, although these developments are heavily screened by the landscape, neither development will feature prominently in this view.</p> <p>The cumulative magnitude of change for consented projects would be negligible.</p> <p><u>Operational, Consented</u></p> <p>There are successive views with the Pitcarlie turbine to the east to the east. The single turbine would not have an impact on the cumulative views from this location, viewed predominantly against the open landscape.</p> <p>The cumulative magnitude of change for consented projects would remain negligible.</p> <p><u>Operational, Consented, In Planning</u></p> <p>There are no planning turbines visible in the same view as Colliston Farm, however, there are successive partial views of Dempsterston to the east in a similar views to the consented Pitcarlie turbine. These developments would not have an impact on the cumulative views from this location, viewed predominantly against the open landscape.</p> <p>The cumulative magnitude of change for consented projects would remain negligible.</p>	
Type of Effect	On completion of the development the visual effect from this viewpoint would be permanent (reversible) and direct. The development would lead to a negligible magnitude of change and despite the careful design of the project a man made vertical structure in this area would always lead to a negative effect.	
Assessment of Visual Effects	Sensitivity:	<i>High</i>
	Magnitude:	<i>Negligible</i>
	Type of Effect:	<i>Permanent, direct and negative</i>
	Level of Effect:	Moderate/Minor

Figure 5.20	Viewpoint 11: Knock Hill	
Description	<p>Viewpoint 11 is taken from E305390 N693786 looking north-eastwards towards Colliston Farm which is located ~16.0km away. The viewpoint was taken from the summit of Knock Hill.</p> <p>Knock Hill is one of the highest points in west Fife and as such the view from this elevated location feels very open. Long distance views to the north and east are possible with the Ochil hills forming the horizon line to the north and the Lomond Hills to the east. The intervening landscape houses the Cleish Hills, these peaks sit slightly lower in the landscape than Knock Hill and are heavily wooded. The landcover is a mixture of arable farming with rough grazing the predominant land use in the foreground of the view. Significant areas of coniferous woodland are visible across the Cleish Hills in the middle ground, as well as across the areas of higher ground to the north. The settlement of Dollar is visible in the shadow of the Ochil Hills to the north-west, as well as numerous individual properties and farms which are spread across the relatively flat plateau of the loch basins below. The operational turbines of Green Knowes are visible on the horizon to the north-west of the viewpoint. Three prominent telecommunication masts occupy the southern edge of the summit.</p>	
Sensitivity	The viewpoint is representative of recreational visitors to Knock Hill and is therefore considered to be of High sensitivity.	
Magnitude of Change	<p>Receptors of this view would be ~16.0km from Colliston Farm.</p> <p>The proposed development would be viewed solely against the landscape from this location. At this distance, viewed against the vast landscape of Fife and Perth and Kinross it is unlikely to be a discernible feature.</p> <p>The overall magnitude of change for the development is considered to be Negligible, leading to a low level of effect which would not be significant.</p>	
Cumulative Impact	<p><u>Operational</u></p> <p>The operational development of Lochelbank appears to the left of Colliston Farm, the turbines are heavily screened by the surrounding topography.</p> <p>Successive views occur with Green Knowes which appear on the opposite horizon line to the north-west of the view, the turbines are clearly visible from this location, due to the relatively limited visibility of Colliston Farm.</p> <p>The cumulative magnitude of change for consented projects would be negligible.</p> <p><u>Operational, Consented</u></p> <p>The Pitcarlie turbine appears theoretically visible to the right of the Colliston Farm turbine, however, it is not predicted that there will be any views of this development from this location</p> <p>The cumulative magnitude of change for consented projects would remain negligible.</p> <p><u>Operational, Consented, In Planning</u></p> <p>The Cleish Hills and Blair Adam Forest windfarms appear much more prominently in the view from this location, located on the nearby summits within the neighbouring Cleish Hills the relatively insignificant visibility of Colliston farm would lead to The cumulative magnitude of change remaining negligible.</p>	
Type of Effect	On completion of the development the visual effect from this viewpoint would be permanent (reversible) and direct. The development would lead to a medium magnitude of change and despite the careful design of the project a man made vertical structure in this area would always lead to a negative effect.	
Assessment of Visual Effects	Sensitivity:	<i>High</i>
	Magnitude:	<i>Negligible</i>
	Type of Effect:	<i>Permanent, direct and negative</i>
	Level of Effect:	Moderate/Minor

Appendix 2 – Updated Ecological Assessments

Ecological Assessment

Colliston Farm



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1 ECOLOGY

1.1 Introduction

This section considers the potential effects of the proposed wind turbine on the nature conservation interests on and around the site, sets out the findings of the various surveys carried out and provides an assessment of impact on key sensitive species and habitats. These assessments were carried out by Garry Mortimer PhD, GLM Ecology, an experienced field ecologist with several years experience of ecological assessments at wind farm sites.

1.2 Regulations and Guidance

This ecological impact assessment (EcIA) pays explicit regard to the requirements of:

- Council Directive 79/409/EEC on the conservation of wild birds (the “Birds Directive”);
- Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (the “Habitats Directive”);
- The Conservation (Natural Habitats, &c.) Amendment (Scotland) Regulations 2007 (the “Habitats Regulations”, which translates the Birds Directive and Habitats Directive into UK law);
- The Wildlife and Countryside Act 1981, as amended;
- Nature Conservation (Scotland) Act 2004;
- SPP – Scottish Planning Policy (subject policy: Landscape and Natural Heritage 2010; and
- The UK Biodiversity Action Plan (BAP).

The EcIA was carried out using the following documents:

- Siting and Designing Wind Farms in the Landscape, SNH 2009;
- Assessing the impact of small-scale wind energy proposals on the natural heritage, SNH 2011;
- Assessing the cumulative impact of onshore wind energy developments SNH 2012;
- Assessing connectivity with Special Protection Areas (SPAs), SNH 2012;
- Recommended bird survey methods to inform impact assessment of onshore wind farms, Scottish Natural Heritage, November 2013;
- Wind farms and birds: Calculating a theoretical collision risk assuming no avoiding action, Scottish Natural Heritage, 2000;
- Developing field and analytical methods to assess avian collision risk at wind farms, Band et al, 2007;
- Technical Information Note 59 Bats and single large wind turbines: joint agencies interim guidance Natural England 18 September 2009; and
- Technical Information Note 51 Bats and onshore wind turbines Interim guidance Natural England 11 February 200;
- BCT (2011) *Bat Surveys – Good Practice Guidelines; surveying for onshore wind farms*. Bat Conservation Trust, London, UK.

The EcIA has been carried out according to current guidance published by the Institute of Ecology and Environmental Management (2006), which is recognized as best practice.

1.3 Impact Assessment Methodology

The EcIA has been carried out according to current guidance published by the Institute of Ecology and Environmental Management (2006), which is recognized as best practice. These guidelines set out a process of identifying the value of each ecological receptor and then characterizing the effects that are predicted, before discussing the effects on the integrity or conservation status of the receptor, proposed mitigation and residual effects.

1.4 Ecological Features Evaluation Criteria

A value or sensitivity has been assigned to each ecological receptor based on the following factors:

- Importance at a geographical scale, from local to international level;
- Designation status, e.g., SPA, SSSI, non-statutory designated sites, etc.;
- Biodiversity value, e.g., national BAP habitat/species, local BAP species, etc.; and
- Social, community and economic value.

The rationale for the valuation of sensitivity has been included for each receptor for which a significant effect is predicted. Table 1 provides examples, which are designed to give guidance as to how levels of sensitivity are typically derived. The value of sensitivity of an ecological receptor refers to land within the development area and a recognised 500m zone of effect.

Table 1. Guideline definitions for the sensitivity of ecological receptors

Sensitivity of Receptor	Examples (Guidance to evaluation)
International	<p>An internationally designated site or candidate site (SPA, pSPA, SAC, pSAC, Ramsar site, Biogenetic Reserve) or an area which the country agency has determined meets the published selection criteria for such designation, irrespective of whether or not it has yet been notified.</p> <p>A viable area of a habitat type listed in Annex I of the Habitats Directive, EU 1992 or smaller areas of such habitat which are essential to maintain the viability of a larger whole.</p> <p>Any regularly occurring population of an internationally important species, which is threatened or rare in the UK, i.e. it is a UK Red Data Book species or listed as occurring in 15 or fewer 10km squares in the UK (categories 1 and 2 in the UK Biodiversity Action Plan (BAP)) or of uncertain conservation status or of global conservation concern in the UK BAP.</p> <p>A regularly occurring, nationally significant population/number of any internationally important species.</p>

Sensitivity of Receptor	Examples (Guidance to evaluation)
National	<p>A nationally designated site (SSSI, ASSI, NNR, Marine Nature Reserve) or a discrete area, which the country conservation agency has determined meets the published selection criteria for national designation (e.g. SSSI selection guidelines) irrespective of whether or not it has yet been notified.</p> <p>A viable area of a priority habitat identified in the UK BAP, or of smaller areas of such habitat, which are essential to maintain the viability of a larger whole.</p> <p>Any regularly occurring population of a nationally important species, which is threatened or rare in the region or county (see local BAP).</p> <p>A regularly occurring, regionally or county significant population/number of any nationally important species.</p> <p>A feature identified as of critical importance in the UK BAP.</p>
Regional	<p>Viable areas of key habitat identified in the Regional BAP or smaller areas of such habitat which are essential to maintain the viability of a larger whole.</p> <p>Viable areas of key habitat identified as being of Regional value in the appropriate Natural Area profile.</p> <p>Any regularly occurring, locally significant population of a species listed as being nationally scarce which occurs in 16-100 10km squares in the UK or in a Regional BAP or relevant Natural Area on account of its regional rarity or localisation.</p> <p>A regularly occurring, locally significant number of a regionally important species.</p> <p>Sites, which exceed the County-level designations but fall short of SSSI selection guidelines, where these occur.</p>
County	<p>Semi-natural ancient woodland greater than 0.25 ha.</p> <p>County/Metropolitan sites and other sites which the designating authority has determined meet the published ecological selection criteria for designation, including Local Nature Reserves selected on County/metropolitan ecological criteria (County/Metropolitan sites will often have been identified in local plans).</p> <p>A viable area of habitat identified in County BAP.</p> <p>Any regularly occurring, locally significant population of a species which is listed in a County/Metropolitan “red data book” or BAP on account of its regional rarity or localisation.</p> <p>A regularly occurring, locally significant number of a County important species.</p>
District	<p>Semi-natural ancient woodland smaller than 0.25 ha.</p> <p>Areas of habitat identified in a sub-County (District/Borough) BAP or in the relevant Natural Area profile.</p> <p>District sites that the designating authority has determined meet the published ecological selection criteria for designation, including Local Nature Reserves selected on District/ Borough ecological criteria (District sites, where they exist, will often have been identified in local plans).</p> <p>Sites/features that are scarce within the District/Borough or which appreciably enrich the District/Borough habitat resource.</p> <p>A diverse and/ or ecologically valuable hedgerow network.</p> <p>A population of a species that is listed in a District/Borough BAP because of its rarity in the locality or in the relevant Natural Area profile because of its regional rarity or localisation.</p> <p>A regularly occurring, locally significant number of a District / Borough important species during a critical phase of its life cycle.</p>

Sensitivity of Receptor	Examples (Guidance to evaluation)
Parish (Local)	Areas of habitat considered to appreciably enrich the habitat resource within the context of the Parish or neighbourhood, e.g. species-rich hedgerows. A regularly occurring but low number of locally common protected species within or adjacent to the Development area. Local Nature Reserves selected on Parish ecological criteria.
Very Local	Areas of habitat that have a limited ecological value. Plant assemblages tend to be species poor, but may be utilised by a small number of faunal species. Those habitats that have an effect of enriching and complimenting the local natural environment to a small degree.
Low	Areas of habitats considered to be of very limited ecological value. They are not representative of natural habitats and are very species poor. Those habitats that do not enrich the local natural environment.
NB: Where species of habitats occur in more than one category, the highest value is applicable.	

1.5 Characterisation of Effects/Magnitude of Effect

The effects on individual receptors are described in relation to a range of factors. These include the magnitude, extent (either in area or population terms), duration, timing and frequency of the effect on the structure and function of the ecosystem. Effects in combination may have a cumulative effect that is greater than when the same effects occur in isolation. Combination effects include the separate effects of the scheme upon a feature (e.g., effects as a result of the construction and operation stage), or the combined effects of a number of schemes that affect the same receptor. Consideration is given to the longevity of effects, based on the life span of the Development and reversibility of the effect.

The criteria used to determine the character (magnitude, scale, duration, reversibility) of the ecological effects are given in Table 2.

Table 2. Definition of terms relating to the Character of ecological effects

Character/Magnitude	Definition
Very high	Total loss or very major alteration to key elements or features of the baseline conditions such that post development character, composition or attributes will be fundamentally changed and may be lost from the site altogether. For example the loss of a great crested newt breeding pond or loss/destruction of a maternity roost of a rare species of bat, loss/destruction of hibernation roost for bats, destruction of a Annex1 priority habitat or a statutory designated site. Generally irreversible and permanent. Guide: >80% of population or habitat lost
High	Major alteration to key elements or features of the baseline (pre-development) conditions such that post development character, composition or attributes will be fundamentally changed. For example the loss of a bat maternity roost, damage to a great crested newt breeding pond, pollution of a stream containing white clawed crayfish, damage to annex 1 priority habitat. Generally reversible after long period of time. Guide: 20-80% of population or habitat lost
Medium	Loss or alteration to one or more key elements or features of the baseline conditions such that post development character, composition or attributes of baseline will be

Character/ Magnitude	Definition
	partially changed. For example loss of optimal foraging habitat for great crested newts, death or injury to a low number of a locally rare species, loss of species rich ancient hedgerow, severance of a bat flight path, temporary abandonment of a bat roost. Generally reversible with mitigation on a short timescale Guide: 5-20% of population or habitat lost
Low	Minor shift away from baseline conditions. Change arising from the loss or alteration will be discernible but underlying character, composition or attributes of baseline condition will be similar to pre-development circumstances or patterns. For example loss of sub optimal foraging habitat for Great crested newt, loss of species poor hedgerow, death or injury of a very small number of common species of bat. Generally reversible without mitigation in short timescale. Guide: 1-5% of population or habitat lost.
Negligible	Very slight change from baseline condition. Change barely distinguishable, approximating to the “no change” situation. Guide: <1% of population or habitat lost.

1.6 Significance Criteria

An ecologically significant effect is defined as an effect (adverse or positive) on the integrity of the site or ecosystem(s) and/or the conservation status of habitats or species within the identified zone of effect for the Development. The definitions of integrity and conservation used for this assessment are those detailed in the Institute of Ecology and Environmental Management (IEEM) Guidelines for Ecological Impact Assessment, namely:

- Integrity is the coherence of ecological structure and function, across a site’s whole area, that enables it to sustain a habitat, complex of habitats and/or the levels of populations of species; and
- Conservation status for habitats is determined by the sum of the influences acting on the habitat and its typical species that may affect its long-term distribution, structure and functions as well as the long-term survival of its typical species within a given geographical area.

The combined assessment of the effect characterisation and the sensitivity of ecological receptors have been used to determine whether or not an effect is significant with respect to the EIA Regulations. These two criteria have been cross-tabulated to assess the overall significance of the effect in Table 4. Effects with significance of moderate or major are considered to be significant in terms of the EIA Regulations.

Table 3. Matrix used to assess the significance of potential effects upon ecological receptors.

Magnitude of effect	Sensitivity of receptor	High (International and National)	Medium (Regional and District)	Low (Parish/ (Local))	Negligible (Very Local/Low)
High		Major	Major	Moderate	Negligible
Medium		Major	Moderate	Moderate	Negligible
Low		Moderate	Moderate	Minor	Negligible
Negligible		Negligible	Negligible	Negligible	Negligible

1.7 Site Background and Context

An initial desk based search, walkover survey and scoping report was carried out in June 2011. Designated sites and associated protected species and habitats at a local and regional level have been identified through that process. A description of the local area in relation to designated sites with ecological interests and the findings of an initial desk based review of the area are presented in the context of the following sections. The following resources were used:

- NBN Gateway¹
- RSPB sensitivity maps²;
- Scottish Natural Heritage (SNH) Sitelink³;
- The Scottish Biodiversity List⁴;
- Scottish Raptor Group⁵; and
- Multi Agency Geographic Information for The Countryside⁶.

1.8 Designated Sites

The following sites were identified within 20km from the site:

Site	Designation	Features
Loch Leven	SPA	Designated for overwintering wildfowl.
Firth of Tay & Eden	SPA	Designated for overwintering wildfowl.
South Tayside Goose Roosts	SPA	Designated for overwintering wildfowl.
The following sites were identified within 5km from the site:		
Lacesston Muir	SSSI	Designated for dry heath.
The following sites were identified within 1km from the site:		
None		

1.9 Scope of Ecological Assessments

The scope of the present EcIA was derived from the initial site background and context study above, the local knowledge and experience of the ecologist and guidance from SNH. The EcIA considers the following issues:

- Breeding Birds;
- Winter Walkover Surveys;
- VP surveys
- Bats;
- Badgers;
- Phase 1 Habitat Survey.

The scope of ecological assessments was in accordance with the guidance given by SNH⁷ unless otherwise agreed with SNH.

2 SITE DESCRIPTION

The site at Colliston Farm (Figures 1, 2) is an area of hilly farmland to the south west of Glenfarg. The site is predominantly arable fields with a paucity of hedgerows and the occasional mature tree line (Figures 2, 3, 4). There are two small dense coniferous plantations on site and some mature beech trees near the farm house (Figure 5, 6, 7).

The proposed turbine location (see Figure 2) is to the south of the farmhouse in an arable field (Figure 8). There is a paucity of hedgerows and groundcover on site with virtually no demarcation between fields. There is no standing or running water on site apart from ditches.

There are farmhouses in the area consisting of the usual mixture of older outbuildings and newer barns.

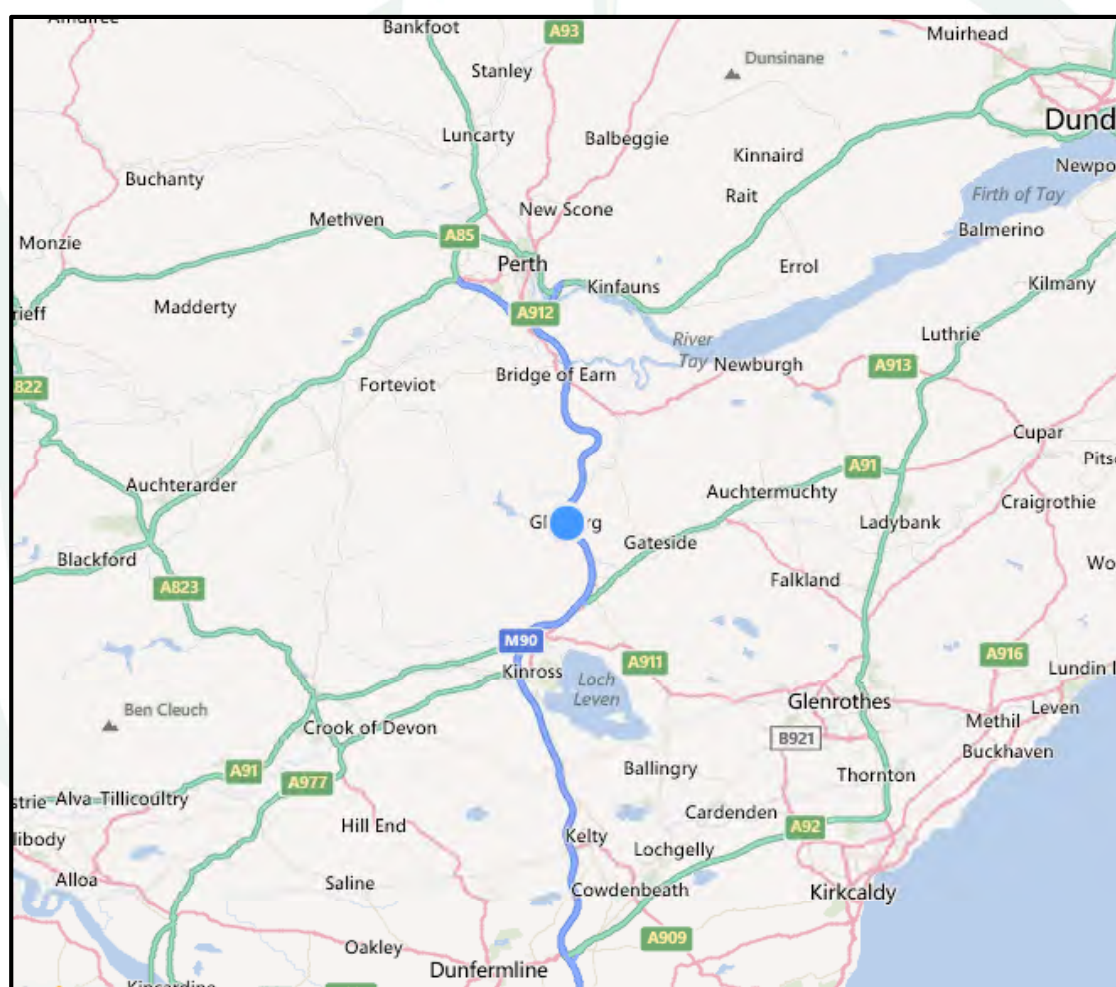


Figure 1. Site location north of Kinross.

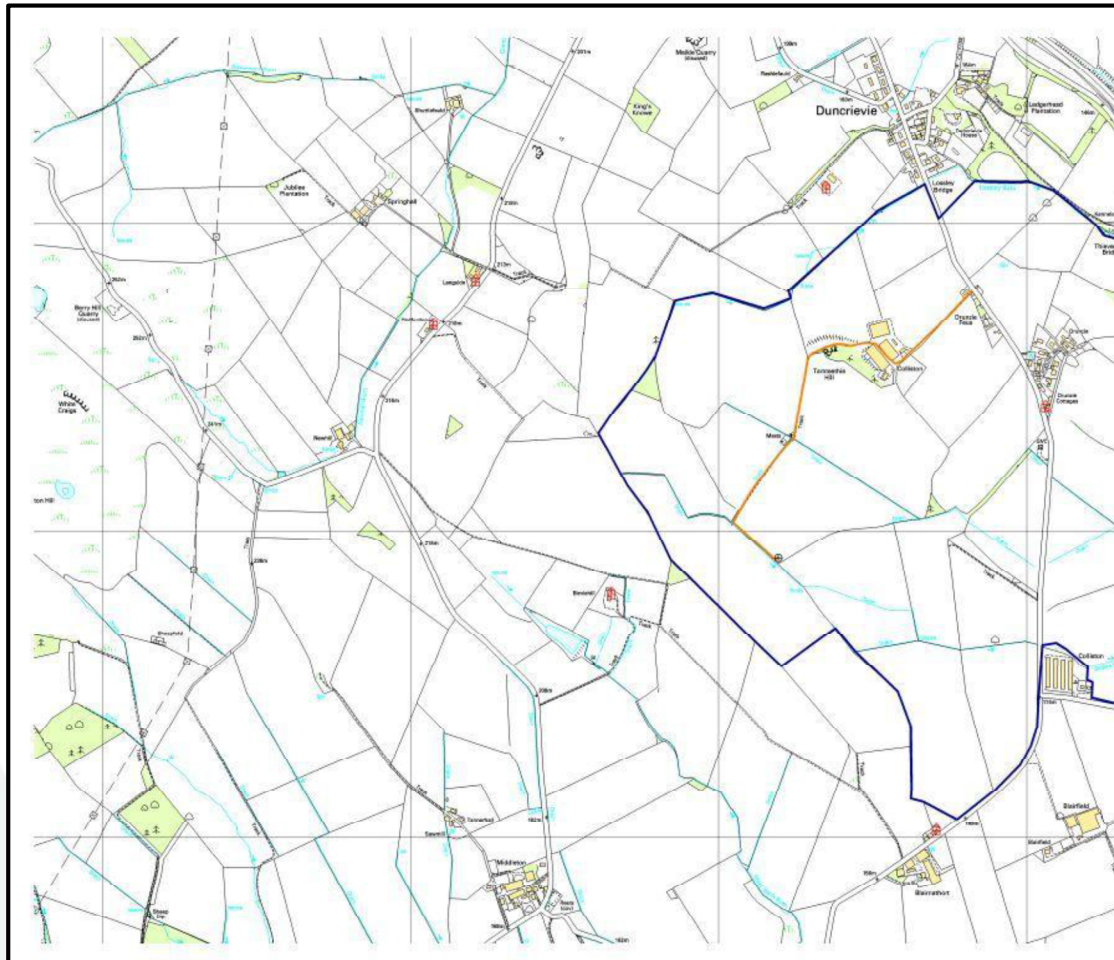


Figure 2. Turbine location and access track.



Figure 3. Arable fields



Figure 4. Arable fields



Figure 5. Arable fields and species poor hedgerows



Figure 6. Small conifer plantation.



Figure 7. Mature deciduous trees and coniferous plantations near farm.



Figure 8. Habitat near turbine location.

3 ORNITHOLOGY

Generally, ornithological surveys on and around the site are required to assess potential impacts of birds throughout the year, which could arise due to:

- Potential loss, fragmentation and degradation of bird habitats arising from the construction of turbine bases, crane pads, access tracks, a sub-station and temporary construction compounds and power lines;
- Potential displacement of hunting or migrating birds through avoidance of turbines, work staff and machinery;
- Disturbance to birds due to noise from operating turbines;
- Potential disturbance to nesting birds (for example, displacement of birds from breeding habitats) resulting from the construction activities; and
- Potential for birds to collide with turbine blades and power lines.

It should be noted that the issues identified above are more likely to be significant for larger wind turbine developments; however, these were considered for this application.

3.1 Survey Scope & Methodology

To assess the movements of birds year round and presence of breeding birds on site and in the surrounding area, a variety of survey methods were carried out, including Common Bird Census, Winter Walkovers and Vantage Point Surveys.

3.1.1 Breeding Bird Survey

The area surveyed was the area half a kilometer round the proposed turbine site (SNH 2006) on ground owned by the developer. Other ground was surveyed by listening along the boundary. The survey work was based on the standard BTO Common Bird Census (CBC) technique where the Survey Area is walked and the route varied each survey. The number of survey visits was the same as a BBS survey (three visits)

rather than the number required for a full CBC survey (ten visits). There were three day visits in approximately late April, mid May and early June. This is a standard technique for breeding bird surveys as used for many years as per BTO's Breeding Bird Survey Instructions⁸ for their Common Birds Census⁹. This involves making a series of visits throughout the breeding season, during which all birds seen or heard in the area are recorded on large-scale maps using standard codes denoting their species and behaviour. The area was searched by walking transects along field edges, roads and paths. During each visit, the location of each bird was mapped. By aggregating these individual records, breeding territories were revealed (Bibby et al. 2000)¹⁰ for each species, the number of breeding territories were then recorded. Birds of conservation concern (Eaton et al. 2009)¹¹ were identified. The designations used were: Breeds (B), Non Breeder (NB) and Possible Breeder (PB).

3.1.2 Winter Walk Over's

To survey the wintering bird populations a series of three-winter walk over's were carried out between October and March following the standard guidance from SNH. A pre-plotted route was taken that covered the entire site and starting points were varied for each visit. The survey area was within 500m of the proposed turbine. Transect lines were walked with all birds seen recorded. Care was taken not to record the same birds on consecutive transects

3.1.3 Vantage Point Surveys

Data from VP surveys are utilised as part of the assessment of potential impacts including: species presence, density, distribution and behaviour. A single VP was used as this gave clear views of the whole site, allowing all flights to be recorded in detail to 500m outwith the site. VP watches were 36 hours each for the autumn-winter-spring periods (September-May). Due to the proximity of SPAs with geese and wildfowl the VPs encompassed both dawn and dusk surveys as well as daytime periods as per SNH guidance. Primary target species were identified as all Special Protection Areas (SPA) qualifying species including geese, wildfowl, waders and Schedule 1 raptors. The location, direction of flight and estimated height above the ground of each target species were recorded. During the VPs flight data for both primary and secondary target species were recorded. Details of species, number of birds, flight height (in bands), duration and direction were recorded. The following height bands were used in the surveys: A- <20m, B- 20-125m, C- >125m. Any flights recorded at band B and within 200m of the proposed turbine location were classified as being within the collision risk window.

3.2 Survey Results

3.2.1 Breeding Birds

Thirteen species of birds were recorded as breeding within the survey area (Table 4). All of the recorded birds are recorded locally as common residents or summer visitors whose populations are not threatened and are in favorable conservation status in Scotland. None are specially protected. The number of breeding species is poor due to the lack of trees, hedgerows and groundcover. Nationally one species, yellowhammer is on the red list of birds of conservation concern with another six on the amber list (Eaton et al. 2009).

Table 4. Bird species list for Colliston: April – June.
Breeds (B), Non Breeder (NB), Possible Breeder (PB)

Species	Latin	April	May	June	Status
Buzzard	<i>Buteo buteo</i>	1 seen			NB
Swallow	<i>Hirundo rustica</i>		2 on	5 on	B
Skylark	<i>Alauda arvensis</i>	2 singing	3 singing	3 singing	B
Willow Warbler	<i>Phy. trochilus</i>		2 singing	3 singing	B
Whitethroat	<i>Sylvia communis</i>		4 singing	2 singing	B
Wren	<i>Troglodytes troglodytes</i>	Present	Present	Present	B
Dunnock	<i>Prunella modularis</i>	1 singing		Present	B
Blue Tit	<i>Parus caeruleus</i>	Present	Present	Present	B
Great Tit	<i>Parus major</i>	Present	Present	Present	B
Blackbird	<i>Turdus merula</i>	2 singing	4 seen		B
Mistle Thrush	<i>Turdus viscivorus</i>	1 singing	1 singing		B
Carrion Crow	<i>Corvus corone</i>	Present	Present	Present	B
Jackdaw	<i>Corvus monedula</i>	Small numbers	Small numbers	Small numbers	NB
Rook	<i>Corvus frugilegus</i>	Common	Common	Common	NB
Chaffinch	<i>Fringilla coelebs</i>	Small numbers	Small numbers	Small numbers	B
Siskin	<i>Spinus spinus</i>	50+ over			NB
Yellowhammer	<i>Emberiza citrinella</i>	3 singing	2 seen	2 singing	B

3.2.2 Protected Species

Schedule 1 Species

No species were recorded which are fully protected under Schedule 1 of the Wildlife and Countryside Act, 1981.

3.2.3 Wintering Birds – Walkovers.

In general there was a very poor selection of birds recorded in the study area due to the vast majority of the habitat being arable fields with limited groundcover present. In the walkovers common passerines that were recorded were mostly around the plantation and woodland near the farm and included flocks of tits, chaffinches, fieldfare and redwing. Rooks and jackdaws were frequently on and over site. No target species were seen and no geese were recorded foraging on site

3.2.4 VP Surveys

During the autumn-winter-spring periods a total of twenty-two flights of geese (approx. 3500 PG, 800 GJ) were recorded over the buffer zone or offsite. Only six flights were recorded over the site. The majority of flights were high and no flights were recorded in the collision risk zone. No geese were recorded foraging on site during any VP or any other survey work. Offsite flights of geese, particularly to the southeast were noted. No Schedule 1 raptors were recorded on site apart from one record of peregrine falcon in November and two juvenile white tailed sea eagles in March. Neither of these was in the collision risk zone.

Buzzards, sparrowhawk and kestrel were recorded intermittently. In autumn and in early spring small passages of lapwings and golden plover were recorded passing over the general area. None of these flights were classed as collision risk and were offsite.

4 BADGERS

4.1 Badger (*Meles meles*) Legislation

Both badgers and their setts are protected by law. The Protection of Badgers Act 1992 (Scottish Version) brings together all of the previous legislation specific to badgers (except their inclusion on Schedule 6 of the 1981 Wildlife and Countryside Act as amended Nature Conservation (Scotland) Act 2004). As a result it is an offence to:

- Willfully kill, injure, take, possess or cruelly ill-treat a badger, or to attempt to do so;
- To intentionally or recklessly interfere with a sett;
- To disturb a badger when it is occupying a sett;
- Damage or destroy a sett; and
- To obstruct access to, or any entrance of a badger sett.

A badger sett is defined in the legislation as '*any structure or place, which displays signs indicating current use by a badger*'. '*Current use*' does not simply mean 'current occupation' and for licensing purposes it is defined as '*any sett within an occupied badger territory regardless of when it may have last been used*'. A sett therefore, in an occupied territory, is classified as in current use even if it is only used seasonally or occasionally by badgers, and is afforded the same protection in law.

4.2 Aims & Objectives

The aims of this assessment were:

- To assess whether badgers were present on site;
- If badgers are present to assess local population status and usage of the site;
- To recommend further survey work if required.

4.3 Data Review

A data search was carried out using NBN Gateway to determine if badgers had been recorded in the 10km square of which Colliston is enclosed.

4.4 Survey Methodology

The surveys consisted of a walkover of the site in 2012 and 2014 and ground within 250m of its boundary to visually inspect and assess the site for its potential to support badgers. Badgers surveys were carried out according to recommended guidelines^{12, 13, 14 and 15}. Evidence of badger activity searched for included:

- Setts: badger setts typically have characteristic shapes and dimensions;
- Paw prints and badger hair caught on hedges and fences;
- Foraging signs: foraging badgers leave distinctive marks when foraging;
- Characteristic worn pathways; and
- Latrines: badgers defecate in pits, often clustering several pits into a latrine.

4.5 Results

4.5.1 Data Review

NBN Gateway recorded no badger within the 10km grid square of the site.

4.5.2 Field Survey

No signs of badger or any protected mammals were recorded in any surveys.

5 BATS

5.1 Bat Legislation

Bats of all species in Britain and their roosts are protected under the Conservation (Natural Habitats, &c) Amendment (Scotland) Regulations 2007. Following recent changes to legislation in Scotland under this law it is illegal intentionally or recklessly to kill or injure a bat, to disturb a roosting bat or to damage, destroy or obstruct access to any bat roost. This applies to both summer and winter roosts, which may be in different structures. Any action, which is likely to disturb or damage a bat roost, requires a license from the Scottish Executive.

5.2 Aims & Objectives

To determine what bat species are present on the site and whether the habitat is utilized for roosting, foraging or commuting by bats.

5.3 Data Review

A data search was carried out using NBN Gateway to determine if any bat species had been recorded in the 10km square of which Colliston is enclosed.

5.4 Survey Methodology

A habitat and bat assessment survey was carried out at the site in June 2012 followed by bat detector surveys in June and September in accordance with guidance from the Bat Conservation Trust¹⁶ and Natural England¹⁷. The objectives of the bat surveys were to identify whether the site would be considered suitable for roosting bats and whether bats were present on site. The aim was to provide sufficient evidence so that the potential impacts of the proposed development on any local bat populations could be assessed and if appropriate, mitigation suggested.

5.5 Habitat Survey

A daytime field survey was carried out in June 2012. The site was surveyed for potential flight lines/commuting routes, roosts and foraging areas and the habitat assessed for its overall suitability for bats. Any potential foraging areas were examined and linear features were assessed for their suitability as flight lines or commuting pathways.

5.6 Bat Detector Surveys

One visit was made on 10th July 2012. The dusk survey was carried out from approximately 30mins before sunset to 2.0hrs after sunset. The dawn survey was from approximately two hours before sunrise to 30mins after sunrise (Table 6) The site was divided into a circular transect which were surveyed constantly by two individual surveyors starting at opposite ends of the transect on each visit.

Table 6. Survey times and weather conditions.

Survey	Survey Area	Date	Sun Set	Sun Rise	Time	Weather
Night Surveys						
1	Dusk	09/07/12	21.55		21.30-23.45	W3. 3/8.14C
	Dawn	10/07/12		04.45	03.00-05.20	W2.2/8.12C
	Dusk	15/09/12	19.40		19.15-22.05	E2. 0/8. 10.C

The transect was focused on the proposed turbine location with strategic stopping points. These points encompassed all habitats found on site and included the proposed turbine location, open fields and tracks. Bats were surveyed at all times and at stopping points using Bat Box ultrasound bat detectors in conjunction with a mini-disc inline recorder between 20 - 120 MHz. Any potential bat calls on the mini discs were analysed using the Bat Sound software package and identified to species level.

5.7 Results

5.7.1 Data Review

NBS Gateway revealed the following bat species recorded in the 10km grid square based on Colliston.

- Common pipistrelle *Pipistrellus pipistrellus*.
- Soprano pipistrelle *Pipistrellus pygmaeus*
- Natterers bat *Myotis nattereri*
- Brown long eared bat *Plecotus auritus*

5.7.2 Habitat Survey Results

Buildings

No buildings are within 500m of the turbine.

Trees

No trees within 500m of the turbine would appear to have roost potential.

Foraging Areas

There would appear to be very limited foraging areas on site over arable fields.

Bat Detector Survey Results

Two soprano pipistrelles were recorded at Colliston Farm in both surveys.

6 PHASE 1 HABITAT SURVEY

6.1 Legislation

Legislation exists to protect habitats and floral species from destruction, degradation and loss as a result of development activities and include:

- The Conservation (Natural Habitats, & C.) Regulations 1994;
- Wildlife & Countryside Act 1981 (as amended); and
- The Nature Conservation (Scotland) Act 2004.

6.2 Aims & Objectives

The Phase 1 Habitat Survey aimed to:

- Identify and record broad habitats within the vicinity of the development area;
- Provide a description of habitat distributions and highlight any areas of ecological constraints in relation to the proposed development; and
- Contribute towards informing planning processes.

Whilst not a full botanical survey, the Phase I method enables a suitably experienced ecologist to obtain sufficient understanding of the ecology of a site so that it is possible either:

- To confirm the conservation significance of the site and assess the potential for impacts on habitats /species likely to represent a material consideration in planning terms; or
- To ascertain that further surveys of some aspect(s) of the site's ecology will be required before such confirmation can be made.

6.3 Data Review

An initial pre-visit desk study was conducted for the location of the proposed scheme at Colliston to establish ecological baseline context. These included consultation with Ordnance Survey (OS) maps and web-based satellite aerial imagery to familiarize with the site and to identify potential habitat features of nature conservation importance.

6.4 Survey Methodology

Phase I habitat survey is a standardised method of recording habitat types and characteristic vegetation, as set out in the Handbook for Phase I Habitat Survey – a technique for Environmental Audit¹⁸. The Phase I habitat survey undertaken in May 2012 covered the whole of the site and encompassed a 500m buffer envelope around this area. A colour coded GIS-based map in hard copy format was produced with associated colour key.

6.5 Results

6.5.1 Data Review

Review of OS maps and aerial imagery indicates the site at Colliston is located within a rural farmland locality. The contour information reveals a undulating rolling topography that rises from east to west. Dominant habitats present over the site comprise arable fields.

6.5.2 Field Survey

The habitats present within the 500-meter proposed turbine and track survey area are presented in Figure 12 and Table 8.

Phase 1 Habitat Type
A1.1.1 Broadleaved woodland - semi-natural
A1.2.2 Coniferous woodland - plantation
A2.2 Scrub - scattered
A3.1 Broadleaved scattered trees
B4 Improved grassland
G2 Ditch Systems
J1.1 Cultivated land - arable
J2.2.1 Defunct hedge - native species-rich
J2.4 Fence
J2.5 Wall
Road & Farm Tracks

Arable Farm Fields

The majority of fields at Colliston are used as arable fields (J1.1). The propose turbine location is within one of these arable fields.

Improved grazing farm fields

Some improved grassland grazing fields (B4) are also present on site and are utilised by livestock, such as sheep and contain agriculturally improved grasses, such as, perennial ryegrass (*Lolium perrene*) and also including clover (*Trifolium repens*), creeping buttercup, (*Rannunculus repens*), common daisy (*Bellis perennis*) and sheeps sorrell (*Rumex acetosella*).

Ditch systems

Ditch systems (G2) can be found on site. Most of the ditches are bordered with wire & post fencing (J2.4) for stock proofing, including the remains of old stone walls. Some of the ditch systems are dry.

Hedging, scattered trees and scrub

In some of the field boundaries and along ditch systems there is defunct hedging (J2.2.1) with gaps and consists of hawthorn (*Crataegus monynga*) with the occasional beech (*Fagus sylvatica*) tree. Trees (A3.1) are also located along some of the field boundaries and are of ash (*Fraxinus excelsior*) and beech (*Fagus sylvatica*) with some rowan (*Sorbus aucuparia*), and hawthorn (*Crataegus monynga*). Along some of the field boundaries and the ditch systems there are areas of scattered scrub (A2.2) such as gorse (*Ulex europaeus*).

Broadleaved woodland

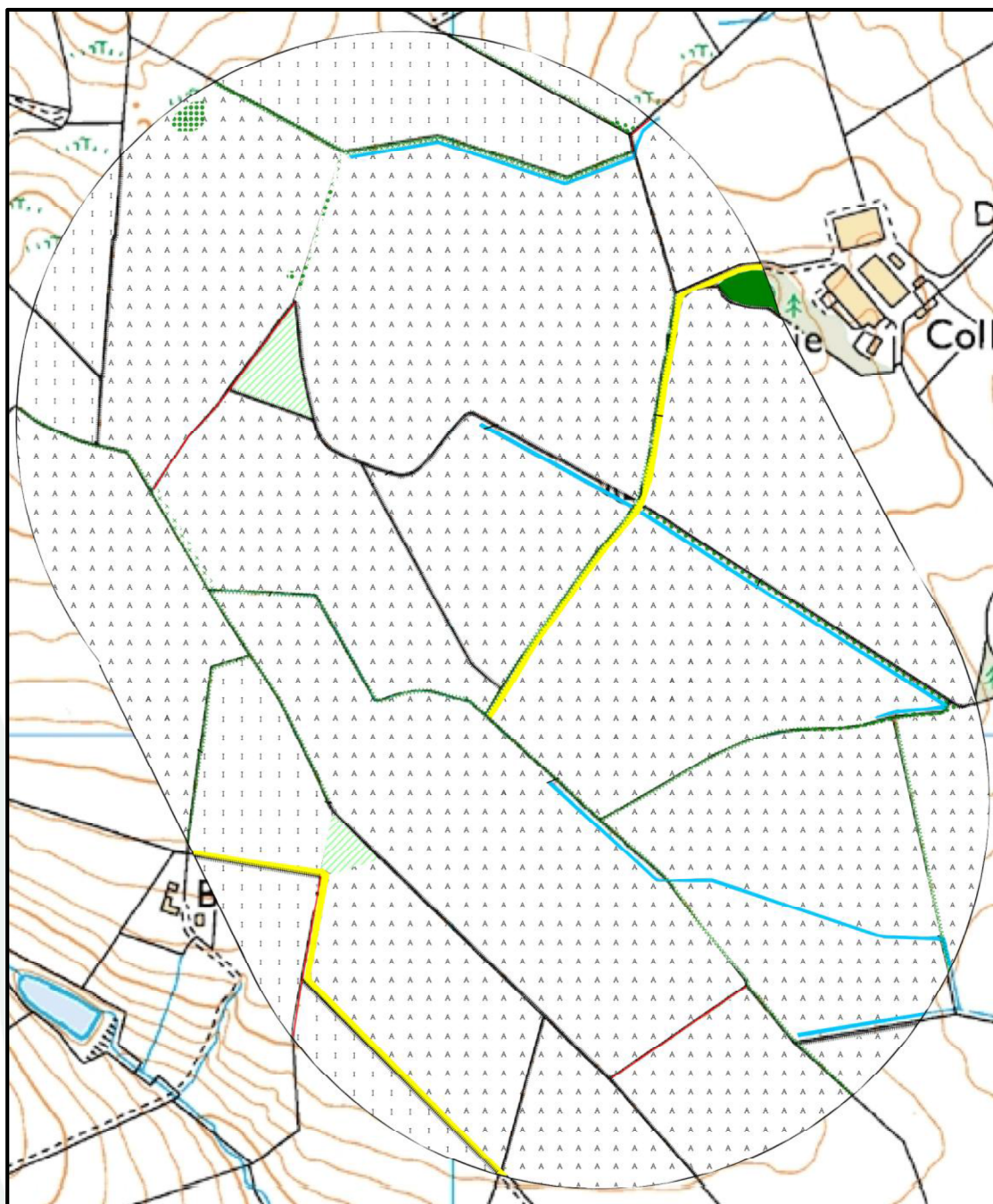
There is a small area of broadleaved trees (A1.1.1) close to the farm buildings. This joins on to a small area of coniferous trees.





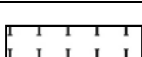
Coniferous woodland



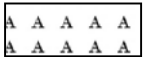
There are two triangular areas of coniferous woodland (A1.2.2) situated north and to the southwest on site, close to the proposed turbine location.

Farm tracks

There are two farm tracks on site, one originating from Colliston farm and one to the south west originating from another farm. There are no farm buildings within the site boundary.



Code	Phase 1 Habitats Description
	A1.1.1 Broadleaved woodland - semi-natural
	A1.2.2 Coniferous woodland - plantation
	A2.2 Scrub - scattered
	A3.1 Broadleaved scattered trees
	B4 Improved grassland

	J1.1 Cultivated/disturbed land - arable
	G2 Ditch Systems
	J1.1 Cultivated land - arable

Boundary Features




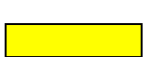
	J2.2.1 Defunct hedge - native species-rich
	J2.4 Fence
	J2.5 Wall
	Road & Farm Track

Figure 12. Habitats and associated legend

7 ASSESSMENT OF IMPACTS

7.1 Impacts on Breeding Birds

There was a poor breeding species list due to the majority of the habitat being arable fields. The majority of species recorded were in the small wooded areas near the farm well away from the turbine location. The species recorded would be considered as typical for these habitats and of low sensitivity. Considering the observations noted above, no significant impact on high sensitivity species could be expected, as the construction footprint will be on existing tracks and arable fields. No trees or groundcover are proposed to be removed. The magnitude of impact is considered to be negligible and overall the significance of impact to be no more than negligible.

8.1.1 Mitigation

No mitigation is deemed to be required.

8.2 Impacts on Schedule 1 Raptors

No Schedule 1 species were recorded breeding on any surveys and the habitat present would not be suitable for breeding and very limited for foraging.

8.2.1 Mitigation

No mitigation is deemed to be required.

8.3 Impacts on Wintering Birds

No Schedule 1 raptors apart from two juvenile white tailed sea eagles were recorded on site during any surveys. The sea eagles were recorded on 03/03/12 well offsite to the south displaying and calling. They were not recorded on subsequent visits. It is assumed that these birds are the regular birds that normally frequent Loch Leven. The only other raptors recorded were small numbers of buzzard, sparrowhawk and kestrel.

The three SPAs within the 20km zone around Colliston are all designated for wintering geese species and it is known that there is regular connectivity between the three sites. No geese or wildfowl or species of concern were recorded foraging on site during surveys at any time. Flights of geese were recorded in the general area, however these flights were predominately at a high level and none were in the collision risk zone.

The flights tended to be heading towards Loch Leven and none were considered as being in the collision risk zone. Flights were often noted at a much lower altitude towards the M90 and it appeared that the geese were following the motorway. The loss of a small area of arable land would not have an adverse affect on any wintering birds given the species present. Construction of the single turbine would be deemed to have a negligible significance of impact on any species.

8.3.1 Mitigation

No mitigation is deemed to be required.

8.4 Impacts on Badgers

No signs of badger were recorded.

8.4.1 Mitigation

No mitigation is deemed to be required.

8.5 Impacts on Bats

No bats were recorded within 500m from the turbine. Very small numbers of soprano pipistrelles were recorded at the farm. No roosts are present within a 500m zone of the turbine location as no buildings or suitable trees are present.

8.5.1 Mitigation

No mitigation is deemed to be required.

8.6 Impacts on Otters/Water Voles

No signs of otters or water voles were recorded.

8.6.1 Mitigation

No mitigation is deemed to be required.

8.7 Impacts on Habitats

A total of eight habitats are present within the site survey areas, of which the majority is arable fields. No nationally or internationally protected habitats were identified in this assessment. The habitat around the proposed access tracks and turbine location is arable fields.

There is the potential of a slight increase in run-off in to ditch systems through the ground disturbance of the construction phase but this is expected to be short lived, minor and further reduced through mitigation.

Some of the impacts predicted as a result of the proposed scheme can be considered generic impacts, which are typically associated with a development of this nature. The

development of the wind turbine scheme at Little Pinmore has been assessed as posing no significant impacts on commonly occurring habitats found on site. Therefore no specific prescriptions are recommended other than the general measures recommended below.

8.7.1 Mitigation

The following mitigation measures are proposed:

- Good construction site management should be implemented to minimise generation of litter, dust, noise and vibration. This should be controlled and monitored through the Contractor's Environmental Management Plan. Through adhering to best practices during construction and operation phases, fragmentation, disturbance and pollution to habitats present can be minimised;
- During construction management of excavated soil will focus on preventing silt runoff into the water environment during rainfall periods through careful design and maintenance of drainage/silt traps.

9 SUMMARY OF IMPACTS

Following the criteria set out in Tables 1, 2 & 3 the following table is an assessment of the impacts on flora and fauna at Colliston due to the proposed construction of a single turbine. It is also considered that the proposal would have no impact on any designated site within the relevant zones of impact.

Residual Effects	Value of receptor	Magnitude of change	Duration	Nature	Significance
Loss of foraging or breeding habitat to badgers/otters.	Parish (Local)	Low	Short term	Negative	Not significant
Loss of foraging or roosting habitat to bats	Parish (Local)	Low	Short term	Negative	Not significant
Bat mortality due to turbine collisions	Parish (Local)	Low	Short term	Negative	Not significant
Bird mortality due to turbine collisions	Parish (Local)	Low	Short term	Negative	Not significant
Loss of habitat to breeding birds	Parish (Local)	Low	Short term	Negative	Not significant
Loss of habitat to wintering birds	Parish (Local)	Low	Short term	Negative	Not significant
Loss of habitat/vegetation	Parish (Local)	Low	Short term	Negative	Not significant
Loch Leven SPA	International	Low	Short term	Negative	Not significant
South Tayside Goose Roosts SPA	International	Low	Short term	Negative	Not significant
Firth of Tay & Eden SPA	International	Low	Short term	Negative	Not significant
Lacesston Muir SSSI	National	Low	Short term	Negative	Not significant

10 CONCLUSION

It is proposed to construct a single wind turbine and associated infrastructure on an area of arable farmland situated at Colliston. A range of ecological assessments have been undertaken to investigate the ornithological and other ecological interest of the site and it is concluded that potential for this to be adversely affected by the current proposal is extremely unlikely.

=

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Best efforts were made to meet the objectives of this study through desktop study and field survey.

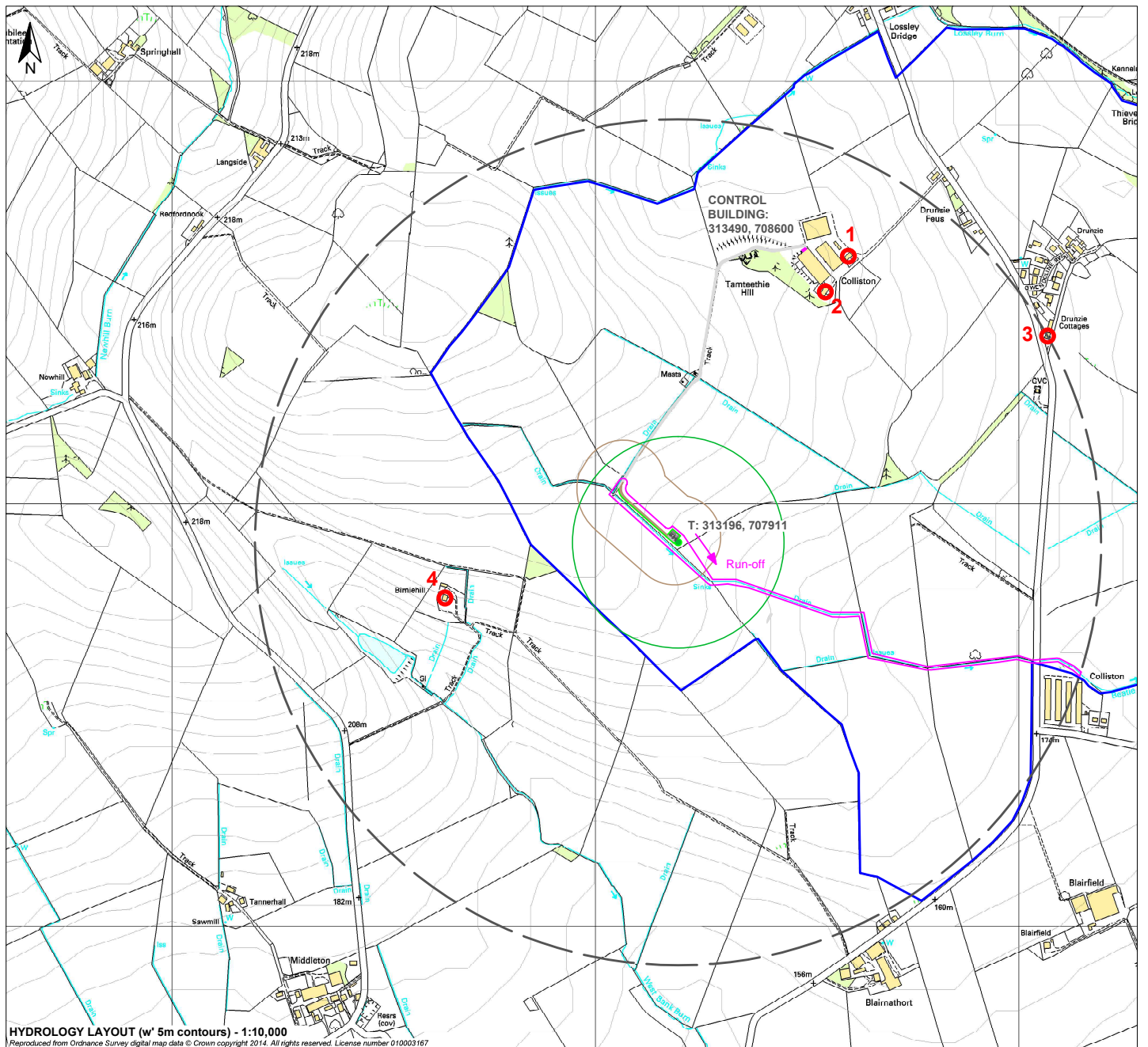
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It should be noted, that whilst every endeavour is made to meet the client's brief, no site investigation can guarantee absolute assessment or prediction of the natural environment. Numerous species are extremely mobile or only evident at certain times of year and habitats are subject to seasonal and temporal change.

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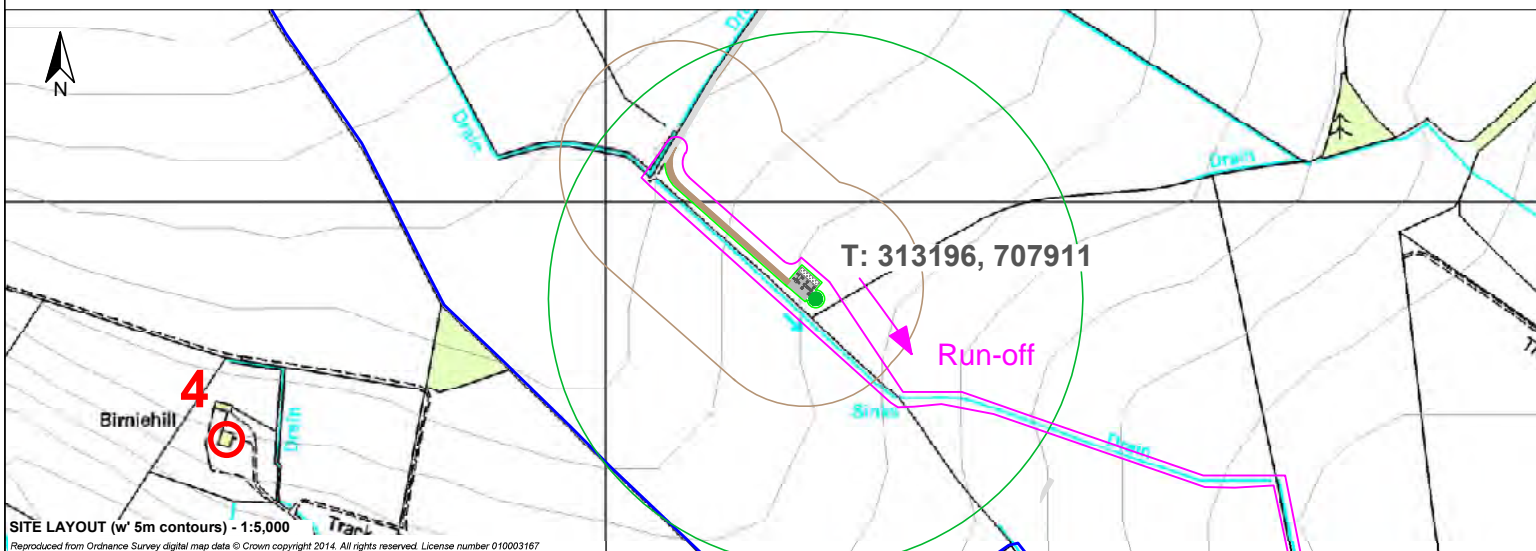
Document Prepared By
Dr Garry Mortimer
GLM Ecology

Appendix 3: Hydrology Context of Site



KEY

- SURFACE WATER DRAINAGE SYSTEM
- SURFACE WATER RISK AREA OF CATCHMENT
- LAND OWNERSHIP
- 1km STUDY BOUNDARY
- PROPERTY WITHIN 1km STUDY BOUNDARY
- 250m DEWATERING ZONE OF INFLUENCE
- 100m BOUNDARY AROUND ACCESS TRACK & CABLE TRENCH
- CONTROL BUILDING
- PROPOSED TURBINE / FOUNDATION
- HARDSTANDING
- NEW ACCESS TRACK
- UPGRADED ACCESS TRACK



PROJECT TITLE: COLLISTON FARM WIND TURBINE

JOB No.
C0387-266

DRAWING TITLE: HYDROLOGICAL CONTEXT OF SITE

DRAWING No.
FIGURE 10.1

SCALE: AS STATED

ORIGINAL DRAWING: A3

DATE	27.02.14	
DWN	CHK	APP
QA	FW	GD
REVISIONS		
DWN	CHK	APP

FINAL

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442

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Colliston Farm Wind Turbine Landscape Figures

to accompany

Colliston Farm Wind Turbine Environmental Statement

Chapter 5: Landscape and Visual Impact

for

D.A Baillie & Sons

produced by

Green Cat Renewables Ltd.



Colliston Farm Wind Turbine Landscape Figures

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Project Name: Colliston Farm Wind Turbine
Document Title: Study Area Map

Scale: 1:200,000 @ A3

Key:

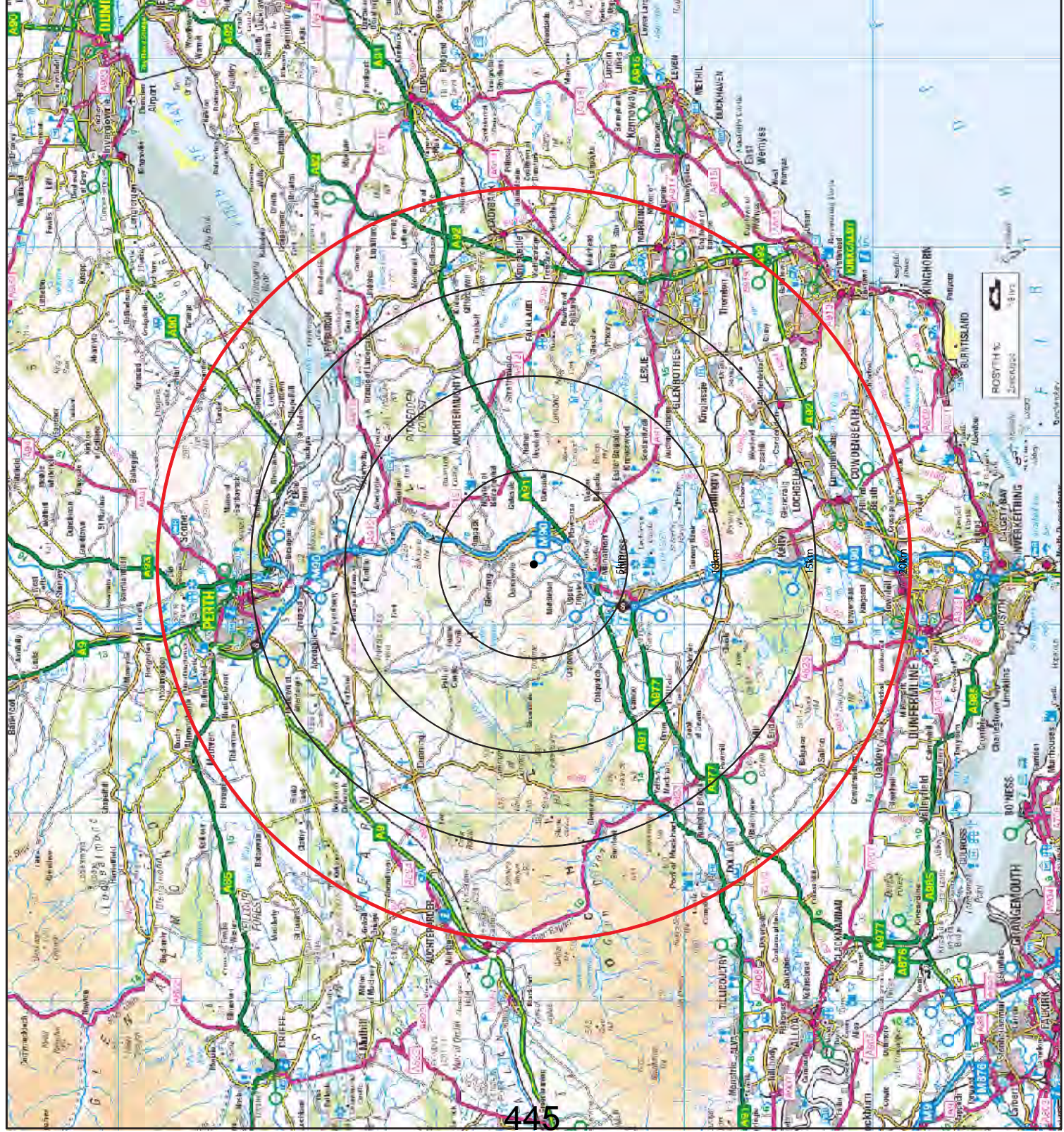
- Proposed Wind Turbine Location
- 5, 10 & 15km Radii from Wind Turbine
- 20km Landscape and Visual Study Area



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Drawing by: Green Cat Renewables Ltd

Document Number: C387-266/ Fig 5.1
Version: 1.0
Author: SS
Checked by: RC
Approved By: GM
Date: 04/03/2014
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Project Name: Colliston Farm Wind Turbine
Document Title: Site and Viewpoint Location Map

Scale: 1:200,000 @ A3

Key:

- Proposed Wind Turbine Location
- 5, 10 & 15km Radii from Wind Turbine
- 20km Landscape and Visual Study Area

Viewpoint Locator & Identifier

Viewpoint Name:

- 1 - Close in from the South
- 2 - Close in from the North-East
- 3 - Minor Road, Newhill to Path of Condie
- 4 - M90
- 5 - Burleigh Castle
- 6 - B919
- 7 - Kinross Services
- 8 - Bonnet Stane
- 9 - Loch Leven Cottages
- 10 - Kinnoull Hill
- 11 - Knock Hill
- 12 - M90 Overbridge at Glenfarg

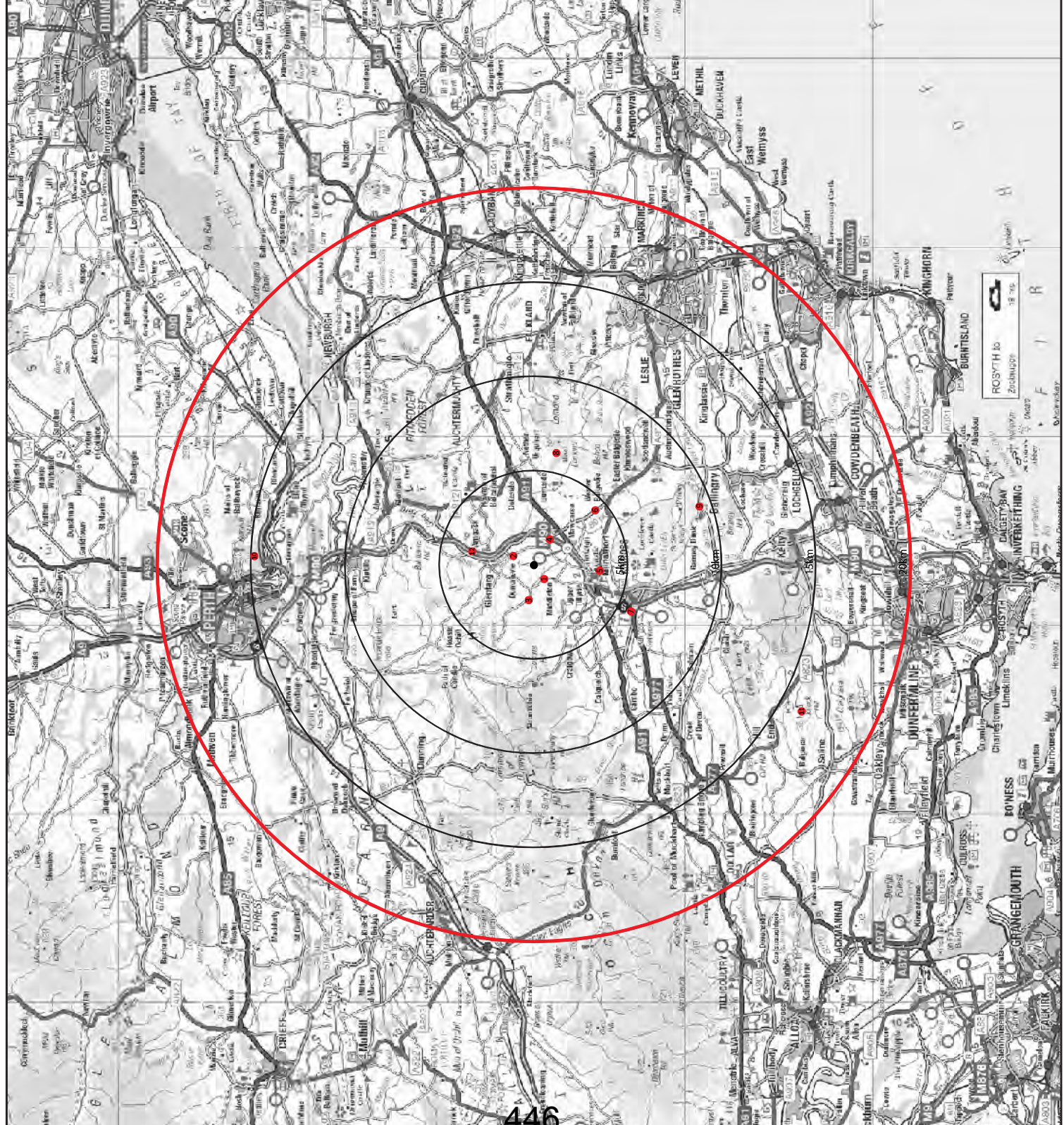


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Client: D.A Baillie & Sons
Drawing by: Green Cat Renewables Ltd

Document Number: C387-266/ Fig 5.2
Version: 1.0
Author: SS
Checked by: RC
Approved By: GM
Date: 04/03/2014

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Project Name: Colliston Farm Wind Turbine
Document Title: Landscape Character Types
Scale: 1:200,000 @ A3

Key:

- Proposed Wind Turbine Location
- 5, 10 & 15km Radii from Wind Turbine
- 20km Landscape and Visual Study Area
- Landscape Character Boundary

Landscape Character Types:

Tavish Landscape Assessment

- 1 Firth Lowlands
- 2 Broad Valley Lowlands
- 3 Dolerite Hills
- 4 Igneous Hills
- 5 Lowland Hills
- 6 Lowland Basin
- 7 Lowland River Corridors

Fife Landscape Assessment

- 1 Coastal Hills
- 2 Coastal Terraces
- 3 Coastal Flats
- 4 Lowland Hills and Valleys
- 5 Lowland Glacial Melwater Valleys
- 6 Upland Slopes
- 7 Upland Foothills
- 8 Pronounced Volcanic Hill and Craigs
- 9 The Uplands
- 10 Lollards River Basins
- 11 Lowland Loch Basins

Clackmannanshire Landscape Assessment

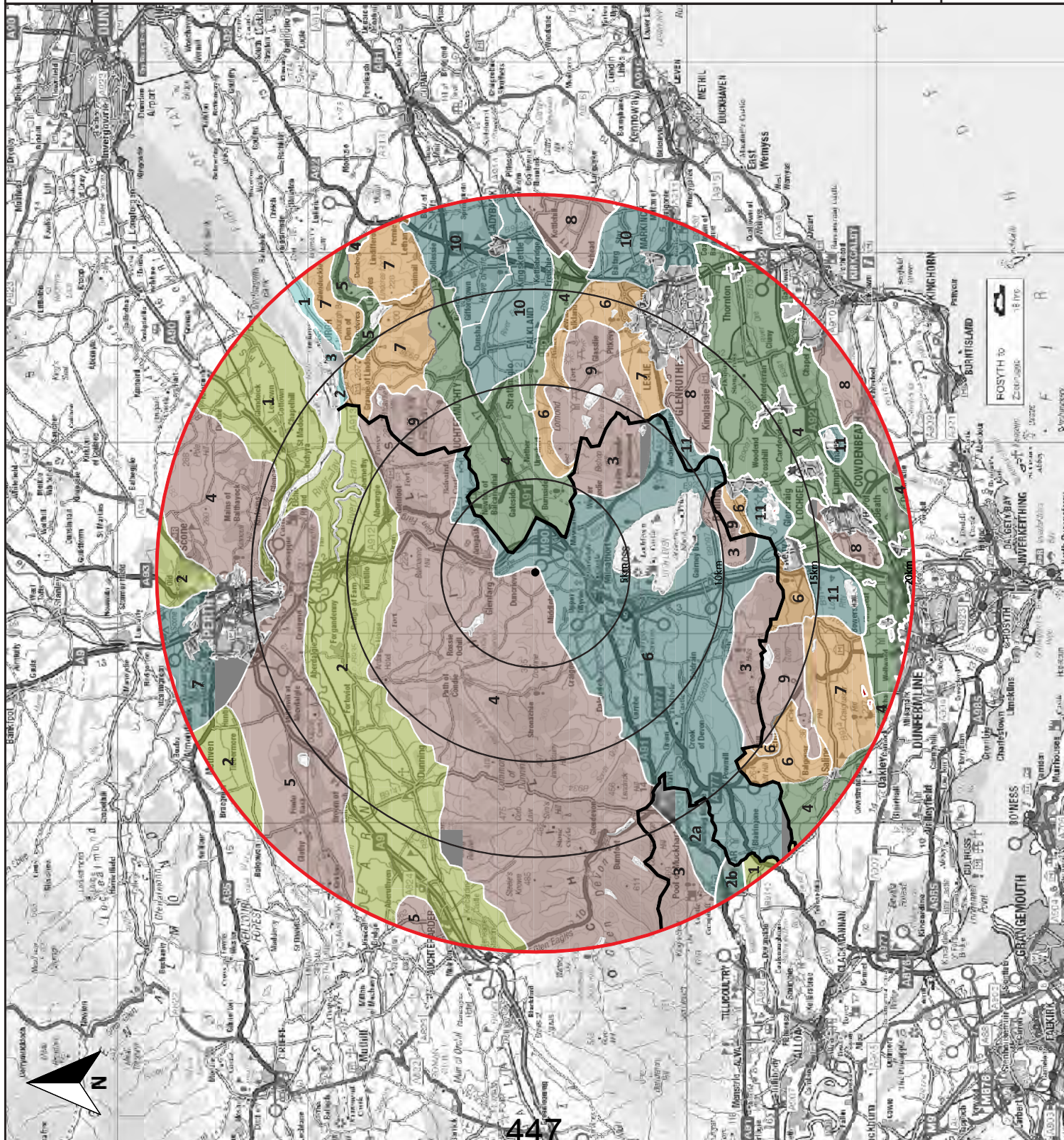
- 1 Devon/Forth
- 2a Middle Devon Water
- 2b Lower Devon Canslands
- 2 Ochil Hills

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Version: 1.0
Author: SS
Checked by: RC
Approved By: GM
Date: 04/03/2014

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Project Name: Colliston Farm Wind Turbine
Document Title: Landscape Designation Map

Scale: 1:200,000 @ A3

Key:

- Proposed Wind Turbine Location
- 5, 10 & 15km Radii from Wind Turbine
- 20km Landscape and Visual Study Area
- Local Authority Boundary

Special Landscape Areas

Areas of Great Landscape Value

Regional Parks

Gardens and Designated Landscapes

- 1 - Kinross House
- 2 - Blair Adam
- 3 - Clais Castle
- 4 - Castle Campbell
- 5 - Invermay
- 6 - Dupplin Castle
- 7 - Methven Castle
- 8 - Scone Palace
- 9 - Balmanno
- 10 - Kinfauns Castle
- 11 - Inchyra
- 12 - Glendoick
- 13 - Megginch Castle
- 14 - Errol Park
- 15 - Melville House
- 16 - House of Falkland
- 17 - Falkland Palace
- 18 - Balbirnie
- 19 - Leslie House
- 20 - Raith Park & Beveridge Park



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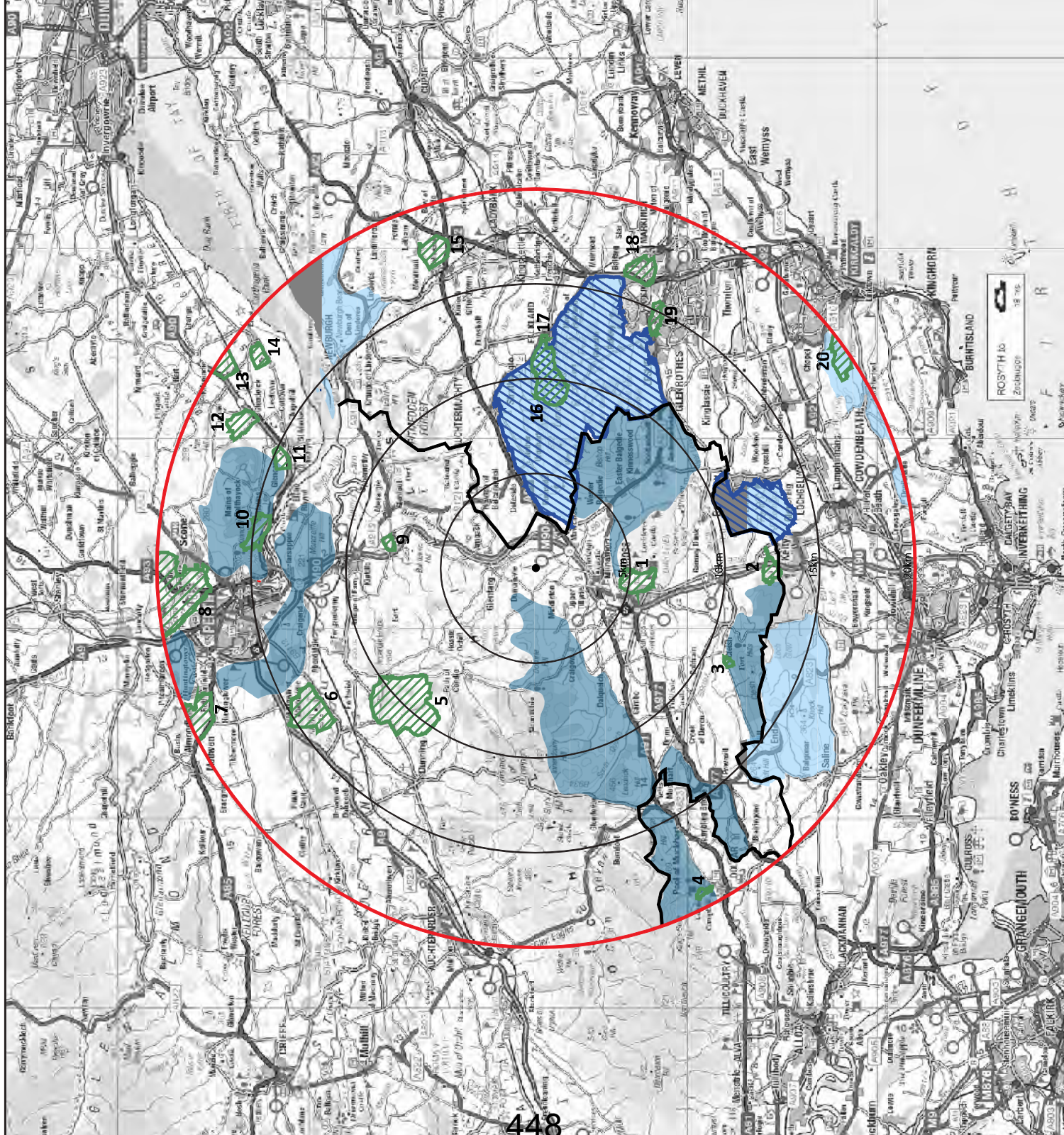
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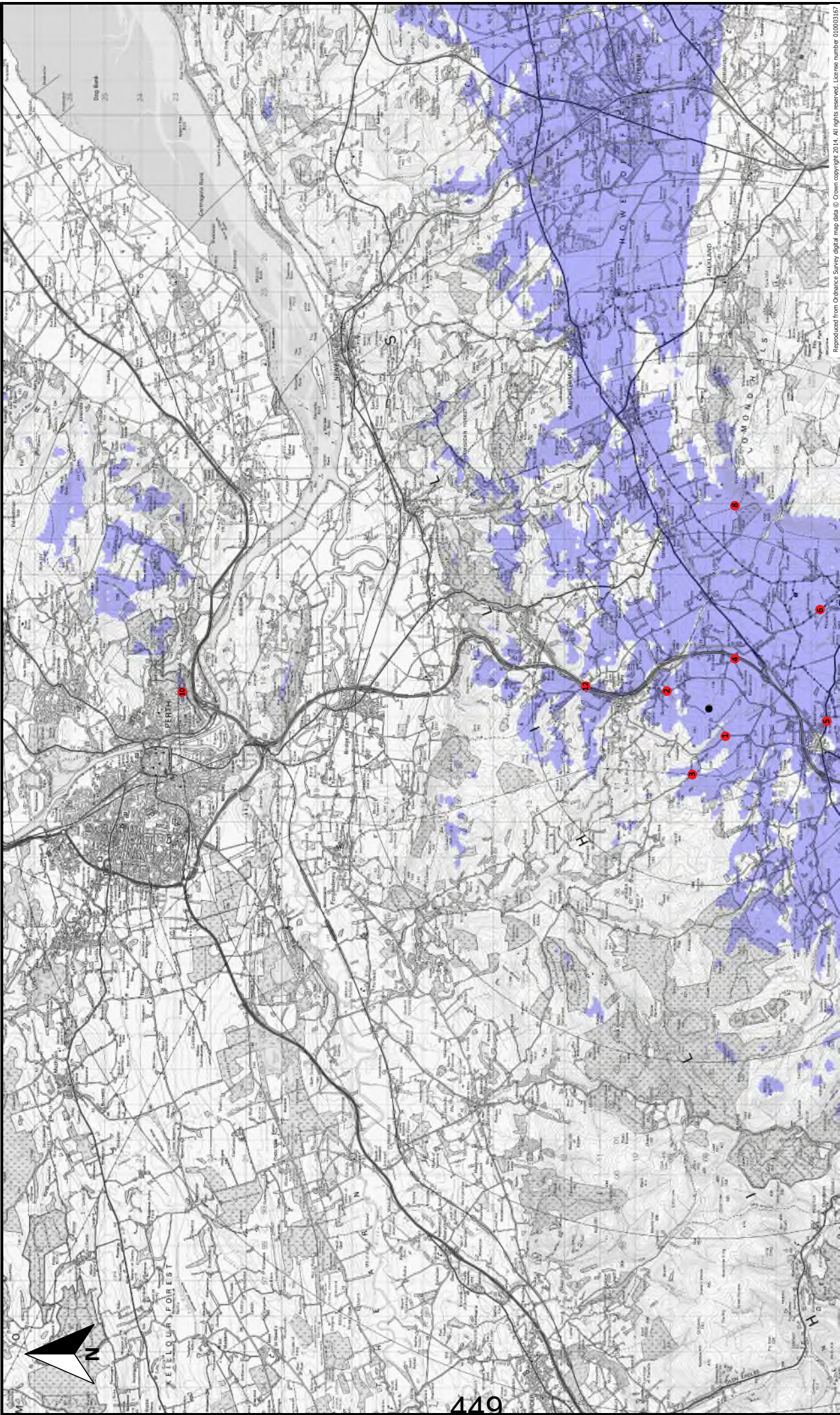
Drawing by: Green Cat Renewables Ltd

Document Number: C387-266/ Fig 5.4

Version: 1.0
Author: SS
Checked by: RC
Approved By: GM
Date: 04/03/2014

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Project Name: Colliston Farm Wind Turbine

Document Title: Detailed ZTV to 45.5m Tip Height - North Zone

Scale: 1:100,000 @ A3

Key:

- Proposed Wind Turbine Location
- Zone of Theoretical Visibility
- 5, 10, 15 & 20km Radii from Turbine

Viewpoint Locator & Identifier

Viewpoint Name:	Identifier
1 - Close in from the South	1
2 - Close in from the North East	2
3 - Major Road, Newhill to Path of Condie	3
4 - M90	4
5 - Burleigh Castle	5
6 - B919	6
7 - Kinross Services	7
8 - Bonnet Stone	8
9 - Loch of Gortages	9
10 - Kinross Hill	10
11 - Knecht Hill	11
12 - M90 Overbridge at Glenfarg	12

Document Number: C387-266/ Fig 5.5a

Version: 1.0

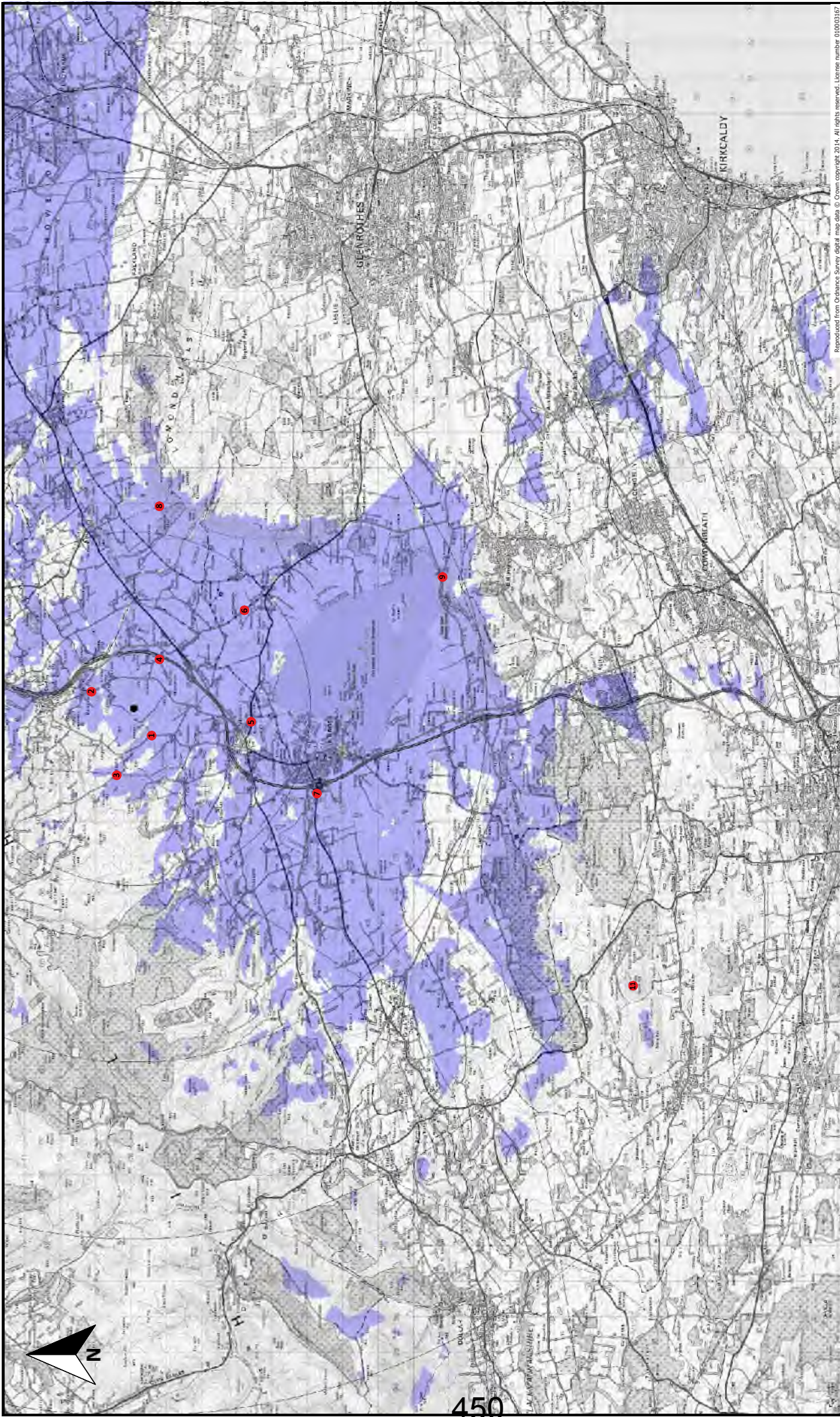
Author: SS

Checked By: RM

Approved By: GM

Date: 04/03/2014

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Project Name: Colliston Farm Wind Turbine

Document Title: Detailed ZTV to 45.5m Tip Height - South Zone

Scale: 1:100,000 @ A3

Key:

- Proposed Wind Turbine Location
- Zone of Theoretical Visibility
- 5, 10, 15 & 20km Radii from Turbine

Viewpoint Locator & Identifier

Viewpoint Name:

- 1 - Close in from the South
- 2 - Close in from the North East
- 3 - Major Road, Newhill to Path of Condle
- 4 - M90
- 5 - Burleigh Castle
- 6 - B919
- 7 - Kinross Services
- 8 - Bonnet Stone
- 9 - Loch of Gort Gortages
- 10 - Kinross Hill
- 11 - Knock Hill
- 12 - M90 Overbridge at Glenfarg

Document Number: C387-266/Fig 5.5b

Version: 1.0

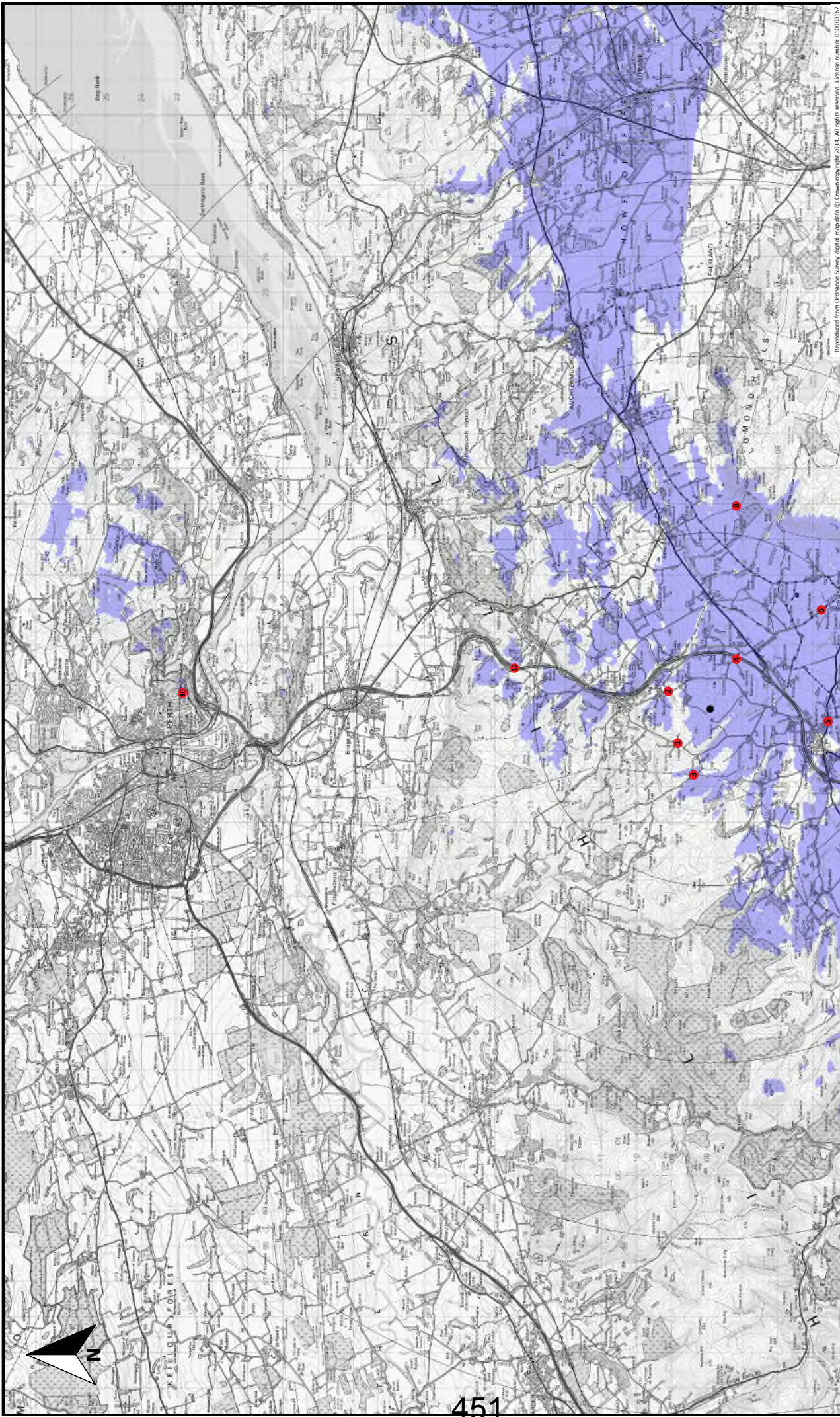
Author: SS

Checked by: RM

Approved By: GM

Date: 04/03/2014

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Project Name: Colliston Farm Wind Turbine

Document Title: Detailed ZTV to 32m Hub Height - North Zone

Scale: 1:100,000 @ A3

Key:

- Proposed Wind Turbine Location
- Zone of Theoretical Visibility
- 5, 10, 15 & 20km Radii from Turbine

Viewpoint Locator & Identifier

Viewpoint Name:	Identifier
1 - Close in from the South	1
2 - Close in from the North East	2
3 - Major Road, Newhill to Path of Condie	3
4 - M90	4
5 - Burleigh Castle	5
6 - B919	6
7 - Kinross Services	7
8 - Bonnet Stone	8
9 - Loch of Gortages	9
10 - Kinross Hill	10
11 - Knock Hill	11
12 - M90 Overbridge at Glenfarg	12

Document Number: C387-266/Fig 5.5c

Version: 1.0

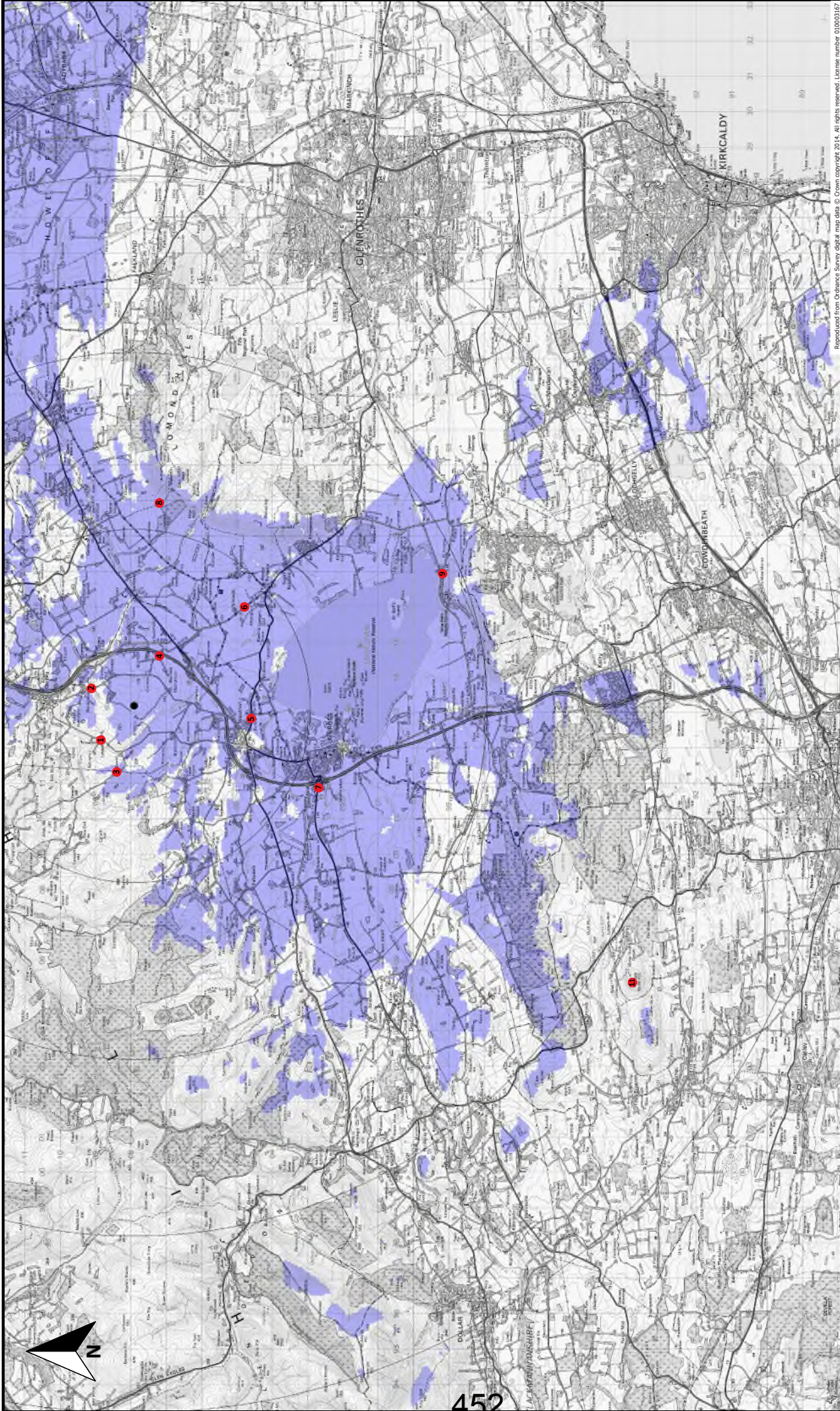
Author: SS

Checked By: RM

Approved By: GM

Date: 04/03/2014

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Project Name: Colliston Farm Wind Turbine

Document Title: Detailed ZTV to 32m Hub Height - South Zone

Scale: 1:100,000 @ A3

Key:

- Proposed Wind Turbine Location
- Zone of Theoretical Visibility
- 5, 10, 15 & 20km Radii from Turbine

Viewpoint Locator & Identifier

Viewpoint Name:

- 1 - Close in from the South
- 2 - Close in from the North East
- 3 - Major Road, Newhill to Path of Condle
- 4 - M90
- 5 - Burleigh Castle
- 6 - B919
- 7 - Kinross Services
- 8 - Bonnet Stone
- 9 - Localised Cottages
- 10 - Kinross Hill
- 11 - Knock Hill
- 12 - M90 Overbridge at Glenfarg

Document Number: C387-266/FIG 5.5d

Version: 1.0

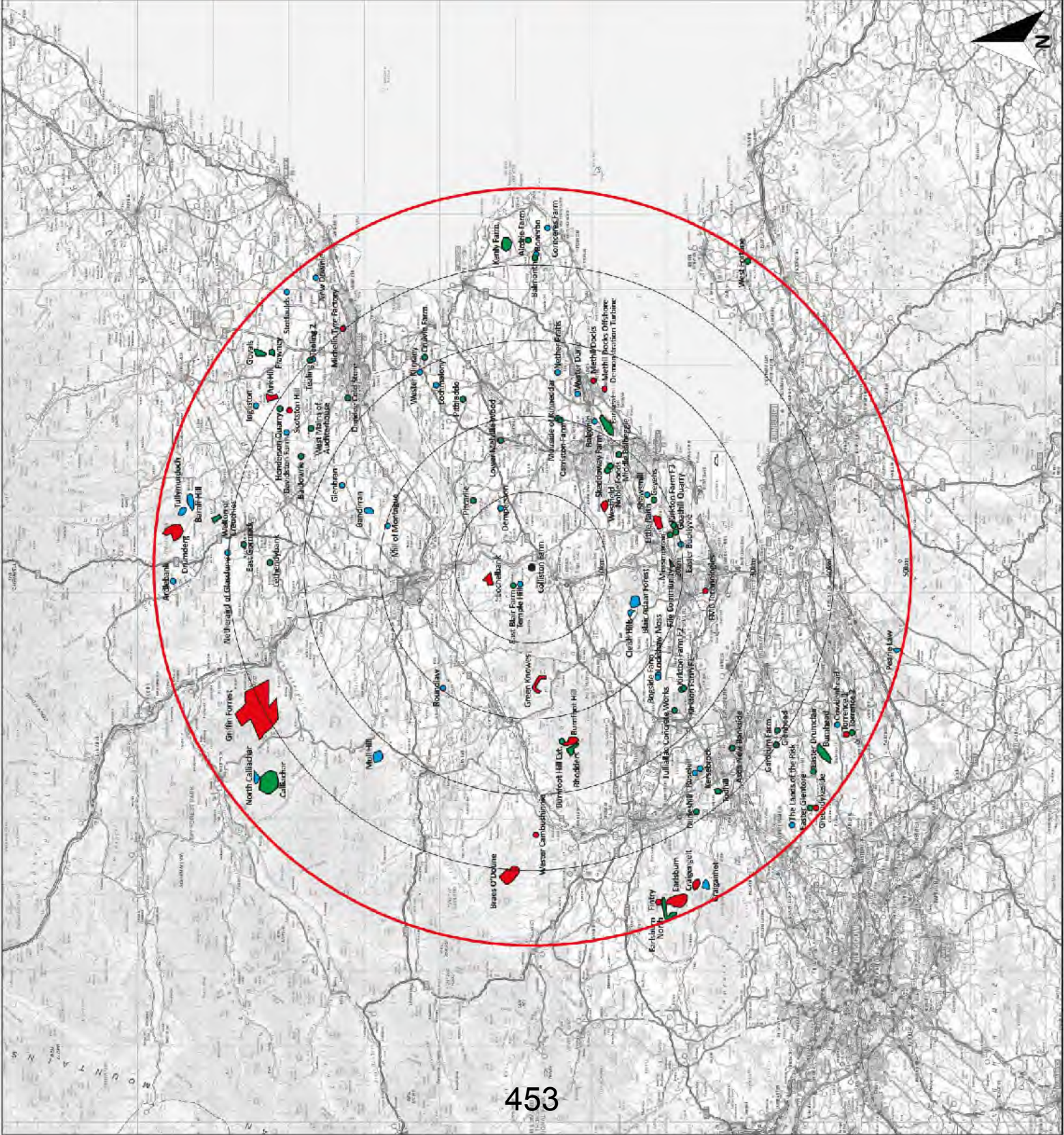
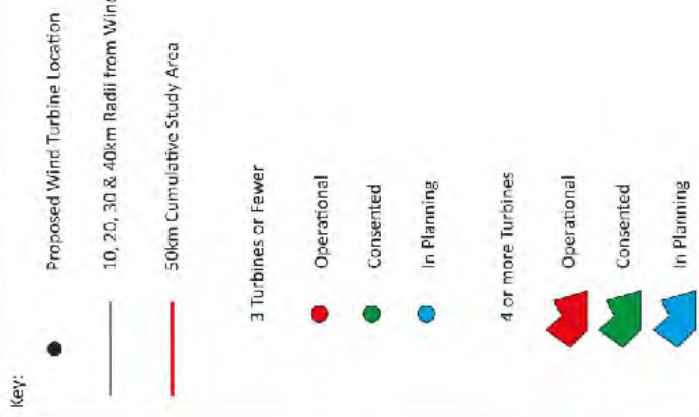
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Checked by: RM

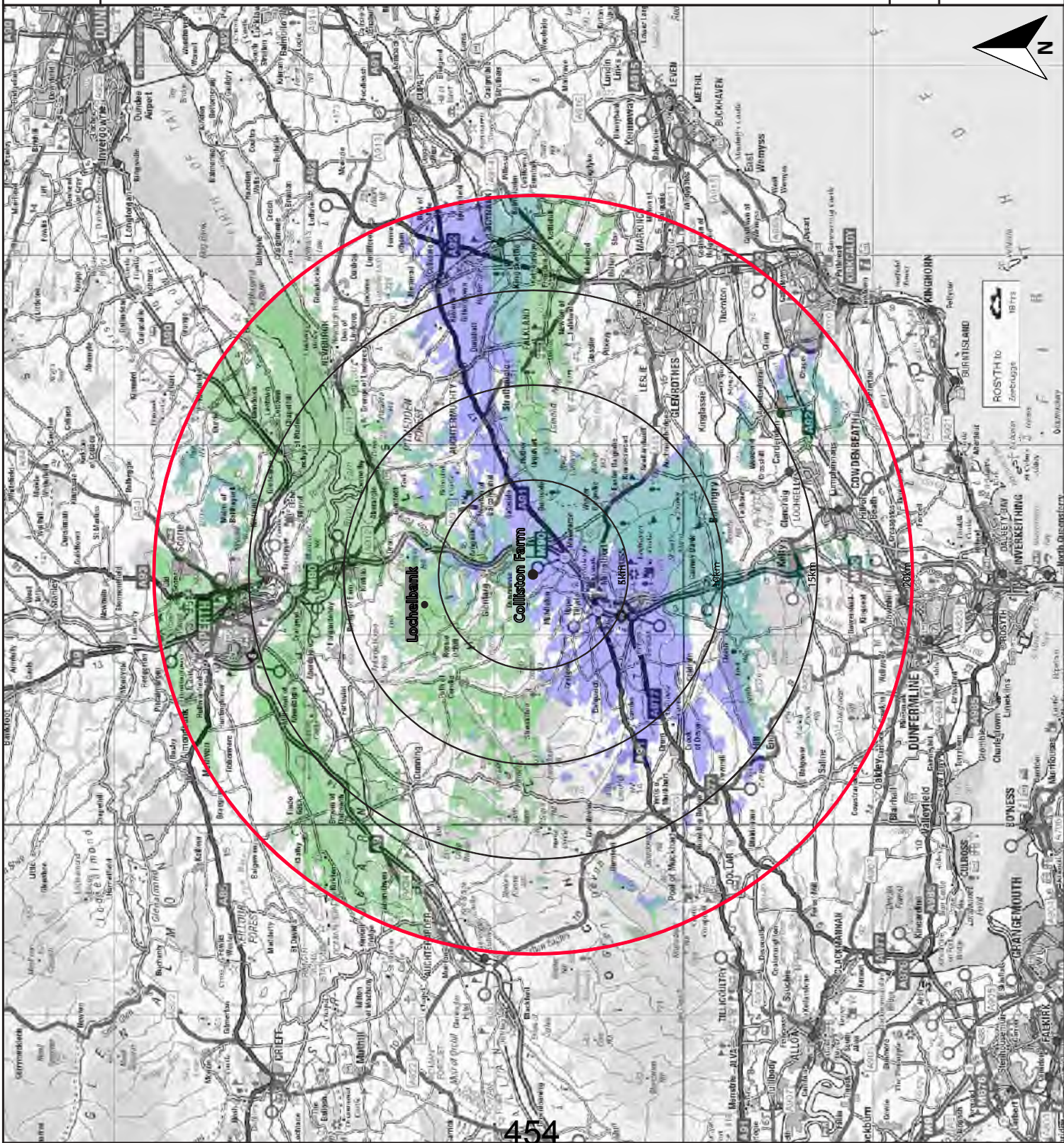
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Date: 04/03/2014

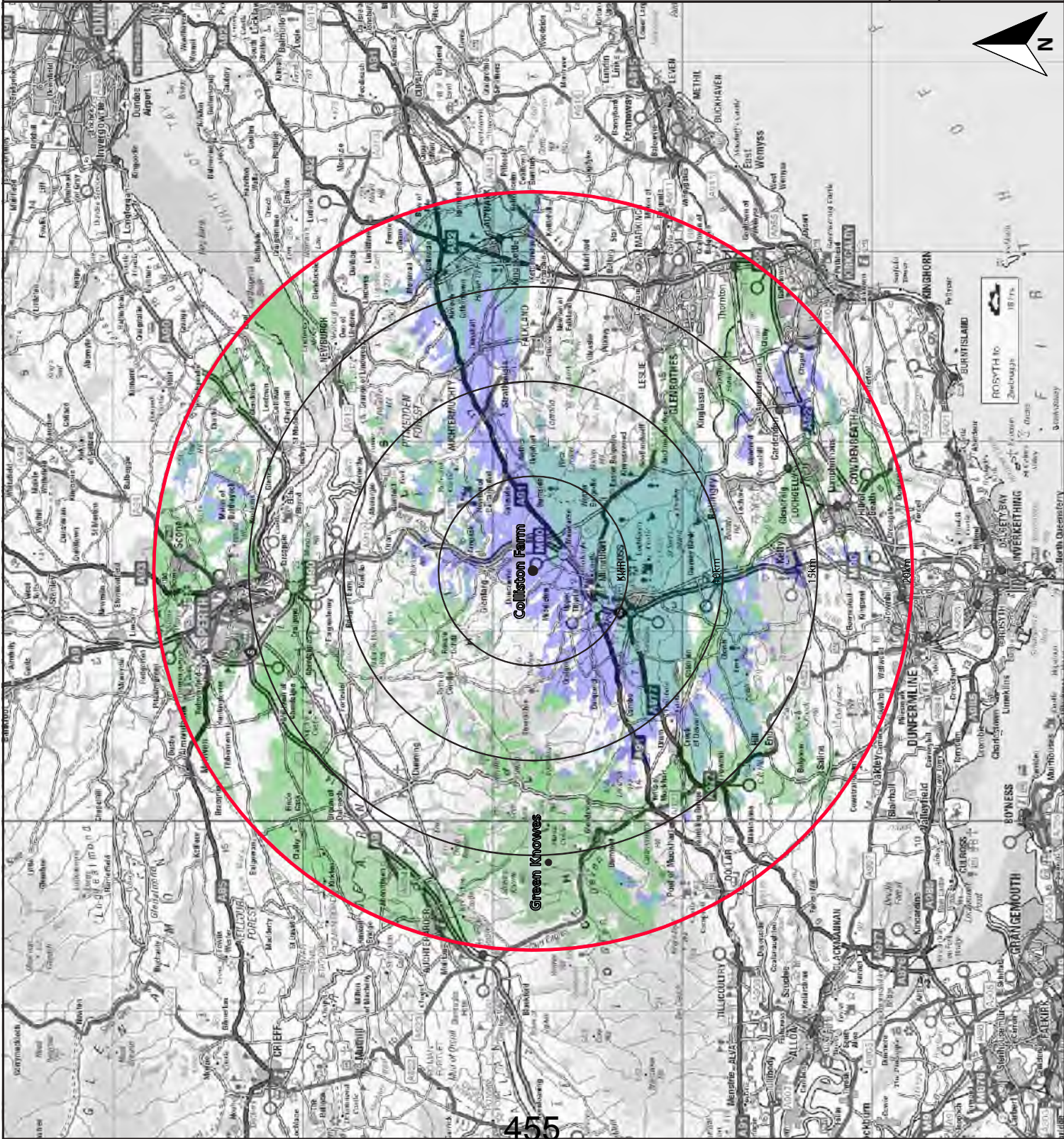
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Project Name:	Colliston Farm Wind Turbine
Document Title:	Cumulative ZTV to Tip Height for 20km Radii - Lochelbank (Operational)
Scale:	1:200,000 @ A3
Key:	<div> <div>●</div> Proposed Wind Turbine Location </div> <div> <div>●</div> Other Project Location </div> <div> <div>—</div> 5, 10 & 15km Radii from Wind Turbine </div> <div> <div>—</div> 20km Landscape and Visual Study Area </div> <div> <div>■</div> Colliston Farm Visible </div> <div> <div>■</div> Lochelbank Visible </div> <div> <div>■</div> Colliston Farm & Lochelbank Visible </div>
Client:	D.A. Baillie & Sons
Drawing by:	Green Cat Renewables Ltd
Document Number:	C387-266/ Fig. 5.7a
Version:	1.0
Author:	SS
Checked by:	RC
Approved By:	GM
Date:	04/03/2014
	



Project Name:	Colliston Farm Wind Turbine
Document Title:	Cumulative ZTV to Tip Height for 20km Radii - Green Knowes (Operational)
Scale:	1:200,000 @ A3
Key:	<div> <div>●</div>Proposed Wind Turbine Location </div> <div> <div>●</div>Other Project Location </div> <div> <div>—</div>5, 10 & 15km Radii from Wind Turbine </div> <div> <div>—</div>20km Landscape and Visual Study Area </div> <div> <div>■</div>Colliston Farm Visible </div> <div> <div>■</div>Green Knowes Visible </div> <div> <div>■</div>Colliston Farm & Green Knowes Visible </div>
Client:	D.A. Baillie & Sons
Drawing by:	Green Cat Renewables Ltd
Document Number:	C387-266/Fig. 5.7b
Version:	1.0
Author:	SS
Checked by:	GM
Approved By:	RC
Date:	04/03/2014
	



Project Name: Colliston Farm Wind Turbine
Document Title: Cumulative ZTV to Tip Height for 20km Radii - East Blair Farm (Consented)
Scale: 1:200,000 @ A3

Key:

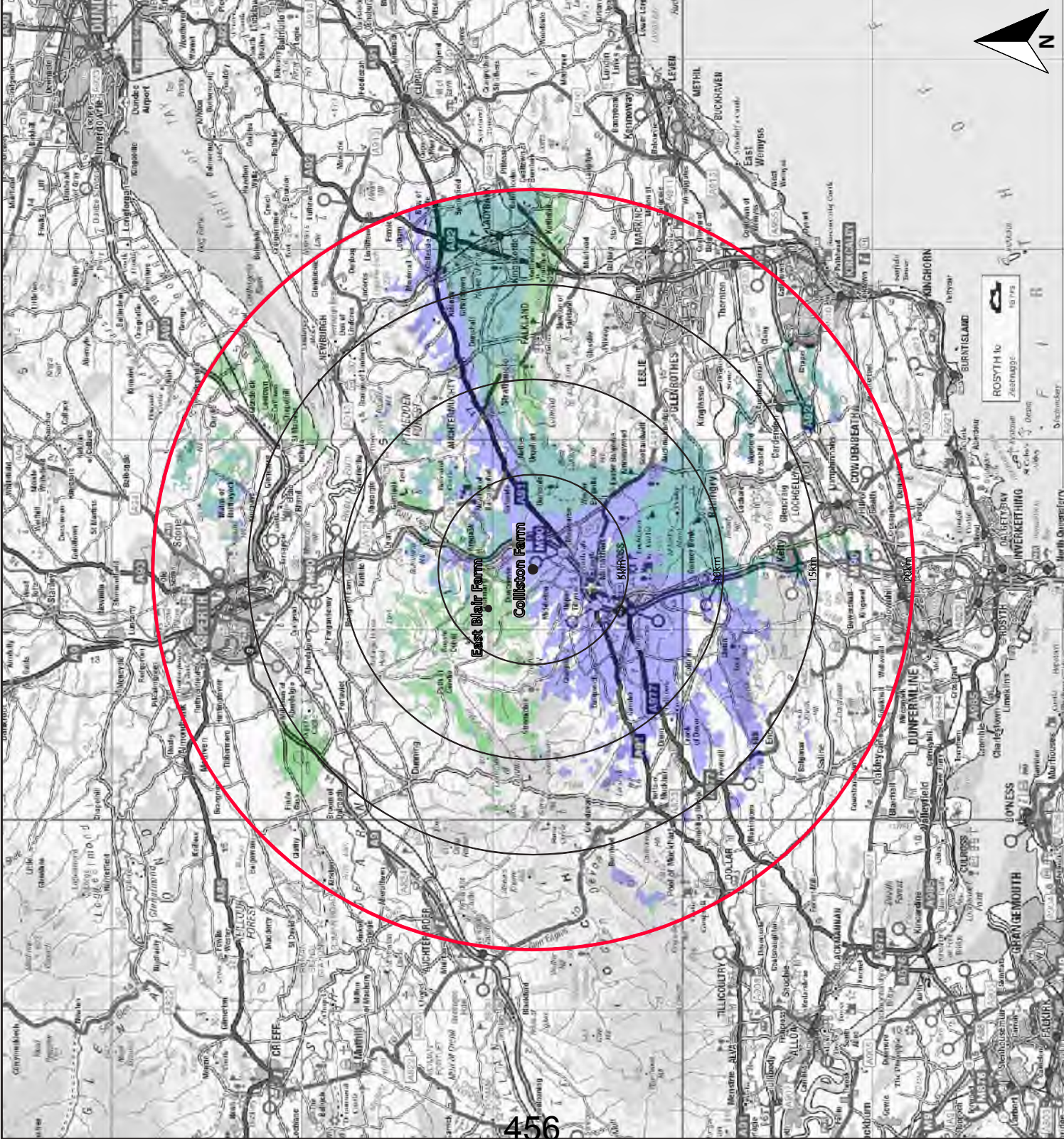
- Proposed Wind Turbine Location
- Other Project Location
- 5, 10 & 15km Radii from Wind Turbine
- 20km Landscape and Visual Study Area

Colliston Farm Visible
East Blair Farm Visible
Colliston Farm & East Blair Farm Visible

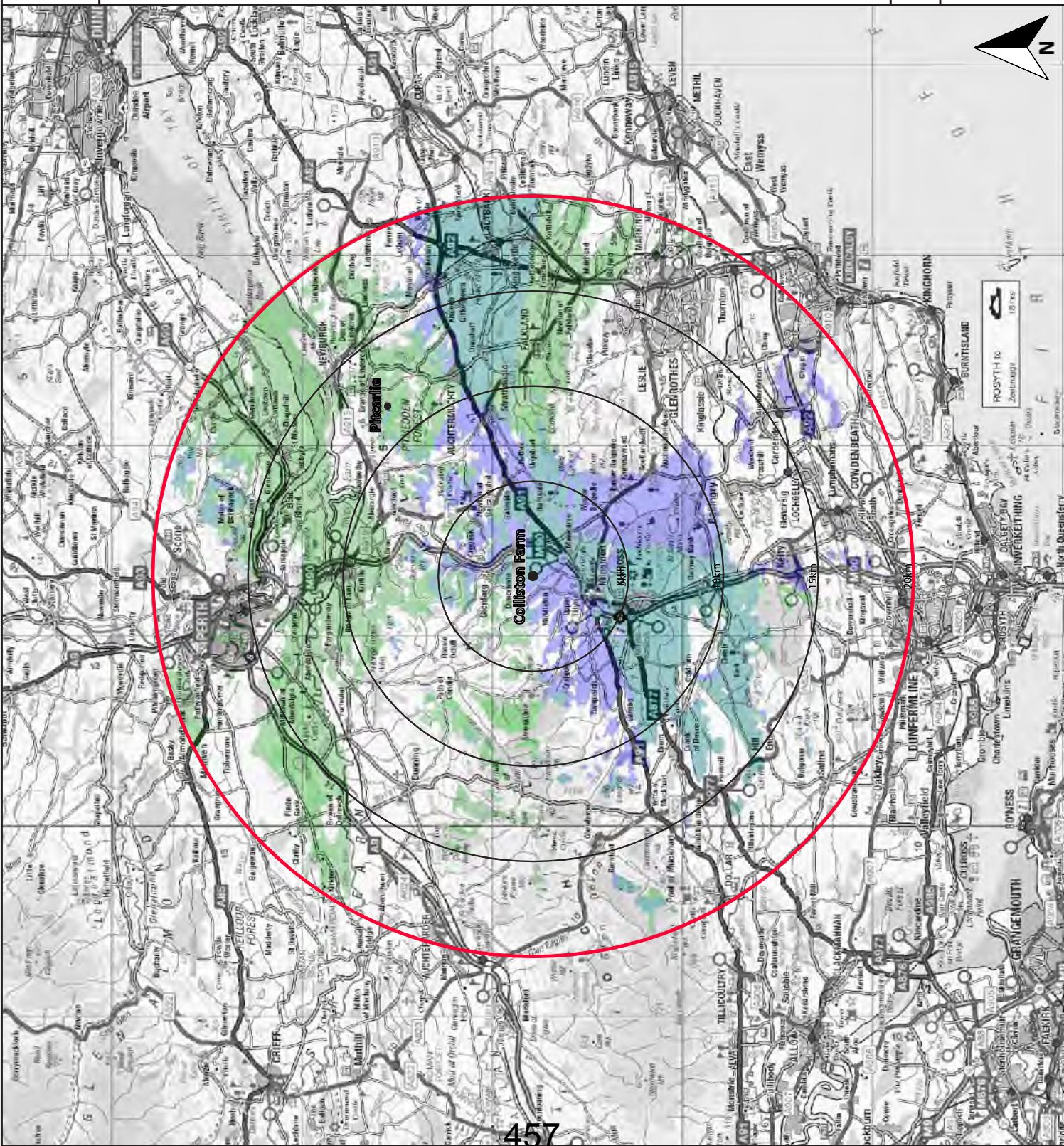
Client: D.A. Baillie & Sons
Drawing by: Green Cat Renewables Ltd

Document Number: C387-266/ Fig. 5.8a
Version: 1.0
Author: SS
Checked by: RC
Approved By: GM
Date: 04/03/2014

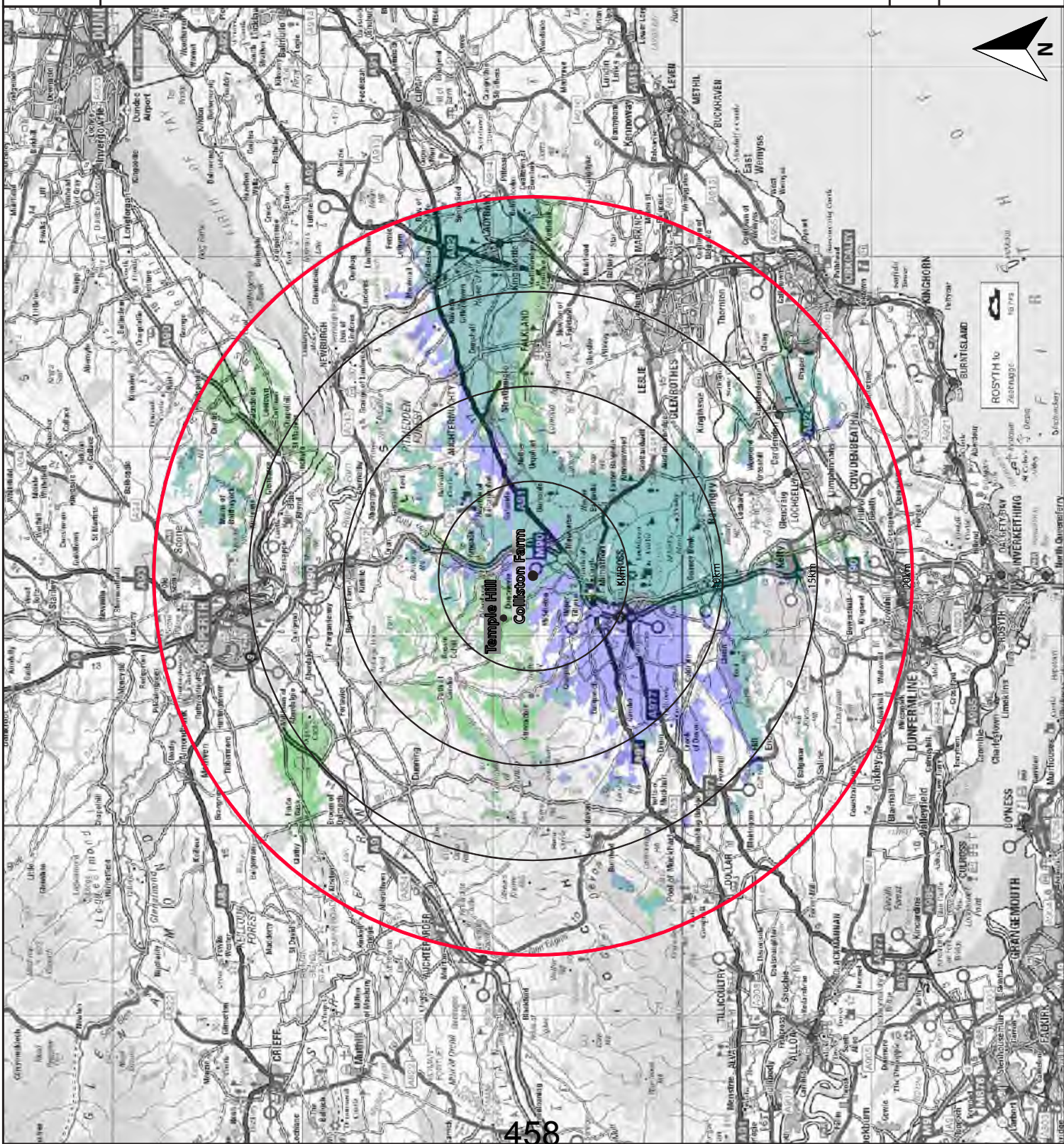
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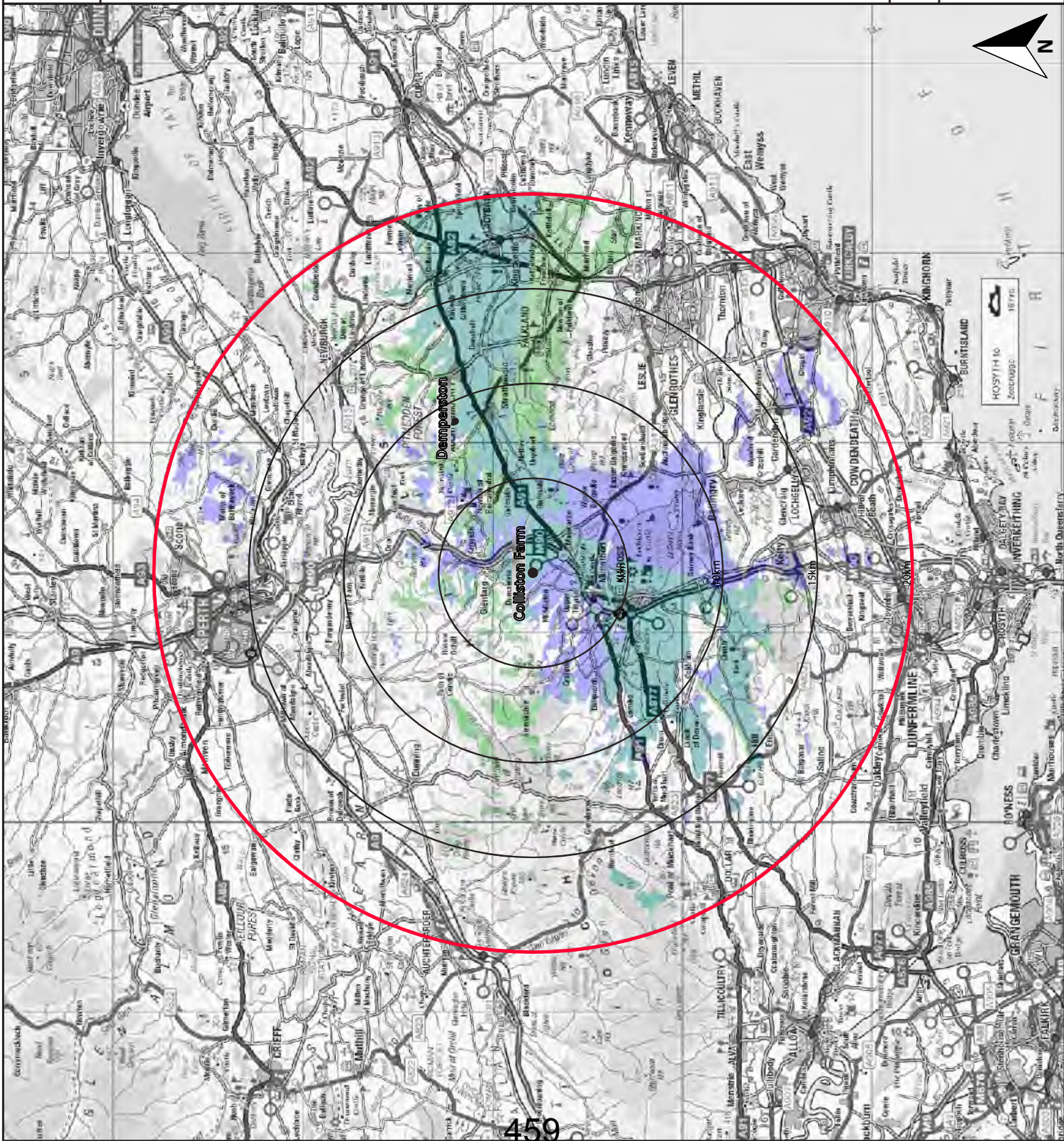
Project Name:	Colliston Farm Wind Turbine
Document Title:	Cumulative ZTV to Tip Height for 20km Radii - Pitcarlie (Consented)
Scale:	1:200,000 @ A3
Key:	<div> <div>●</div> Proposed Wind Turbine Location </div> <div> <div>●</div> Other Project Location </div> <div> <div>—</div> 5, 10 & 15km Radii from Wind Turbine </div> <div> <div>—</div> 20km Landscape and Visual Study Area </div> <div> <div>■</div> Colliston Farm Visible </div> <div> <div>■</div> Pitcarlie Visible </div> <div> <div>■</div> Colliston Farm & Pitcarlie Visible </div>
Client:	D.A. Baillie & Sons
Drawing by:	Green Cat Renewables Ltd
Document Number:	C387-266/ Fig. 5.8b
Version:	1.0
Author:	SS
Checked by:	RC
Approved By:	GM
Date:	04/03/2014
	



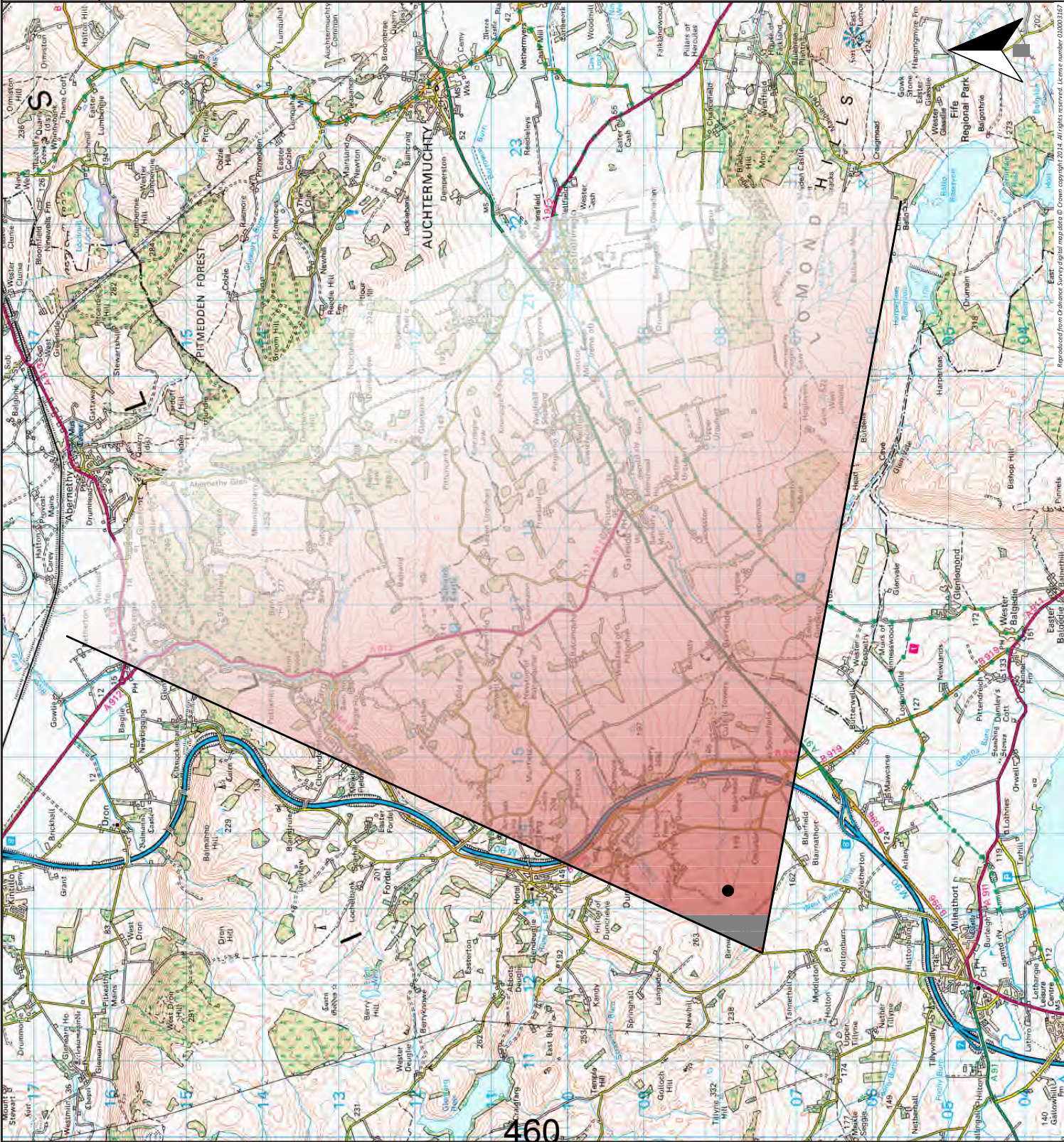
Project Name:	Colliston Farm Wind Turbine
Document Title:	Cumulative ZTV to Tip Height for 20km Radii - Temple Hill (Planning)
Scale:	1:200,000 @ A3
Key:	<div> <div>●</div> <div>●</div> <div>—</div> <div>—</div> <div>■</div> <div>■</div> <div>■</div> </div> <div> <div>Proposed Wind Turbine Location</div> <div>Other Project Location</div> <div>5, 10 & 15km Radii from Wind Turbine</div> <div>20km Landscape and Visual Study Area</div> <div>Colliston Farm Visible</div> <div>Temple Hill Visible</div> <div>Colliston Farm & Temple Hill Visible</div> </div>
Client:	D.A. Baillie & Sons
Drawing by:	Green Cat Renewables Ltd
Document Number:	C387-266/ Fig. 5.9a
Version:	1.0
Author:	SS
Checked by:	RC
Approved By:	GM
Date:	04/03/2014
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Project Name:	Colliston Farm Wind Turbine
Document Title:	Cumulative ZTV to Tip Height for 20km Radii - Demperston (Planning)
Scale:	1:200,000 @ A3
Key:	<div> <div>●</div> <div>●</div> <div>—</div> <div>—</div> <div>■</div> <div>■</div> <div>■</div> </div> <div> <div>Proposed Wind Turbine Location</div> <div>Other Project Location</div> <div>5, 10 & 15km Radii from Wind Turbine</div> <div>20km Landscape and Visual Study Area</div> <div>Colliston Farm Visible</div> <div>Demperston Visible</div> <div>Colliston Farm & Demperston Visible</div> </div>
Client:	D.A. Baillie & Sons
Drawing by:	Green Cat Renewables Ltd
Document Number:	C387-266/ Fig. 5.9b
Version:	1.0
Author:	SS
Checked by:	RC
Approved By:	GM
Date:	04/03/2014
	

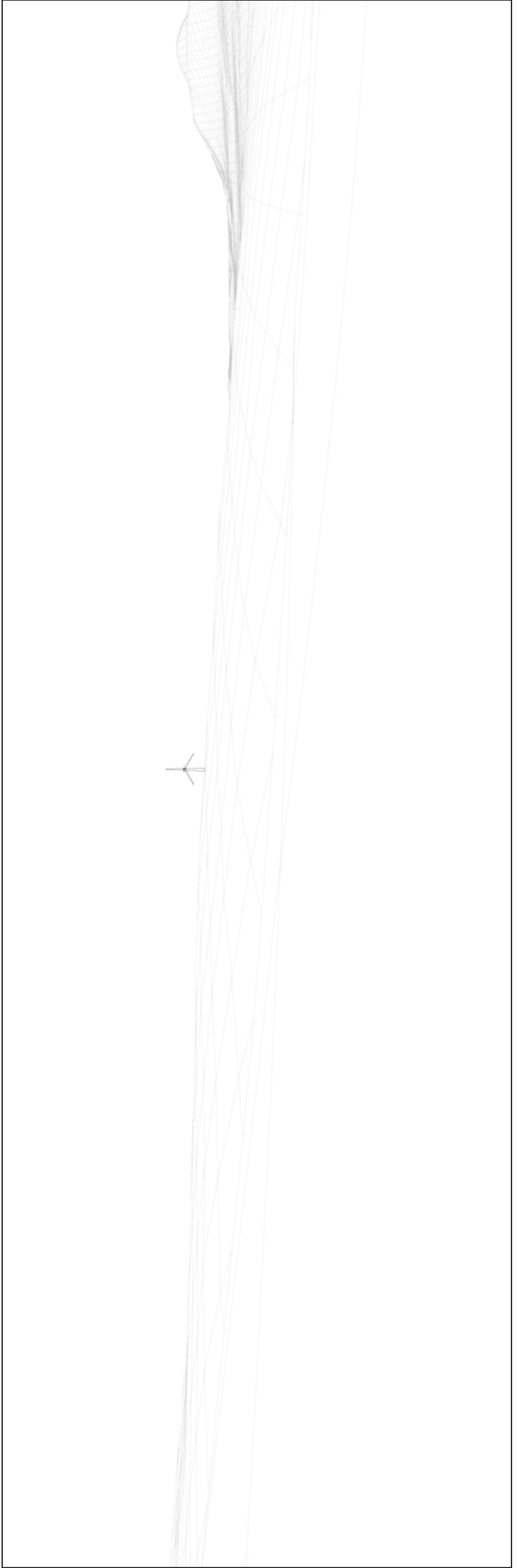


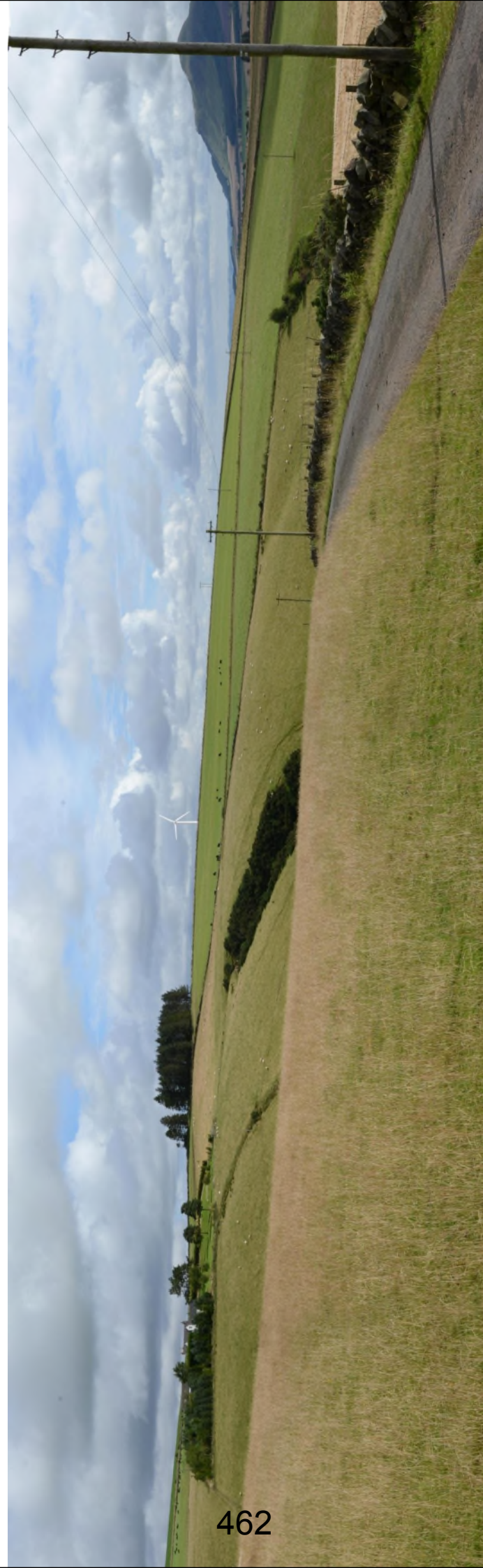
Project Name: Colliston Farm Wind Turbine			<p><u>Viewpoint Information</u></p> <p>Viewpoint Location: E312426 N707434</p> <p>Viewpoint Elevation: 203m (A.O.D)</p> <p>View Direction: 60°</p> <p>Distance to Turbine: 905m</p> <p>Visibility: Hub</p> <p>Camera Type: Nikon D3100</p> <p>Focal Length: 35mm</p> <p>Effective Focal Length: 54.6mm</p> <p>Date Taken: 23/08/2012</p> <p>Time Taken: 11:17</p> <p>Height above elevation: 1.5m</p>	<p><u>Visual Impact</u></p> <p>Sensitivity: High</p> <p>Magnitude: Medium</p> <p>Overall: Major/Moderate</p>	<p><i>Please note for a 76° field of view, a viewing distance of 300mm is recommended.</i></p>
Document Title: VP01 - Close in from the South					
Key:		Proposed Turbine Location			
		<p>Client: D.A Baillie & Sons</p> <p>Drawing by: Green Cat Renewables Ltd</p>			
Document Number: C387-266/ Fig 5.10					
Version: 1.0		Author: SS			
Checked by: RC		GM			
Approved By: 04/03/2014		©Green Cat Renewables Ltd			
Date:					





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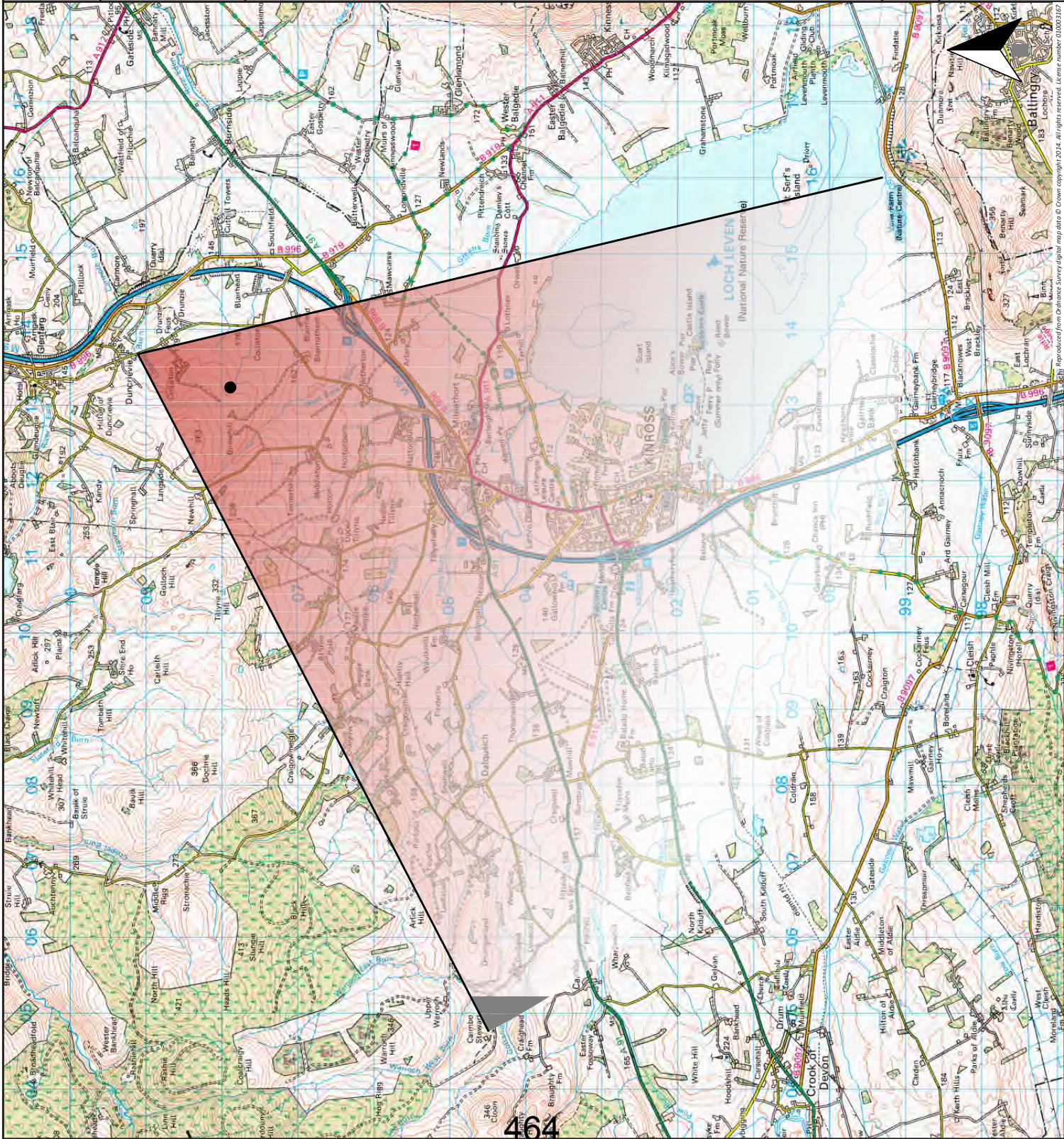


VP01 CLOSE IN FROM THE SOUTH - 70MM PHOTOMONTAGE OF PROPOSAL



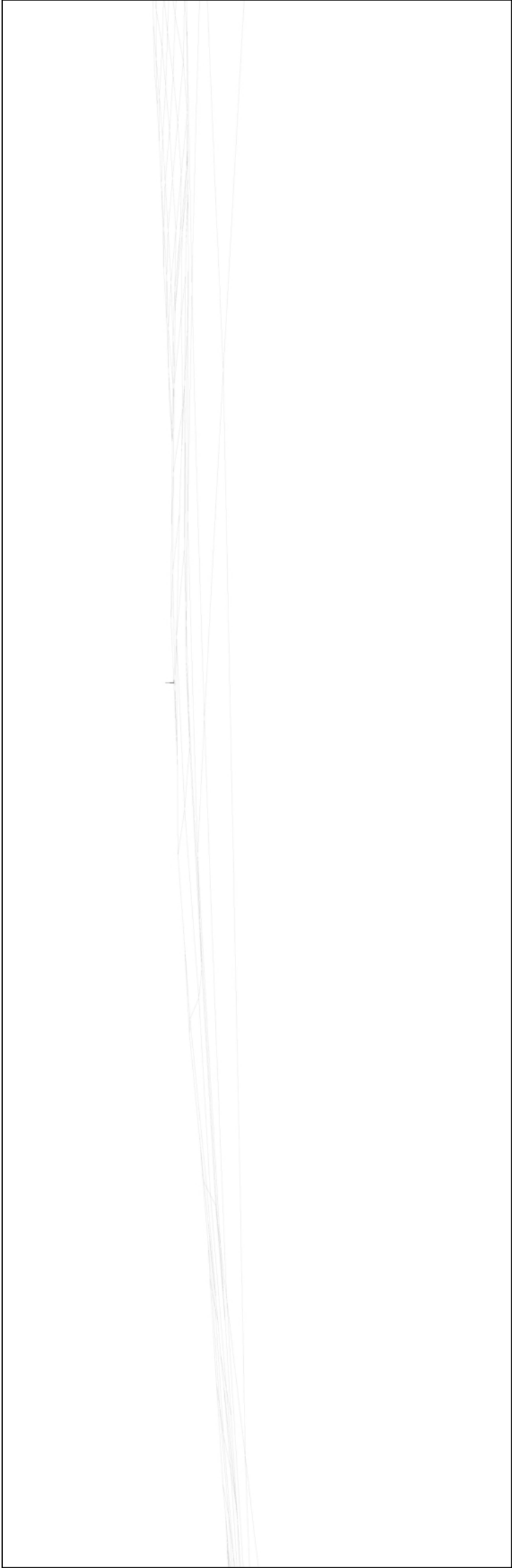
26° VIEWING ANGLE
500MM VIEWING DISTANCE

Project Name: Colliston Farm Wind Turbine	Document Title: VP02 - Close in from the North-East
Scale: 1:50,000 @ A3	
Key: <ul style="list-style-type: none"> Proposed Turbine Location 76° Field of View 	
Viewpoint Information Viewpoint Location: E313687 N709098 Viewpoint Elevation: 181m (A.O.D) View Direction: 198° Distance to Turbine: 1.3km Visibility: Tip Camera Type: Nikon D3000 Focal Length: 35mm Effective Focal Length: 53.4mm Date Taken: 17/07/2012 Time Taken: 10:14 Height above elevation: 1.5m	
Visual Impact Sensitivity: High Magnitude: Negligible Overall: Moderate/Minor	
Please note for a 76° field of view, a viewing distance of 300mm is recommended.	
Client: D.A Baillie & Sons	Drawing by: Green Cat Renewables Ltd
Document Number: C387-266/ Fig 5.11	Version: 1.0
Author: SS	Checked by: RM
Approved By: GM	Date: 04/03/2014
	

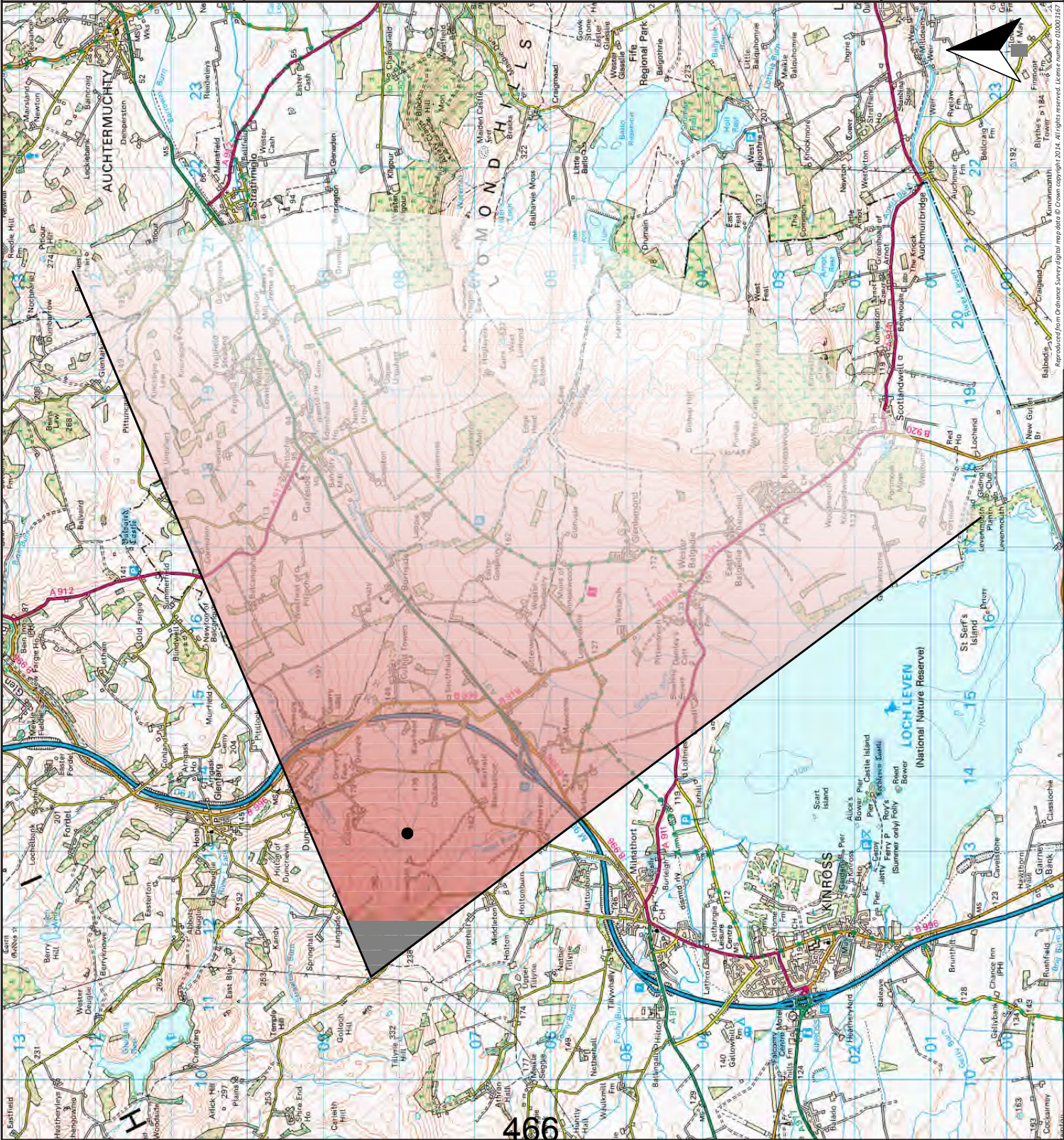


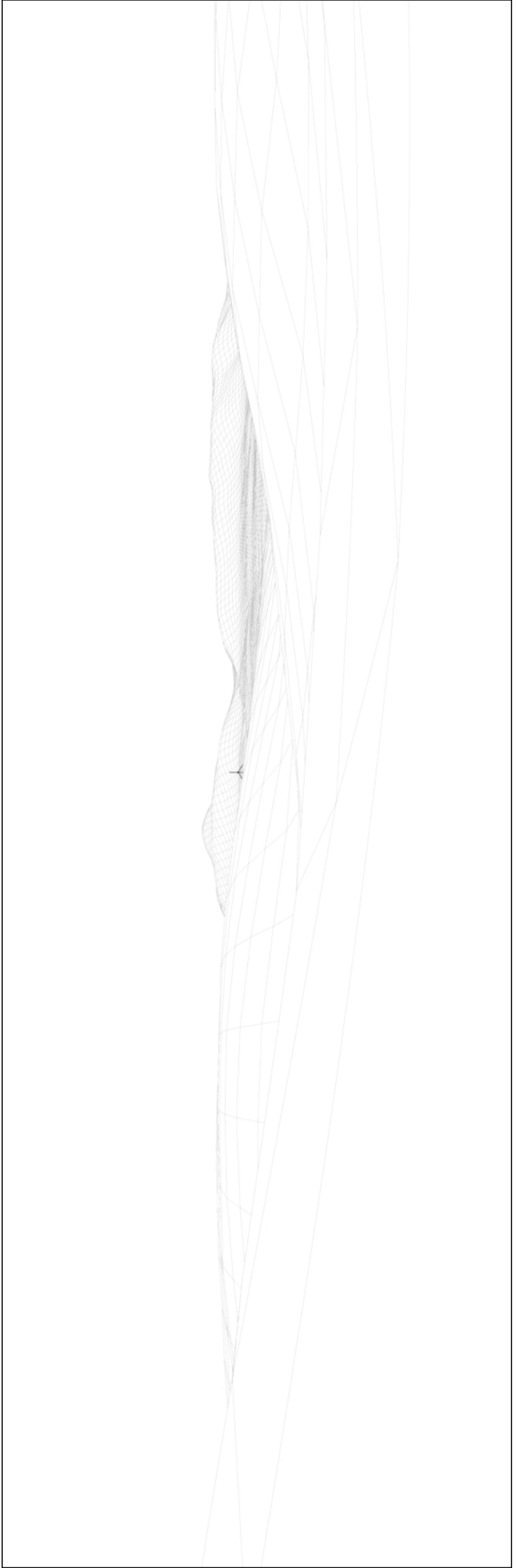


465



Project Name: Colliston Farm Wind Turbine	Document Title: VP03 - Minor Road, Newhill to Path of Condie
Scale: 1:50,000 @ A3	
Key: <div> <div>●</div> <div>Proposed Turbine Location</div> </div> <div> <div></div> <div>76° Field of View</div> </div>	
Viewpoint Information Viewpoint Location: E311400 N708373 Viewpoint Elevation: 238m (A.O.D) View Direction: 103° Distance to Turbine: 1.9km Visibility: Hub Camera Type: Nikon D3000 Focal Length: 35mm Effective Focal Length: 53.4mm Date Taken: 17/07/2012 Time Taken: 11:29 Height above elevation: 1.5m	
Visual Impact Sensitivity: Medium Magnitude: Low Overall: Moderate/Minor	
Please note for a 76° field of view, a viewing distance of 300mm is recommended.	
Client: D.A Baillie & Sons	Drawing by: Green Cat Renewables Ltd
Document Number: C387-266/ Fig 5.12	Version: 1.0
Author: SS	Checked by: RC
Approved By: GM	Date: 04/03/2014



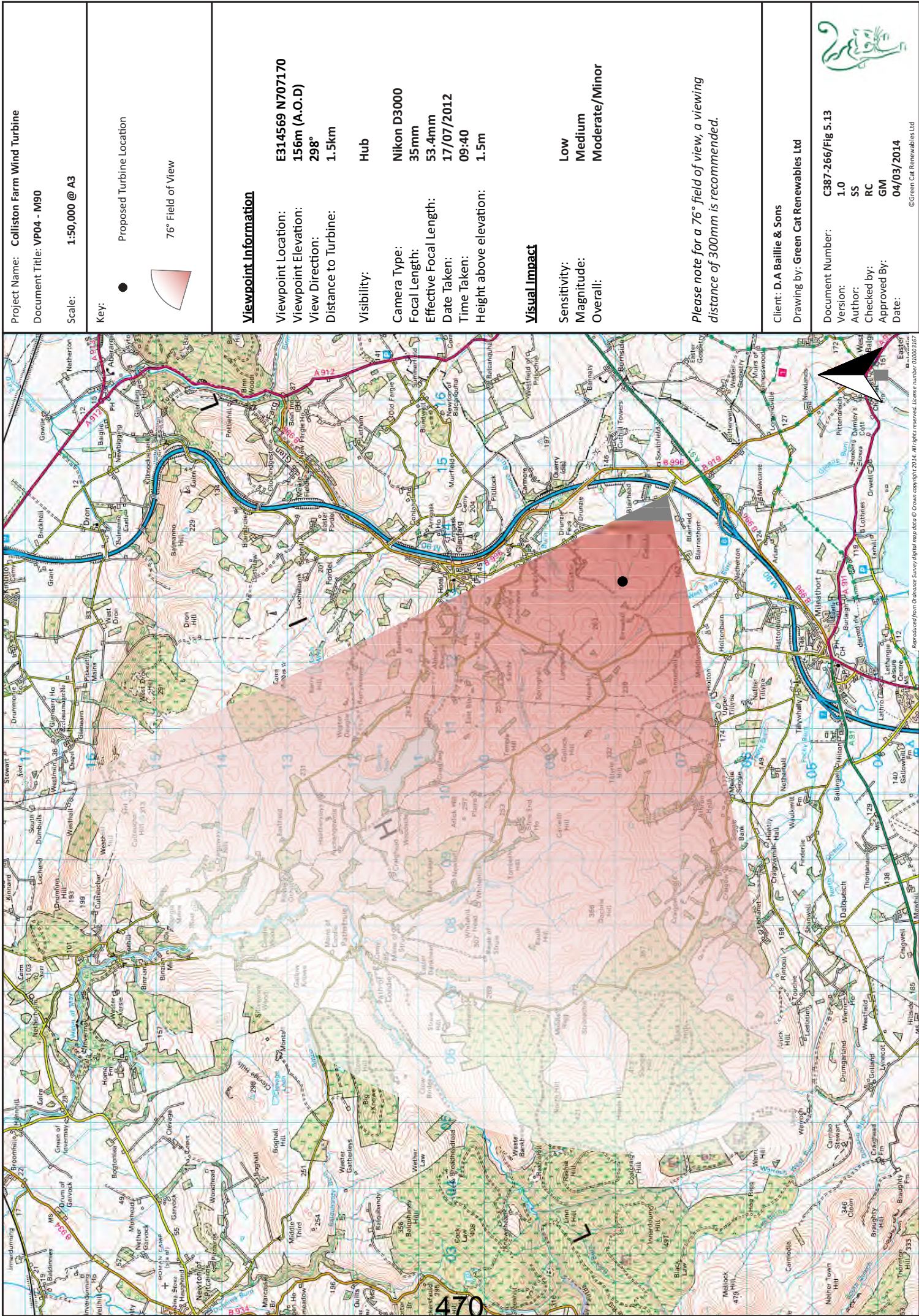




VP03 MINOR ROAD, NEWHILL TO PATH OF CONDIE - 70MM PHOTOMONTAGE OF PROPOSAL




26° VIEWING ANGLE
500MM VIEWING DISTANCE



Project Name: Colliston Farm Wind Turbine
Document Title: VP04 - M90
Scale: 1:50,000 @ A3

Key:

- Proposed Turbine Location
-  76° Field of View

Viewpoint Information

Viewpoint Location: E314569 N707170
Viewpoint Elevation: 156m (A.O.D)
View Direction: 298°
Distance to Turbine: 1.5km
Visibility: Hub
Camera Type: Nikon D3000
Focal Length: 35mm
Effective Focal Length: 53.4mm
Date Taken: 17/07/2012
Time Taken: 09:40
Height above elevation: 1.5m

Visual Impact

Sensitivity: Low
Magnitude: Medium
Overall: Moderate/Minor

Please note for a 76° field of view, a viewing distance of 300mm is recommended.

Client: D.A Baillie & Sons
Drawing by: Green Cat Renewables Ltd

Document Number: C387-266/ Fig 5.13
Version: 1.0
Author: SS
Checked by: RC
Approved By: GM
Date: 04/03/2014

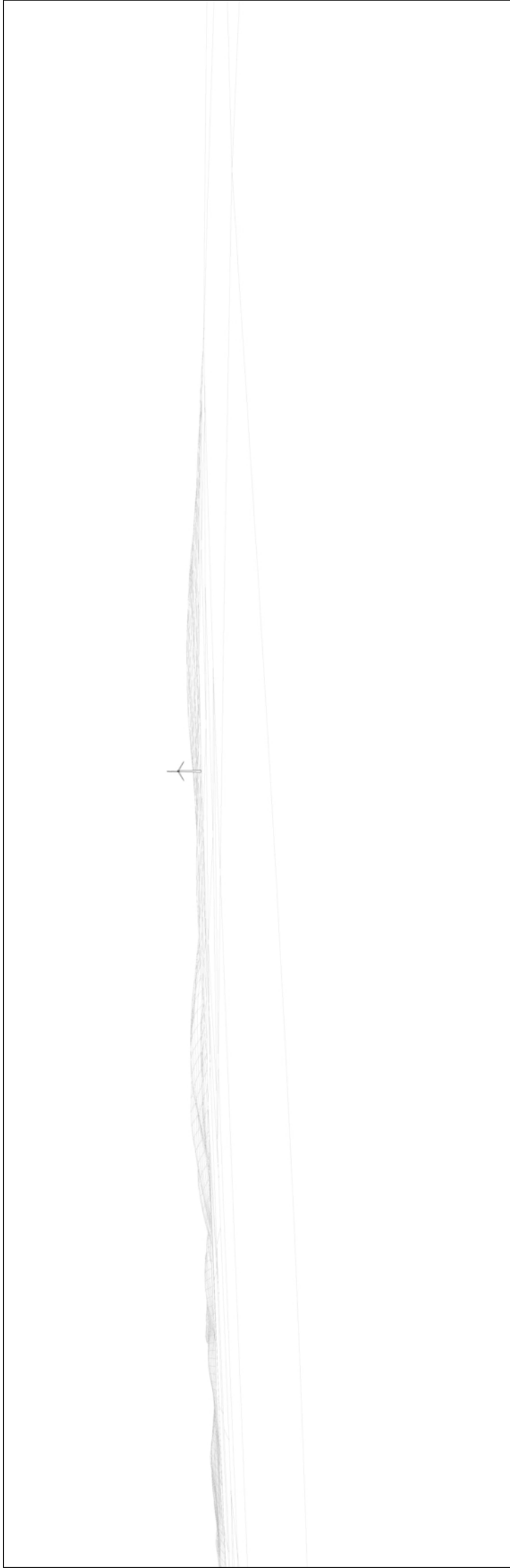


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VP04 M90 - PHOTOGRAPH OF EXISTING VIEW



VP04 M90 - WIRELINE DRAWING



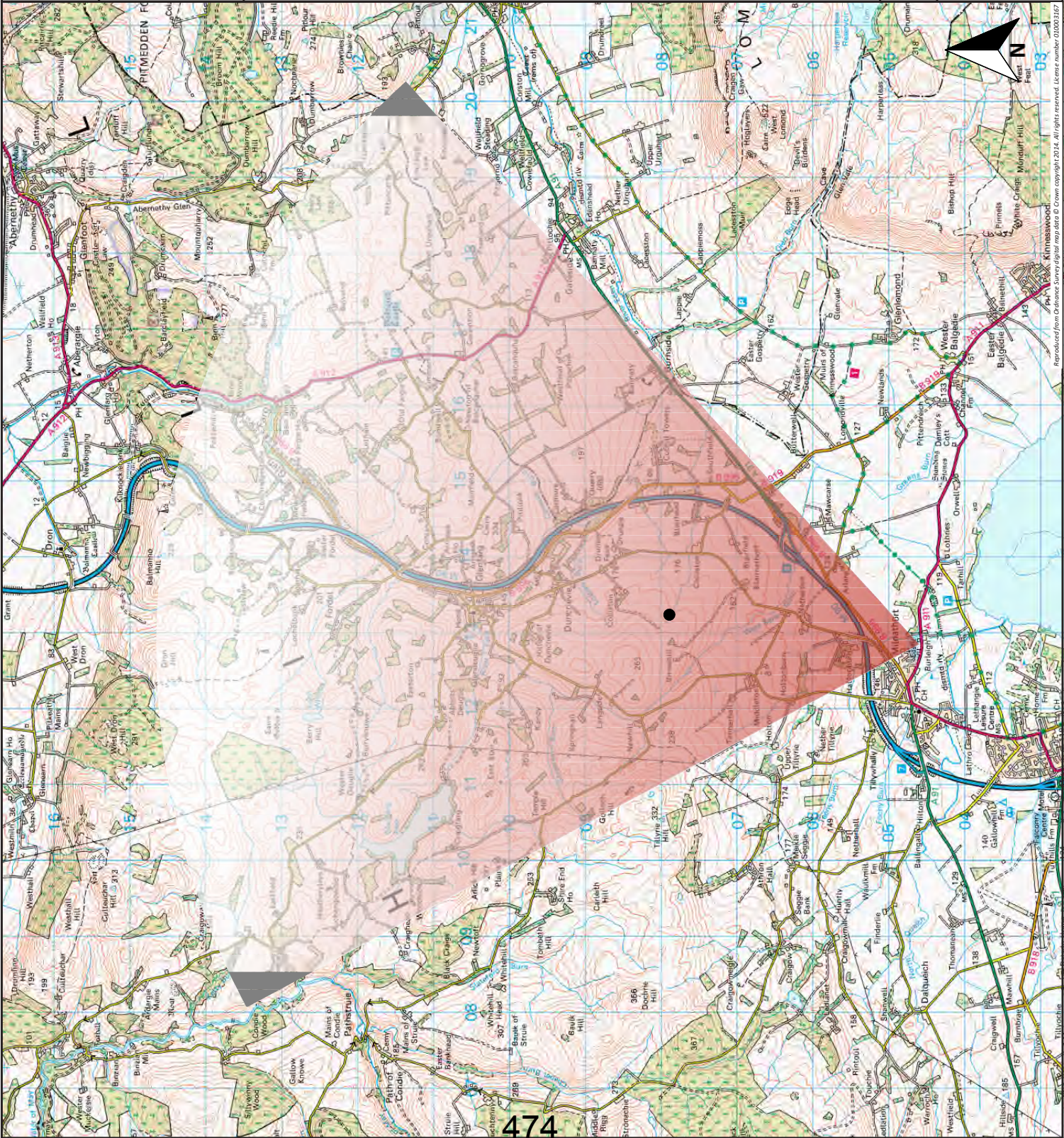


VP04 M90 - 70MM PHOTOMONTAGE OF PROPOSAL



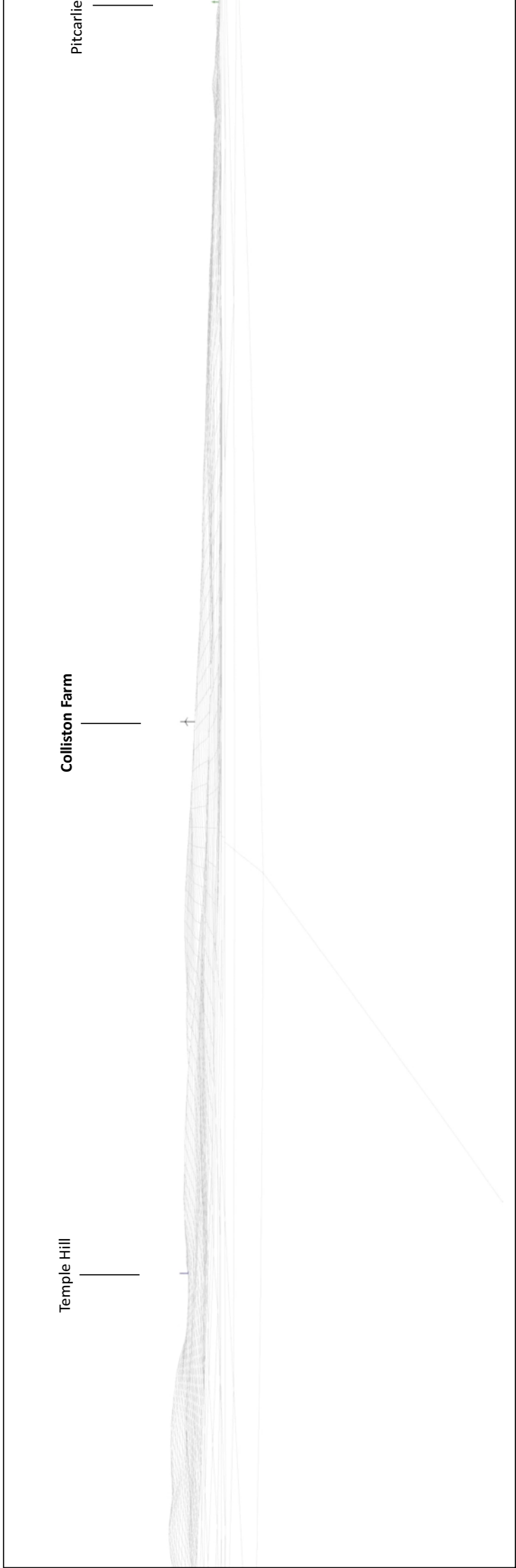
26° VIEWING ANGLE
500MM VIEWING DISTANCE

<p>Project Name: Colliston Farm Wind Turbine</p> <p>Document Title: VP05 - Burleigh Castle</p> <p>Scale: 1:50,000 @ A3</p>	<p>Key:</p> <p>● Proposed Turbine Location</p> <p>76° Field of View</p>	<p>Viewpoint Information</p> <p>Viewpoint Location: E312902 N704599</p> <p>Viewpoint Elevation: 117m (A.O.D)</p> <p>View Direction: 2°</p> <p>Distance to Turbine: 3.3km</p> <p>Visibility: 3 Projects</p> <p>Camera Type: Nikon D3000</p> <p>Focal Length: 35mm</p> <p>Effective Focal Length: 53.4mm</p> <p>Date Taken: 17/07/2012</p> <p>Time Taken: 11:56</p> <p>Height above elevation: 1.5m</p> <p>Visual Impact</p> <p>Sensitivity: High</p> <p>Magnitude: Low</p> <p>Overall: Moderate</p> <p>Please note for a 76° field of view, a viewing distance of 300mm is recommended.</p>	<p>Client: D.A Baillie & Sons</p> <p>Drawing by: Green Cat Renewables Ltd</p>	<p>Document Number: C387-266/ Fig 5.14</p> <p>Version: 1.0</p> <p>Author: SS</p> <p>Checked by: RC</p> <p>Approved By: GM</p> <p>Date: 04/03/2014</p>
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VP05 BURLEIGH CASTLE - WIRELINE DRAWING





VP05 BURLEIGH CASTLE - 70MM PHOTOMONTAGE OF PROPOSAL



26° VIEWING ANGLE
500MM VIEWING DISTANCE

Project Name: Colliston Farm Wind Turbine
Document Title: VP06 - B919

Scale: 1:50,000 @ A3

Key:

● Proposed Turbine Location

76° Field of View



Viewpoint Information

Viewpoint Location: **E316003 N704745**

Viewpoint Elevation: 130m (A.O.D)

View Direction: 330°

Distance to Turbine: 4.2km

Visibility: 3 Projects

Camera Type: Nikon D3000

Focal Length: 35mm

Effective Focal Length: 53.4mm

Date Taken: 17/07/2012

Date Taken: 09/01/2011
Time Taken: 09:11

Visual Impact

Sensitivity:

Magnitude:

Overall: Moderate

Please note for a 76° field of view, a viewing distance of 300mm is recommended.

Client: D.A Baillie & Sons

Drawing by: **Green Cat Renewables Ltd**

Document Number: C387-266/Fig 5.15

Version: 1.0

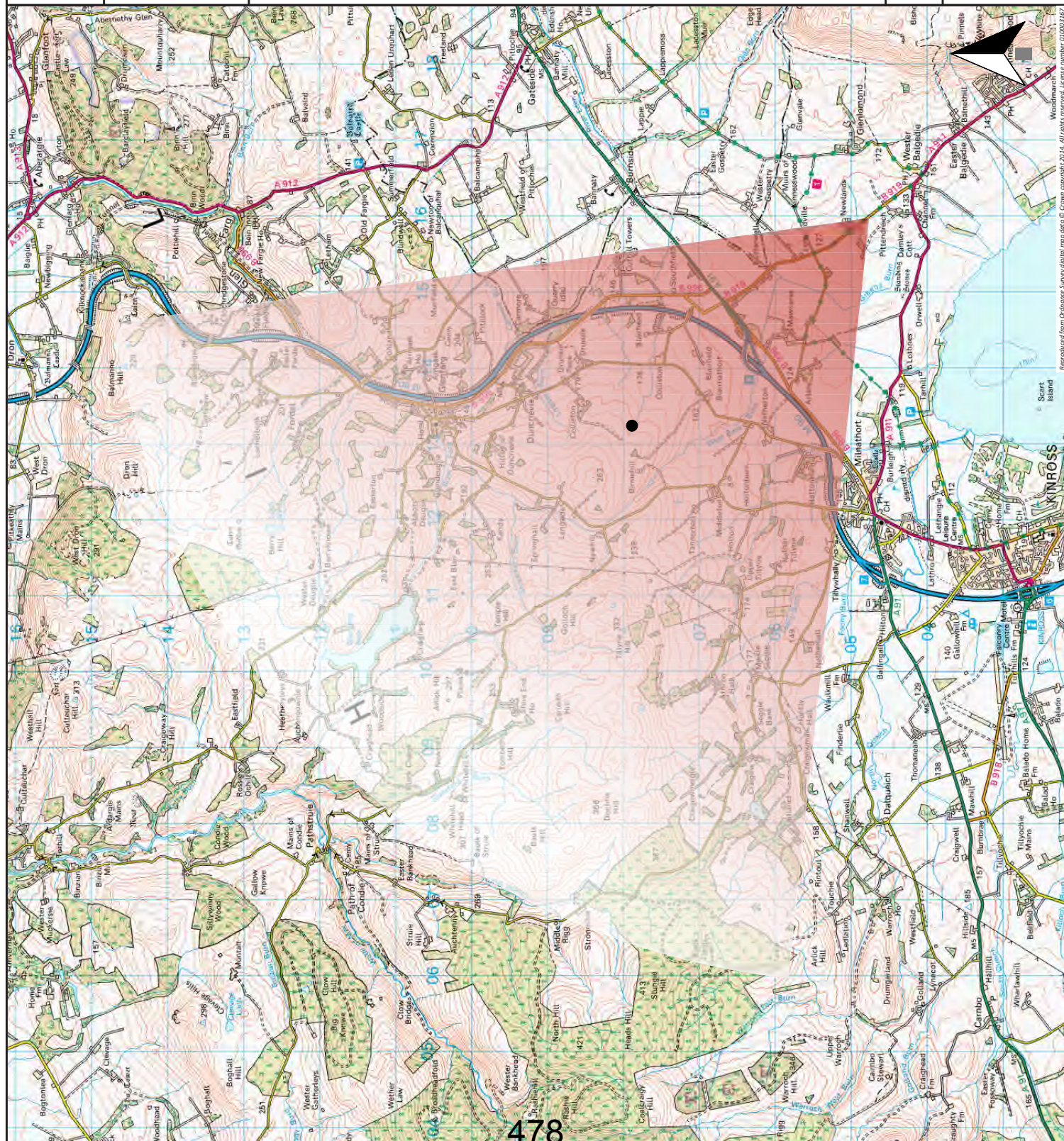
Author: SS

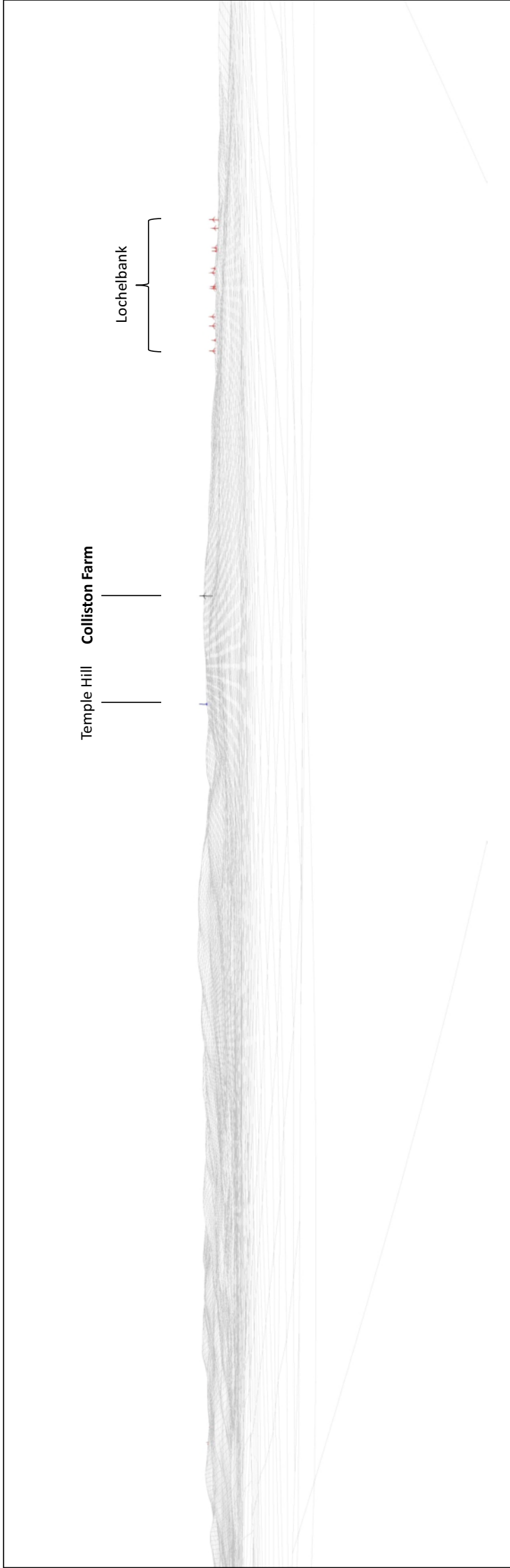
Checked by: RC

Approved By: **GM**
Date: **04/03/2014**



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VP06 B919 - 70MM PHOTOMONTAGE OF PROPOSAL




26° VIEWING ANGLE
500MM VIEWING DISTANCE

Project Name: Colliston Farm Wind Turbine
Document Title: VP07 - Kinross Services
Scale: 1:50,000 @ A3

Key:

●

Proposed Turbine Location

76° Field of View

Viewpoint Information

Viewpoint Location: E310736 N702853
Viewpoint Elevation: 127m (A.O.D)
View Direction: 28°
Distance to Turbine: 5.6km
Visibility: 3 Projects
Camera Type: Nikon D3000
Focal Length: 35mm
Effective Focal Length: 53.4mm
Date Taken: 17/07/2012
Time Taken: 13:11
Height above elevation: 1.5m

Visual Impact

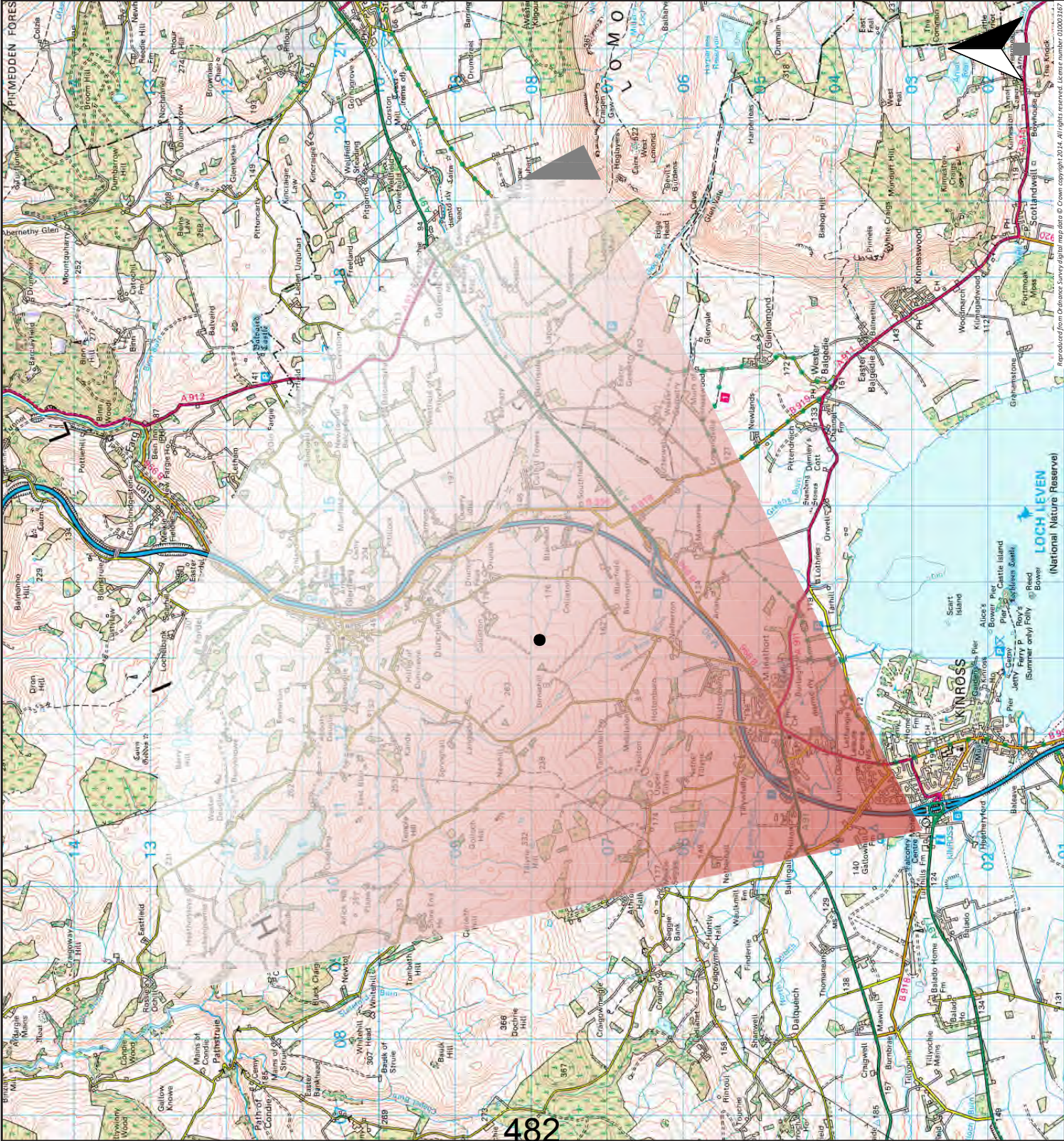
Sensitivity: Medium
Magnitude: Negligible
Overall: Minor

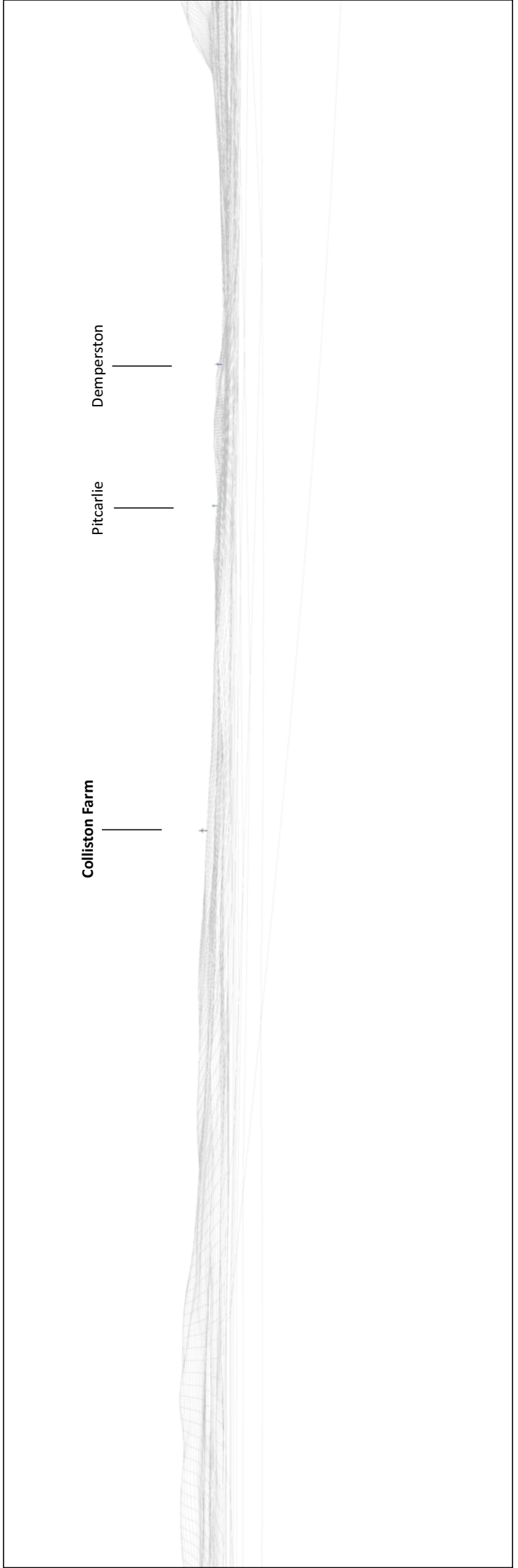
Please note for a 76° field of view, a viewing distance of 300mm is recommended.

Client: D.A Baillie & Sons
Drawing by: Green Cat Renewables Ltd



Document Number: C387-266/Fig 5.16
Version: 1.0
Author: SS
Checked by: RC
Approved By: GM
Date: 04/03/2014





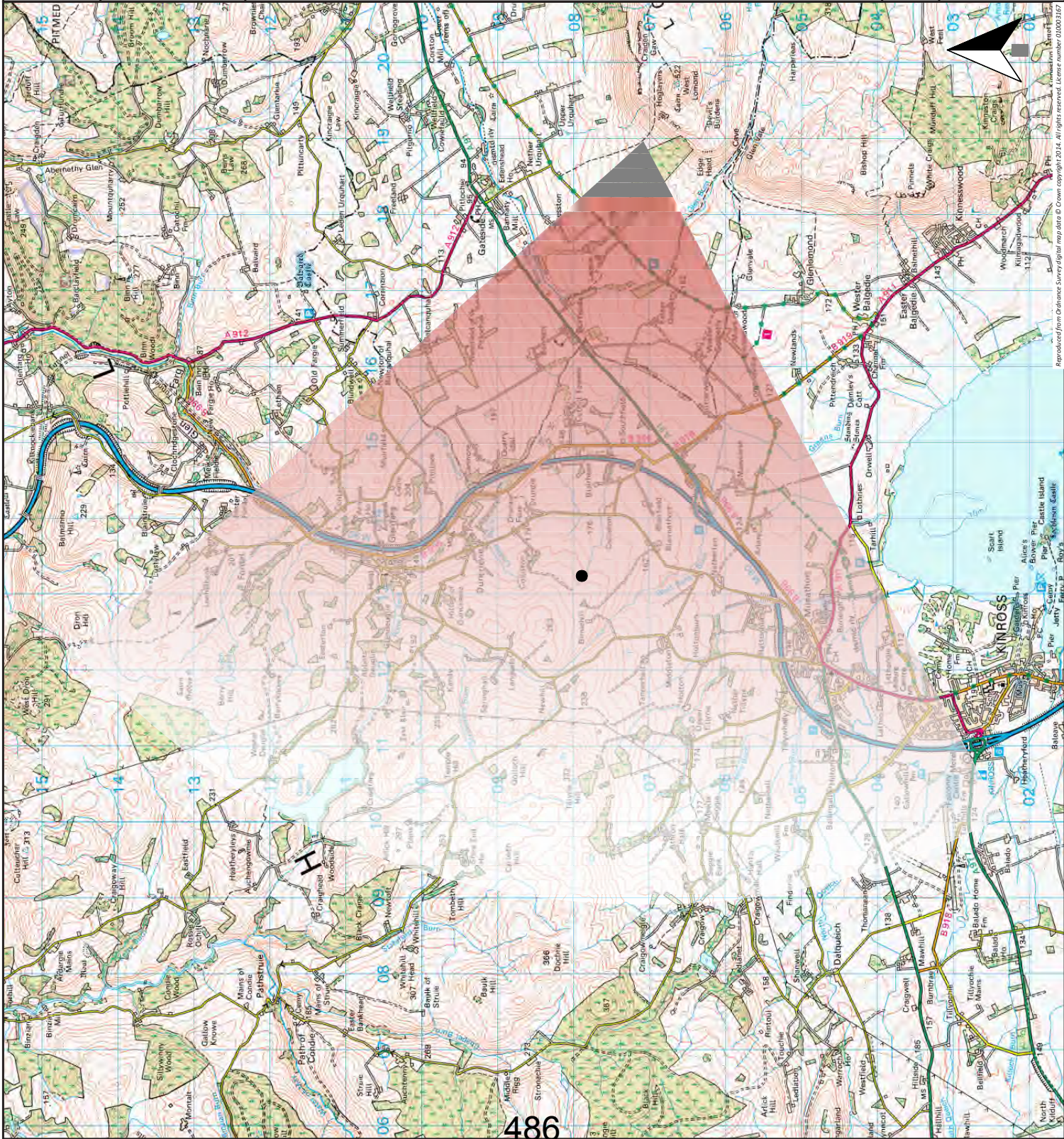


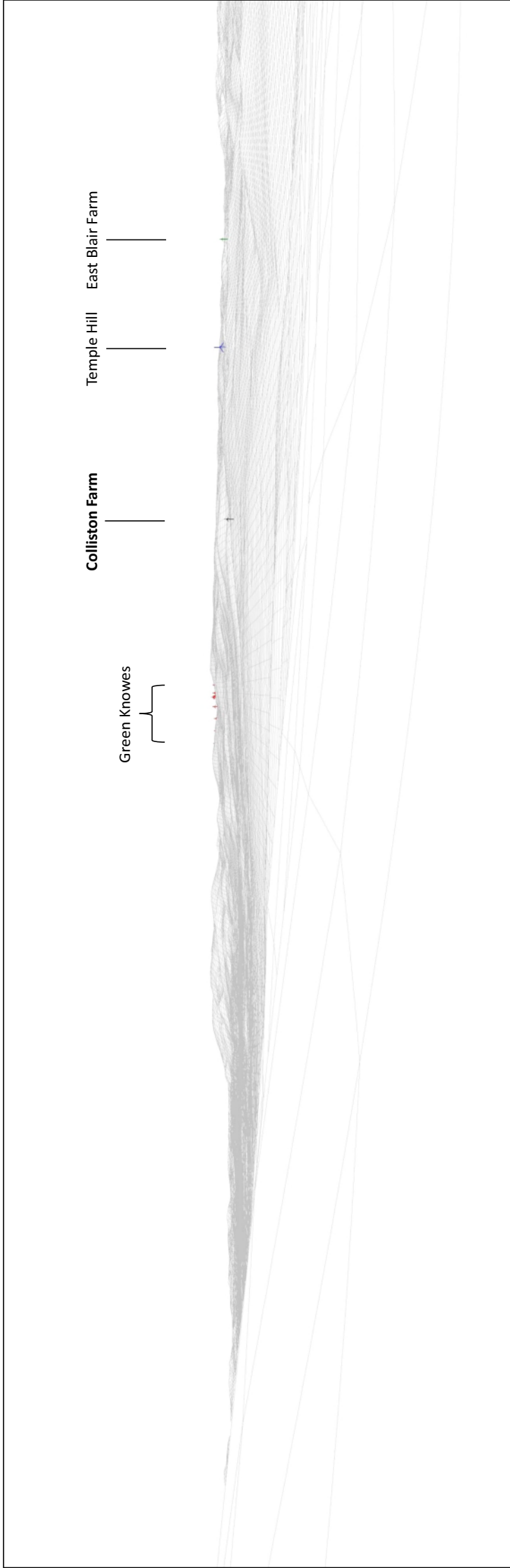
VP07 KINROSS SERVICES - 70MM PHOTOMONTAGE OF PROPOSAL

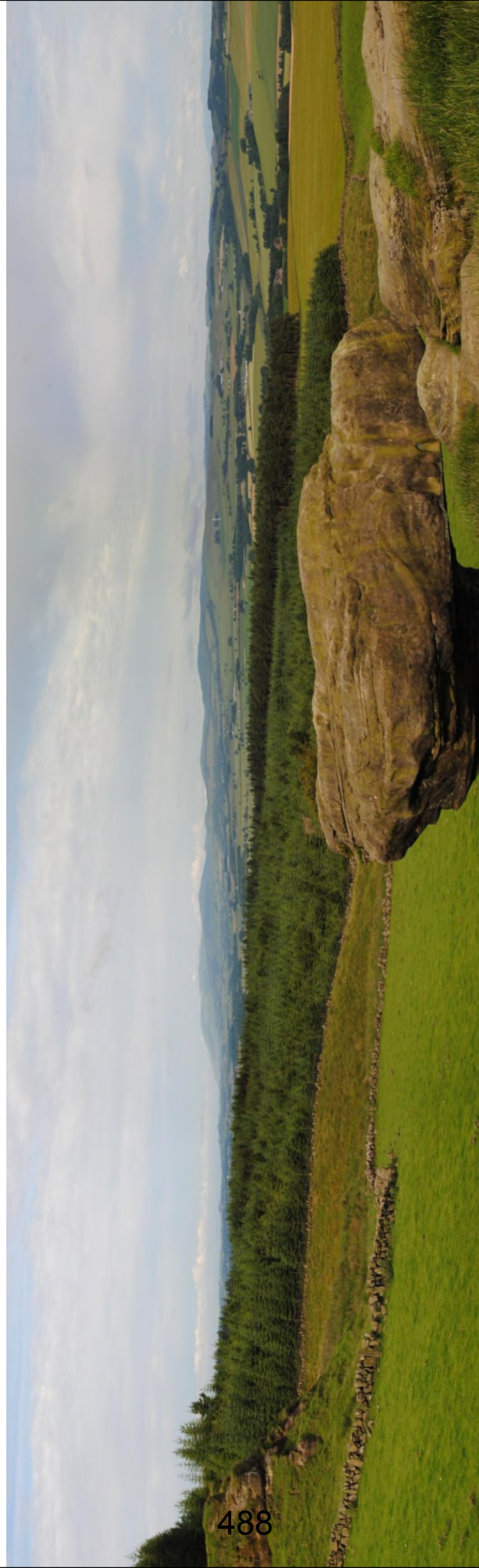


26° VIEWING ANGLE
500MM VIEWING DISTANCE

<p>Project Name: Colliston Farm Wind Turbine</p> <p>Document Title: VP08 - Bonnet Stane</p> <p>Scale: 1:50,000 @ A3</p>	<p>Key:</p> <p>● Proposed Turbine Location</p> <p>76° Field of View</p>	<p>Viewpoint Information</p> <p>Viewpoint Location: E318987 N707062</p> <p>Viewpoint Elevation: 231m (A.O.D)</p> <p>View Direction: 265°</p> <p>Distance to Turbine: 5.8km</p> <p>Visibility: 4 Projects</p> <p>Camera Type: Nikon D3000</p> <p>Focal Length: 35mm</p> <p>Effective Focal Length: 53.4mm</p> <p>Date Taken: 17/07/2012</p> <p>Time Taken: 08:08</p> <p>Height above elevation: 1.5m</p> <p>Visual Impact</p> <p>Sensitivity: High</p> <p>Magnitude: Low</p> <p>Overall: Moderate</p> <p>Please note for a 76° field of view, a viewing distance of 300mm is recommended.</p>	<p>Client: D.A Baillie & Sons</p> <p>Drawing by: Green Cat Renewables Ltd</p> <p>Document Number: C387-266/Fig 5.17</p> <p>Version: 1.0</p> <p>Author: SS</p> <p>Checked by: RC</p> <p>Approved By: GM</p> <p>Date: 04/03/2014</p> <p>©Green Cat Renewables Ltd</p>
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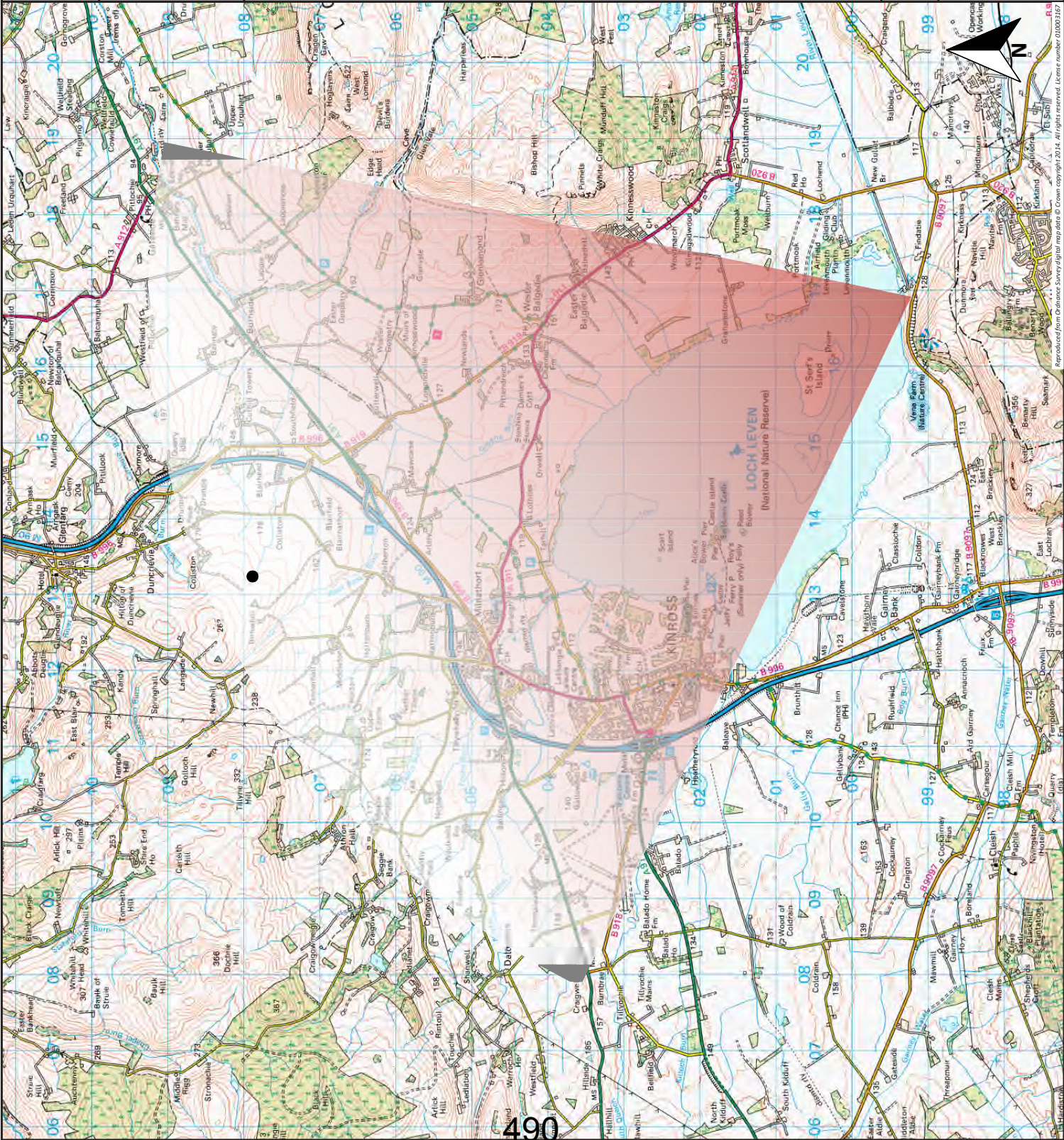


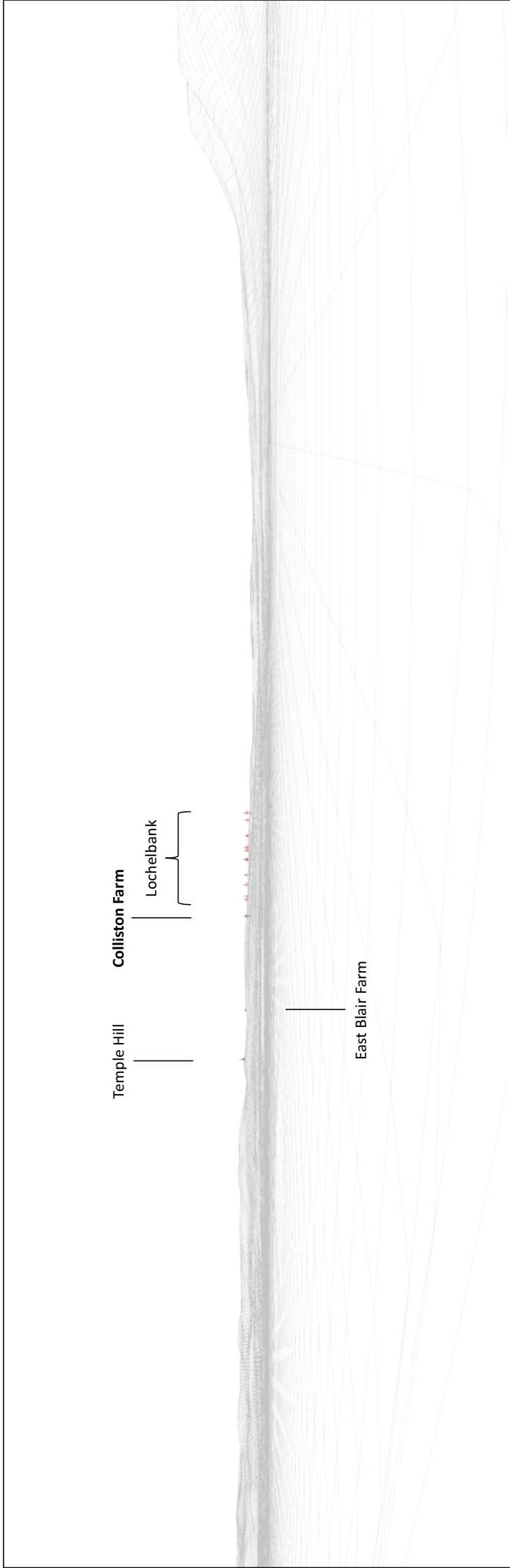
VP08 BONNET STANE - 70MM PHOTOMONTAGE OF PROPOSAL



26° VIEWING ANGLE
500MM VIEWING DISTANCE

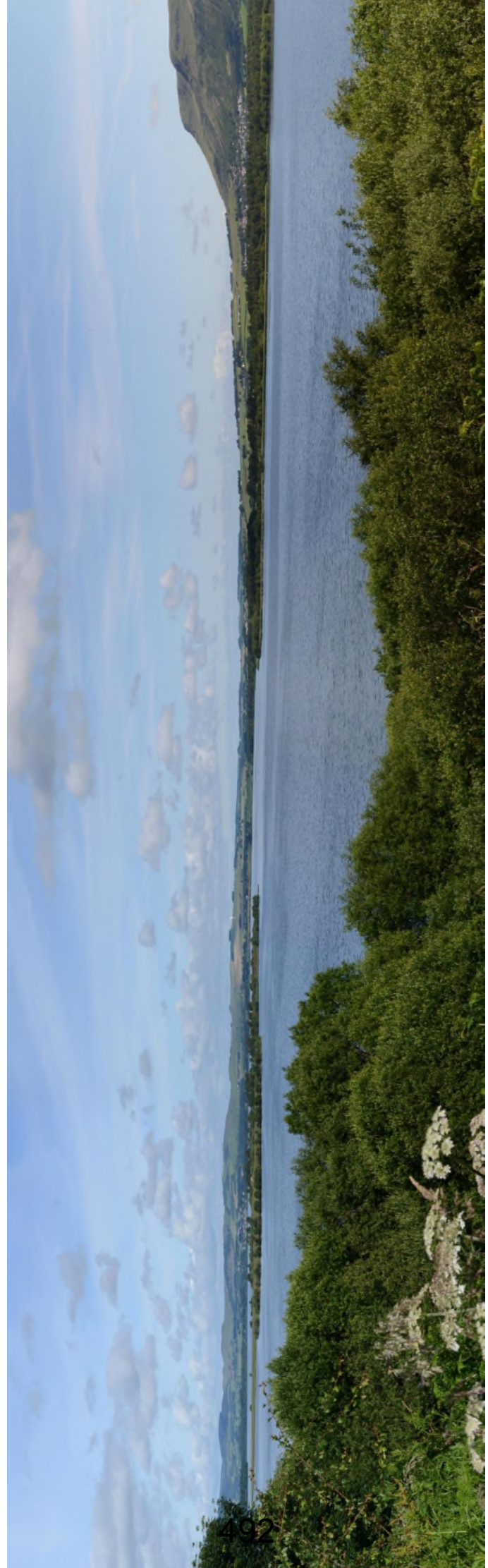
<p>Project Name: Colliston Farm Wind Turbine</p> <p>Document Title: VP09 - Loch Leven Cottages</p> <p>Scale: 1:50,000 @ A3</p> <p>Key:</p> <ul style="list-style-type: none"> Proposed Turbine Location 76° Field of View 	<p>Viewpoint Information</p> <p>Viewpoint Location: E316905 N699229</p> <p>Viewpoint Elevation: 127m (A.O.D)</p> <p>View Direction: 343°</p> <p>Distance to Turbine: 9.4km</p> <p>Visibility: 4 Projects</p> <p>Camera Type: Nikon D3100</p> <p>Focal Length: 35mm</p> <p>Effective Focal Length: 54.6mm</p> <p>Date Taken: 25/07/2012</p> <p>Time Taken: 10:09</p> <p>Height above elevation: 1.5m</p> <p>Visual Impact</p> <p>Sensitivity: High</p> <p>Magnitude: Negligible</p> <p>Overall: Moderate/Minor</p> <p>Please note for a 76° field of view, a viewing distance of 300mm is recommended.</p>	<p>Client: D.A Baillie & Sons</p> <p>Drawing by: Green Cat Renewables Ltd</p> <p>Document Number: C387-266/ Fig 5.18</p> <p>Version: 1.0</p> <p>Author: SS</p> <p>Checked by: RC</p> <p>Approved By: GM</p> <p>Date: 04/03/2014</p> <p>©Green Cat Renewables Ltd</p>
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VP09 LOCH LEVEN COTTAGES - PHOTOMONTAGE OF PROPOSAL

76° VIEWING ANGLE
300MM VIEWING DISTANCE

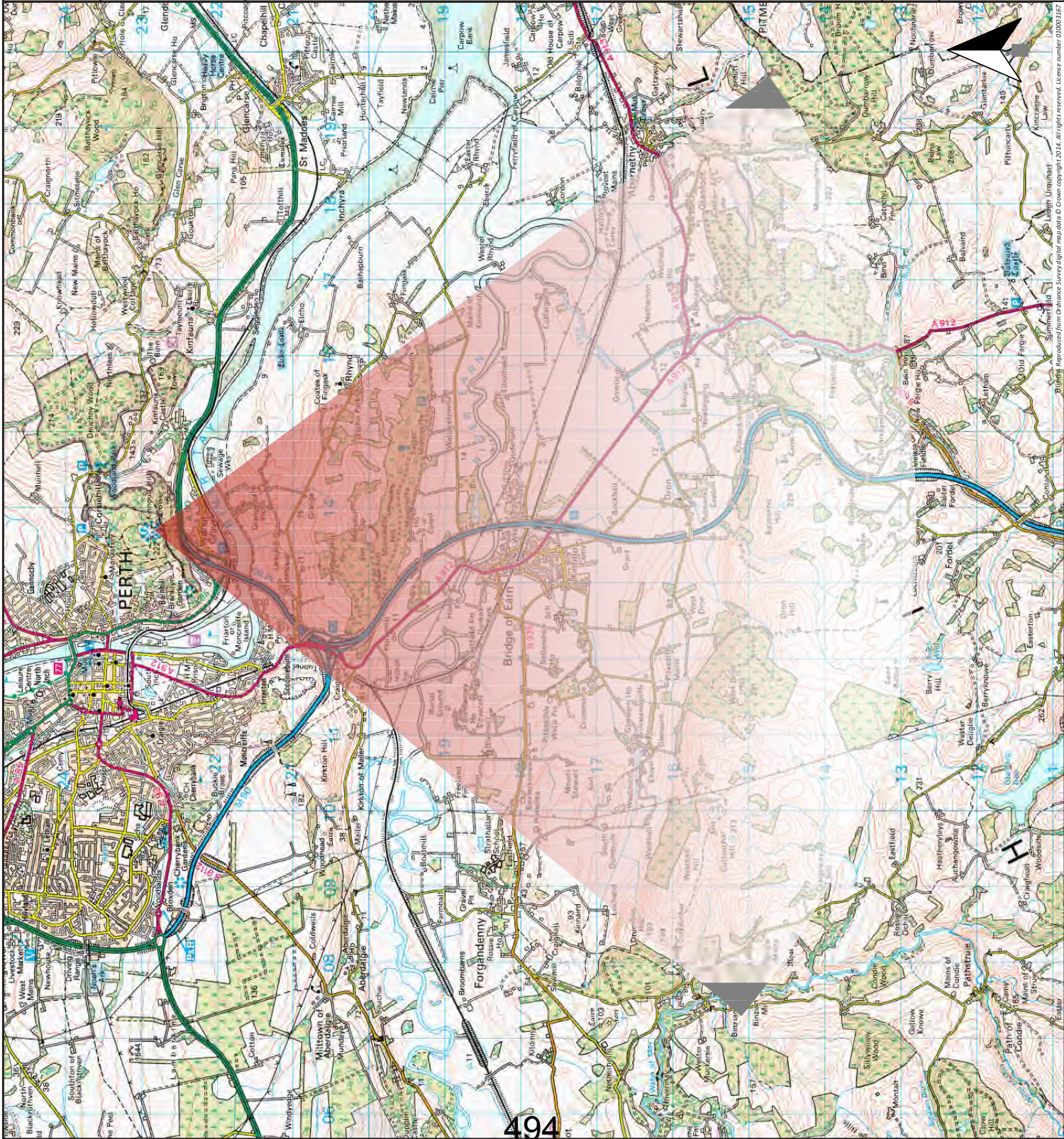


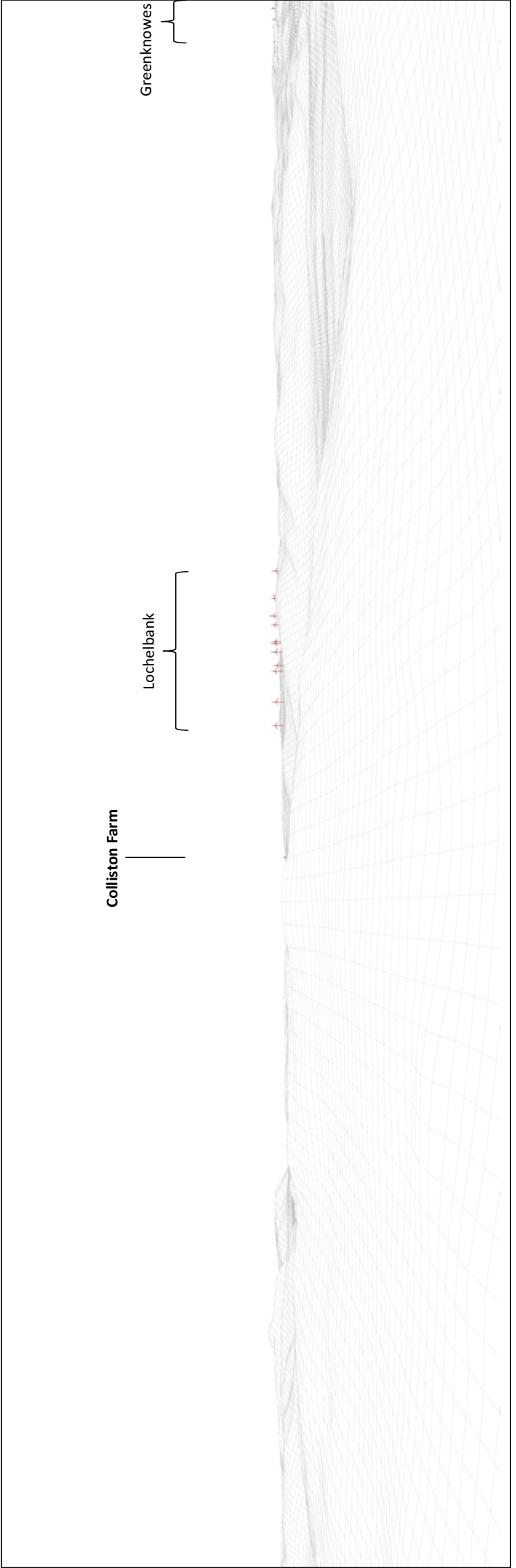
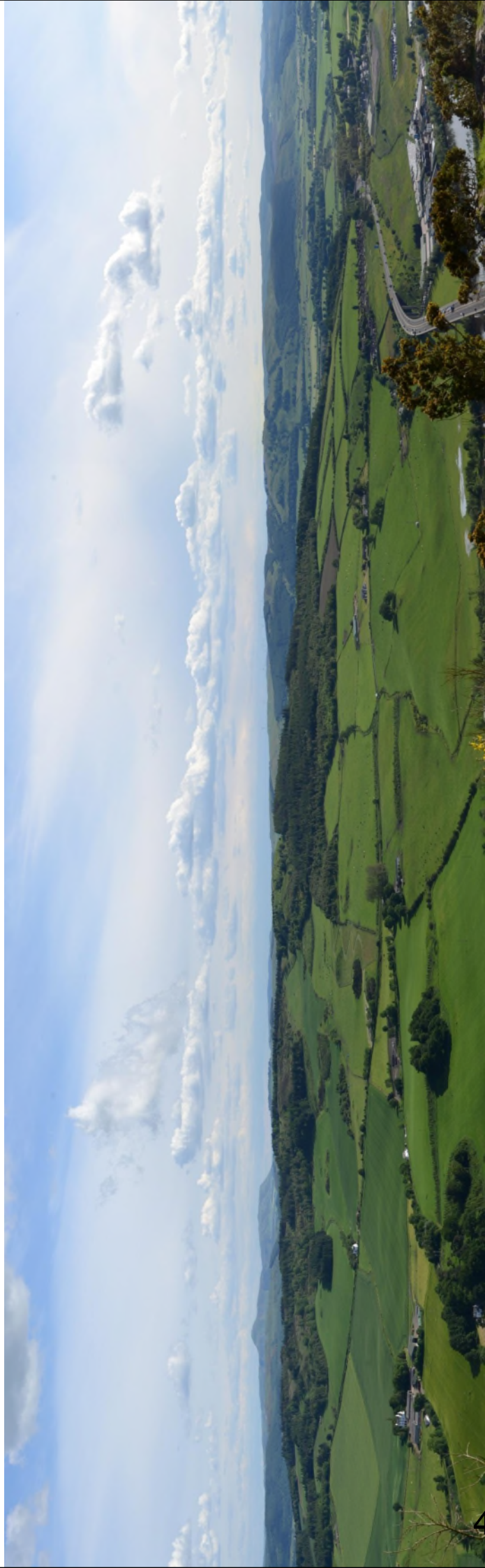
VP09 LOCH LEVEN COTTAGES - 70MM PHOTOMONTAGE OF PROPOSAL



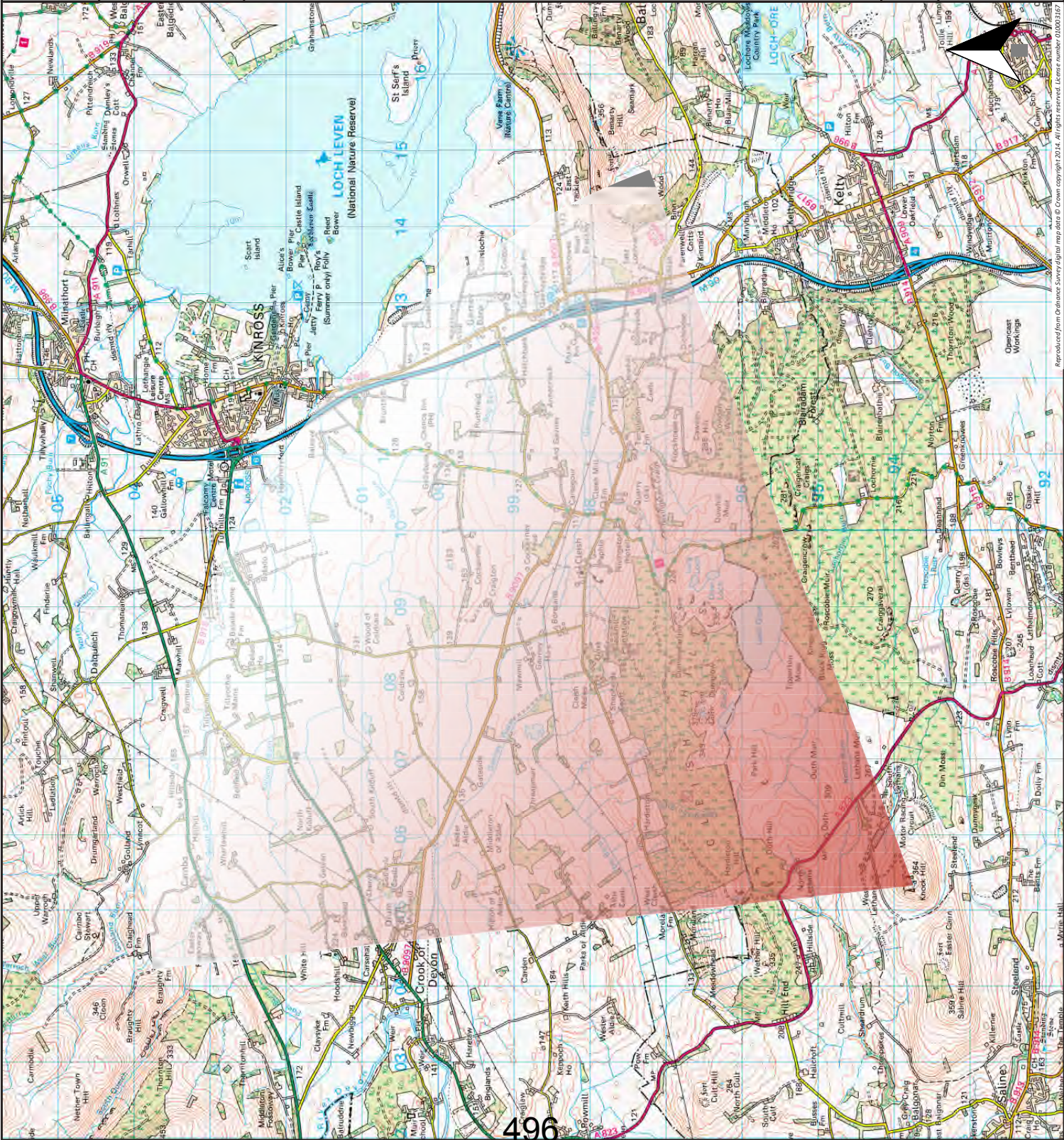
26° VIEWING ANGLE
500MM VIEWING DISTANCE

Project Name: Colliston Farm Wind Turbine	
Document Title: VP10 - Kinnoull Hill	
Scale: 1:50,000 @ A3	
Key: <ul style="list-style-type: none"> Proposed Turbine Location 76° Field of View 	
Viewpoint Information <p> Viewpoint Location: E313663 N722709 Viewpoint Elevation: 177m (A.O.D) View Direction: 186° Distance to Turbine: 14.6km Visibility: 3 Projects Camera Type: Nikon D3100 Focal Length: 35mm Effective Focal Length: 54.6mm Date Taken: 18/06/2012 Time Taken: 17:02 Height above elevation: 1.5m </p>	Visual Impact <p> Sensitivity: High Magnitude: Negligible Overall: Moderate/Minor </p>
Please note for a 76° field of view, a viewing distance of 300mm is recommended.	
Client: D.A Baillie & Sons	
Drawing by: Green Cat Renewables Ltd	
Document Number: C387-266/ Fig 5.19	
Version: 1.0	
Author: SS	
Checked by: RC	
Approved By: GM	
Date: 04/03/2014	



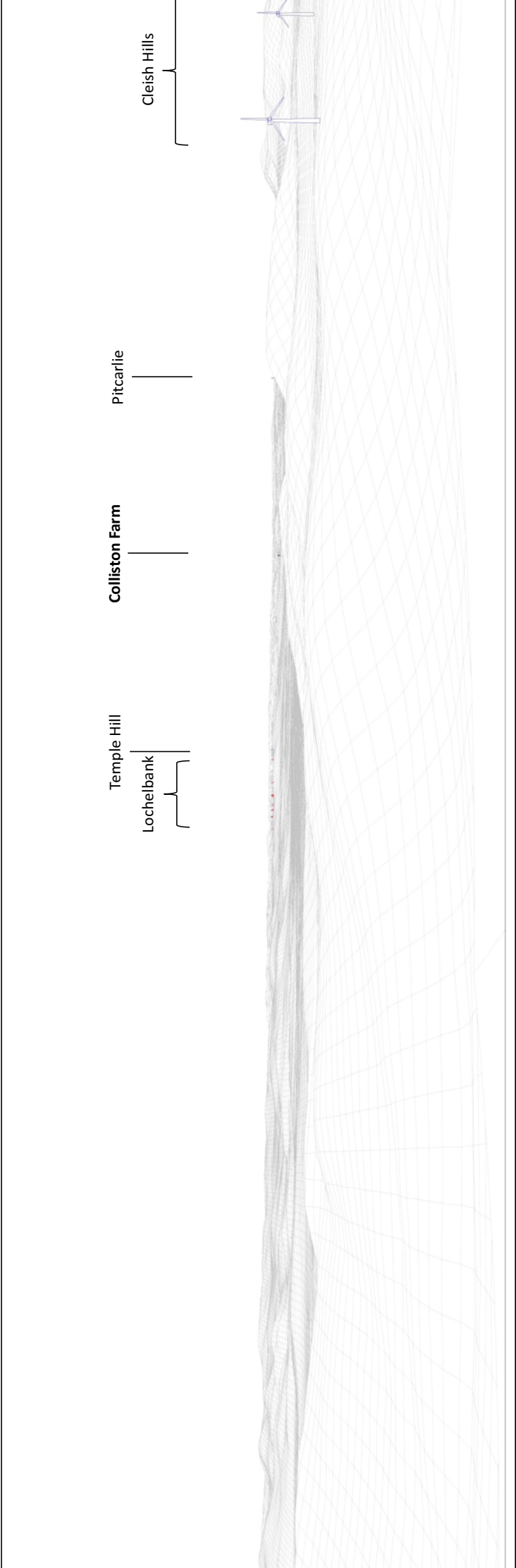


Project Name: Colliston Farm Wind Turbine Document Title: VP11 - Knock Hill		Scale: 1:50,000 @ A3
Key:	 Proposed Turbine Location  76° Field of View	
Viewpoint Information Viewpoint Location: E305390 N693786 Viewpoint Elevation: 360m (A.O.D) View Direction: 18° Distance to Turbine: 16km Visibility: 5 Projects Camera Type: Nikon D3100 Focal Length: 35mm Effective Focal Length: 54.6mm Date Taken: 25/07/2012 Time Taken: 09:22 Height above elevation: 1.5m		
Visual Impact Sensitivity: High Magnitude: Negligible Overall: Moderate/Minor		
Please note for a 76° field of view, a viewing distance of 300mm is recommended.		
Client: D.A Baillie & Sons Drawing by: Green Cat Renewables Ltd		Document Number: C387-266/ Fig 7.20 Version: 1.0 Author: SS Checked by: RC Approved By: GM Date: 04/03/2014





VP12 KNOCK HILL - WIRELINE DRAWING



Project Name: Colliston Farm Wind Turbine
Document Title: VP12 - M90 Overbridge at Glenfarg
Scale: 1:50,000 @ A3

Key:

●

Proposed Turbine Location

76° Field of View

Viewpoint Information

Viewpoint Location: E313805 N711455
Viewpoint Elevation: 136m (A.O.D)
View Direction: 190°
Distance to Turbine: 3.6km
Visibility: No Visibility
Camera Type: Nikon D3000
Focal Length: 35mm
Effective Focal Length: 53.4mm
Date Taken: 17/07/2012
Time Taken: 10:41
Height above elevation: 1.5m

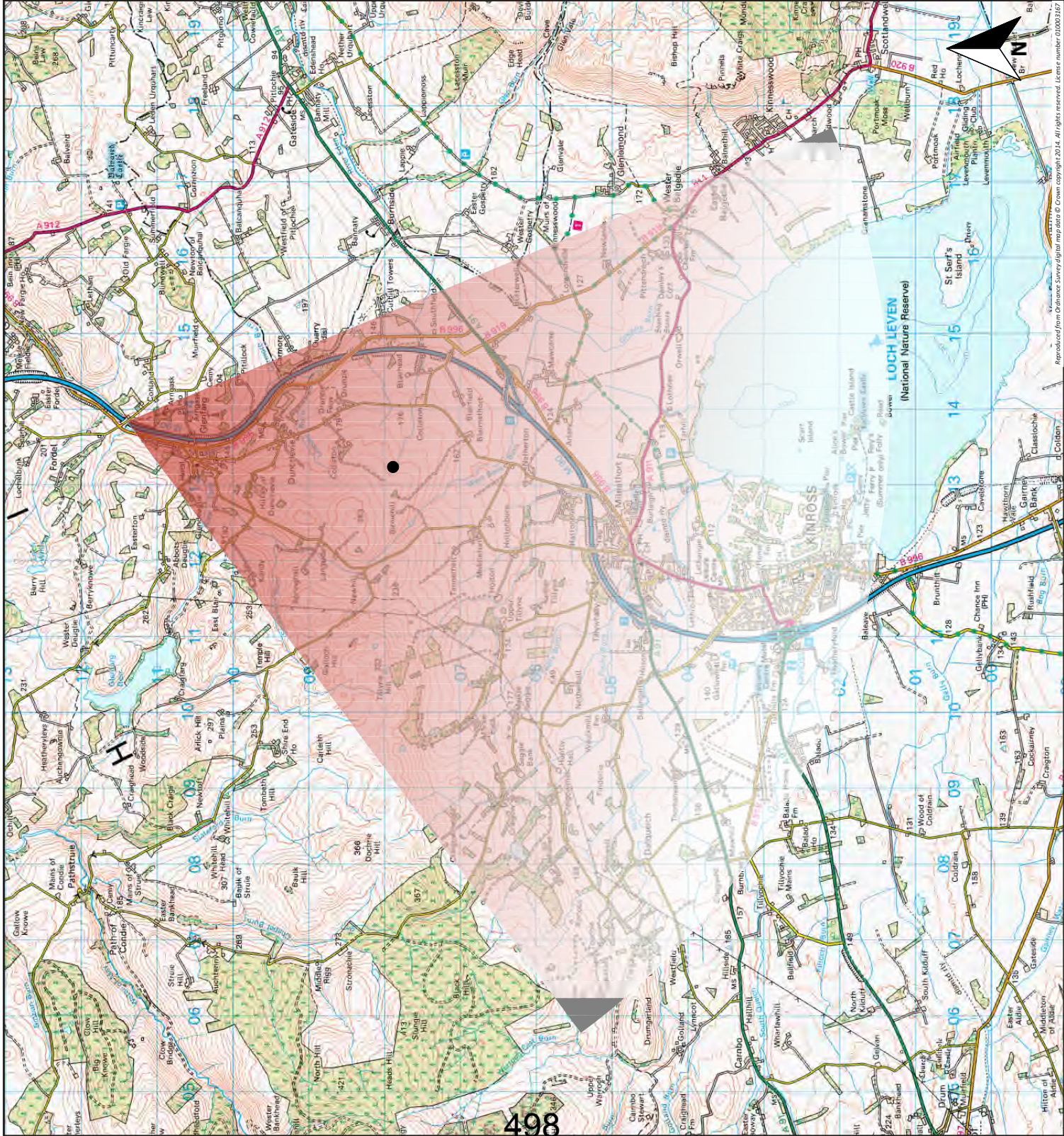
Visual Impact

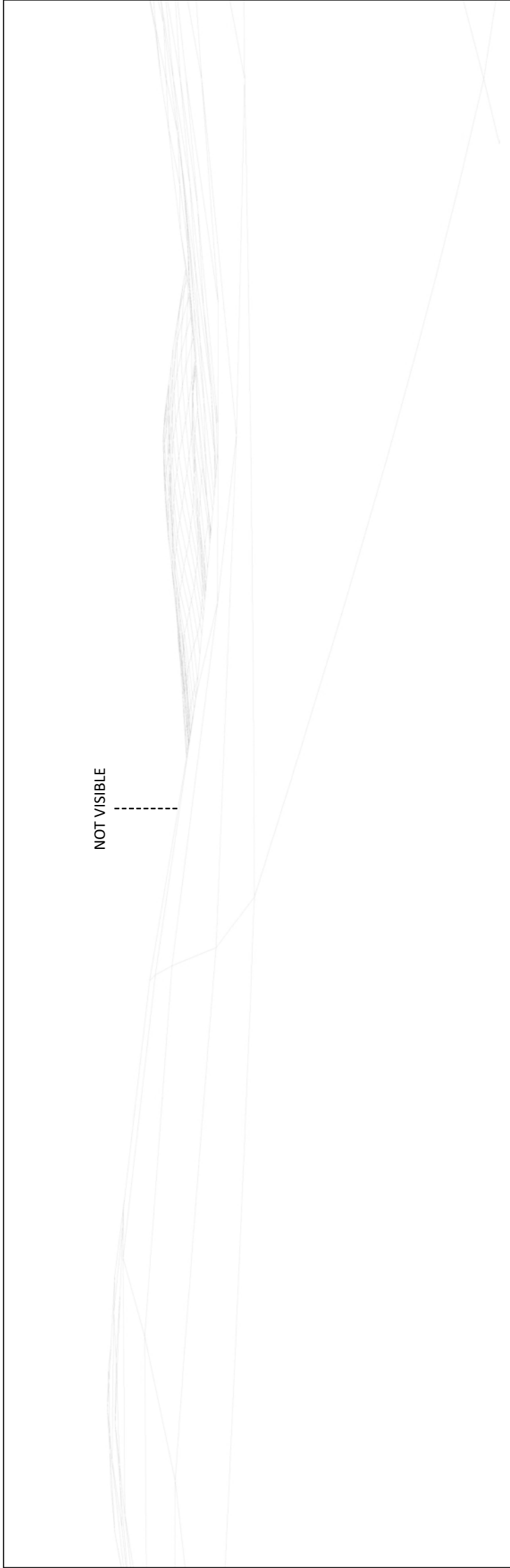
Sensitivity: -
Magnitude: -
Overall: -

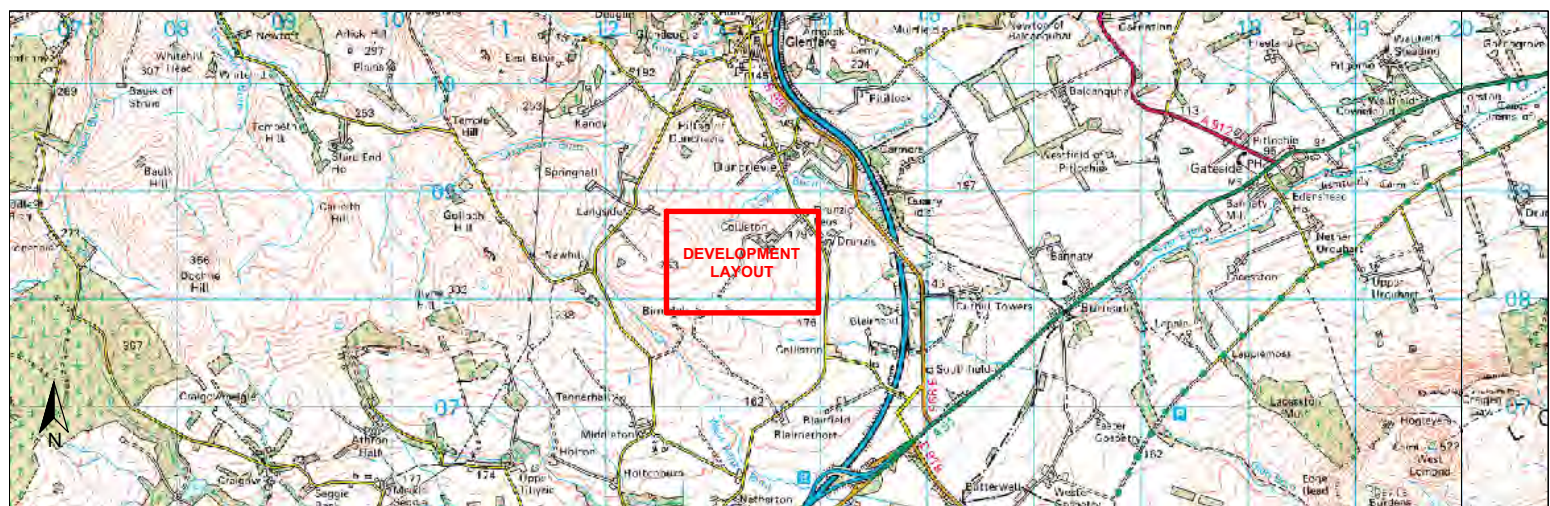
Please note for a 76° field of view, a viewing distance of 300mm is recommended.

Client: D.A Baillie & Sons
Drawing by: Green Cat Renewables Ltd

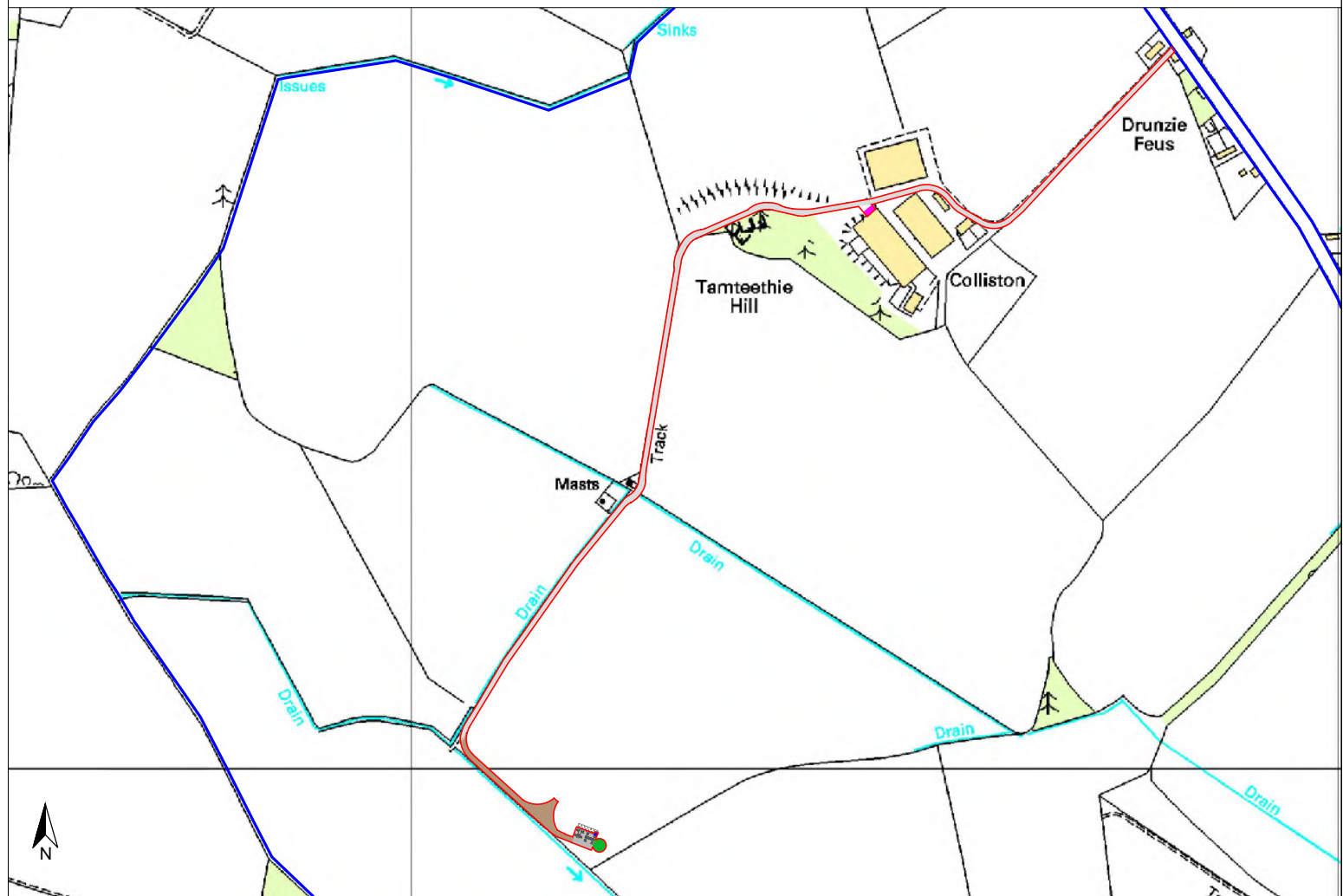
Document Number: C387-266/ Fig 5.21
Version: 1.0
Author: SS
Checked by: RC
Approved By: GM
Date: 04/03/2014



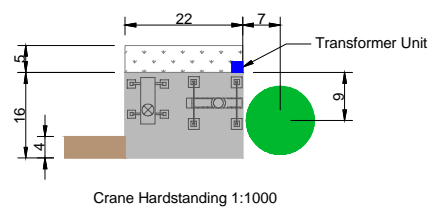




DEVELOPMENT SITE LOCATION - 1:50,000
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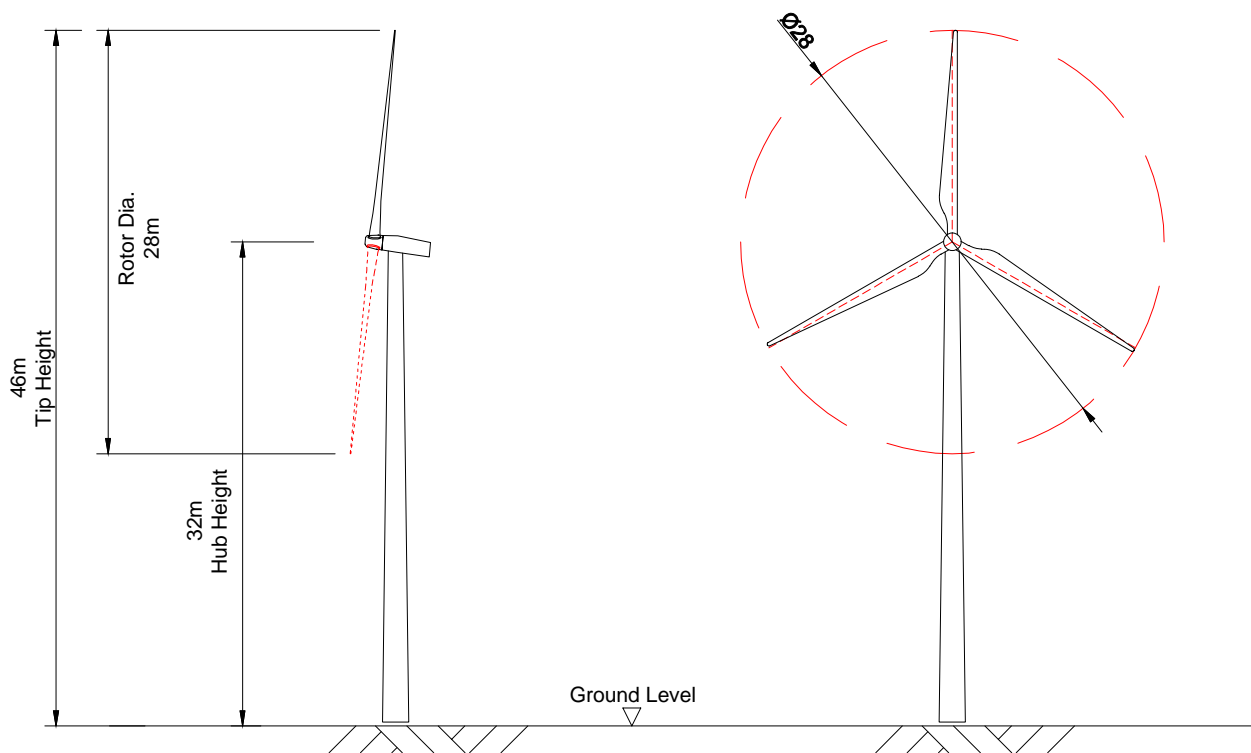
DEVELOPMENT LAYOUT - 1:5,000
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- KEY**
- PROPOSED TURBINE / FOUNDATION
NGR: 313200,707920
 - SUB-STATION / METERING POINT
NGR: 313500,708600
 - UPGRADED ACCESS TRACK
 - NEW ACCESS TRACK
 - CRANE HARDSTANDING & LEVELED ASSEMBLY AREA
 - LAND OWNERSHIP BOUNDARY
 - APPLICATION BOUNDARY

APPLICATION AREA:
1.1 HECTARES (TURBINE, ACCESS TRACK, HARD-STANDING & SUBSTATION)

Project Title: Colliston Farm Wind Turbine		Date drawn: 27.02.14		Rev.	Date	Chk'd	Client: D A Baillie & Sons	GREEN CAT RENEWABLES LTD Midlothian Innovation Centre, Pentlandsfield, Edinburgh, EH25 9RE. Tel:0131 440 9053 www.greencatrenewables.co.uk
Drawing Title: Planning Application - Site Plan		Drawn by: LS		-	-	-		
Job No. C387-266		Drawing No. APP-001		Checked by: AE		-		
Scale: Shown @ A3		Approved by: SD		500		-		



Project Title:			Date drawn:	Client:	<div>GREEN CAT RENEWABLES LTD</div> <div> Midlothian Innovation Centre, Pentlandfield, Edinburgh, EH25 9RE. Tel:0131 440 9053 www.greencatrenewables.co.uk</div>
Colliston Farm Wind Turbine			13.03.14		
Drawing Title:			Stage:		
Turbine Elevation			Planning		
Job No. C387-266			Drawn by: AF		
Drawing No. APP-002			Checked by: GD	D A Bailie & Sons	
Scale: 1:500 @ A4			Approved by:		



Perth & Kinross Council
Planning Department
Pullar House
35 Kinoull Street
Perth
PH1 5GD

Graham Donnachie
Tel: 0131 440 6155
e-mail: graham@greencatrenewables.co.uk
web: www.greencatrenewables.co.uk

18/07/2014

Colliston Farm Wind Turbine (14/00468/FLL) – Response to Landscape Architect Comments

Dear Andy,

Thank you for your email on the 16/07/2014 in which you passed on comments from the Perth and Kinross Council Landscape Architect relating to the proposed Colliston Farm Wind Turbine (14/00468/FLL).

As I am sure you will appreciate, a great deal of time and consideration has gone into the re-design process of this application, and we are confident that the application fully address the concerns of the original application and complies with local and national policies. We feel that the landscape and visual impacts of the proposed 46m wind turbine have been overstated and would like to take the opportunity to respond to the concerns raised:

- *“The location is on the south facing slopes of the Ochils and would therefore be prominent in views from the south and this is likely to have a significant effect on the Kinross AGLV.”*

The Kinross AGLV is located to the east of Kinross, covering the landscape between Loch Leven and the Lomond Regional Park.

The impact on the AGLV was assessed as part of the ER, where it was referred to as the Lomond Hills AGLV. The impacts on this area are considered to be negligible. There is no suggestion that the proposed turbine at this scale will have a significant effect on the setting of the AGLV.

Viewpoints 6 & 9 are taken from locations relatively close to the AGLV and neither location depicts an overly dominant or prominent feature within the landscape. The photomontages are shown in **Figure 1.1 and 1.2** below – A3 versions are in the Landscape Figures document.



Figure 1.1 - VP06 – B919



Figure 1.2 - VP09 – Loch Leven Cottages

The ZTV associated with the proposed Colliston turbine shows theoretical visibility over the western half of the AGLV, covering around 50% of the AGLV area. Views from within this section of the AGLV will be further limited by vegetation and other features present in the wider landscape.

The AGLV abuts the Regional Park around the Lomond Hills. From these elevated positions the views from within the AGLV will be open and panoramic, offering fairly broad views in all directions across the surrounding landscapes. From these more elevated locations the Colliston Farm turbine would be viewed solely against the landscape. As well as these open views, the Loch Leven vistas are also important. The proposed turbine would not appear in the views to the west towards the Loch from these areas.

From the southern banks of Loch Leven (**Viewpoint 9**) the turbine is almost completely absorbed by the Lochelbank Windfarm, marginally extending the horizontal influence of the turbines already present in the view, although the change to the view is negligible.

Exiting the AGLV to the north, **Viewpoint 6**, located at the side of the B919, depicts a turbine predominantly viewed against the upland landscape of the Ochils. The turbine does not create a feature on the skyline and would be absorbed to some extent by the large scale of the Ochils which spread to the left of the receptor. The proposed turbine appears more akin in scale with the electricity pylons which traverse the horizon beyond. The Lochelbank turbines appear in this view, although they are heavily screened by both the intervening landscape and vegetation features present in the landscape. The Lochelbank turbines are present in the photograph in **Figure 1.1**, highlighting how unobtrusive the turbines are in this particular view, they are not easily discernible on the horizon.

The impact on the AGLV is considered to be minimal.

- *“It would be worth having a look at the Tillyrie report as some of the reasons for refusal may apply to this application.”*

We do not think that a comparison with the refused Tillyrie development is valid or appropriate.

The Colliston site sits at an elevation of 207m AOD, whilst the Tillyrie site is almost 100m higher, at an elevation of 300m AOD. The turbines proposed at Tillyrie also differ in number and scale, with the Tillyrie development proposing 3 x 74m tip turbines, compared to the single 47m turbine at Colliston. The two sites are 3.5km apart and differ in their appearance in both the immediate and wider landscape. The Colliston turbine, which is located at a much lower altitude away from the more sensitive summits of the Ochils and near the transition with the lowland landscape to the south, would not have the same visual impact as the Tillyrie cluster. We are concerned by the suggestion that refusal reasons for Tillyrie could simply be applied to a development in a different location, with differing turbine scale and numbers.

- *“The design rationale fails to explain how the proposed site relates to the existing wind farms in the area – would it appear to be an outlier on the skyline and/or reduce the spacing between Green Knowes and Lochelbank?”*

The proposed turbine at Colliston Farm is located over 15km from Green Knowes and the two schemes rarely occupy the same view. It is therefore unlikely that there would be any significant cumulative effects arising between the two developments. **Figure 1.3** shows the CZTV, with only the area around Loch Leven showing any significant cumulative intervisibility, highlighted in the darker green coloration. As has been demonstrated from these areas views of Green Knowes are extremely limited, with the wind farm located over 15km from the area.

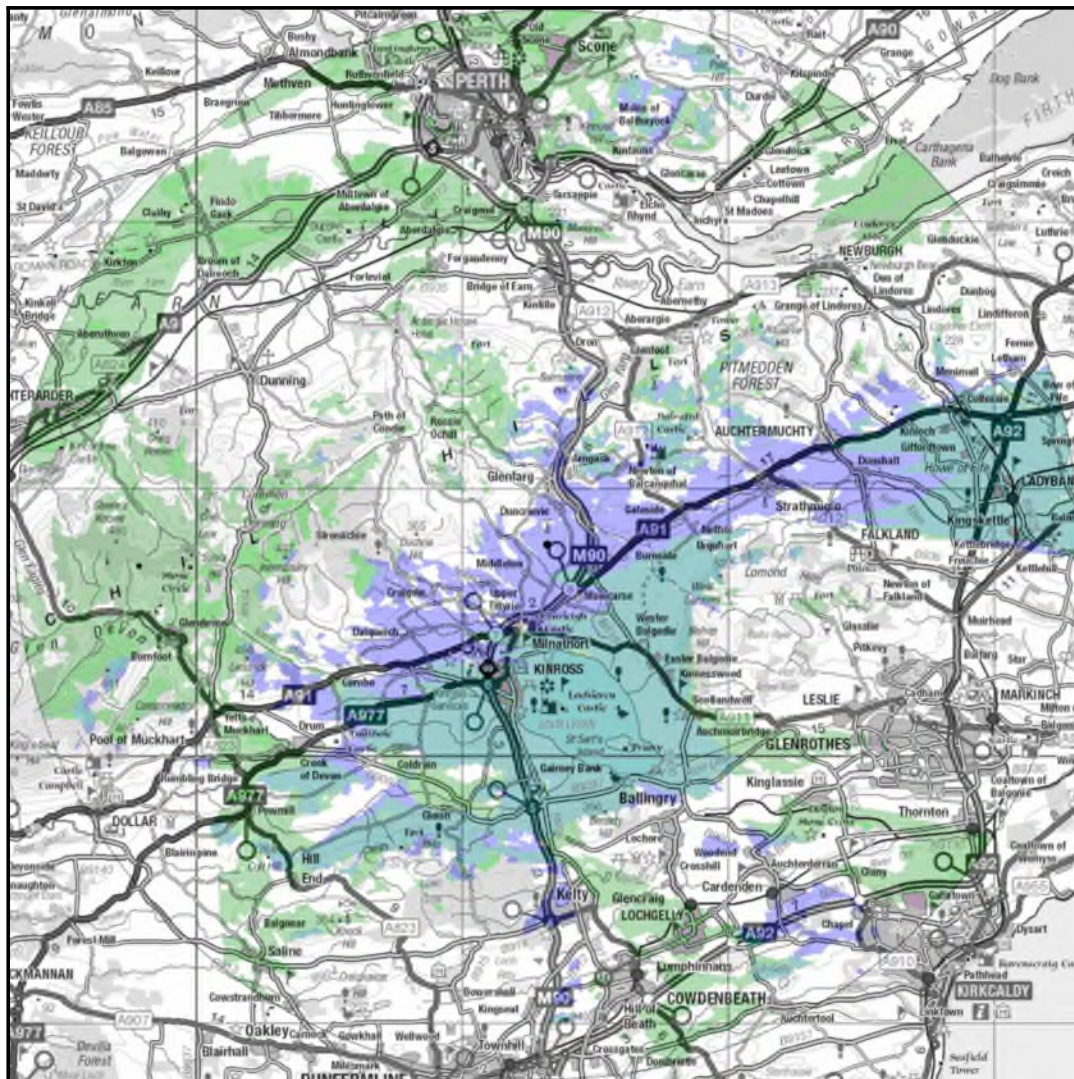


Figure 1.3 – CZTV with Green Knowes

The Lochelbank Windfarm is located ~6km to the north of the Colliston Farm site.

There are relatively few views where all three developments would appear together, with the view from the Bonnet Stane being one of relatively few locations that all three developments appear visible in successive views. The photomontage is shown in **Figure 1.4**.



Figure 1.4 – VP08 – Bonnet Stane looking towards Colliston Farm and Green Knowes, Lochelbank to the right of the view

At this distance Green Knowes (20.2km distant) forms a barely discernible feature on the horizon, while the Lochelbank Windfarm is in a relatively prominent feature on the horizon to the right of the view. From the Bonnet Stane the Colliston Farm turbine is viewed against the landscape, and absorbed by the large scale and openness of the vista. There is little visual confusion between any of the developments. The Colliston turbine does not reduce the spacing between the Green Knowes and Lochelbank Windfarms, appearing fleetingly in cumulative views from across the wider area to the south.

- *“The location of the turbine would bring it closer to the lowlands and when viewed from the south it would visually appear to be a similar size as Lochelbank in some views whilst in reality the two schemes are not related to one another (this illusion is similar to the existing relationship between the turbines at East Gormack, Stuart Tower with Drumderg) and therefore creates a confusing and adhoc image of wind energy in the landscape.”*

The only viewpoint where the turbines appear “similar” in scale is that taken from the south banks of Loch Leven, see **Figure 1.2**. At this point the Lochelbank turbines are partially screened by the intervening landscape and the Colliston Farm turbine appears predominantly against the landscape. Due to the relative perspective in the landscape the two schemes do appear related, although there is no visual confusion as the Colliston Farm turbine is absorbed by the operating Windfarm, appearing as a natural extension and increasing the horizontal extent of Lochelbank marginally.

The most prominent views of the Colliston turbine occur in the immediate areas around the site, with some views from the M90 to the south-east. From these areas there are no cumulative impacts with any other local developments within the Ochil Hills such as Lochelbank or Green Knowes. Views from the wider areas to the south, will see some cumulative effects as discussed, although these never become overbearing and there would be no feeling of cluttering within the views with

the addition of the Colliston Farm turbine, due to the fact that there are relatively few developments within the area.

Conclusion

The proposal for a single 46m tip turbine on land at Colliston Farm is a carefully re-designed resubmission taking into account the comments received for the previously proposed single 86.5m turbine.

The new proposal has moved the turbine a significant distance downhill from the previous more prominent location. As well as this reduction in siting elevation the overall height of the proposed turbine has dropped to under 50m. We feel that the conclusions reached regarding the turbine's visual impact on the Kinross AGLV and cumulative impacts are over-stated in this instance.

The turbine where visible is a minor feature and located away from any prominent hill summits; indeed the turbine often appears backdropped by the landscape to the north. When visible on the horizon the turbine is viewed backdropped by the sky, never becoming a dominant feature within the views, and appears more in scale with other man made features such as electricity pylons and farm infrastructure than the larger scale upland wind turbines at Lochelbank and Green Knowes.

Kind Regards,
Graham Donnachie



Planning and Regeneration
Head of Service David Littlejohn

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D A Baillie And Sons
c/o Green Cat Renewables
Glen Moon
Stobo House
Midlothian Innovation Centre
Roslyn
EH25 9RE

Telephone 01738 475300

Ref No 14/00468/FLL

Date 25th March 2014

Dear Sir / Madam,

Town and Country Planning (Scotland) Act, 1997 as amended by Planning etc (Scotland) Act 2006

RE: Erection of a wind turbine and ancillary infrastructure at Colliston Farm Drunzie Glenfarg Perth PH2 9PE

Thank you for your recent application for planning permission or for the approval of conditions arising from a planning permission in principle for the above proposal. I write to confirm that your application has been registered. This letter is accompanied by a guidance note on "What Happens to my Planning Application?". This explains the process of assessing and deciding your application. Your application is for a 'Local Development' as defined in the Town and Country Planning (Hierarchy of Development)(Scotland) Regulations 2009.

Registration Details

Application reference number - 14/00468/FLL
Date of registration - 20th March 2014

Description of proposed development

The description of the proposed development and/or the site address may have been changed from the planning application form in order to make the description more explicit and legally correct. This revised description will appear on the decision notice. It will be assumed that the amended description is acceptable to you unless you indicate otherwise.

Statutory Advertisement

If this application requires to be advertised under the Town and Country Planning (Development management Procedure)(Scotland) Regulations 2008, and payment has not yet been made, then I will re-contact you concerning payment for the cost of the advert.

Timescale for a decision

In most cases with a Local Development, if you do not receive a decision from the Council within two months of the date of registration you may request a review by the Council's Local Review Body, or in a few cases, you may appeal to Scottish Ministers. The form to request a review may be obtained from The Secretary, Local Review Body, Perth and Kinross Council, Committee Services, Council Building, 2 High Street, Perth PH1 5PH or email to planninglrp@pkc.gov.uk . The form to request appeal may be obtained from the Scottish Government Directorate for Planning and Environmental Appeals, 4 The Courtyard, Callendar Business Park, Callendar Road, Falkirk FK1 1XR Tel no. 01324 696 400.

Many applications take longer than two months to resolve and in these cases we will write to you to explain the reason and if appropriate ask for an extension to the two-month time period. If you have not heard from us after two months you should contact the case officer.

Please note that **work must not start** until you have received planning permission from the Council.

Yours faithfully

Nick Brian

Development Quality Manager

Receipt of Application Fee Payment

Payment Type	cheque
Receipt Number	05758
Amount Received	£4202.00
Payment Date	20th March 2014
Total Received	£4202.00

What Happens to My Planning Application ?

- A Guide for Applicants



This guide is normally sent out with the acknowledgement of a “valid” application. The acknowledgement letter confirms the brief description of the proposed development, the application reference number, whether the application is for a ‘Local’ or ‘Major’ development and the date of registration. It explains the initial statutory period from the date of registration for dealing with the application and your right of appeal thereafter, if you have not agreed to an extension of time. The initial statutory period is two months for Local Developments and four months for Major Developments.

Can I speak to the case officer?

You are asked not to contact the planning officer during the initial statutory period for dealing with your application. This allows the case officer to concentrate on assessing your application. You will normally only be contacted during that period if we need you to give further consideration to a particular issue or if we wish to extend the statutory period.

What happens if I am asked to change my application?

Applicants will usually be requested to **withdraw** an application with a view to subsequent re-submission of the revised proposals if the change requested by the Planning Service is “material”. In such cases, it is not possible to amend the current application.

Where the changes are so minor as not to be material, applicants will normally be allowed 14 days for the submission of the requested change. If this is unlikely within 14 days, the applicant will be requested to withdraw the application and resubmit a new application once the changes have been finalised. A new application for a similar development does not normally require a fee provided it is submitted within one year of the registration of the previous application.

How can I present information if I don’t speak to the case officer?

To avoid the need to re-submit an application and to avoid the need to contact the case officer, any information you wish to provide which is intended to explain or support your application should be included **in writing with the initial application**. Additional information should not in any case be provided verbally to the case officer. By providing information in writing at the start, the information is available to all those involved in the decision making process from the outset. You can follow the progress of your application on “PublicAccess” which is accessible from the “Online Planning Applications” webpage on the Council’s website at www.pkc.gov.uk

What does the case officer do with the application?

The planning case officer will initially undertake appropriate consultations with other statutory agencies (such as Scottish Natural Heritage), arrange for the application to be advertised in a local newspaper and on site where this is necessary, study the application and inspect the site. The case officer will not normally arrange a set time to make the site visit or arrange to meet the applicant on site.

Once all the necessary information and comments have been received, the case officer will undertake a professional assessment of the proposed development in relation to the site itself, the policies in the Development Plan, other relevant Council Policies, government guidance, comments received from the public, comments received from Statutory Consultees and any other material considerations. In some cases this may lead to a request to alter the application or provide more information.

As explained above, this may be accompanied by a request to withdraw the application and re-submit it once the revised proposals or additional information are available.

As the final stage in this assessment, the case officer will prepare a recommendation for either the Councillors on the Development Control Committee or a senior planning officer to determine the application. If it is considered likely that your planning application will take more than the statutory period to determine, you will be contacted before that date with an explanation and a request to agree a continuation of the application, if that is appropriate.

Who will decide my application?

The determination of the majority of planning applications is delegated to senior planning staff in the Environment Service. Some planning applications are referred for decision to Councillors on the Development Control Committee of the Council, which meets monthly. A very few applications have to be decided by the full Council and separate guidance will be issued to applicants in these cases. Applicants and the public may attend these meetings.

The decision as to whether or not an application has to be decided by the Committee is dependent on such matters as the number of objections received and whether the application is proposed for approval or refusal by the planning officer. It is therefore not possible in most cases to predict before the end of the application process whether an application will be referred to the Committee. The Council's "Scheme of Administration" laying down what may be delegated to officials and what has to be referred to the Committee is available from the Planning Service and from the Council's website.

Can I speak at the Committee?

Where an application will be determined by the Development Control Committee, applicants (and objectors) are informed in advance and they may ask to be heard at that meeting. This is at the discretion of the Committee but is normally allowed. If there are a number of objectors they are likely to be asked to have only one representative to speak. The presentation to the Committee by applicants or objectors cannot include additional written information, photographs etc.

What is in the decision letter?

In due course, you will receive a formal decision letter from the Council approving, approving with conditions, or refusing the planning application. Reasons will be given for any approval, for any conditions attached to an approval and for any refusal. You will also be given details of your right to have any refusal or any condition on an approval reviewed. Depending on the scale of the application and whether or not the decision was made by the Committee, this will either be through a review by the Council's Local Review Body or an Appeal to the Scottish Ministers.

If you do receive permission, you should **read the letter granting permission** carefully, including any Conditions and any Notes. Sometimes the conditions on an approval will require the submission of further details for written approval **prior to starting** the development or they may require that certain work, such as the formation of the access, is carried out prior to other work. If these conditions are not complied with at the specified time then the whole planning permission can not be legally implemented. This applies even if, for example, the required details are subsequently submitted. In addition the decision letter will include information on the requirement for applicants to submit notices to the Council concerning commencement and completion of works and, in some cases, to display information on site during the development. These also have to be complied with to ensure that the development is lawful. It is therefore essential for the developer's own protection that these conditions and notices are fully complied with.

Perth and Kinross Council
August 2009

Graham Donnachie

From: Andy Baxter [ABaxter@pkc.gov.uk]
Sent: 16 July 2014 15:59
To: Graham Donnachie
Subject: FW: Wind Turbine @ Colliston Farm (14/00468/FLL)

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Graham,

Here are the comments from Doug, in terms landscape matters which I would appreciate your comments on.

On aside, you should also note that the application at Temple Hill was refused at the DM Committee this morning.

Cheers,

Andy

From: Douglas Cook
Sent: 01 July 2014 11:18
To: Andy Baxter
Subject: RE: Wind Turbine @ Colliston Farm (14/00468/FLL)

Hi Andy,

The location is on the south facing slopes of the Ochils and would therefore be prominent in views from the south and this is likely to have a significant effect on the Kinross AGLV. It would be worth having a look at the Tillyrie report as some of the reasons for refusal may apply to this application.

The design rationale fails to explain how the proposed site relates to the existing wind farms in the area – would it appear to be an outlier on the skyline and/or reduce the spacing between Green Knowes and Lochelbank? The location of the turbine would bring it closer to the lowlands and when viewed from the south it would visually appear to be a similar size as Lochelbank in some views whilst in reality the two schemes are not related to one another (this illusion is similar to the existing relationship between the turbines at East Gormack, Stuart Tower with Drumderg) and therefore creates a confusing and adhoc image of wind energy in the landscape.

Please give me a call if you wish to discuss this further.

Regards

Douglas

Douglas Cook
Landscape Architect
Community Greenspace

Perth and Kinross Council, Pullar House, 35 Kinnoull Street, Perth, PH1 5GD
Tel: 01738-475279 Fax: 01738-476410 Email: dcook@pkc.gov.uk

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REPORT OF HANDLING

DELEGATED REPORT

Ref No	14/00468/FLL	
Ward No	N8- Kinross-shire	
Due Determination Date	19.05.2014	
Case Officer	Andy Baxter	
Report Issued by		Date
Countersigned by		Date

PROPOSAL: Erection of a wind turbine and ancillary infrastructure

LOCATION: Colliston Farm, Drunzie, Glenfarg, Perth, PH2 9PE

SUMMARY:

This report recommends **refusal** of a detailed planning application for the erection of a single 46m (tip) wind turbine at Colliston Farm, Glenfarg as the development is considered to be contrary to the relevant provisions of the Development Plan and there are no material considerations apparent which justify setting aside the Development Plan.

DATE OF SITE VISIT: 29 September 2014 (re-visit)

BACKGROUND AND DESCRIPTION OF PROPOSAL

The application site relates to a small area of farmland at Colliskton Farm, a small hill farm at Drunzie which is located approx. 1.9km south of Glenfarg and 2km west of the M90. The site is surrounded by pasture land which appears to be predominately used for the grazing of animals. Approx. 5km to the south of the site is Kinross House, which is surrounded by a Historic Garden and Designed Landscape.

Planning consent was refused in 2012 (12/01727/FLL) for a larger turbine on a site approx. 550m to the north on the grounds that the proposal would have an adverse impact on the visual amenity of the area, both individually and collectively. The height of previously refused turbine was 86.5m to blade tip, with a hub height of approx. 60m.

This planning application seeks to obtain detailed planning consent for a far smaller turbine measuring 46m to its blade tip with a hub height of approx. 32m which will result in an estimated output of approx. 225kW. The turbine will be of the three blade variety, and in addition to the turbine itself it is likely that a small ancillary building will be sited close to the base of the turbine, and there may be the need for a small borrow pit for obtaining aggregate. The

applicant has also proposed approx. 190m of new access track to facilitate the delivery of the turbine. In addition to this, approx. 800m of an existing track will require an upgrade.

PROCEDURAL MATTERS

Screening Opinion

A Screening Opinion has been carried out by the Council which concluded that the proposal was not an EIA development

Additional Information

Although a formal EIA was not required, the applicant has nevertheless opted to lodge a detailed LVIA assessment which includes a series of ZTVs, wirelines and photomontages to help demonstrate the likely impact that the turbine will have on the visual amenity of the area and on the landscape. A series of background reports also accompany the planning application.

SITE HISTORY

A detailed planning application (12/01727/FLL) on an adjacent site approx. 550m to the north for a larger wind turbine (approx. 86.5m) was refused planning consent on the grounds that,

- 1 *As the proposed scale of the turbine will not be absorbed by the existing landscape framework surrounding the site, which in turn will lead to the turbine becoming a dominant feature within the landscape resulting in a significant adverse impact on the visual amenity and landscape character of the area), the proposal is contrary to Policy 2 of the Kinross Area Local Plan 2004 which seeks to ensure that all new developments have a good landscape framework and will not adversely impact on the amenity of existing areas and Policy 5 of the Kinross Area Local Plan 2004, which seeks to conserve the existing landscape character.*
- 2 *As the proposal will potentially result in a significant cumulative, adverse visual impact on the landscape of the area by virtue of it being viewed in combination with both existing and proposed wind turbines in the surrounding area, the proposal is contrary to Policy 2 of the Kinross Area Local Plan 2004, which seeks to ensure that new developments do not adversely impact on the amenity of existing areas and Policy 5 of the Kinross Area Local Plan 2004 which seeks to conserve the existing landscape character.*
- 3 *The approval of this proposal would establish an undesirable precedent for similar sized developments within the local area, which would be to the detriment of the overall visual character of the area, and which in*

turn could potentially undermine (and weaken) the Councils established relevant Development Plan policies.

- 4 *An approval of the proposal would contravene the recommendations contained within the Tayside Landscape Character Assessment 1999 and Kinross-shire Landscape Character Assessment 1995, in relation to tall structures on the landscape surrounding Loch Leven Basin.*

PRE-APPLICATION CONSULTATION

Following the previous refusal, the applicant sought advice from the Planning Service on other potential sites and also potential sizes of turbines which might be appropriate. General advice was offered to the applicant, however in the absence of a full LVIA it was not possible to offer specific comment on a revised proposal.

NATIONAL POLICY AND GUIDANCE

The Scottish Government expresses its planning policies through The National Planning Frameworks, the Scottish Planning Policy (SPP), Planning Advice Notes (PAN), Creating Places, Designing Streets, and a series of Circulars.

Of specific relevance to this proposal are,

Scottish Planning Policy 2014

The Scottish Planning Policy (SPP) was published on 23 June 2014. It sets out national planning policies which reflect the Scottish Ministers' priorities for operation of the planning system and for the development and use of land.

The SPP promotes consistency in the application of policy across Scotland whilst allowing sufficient flexibility to reflect local circumstances. It directly relates to:

- ☐ the preparation of development plans;
- ☐ the design of development, from initial concept through to delivery; and
- ☐ the determination of planning applications and appeals.

The following sections of SPP are of particular importance in the assessment of this planning application:-

- ☐ Paragraphs 24 – 35, which relate to Sustainability
- ☐ Paragraphs 74 – 83, which relate to Promoting Rural Development
- ☐ Paragraphs 135 – 151, which relate to Valuing the Historic Environment

- ☐ Paragraphs 152 -174, which relate to Delivering Heat and Electricity
- ☐ Paragraphs, 193 -218 which relate to Valuing the Natural Environment

Planning Advice Notes

The following Scottish Government Planning Advice Notes (PAN) are relevant to this planning application,

- ☐ PAN 1/2011 Planning and Noise
- ☐ PAN 2/2011 Planning and Archaeology
- ☐ PAN 1/2013 Environmental Impact Assessment
- ☐ PAN 40 Development Management
- ☐ PAN 51 Planning, Environmental Protection and Regulation
- ☐ PAN 60 Planning for Natural Heritage

Onshore wind turbines – Online Renewables Advice December 2013

Provides specific topic guidance to Planning Authorities from Scottish Government.

The topic guidance includes encouragement to planning authorities to:

- develop spatial strategies for wind farms;
- ensure that Development Plan Policy provide clear guidance for design, location, impacts on scale and character of landscape; and the assessment of cumulative effects.
- involve key consultees including SNH in the application determination process;
- direct the decision maker to published best practice guidance from SNH in relation to visual assessment, siting and design and cumulative impacts.

DEVELOPMENT PLAN

The Development Plan for the area comprises the TAYplan Strategic Development Plan 2012-2032 and the Perth and Kinross Local Development Plan 2014.

TAYplan Strategic Development Plan 2012 – 2032 - Approved June 2012

The vision states *“By 2032 the TAYplan region will be sustainable, more attractive, competitive and vibrant without creating an unacceptable burden on our planet. The quality of life will make it a place of first choice, where more*

people choose to live, work and visit and where businesses choose to invest and create jobs.”

Policy 3 - Managing TAYplan's Assets

Seeks to respect the regional distinctiveness and scenic value of the TAYplan area and presumes against development which would adversely affect environmental assets.

Policy 6 - Energy and Waste/Resource Management Infrastructure

Relates to delivering a low/zero carbon future for the city region to contribute to meeting Scottish Government energy targets and indicates that, in determining proposals for energy development, consideration should be given to the effect on off-site properties, the sensitivity of landscapes and cumulative impacts.

Perth and Kinross Local Development Plan 2014 – Adopted February 2014

The Local Development Plan was adopted by Perth and Kinross Council on 3 February 2014. It is the most recent statement of Council policy and is augmented by Supplementary Guidance.

Within the Local Development Plan the site lies within the landward area, where the following policies are directly applicable.

Policy PM1A – Placemaking

Development must contribute positively to the quality of the surrounding built and natural environment, respecting the character and amenity of the place. All development should be planned and designed with reference to climate change mitigation and adaption.

Policy HE1B - Non Designated Archaeology

Areas or sites of known archaeological interest and their settings will be protected and there will be a strong presumption in favour of preservation in situ. If not possible provision will be required for survey, excavation, recording and analysis.

Policy NE3 – Biodiversity

All wildlife and wildlife habitats, whether formally designated or not should be protected and enhanced in accordance with the criteria set out. Planning permission will not be granted for development likely to have an adverse effect on protected species.

Policy ER1A - Renewable and Low Carbon Energy Generation

Proposals for the utilisation, distribution and development of renewable and low carbon sources of energy will be supported where they are in accordance with the 8 criteria set out. Proposals made for such schemes by a community may be supported, provided it has been demonstrated that there will not be significant environmental effects and the only community significantly affected by the proposal is the community proposing and developing it.

Policy ED3 – Rural Business and Diversification

Identifies favourable support for the expansion of existing businesses in rural areas.

Policy ER6 - Managing Future Landscape Change to Conserve and Enhance the Diversity and Quality of the Areas Landscapes

Development proposals will be supported where they do not conflict with the aim of maintaining and enhancing the landscape qualities of Perth and Kinross and they meet the tests set out in the 7 criteria.

Policy EP5 - Nuisance from Artificial Light and Light Pollution

Consent will not be granted for proposals where the lighting would result in obtrusive and / or intrusive effects.

Policy EP8 - Noise Pollution

There is a presumption against the siting of proposals which will generate high levels of noise in the locality of noise sensitive uses, and the location of noise sensitive uses near to sources of noise generation.

OTHER COUNCIL POLICIES

Perth & Kinross Wind Energy Policy & Guidelines (WEPG) 2005

None specifically applicable to the proposal, although it should be noted that the Council's SPG on Wind Energy Proposals is presently under review. I therefore consider its existence should be acknowledged, but the weighing given to its contents should be limited at this stage.

CONSULTATION RESPONSES

Environmental Health have commented on the planning application and raised no concerns regarding the proposal.

Scottish Water have commented on the planning application and raised no concerns.

Shell UK Exploration And Production have commented on the planning application and raised no objections.

BP Consultations have commented on the planning application and raised no objections.

Ministry Of Defence – Windfarms has commented on the planning application and raised no objections.

Civil Aviation Authority have commented on the planning application and raised no objections.

Historic Scotland have commented on the planning application and raised no objections.

REPRESENTATIONS

Five letters of representations have been received in relation to the proposal.

All five representations are offering support for the proposal. The main reasons raised within the letters of support relate primarily to the need for the country as a whole to provide more renewables, reduce CO2 emissions. Specific comment is also made in relation to the fact that the approval of this turbine would allow the applicant to remain economically competitive. The supports also state that the proposed turbine will not dominate the landscape and will not have an adverse impact on the surrounding countryside.

ADDITIONAL STATEMENTS RECEIVED

Environment Statement	Not Required
Screening Opinion	Carried out by the Council
Environmental Impact Assessment	Not Required
Appropriate Assessment	Not Required
Design Statement or Design and Access Statement	Submitted
Report on Impact or Potential Impact	Submitted (<i>LVIA submitted in support of the application</i>)

APPRAISAL

Sections 25 and 37 (2) of the Town and Country Planning (Scotland) Act 1997 require that planning decisions be made in accordance with the development plan unless material considerations indicate otherwise.

The Development Plan for the area comprises the approved TAYplan 2012 and the adopted Perth and Kinross Local Development Plan 2014.

In terms of other material considerations, the content and advice offerered in the Tayside Landscape Character Assessment and the Kinross-shire Landscape Character Assessment are material considerations.

Policy Appraisal

In terms of Policy issues, both the Tay Plan and the Local Development Plan contain policies which are applicable to this proposal.

Policy 6 of the Tay Plan is directly applicable to this proposal as are *Policies ER1A (Renewals), PM1A (Placemaking), ED3 (Rural Development), NE3 (Biodiversity) EP5 (pollution), EP8 (pollution), ER6 (landscape), HE1 (archaeology)* of the Local Development Plan.

Policy 6 of the Tay Plan states that Local Development Plans and development proposals should ensure that all areas of search, allocated sites, routes and decisions on development proposals for energy and waste/resource management infrastructure have been fully justified.

Policy ER1A of the Local Development Plan offers general support for renewable proposals providing they are in suitable locations which will not adversely affect the existing environment whilst *Policy ER6* states that new proposals will only be supported when they do not conflict with the landscapes qualities of the surrounding land.

Policy PM1A seeks to ensure (amongst other things) that all new developments contribute positively to the natural and built environment, whilst *Policies EP5 and EP6* seek to ensure that new proposals do not create an unacceptable level of noise or light pollution.

Policy ED3 of the Local Development Plan offers favourable support for the expansion of existing businesses in rural areas, whilst *Policy NE3* seeks to protect and enhance existing wildlife and their habitats - regardless of whether they are statutory protected or not.

Accordingly, based on the above, I ultimately consider the key policy issues for this proposal to be:-

- a) whether or not the proposal (by virtue of its siting and height) will have an unacceptable impact on the landscape / visual amenity of the area,
- b) whether or not the proposal is compatible with existing, surrounding land uses and,

- c) whether or not there will be an adverse impact on any protected species / habitats or local wildlife

For reasons stated below, I consider the proposal to be inconsistent with Council policy, namely in respect of point a).

Landscape / Visual Impact

In terms of the impact that the development will have on both the local landscape and the visual amenity of the area, there is no doubt that this proposal will have a significantly less of an impact than the larger turbines (70m+) which are being proposed in the southern part of Perth and Kinross.

However, this alone is not a reason for approving the planning application, so an assessment of the proposal's likely visual and landscape impacts in isolation (and cumulatively) is necessary.

Landscape Impact

In terms of renewable developments, *Policy ER1A* of the Local Development Plan key objective is to protect the existing landscapes, and in terms of wind turbines this would mean restricting renewable developments within the landward area if the proposal would have an adverse, negative impact on the landscape of the area concerned.

In considering the likely impact that the proposal would have on the local landscape, it is useful to consider the contents of the TLCA. Within the TLCA the application site lies within the Ochil Hills which falls into the Igneous Hills classification. The TLCA states that the Ochil Hills form an essential part of a distinctive landscape character type (LCT), particularly when viewed from the flat, open landscape of the Loch Leven Basin to the south and the TLCA states that this LCT will exert an influence over the adjacent Lowland Basin landscape character type, which includes Loch Leven.

The TLCA also states that the Ochils may be one of the most suitable areas for wind turbine developments in Tayside, subject to evaluation in terms of the sensitivity of the landscape and the capacity of the local area to absorb the development proposed. Wind farm developments should be steered away from exposed and steep ridgelines and summits, and away from locations where their visual influence would extend both north and south. Areas with shallow bowls and valleys away from ridges should instead be considered and new development steered towards areas already affected by masts, roads or forestry.

The TLCA goes on to say that whilst these hills are not particularly high, the stark transition between the flat open landscape of the basin and the hills accentuate their size. As such the introduction of large scale structures within the Ochil Hills could potentially upset the perception of the surrounding hills when viewed from the basin, making the hills appear smaller and thereby

diluting their visual influence over the landscape and that this is a particular issue where tall structures, such as wind turbines, are introduced on undeveloped parts of the Ochils.

The significance of the skyline to the landscape character of the basin is referred to in the TLCA and also in the earlier, but more detailed Kinross-shire Landscape Character Assessment (KLCA). This identifies one of the key characteristics of the basin as the dominance and enclosure of the distinctive upland skylines and slopes. Within the KLCA, it is stated that *“The skylines of the Ochils, Lendrick, Benarty and Lomond Hills should be regarded as landscape features of national importance and should be safeguarded from all development proposals that may affect the skylines or landform or visual horizons”*. The KLCA also goes on to say that the Ochils should be safeguarded from all development proposals that may affect the skyline, landform or visual horizons. The TLCA and KLCA both recognise that Loch Leven has a very special ‘sense of place’ which occurs through the combination of landscape types typified by the loch, the Lomond and Ochil Hills and the surrounding agricultural landscape, which are all perceived in a relatively small area.

This position is also echoed in the text of *Policy EP6* of the Local Development Plan which states that new proposals (which affect existing landscapes) must not erode local distinctiveness, diversity and quality of Perth and Kinross’s landscape character areas.

To this end, key issue for this proposal is therefore whether or not the introduction of a 46m structure would result in an adverse impact on the landscape of the area. Whilst it has not been possible due to workloads issues to obtain a detailed response from the Council’s landscape architect on this issue, he has nevertheless made some general comments on the proposal which I consider to hold significant weighting.

The general view of the Council’s Landscape Architect is that the location of the proposed turbine, high on the south facing slopes of the Ochils will result in the turbine being prominent from views from the south, which in turn will have a significant effect on character of the Loch Leven Basin.

However, it must be noted that the local landscape is not protected by any specific local, regional or national designations, and whilst it perhaps has some local amenity value to the local community, it is not of exceptional quality in landscape terms. Within the local area, the natural landscape has already been altered by the influence of man-made developments (such as existing turbines) and there is perhaps an argument to be made that this proposal would be another stage in the evolution of this landscape – which has been identified in the TLCA as perhaps being one of the most suitable areas for wind turbine development in the old Tayside region.

The impact that a proposal has on a landscape is regrettably an extremely subjective matter, with often a fine line being drawn between a proposal having an adverse impact and a proposal simply changing the appearance of the landscape. In this case, I consider there to be sufficient impact on the character on the local landscape both individually, and in combination with other installed, consented and proposed turbines in the local area to potentially result in an adverse impact which would be to detriment to the landscape character of the area, particularly when viewed from the south.

Visual Amenity

Assessing the potential impact on existing visual amenity is again an extremely subjective matter, particularly as everyone has their own idea of what they consider to be a pleasant environment with attractive vistas. To this end, and to enable an assessment of the likely impact on the visual amenity of the area, the applicant has submitted supplementary information in the form of a series of wireframes and visualisations from a number of selected viewpoints which helps demonstrate the likely visual impact that the development would have.

This information was also useful in assessing the landscaping impact.

Viewpoint 1 is taken from a public road at approx. E312426 N707434 and shows the view looking in a north-easterly direction towards the site. This viewpoint is located approx. 0.9km away from the proposed turbine. The visualisation provided from this viewpoint shows the turbine to be positioned on the skyline of rising land, with the majority of the turbine tower being visible.

Viewpoint 2 is taken at approx. E313687 N709098 from the south-east edge of the settlement of Duncricvie at the side of the minor road which runs through the settlement and shows the view looking in a south-westerly direction towards the site which is approx. 1.3km away. The viewpoint shows the turbine will not readily be visible from this viewpoint. In addition to this, it was clear from visiting this viewpoint, and associated stretches of road, the view of the turbine from this section of road will be significantly screened by existing vegetation and land form.

Viewpoint 3 is taken from the side of the minor road which links Newhill to Path of Condie at approx. E311400 N708373 looking eastwards towards the turbine which is approx. 1.9km away. The viewpoint shows the hub and a small section of tower appearing above a small hill, with the turbine set within the backdrop of rising land to the rear.

Viewpoint 4 is taken near to the M90 motorway, by the over-bridge to the north of junction 8 at E314569 N707170 looking in a north-westerly direction towards the site approx. 1.5km away from the turbine. The viewpoint was selected to try and represent the view that a motorist will have travelling on the M90, although the view from this point would not be as prominent from the

roadside due to it sitting lower in the landscape. From this viewpoint, the full height of the turbine is visible with only a small area of rising land behind.

Viewpoint 5 is taken directly south of the site from the grounds of Burleigh Castle on the eastern edge of the settlement of Milnathort at approx. E312902 N704599 looking north towards the site with the turbine being approx. 3.3km away. From this viewpoint, the full height of the turbine will be visible. The general view between the turbine and the viewpoint is 'busy' one, with a number of pylons crisscrossing the view. From this viewpoint, a proposed turbine at Temple Hill will be visible in the same view.

Viewpoint 6 is taken from a point south east of the site from the side of the B919 between Newlands and Pittendreich Farms at approx. E316003 N704745 looking north-west towards the site. The turbine will be located approx. 4.2km away. From this viewpoint, the full height of the turbine will be visible directly in front of the road users (travelling north). Whilst the turbine will be positioned on rising land as opposed to a skyline, the blades of the turbine will nevertheless still break the skyline with the hills behind. In addition to this, the proposed turbine would be seen in combination with both the proposed turbine at Temple Hill to the left (west) and the operational windfarm of Lochelbank to the right (east). The prominence of the turbine will also increase the further north along the road.

Viewpoint 7 is taken from the south of the site at local services on the western edge of Kinross from approx. E313687 N709098 looking in a north-north-easterly direction towards the site. The turbine will be located approx. 5.6km away. From this viewpoint the turbine will be visible on the skyline with almost the full height of the turbine visible.

Viewpoint 8 is taken from the east of the site at the Bonnet Stane, near Gateside approx. at E318987 N707062 looking westwards towards the site. The turbine will be located approx. 5.8km away. From this viewpoint, the turbine will be clearly visible and will be seen in combination with both Lochelbank and also Green Knowes as stated in the ES. However, this relationship is not shown on the visualisation submitted.

Viewpoint 9 is taken from the edge of Loch Leven, near to the Holiday Cabins located on the south eastern edge of the Loch at approx. E312902 N704599 looking north-north-west towards the site and approx. 9.4km away from the proposed turbine. From this viewpoint, the turbine will be clearly visible on the southern side of the hills on which it sits, and will likely be seen in combination with Lochelbank. However, it is noted that relationship is not shown on the visualisations submitted.

Viewpoint 10 is taken near the summit of Kinnoull Hill to the east of Perth on Kinnoull Hill which is a popular destination with walkers and runners as well as other recreational users at approx. E313655 N722709. The view is looking south towards the turbine site which is approx. 14.6km away. From this viewpoint, there will be limited visibility of the turbine due to the intermitting land form.

Viewpoint 11 is taken from the summit of Knock Hill at approx. E305390 N693786 looking north-eastwards towards the site, approx. 16.0km away from the turbine. From this viewpoint, there will be limited visibility of the turbine due the distances involved and the intermitting land form.

Viewpoint 12 is taken at the over bridge at Glenfarg on the M90 at approx. E313805 N711455 looking south towards the site. From this viewpoint, the view shows the proposed turbine not to be visible, however based on the submitted ZTV; the turbine could potentially be visible from points further south on the M90.

Reviewing the visuals, and based on my site visit to the area and surrounding local roads, there are a number of public areas from which the turbine will be clearly visible, particularly from the south. However I do note that the visual impact of this proposal has been significantly reduced in some areas from the previous scheme by a combination of re-positioning and the reduction in height and this is clearly seen from VP3 which is the minor road between Newhill and Path of Condie and also VP6 along the B919. However, from the south the face of the hill on which the turbine is proposed is exposed and I have no doubt that the siting of a turbine in this location will have a significant impact on the visual amenity of the area which will ultimately be to its detriment.

To this end, as per the eventual outcome of the landscape impact issues, I consider the proposal to be unacceptable on visual grounds.

Compatibility with Existing land uses

In terms of the compatibility with existing land uses, I have no concerns regarding the impact that the turbine will have on the commercial activities of the land, and in terms of the impact on any existing residential properties, it is noted that that the closest residential properties are approx. of 0.6km from the site. My Environmental Health colleagues have commented on the proposal and have raised no concerns regarding noise related issues.

Protected Species / Habitats

In terms of the impact on protected species / habitats, I have no immediate concerns regarding this development which could not be adequately addressed or mitigated via appropriate planning conditions. I therefore consider the proposal to be consistent with the relevant Development Plan policies which relate to protected species / habitats, insofar as the proposal would not have an adverse impact on either element.

Other Material Issues

Cultural Heritage

There are several listed buildings, and schedule monuments potentially affected by the proposal; however any impact on their individual settings will not be of a particular significance, and I note that Historic Scotland have no raised any concerns over the development. In addition to this, my Conservation colleagues have indicated that the proposal is unlikely to have any adverse effect on the HGDL associated with Kinross House.

Shadow Flicker

I note that my EHO colleagues have not raised any specific concerns on this topic, and I have no reason to offer a different view.

Aviation Lighting

Any lighting of the turbine, as may be required by the MOD would only be visible from the air, and I do not consider there to be any need for ground based lighting. I therefore have no concerns regarding lighting.

Noise

With regard to noise, I note there are a number of residential properties within the vicinity of the site (the closest one approx. 0.5km away), however my EHO colleagues have raised no concerns regarding this proposal. I therefore do not consider noise to be issue.

TV reception

An appropriately worded condition will be attached to the consent which will provide mitigation measures for any person(s) affected directly by this proposal.

Road / Access Issues

My road colleagues have commented on the proposal and have raised no objection. If the LRB were to support a review of this refusal, a number of conditions could be attached to the consent that would mitigate any potential impact on road and pedestrian safety.

Health & Safety

Following recent national press coverage of turbine failures and subsequent explosions, there are greater concerns amongst the public regarding the safety of wind turbines. Nevertheless, I do not consider this to be a valid planning consideration.

National Guidance

Although the proposal is of a relevantly small scale, the principle of renewable energy developments is supported by the Scottish Government through its planning policies and guidance. However, the Scottish Government also suggests that renewable projects should be sited in appropriate locations which have the ability to absorb the development that is proposed.

Developer Contributions

The Developer Contributions Guidance (in relation to both Education and Transport Infrastructure) is not applicable to this application and therefore no contributions are required in this instance.

Economic Impact

The applicant has indicated that the wind turbine will be an enabling mechanism that can deliver increased competitiveness to the farm whilst sustaining the long term viability of those enterprises. I agree with the applicant, insofar as an approval of this application would (potentially) allow the existing business to remain competitive.

Conclusion

In conclusion, the application must be determined in accordance with the Development Plan unless material considerations indicate otherwise. In this respect, the proposal is considered to be contrary to the approved TAYplan 2012 and the adopted Local Development Plan 2014. I have taken account of material considerations and find none that would justify overriding the adopted Development Plan and on that basis the planning application is recommended for a refusal.

APPLICATION PROCESSING TIME

The recommendation for this application has not been made within the statutory determination period.

LEGAL AGREEMENTS

None required.

DIRECTION BY SCOTTISH MINISTERS

None applicable to this proposal.

RECOMMENDATION

Refuse the application based on the following grounds,

- 1 As the proposed scale of the turbine would not be absorbed by the existing landscape framework surrounding the site, which in turn will lead to the turbine becoming a dominant feature within the landscape which would have a significant adverse impact on the visual amenity and landscape character of the area (in isolation and in combination with other wind energy proposals), the proposal is contrary to Policy 6 of the Tay Plan 2012 and Policies ER1A and ER6 of the adopted Local Development Plan 2014, all of which seek to ensure that all new developments do not have a significant impact on existing landscapes.
- 2 An approval of the proposal would contravene the recommendations contained within the Tayside Landscape Character Assessment 1999 and Kinross-shire Landscape Character Assessment 1995, in relation to tall structures on the landscape surrounding Loch Leven Basin.

Justification

The proposal is not in accordance with the Development Plan and there are no material reasons which justify departing from the Development Plan

Informatives

None

Procedural Notes

Not Applicable.

PLANS AND DOCUMENTS RELATING TO THIS DECISION

14/00468/1 - 14/00468/46 (*inclusive*)

Date of Report 3.10.2014

PERTH AND KINROSS COUNCIL

D A Baillie And Sons
c/o Green Cat Renewables
Glen Moon
Stobo House
Midlothian Innovation Centre
Roslyn
EH25 9RE

Pullar House
35 Kinnoull Street
PERTH
PH1 5GD

Date 9th October 2014

TOWN AND COUNTRY PLANNING (SCOTLAND) ACT

Application Number: **14/00468/FLL**

I am directed by the Planning Authority under the Town and Country Planning (Scotland) Acts currently in force, to refuse your application registered on 20th March 2014 for permission for **Erection of a wind turbine and ancillary infrastructure Colliston Farm Drunzie Glenfarg Perth PH2 9PE** for the reasons undernoted.




Development Quality Manager

Reasons for Refusal

1. As the proposed scale of the turbine would not be absorbed by the existing landscape framework surrounding the site, which in turn will lead to the turbine becoming a dominant feature within the landscape which would have a significant adverse impact on the visual amenity and landscape character of the area (in isolation and in combination with other wind energy proposals), the proposal is contrary to Policy 6 of the Tay Plan 2012 and Policies ER1A and ER6 of the adopted Local Development Plan 2014, all of which seek to ensure that all new developments do not have a significant impact on existing landscapes.
2. An approval of the proposal would contravene the recommendations contained within the Tayside Landscape Character Assessment 1999 and Kinross-shire Landscape Character Assessment 1995, in relation to tall structures on the landscape surrounding Loch Leven Basin.

Justification

The proposal is not in accordance with the Development Plan and there are no material reasons which justify departing from the Development Plan

The plans relating to this decision are listed below and are displayed on Perth and Kinross Council's website at www.pkc.gov.uk "Online Planning Applications" page

Plan Reference

14/00468/1 to 14/00468/46 inclusive

TCP/11/16(332)
Planning Application 14/00468/FLL – Erection of a wind turbine and ancillary infrastructure, Colliston Farm, Drunzie, Glenfarg, PH2 9PE

**PAPERS SUBMITTED
BY THE
APPLICANT**



Pullar House 35 Kinnoull Street Perth PH1 5GD

Tel: 01738 475300

Fax: 01738 475310

Email: onlineapps@pkc.gov.uk

Applications cannot be validated until all necessary documentation has been submitted and the required fee has been paid.

Thank you for completing this application form:

ONLINE REFERENCE 000107549-001

The online ref number is the unique reference for your online form only. The Planning Authority will allocate an Application Number when your form is validated. Please quote this reference if you need to contact the Planning Authority about this application.

Applicant or Agent Details

Are you an applicant, or an agent? * (An agent is an architect, consultant or someone else acting on behalf of the applicant in connection with this application)

☐ Applicant ☒ Agent

Agent Details

Please enter Agent details

Company/Organisation:	Green Cat Renewables Ltd
Ref. Number:	
First Name: *	Graham
Last Name: *	Donnachie
Telephone Number: *	01314406155
Extension Number:	
Mobile Number:	
Fax Number:	
Email Address: *	graham@greencatrenewables.co.uk

You must enter a Building Name or Number, or both:*

Building Name:	Stobo House
Building Number:	
Address 1 (Street): *	Midlothian Innovation Centre
Address 2:	
Town/City: *	Roslin
Country: *	UK
Postcode: *	EH25 9RE

Is the applicant an individual or an organisation/corporate entity? *

☒ Individual ☐ Organisation/Corporate entity

Applicant Details

Please enter Applicant details

Title: *	<input type="text" value="Mr"/>
Other Title:	<input type="text"/>
First Name: *	<input type="text" value="Gavin"/>
Last Name: *	<input type="text" value="Baillie"/>
Company/Organisation:	<input type="text" value="D A Baillie and Sons"/>
Telephone Number:	<input type="text"/>
Extension Number:	<input type="text"/>
Mobile Number:	<input type="text"/>
Fax Number:	<input type="text"/>
Email Address:	<input type="text"/>

You must enter a Building Name or Number, or both:*

Building Name:	<input type="text" value="Colliston Farm"/>
Building Number:	<input type="text"/>
Address 1 (Street): *	<input type="text" value="Drunzie"/>
Address 2:	<input type="text"/>
Town/City: *	<input type="text" value="Glenfarg"/>
Country: *	<input type="text" value="Scotland"/>
Postcode: *	<input type="text" value="PH2 9PE"/>

Site Address Details

Planning Authority:	<input type="text" value="Perth and Kinross Council"/>
---------------------	--

Full postal address of the site (including postcode where available):

Address 1:	<input type="text" value="Colliston Farm"/>	Address 5:	<input type="text"/>
Address 2:	<input type="text" value="Drunzie"/>	Town/City/Settlement:	<input type="text" value="Perth"/>
Address 3:	<input type="text" value="Glenfarg"/>	Post Code:	<input type="text" value="PH2 9PE"/>
Address 4:	<input type="text"/>		

Please identify/describe the location of the site or sites.

Northing	<input type="text" value="708507"/>	Easting	<input type="text" value="313542"/>
----------	-------------------------------------	---------	-------------------------------------

Description of the Proposal

Please provide a description of the proposal to which your review relates. The description should be the same as given in the application form, or as amended with the agreement of the planning authority: *
(Max 500 characters)

Erection of a single wind turbine of 46m to tip and ancillary infrastructure.

Type of Application

What type of application did you submit to the planning authority? *

- ☒ Application for planning permission (including householder application but excluding application to work minerals).
- ☐ Application for planning permission in principle.
- ☐ Further application.
- ☐ Application for approval of matters specified in conditions.

What does your review relate to? *

- ☒ Refusal Notice.
- ☐ Grant of permission with Conditions imposed.
- ☐ No decision reached within the prescribed period (two months after validation date or any agreed extension) – deemed refusal.

Statement of reasons for seeking review

You must state in full, why you are seeking a review of the planning authority's decision (or failure to make a decision). Your statement must set out all matters you consider require to be taken into account in determining your review. If necessary this can be provided as a separate document in the 'Supporting Documents' section: * (Max 500 characters)

Note: you are unlikely to have a further opportunity to add to your statement of appeal at a later date, so it is essential that you produce all of the information you want the decision-maker to take into account.

You should not however raise any new matter which was not before the planning authority at the time it decided your application (or at the time of expiry of the period of determination), unless you can demonstrate that the new matter could not have been raised before that time or that it not being raised before that time is a consequence of exceptional circumstances.

See attached 'Appeal Statement'.

Have you raised any matters which were not before the appointed officer at the time the determination on your application was made? *

☐ Yes ☒ No

Please provide a list of all supporting documents, materials and evidence which you wish to submit with your notice of review and intend to rely on in support of your review. You can attach these documents electronically later in the process: * (Max 500 characters)

Full list of productions provided within Appeal Statement.

Application Details

Please provide details of the application and decision.

What is the application reference number? *

14/00468/FLL

What date was the application submitted to the planning authority? *

13/03/14

What date was the decision issued by the planning authority? *

09/10/14

Review Procedure

The Local Review Body will decide on the procedure to be used to determine your review and may at any time during the review process require that further information or representations be made to enable them to determine the review. Further information may be required by one or a combination of procedures, such as: written submissions; the holding of one or more hearing sessions and/or inspecting the land which is the subject of the review case.

Can this review continue to a conclusion, in your opinion, based on a review of the relevant information provided by yourself and other parties only, without any further procedures? For example, written submission, hearing session, site inspection. *

☒ Yes ☐ No

In the event that the Local Review Body appointed to consider your application decides to inspect the site, in your opinion:

Can the site be clearly seen from a road or public land? *

☒ Yes ☐ No

Is it possible for the site to be accessed safely and without barriers to entry? *

☒ Yes ☐ No

Checklist - Application for Notice of Review

Please complete the following checklist to make sure you have provided all the necessary information in support of your appeal. Failure to submit all this information may result in your appeal being deemed invalid.

Have you provided the name and address of the applicant? *

☒ Yes ☐ No

Have you provided the date and reference number of the application which is the subject of this review? *

☒ Yes ☐ No

If you are the agent, acting on behalf of the applicant, have you provided details of your name and address and indicated whether any notice or correspondence required in connection with the review should be sent to you or the applicant? *

☒ Yes ☐ No ☐ N/A

Have you provided a statement setting out your reasons for requiring a review and by what procedure (or combination of procedures) you wish the review to be conducted? *

☒ Yes ☐ No

Note: You must state, in full, why you are seeking a review on your application. Your statement must set out all matters you consider require to be taken into account in determining your review. You may not have a further opportunity to add to your statement of review at a later date. It is therefore essential that you submit with your notice of review, all necessary information and evidence that you rely on and wish the Local Review Body to consider as part of your review.

Please attach a copy of all documents, material and evidence which you intend to rely on (e.g. plans and drawings) which are now the subject of this review *

☒ Yes ☐ No

Note: Where the review relates to a further application e.g. renewal of planning permission or modification, variation or removal of a planning condition or where it relates to an application for approval of matters specified in conditions, it is advisable to provide the application reference number, approved plans and decision notice (if any) from the earlier consent.

Declare - Notice of Review

I/We the applicant/agent certify that this is an application for review on the grounds stated.

Declaration Name: Graham Donnachie

Declaration Date: 18/12/2014

Submission Date: 18/12/2014



Green Cat Renewables

Colliston Farm Wind Turbine

Appeal Statement

D A Baillie and Sons

December 2014

Appeal Statement
Prepared for:
D A Baillie and Sons

Colliston Farm Wind Turbine

December 2014

Prepared By:
Green Cat Renewables Ltd.



Edinburgh Office
Stobo House
Midlothian Innovation Centre
Roslin,
EH259RE

Tel: 0131 440 6155

Checked By: Glen Moon	Date: 11/12/2014
Approved By: Cameron Sutherland	Date: 16/12/2014

EXECUTIVE SUMMARY

This Statement has been prepared by Green Cat Renewables Ltd (The Agent) on behalf of D A Baillie and Sons (the Appellant) to support an Appeal against the refusal by Perth and Kinross Council of the planning application for the erection of a single 46m to tip wind turbine and associated infrastructure at Colliston Farm, Drunzie.

The application was determined under delegated powers by Perth and Kinross Council and as such this appeal is to the Local Review Body of Perth and Kinross Council.

Perth and Kinross Council gave the following reasons to support the refusal of this application (**B04**):

1. *'As the proposed scale of the turbine would not be absorbed by the existing landscape framework surrounding the site, which in turn will lead to the turbine becoming a dominant feature within the landscape which would have a significant adverse impact on the visual amenity and landscape character of the area (in isolation and in combination with other wind energy proposals), the proposal is contrary to Policy 6 of the Tay Plan 2012 and Policies ER1A and ER6 of the adopted Local Development Plan 2014, all of which seek to ensure that all new developments do not have a significant impact on existing landscapes; and'*
2. *'An approval of the proposal would contravene the recommendations contained within the Tayside Landscape Character Assessment 1999 and Kinross-shire Landscape Character Assessment 1995, in relation to tall structures on the landscape surrounding Loch Leven Basin'*

The Appellant contends that the proposed turbine:

1. Is of a suitable scale for this location and within a broad area of search as outlined by Perth and Kinross Council's Supplementary Planning Guidance. The proposal also does not raise significant cumulative effects; and
2. In line with the more recent Tayside Landscape Character Assessment, a full and robust landscape assessment was carried out as part of the planning process which concluded that the impacts of the proposed turbine were not significant. The proposed turbine would not represent a dominant or prominent feature in the landscape, and is in a location that was agreed with the Planning Officer as the most suitable location on the land holding.

Furthermore, the proposed turbine will meet electricity demands of the farming business, safeguarding the local business from rising electricity costs and allowing them to remain competitive in a global market place. This follows the main principles of Scottish Planning Policy (published 23rd June 2014), in relation to sustainability (paragraphs 24-35) and promoting rural development (paragraphs 74-83).

Therefore, it is the Appellant's view that the proposed development is compliant with national, regional and local policies and that the Planning Officer's decision did not reflect the Council's own policy framework. As such, the project should have been granted consent in accordance with the Tay Plan and the Council's own Local Development Plan and Supplementary Guidance.

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LIST OF PRODUCTIONS

Applicant's documents

Reference	Description	Posted/Uploaded
A01	Environmental Report	Uploaded
A02	Landscape and Visual Figures	Posted
A03	Planning Application and Elevation Drawing	Uploaded
A04	Additional Landscape and Visual Information	Uploaded

Council & Consultee documents

Reference	Description	Posted/Uploaded
B01	Application Validation Notification	Uploaded
B02	Planning Officer and Landscape Architect Correspondence	Uploaded
B03	Report of Handling	Uploaded
B04	Decision Notice	Uploaded

Other documents electronic copy available on request from Committee Services

Reference	Description	Posted/Uploaded
C01	TAYplan Strategic Development Plan	Uploaded
C02	Perth and Kinross Local Development Plan	Posted
C03	Supplementary Planning Guidance for Wind Energy Proposals in Perth & Kinross	Uploaded
C04	Tayside Landscape Character Assessment (TCLA) 1999	Posted
C05	Kinross Landscape Character Assessment (KCLA) 1995	Uploaded

Note:

All Productions have been provided in accordance with good practice and to ensure consistency with versions.

1 INTRODUCTION

- 1.1 This Appeal is against the refusal by Perth and Kinross Council of the planning application for the erection of a single turbine 46m to tip wind turbine and associated infrastructure at Colliston Farm, Drunzie.
- 1.2 The application was submitted on 13th March 2014 and validated by Perth & Kinross Council on 20th March 2014. The Planning Officer determined the application under delegated powers on the 3rd October 2014, with the decision issued on the 9th October 2014.
- 1.3 The planning application reference is **14/00468/FLL**.
- 1.4 This document:
 - Briefly describes the proposed development;
 - Presents the procedural history of the application;
 - Sets out the grounds for refusal by the Council;
 - Summarises comments from Consultees;
 - Summarises the public comments received; and
 - Appraises the Council's stated reasons for refusing the development.
- 1.5 A number of supporting documents ('Productions') are referred to throughout this Appeal Statement. They are referenced by parenthesis within the text.
- 1.6 This document focuses on the reasons for refusal (**B04**), with other material considerations being covered by the Environmental Report (**A01**) and other documents submitted with the planning application (**A02, A03**). Should other parties to the appeal raise other issues, the Appellant reserves the right to respond to these.

2 THE PROPOSED DEVELOPMENT

- 2.1 The proposed development site lies approximately 2.5km to the south of Glenfarg and would comprise the installation and operation of a single three bladed wind turbine no greater than 46m to blade tip.

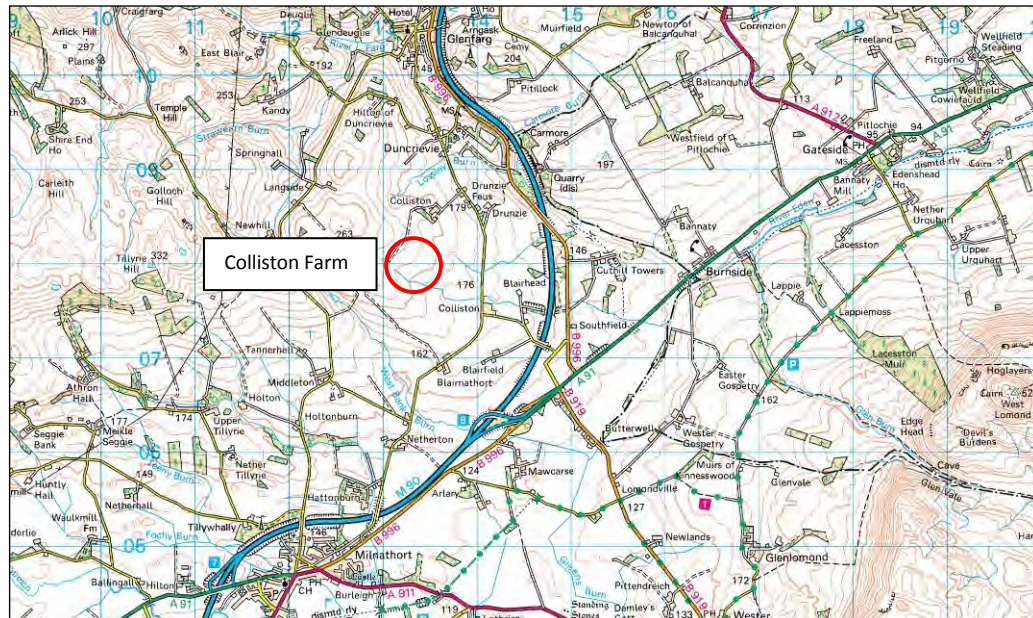


Figure 2.1 – Proposed Development Location

- 2.2 The land at Colliston Farm is owned by D. A. Baillie and Sons, who have farmed at Glenfarg since the 1950s. The business farms approximately 2,000 acres of land and has eight full time employees, with a further four to nine seasonal workers employed for ten months of the year. Despite being described as a “small hill farm” in the Report of Handling, Colliston produces around 11,000 tonnes of potatoes each year, which are sold and distributed throughout the UK and globally.
- 2.3 The stores in which the potatoes are stored are extremely energy intensive and require just over 500,000kWh of electricity per year, meaning that electricity costs comprise a significant proportion of the businesses’ outgoings. The main driver behind the construction of a farm scale wind turbine is the opportunity to generate this electricity on-site. The proposed turbine is estimated to generate in the region of 520,000kWh annually, closely matching the farm’s demand.
- 2.4 The main aims of the proposed development are to:
- Reduce the businesses’ carbon footprint and boost their ‘green credentials’, which is of increasing importance to the farm’s major suppliers.
 - Generate clean electricity. The majority of the generated electricity will be used to power the farm’s cold stores and any unused electricity will be exported to the National Grid.

- 2.5 An access track and hardstanding will be required for the construction of the turbine, and subject to consultation with Scottish & Southern Energy, a small building is likely to be required to house the necessary metering and protection equipment.
- 2.6 At the end of its operational life, the wind development would be decommissioned, the principal elements removed, and the site restored leaving little, if any, visible trace.
- 2.7 Please refer to **Section 2** of the Environmental Report (**A01**) for further details of the proposed development.

3 PROCEDURAL HISTORY

- 3.1 The application followed the refusal of a previous application (12/01727/FLL) for a wind turbine of up to 86.5m in height on a more elevated part of the same site, submitted in September 2012. This application was refused by Perth and Kinross' Planning Authority under delegated powers in November 2012 on the grounds of unacceptable landscape and visual impacts, and cumulative effects.
- 3.2 Following consultation with Perth and Kinross Council, and a detailed consideration of the reasons for refusal, an Environmental Report was prepared to support the planning application for a single wind turbine of up to 46m in height.
- 3.3 As well as reducing the overall height of the development, the turbine was also relocated to a lower altitude than the previous proposal, in accordance with discussions between the Agent and Perth and Kinross Council Planning Department. This had the effect of significantly reducing the theoretical visibility of the proposed turbine and ensuring the turbine would appear in scale with the existing features present in the local and wider landscape.
- 3.4 Consultees responded as detailed in **Section 5** of the present Appeal Statement.
- 3.5 A delay in the determination of the planning application was agreed to allow for comments from the Council's Landscape Architect, as Landscape and Visual Impact was a key element in the determination of the application. On the 16th of July 2014, the Agent received an email (**B02**) from the Planning Officer who was passing on the Landscape Architect's comments which had been received by the Planning Officer on the 1st of July 2014.
- 3.6 A detailed response was formulated by the Agent in response to the general comments received from the Landscape Architect, discussed further in Paragraphs 6.14 and 6.15. No further response from the Landscape Architect was received following this.
- 3.7 The Planning Officer moved to refuse the application under delegated powers. The Report of Handling was dated 3rd October 2014 (**B03**).

4 SUMMARY OF CONSULTEE COMMENTS

- 4.1 The Report of Handling (**B03**) summarises the consultee responses to the application:

Consultee	Response
Environmental Health	No Objection, subject to conditions
Scottish Water	No Objection
Shell UK	No objection
BP Consultations	No objection
Ministry of Defence	No objection
Civil Aviation Authority	No objection
Historic Scotland	No objection
The Environment Service (Conservation)	No objection
Transport Planning	No objection, subject to conditions

Community Councils

- 4.2 Glenfarg Community Council raised an objection to the original planning application 12/01727/FLL citing visual impact as the main reason for the objection. The objection comment concludes by stating *“a smaller turbine would be sufficient for the farm needs. The Community Council might be more inclined to support such a proposal”* (**B05**).
- 4.3 The Appellant has since presented the revised proposal to both the Glenfarg Community Council and the Milnathort Community Council. No objections have been received from any Community Councils in relation to the revised proposal.

Public Representations

- 4.4 In total five public comments were received in relation to the planning application.
- 4.5 All five letters offered support of the application. There were no public objections received.
- 4.6 Supporting comments stated that the project:
- Is an appropriate scale to meet the needs of the current farming operations, allowing for a significant cut in CO₂ emissions;
 - Will safeguard the business against the raising of electricity prices; and
 - Is a response to market pressure to become more energy efficient.

Summary

- 4.7 No objections were raised by any of the statutory consultees, community councils or members of the public in relation to this application.

5 APPRAISAL OF COUNCIL'S REASONS FOR REFUSAL

Refusal Reason 1

'As the proposed scale of the turbine would not be absorbed by the existing landscape framework surrounding the site, which in turn will lead to the turbine becoming a dominant feature within the landscape which would have a significant adverse impact on the visual amenity and landscape character of the area (in isolation and in combination with other wind energy proposals), the proposal is contrary to Policy 6 of the Tay Plan 2012 and Policies ER1A and ER6 of the adopted Local Development Plan 2014, all of which seek to ensure that all new developments do not have a significant impact on existing landscapes'.

Policy 6 of the Approved TAYplan – Managing TAYplan's Assets

5.1 The parts of Policy 6 that are relevant to this proposal are Parts A and C. Part A states:

Local development plans should identify areas that are suitable for different forms of renewable development and electricity infrastructure and for waste/resource management infrastructure or criteria to support this; including, where appropriate, land for process industries.

Part C (points 3, 5 and 7) note:

Local development plans and development proposals should ensure that all areas of search, allocated sites, routes and decision on development proposals for energy and waste/resource management infrastructure have been justified, at a minimum, on the basis of these considerations:

- 3. Proximity of resources (e.g. woodland, wind or waste material); and to users customers, grid connections and distribution networks for the heat, power or physical materials and waste products, where appropriate;*
- 5. Sensitivity of landscapes (informed by landscape character assessments and other work), the water environment, biodiversity, geo-diversity, habitats, tourism, recreational access and listed/scheduled buildings and structures; and*
- 7. Cumulative impacts of the scale and massing of multiple developments, including existing infrastructure.*

5.2 With regards to **Part A** the Local Authority, by means of the 'Supplementary Planning Guidance for Wind Energy proposals in Perth & Kinross' has identified broad search areas that are suitable for renewable energy development. Wind Energy Policy 2, within the 'Supplementary Planning Guidance for Wind Energy proposals in Perth & Kinross', it states that "in the Broad Area of Search, Community and Commercial wind energy developments will be supported

where they would be consistent with the Council's detailed Policy Guidelines and it has been demonstrated that they utilise turbines of a size and a scale appropriate to their location, are in locations least damaging to settlements, landscape character, visual amenity, habitats, and will not have unacceptable cumulative impacts".

- 5.3 The Colliston Farm site is within one of those broad areas, as shown below in **Figure 6.1**.

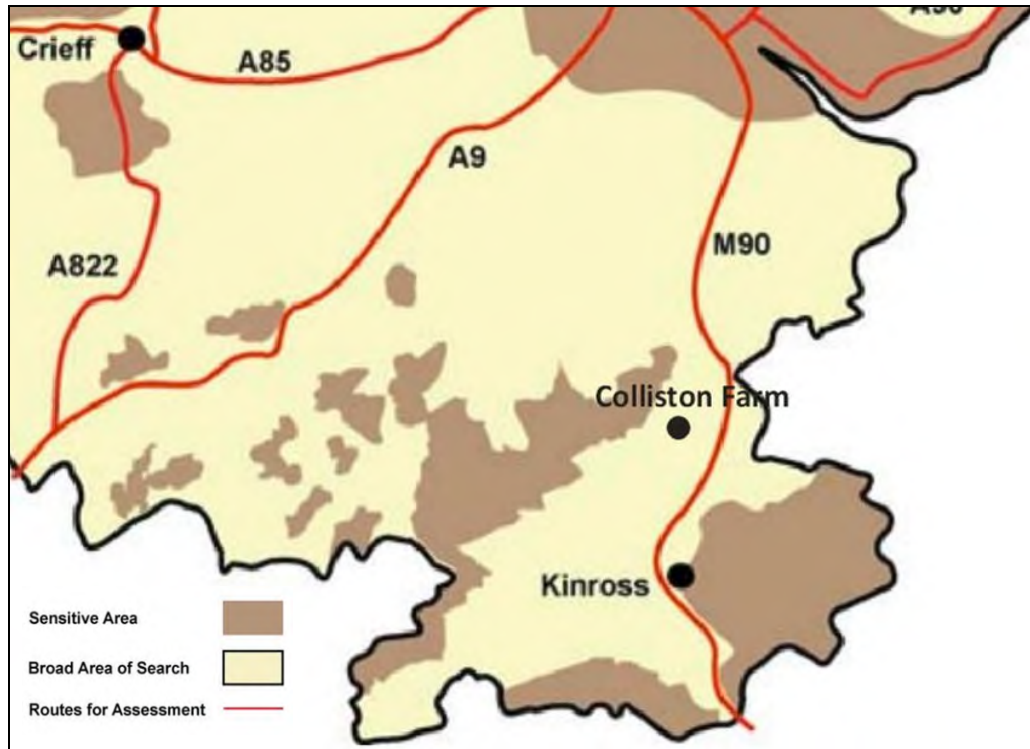


Figure 6.1 Broad Area of Search Diagram – Supplementary Planning Guidance for Wind Energy proposals in Perth & Kinross

- 5.4 The report of handling acknowledges that the local landscape *"has been identified in the TLCA as perhaps being one of the most suitable areas for wind turbine development in the old Tayside region."*
- 5.5 With regards to **Part C**, the proximity of the resource to the end user is one of the key considerations for the development. The proposed turbine will generate in the region of 520,000kWh annually, closely matching the annual energy demand of the farming business, which has been calculated at around 500,000kWh. The majority of the energy generated by the proposed turbine will be utilised on-site as detailed in the Environmental Report.
- 5.6 The area is characterised by improved grassland, surrounded by a landscape that is undulating with several small knolls, with a rolling character. The sensitivity of this local landscape has been considered in detail as part of the Environmental Report (**A01**) and was found to be 'medium'. The LVIA focusses on both the local landscape and the wider landscapes, including the Igneous Hills and Lowland Basins Landscape Character Area's (LCA) as defined by the TCLA.

- 5.7 The Report of Handling notes that *“Wind farm developments should be steered away from exposed and steep ridgelines and summits, and away from locations where their visual influence would extend both north and south. Areas with shallow bowls and valleys away from ridges should instead be considered and new development steered towards areas already affected by masts, roads or forestry.”*
- 5.8 The proposal has been designed with these statements in mind, particularly moving the turbine away from the hilltop of the previous application. This, in turn with the reduction in overall height of the turbine, has significantly reduced the theoretical visibility, particularly to the north. The site is also in an area which is already affected by masts (masts are present less than 500m to the north of the proposed turbine), roads (the M90 is located approximately 1.5km to the east of the site) and forestry (there are clusters of mature trees surrounding the site in most directions, as is visible in the photomontages).
- 5.9 Cumulative impacts are thoroughly considered within the Environmental Report (A01). Whilst there is likely to be a degree of impact arising from cumulative effects, as acknowledged in the environmental report, these were not found to be of key concern for this development. The assessment found that the Colliston turbine is rarely viewed alongside any other developments, and where views do occur, these are not considered significant.

Policy ER1A of the Perth & Kinross Local Development Plan (2014)

- 5.10 *Proposals for the utilisation, distribution and development of renewable and low carbon sources of energy will be supported subject to the following factors being taken into account:*
- *(a) The individual or cumulative effects on biodiversity, landscape character, visual integrity, the historic environment, cultural heritage, tranquil qualities, wildness qualities, water resources, aviation, telecommunications and the residential amenity of the surrounding area.*
 - *(b) The contribution of the proposed development towards meeting carbon reduction targets.*
 - *(c) The effects on the elements listed in criterion (a) of the connection to the electricity distribution or transmission system*
 - *(d) The transport implications, and in particular the scale and nature of traffic likely to be generated, and its implications for site access, road capacity, road safety, and the environment generally.*
 - *(e) The hill tracks and borrow pits associated with any development.*
 - *(f) The effects on carbon rich soils*

- *(g) Any positive or negative effects they may have on the local or Perth & Kinross economy including tourism and recreation interests either individually or cumulatively.*
- *(h) In the case of large-scale onshore wind energy developments, their fit with the spatial framework for wind energy developments.*

5.11 It is outlined in the Report of Handling that contravention of policy ER1A is of key concern in relation to the proposed development, however, it is the opinion of the appellant that the Colliston Farm turbine is entirely in keeping with the policy as quoted above. In terms of effects on landscape, biodiversity etc, a full and robust Environmental Report has been prepared (**A01**), this found no significant effects arising from the development. Indeed it is the appellant's belief, demonstrated through assessment that the development will help to reduce the carbon emissions of a local business, thus aiding the overall reduction in carbon emissions across the county, while boosting the local economy through the safeguarding the business from rising electricity costs and helping to retain employment at the farm.

Policy ER6 of the Perth & Kinross Local Development Plan (2014)

5.12 *Development and land use change should be compatible with the distinctive characteristics and features of Perth and Kinross's landscapes. Accordingly, development proposals will be supported where they do not conflict with the aim of maintaining and enhancing the landscape qualities of Perth and Kinross. They will need to demonstrate that either in the case of individual developments, or when cumulatively considered alongside other existing or proposed developments.*

5.13 The Report of Handling specifically refers to section (a), which states:

- *(a) They do not erode local distinctiveness, diversity and quality of Perth and Kinross's landscape character areas, the historic and cultural dimension of the area's landscapes, visual and scenic qualities of the landscape, or the quality of landscape experience.*

5.14 The key places of concern are highlighted in the Report of Handling as those areas to the south of the development around the Loch Leven Basin.

5.15 As demonstrated within **Viewpoints 6 & 9 (A02)** of the viewpoint assessment prepared for the application, the turbine is a minor feature. When viewed from Loch Leven (**Viewpoint 9**), it is seen against the sky in the same general view as the larger scale Green Knowes development, while from **Viewpoint 6** the turbine appears predominantly against the landscape, in keeping with the other features within the view.

5.16 Both the Landscape and Visual Impact Assessment (LVIA) and the Cultural Heritage Assessment carried out demonstrated that no significant adverse impacts are expected on any features of cultural heritage importance or any landscape qualities of the area.

Summary

- 5.17 The proposed development at Colliston Farm would be located in a general area suitable for turbine development, would use a turbine in scale with the receiving landscape, would be located in a position which minimises any adverse visual impact, would contribute little to cumulative impacts in the wider area and, as such, would not have a significant impact on existing landscapes. Far from being contrary to Policy 6 of Tay Plan 2012 and Policies ER1A and ER6 of the Local Development Plan 2014, the proposal is entirely appropriate to the terms of these policies. As such the Council's first refusal reason should be set aside.

Refusal Reason 2

An approval of the proposal would contravene the recommendations contained within the Tayside Landscape Character Assessment 1999 and Kinross-shire Landscape Character Assessment 1995, in relation to tall structures on the landscape surrounding Loch Leven Basin.

Tayside Landscape Character Assessment (TCLA) 1999

- 5.18 A full and robust landscape appraisal has been conducted as part of the Environmental Report, the baseline of which is drawn from the landscape assessment from the TLCA. The TLCA (**C04**) provides a number of recommendations regarding tall structures within the Igneous Hills LCA in which Colliston Farm is situated. The relevant comments are summarised below along with a comment on how this proposal complies each (see Paragraph 5.8.19 on pages 185 to 187):

- 5.19 *"Restrict the development of tall structures to those absolutely essential for operational reasons"*

The proposed development has been designed to meet the high electricity demand of the farm and is an essential part of reducing the business' overall carbon footprint. Supplier demands and global market pressure are meaning local farming businesses are forced to take measures in order to remain competitive. The addition of the turbine will protect the farm against the rising costs of electricity, securing jobs and the operational future of the farming business.

- 5.20 *"Avoid new masts on undeveloped hilltops and ridges".*

The revised turbine location is in a less prominent area than previously proposed, located at a lower elevation, away from the local summit, thus minimising the impact on the surrounding landscape. As can be seen in **Viewpoint 1**, the turbine is situated a reasonable distance away from the summit and is situated on part of the horizon which does not form a ridge but forms a gently sloping valley side. There is also an existing mast located on this hilltop, less than 500m to the north of proposed turbine location.

- 5.21 *“Where possible, encourage masts and other tall structures to achieve backclothing. Particularly for associated infrastructure and buildings so that skyline features are minimised”.*

Every attempt has been made through the redesign of the proposal to increase the amount of backclothing of the development. Of the ten viewpoints with visibility of the turbine, four locations are fully backclothed, and three are partially backclothed including the view from the Loch Level Basin. The remaining three viewpoints, where skylining is unavoidable, the turbine is viewed alongside other vertical features such as woodland and electricity pylons. In these views, the turbine does not dominate or diminish the scale of the vista. Associated infrastructure such as the substation will be fully backclothed from everywhere, outwith the site area.

- 5.22 *“Explore the potential to steer wind farm developments away from exposed and steep ridgelines and summits and from locations where their visual influence would extend both north and south”.*

The turbine is not located on either an exposed or steep ridge; rather, it is situated on a gently sloping valley side. As can be seen from the ZTV, the predicted visibility is almost exclusively to the south, with almost no views to the north illustrating that the site offers some visual containment.

- 5.23 *“Consider potential areas with shallow bowls and valleys away from ridges. Maximise the amount of backclothing provided by the natural landform. Consider steering development to areas already affected by masts, roads or forestry”.*

Although not located within a shallow bowl, the turbine is situated on the side of a shallow valley which is not part of a prominent ridge. The development is afforded considerable backclothing from a number of different angles. As well as this, the turbine is situated on part of the landscape which has already been affected by the addition of a telecommunications mast, less than 500m to the north of the proposed turbine, and the M90, approximately 1.5km to the east.

- 5.24 *“Assess proposals for aerials, pylons and masts in terms of their visual and landscape impact on the local landscape of the hills and surrounding areas”.*

The proposal was fully assessed in terms of landscape and visual impact in the Environmental Report accompanying the planning application. Significant effects were found to be isolated to occur within around 1km of the proposed turbine, with effects outside this distance quickly diminishing.

The local landscape is contained by the hill ranges at the Ochils to the north and west and the Lomond Hills to the east. The ZTV illustrates the minor areas of potential visibility from within both of these hill ranges. The impact on the views from the Lomond Hills is considered in detail in **Viewpoint 8** from the Bonnet Stane, taken from the lower lying slopes of West Lomond. The turbine appears completely backclothed from this location. The views from the more elevated summit areas would be even less distinct, with the turbine a relatively

minor feature in the wider landscape. From the north, **Viewpoint 3** highlights the potential views from the southern slopes of the Ochils, the turbine appearing again completely backclothed in this view, as well as partially screened by the intervening landscape.

- 5.25 *“New infrastructure (e.g. access roads) should be minimised by locating any new facilities close to existing roads”.*

The proposed access makes use of existing roads within the landholding, with approximately 190m of new access tracks required. The site is also located in relative proximity to the Duncraevie Road, M90 and the B996.

Kinross Landscape Character Assessment (KLCA) 1995

- 5.26 The KLCA (**C05**) puts the application site in the ‘West Bank Burn’ LCA, within the Loch Leven Basin Low Hills LCT. Within the document no reference is made to the impacts of tall structures within the LCA. Rather, the document highlights, in paragraph E.4.15, the impact of the M90 on the LCA as a linear feature.
- 5.27 The adoption of the TLCA in 1999, which incorporates the area previously considered by the 1995 KLCA, is presumed to have superseded and developed the themes contained within the KLCA. Therefore, greater weighting has been given to the more recently published TLCA.

Summary

- 5.28 The site itself is not located on a prominent ridge or summit, sitting on the side of the hill as it slopes down towards the valley.
- 5.29 Attempts have been made to backcloth the turbine where possible, while the ancillary infrastructure will always appear against the landscape.
- 5.30 It is not considered that the proposed turbine would add a dominant or prominent feature within the local or the wider landscape, or significantly alter the character or visual amenity of the area. Where views do occur the turbine appears as a relatively minor feature, more in keeping with other manmade vertical elements within the wider landscape such as wooden and metal electricity pylons, communication masts and farm infrastructure such as grain silos.
- 5.31 The impacts on the Loch Leven basin are considered to be negligible, with the turbine a barely visible feature from the southern shores, as demonstrated in **Viewpoint 9**.
- 5.32 Following this review of the recommendations contained within the TLCA and KLCA, regarding tall structures within the LCA, it is the view of the Appellant that the proposed turbine does meet with the criteria as recommended. As such the Council’s second refusal reason should be set aside.

6 BENEFITS OF PROPOSAL

National Benefits

- 6.1 The Scottish Government through the 2020 Routemap for Renewable Energy in Scotland have set a target for 500MW in community and locally owned development. The proposed scheme will contribute towards this target.

Local Benefits and Business Need

- 6.2 The proposed scheme has been significantly reduced in scale to better meet the site constraints, addressing consultee concerns identified through the planning process for a larger turbine, particularly those relating to landscape and visual impacts.
- 6.3 The main driver of this development is the opportunity to generate electricity on-site. This has the twin advantage of reducing overall business costs (making the farm more competitive, allowing re-investment and securing employment) and lowering the firm's carbon footprint.
- 6.4 The project will generate in the region of 520,000kWh annually, closely matching the annual demand of the farm's climate controlled cold stores of around 500,000kWh. This addresses a key concern raised by Glenfarg Community Council, as detailed in paragraph 4.2, in relation to the previous application, suggesting that the turbine should be reduced to a scale in keeping with the farms demands. This revised development will deliver the energy required at Colliston Farm and in turn reduce overheads and provide energy security for a local business.
- 6.5 The construction of the proposed development would represent a sizeable investment in the local area, with a range of contracts being placed preferentially with various local contractors, including electrical and civil engineering companies.

7 FURTHER CONSIDERATIONS

- 7.1 The Agent engaged with Perth & Kinross Council following the previous application, with the aim of designing a more sympathetic scheme which can balance the impacts on the local landscape, with a viable wind development to meet the needs of the business at the farm. The Appellant contends that this balance has been achieved, particularly as the Planning Officer had an input in determining the location of the revised turbine.
- 7.2 When the reductions in turbine height and elevation from the original application are considered, it is evident how the project redesign has addressed the concerns of that application. The turbine has reduced approximately 45m in elevation and approximately 40m in turbine height, giving an overall reduction of 85m. This results in a significant reduction on impact of the surrounding landscape and visual impacts, as demonstrated in **Figures 7.1, 7.2 and 7.3.**

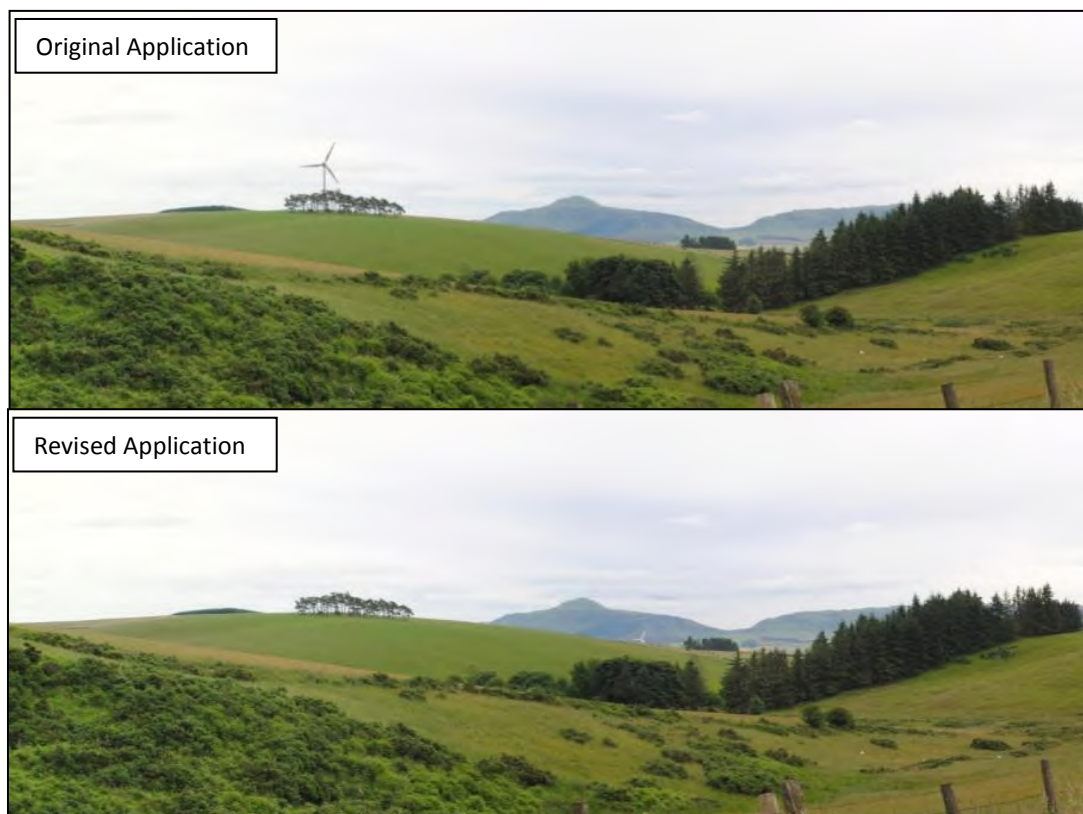


Figure 7.1 – VP03 (Minor road between Newhill and Path of Condie)



Figure 5.2 – VP06 (B919) Comparison of Original & Revised Applications



Figure 5.3 – VP09 (Loch Leven Cottages) Comparison of Original & Revised Applications

7.3 It is acknowledged in the Report of Handling that the local landscape is not protected by any specific local, regional or national designations nor is it of exceptional quality in landscape terms. It is also acknowledged that the issue of impact on a landscape is a subjective matter and this is not disputed. As it is a subjective matter, and a matter of vital importance in this application, the Council sought the views of their Landscape Architect.

7.4 However, as stated in the Report of Handling:

“It has not been possible due to workloads issues to obtain a detailed response from the Council’s landscape architect on this issue, he has nevertheless made some general comments on the proposal which I consider to hold significant weighting.

The general view of the Council’s Landscape Architect is that the location of the proposed turbine, high on the south facing slopes of the Ochils will result in the turbine being prominent from views from the south, which in turn will have a significant effect on character of the Loch Leven Basin.”

7.5 Given the detailed Landscape and Visual Assessment that has been conducted for both the original and the revised application, there is an issue of concern that the Planning Officer has given significant weighting to comments which they have acknowledged were, general comments. This is particularly poignant as the issue of Landscape and Visual Impacts is one of vital importance to this application.

7.6 It would not be unreasonable to expect that the Landscape Architect would have been significantly involved in the determination process and would have given the application thorough and detailed consideration.

7.7 Rather, it is true that general comments were offered due to workload issues. Given length of the determination period (approximately thirty weeks), thorough consideration from the Landscape Architect, and full consideration of the additional Landscape Assessment submitted in response (A04), should have been given.

8 CONCLUSION

- 8.1 It is contended that the proposed height and scale of the turbine at Colliston Farm is suitable for this location. It has been demonstrated through assessment that the revised development is in line with the relevant Perth & Kinross Council guidance and has addressed concerns raised in the previous application for a larger turbine. The scheme has been significantly reduced in terms of scale from the previous application, reducing potential impacts on the key sensitive receptors, including around the Loch Leven Basin.
- 8.2 The primary aim of the development is to support and sustain a local business, which is consistent with the overarching aims of Perth and Kinross Local Development Plan, in particular Policy ED3 Rural Business and Diversification. The energy need for the business has been clearly demonstrated within the Environmental Report.
- 8.3 In general landscape terms the proposed development sits within a Landscape Character Type that the Council acknowledges has some capacity for development of wind energy, through the Perth & Kinross Supplementary Planning Guidance. The TLCA acknowledges this area as *“one of the most suitable areas for wind turbine developments in Tayside”*. It is therefore contended that the development should be supported by Perth and Kinross Council.
- 8.4 With regards to the local landscape character, it is the view of the appellant that the re-design of the proposal, as well as the change in location allows the turbine to be accommodated well within the local area. This follows on from the robust and professional assessment carried out by the agent. Unfortunately, despite allowing a significant amount of time to determine the application, only generic comments were received from the councils own landscape architect.
- 8.5 Visual amenity has been assessed in detail as part of the supporting Environmental Report. The findings of this support the application, highlighting the reduction in altitude as well as the reduction in overall height as significant in terms of accommodating the turbine within the local and wider landscape.
- 8.6 The proposed scheme has been refused on the same grounds as the previous application for a much larger scale development. It is difficult to understand, given the reduction in scale and altitude, how the revised proposal will have the same impact as the previous scheme, which is suggested by the stated refusal reasons. Specifically, potential impacts on the landscape character and visual amenity.
- 8.7 It is the Appellant’s view that the Planning Officer’s decision did not reflect the findings of the professional assessments and the views of the statutory consultees in addition to the Council’s own policy framework and, as such, the project should be granted consent.



Green Cat Renewables

Colliston Farm Wind Turbine

Environmental Report

D A Baillie and Sons

March 2014



Prepared for:
D A Baillie and Sons

Colliston Farm Wind Turbine

Environmental Report

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Preface

This Environmental Report (ER) assesses the local environmental impacts of a proposed wind turbine at Colliston Farm, near Glenfarg in Perth and Kinross.

This application follows the refusal of a previous application (12/01727/FLL) for a wind turbine of up to 86.5m in height on the same site, submitted in September 2012. This application was refused by Perth and Kinross under delegated powers in November 2012 on the grounds of unacceptable landscape and visual impacts, and cumulative effects.

Following consultation with Perth and Kinross Council and a detailed consideration of the reasons for refusal, this revised planning application seeks planning permission for a single wind turbine of up to 46m in height.

This significantly smaller turbine would be located at a lower altitude than the previous proposal, and its visual impacts would therefore be much reduced.

This ER presents a comprehensive assessment of the environmental impacts of the proposed turbine, and covers many of the same areas as a formal Environmental Impact Assessment. It is not a formal Environmental Statement for the purposes of the Planning EIA Regulations (the Environmental Impact Assessment (Scotland) Regulations 2011) but nevertheless comprehensively assesses the potential effects arising from the proposal.

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Appendix 1 - Landscape and Visual Impact Viewpoint Analysis

Appendix 2 –Ecological Assessment

Appendix 3 – Hydrological Context of the Site

1 Project Summary

1.1 Introduction

The development would comprise the installation a single wind turbine, no greater than 46m to blade tip height. The turbine would be located on land to the south west of Colliston Farm, approximately 2.5km to the south of the village of Glenfarg in Perth and Kinross.

1.2 The Applicant

The land at Colliston Farm is owned by D. A. Baillie and Sons, who have farmed at Glenfarg since the 1950s. D. A. Baillie and Sons farm 2,000 acres of land and have eight full time employees, with a further four to nine seasonal workers employed for ten months of the year.

Around a quarter of the farm is set aside for potatoes, with the remainder used for cereal production. Colliston produces around 11,000 tonnes of potatoes each year, which are sold to a Scottish pre-packer and then distributed throughout the UK. Scottish potato seed is known for its quality throughout the world, and the seed that is not reused is also sold locally.

1.3 Rationale for the Proposed Development

The main aims of the proposed development are to:

- Reduce the businesses' carbon footprint and boost their 'green credentials', which is of increasing importance to the farms major suppliers.
- Generate clean electricity. The majority of the generated electricity will be used to power the farm's cold stores and any unused electricity will be exported to the National Grid; and

Customer demands require the business to be able to supply potatoes for 10-11 months of the year, which means that the farm's storage systems are a crucial part of its viability. Colliston Farm has made a significant investment in climate controlled stores, which can accommodate 10,000 tonnes of potatoes. These stores are extremely energy intensive and require just over 500,000kWh of electricity per year, meaning that electricity costs comprise a significant proportion of the businesses' outgoings.

The number of potato growers has fallen significantly in recent decades and is now at just over 200 in Scotland, 3% of the level of growers in the 1960s. This demonstrates the unprecedented pressure on the industry in which farmers now have to compete on a European level. Scotland is an exporter of potatoes and it is important to remain competitive in the in industry.

D. A. Baillie & Sons works closely with Sainsbury's whose main objectives include ensuring its suppliers are sustainable and renewable energy conscious. They have demonstrated this by setting their own 2020 targets. D. A. Baillie & Sons is working hard to meet the targets set by Sainsbury's and the importance of the proposed wind turbine development is vital to the farming business.

Another of the main drivers behind the construction of a farm scale wind turbine is the opportunity to generate this electricity on-site. This would have the twin advantage of reducing overall business costs (making the farm more competitive, allowing re-investment and securing employment) and lowering the firm's carbon footprint. The large supermarkets that make up the farm's customers place an increasing importance on their suppliers being able to demonstrate green credentials, so the generation of clean energy on-site would be of major benefit to the business. The turbine will generate in the region of 520,000kWh annually, closely matching the farm's demands. This demonstrates that the scale of the proposed turbine is in keeping with the requirements of the business.

1.4 Policy Overview

The Scottish Government is committed to reducing emissions through requirements set down in the Climate Change (Scotland) Act 2009 and the 2020 Route Map for Renewable Energy in Scotland. The Annual Routemap Update, published in December 2013, includes the latest targets for renewable electricity generation in Scotland.

The targets (and implications) set out within the document include:

100% electricity demand equivalent from renewables by 2020 – the Routemap recognises that this is a 'formidable' goal but states the Scottish Government's determination to pursue this for economic and carbon benefits. The Routemap acknowledges that this potential will need to be recognised in a UK-wide regulatory framework.

500MW community and locally-owned renewable energy by 2020 – The Routemap states that the Feed in Tariff and the Renewable Heat Incentive should be used as a springboard to increase the scale of local ownership of renewable projects, allowing communities and rural businesses to take advantage of the significant potential revenue streams.

Every wind turbine in a rural area contributes to the farming economy with the provision of additional income. However, a project such as this where the rural business is the developer rather than simply a landlord will give an even greater benefit to both the business and the local economy.

Overall, this project will create a benefit to a local farming business, when agriculture is under significant pressure to diversify, and aid in the delivery of the Scottish Government's renewable energy targets.

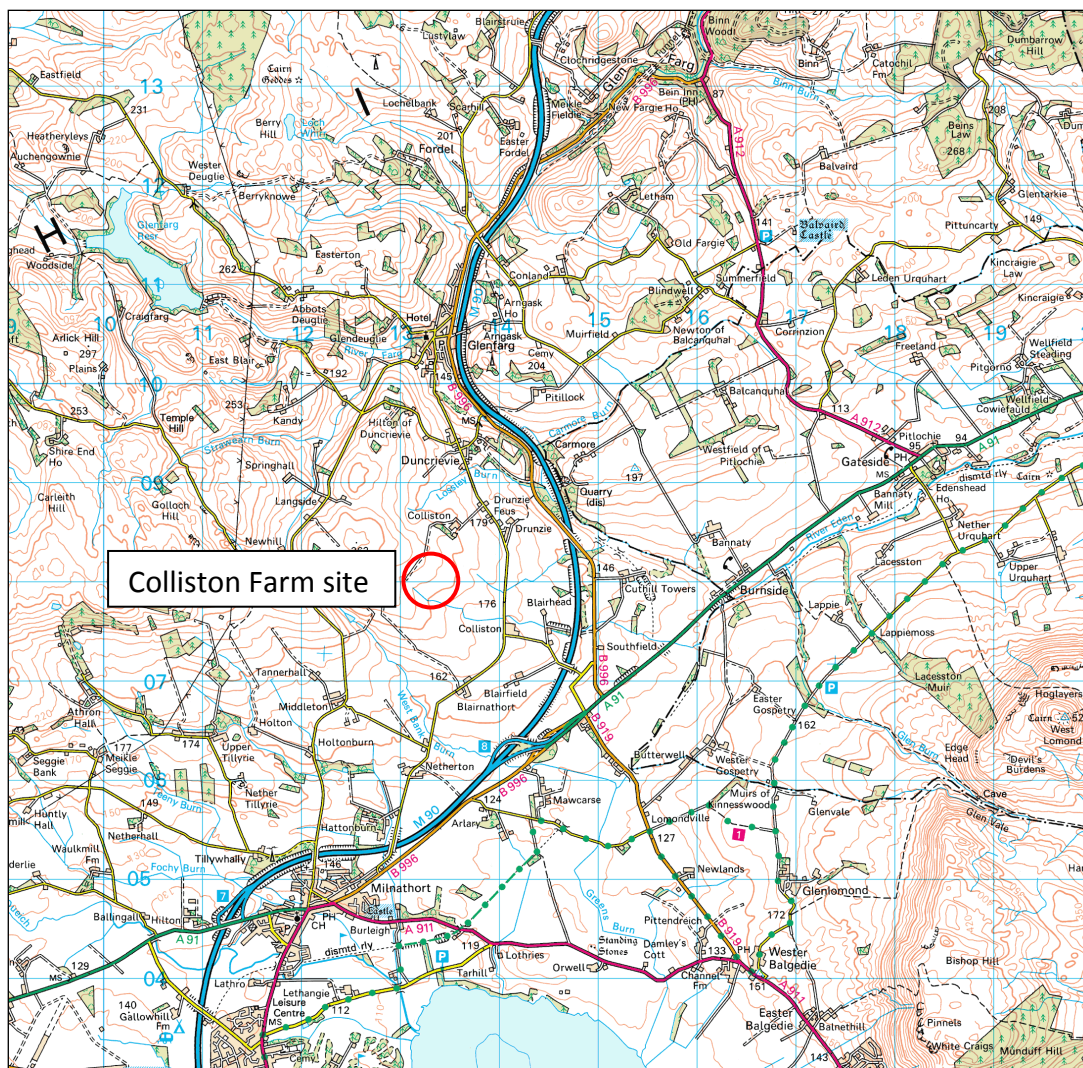
1.5 Scope of the Report

This report assesses the environmental impacts likely to result from the proposal for a single wind turbine of 46m to tip. It provides a level of detail appropriate to the scale of the development, and has been produced in line with relevant environmental policies and planning guidance.

2 The Proposed Development

2.1 Site Location and Project Layout

The Colliston Farm site is located approximately 2.5km south of Glenfarg in Perth and Kinross, as shown on **Figure 2.1** below.



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Figure 2.1 – Proposed Development Location

The project would comprise the installation and operation of one wind turbine up to a maximum height of 46m to blade tip with a hub height of 32m.

The proposal requires the construction of a new section of track, an area of hardstanding and a small control building as shown on **Figure 2.2**. The Ordnance Survey grid reference for the proposed turbine is **E313200 N707920**.

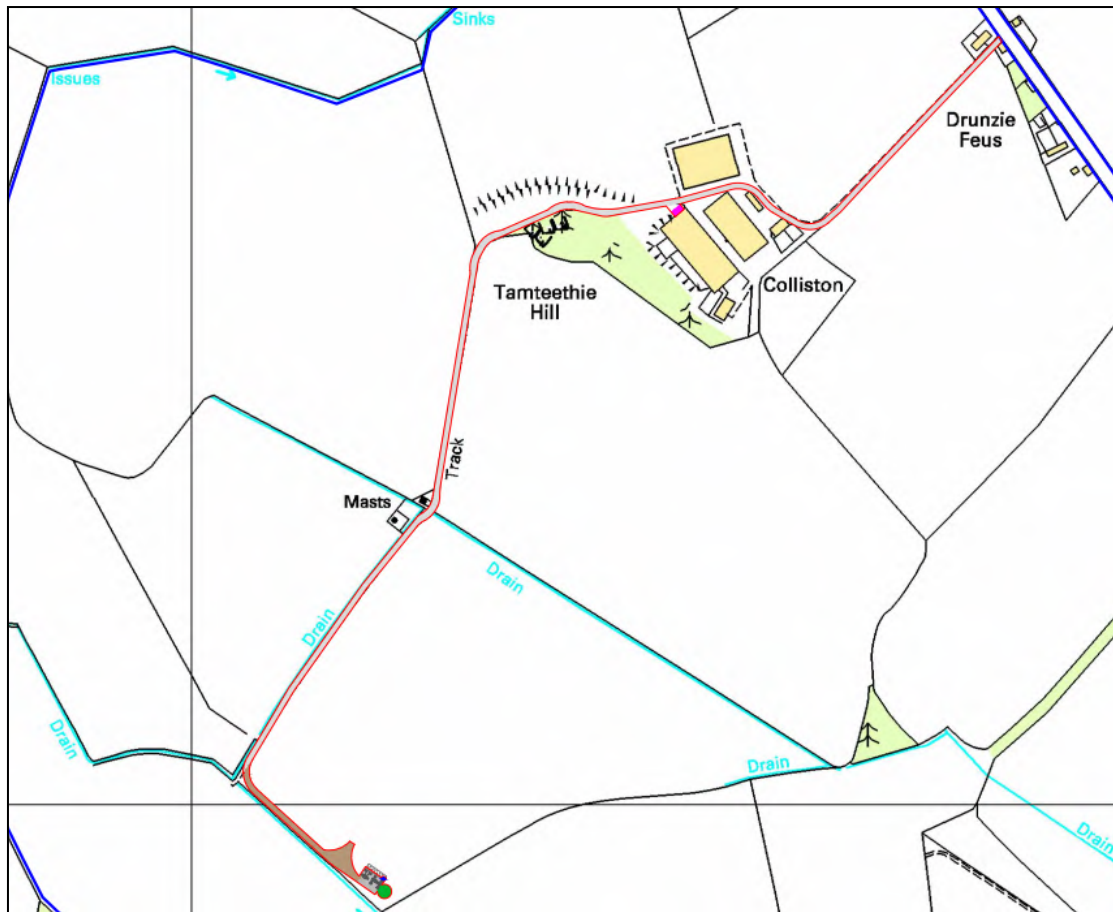


Figure 2.2 - Site layout

The site is an area of undulating farmland to the south of Glenfarg and north of Milnathort. The site is predominantly arable fields with a paucity of hedgerows and the occasional mature tree line. There are two small dense coniferous plantations on site and some mature beech trees near the Colliston farm house. The turbine has been located close to the field edge in order to minimise the disruption to the ongoing use of the field.

The proposed turbine location has been chosen as it is considered to represent the best compromise between the technical and environmental considerations. The turbine has been relocated ~650m to the south-east of the original proposal, away from the local summit, which results in a 45m loss in elevation. The elevation of the original turbine location was approximately 255m AOD and the revised turbine location sees the elevation drop to approximately 210m AOD, allowing the turbine to integrate with the immediate landscape surrounding the site. Taking into account the drop in turbine height from the original application and the reduced turbine height, the overall reduction in the height of the proposal is approximately 85m.

The associated infrastructure of site access tracks and substation have been designed and located sensitively to minimise visual impact. The access track is proposed to make use of the existing farm track which reduces the length of new access required. The proposed substation has been located adjacent to the existing farm buildings to avoid unnecessary clutter on the site.

2.2 Description of the Proposed Wind Turbine

Figure 2.3 shows the principal dimensions of the turbine.

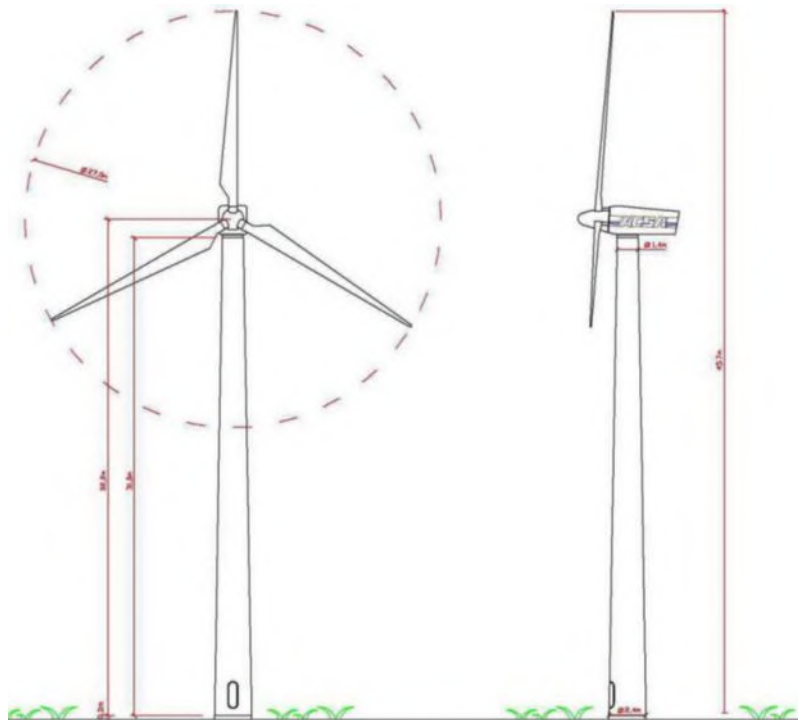


Figure 2.3 - Elevation drawings of candidate turbine

The turbine will be of a modern, quiet design, incorporating tapered tubular tower with three blades attached to a nacelle housing. The control unit is contained inside a small control cabin at the base of the turbine. It is proposed that the finish of the wind turbine, blades and tower should be semi-matt and a pale grey in colour.

In line with all modern wind turbines the machine would start generating when wind speeds rise to the 'cut-in' wind speed (in this case 3.5 m/s). The level of generation would increase with wind speed to the rated wind speed (225kW at approximately 14m/s), and generation would then be limited to that rated level at higher wind speeds. The turbine is programmed to stop when the wind speed exceeds 25 m/s ('cut-out' wind speed).

2.3 Purpose of the Development

Electricity generation

The production, packing and storage of fresh vegetables requires significant levels of energy consumption by the business. The business operates three on-site cold stores, which are required to maintain the freshness and quality of produce. These contribute to the farms annual electricity consumption of ~500,000kWh, which is one of the businesses' largest costs. The proposed turbine is intended to supply 'green' electricity directly to the farm, resulting in an efficient use of a natural resource, and significant financial savings.

Business Diversification

The development of the wind turbine will lead to a significant reduction in current business expenditure which will help to cushion it from market volatility caused by significant annual factors such as changes in the weather and fluctuating commodity prices. An increase in the

sustainability and stability of the business will also help support both the existing employment and help to create new employment as the business continues to expand.

Carbon footprint

As a high energy user involved in the supply of fresh produce to the leading supermarkets, the business is seeking to improve its sustainability and reduce its carbon footprint. The need to demonstrate commitment to sustainability is increasing as supermarket customers demand higher environmental standards from their suppliers. Thus the development of renewable energy should increase the attractiveness of the farm's produce to suppliers through its sustainable production.

Without taking into account other facilities on the farm, the three cold stores alone are estimated to emit 216 tonnes of CO₂ annually, based upon grid mix electricity usage. The turbine is expected to directly offset the emission of approximately 224 tonnes of CO₂ for every year of operation. This is around 104% of the carbon footprint emitted by the cold stores, dramatically boosting the business' green credentials and sustainability.

Summary

The development of wind energy at Colliston Farm will provide the business with a source of renewable energy to meet its growing energy demand whilst at the same time significantly reducing the business' carbon footprint. The savings made from the reduction of electricity costs would provide a significant boost to the businesses financial models which will provide stability to the business in a changeable marketplace.

2.4 Infrastructure

Site tracks and crane hardstanding

Access to the site would be taken from the existing Colliston Farm access, which joins Duncreavie Road to the north of Drunzie. This utilises the existing farm access track which is in good condition and prevents the need for the construction of an entirely new access route.

Approximately 190m of new access track will be required to provide access to the wind turbine. The track would be typically 4.0m wide with 0.5m shoulders on each side and made up of crushed stone to an average depth of up to 350mm. On corners, it will be necessary to construct wider areas of track to reflect the minimum bend-radii for the longest construction loads. Approximately 800m of existing track would also need a minor upgrade, if deemed necessary by the turbine manufacturer.

Appropriate drainage requirements would be incorporated where the site specific conditions make this necessary. If any areas of softer ground are encountered, the depth of crushed rock may need to increase to approximately 700mm and a layer of geotextile material embedded within the structure would be used. Construction of site tracks would preferably utilise stone from an on-site borrow pit. A site survey will be carried out at a later stage to confirm the potential for this. The borrow pit would be subject to a separate planning application.

The crane platform would be of similar construction to the access track, designed to withstand the maximum load bearing applied by the crane during the construction process.

Construction compound

It is anticipated that the local ground works contractor would set up a small compound for site offices, welfare facilities and the storage of tools, which would be located near to the site entrance.

Turbine foundations

Ground investigations will be carried out to gain site information in order to validate the suitability of the foundation design normally specified by the wind turbine manufacturer.

Much of the material removed during excavation would be replaced following the construction of the foundation to leave only the plinth at the surface with the turbine bolted on to it. The original excavated area would be reinstated to ground level following the construction of the foundation, with the removed topsoil replaced and reseeded.

2.5 Grid / Local Electrical Connection

There are two basic methods of exporting electricity onto the grid:

- A simple stand-alone project where 100% of the electricity is exported onto the local electrical grid;
- The turbine supplies the on-site facility with electricity, with any excess of power being exported onto the local electrical grid.

It is the intention of the application to use the electricity generated on-site, with any surplus energy being exported to the national grid. Around 502,000kWh of energy per year is currently consumed by the farm business, primarily relating the potato storage facilities. A monthly breakdown is provided in **Table 2.1**.

Month	Number of units (kWh)
Jan	45,731
Feb	48,309
Mar	52,188
Apr	58,210
May	51,406
Jun	39,380
Jul	26,220
Aug	26,268
Sep	19,531
Oct	38,383
Nov	54,017
Dec	42,425
Total (kWh)	502,068

Table 2.1 – Colliston Farm electricity usage

Based upon the calculated average windspeed on site, a 225kW turbine on site would be expected to generate in the region of 520,000kWh of electricity per year. This means that **the turbine will generate the equivalent of 104% of the energy demand of the farm.**

Grid connection options are currently being investigated, and will be agreed with Scottish Power. It is anticipated that no overhead lines will be used and that the turbine will be connected to the site substation and meters by underground cables.

2.6 Access from the Public Highway

It is envisaged that the turbine will be transported via the M90, exiting at Junction 8 and continuing along the A91 before joining the unclassified road between Milnathort and Duncruevie to arrive at Colliston Farm. The Turbine Delivery Vehicles (TDV) would then access the site through the farm itself.

The turbine would be delivered on a standard articulated lorry and off loaded by a crane on site.

2.7 Construction Programme

The construction phase would involve approximately 3 to 4 months of onsite activity, from construction of the new access tracks through to construction and commissioning of the wind turbine.

2.8 Development Traffic

There are three distinct phases of the development:

- Construction;
- Operation; and
- Decommissioning.

Construction traffic

The traffic involved throughout the project construction phase includes lorries with deliveries of the turbine, concrete, reinforcement steel and cabling, as well as personnel commuting. No upgrades to the existing road network will be necessary and the volume of traffic will not be noticeably increased. This is a short phase of the project of up to a maximum of three months.

Operational traffic

Once erected the wind turbine would be operated and monitored remotely. Between two and four short maintenance visits are required per year, with longer visits for scheduled servicing every three to five years. These visits would be undertaken in light commercial vehicles.

Decommissioning traffic

The amount of site traffic during decommissioning would be similar to that required during construction.

2.9 Decommissioning

At the end of the project's operational life, the wind turbine would be decommissioned, the principal elements removed, and the site restored leaving little if any visible trace.

The wind turbine would be removed from the site and the foundation, track and hardstanding covered over with topsoil and reseeded. The cables would be de-energised and left in place, with any cables marker signs removed.

3 Planning and Environmental Policy Context

An application for the development of a wind project should be assessed in the context of:

- National policy and guidance;
- The Local Planning Authority Development Plan; and
- Supplementary Planning Guidance.

The following section summarises the planning guidance and policies relevant to the determination of the Colliston Farm Wind Turbine proposal.

3.1 National Planning Policy

National planning policy and guidance is set out in the National Planning Framework (NPF); the Scottish Planning Policy (SPP); Circulars; the Scottish Historic Environment Policy (SHEP); Planning Advice Notes (PANs); and Design Advice Guidance.

A brief summary of national policy is presented below.

National Planning Framework

The National Planning Framework for Scotland 2 (NPF2) 2009, expresses the spatial aspect of the Government's Economic Strategy and confirms the importance of renewable energy to Scotland's energy mix.

It states that the, *'Government is committed to establishing Scotland as a leading location for the development of renewable energy technology and an energy exporter over the long term'* and that *'the aim of national planning policy is to develop Scotland's renewable energy potential whilst safeguarding the environment and communities.'*

Scottish Planning Policy

Scottish Planning Policy (SPP) is the statement of the Scottish Government's policy on nationally important land use planning matters. SPP aims to ensure the delivery of national renewable energy targets, and states that *'the commitment to increase the amount of electricity generated from renewable sources is a vital part of the response to climate change'*.

Following publication of the SPP, Scotland's renewable electricity target for the next decade was increased from 50% to 100% by First Minister Alex Salmond in July 2011. The Scottish Government has calculated that significantly higher levels of renewables could be deployed by 2020 with little change to the current policy, planning or regulation framework in Scotland. A separate study for industry body Scottish Renewables, published in September 2010 reported similar conclusions.

SPP states that Development plans are required to guide development to appropriate locations and should *'support all scales of development associated with the generation of energy and heat from renewable sources, ensuring that an area's renewable energy potential is realised and optimised in a way that takes account of relevant economic, social, environmental and transport issues and maximises benefits.'*

2020 Routemap for Renewable Energy in Scotland

This action plan, published in July 2011, includes the latest targets for renewable electricity generation in Scotland. It is an update and extension to the Scottish Renewables Action Plan 2009.

It states that 100% of Scotland's electricity demand should be generated by renewable means by 2020. The targets (and implications) set out within the document are:

100% electricity demand equivalent from renewables by 2020 – the Routemap recognises that this is a 'formidable' goal but states the Scottish Government's determination to pursue this for economic and carbon benefits. The Routemap acknowledges that this potential will need to be recognised in a UK-wide regulatory framework.

11% heat demand from renewables by 2020 – currently Scotland generates 2.8% of heat demand from renewable sources.

At least 30% overall energy demand from renewables by 2020 – the 100% electricity demand target by 2020 allows this update to the overall energy demand target figure.

500MW community and locally-owned renewable energy by 2020 – The Routemap states that the Feed in Tariff and the Renewable Heat Incentive should be used as a springboard to increase the scale of local ownership of renewable projects, allowing communities and rural businesses to take advantage of the significant potential revenue streams.

The Routemap states that, *"The Government is committed to the continued expansion of portfolio of onshore wind farms to help meet renewables targets, with a robust planning system providing spatial guidance, a clear policy framework and together with a timely and efficient processing of Section 36 Electricity Act and planning applications"*.

One of the main challenges identified in meeting these targets relates to 'Planning and Consents', with the Routemap identifying that there is a *'need to continue to streamline systems and work for greater speed and transparency, without sacrificing proper consideration of the impacts on the local environment'*.

A Low Carbon Economic Strategy for Scotland

The Low Carbon Economic Strategy (LCES) is an integral part of the Scottish Government's Economic Strategy to secure sustainable economic growth, and a key component of the broader approach to meet Scotland's climate change targets and secure the transition to a low carbon economy in Scotland.

The Strategy states that, *"Opportunities exist for every business and industry to adapt to and exploit low carbon markets, and these should be reflected in business plans and industry-led strategies, focussing on two areas: saving money through efficiencies; and making money through new market opportunities"*.

Two of the objectives within the Strategy are particularly relevant to this application:

Objective 1: Sustainable and resource-efficient businesses. Helping all businesses in Scotland become more competitive by using resources more efficiently, proactively adapting to climate change impacts and generally adopting sustainable business practices.

Objective 2: Sustainable and competitive industries. Supporting Scotland's industries to exploit low carbon business opportunities to accelerate industry growth, build low carbon supply chains, diversify into new markets and technologies and promote long-term ambition and resilience.

Conserve and Save: Energy Efficiency Plan for Scotland

The Scottish Government published "**Conserve and Save: The Energy Efficiency Action Plan for Scotland**" in October 2010. This plan introduced, for the first time, a headline target to reduce final energy (end-use) consumption **by 12% by 2020** using a 2005-7 baseline as published by the Department of Energy and Climate Change (DECC).

The 2009 Consultation Document states that, "increasing energy costs are a significant business risk and affect both the direct energy costs for business and the cost of materials bought in. However, energy consumption is not on all management agendas".

The Plan identifies that energy efficiency can also indirectly assist with other targets including:

- **Reducing emissions** - Reduced energy consumption in the non-traded sector (i.e. excluding electricity consumption and heat use from large power stations) will lead to direct emission reductions that will contribute towards the 42% emission reduction target by 2020.
- **Renewable electricity targets** - As these are measured against gross consumption, reductions in energy use will mean that they can be met with lower levels of installed capacity. Therefore, the more expensive projects may not be required to meet our renewables targets, with a positive effect on energy bills as the costs from these projects will not be passed through to consumers.
- **Long-term decarbonisation** - Power generation is included within the EU- ETS and is therefore traded. However, reductions in consumption, combined with development of energy smart technologies, will result in the most efficient path toward full decarbonisation.

Other Relevant National Policy Documents

Circulars provide statements of the Scottish Government's policy, and contain guidance on policy implementation through legislative or procedural change. PANs provide advice and information on technical planning matters.

Circulars

- 3/2011 The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2011.

Advice and Guidance Notes

- PAN 1/2011 Noise and Planning;
- PAN 2/2011 Planning and Archaeology;
- PAN 45 (Renewable Energy) was superseded in February 2011 by Scottish Government web-based guidance on renewables;
- PAN 51: Environmental Protection 1999;
- PAN 58: Environmental Impact Assessment;
- PAN 60: Planning for Natural Heritage 2000; and
- Managing Change in the Historic Environment guidance note series.

Scottish Government Web-Based Renewable Guidance

This online guidance replaced PAN 45 in February 2011. The two most relevant documents are:

- ‘Onshore Wind Turbines’, which sets out clear planning guidelines for local authorities, presenting technical information on wind turbine and assessment procedures; and
- ‘Process for preparing spatial frameworks for wind farms’, which provides guidance to local authorities on how to guide development through the production of spatial frameworks.

3.2 Local Planning Policy

The proposal is located within the Perth and Kinross Council area. The key local development plans are:

- TAYplan Strategic Development Plan 2012; and
- Perth and Kinross Local Development Plan (2014);
- The Perth & Kinross Wind Energy Policy & Guideline 2005.

TAYplan Strategic Development Plan (2012)

The TAYplan is the Dundee, Perth, Angus and North Fife Strategic Development Planning Authority which has replaced the Structure Plans.

The plan embraces sustainability stating in the foreword *‘We want to provide future generations with opportunities to improve their lives; what better legacy to leave our children. Therefore the mitigation of and adaptation to climate change, as the single greatest challenge facing humankind, is central to this Plan. We must shift to a low carbon and zero waste economy by using our land and resources more efficiently.’*

This is embodied in the Vision and Objectives which aims to ‘support the switch to a low carbon and zero waste economy’ and to *‘strengthen the economic base to support the renewable energy and local carbon technology sectors’*.

Policy 6: Energy and Waste/Resource Management Infrastructure requires the Local Development Plans to identify areas suitable for different forms of renewable heat and

electricity infrastructure with areas of search, allocated sites and decisions on proposals taking into account:

- *‘The specific land take requirements associated with the infrastructure technology and associated statutory safety exclusion zones where appropriate;*
- *Proximity of resources (e.g. woodland, wind or waste material); and to users/customers, grid connections and*
- *distribution networks for the heat, power or physical materials and waste products, where appropriate;*
- *Anticipated effects of construction and operation on air quality, emissions, noise, odour, surface and ground water pollution, drainage, waste disposal, radar installations and flight paths, and, of nuisance impacts on off-site properties;*
- *Sensitivity of landscapes (informed by landscape character assessments and other work), the water environment, biodiversity, geo-diversity, habitats, tourism, recreational access and listed/scheduled buildings and structures;*
- *Impacts of associated new grid connections and distribution or access infrastructure;*
- *Cumulative impacts of the scale and massing of multiple developments, including existing infrastructure;*
- *Impacts upon neighbouring planning authorities (both within and outwith TAYplan); and,*
- *Consistency with the National Planning Framework and its Action Programme’.*

Perth and Kinross Local Development Plan (2014)

Adopted on the 3rd of February 2014, the local development plan (LDP) is a statutory document that aims to guide all future development and shapes the environment of Perth & Kinross. It addresses a wide range of topics from recreation to housing. Policy ER1: Renewable and Low Carbon Energy Generation sets out the framework in which each proposal will be assessed against and lists a number of factors to be considered, including:

- The individual or cumulative effects on biodiversity, landscape character, visual integrity, the historic environment, cultural heritage, water resources, aviation, telecommunications and residential amenity;
- The contribution of the proposed development towards meeting carbon reduction targets; and
- Any positive or negative effects they may have on the local or Perth & Kinross economy including tourism and recreation interests.

The LDP is supportive of renewable energy and states that *“increasing the amount of energy from renewable and low carbon technologies will help to make sure that Scotland has a secure energy supply, reduce greenhouse gas emissions to slow down climate change and stimulate investment in new jobs and businesses. Planning has an important role in the delivery of new renewable and low carbon energy infrastructure in locations where the local environmental impact is acceptable.”*

Climate change also features in the LDP as it recognises that “coping with a changing climate is likely to be one of the greatest challenges of the 21st century and it is recognised that the

climate of Scotland is already changing affecting many aspects of our society environment and economy and therefore our day-to-day lives.

Perth and Kinross Wind Energy Policy and Guidelines (WEPG) 2005

In addition to the local plans, Perth and Kinross Council issued Supplementary Planning Guidance (SPG) for wind energy projects in 2005. The WEPG contains a schematic diagram illustrating 'Strategically Sensitive Areas' and 'Broad Area of Search' for Wind Developments in Perth and Kinross. These areas are shown in Diagram 1 of the SPG and in **Figure 3.1**. The Colliston Farm project is situated within a Broad Area of Search.

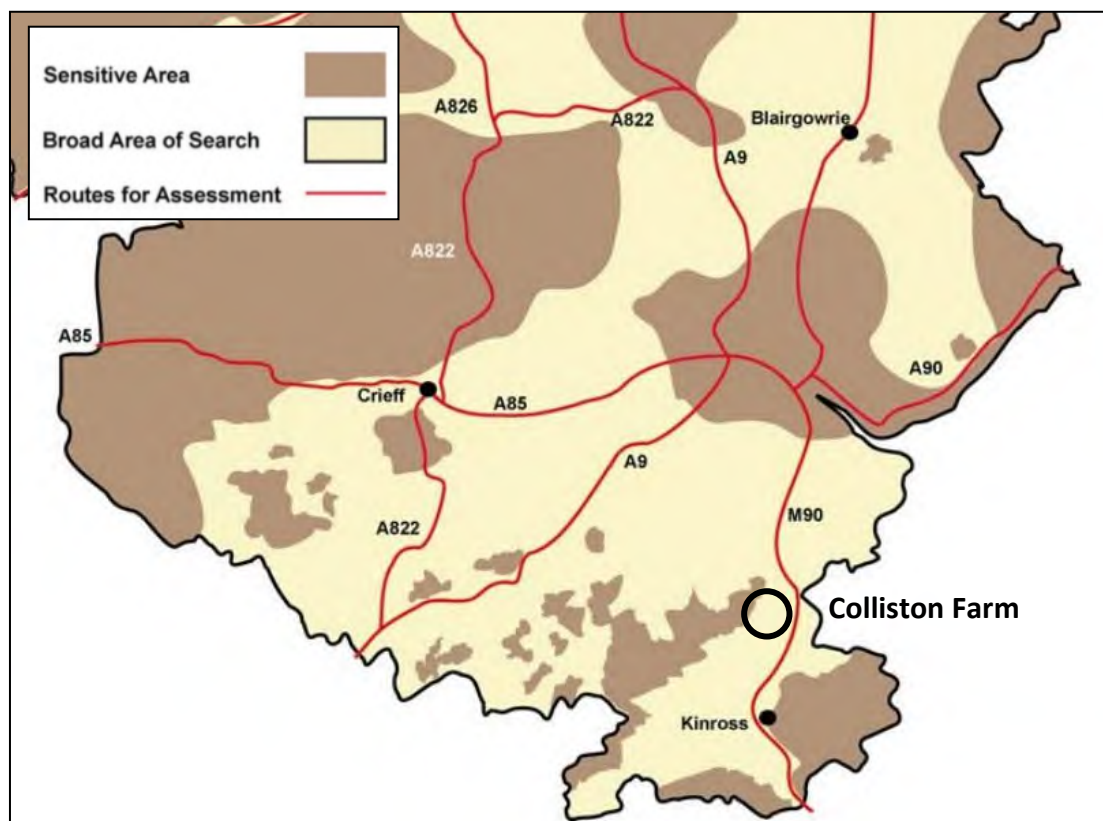


Figure 3.1 – Broad Area of Search and the project location.

The SPG details that developments in the Broad Area of Search will be supported when they are consistent with the Council's other detailed policies.

3.3 Conclusion

The Scottish Government is supportive of this scale of renewable projects, particularly where these are locally owned and will support a rural business.

In terms of Local Policy, Perth & Kinross Council are supportive of renewable energy development where they are considered to be environmentally acceptable, their energy represents a beneficial contribution and they also contribute positively to the local economy. It is contended that the proposed Colliston turbine satisfies all these criteria.

The proposed development site is located in the Broad Area of Search for Wind Energy Developments and with that respect is consistent with the TAYplan Strategic Development Plan and the Local Development Plan's key environmental policies. It is our opinion that the

Colliston Farm proposal is consistent with local and national planning policy and that the potential local benefits, of supporting an established rural business diversification, will outweigh any, localised negative environmental effects.

The remainder of this document aims to demonstrate that the proposal is appropriate in terms of its size, scale and location and that it can be accommodated without significant environmental adverse impact.

4 Project Design Considerations

4.1 Original Application

An application for a single 86.5m to tip wind turbine located on the Colliston Farm site was submitted in September 2012. This application was refused by Perth and Kinross under delegated powers in November 2012 for the four reasons detailed below:

1. *As the proposed scale of the turbine will not be absorbed by the existing landscape framework surrounding the site, which in turn will lead to the turbine becoming a dominant feature within the landscape resulting in a significant adverse impact on the visual amenity and landscape character of the area), the proposal is contrary to Policy 2 of the Kinross Area Local Plan 2004 which seeks to ensure that all new developments have a good landscape framework and will not adversely impact on the amenity of existing areas and Policy 5 of the Kinross Area Local Plan 2004, which seeks to conserve the existing landscape character;*
2. *As the proposal will potentially result in a significant cumulative, adverse visual impact on the landscape of the area by virtue of it being viewed in combination with both existing and proposed wind turbines in the surrounding area, the proposal is contrary to Policy 2 of the Kinross Area Local Plan 2004, which seeks to ensure that new developments do not adversely impact on the amenity of existing areas and Policy 5 of the Kinross Area Local Plan 2004 which seeks to conserve the existing landscape character;*
3. *The approval of this proposal would establish an undesirable precedent for similar sized developments within the local area, which would be to the detriment of the overall visual character of the area, and which in turn could potentially undermine (and weaken) the Councils established relevant Development Plan policies; and*
4. *An approval of the proposal would contravene the recommendations contained within the Tayside Landscape Character Assessment 1999 and Kinross-shire Landscape Character Assessment 1995, in relation to tall structures on the landscape surrounding Loch Leven Basin.*

4.2 Re-designed Application

The refusal of the original application prompted a reconsideration of the development at Colliston Farm and a re-evaluation of the project against business needs. A detailed analysis of the farm's electricity usage is discussed in **Section 2.5**.

The dual aim of the original application was to provide the farm with all its energy, and any excess electricity can be exported back to the national grid, creating a new stream of revenue for the business to utilise and reinvest. The decision was made that rather than exporting electricity, the farm would pursue a reduced scale project focused on providing electricity for the farm itself. It was identified that a turbine with a capacity of approximately 225kW would achieve this.

On this basis, a revised site design process was undertaken which reconsidered the following:

Turbine Scale Selection

Based upon the calculated average windspeed for the site, a 225kW turbine on site would be expected to generate in the region of 521,000kWh of electricity per year. As the demand of the farm including the cold stores is just over 500,00kWh a year, this scale of turbine was the logical choice for the site as the turbine would generate the equivalent of 104% of the energy demand of the farm.

Wind resource

A Vortex wind analysis report was commissioned to ensure the predicted wind speeds would be suitable for a turbine of this scale. The report calculated that the site is forecast to be subject to a mean wind speed of 7.4m/s at a height of 40m above ground level. In accordance with these results, the candidate turbine was selected: ACSA A27/225kW (32.2m hub height, 45.7m tip height).

Access

The majority of the proposed access follows an existing track in order to minimise adverse visual effects and minimise the impact on agricultural land.

Ecology

A series of ecology surveys was undertaken for the original assessment. These were updated in accordance to the latest proposal, with results presented in **Section 7**. No significant impacts on any species or habitats are expected.

Landscape and Visual Impact

The previous application was refused on Landscape and Visual grounds and therefore this was a major consideration in the re-designing process. A number of potential turbine locations were presented to the Case Officer between June and September 2013, who advised which of these would have the least impact on the surrounding landscape. This suggested position for the turbine was carried forward into the final site layout.

This proposed turbine location is in a less prominent area than previously proposed, thus minimising the impact on the surrounding landscape, being located of lower elevation, away from the local summit. The loss in elevation from the original location is approximately 45m. When taking into account the drop in turbine height from the original application, which is approximately 40m, the overall reduction in the height of the proposal is approximately 85m. This results in a significant reduction on impact of the surrounding landscape and visual impacts, as demonstrated in **Figures 4.1 and 4.2**.



Figure 4.1 – VP03 (Minor road between Newhill and Path of Condie) Comparison of Original & Revised Applications

Figure 4.1 shows that the revised turbine location is much less prominent when viewed from the minor road looking east towards West Lomond. The turbine will be backdropped by the hills to the east, as opposed to appearing on the skyline to the left of the hill.



Figure 4.2 – VP06 (B919) Comparison of Original & Revised Applications

Figure 4.2 demonstrates the views from the opposite direction. Again the new turbine is backdropped by the hills to the rear, and is much less prominent than the previous proposal.

The impact of the turbine on landscape character, designation and specific viewpoints is considered in detail in **Section 5**. The visual impact on the closest residential properties is also discussed within this section.

Noise

Noise impacts have been reassessed for the latest candidate machine in the revised turbine location, although no concerns were raised with this aspect of the previous application. The turbine is located significantly further than 10 rotor diameters distance (270m) from the nearest residential properties, and respects the noise tolerances set out in the ETSU-R-97 guidelines. The results of the noise impact assessment are presented in **Section 6**, and show that the turbine can comfortably meet the identified noise constraints at the nearest properties.

Cultural heritage

The original application did not raise significant concerns relating to Cultural Heritage. The assessment has been revised to consider the reduced proposal and is discussed in **Section 7**.

Communication Links

Communication links operated by BT and JRC were identified within 1000m of the proposed turbine location. The turbine has been located at a suitable separation distance from these links so that it will not interfere with their operation.

Shadow flicker

The former PAN45¹, now replaced by the Scottish Government's web based renewables advice, suggests that shadow flicker should not pose problems beyond a distance of 10 rotor diameters from a wind turbine. In this instance this equates to a maximum of 270m. The nearest property is approximately 560m to the proposed turbine location. Based on this guidance, no shadow flicker impacts are therefore predicted at any of the properties in the area due to their proximity to the turbine, and this aspect has not been considered further.

All of these factors were taken into account when finalising the project design. **Figure 5.1** below displays the project infrastructure in the context of the identified site specific constraints.

1 ¹ Scottish Executive Planning Advice Note, PAN45 (revised 2002): Renewable Energy Technologies, Wind Power, <http://www.scotland.gov.uk/library/pan/pan45-04.asp>, para. 64, 01/11/05

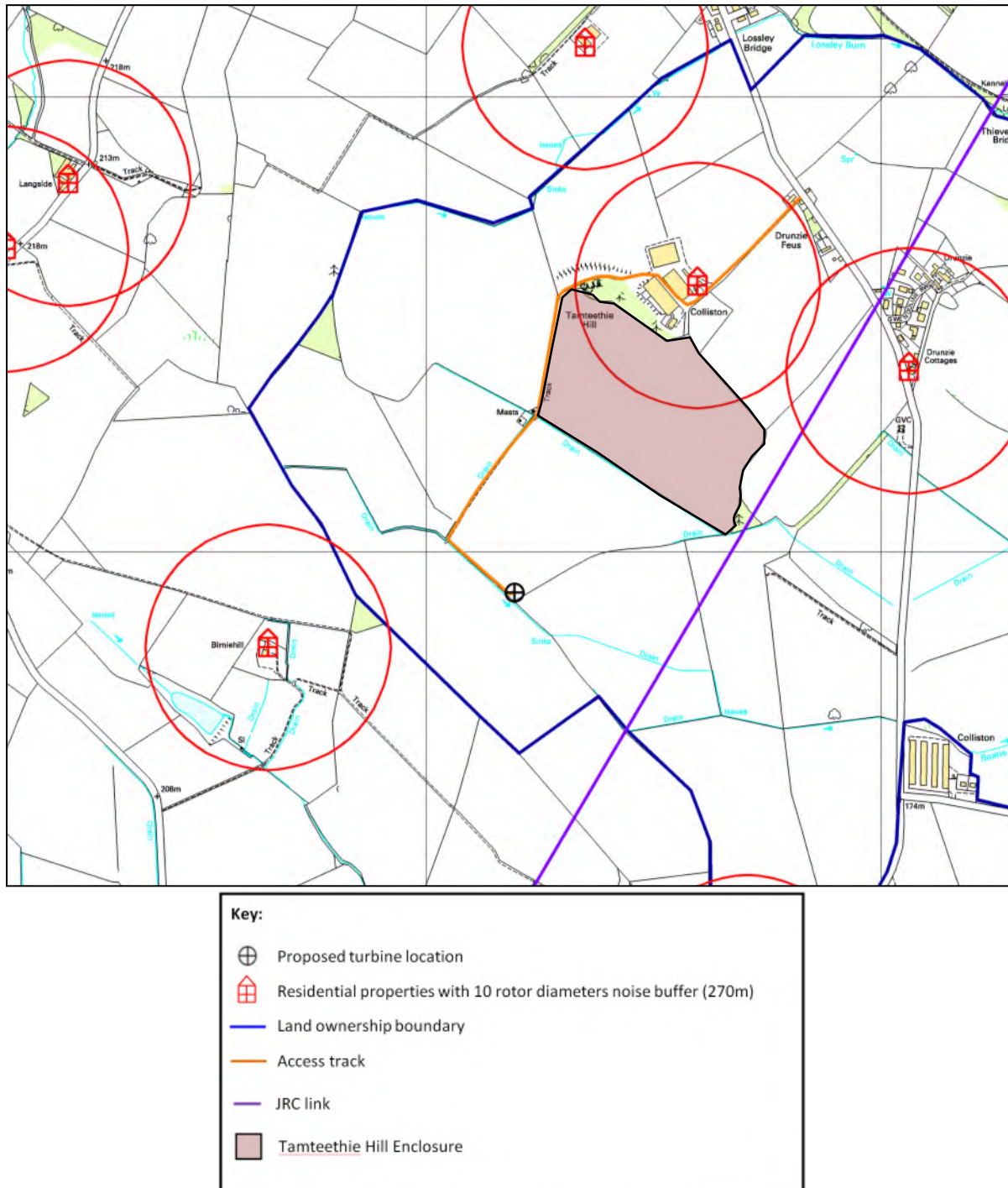


Figure 4.1 – Project layout and constraints

5 Landscape and Visual Impact

5.1 Introduction

This section reports on the potential landscape and visual effects of the Colliston Farm Wind Turbine. The proposed development is a single turbine scheme, 46m to blade tip located on privately owned farmland at Colliston farm ~2km south-west of Glenfarg, Perth and Kinross.

The aim of the design and assessment process is to promote the best “environmental fit” for the development through consideration of the existing landscape resource, the potential landscape and visual effects and design alternatives. This assessment process will refer to landscape value, and in particular landscape designations and related planning policy, as well as landscape character and the capacity for wind turbine development at this site. Included as part of this chapter are accompanying figures, illustrating potential visibility and, photomontaged examples from a range of receptors, descriptions of which can be found in **Colliston Farm Wind Turbine Landscape Figures** which accompany the Environmental Statement.

Summary of Scope

The scope of the assessment has been established on the basis of professional judgement and through the consultation process and is set out in **Table 5.1**.

Table 5.1 Scope of the Landscape and Visual Assessment

Landscape Issues	Description
Landscape Character	The effects of the proposed development on the landscape character and quality of the site area, as defined by the <i>Tayside Landscape Character Assessment</i> , <i>Fife Landscape Character Assessment</i> , <i>Clackmannanshire Landscape and Assessment</i> , <i>The Lothians landscape Character Assessment</i> and site survey.
Landscape Elements	Direct or physical effects on landscape elements.
Landscape Designations	Views from the National Scenic Areas, Areas of Great Landscape Value, Gardens and Designed Landscapes as well as views from other areas of landscape character as perceived by people
Visual Issues	Description
Local Community	Views from the local rural community, particularly from residential properties near the site and from local settlements which lie within the ZTV. Views from roads and popular tourist / walker destinations and hilltops will also be taken into consideration.
Tourist Destinations	Views from popular outdoor tourist destinations which entail an appreciation of the landscape tourist destinations, and the setting of features and the visitor experience.
Major Transport Routes	Transport routes including the M90 and A91.
Cumulative Issues	Description
Cumulative Assessment	The cumulative assessment includes viewpoint assessment within the Study Area where simultaneous and/or successive views of more than one wind energy development may be achieved, and sequential cumulative assessment, where more than one wind energy development may be viewed along transport routes (simultaneous or successive).

5.2 Guidance

The methodology for the landscape and visual impact assessment (LVIA) and the cumulative landscape and visual assessment (CLVIA) has been undertaken in accordance with the methodology set out below and conforms with *The Guidelines for Landscape and Visual Impact Assessment*, Third Edition (Landscape Institute and IEMA, 2013).

Additional guidance has been taken from the following publications:

- *The Tayside Landscape Character Assessment*, Land Use Consultants, 1999;
- *Fife Landscape Assessment*, SNH Review No. 113, David Tyldesley and Associates, 1999;
- *ASH Consulting Group 1998. The Lothians landscape character assessment. Scottish Natural Heritage Review No 91.*
- *ASH Consulting Group 1998. Clackmannanshire landscape character assessment. Scottish Natural Heritage Review No 96.*
- *Wind Energy, Planning Supplementary Guidance, June 2013 – Fife Council*
- *Siting and Designing Windfarms in the Landscape*, Scottish Natural Heritage, Version 1, December 2009;
- *Visual Representation of Windfarms Good Practice Guidance*, prepared by Horner + MacLennan and Envision for Scottish Natural Heritage, The Scottish Renewables Forum and the Scottish Society of Directors of Planning, March 2007
- *Landscape Character Assessment: Guidance for England and Scotland* (Countryside Agency and Scottish Natural Heritage publication, produced by the University of Sheffield and Landuse Consultants), 2002;
- *Guidance: Cumulative Impacts of Onshore Wind Developments*, Scottish Natural Heritage Advisory Service, Version 3, March 2012;
- *Landscape Character Assessment Topic Paper 6 - Techniques and Criteria for Judging Capacity and Sensitivity*, Countryside Agency and Scottish Natural Heritage, 2004;
- *Photography and Photomontage in Landscape and Visual Assessment*, Landscape Institute Advice Note 01/2011, 2011;

5.3 Assessment Methodology

Defining the Study Area

An overall Study Area of 20km radius from the site centre has been established following consultation with Perth & Kinross Council. This is also in line with SNH recommended study area for a proposal of this size.

Landscape and Visual Impact Assessment (LVIA) – the study area was restricted to the application site, access routes, and the potential Zone of Theoretical Visibility (ZTV) from

where there may be a view of the development at up to 20km distance from the site centre. The main focus of the assessment is on the area within 10km, which would be the distance within which significant effects of the proposed development are most likely to be experienced. This has been informed with reference to the findings of field surveys and viewpoint analysis, as well as from professional experience by previous assessments. This allows the assessment to focus on the issues most relevant to the application.

Cumulative Landscape and Visual Impact Assessment (CLVIA) - considers existing wind energy development proposals that have permissions, and those that are currently the subject of undetermined applications within a search area of 50km radius of the site centre. An initial assessment of the cumulative visibility of these windfarms within the Cumulative Search Area was then undertaken in order to determine which have the potential to contribute to a significant cumulative effect following addition of the Colliston Farm Wind Turbine. Many of the more remote developments were scoped out of the assessment at this stage due to the lack of combined visibility or their distance to the site. The detailed assessment focuses on those sites with potential for significant cumulative effects in combination with the Colliston Farm turbine. These windfarms are considered to be those within a 10km radius from the site, as mapped on **Figure 5.6**.

A Zone of Theoretical Visibility (ZTV) was created using the ReSoft © Wind Farm computer software to identify areas that have potential visibility of any part of the proposed wind Turbine calculated to blade tip and hub-height. The ZTV however, does not take account of built development and vegetation, which can significantly reduce the area and extent of actual visibility in the field and as such provides the limits of the visual assessment study area.

Figure 5.5a, b illustrates the ZTV to a tip height of 45.7m at 1:100,000 scale. **Figure 5.5c, d** illustrates the ZTV to a hub height of 32.2m at this scale.

Baseline Landscape and Visual Resource

This part of the LVIA refers to the existing landscape character, quality or condition and value of the landscape and landscape elements on the site and within the surrounding area, as well as general trends in landscape change across the study area. A brief description of the existing landscape character and land use of the area which includes reference to settlements, transport routes, vegetation cover, as well as landscape planning designations, local landmarks, and tourist destinations.

Assessing Landscape Effects

Landscape Effects are defined by the Landscape Institute as “*changes to landscape elements, characteristics, character, and qualities of the landscape as a result of development*”. The potential landscape effects, occurring during the construction and operation period, may therefore include, but are not restricted to, the following:

- Changes to landscape elements: the addition of new elements or the removal of trees, vegetation, and buildings and other characteristic elements of the landscape character type;

- Changes to landscape quality: degradation or erosion of landscape elements and patterns, particularly those that form characteristic elements of landscape character types;
- Changes to landscape character: landscape character may be affected through the incremental effect on characteristic elements, landscape patterns and qualities and the cumulative addition of new features, the magnitude of which is sufficient to alter the overall landscape character type of a particular area; and
- Cumulative landscape effects: where more than one wind farm may lead to a potential landscape effect.

The development may have a direct (physical) effect on the landscape as well as an indirect effect or effect perceived from out with the landscape character area. Landscape effects are assessed by considering the sensitivity of the landscape against the degree of change posed by the development. The sensitivity of the landscape to a particular development is based on factors such as its quality and value and is defined as high, medium or low. Examples of landscape sensitivity and criteria are described below:

High Sensitivity – This would primarily be rare landscapes, or landscapes which have been afforded either a national or local designation such as National Parks, National Scenic Areas or Areas of Great Landscape Value. These landscapes can be fairly dramatic in terms of scale and may feature a number of attractive landscape features, including mature woodland, intricate gorges and river valleys, prominent summits or features of cultural heritage. Man-made features or modifications to the landscape will be minimal and the landscape may have a wild or remote feeling to it;

Medium Sensitivity – This would include landscapes which are still relatively attractive and generally rural but do contain some man-made elements. It may be landscapes which have been modified to accommodate farming practices and landscapes which include more prominent settlement pattern and road networks. These landscapes may also contain woodland including plantation forestry and shelterbelts; and

Low Sensitivity – This would only be reserved for landscapes which may be deemed unattractive due to heavy modification and prominent man made features, such as industrial units.

The magnitude, or degree of change, considers the scale and extent of the proposed development, which may include the loss or addition of particular features, and changes to landscape quality, and character. Magnitude can be defined as high, medium, low or negligible, examples of magnitude are shown below:

High Magnitude – This would be a major change to baseline conditions, where the character of the landscape may be altered from its existing state into a landscape with windfarms;

Medium Magnitude – This would be a noticeable change in the baseline condition but not necessarily one which would be enough to alter the character of the landscape and will generally diminish with distance;

Low Magnitude – This would be a minor change to the baseline conditions where the development would be readily missed by a casual viewer and any character of the landscape would remain intact; and

Negligible Magnitude – This would be a change which would be difficult to notice and the baseline conditions are likely to remain almost as they were.

The level of effect is determined by the combination of sensitivity and magnitude of change as shown in **Table 5.2**.

Table 5.2 Magnitude and Sensitivity Matrix for assessing Overall Level of Effect

Sensitivity	Magnitude of Change			
	High	Medium	Low	Negligible
High	Major	Major/Moderate	Moderate	Moderate/Minor
Medium	Major/Moderate	Moderate	Moderate/Minor	Minor
Low	Moderate	Moderate/Minor	Minor	Minor/Negligible

Assessing Visual Effects

Visual effects are recognised by the Landscape Institute as a subset of landscape effects and are concerned wholly with the effect of the development on views, and the general visual amenity. The visual effects are identified for different receptors (people) who will experience the view at their places of residence, during recreational activities, at work, or when travelling through the area. These may include:

- Visual effect: a change to an existing view, views or wider visual amenity as a result of development or the loss of particular landscape elements or features already present in the view; and
- Cumulative visual effects: the cumulative or incremental visibility of similar types of development may combine to have a cumulative visual effect. Either:
 - Simultaneously - where a number of developments may be viewed from a single fixed viewpoint simultaneously within the viewer's field of view without moving;
 - Successively - where a number of developments may be viewed from a single viewpoint successively by turning around at a viewpoint, to view in other directions; and
 - Sequentially - where a number of developments may be viewed sequentially or repeatedly from a range of locations when travelling along a route.

The general principles adopted for the assessment of visual effects were taken from *The Guidelines for Landscape and Visual Impact Assessment* Third Edition, produced by the Landscape Institute, 2013. This guidance outlines the approach to define a ‘sensitivity’ for a given view and a ‘magnitude of change’ that would be caused by the development in question over its lifetime. A matrix in the Guidance is then used to assess the overall ‘level of effect’. This matrix is the same format as used to understand landscape effects and can be seen in **Table 5.2**. Examples of visual sensitivity are highlighted below:

High Sensitivity – These include residential receptors, such as views from individual properties or views from within settlements. Views from both recreational locations, such as hill summits, long distance footpaths, cycle paths and tourist locations such as castles and visitor centres are also considered to be of high sensitivity;

Medium Sensitivity – This would include most other visual receptors such as views from roads, other areas of landscape which would not be classed as recreational areas and views from areas within settlements which would not be considered residential; and

Low Sensitivity – This would cover views experienced by people at work and views where the existing view is already dominated by significant man made features.

In the context of this project, the effects during operation are always direct and long term (reversible after 25 years). Effects may also be non-cumulative or cumulative. None of the visual effects relating to this project have been considered positive in order to present a worst case view of any effects, although it should be noted that surveys have consistently shown that the majority of people are positively disposed to wind farm development once it is built.

Viewpoint Analysis Method

Viewpoint analysis is used to assist the LVIA from selected viewpoints within the study area. The purpose of this is to assess both the level of visual impact for particular receptors and to help guide the assessment of the overall effect on visual amenity and landscape character. The assessment involves visiting the viewpoint location in good weather and viewing wireframes and photomontages prepared for each viewpoint location. Illustrated turbines always face the viewer to give a worst case impression of the development under consideration. As far as possible the viewpoints have been selected to meet the following criteria:

- A balance of viewpoints to the north, south, east and west;
- A range of near middle and distance views of the development;
- A proportion representing areas known locally where people use the landscape, such as prominent hill tops or footpaths; and
- A proportion representing designated areas.

A wide range of viewpoints have been studied as part of this assessment and 12 viewpoints have been illustrated with photomontages to assist the assessment for the proposed development. **Table 5.3** below provides a summary of the viewpoint locations and rationale for their selection. Viewpoints highlighted in green no longer have any visibility of the proposed turbine.

Table 5.3 Summary of locations selected for Viewpoint Assessment

Viewpoint	Reason for Initial Selection	Distance
1. Close in from the south	Located at the side of the minor road which serves as access for Birniehill Farm. The view is representative of the closest residential properties to the south.	1km
2. Close in from the north-east	Located on the south-east edge of the Duncruevie. The view is representative of local residents of Duncruevie, other residences to the east and road users on the minor road.	1.2km
3. Minor Road between Newhill and Path of Condie	The viewpoint was taken at the side of the minor road between Newhill Farm and Path of Condie. The viewpoint was selected to represent road users and residences to the west.	1.3km
4. M90 at Blairfield	The viewpoint is located near to the M90 motorway, by the over-bridge to the north of Junction 8. The viewpoint was selected to represent motorists travelling on the M90.	2.2km
5. Burleigh Castle	The viewpoint was taken from the grounds of Burleigh Castle on the eastern edge of the settlement of Milnathort. The viewpoint was selected to represent visitors to the castle as well as the residents of Milnathort.	3.8km
6. B919 at Wester Balgedie	The viewpoint was taken at the side of the B919 between Newlands and Pittendreich Farms. The viewpoint was selected to represent road users heading north.	4.9km
7. Kinross Services	The viewpoint was taken from the service station and Travelodge on the western edge of Kinross. The viewpoint was chosen to represent visitors to the Service Station and road users.	5.9km
8. Bonnet Stane	The viewpoint was taken by the Bonnet Stane. The viewpoint was selected to represent visitors to the stone.	6.4km
9. Loch Leven Lodges	The viewpoint was taken from the edge of Loch Leven, near to the Holiday Cabins located on the south eastern edge of the Loch. The viewpoint is representative of visitors to the area, holidaymakers and recreational visitors to the Loch.	10.1km
10. Kinnoull Hill	The viewpoint is located near the summit of Kinnoull Hill to the east of Perth. Kinnoull Hill is a popular destination with walkers and runners as well as other recreational users	14.6km
11. Knock Hill	The viewpoint was taken from the summit of Knock Hill, one of the most prominent peaks in Western Fife. The view was selected to represent recreational visitors to Knock Hill.	16.0km
12. M90 overbridge at Glenfarg	The viewpoint was taken from the bridge over the M90 to the north of Glenfarg. The viewpoint was chosen to represent road users travelling on the M90 heading south.	3.6km

The ‘M90 overbridge at Glenfarg’ Viewpoint was included in the previous application, following the project redesign is no longer visible from this location. The Viewpoint has been included in the Landscape Graphics to illustrate this.

Methodology for Production of Visualisations

With the view selected, the locations were confirmed and then photographed with a digital Single Lens Reflex (SLR) camera set to produce photographs equivalent to that of a manual 35 mm SLR camera with a fixed 50mm focal length lens. In accordance with the SNH guidance *Visual Representation of Windfarms Good Practice Guidance*, panoramic images were produced from these photographs to record a 76° angle of view illustrating the typical

extent of view that would be experienced by the viewer at the viewpoint when facing in one direction and also provides an indication of the visual context of the proposed development. The wider 360° of each view were also taken into account, particularly for the hill summit viewpoints. As well as these photomontages, single frame visualisations equivalent to those of a 70mm manual SLR which have been included in the visualisation production.

Each view was illustrated using a panoramic photograph, a wireline and, in some cases, a photomontage. Wirelines and photomontages were produced using Resoft© WindFarm software and utilising 50m² Ordnance Survey Digital Terrain Mapping (DTM) height data covering the study area.

Visual Assessment of Settlements

All settlements within the study area have been assessed with regards to the level of visual impact the development will have on them. The sensitivity for each of the settlements is considered to be high in accordance with Guidelines for Landscape and Visual Impact Assessment, 2013. In line with the guidance from the Landscape Institute², the views from upper floor windows are considered to be of lesser importance. Views from gardens and public areas have also been considered. In addition to this all settlements within the study area have been assessed and level of effect noted.

Visual Assessment of Main Transport Routes

A route assessment has been undertaken which explores the visual impact of the development on views experienced by road users along major transport routes in the area and assumes that the viewer would be travelling at speed.

It also includes assessment of any National Cycle Routes, Long Distance Footpaths and locally valued footpaths which fall within the study area. This part of the assessment has been considered cumulatively along with all other wind energy development within the study area.

Cumulative Landscape and Visual Assessment

In addition to the Landscape Institute methodology for LVIA, the cumulative landscape and visual assessment (CLVIA) has considered the emerging guidance from Scottish Natural Heritage's *Assessing the Cumulative Impact of Onshore Wind Energy Developments*, Scottish Natural Heritage, March 2012. The CLVIA is however, not a substitute for individual wind farm landscape and visual impact assessment.

Predicting Cumulative Landscape Effects

The assessment considers the extent to which the proposed development, in combination with others, may change landscape character through either incremental effect on characteristic elements, landscape patterns and quality, or by the overall cumulative addition of new features. Identified cumulative landscape effects are described in relation to each individual Landscape Character Area and for any designated landscape areas that exist within the study area.

² Paragraph 6.36 page 114 in 'Guidelines for Landscape and Visual Impact Assessment'. Third Edition.' Landscape Institute and Institute of Environmental Management and Assessment. April 2013.

Predicting Cumulative Visual Effects

The assessment of cumulative visual effects involves reference to the cumulative visibility ZTV maps and the cumulative viewpoint analysis. Cumulative visibility maps are analysed to identify the residential and recreational locations and travel routes where cumulative visual effects on receptors (people) may occur as a result of the proposed development.

With potential receptor locations identified, cumulative effects on individual receptor groups are then explored through viewpoint analysis, which involves site visits informed by wireline illustrations that include other wind developments. Travel routes are driven to assess the visibility of different wind developments and inform the assessment of sequential cumulative effects that may occur along a route or journey.

Cumulative Viewpoint Analysis

Each viewpoint has been assessed cumulatively in order to understand whether or not the proposed development introduces a cumulative impact on the view from that location. All visible operational, consented and undetermined planning application wind energy projects are considered along with the Colliston Farm Wind Turbine development and a level of cumulative magnitude is assigned. The level and significance of cumulative visual effects is determined in the same manner as the main LVIA, using the previous matrix shown in **Table 5.2**.

5.4 Landscape Design Considerations

Project Description

The Colliston Farm Wind Turbine would include the construction of a single turbine in the Igneous Hills landscape. The turbine would be 32.2m in height to hub and 45.7m to blade tip.

Landscape Design Considerations

In accordance with SNH's *Strategic Locational Guidance for Onshore Wind Farms*, the site location would lie within Zone 1, which is described as follows:

Zone 1: Lowest natural heritage sensitivity identifies areas at the broad scale with least sensitivity to wind farms, with the greatest opportunity for development, within which overall a large number of developments could be acceptable in natural heritage terms, so long as they are undertaken sensitively and with due regard to cumulative impact.

However, this assessment is the result of a broad based study and provides an indication only. The Colliston Farm Wind Turbine site has been subject to LVIA in accordance with the relevant EIA Regulations.

Supplementary Planning Guidance for Wind Energy Proposals in Perth & Kinross (SPG)

The SPG, which was approved on 18 May 2005, seeks to clarify existing development plan policy and to assist in considering proposals against those policies. The SPG also provides a map highlighting broad areas of search along with more sensitive areas as a guide.

The proposed Colliston Farm turbine is located within a broad area of search as shown below in **Figure 5.1**.

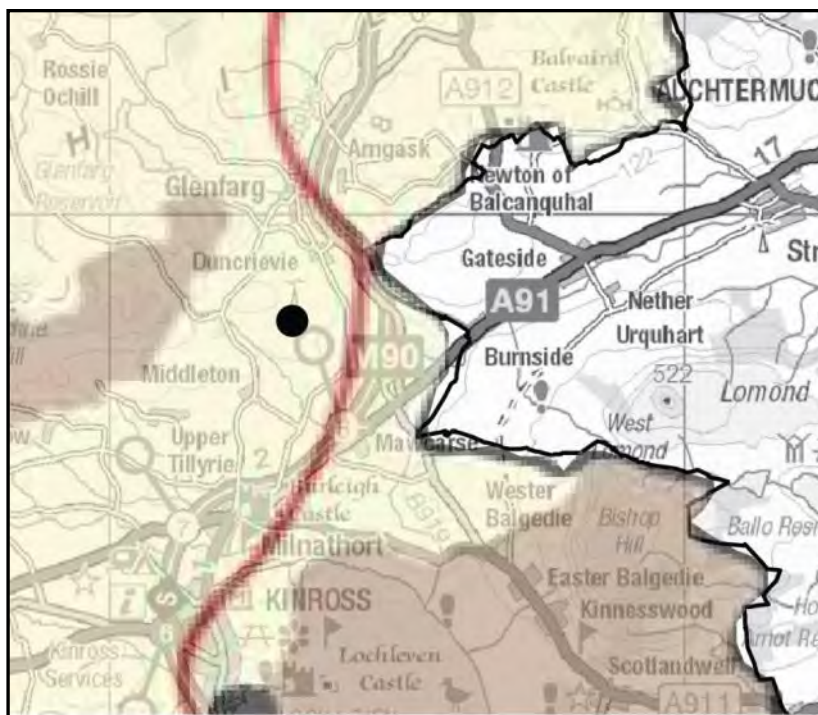


Figure 5.1 Broad Area of Search Diagram – Supplementary Planning Guidance for Wind Energy proposals in Perth & Kinross

The document sets out a number of guidelines relevant to the Landscape and Visual Assessment, these have been followed as well as guidance from SNH and the Landscape Institute.

According to the document the proposed turbine be classed as a single Community Scale development which is described in Table 1 of the SPG as:

A single ‘standard’ turbine (typically more than 20m to hub height and blade diameter more than 20m).

Design Objectives

SNH’s guidance ‘*Siting and Designing Windfarms in the Landscape*’ has been used to inform the layout and design of the scheme and it is considered that the proposed development is in accordance with its key principles, as laid out below:

Scale – The turbine size and number has been chosen to ‘fit’ with the scale of the landscape and not diminish the scale and setting of the surrounding countryside. Reducing the overall size of the turbine to sub 50m has allowed the development to interact with the features already present in the landscape including woodland, farm buildings and electricity pylons.

Skylines – As a single turbine less than 50m the development avoids dominating the major proportion of skyline and maintains a consistent position where it is

rarely a prominent feature of the skyline. The majority of views would see the turbine backdropped by the large scale upland landscapes to the east and west, an important consideration, particularly when viewed from Loch Leven.

Aesthetics – The location was chosen to work best with the surrounding landscape, appearing lower in the surrounding landscape than the surround prominent hill summits there is little confusion between the development and the wider landscape.

Layout Design

The proposed, broad location has been chosen as it is considered to represent the best compromise between the technical and environmental considerations set out above. The turbine has been moved ~650m to the south-east away from the local summit, allowing it to integrate with the immediate landscape surrounding the site. The overall height of the development was also substantially reduced.

Turbine Selection

The LVIA has been assessed on the basis of one turbine up to a maximum height of 45.7m. Other likely design considerations include the following:

- A modern turbine will be used that has a simple and balanced appearance with three blades and tapered, non-lattice towers; and
- The turbine will be semi-matt and pale grey in colour to reduce its contrast with the background sky under most weather conditions;

Construction Activities

Temporary landscape and visual effects would occur during the construction period, and would result from the visibility of construction activity, use of lay down areas, and site compounds. The landscape and visual effects would be of a low to negligible magnitude of change and not significant.

The lay down area and compound would be located in a field adjacent to the proposed turbine. During the construction period the landscape and visual effects would be significant due to the movement and contrast of workers and machinery in this area. These effects would be temporary and fully restored on completion.

All disturbed areas resulting from the construction (around the turbine bases, access tracks and on site compounds and lay-down areas) will be restored upon completion of the construction period. Specific mitigation measures necessary during construction would include:

- Colour and finish of substation/control building to be agreed with Perth & Kinross Council prior to construction;
- Land clearance and occupation will be limited to the minimum necessary for the works;
- Vegetation removal will be minimised as far as possible; and

- Valued features, such as peat land, wetland, historic features and field boundaries are protected and fencing will be used to keep contractors out of areas where damage could result.

Decommissioning

All of the visible, above-ground structures (turbines, transformer, substation and grid connection) will be removed upon decommissioning, thus rendering the landscape and visual effects of the development as reversible. There would therefore, be no landscape and visual effects remaining after decommissioning.

5.5 Baseline Conditions

Broad Landscape Context

The study area for the proposed development is located within the Tayside Landscape Character Assessment. The Tayside area stretches inland from the coast and Tay Estuary encompassing the city of Dundee and the route of the River Tay until it meets the Cairngorms National Park in the north and Fife to the south. The area features a number of settlements, including Perth, Kinross, Bridge of Earn, Glenfarg and Milnathort. The settlements are located close to the M90 motorway corridor which runs from Edinburgh in the south to Aberdeen in the north. Perth, Dundee and other larger settlements such as Dunfermline further out from the site are not predicted to have any views of the project. The area includes a variety of landscapes, ranging from large areas of intensively farmed arable land to the coastal areas of Fife and the Lothians as well as the hill ranges of the Ochils and Lomonds. **Figure 5.3** illustrates the various landscape character types, which have been classified and assessed by Scottish Natural Heritage and their consultant landscape architects. It can be seen from **Figure 5.3** that the site study area is covered by four different area reports: the Tayside Landscape Character, Fife Landscape Character, The Lothians Landscape Character and the Clackmannanshire Landscape Character.

The proposed development site is located in the Tayside Lowlands Landscape Character Area as defined by the Tayside Landscape Character Assessment document. Within the Tayside Lowlands the site is within the Igneous Hills character type, the Igneous Hills cover two areas, the Ochils and the Sidlaws. The proposed development is located in the Ochils.

In addition to this landscape there are also a number of other landscape character areas that lie within the study area. **Table 5.4** summarises all the landscape character areas that are situated within the study area. Any areas highlighted in green are not within the ZTV.

Table 5.4 - Key Characteristics of Landscape Character Types

Name	Key characteristics
Tayside Landscape Character Assessment	
Firth lowlands	Lying along the northern side of the Firth of Tay, between Perth and Dundee, Bound to the north by the steep Sidlaw Hills, the area forms one of the most fertile parts of Scotland. The area is principally an agricultural area and the landscape is dominated by large, geometric fields. Field boundaries within parcels of land are often absent, the distinction between different fields being marked by drainage ditches or simply changes in crop.

Name	Key characteristics
Broad Valley Lowland	Located south of the Highland boundary Fault lie five broad lowland valleys or straths. These share a range of common characteristics which set them apart from other valleys and glens. The five areas of Broad Valley lowland are: Strathmore, Strathearn, Strathalan, Lower south and north Esk river valleys and the Pow Water Valley between Gask Ridge and Keillour Forest. Valleys such as Strathmore had comprised extensive areas of rough grazing, scrub woodland and unproductive wetland. Overtime large rectilinear fields were created as the area became predominant in agriculture.
Dolerite Hills	A series of hills rise along the southern boundary of Tayside, enclosing the Loch Leven basin. These are fragments of landscape character areas which extend beyond the region in Fife. The hills divide into three groups, the Lomond Hill to the east, and Benarty Hill and the Cleish Hills to the south.
Lowland Hills	The Lowland Hills form the transition between the Highlands to the north and west and the lowlands to the south and east. In contrast to the areas of true upland to the north, these hills are generally smooth and well-rounded. The transitional nature of the hills is reflected in landcover and vegetation. Pastoral and even arable fields on the lower slopes give way to rough grazing and then to open moorlands as height is gained. There is a considerable amount of coniferous forestry in this landscape type, though this is concentrated on less fertile land.
Lowland River Corridors	This area is characterised by a well-defined river corridors in broader lowland landscapes. It features meandering rivers often incising through softer sandstone with semi-natural woodland on steeper slopes.
Fife Landscape Character Assessment	
Coastal Hills	Located around the coast of Fife, the Coastal Hills are mainly located above the Coastal Cliffs, Braes and terraces, which slope gradually towards the sea offering panoramic views of the Firths. They are characterised by their strong association with the sights, sounds and smells of the coast and usually comprise large, undulating, regular, open, arable landscapes with few hedges but some linear shelterbelts and policy plantings. These are medium to large-scale, often open or exposed coastal landscapes where the character is always influenced by the sea. Generally a simple, sloping, balanced, active, organised, tended, farming landscape with regular or geometric patterns. These hills mark the transition between coastal and landward areas of Fife sharing characteristics of both.
Coastal Terrace	The Coastal Terraces are mostly flat or gently sloping towards the coast. They are extensively built upon or relatively undeveloped comprising large, open, undulating, arable fields with infrequent or more regular steadings. They have little vegetation cover except policy planting and shelter-belts around the large houses and designed landscapes, or on the steeper slopes often above burns. There are few field boundaries, limited to some hedgerows, stone dykes or post-and-wire fencing primarily around the larger houses and farmsteads. These are coastal landscapes where the character is always influenced by the sea and typically they are a simple, undulating, balanced landscape with muted colours, varied textures and slow movement.
Coastal Flats	The Coastal Flats on the south coast are very flat, low-lying coastal landscapes claimed from the Firth of Forth. On the north east coast they are developed on blown sands and old dune systems and covered by a variety of land uses such as the afforestation at Tentsmuir Forest, the airfield at Leuchars and the world famous golf courses at St Andrews. Therefore they have a diversity of landscape character but their close association with the sea is ever present in these very flat, low-lying, horizontal, open, large-scale, exposed coastal landscapes. Typically, intensively cultivated, geometrically laid out, large to medium-scale, predominantly arable fields or forestry plantations with rectilinear, fenced enclosures.
Lowland Hills and Valleys	The Upland Foothills of the Ochils, Lomond and Cleish Hills are very conspicuous, often defining the edge of other landscape types and the extent of views across the lowlands. The natural slopes of the landform of the Foothills are gentler and less pronounced than the Upland Slopes but usually steeper and higher than the Lowland Hills. They too form distinctive backdrops to other landscape types. The Foothills have several conspicuous point features, providing each area with its own identity. They are characterised by a combination of steep sided, rugged, open landform and land cover on the upper foothills, and shallower, smoother, more vegetated or developed landform lower down.
Lowland Glacial Meltwater Valleys	The Lowland Glacial Meltwater valleys are 'U' shaped, flat bottomed channel-like valleys with distinctive often pronounced and frequent eskers, kames and mounds deposited by melting glaciers. Typically used for intensive arable cultivation, the valley floor and lower slopes contrast with the mixed farming or grazing land on the rising slopes. There are medium to large-scale geometric field patterns enclosed by low, gappy hedges or post and wire fences. Steadings are located along distinct lines of transition from fertile valley soils to the poorer soils of hill slopes. They have small, sinuous often inconspicuous burns or small rivers which appear to be too small for the size of the valley. In parts, there are extensive conspicuous sand and gravel quarries disrupting an otherwise generally well organised, tended, balanced, open, locally busy and diverse landscape with regular patterns, smooth textures and seasonally variable colours.
Upland Slopes	The steep Upland Slopes of the Lomond, Cleish and Benarty Hills with their pronounced, vertical landform are very conspicuous, often defining the edge of other landscape types and the extent of views across the lowlands. They are distinctive backdrops, edges and skylines to other landscape types. They are typically open

Name	Key characteristics
	and exposed with semi-natural land cover, including woodlands often strongly related to landform. The burns and occasional waterfalls, gullies and folds and steep-sided, narrow glens are important features in these balanced, harmonious, colourful, many-featured, vertical, open, semi-natural landscapes. The ruggedness and rocky outcrops of some of the slopes contrast with the sweeping patchwork of gentler, smoother more regular landform and land cover of the slopes elsewhere.
Upland Foothills	The Upland Foothills of the Ochils, Lomond and Cleish Hills are very conspicuous, often defining the edge of other landscape types and the extent of views across the lowlands. The natural slopes of the landform of the Foothills are gentler and less pronounced than the Upland Slopes but usually steeper and higher than the Lowland Hills. They too form distinctive backdrops to other landscape types. There is a lack of settlements but a general abundance of farmsteadings which, along with the many types of woodland are well related to landform, often in association with the frequent burns running down gullies or folds or narrow glens. The Foothills have several conspicuous point features, providing each area with its own identity. They are characterised by a combination of steep sided, rugged, open landform and land cover on the upper foothills, and shallower, smoother, more vegetated or developed landform lower down. These are medium to large-scale, open, simple, sloping, curved, quiet and balanced landscapes with smooth or varied textures and muted colours.
Pronounced Volcanic Hills & Craigs	The Pronounced Volcanic Hills and Craigs form conspicuous, pronounced, often distinctive and recognisable hills or hill ranges sometimes protruding high above the lowlands or extending the uplands or foothills. They form important backdrops to the lowlands. Their distinctive shapes, silhouettes and skylines, with recognisable shapes, peaks and slopes give Fife a strong sense of place and direction. The farmsteadings and woodlands are well related to landform and there is a variety of other individual buildings and structures, sometimes associated with the burns and contributing to the identity of the area. The upper slopes of these Hills and Craigs can be steep sided, rugged and open, contrasting with the shallower, smoother, more open, simple, sloping, curved, quiet and balanced landscapes with smooth or varied textures and muted colours.
Uplands	The Uplands of the Ochil, Lomond, Cleish and Benarty Hills have an elevated, massive, pronounced physical landform with distinctive silhouettes and skylines often with recognisable shapes, peaks and slopes. They are open large-scale, rolling hills of upland pastures with peaks, knolls and ridges mainly covers in a green and brown patchwork of grasses, bracken, sedge and rush with pockets of heather. Stone dykes, burns and occasional minor roads flow over and along the contours and patterns are irregular, responding to the landform. The Uplands are a landscape of vast scale, exposure, openness, peacefulness and simplicity. They are typically quiet, calm, harmonious, semi-natural, enduring landscapes.
Lowland River Basins	The lowland River Basins of the Rivers Leven and Ore are flat, wide, relatively low-lying valley basins contained by distant foothills or volcanic hills with an open, medium to large-scale, regular pattern of intensively cultivated arable fields with few animals. In some parts there are extensive coniferous plantations on poorer soils but elsewhere many mature, narrow, linear, straight, predominantly coniferous shelterbelts form strong visual features and patterns. Dominated by straight or angular horizontal lines and geometric patterns formed by cropping, and a dense network of narrow, straight ditches and lanes with bridges and sharp corners. This is a diverse, flat, active, planned, organised, tended and regular landscape.
Lowland Loch Basins	Lochs Ore, Fitty and Gelly comprise low lying land with freshwater lochs surrounded by gently rising agricultural land. The Loch Leven Basin is edged by the volcanic Redwell Hills along the minor road running from Ballingry to Auchmuirbridge which is relatively steep and wooded in parts. The Leven basin is in intensive arable production. Kilconquhar loch basin, in contrast, is heavily wooded.

Clackmannanshire Landscape Character Assessment

Middle Devon Water	Strongly undulating low hills, bluffs and spurs which enclose and conceal the middle stretches of the River Devon. The river is deeply incised within the hummocky landform, and is at its most dramatic on the outskirts of the area where waterfalls, gorges and frothy pools have been gouged out of the rock. The field network of improved grassland is thickly punctuated by deciduous trees which stud the numerous hedgerows. Blocks and drifts of small-scale coniferous and mixed woodland thickets and shelterbelts are scattered throughout the farmland, merging with ribbons of birch, ash, oak and alder along the river and its tributaries.
Lower Devon Carselands	The small, vigorously twisting watercourse occupies an oversized, flat, valley, bounded by rolling farmland to the south and by the abrupt escarpment of the Ochils to the north. It forms a large-scale grid of rectilinear arable fields predominantly divided by the lines of post-and-wire fences or, more occasionally, drainage channels, the broken lines of low hawthorn hedgerows, or widely scattered hedgerow trees. There are a few small isolated blocks of trees dispersed across the notably unwooded river floodplain, contrasting with the mixture of arable crops, pasture and dense fringes of broadleaved and mixed woodland along the valley edges.
Devon/Forth	The valley of the Devon Water to the north is separated by this broad area of elevated, strongly rolling ground from the Forth estuary and adjacent plains to the south. The farmland of the area is varied, the undulating fields including rough grassland, lush pasture and crops. Field boundaries include clipped, well-maintained hedgerows, scattered hedgerow trees, post-and-wire fences and neat stone walls. Several large

Name	Key characteristics
Ochil Hills	coniferous blocks, integrated within the undulating landform, merge with fringes of mixed woodland, farm woodlands and tree clumps, and several areas of policy landscape. Forming the highest ground within the Lowlands of Central Region, the hills reach a peak in Ben Cleuch. The tightly-knit hill plateau is capped by smooth, rounded tops, strongly fissured by the deep cuts of minor watercourses. Across the rolling upper hill summits, peaty ground and extensive stretches of grass and heather moorland are the dominant land cover, from which afforestation is absent. Panoramic views of the glinting coils of the Forth, as it journeys to the sea, are gained from the southern edge of the Ochils, becoming absorbed and localised within the rolling hill plateau to the north.

Land use and Landscape Change

The study area is dominated by arable and pasture land particularly around the site. To the north the Ochil Hills serve to form a barrier between the site and the north-west of the study area. To the south the land is generally flatter around Kinross with Loch Leven one of the main features of the area, there are areas of higher ground further east with the Lomond Hills forming two distinctive peaks. Generally speaking, over time, the fields have become larger with the removal of hedgerows, woodland, wetland and traditional field boundaries to increase farm productivity.

Igneous Hills Landscape Character Type

The site is completely located within the Igneous Hills landscape area as defined by SNH in the Tayside Landscape Character Assessment. The Igneous Hills landscape character type occurs in two distinct areas within the Tayside assessment. The proposed development is located within the Ochils and is described below:

“The Ochils are the larger of the two hill ranges, rising to over 500 metres and extending up to 12 kilometres in width in places. Though there are areas of improved pasture and even some cultivation within the more sheltered glens, the land is generally low fertility and the bulk of the agricultural land takes the form of unimproved rough grazing. The Ochils also have a considerable amount of coniferous forestry. Along the lower slopes in Strathalan, this generally takes the form of geometric plantations and shelterbelts which are prominent in this open, large-scale landscape. Further west, in Strathearn, the woodland is less formal. However, the most extensive woodlands are located in the heart of the eastern Ochils, particularly Innerdouny Hill where a large expanse of Sitka spruce covers a series of upper catchments. The effect is to transform the sparse, open landscape of the Ochil summits, and to create a sense of enclosure which is absent elsewhere on the hills. New planting is more sensitive, incorporating broad-leaf fringes and better reflecting the natural flow of the landform. Nevertheless, it will result in a significant change in the upland landscape.

Much of the Ochils and Sidlaws are given over to pastoral uses, and in places the land is so poor it supports little more than rough grazing. This pattern of agricultural land use sits comfortably with the Igneous Hills’ upland, exposed character and contrasts effectively with more fertile areas of lowland to the north and south. In a few areas better soils and a degree of shelter allow arable cultivation to take place, often at some altitude. As in other areas, the influence of estate ownership is evident in the maintenance of the farming landscape. The area falling within the Gleneagles Estate can be determined from less well maintained areas around.

Woodland makes an important contribution to the landscape of the Ochils and Sidlaws, clothing many of the steepest slopes and lining some of the more sheltered valleys and glens. However, a number of commercial woodlands, planted in the first half of the 20th century, have had a significant adverse impact on the landscape. Extensive ranks of Sitka spruce and Douglas fir cover large areas of the Ochils in particular in an even aged monoculture of conifers. Such plantations have created a uniform, enclosing landscape where before there would have been an open and varied landscape of pastures, burns and small glens. The negative effect of these early plantations has tainted attitudes towards commercial forestry in these areas even though forestry practice has long since moved on. As the existing plantations reach maturity, there will be opportunities to implement a phased programme of felling and replanting which will allow a more varied and ‘natural’ woodland form to be created, with a much more varied species and age mix, and a higher proportion of open space.

The low fertility of the Igneous Hills and the suitability of their climate to tree growing mean that there is still some interest in establishing new woodlands within the Ochils and Sidlaws. The Tayside Forestry Strategy suggests that areas to the south and east of Auchterarder fall into the ‘preferred’ category for new planting, together with smaller areas in the eastern Sidlaws.

The elevation of the Ochils and Sidlaws and their proximity to centres of population makes them technically well-suited as locations for telecommunications masts and aerials. Several of the hilltops are crowned with one or more masts, introducing strong vertical and industrial structures into the upland landscape. The masts are frequently visible over a considerable distance. It is possible that the growth of the telecommunications industry will be reflected in pressure for additional masts and aerials.”

Immediately to the south of the proposed site lies an area of landscape referred to as the Lowland Loch Basin predominantly the Loch Leven Basin, part of the Tayside Lowlands regional character area. This area is the location where the majority of the theoretical visibility is predicted and is described as:

“Historically Loch Leven has been a focus for human settlement and land use. The earliest signs of settlement included a crannog which was destroyed during the 19th century. Loch Leven has a number of other historic sites including Kinross House, Loch Leven Castle on Castle Island and the Priory on St Serf’s Island. Several villages and hamlets grew around the fringes of the loch, their industries of weaving, paper making and fishing reliant on the supply of water. The largest of these settlements, particularly Kinross, Milnathort and Kinnesswood have expanded over the last century, the latter pushing up the slopes of the Lomond Hills.

Both Basins include considerable areas of arable and grazing land around the fringes of the waterbodies. This is generally of a semi-open character, enclosed by hedges. There appear to be few pressures acting upon agriculture in these areas.

Commercial woodland is absent from this landscape type. However, semi-natural woodland is found around the edges of the waterbodies.”

Local Landscape Character

The site is located in the Igneous Hills landscape character area and is located in an area of arable farmland at ~255m AOD. The site is currently in an area of pastureland consisting of improved grassland. The surrounding landscape is fairly undulating with several small knolls and has a rolling feel. The area is fairly open and of a medium to large scale, with views towards the more conspicuous peaks of the Lomond Hills which rise from the flatter landscapes of Fife. The rise in topography to the west tends to limit views in this direction. To the east of the site runs the M90, with the Ochil Hills lying to the north-west. Within the site itself, the ground rises to form a small peak rising to a reasonable height. Built features adjacent to the proposed site include Colliston Farm and associated infrastructure.

Landscape Elements and Features

Landscape elements are the component parts of the landscape, such as trees, woodland and ponds that combine to form areas of landscape character. Often these characteristic elements may be distinctive to a particular regional area of landscape character or more localised area of landscape character type. The main elements of landscape character across the region include forestry plantations, arable fields and pastureland with some dry stone dykes. The area is heavily defined by the Ochil Hills which lie to the north-west of the site. There is also a significant man-made feature in the M90, which serves to connect Aberdeen, Perth and Dundee with Edinburgh in the south.

Broad Visual Context

The visual character of the landscape in the vicinity of the site is of rolling agricultural land, with rolling hills to the north-west of the site. To the west of the site the land takes on the appearance of a valley as it rolls away from the higher ground in the north-west. The valley runs from north-east to south-west and is dominated by large arable and pasture land. To the north-west the views give way to the mountainous terrain of the Ochil Hills. To the south-east of the study area is rolling agricultural land which contains settlements, roads, Lochs and a patchwork of fields and woodland. Despite several major built features, notably the M90, overall the area retains a rural feel for the majority with large arable fields and rolling hills forming large portions of the views.

Weather conditions

Changing weather patterns and local climatic conditions will influence the visibility of the turbine in terms of the extent of view, the colour and contrast of the turbines and the number of turbines visible and thus the perceived visual impact. There will be periods of low visibility (fog, low cloud, and bright sunny conditions that are accompanied by haze generated by temperature inversions) as well as periods of high visibility in clear weather. In some instances and from some locations they may be ‘back-lit’ (e.g. appearing darker in colour during sunset/sunrise and periods of pale or white blanket cloud) and in other circumstances may appear to be ‘up-lit’ (e.g. during stormy periods that combine dark clouds and bright sunshine).

Landscape Planning Designations

The study area for the proposed development as shown in **Figure 5.4** is primarily located within Perth and Kinross Council although there is also part of the study area within the Fife Council and Clackmannanshire Council areas. The local development plans contain a number of policies which seek to protect landscape resources, and although there are no designations on the site itself, the study area includes a number of designated landscapes that are relevant to this assessment. The key landscape planning designations are illustrated in **Figure 5.4**.

Landscape planning designations and policies are considered in the determination of the sensitivity of landscape receptors as they provide an indication of value ascribed to the landscape resource.

Those designated landscapes that overlap the ZTV (and may potentially have views of the proposed development) have been considered as part of this assessment and are listed in **Table 5.5**. Other planning policies and designated landscapes located out with the ZTV have been excluded from further study as they will not experience any effects from the proposed development.

Table 5.5 Landscape Planning Designations

Designation	Description
Areas of Great Landscape Value (AGLV)	<p>Ochil Hills. This AGLV covers the Ochils Hills to the west and south-west of the proposed development, the most prominent hill range in the region. The designation covers the hills of Innerdouny and Dochrie to the north west of Kinross as well as the hills to the north of Alva, Tillicoultry and Dollar. The AGLV is situated ~1km distance from the turbine to the west at its closest point and covered by Policy 54 in the Kinross Area Local Plan and Policy EN2 in the Clackmannanshire Plan.</p> <p>Cleish Hills. This designation covers the Cleish Hills to the south of Kinross which sit to the south of the proposed development. The designation is situated ~10.5km distance from the turbine to the south west and covered by Policy 54 in the Kinross Area Local.</p> <p>Perth Greenbelt. These smaller designated landscapes surround the settlement of Perth acting a green belt to the city. They are situated 10.4km distance from the turbine to the north and covered by Policy 11 in the Perth Area Local Plan.</p> <p>Lomond Hills. This designation covers the landscape area between Loch Leven and the western slopes of the Lomond Hills and the Regional Park to the southern boundary between Perth & Kinross and Fife. The AGLV is situated ~4.1km to the south-east of the proposed turbine and is covered by Policy 54 in the Kinross Area Local.</p>
Fife Council - Special Landscape Areas (SLA)	<p>Lomond Hills. This area lies to the north west of Glenrothes and is centred on the main hill summits West and East Lomond and upland slopes. The area to the north and the area of upland out with this SLA extends into the neighbouring local authority area of Perth and Kinross. The boundaries selected include the eastern, southern and northern slopes. The southern boundary reaches the northern edge of Glenrothes and Leslie and in the west at Auchmuirbridge heads north to East Feal and along the boundary with Perth & Kinross to the B919 and A91. The north boundary then extends to the A912 along the course of the River Eden to the west and the minor road which runs along the foot of the Lomond Hills to Gateside and Strathmiglo before joining the A912 and thence on to Falkland and the A92. It is situated 3.6km distance from the development to the east and covered by Policy E19 in the Fife Local Plan.</p> <p>Cleish Hills This extensive area is located on north western edge of West Fife and borders Perth and Kinross to the north. The minor road east of Loch Glow forms the eastern boundary and the B914 forms the southern boundary as far as Saline where the west boundary follows the foot of Saline Hill north to and Cult Hills. The designation is located ~14km to the south and covered by Policy E19 in the Fife Local Plan.</p> <p>Benarty Hill and Loch Ore. The area extends from the B996 (NE of Kelty) east to the settlements of Ballingry and Lochore. To the north and west the boundary adjoins Perth and Kinross Council</p>

Designation	Description																				
	<p>area. The area includes the summit of Benarty Hill, the south facing slopes including Benarty Hill and Harran Hill Wood and the basin of Loch Ore with the southern boundary at the Lochfitty Burn. The designation is situated 10.9km to the south of the turbine and covered by Policy E19 in the Fife Local Plan.</p> <p>Cullaloe Hills and Coast. This landscape covers a large area stretching from the eastern edge of Dalgety Bay to the western edge of Kirkcaldy, and extending down toward the coastal edge. The north boundary follows the minor road from Newliston on the perimeter of Kirkcaldy where it then continues along a ridge which is further defined by shelterbelts and woodland planting, and to the north of Camilla Loch. From here the boundary follows the minor road to Auchtertool, and then follows the route of the B925. The boundary then passes to the south of Mossmorran to Pitmethven Wood and joins the A909. The boundary extends along the B9157 and then follows the minor road to Goat Quarry where it extends west along a minor water course, taking in the policies of Fordell to the east of Clockluine Road and north of the A921, extending along the coastal edge to Aberdour. The designation is situated 19.7km to the south of the turbine and covered by Policy E19 in the Fife Local Plan.</p> <p>Tay Coast. This extensive area comprises a long band of low hills and coastal landscapes bordering the southern shores of the Firth of Tay, extending from Tayport to Newburgh. The western boundary includes the slopes which contain the basin of Lindores Loch. The boundary then extends east along the foot of Dunbog Hill then along the A92 before heading north towards the coast at the foot of hills to Wormit. East of Wormit the north boundary extends to Tayport south of the B946 and then the southern boundary follows the lower hill slopes around St Fort and minor roads on the boundary of the Scotsraig Estate to the western edge of Tayport. The designation is situated 15.2km to the north east of the turbine and covered by Policy E19 in the Fife Local Plan.</p>																				
Regional Parks	<p>Lomond Hills Regional Park. This is one of only three regional parks in Scotland and is designated for both its scenic qualities and its recreational value. The designation covers the Lomond Hills and landscape north west of Glenrothes. The Regional Park is and situated ~3.6km to the south of the turbine.</p>																				
Gardens and Designed Landscapes (GDL)	<p>(Listed in the Inventory of GDL for Scotland) are designated for their unique combinations of horticultural, landscape, scenic and historic interest.</p> <p>There are 20 Gardens and Designed Landscapes within the study area these are located within the various council areas. The GDL's are covered by Policy E11 in the Fife Local Plan, Policy 17 in the Perth Area Local Plan, Policy 33 in the Kinross Local Plan and Policy EN9 in the Clackmannanshire Local Plan. A list of all GDL's within the study area is provided below:</p> <table> <tr> <td>Kinross House</td><td>Inchyra House</td></tr> <tr> <td>Blair Adam</td><td>Glendoick House</td></tr> <tr> <td>Cleish Castle</td><td>Megginch Castle</td></tr> <tr> <td>Castle Campbell</td><td>Errol Park</td></tr> <tr> <td>Invermay</td><td>Melville House</td></tr> <tr> <td>Dupplin Castle</td><td>House of Falkland Palace</td></tr> <tr> <td>Methven Castle</td><td>Balbirnie</td></tr> <tr> <td>Scone Palace</td><td>Leslie Hall</td></tr> <tr> <td>Balmano</td><td>Raith House and Beveridge</td></tr> <tr> <td>Kinfauns Castle</td><td>Park</td></tr> </table>	Kinross House	Inchyra House	Blair Adam	Glendoick House	Cleish Castle	Megginch Castle	Castle Campbell	Errol Park	Invermay	Melville House	Dupplin Castle	House of Falkland Palace	Methven Castle	Balbirnie	Scone Palace	Leslie Hall	Balmano	Raith House and Beveridge	Kinfauns Castle	Park
Kinross House	Inchyra House																				
Blair Adam	Glendoick House																				
Cleish Castle	Megginch Castle																				
Castle Campbell	Errol Park																				
Invermay	Melville House																				
Dupplin Castle	House of Falkland Palace																				
Methven Castle	Balbirnie																				
Scone Palace	Leslie Hall																				
Balmano	Raith House and Beveridge																				
Kinfauns Castle	Park																				

Visual Baseline and Receptors

Visual receptors would include anyone who may have visibility of the turbine, such as people who may work in the area, residents or tourists. **Table 5.6** identifies all the visual receptors that were considered as part of the assessment.

Table 5.6 Visual Receptors

Visual Receptor	Description
Settlements	Settlements that will be assessed include Duncruevie, Milnathort and Drunzie. Photomontages have been produced for a number of these settlements. Settlements outwith 10km are unlikely to experience significant visual effects.
Road Users	The M90 has been assessed both with regards to the impact of Colliston Farm Wind Turbine and any potential sequential cumulative effects.
Recreational	Recreational receptors in the area mostly refer to hill walkers using the Lomond Hills in the area, as well as The Ochils.

Construction Stage: Assessment of Landscape and Visual Effects

The visual effects of the development during the construction period would mostly be limited to ‘close-range views’ from where it would be possible to view noticeable ground-based activities and the movement of construction vehicles. The main receptors with visibility of ground-based construction activities would be limited to the immediate properties such as Colliston and Birniehill which will see construction vehicles accessing the site.

The visual effects of the construction would begin with the establishment of a Contractor’s compound and increase incrementally over the construction period with the most obvious effects associated with the erection of the turbine. The construction activity would be limited to a relatively small area. The specific construction activities have been assessed earlier as part of the Landscape Design Considerations and no significant negative residual effects are anticipated on any receptors.

5.6 Assessment of Landscape Effects

Landscape Effects are defined by the Landscape Institute as “*Change in the elements, characteristics, character, and qualities of the landscape as a result of development.*” These effects are assessed by considering the landscape sensitivity against the magnitude of change. The matrix used to guide the evaluation or level of effect as illustrated in **Table 5.2**. The type of effect may also be described as temporary or long term/permanent, direct or indirect, cumulative and positive, neutral, or negative.

Direct Effects on Landscape Fabric

Landscape Sensitivity of Local Landscape Character

The landscape is somewhat man-modified with large arable fields dominating the surrounding areas. There are some small areas of shelterbelt woodland to the north-west, with most of the area comprising of an undulating topography with a series of small hill summits. The general landcover for much of the area is rough and improved grassland used for grazing and the overall feel is one of a fairly uniform landscape with little or no significant features. The quality of the landscape is generally medium.

In terms of landscape value, within the study area, the landscape area is not covered by any designations but may be valued locally. Overall the landscape value is medium.

The overall sensitivity of the local landscape character is considered to be medium.

Magnitude of Change

During operation and construction, the Colliston Wind Turbine would occupy and directly affect a small area of the local landscape character leading to a medium overall magnitude of change. The addition of a single turbine to the local area would result in the loss of a minimal area of improved pastureland. The overall level of direct landscape effects on the local landscape character resource would be **medium** and not significant, long term (reversible) and negative.

Indirect Effects on Igneous Hills LCA*Landscape Sensitivity of Igneous Hills LCA*

The Igneous Hills Landscape Character Area runs across the centre of the study area. The character area predominantly covers the Ochil Hills of Perth and Kinross and comprises areas of upland.

The landscape has been slightly man-modified with plantation forestry and farm steadings the noticeable features throughout the area, and more recently the introduction of communication masts over some of the higher peaks. The area has a slightly remote feel to it, although views south do look over a more developed valley and the landscape always feels part of that or connected to it. There are no significant settlements within the area but a number of scattered dwellings, farmsteads and hamlets can be found across the landscape. The quality of the landscape is generally medium.

In terms of landscape value, within the study area, the landscape area is covered in part by the Ochil Hills landscape designations. Overall the landscape value is high.

The overall sensitivity of the Igneous Hills LCA is considered to be high.

Magnitude of Change

During operation, the Colliston wind turbine would occupy and directly affect a small area of the Igneous Hills, resulting in the loss of a minor area of farmland. However it may be visible from across the landscape area indirectly affecting its character. The ZTV shows that visibility would cover a small area close to the site, affecting a small extent of a fairly large character area. Due to the large scale nature of the hilltops, views from the west and north-west are limited. There are very small areas of visibility from within the character area, with visibility limited to areas of higher ground to the north-west in the summits surrounding Glenfarg Reservoir. These effects are not expected to be significant. The remainder of the character area will have little or no views of the development and when visible from occasional summits and ridges further to the south-west the development is likely to be only a minor feature. From these more remote areas and hill tops the development appears in the more developed lower lying areas as opposed to the more natural wilder areas of this landscape area. The overall level indirect effects on the whole of the Igneous Hills LCA would be Negligible and not significant, long term (reversible) and negative.

Indirect Effects on Lowland Basin LCA

Landscape Sensitivity of Lowland Basin LCA

The Lowland Basin Character type covers a large expanse of the landscape to the immediate south of the proposed Colliston Farm turbine. The character area predominantly covers the lowland landscape around the settlements of Milnathort and Kinross and the landscape around Loch Leven.

The landscape has been significantly man-modified with the M90 running through the area linking Edinburgh with the north, the settlements of Milnathort and Kinross are located within this landscape as well as a number of smaller settlements and hamlets. The area does not feel particularly remote with these features present within the wider landscape although the areas around Loch Leven and the western slopes of the Lomond Hills slightly more remote, although the landscape always feels part of the more developed areas of the landscape. The quality of the landscape is generally medium.

In terms of landscape value, within the study area, the landscape area is covered in part by the Lomond Hills landscape designations. Overall the landscape value is high.

The overall sensitivity of the Lowland Basin LCA is considered to be high.

Magnitude of Change

The ZTV indicates theoretical visibility over much of the eastern half of this large scale character area, around the settlements of Kinross, Milnathort and Loch Leven, this is primarily due to the areas flatter nature. As the closest neighbouring character area to the proposed development the views and impacts on the area have been considered in **Viewpoints 5, 6, 7 & 9**. This area of landscape contains a number of settlements and manmade features as well as the scenic setting around Loch Leven. There are no significant views predicted from within this area of landscape and as highlighted by the accompanying viewpoints. Where visible the turbine is often viewed on the distant horizon, backdropped by the sky, alongside other vertical features such as electricity pylons and areas of woodland. The overall level indirect effects on the whole of the Lowland Basin LCA would be Low and not significant, long term (reversible) and negative.

Indirect Effects on Neighbouring Landscape Character Areas

The wind turbine may be visible from neighbouring Landscape Character Areas, and as such could indirectly affect the landscape character where particular views or scenic qualities are noted as a key characteristic of the landscape. Alternatively, the wind turbine could be frequently visible and particularly prominent in the landscape such that the addition of this new feature affects the character of an area.

The closest neighbouring area of landscape character is the Lowland Loch Basins area, a large portion of which has theoretical visibility of the turbine. The Lowland Loch Basin around Kinross and Milnathort would experience some indirect impact from the development, due to the proximity of the character type to the project.

The Lowland Loch Basins area would not be directly affected by the wind turbine and there would be no direct effects on the key physical characteristics that form the area's landscape character or its quality and integrity.

The indirect impact on the Lowland Loch Basins area and other neighbouring Landscape Character Areas is discussed in **Table 5.7** below.

Table 5.7 - Indirect Landscape Effects on Neighbouring Landscape Character Areas

Name	Assessment
Tayside Landscape Character Assessment	
Firth lowlands	There are no views of the development from within this landscape character area. Therefore there would be no indirect effects on its character.
Broad Valley Lowland	There are no views of the development from within this landscape character area. Therefore there would be no indirect effects on its character.
Dolerite Hills	<p>The Dolerite Hills character type occurs in three distinct areas to the south of the Tayside assessment around the border with Fife, forming part of the Cleish Hills, the Lomond Foothills around Bishop Hill and Benarty Hill between Loch Leven and Loch Ore, the closest area is located ~4.7km to the south-east of the turbine. Due to the elevated nature of these character areas the ZTV indicates that there may be some visibility of the development. Where views do occur from the south the turbine would appear on the distant horizon, viewed solely against the sky, it is not predicted that it would be a prominent feature in the view from this location. Views from the south-east around Bishop Hill would see the turbine viewed solely against the surrounding landscape, again the turbine would not become a prominent feature in these views with the scale of the landscape absorbing the development slightly.</p> <p>The landscape character area is considered to be of high sensitivity as it contains a number AGLV's around the Cleish Hills and Lomond Hills. Overall the magnitude of change would be negligible and the overall level of effect would be moderate/minor, indirect, negative and reversible.</p>
Lowland Hills	There are no views of the development from within this landscape character area. Therefore there would be no indirect effects on its character.
Lowland River Corridors	There are no views of the development from within this landscape character area. Therefore there would be no indirect effects on its character.
Fife Landscape Character Assessment	
Coastal Hills	There are no views of the development from within this landscape character area. Therefore there would be no indirect effects on its character.
Coastal Terrace	There are no views of the development from within this landscape character area. Therefore there would be no indirect effects on its character.
Coastal Flats	There are no views of the development from within this landscape character area. Therefore there would be no indirect effects on its character.
Lowland Hills and Valleys	<p>The Lowland Hills and Valleys landscape area occurs within two distinct areas within the study area, to the east of the proposed turbine ~1.7km away, around Auchtermuchty, Strathmiglo and Burnside and to the south of the area ~11.3km from the turbine between the settlements of Cowdenbeath, Kirkcaldy and Glenrothes, covering a large area of the landscape. Where views occur from this area the turbine is visible on the horizon, viewed against the sky. The area itself is heavily screened with bands of shelterbelt and policy woodland limiting potential views from this section of the landscape. As well as this area, there are some patches of theoretical visibility within the large area to the south to the west of Kirkcaldy, located over 15km from the proposed development potential views are not predicted to be prominent with a turbine of this scale unlikely to be a dominant feature.</p> <p>The landscape character area is considered to be of high sensitivity, with parts of the landscape in the north covered by the Lomond Hills SLA and the Lomond Hills Regional Park. Overall the magnitude of change would be low although the more distant areas would be negligible and the overall level of effect would be moderate, indirect, negative and reversible.</p>
Lowland Glacial Meltwater Valleys	There are no views of the development from within this landscape character area. Therefore there would be no indirect effects on its character.

Name	Assessment
Upland Slopes	<p>The Upland Slopes landscape area occurs in two distinct locations within the study area, covering the northern slopes of the Lomond Hills and the fringes of the Cleish Hills. The closest area is located ~5.1km to the east around West Lomond. This is also the only area predicted to experience any visibility of the proposed turbine. The view from this area is shown by Viewpoint 8 which is taken from the Bonnet Stane and shows the turbine would appear against the landscape. With open views the turbine is not a dominant or controlling feature visible from a fairly small portion of this character area.</p> <p>The landscape character area is considered to be of high sensitivity, with parts of the landscape covered by the Lomond Hills SLA and the Lomond Hills Regional Park, as well as the Cleish Hills SLA. Overall the magnitude of change would be negligible and the overall level of effect would be moderate/minor, indirect, negative and reversible.</p>
Upland Foothills	There are no views of the development from within this landscape character area. Therefore there would be no indirect effects on its character.
Pronounced Volcanic Hills & Craigs	<p>The Pronounced Volcanic Hills & Craigs character areas occur in several locations throughout Fife, located over 10km from the proposed development. The ZTV indicates that most of the outlying areas will receive little or no views of the proposed development with minimal areas of theoretical visibility predicted. Where views do occur the turbine is viewed at considerable distance, appearing in a setting with prominent upland landscapes and the distinguishable summits of the Lomond and Ochil Hills it is unlikely that the proposed turbine will be an easily discernible feature within the wider view.</p> <p>The landscape character area is considered to be of high sensitivity. Overall the magnitude of change would be negligible and the overall level of effect would be moderate/minor, indirect, negative and reversible.</p>
Uplands	<p>The Uplands Landscape occurs in several areas across the Fife landscape around Pitmedden Forest, Lomond Hills, Benarty Hill and the southern edge of the Cleish Hills. The closest area is located ~5.9km to the east covering the Lomond Hills. Despite the elevated topography of these areas the ZTV indicates that visibility is extremely limited, occurring only around the most elevated summits of West Lomond. The long distance views from these areas are unlikely to be affected by the addition of a single 45.7m tip turbine to the views, visible solely against the landscape below the viewer.</p> <p>The landscape character area is considered to be of high sensitivity, forming part of the Lomond Hills SLA and the Regional park. Overall the magnitude of change would be negligible and the overall level of effect would be moderate/minor, indirect, negative and reversible.</p>
Lowland River Basins	<p>The Lowland River Basins landscape occurs in two distinct areas to the east of the study area around Markinch and the Howe of Fife, the closest area is located ~9.5km from the proposed turbine. The ZTV indicates an area of theoretical visibility around Ladybank across the Howe of Fife. Where views occur the turbine will be visible predominantly against the landscape, in the setting with the Lomond Hills. The landscape itself is peppered with woodland and other man made features such as electricity pylons. It is unlikely that the turbine will be an easily discernible feature from this landscape area.</p> <p>The landscape character area is considered to be of medium sensitivity as an area of intensive farming practise. Overall the magnitude of change would be negligible and the overall level of effect would be minor, indirect, negative and reversible.</p>
Lowland Loch Basins	<p>The Lowland Loch Basins character type occurs in several areas across Fife around the lochs of Fitty, Lumphannan, Ore and to the south of Loch Leven. The closest character area to the proposed development is located ~9.6km to the south-east of the Colliston Farm turbine. Visibility is extremely limited from these areas with only the section of landscape to the south-east of Loch Leven experiencing any potential views. The turbine would be a minor feature in the view from this relatively small area of the larger landscape.</p> <p>The landscape character area is considered to be of medium sensitivity. Overall the magnitude of change would be negligible and the overall level of effect would be minor, indirect, negative and reversible.</p>

Clackmannanshire Landscape Character Assessment

Middle Devon Water	There are no views of the development from within this landscape character area. Therefore there would be no indirect effects on its character.
Lower Devon Carselands	There are no views of the development from within this landscape character area. Therefore there would be no indirect effects on its character.
Devon/Forth	There are no views of the development from within this landscape character area. Therefore there would be no indirect effects on its character.
Ochil Hills	There are no views of the development from within this landscape character area. Therefore there would be no indirect effects on its character.

Direct and Indirect Effects on Landscape Planning Designations

The site area is not designated and there would be no direct effects on designated landscape areas. Any landscape effects therefore would be limited to indirect effects on the views and visual character experienced from within these areas, whilst viewing towards the wind turbine. The assessment below considers if these effects on the views would lead to an indirect effect on the landscape character and valued features and characteristics for which these areas are designated.

The assessment of the overall indirect effects experienced by people viewing the wind farm from within these areas is provided in **Table 5.8**. The sensitivity of all designated landscapes considered as part of this assessment has been considered as high.

Table 5.8 - Indirect Landscape Effects on Landscape Planning Designations

Designation	Description
Areas of Great Landscape Value (AGLV)	
Ochil Hills	<p>The Ochil Hills AGLV is located ~1.7km from the proposed turbine at its closest point to the north-west. Despite this relative proximity this large designation which runs over the Ochil Hills to the south-west remains largely free from any views of the development. The ZTV indicates some patches of visibility around Craigow and Dalqueich to the west of the turbine and other intermittent areas around some summits such as Lendrick Hill. Viewpoint 3 is taken from within the closest area of the AGLV to the proposed turbine and highlights a worst case scenario for the area. The proposed turbine appears backdropped by the prominent and distinctive Lomond Hills from this area, absorbed slightly by the large scale of the landscape it is unlikely to be a prominent or controlling feature within the long distance views possible from these upland areas. When looking north-west towards the Ochils the proposed turbine may appear in view, however, the development would appear predominantly backdropped by the much larger landscape of the Ochils and would not interfere with or diminish the scale of the upland landscape beyond.</p> <p>The landscape designation is considered to be of high sensitivity. Overall the magnitude of change would be negligible as the majority of the designation is free from any potential views of the development, however some of the closer areas may be considered the magnitude of change to be low and the overall level of effect would be moderate and not significant.</p>
Cleish Hills	<p>The Cleish Hills AGLV is located ~10.7km to the south of the proposed turbine. The ZTV indicates theoretical visibility across much of the designation, however, at this distance the 45.7m turbine is unlikely to add a prominent or discernible feature to the view, with open and distant views occurring across the Ochils and Lomond Hills to the north and east.</p> <p>The landscape designation is considered to be of high sensitivity. Overall the magnitude of change would be negligible and the overall level of effect would be moderate/minor and not significant.</p>
Perth Greenbelt	<p>The Perth Greenbelt is located ~11km to the north of the proposed turbine. The ZTV indicates a small area of theoretical visibility to the east of Scone around Mains of Balthayock around the local summit. At this distance the turbine is partially screened by the intervening landscape, the visible portion would appear on the horizon against the sky. It would not be an easily discernible feature in the view, affecting a minimal portion of the wider designation which remains free of any views.</p> <p>The landscape designation is considered to be of high sensitivity. Overall the magnitude of change would be negligible and the overall level of effect would be moderate/minor and not significant.</p>
Lomond Hills	<p>The Lomond Hills AGLV covers the area of landscape between Loch Leven and the Regional Park, at its closest point it is ~4.1km from the proposed turbine. The ZTV indicates an area of theoretical visibility on the western slopes around Bishop Hill and the north-eastern shores of Loch Leven. The views from this area would be similar to those experienced in Viewpoint 6 taken from the local B919. The turbine appearing predominantly against the landscape from this area. It is not predicted that the turbine would be a dominant or controlling feature in the view, visible alongside many made features present within the wider landscape.</p>

Designation	Description
	The landscape designation is considered to be of high sensitivity. Overall the magnitude of change would be negligible and the overall level of effect would be moderate/minor and not significant.
Fife Council - Special Landscape Areas (SLA)	
Lomond Hills	<p>The Lomond Hills SLA sits ~2.5km to the east of the proposed turbine, the large area covers the Lomond Hills and surrounding area. The ZTV indicates that visibility is limited from these upland areas, restricted to the western fringes of the designation around the summit of West Lomond and the Bonnet Stane which is considered in greater detail in Viewpoint 8. The turbine would not inhibit the long distance views possible particularly from the summit of West Lomond, where it is possible to look over to Fife and East Lothian on a clear day.</p> <p>The landscape designation is considered to be of high sensitivity. Overall the magnitude of change would be negligible and the overall level of effect would be moderate/minor and not significant.</p>
Cleish Hills	There is no visibility of the development predicted from this designation and as such there will be no impact on its unique character as an ALS.
Benarty Hill and Loch Ore	There is no visibility of the development predicted from this designation and as such there will be no impact on its unique character as an ALS.
Cullaloe Hills and Coast	There is no visibility of the development predicted from this designation and as such there will be no impact on its unique character as an ALS.
Tay Coast	There is no visibility of the development predicted from this designation and as such there will be no impact on its unique character as an ALS.
Regional Parks	
Lomond Hills Regional Park	<p>The regional park covers the same area of landscape as the Benarty Hill and Lomond Hill SLA's the views from this area would be the same as previously assessed, the Lomond Hill area would have limited views covering a small portion of the regional park while the Benarty area to the south would experience no views of the development.</p> <p>The landscape designation is considered to be of high sensitivity. Overall the magnitude of change would be negligible and the overall level of effect would be moderate/minor and not significant.</p>
Gardens and Designed Landscapes (GDL)	
Kinross House	<p>Theoretical views are predicted from Kinross House on the north-western shores of Loch Leven. The GDL itself is bound by an area of mature woodland which would severely limit potential views to the north towards the turbine. The primary vista from the GDL would face out over the nearby Loch Leven, which is framed by the dramatic Lomond Hills situated on the eastern shores. It is unlikely that there will be any views of the turbine from within the GDL and the primary views towards the Loch would remain intact.</p> <p>The landscape designation is considered to be of high sensitivity. Overall the magnitude of change would be negligible and the overall level of effect would be moderate/minor and not significant.</p>
Blair Adam	There are no views from within the GDL, therefore there will be no impact on the unique character or setting of the designation.
Cleish Castle	<p>Cleish Castle is located ~10.9km to the south-west of the proposed turbine. The ZTV indicates theoretical visibility across the GDL, however, the surrounding area is bound by dense mature coniferous woodland and views are not predicted.</p> <p>The landscape designation is considered to be of high sensitivity. Overall the magnitude of change would be negligible and the overall level of effect would be moderate/minor and not significant.</p>
Castle Campbell	There are no views from within the GDL, therefore there will be no impact on the unique character or setting of the designation.
Invermay	There are no views from within the GDL, therefore there will be no impact on the unique character or setting of the designation.
Dupplin Castle	There are no views from within the GDL, therefore there will be no impact on the unique character or setting of the designation.

Designation	Description
Methven Castle	There are no views from within the GDL, therefore there will be no impact on the unique character or setting of the designation.
Scone Palace	There are no views from within the GDL, therefore there will be no impact on the unique character or setting of the designation.
Balmanno	There are no views from within the GDL, therefore there will be no impact on the unique character or setting of the designation.
Kinfauns Castle	There are no views from within the GDL, therefore there will be no impact on the unique character or setting of the designation.
Inchyra House	There are no views from within the GDL, therefore there will be no impact on the unique character or setting of the designation.
Glendoick House	There are no views from within the GDL, therefore there will be no impact on the unique character or setting of the designation.
Megginch Castle	There are no views from within the GDL, therefore there will be no impact on the unique character or setting of the designation.
Errol Park	There are no views from within the GDL, therefore there will be no impact on the unique character or setting of the designation.
Melville House	<p>Melville house is located over 16km from the proposed development to the north-east. At this distance it is unlikely that there will be any views of a turbine of this scale when considering built and naturally occurring features within the wider landscape such as settlements and woodland.</p> <p>The landscape designation is considered to be of high sensitivity. Overall the magnitude of change would be negligible and the overall level of effect would be moderate/minor and not significant.</p>
House of Falkland/Falkland Palace	There are no views from within the GDL, therefore there will be no impact on the unique character or setting of the designation.
Balbirnie	There are no views from within the GDL, therefore there will be no impact on the unique character or setting of the designation.
Leslie Hall	There are no views from within the GDL, therefore there will be no impact on the unique character or setting of the designation.
Raith House and Beveridge Park	There are no views from within the GDL, therefore there will be no impact on the unique character or setting of the designation.

5.7 Assessment of Visual Effects

Visual effects are recognised by the Landscape Institute as a subset of landscape effects and are concerned wholly with the effect of the development on views, and the general visual amenity. The assessment has been conducted in periods of fine weather and assumes good visibility and limited seasonal leaf cover.

ZTV and Visual Receptors

A blade tip ZTV is illustrated in **Figure 5.5a, b** and indicates the maximum potential visibility of the wind turbine, assuming there are no trees, woodland or buildings within the area (i.e. a bare earth scenario). It is likely that this visibility would be reduced further by the screening effect of trees, woodland, and buildings on the ground, particularly in relation to settlements.

The pattern of ZTV coverage is influenced by the larger scale topography to the north-west and west of the development, with the landscape becoming more elevated as it rises from the lowland landscapes into the Ochil Hills which restricts visibility in these directions. The

most prominent areas of visibility would be in the immediate ~5km to the south, east and south-east around the site, with visible areas spreading out to the north-east towards the Howe of Fife.

The key visual effects to be addressed include the following:

- Visual effects on the views experienced by local communities;
- Visual effects on the views experienced by users of footpaths and general recreational areas/ tourist destinations; and
- Visual effects on the views experienced by road users along the main transport routes.

Viewpoint Analysis

Viewpoint analysis has been undertaken for each of the viewpoints and is reported in **Appendix 1**. A summary of the results of the viewpoint analysis is provided in **Table 5.9** and this analysis reveals that significant visual effects would only occur from one viewpoint; this would be from some of the closest visual receptors within 1km.

Table 5.9 Summary of Viewpoints Analysis

Location	Assessment			Distance from Development
	Sensitivity	Magnitude	Overall Impact	
1. Close in from the south	High	Medium	Major/Moderate	Viewpoint located at ~930m distance
2. Close in from the north-east	High	Negligible	Moderate/Minor	Viewpoint located at ~1.3km distance
3. Minor Road between Newhill and Path of Condie	Medium	Low	Moderate/Minor	Viewpoint located at ~1.9km distance
4. M90 at Blairfield	Medium	Low	Moderate/Minor	Viewpoint located at ~1.5km distance
5. Burleigh Castle	High	Low	Moderate	Viewpoint located at ~3.3km distance
6. B919 at Wester Balgedie	High	Low	Moderate	Viewpoint located at ~4.2km distance
7. Kinross Services	Medium	Negligible	Minor	Viewpoint located at ~5.6km distance
8. Bonnet Stane	High	Low	Moderate	Viewpoint located at ~5.8km distance
9. Loch Leven Lodges	High	Negligible	Moderate/Minor	Viewpoint located at ~9.4km distance
10. Kinnoull Hill	High	Negligible	Moderate/Minor	Viewpoint located at ~14.6km distance
11. Knock Hill	High	Negligible	Moderate/Minor	Viewpoint located at ~16.0km distance

Visual Effects during Operation

Post construction and during operation, the appearance of the site would recover a calmer visual character with negligible levels of maintenance activity visible on site from the nearest visual receptors, and no significant visual effects likely.

The visibility of the turbine would extend over the study area affecting a range of visual receptors including residents, road users, tourists, and people undertaking recreational activity. The visual effects of the wind turbine on views and visual amenity during operation are assessed in the following sections.

Settlements

The following assessment considers the views from settlements, and the likely visual effects that could be experienced from the main living rooms and garden areas of residential properties, but excludes rooftops and upper windows. The illustrated viewpoints have been selected to represent views from where the wind turbine would be most visible within the villages or along the edges of the villages. All settlements and residential properties have been judged to be of high sensitivity.

Many of the settlements within the study area will experience very limited, or have no views of the turbine due to the concentration of buildings and other urban features and the landform of the area. Of the 19 settlements within 15km that were assessed, 11 of these are not within the ZTV and will therefore receive no views of the development. Settlements that have been predicted to receive views are likely to only get views of the development from open areas, prominent hill tops within the settlement or from the edges of the settlement, as it is likely that woodland and the built environment will screen outward views.

Table 5.10 Visual effects on settlements within the ZTV

Settlement	Distance	Visual Assessment
Settlements <10km from Colliston Farm		
Drunzie	1.0km	<p>Drunzie is a small cluster of properties located ~1km to the east of the proposed development. The ZTV indicates theoretical visibility across the whole of the hamlet. The properties that make up the hamlet are orientated generally to the south. The gardens which back onto the local Duncrievie road are bound by hedgerows and intermittent trees. The views from this area of the settlement would see the turbine on the horizon, partially screened and alongside a number of vertical features most prominently several runs of wooden electricity pylons. The single turbine would not be a dominant or overbearing feature from this area of the settlement remaining in scale with the other vertical features in the local area.</p> <p>The settlement is considered to be of high sensitivity, overall the magnitude of change would be Low and the overall level of effect would be Moderate, direct, negative and reversible.</p>
Duncrievie	1.3km	<p>Duncrievie is located ~1.3km to the north-east of the proposed turbine. The ZTV indicates theoretical visibility across the small hamlet. As one of the closest visual receptors the views from the open edge of the settlement to the south are considered in Viewpoint 2, the viewpoint shows that much of the turbine will in fact be screened by the intervening landscape, limiting views to blades only, the intervening vegetation will provide screening of the visible portion of the turbine. There are no predicted significant effects on the settlement.</p> <p>The settlement is considered to be of high sensitivity, overall the magnitude of change would be Negligible and the overall level of effect would be Moderate/Minor, direct, negative and reversible.</p>
Glenfarg	2.2km	<p>Glenfarg is one of the closest settlements to the development. Much of the settlement lies outwith the ZTV, with only the very northern fringes of the settlement predicted to have any theoretical views towards the proposed turbine. Views from this area of the settlement would be extremely limited with the intervening landscape screening all but the very tips of the blades from view. The intervening vegetation and other built features within the settlement would screen any potential views towards the development from this area of Glenfarg.</p> <p>The settlement is considered to be of high sensitivity, overall the magnitude of change would be Negligible and the overall level of effect would be Moderate/Minor, direct, negative and reversible.</p>
Milnathort	3.1km	<p>The ZTV indicates theoretical visibility around the fringes of the settlement with the lower lying central areas remaining free from any potential views. Viewpoint 5 is taken from the eastern edge of the settlement by Burleigh Castle, the turbine is not an overly prominent feature in this view, with a number of other more prominent man made features present in</p>

Settlement	Distance	Visual Assessment
		the wider landscape. The viewpoint presents a worst case for the settlement with the majority of the settlement experiencing no views of the proposed development
		The settlement is considered to be of high sensitivity, overall the magnitude of change would be Negligible and the overall level of effect would be Moderate/Minor , direct, negative and reversible.
Kinross	4.7km	Similar to Milnathort, the settlement of Kinross is located on the opposite side of the M90 and as such is subject to screening features put in place to form a barrier between the road and the settlement. Viewpoint 7 is taken from the service station on the opposite side of the road to the west of the settlement and shows the potential views experienced by the settlement if there was no intervening vegetation.
		The settlement is considered to be of high sensitivity, overall the magnitude of change would be Negligible and the overall level of effect would be Moderate/Minor , direct, negative and reversible.
Strathmiglo	8.5km	The ZTV indicates an overall visibility from Strathmiglo, however views are most likely to occur on the edge of the village facing towards the turbine site, and with the introduction of vegetation to the intervening views, and views of a turbine of this size are unlikely to occur. Other residents will have any potential views screened by buildings and trees from the village.
		The settlement is considered to be of high sensitivity, overall the magnitude of change would be Negligible and the overall level of effect would be Moderate/Minor , direct, negative and reversible.
Abernethy	8.6km	No views are predicted from Abernethy
Bridge of Earn	8.7km	No views are predicted from Bridge of Earn
Settlement between 10-15km from Colliston Farm		
Auchtermuchty	10.7km	The ZTV indicates an overall visibility from Auchtermuchty, however views are most likely to occur on the edge of the village facing towards the turbine site and at this distance are unlikely to be significant. Other residents will have any potential views screened by buildings and trees from the village.
		The settlement is considered to be of high sensitivity, overall the magnitude of change would be negligible and the overall level of effect would be moderate/minor , direct, negative and reversible.
Ballingry	11.6km	No views are predicted from Ballingry
Dunning	12.8km	No views are predicted from Dunning
Falkland	12.1km	No views are predicted from Falkland
Perth	12.6km	No views are predicted from Perth
Kelty	13.1km	The ZTV indicates an overall visibility from Kelty, however, views are most likely to occur on the edge of the village facing towards the turbine site and at this distance are unlikely to be significant. Other residents will have any potential views screened by buildings and trees from the village.
		The settlement is considered to be of high sensitivity, overall the magnitude of change would be negligible and the overall level of effect would be moderate/minor , direct, negative and reversible.
Glenrothes	13.1km	No views are predicted from Glenrothes
Newburgh	13.4km	No views are predicted from Newburgh
Kinglassie	14.1km	No views are predicted from Kinglassie
St Madoes	14.1km	No views are predicted from St Madoes
Lochgelly	14.3km	No views are predicted from Lochgelly
Settlement over 15km from the development are unlikely to experience any effects		

Assessment of Major Tourist and Transport Routes

The ZTV indicates theoretical visibility over the M90, with visibility theoretically occurring primarily between Junction 5 and Junction 9. Due to the nature of the route visibility is likely to be extremely limited - the motorway is heavily lined with vegetation as well as being set into the landscape with steep embankments on each side of the road for large portions of the route.

An assessment of the potential for visual effects from the M90 has been undertaken.

The M90 motorway runs from the northern side of the Forth Road Bridge where it emerges from the A90, serving the settlements of Dunfermline, Kinross, Kelty, Milnathort, Glenfarg, Bridge of Earn and Perth, where the route becomes re-classified as the A90 as it travels northwards toward Dundee and then on to Aberdeen. For the purpose of the assessment the route has been split into intervals between each junction to assess the potential views of the Colliston Farm on this important transport link. Due to the lack of visibility to the north of the proposed development views for southbound traffic was found to be extremely limited. The route as a whole is considered to be of Medium sensitivity.

- M90 from Junction 4 Kelty to Junction 5 Ballingry;
- M90 from Junction 5 Ballingry to Junction 6 Kinross;
- M90 from Junction 6 Kinross to Junction 7 Milnathort;
- M90 from Junction 7 Milnathort to Junction 8 Mawcarse;
- M90 from Junction 8 Mawcarse to Junction 9 Bridge of Earn;

From Junction 4 Kelty to Junction 5 Ballingry

As the M90 passes the settlement of Kelty it is travelling in a generally north-westerly direction, the route is heavily screened by areas of woodland particularly to the west and north-west by Blairadam Forest. To the east, roadside vegetation on the embankment limits views of the road from Kelty. Views in front of the road users are occupied by part of the Lomond Hills Regional Park. Passing Blairadam, the woodland which screened the roadside gives way to a more open view, with the Ochils appearing in front of the road user to the north, travelling south the route begins to enter the area of significant screening and views would be limited. The gently undulating farmland and over bridges serve to limit the view for a short period on approach to Junction 5.

The proposed Colliston Farm turbine would remain significantly screened for the majority of this section of the route. It may be possible to view the turbine for a small period on the horizon as the road emerges from the woodland and the surrounding landscape flattens, however, the development is located ~12km from this section of the route any views would not be significantly felt by road users travelling between Kelty and Ballingry. Road users travelling southwards would experience no views of the development over this section of the route. The turbine is likely to be visible for around 2km along this section of the route and when visible, views would be direct and the turbine would be seen on the horizon, viewed solely against the sky.

The magnitude of change would be **Negligible**, resulting in a negligible level of effect which would not be significant.

From Junction 5 Ballingry to Junction 6 Kinross

The M90 passes under the bridge at Junction 5 continuing its course northwards on the same north-westerly trajectory. The land either side of the road flattens out slightly allowing for oblique views over the landscape, long distance views to the north are limited by the introduction of intermittent areas of shelterbelt and bridges passing overhead. Passing over the bridge for Gairney Bank, the view opens up slightly, allowing for views of the Ochil Hills to the north and north-west. As the road approaches Kinross, oblique views occur across Loch Leven and the Lomond Hills to the east, with the Ochil Hills visible to the north and north-west. The views remain as the route approaches Junction 6. **Viewpoint 7** is taken from the service station located at the top of the off ramp at this junction.

The Colliston Farm turbine would appear on the horizon line, featuring slightly more prominently in the view of road users travelling northwards along this section of the route. Remaining theoretically visible throughout the section, the turbine would only be intermittently visible due to the introduction of shelterbelts and other built features such as bridges, masts and buildings in the landscape. The turbine is ~6.6km from the road at its closest point through this section of the route and is predicted to be visible for 5km of this route. During this time visibility will be intermittent but on the occasional sections where visibility will occur, view will be direct and the turbine seen on the horizon, viewed solely against the sky. The magnitude of change would be **Low**, resulting in a low level of effect which would not be significant.

From Junction 6 Kinross to Junction 7 Milnathort

Passing Junction 6 the route begins to move in a northerly direction. This is a short section of the M90. Views remain fairly open to the north, surrounded by farmland to the west and north, with Loch Leven to the east. As the route passes under a bridge to the west of Milnathort, a large area of shelterbelt comes into view on both sides of the carriageway, coupled with the rising embankment on both sides of the road, visibility is very limited.

The Colliston Farm turbine would appear in a similar view to the previous section over the opening part of the route, where views remain slightly more open, looking over farmland towards the Ochil Hills to the north, the turbine would be viewed on the horizon solely against the sky. As the route travels north, views of the turbine would be completely screened as it passes by the settlement of Milnathort by thick areas of vegetation. The turbine is located ~3.9km to the north of the road at its closest point. The turbine will be visible for 1km of the route and when visible, views are likely to be direct during this short section before becoming screened by the vegetation. The magnitude of change would be **Negligible**, resulting in a negligible level of effect which would not be significant.

M90 from Junction 7 Milnathort to Junction 8 Mawcarse

Passing by the settlement of Milnathort to the east, the road begins to travel in a more north-easterly direction. Visibility is limited along this part of the route by bands of mature woodland located either side of the carriageway, this gives way on the eastern side after a time allowing for oblique views towards the Lomond Hills. To the south of junction 8 the views open up again slightly with the woodland giving way to views over large arable fields.

As the route approaches the junction the off ramp is lined with a band of mature trees which again restrict views.

The Colliston turbine would be screened by the woodland as the route passes Milnathort and would remain screened for a large part of this section of the route, due to intervening vegetation. The turbine would appear for a short time, although views over this time would be oblique to the road users, but would be felt by traffic travelling in both directions over this section. Where visible the turbine would be viewed on the horizon line, viewed solely against the sky occupying a minor extent of the view and being visible in context with large metal road signs, electricity pylons which run through the countryside to the east and west of the road, Communications masts and occasional farm steadings with grains silos and associated outbuildings. The magnitude of change would be **Low**, resulting in a low level of effect which would not be significant.

M90 from Junction 8 Mawcarse to Junction 9 Bridge of Earn

This is the longest section the route, as it passes by Junction 8 the M90 begins to travel in a more generally northerly direction once again. Views remain fairly open save for areas of shelterbelt around bridges and across the arable fields which line the route. Passing the settlement of Mawcarse, the embankments on either side of the road rise again, restricting views and focussing the eye in the general direction of travel, to the north or south. Passing to the east of Duncricvie, the road begins to travel in a generally north-westerly direction, remaining heavily wooded on both sides of the route views remain concentrated in the travelling direction of the road user. Passing by the settlement of Glenfarg to the west, the embankment on the south carriageway remains, restricting any views. Shelterbelts run alongside the northern carriageway screening the road from the settlement of Glenfarg. As the route makes its way towards Bridge of Earn, it begins to reduce in height as the surrounding landscape lowers to the River Basin surrounding the River Tay.

There are no significant views along this section of the route with the turbine remaining screened for southbound traffic over this section of the route. Views for north bound traffic would be brief at the beginning of the route and views would be oblique. The magnitude of change would be **Negligible**, resulting in a negligible level of effect which would not be significant.

Summary

Overall visibility would be very limited when travelling along the M90, due to areas of woodland located at the roadside as well as across the landscape shelterbelts lining field boundaries and property markers, roadside embankments and bridges as well as road signs and communications masts all form features which would limit potential views towards the Colliston Farm turbine. The speed with which commuters would be travelling along the M90 also has a bearing on the areas of predicted visibility, as road users are typically travelling at higher speeds along motorways. Predominantly views of the Colliston turbine would be limited to those travelling northwards; these views were found to be extremely limited and would not be open for significant periods of time before being subject to screening from woodland, embankments or the built environment. Road users travelling southwards from Perth would experience no significant views of the proposed development due to the significant amounts of screening features around Glenfarg and the surrounding area. Where

the views do open slightly the turbine is already to the rear of the view. Overall the magnitude of change for the motorway was found to be **Negligible**, resulting in a negligible level of effect which would not be significant. Although there were isolated areas of higher visibility these tended to be rare and oblique.

5.8 Assessment of Cumulative Visual Effects

Wind Energy Development Included in the CLVIA

The cumulative assessment includes existing wind energy developments (those operating or under construction), proposals with planning permission, and those that are currently the subject of undetermined applications within a 50km radius of the Colliston Farm site. Other known pre-application wind energy development proposals have been identified as part of the assessment process and considered in outline only, due to the more limited information available in connection with these proposals.

For the purpose of the assessment, consideration was given to turbines over 50m to blade tip, in line with SNH guidance.

The list of other wind energy development sites to be included in the assessment has been confirmed with Perth & Kinross Council and SNH and compiled from known wind energy development planning applications and formal requests for scoping opinions held by the various planning authorities.

All wind energy developments included or referred to in this assessment out to 50km are illustrated on a plan in **Figure 5.6**. Listed below in **Table 5.12** are the key projects, primarily within 15km of the development, which are likely to have some level of cumulative impact with Crofts Farm Turbine, potentially appearing simultaneously or successively in views. The information available on the Perth & Kinross website excludes turbines less than 25m to blade tip, as such they have been excluded from this study also. There were no turbines between 25 to 50m found within 5km of the proposed development.

Table 5.11 Summary of key Wind Energy Projects within 15km

Development Name	Scale of Project (Single turbine, Cluster or Windfarm)	Tip Height (m)	Distance to Project (approx. in km)
Operational Projects			
Lochelbank	Wind Farm	80	5.4
Green Knowes	Wind Farm	93	14.5
Westfield	Wind Cluster	110	12.3
Consented Projects			
East Blair Farm	Wind Cluster	55	3.1
Pitcarlie	Wind Turbine	84	11.5
Projects in Planning			
Temple Hill	Wind Turbine	104	2.7
Demperston	Wind Turbine	54	8.8
Blair Adam Forest	Wind Farm	115	13.9
Cleish Hills	Wind Farm	110	14.3

Two or more windfarms are required for the occurrence of a cumulative visual effect. This assessment has therefore considered the development of Colliston Farm turbine in addition to the other windfarm sites in the landscape in order to test the landscape capacity of the area and provide conclusions for the CLVIA relevant to this proposal.

Figure 5.6 shows the location of all of the windfarms currently operational, consented and in planning within a 50km radius of the proposed turbine locations at Colliston Farm.

From this, it can be observed that there are only four operational developments within 20km of the proposed development site, these are larger developments at Lochelbank, Green Knowes, Westfield and Little Raith. To the south-east, there are a number of single turbines and clusters located within the lowland areas of Fife.

A series of potential cumulative ZTV's (based on submission status) is illustrated in **Figure 5.7, 5.8 and 5.9** showing the potential cumulative ZTV for each of the key windfarms. The findings from the analysis of the cumulative visibility maps and cumulative viewpoint assessment have been used to form a conclusion as to the level of overall cumulative visual effects during operation as experienced by various receptors.

Cumulative Viewpoint Assessment

Each viewpoint assessed as part of the viewpoint assessment has also been considered cumulatively with all other wind energy projects identified within the 50km cumulative study area. A summary of potential cumulative visibility assessment from each of the viewpoints is provided in **Table 5.13**. Further detail can be found in the viewpoint assessment located in **Appendix 2**.

Table 5.12 Summary of Cumulative Viewpoint Analysis

Viewpoint No.	Sensitivity	Magnitude	Level of Effect
Viewpoint 1: Close in from the south			
Colliston Farm Wind Turbine and Operational Wind farms	High	-	-
Colliston Farm Wind Turbine and Operational, Consented Wind farms		-	-
Colliston Farm Wind Turbine and Operational, Consented, Planned Wind farms		-	-
Viewpoint 2: Close in from the north-east			
Colliston Farm Wind Turbine and Operational Wind farms	High	-	-
Colliston Farm Wind Turbine and Operational, Consented Wind farms		-	-
Colliston Farm Wind Turbine and Operational, Consented, Planned Wind farms		-	-
Viewpoint 3: Minor Road between Newhill and Path of Condie			
Colliston Farm Wind Turbine and Operational Wind farms	Medium	-	-
Colliston Farm Wind Turbine and Operational, Consented Wind farms		-	-
Colliston Farm Wind Turbine and Operational, Consented, Planned Wind farms		-	-
Viewpoint 4: M90			
Colliston Farm Wind Turbine and Operational Wind farms	Medium	-	-

Viewpoint No.	Sensitivity	Magnitude	Level of Effect
Colliston Farm Wind Turbine and Operational, Consented Wind farms		Negligible	Minor
Colliston Farm Wind Turbine and Operational, Consented, Planned Wind farms		Negligible	Minor
Viewpoint 5: Burleigh Castle			
Colliston Farm Wind Turbine and Operational Wind farms		-	-
Colliston Farm Wind Turbine and Operational, Consented Wind farms	High	-	-
Colliston Farm Wind Turbine and Operational, Consented, Planned Wind farms		Negligible	Moderate/Minor
Viewpoint 6: B919			
Colliston Farm Wind Turbine and Operational Wind farms		Negligible	Moderate/Minor
Colliston Farm Wind Turbine and Operational, Consented Wind farms	High	Negligible	Moderate/Minor
Colliston Farm Wind Turbine and Operational, Consented, Planned Wind farms		Negligible	Moderate/Minor
Viewpoint 7: Kinross Services			
Colliston Farm Wind Turbine and Operational Wind farms		-	-
Colliston Farm Wind Turbine and Operational, Consented Wind farms	Medium	-	-
Colliston Farm Wind Turbine and Operational, Consented, Planned Wind farms		Negligible	Minor
Viewpoint 8: Bonnet Stane			
Colliston Farm Wind Turbine and Operational Wind farms		Negligible	Moderate/Minor
Colliston Farm Wind Turbine and Operational, Consented Wind farms	High	Negligible	Moderate/Minor
Colliston Farm Wind Turbine and Operational, Consented, Planned Wind farms		Negligible	Moderate/Minor
Viewpoint 9: Loch Leven Lodges			
Colliston Farm Wind Turbine and Operational Wind farms		Negligible	Moderate/Minor
Colliston Farm Wind Turbine and Operational, Consented Wind farms	High	Negligible	Moderate/Minor
Colliston Farm Wind Turbine and Operational, Consented, Planned Wind farms		Negligible	Moderate/Minor
Viewpoint10: Kinnoull Hill			
Colliston Farm Wind Turbine and Operational Wind farms		Negligible	Moderate/Minor
Colliston Farm Wind Turbine and Operational, Consented Wind farms	High	Negligible	Moderate/Minor
Colliston Farm Wind Turbine and Operational, Consented, Planned Wind farms		Negligible	Moderate/Minor
Viewpoint 11: Knock Hill			
Colliston Farm Wind Turbine and Operational Wind farms		Negligible	Moderate/Minor
Colliston Farm Wind Turbine and Operational, Consented Wind farms	High	Negligible	Moderate/Minor
Colliston Farm Wind Turbine and Operational, Consented, Planned Wind farms		Negligible	Moderate/Minor

Cumulative Assessment of Major Tourist and Transport Routes

An assessment of the potential for cumulative effects from the M90 has been undertaken. The route has been split into the following sections;

- M90 from Junction 4 Kelty to Junction 5 Ballingry;
- M90 from Junction 5 Ballingry to Junction 6 Kinross;
- M90 from Junction 6 Kinross to Junction 7 Milnathort;
- M90 from Junction 7 Milnathort to Junction 8 Mawcarse;

- M90 from Junction 8 Mawcarse to Junction 9 Bridge of Earn;

A summary of significance of impact is outlined in **Table 7.14**.

M90 from Junction 4 Kelty to Junction 5 Ballingry

Operational

The operational development of Lochelbank appears theoretically visible just over the horizon line as the route passes Blairadam, emerging from the surrounding woodland. It would be viewed in the same direction as Colliston Farm but due to its location in the landscape visibility would be limited to blade tips and in reality would be further reduced by the distance to the development and areas of vegetation.

Oblique views are theoretically possible with Green Knowes for a short section as the route approaches Junction 5, in reality the development will not be visible. Travelling southwards there are theoretical sequential views with Westfield and Little Raith along this section of the route, views would be restricted by the areas of shelterbelt and the settlement of Kelty along this part of the route, the Colliston Farm turbine would be to the rear of the view. Overall, the cumulative magnitude of impact on this route would be **Negligible**.

Consented

There are theoretical views when travelling northwards with the Pitcarlie turbine, although at this distance from the turbine it is unlikely to be an easily discernible feature in the view. Travelling south the cluster of developments around the operating turbines at Westfield and Little Raith appear on the horizon such as Mossmorran, Noble Foods and Skeddoway Farm, these developments only appearing in the view when the Colliston turbine is to the rear. Overall, the cumulative magnitude of impact on this route would remain **Negligible**.

Planning

There are no significant views of any planning developments over this section of the route, the single turbines to the south-east such as Shawsmill would be theoretically visible to road users travelling south, viewed in the opposite direction to the Colliston turbine, appearing in a landscape with more prominent operating turbines. Overall, the cumulative magnitude of impact on this route would remain **Negligible**.

M90 from Junction 5 Ballingry to Junction 6 Kinross

Operational

There are no operational developments visible through this section. Overall, the cumulative magnitude of impact on this route would be **none**.

Consented

There are no significant cumulative views between any consented developments and the Colliston Farm turbine over this section of the route. Overall, the cumulative magnitude of impact on this route would remain **none**.

Planning

There are no significant cumulative views towards any planning projects along this section of the route, the views which are theoretically possible are restricted to blade tips and due

to intervening screening features visibility is unlikely. Overall, the cumulative magnitude of impact on this route would become **Negligible**.

M90 from Junction 6 Kinross to Junction 7 Milnathort

Operational

There are no operational developments visible through this section. Overall, the cumulative magnitude of impact on this route would be **none**.

Consented

There are no consented developments visible through this section of the route. Overall, the cumulative magnitude of impact on this route would remain **none**.

Planning

There are no planning projects visible through this section of the route. Overall, the cumulative magnitude of impact on this route would remain **none**.

M90 from Junction 7 Milnathort to Junction 8 Mawcarse

Operational

There are no operational developments visible through this section. Overall, the cumulative magnitude of impact on this route would be **none**.

Consented

There are no consented developments visible through this section of the route. Overall, the cumulative magnitude of impact on this route would remain **none**.

Planning

There are no planning projects visible through this section of the route. Overall, the cumulative magnitude of impact on this route would remain **none**.

M90 from Junction 8 Mawcarse to Junction 9 Bridge of Earn

Operational

There are no significant views of any operational developments along this section of the route, fleeting glimpses of Lochelbank and the more distant Griffin Forrest as the route rounds Balmano hill and begins its decent into the Tay basin although these are unlikely to be keenly felt by road users. The Colliston Farm turbine has long since passed to the rear of the view. Overall, the cumulative magnitude of impact on this route would be **Negligible**.

Consented

There are no consented developments visible through this section of the route. Overall, the cumulative magnitude of impact on this route would remain **Negligible**.

Planning

Due to screening features and the lack of visibility of Colliston Farm through this section, there are no cumulative effects. Overall, the cumulative magnitude of impact on this route would remain **Negligible**.

The overall cumulative effect upon the M90 was found to be negligible. There are no significant views of any operational, consented or planning developments from the road,

with potential views limited to oblique views of the two operational windfarms within the lowlands of Fife and fleeting views of the Green Knowes windfarm on approach to Bridge of Earn and Perth. The Colliston Farm turbine itself is only fleetingly visible over a short section of the overall route and would predominantly appear in oblique rather than direct views for road users regardless of direction of travel, as such the cumulative effects on the M90 between Colliston Farm and other developments would be **Negligible**.

Table 7.14 - Summary of Cumulative Viewpoint Analysis

Route	Sensitivity	Magnitude	Level of Effect
M90			
Colliston Farm and Operational Wind Farms	Medium	Negligible	Negligible
Colliston Farm and Operational, Consented Wind Farms		Negligible	Negligible
Colliston Farm and Operational, Consented, Planned Wind Farms		Negligible	Negligible

5.9 Summary of Assessment Conclusions

Introduction

The proposed Colliston Farm turbine is located in an area of arable farmland which is predominantly characterised by the agricultural nature of the landscape. The surrounding landscape has been identified in the *Supplementary Planning Guidance for Wind Energy Proposals in Perth & Kinross* as a broad area of search. The Colliston Farm development has been designed to minimise the visual impact on the surrounding landscape and visual receptors. The methodology for the landscape and visual impact assessment (LVIA) adopted the guidelines set out by the Landscape Institute and the Institute for Environmental Management and Assessment.

Landscape Design

The project comprises a single turbine with a typical hub height of 32.2m and a typical turbine height of 46m to blade tip.

The associated infrastructure of site access tracks and substation have been designed and located sensitively to minimise visual impact. There will be no significant effects resulting from the construction and operation of the associated infrastructure, although negative effects are anticipated during the construction period. These would be restored and mitigated on completion of the construction period.

Landscape Assessment

The proposed Colliston Farm Wind development is located within the Igneous Hills Character Type, within the Tayside Landscape Character Assessment and would affect a proportion of this area. As an area of intensive farming practice, this area has a medium to low landscape sensitivity and there would be no unacceptable effects on the wider landscape character area.

Considering the wider area, the assessment has concluded that there would be no significant indirect effects from any of the other landscape character types or within the study area.

Effects on Designated Landscapes

The landscape of the site area is not designated and as such there will be no direct effects on any designated landscape and any effects would be as a result of indirect landscape effects from designated areas within the study area. The assessment has concluded that there would be no significant indirect landscape effects on designated landscape areas including Areas of Great Landscape Value, Special Landscape Areas and Gardens and Designed Landscapes.

Visual Assessment

The viewpoint analysis is contained in **Appendix 1** and indicates that there would be no significant visual effects occurring beyond ~1km from the proposed turbine. Out of the nine viewpoints assessed only one was found to have significant effects. As well as these nine viewpoints there were three longer distance viewpoints from the previous submission which were omitted due to the reduction in visibility of the scheme. The conclusions from the viewpoint assessment have been used to form a view as to the level of overall visual effects within the study area.

Visual Effects: Construction Period

There will be no significant visual effects resulting from the construction period and visibility of the ground based activity. Views of concentrated areas of construction could however lead to a temporary and negative effect that in some cases may appear more disruptive than the finished development. Post-construction, the appearance of the site would recover a calmer visual character with negligible levels of activity visible on site from the nearest visual receptors.

Visual Effects: Operational Period

The nearby hamlet of Drunzie may experience some effects, with the turbine appearing on the horizon to the west of the settlement as well as some of the nearby properties. The views however, were not found to be overbearing or dominant; the effects arise from the addition of two tall, vertical features into the local landscape. Visual effects were found to quickly diminish beyond 1km of the proposed development with settlements such as Duncricvie and Glenfarg receiving no views of the proposed turbine.

Cumulative Landscape and Visual Effects

The Colliston Farm turbine would rarely be seen in conjunction with other wind turbines, the operating windfarms in the local area tend to be sited in the more upland landscapes to the north-west and within the flatter basins of Fife to the south-east. Cumulative views do occur from the more elevated areas and hill tops in the region, however, from these locations the Colliston Farm Wind Turbine will rarely appear as significant or prominent feature in these views.

Certain Impact

The operating windfarm of Lochelbank is the closest development to the Colliston Site. Due to the intervening feature such as topography and vegetation, intervisibility and cumulative effects between the developments are rare. The operating developments to the south-east do not appear in the same views as the Colliston turbine, appearing in the opposite direction to the proposed turbine from most of the potential visible areas. It is considered that the overall level of cumulative effect due to Colliston Farm would be negligible, which would not be significant.

Likely Impact

Considering the introduction of the proposed Colliston Farm Wind Turbine and the effects it will have on operational and consented projects in the study area, it is considered that the overall level of cumulative effect due to Colliston Farm would remain negligible, due again in part to the small numbers of development in proximity to the proposed turbine. The nearest consented project is located ~3-4km to the north-west of the Colliston Farm turbine and any cumulative effects would not be significant.

Uncertain Impact

In addition to the above, when considering all the currently planned developments, levels of intervisibility would be low, with development in the immediate vicinity limited to single turbine development larger in size to the proposed Colliston Farm development.

5.10 Summary of Effects

The single turbine proposed within the arable landscape near to Colliston Farm would rarely be seen as a prominent feature, appearing in views alongside a significant number of manmade features and other naturally occurring features. Typically the turbine at would relate well to both the scale of the landscape and the form of the topography. Assessed significant effects are isolated, only occurring within ~1km of the turbine. These relate to the visual impact at one of the assessed viewpoints. Effects outside this distance quickly diminish, which indicates localised impacts that are not widespread. The views from the more sensitive locations around Loch Leven were found to be limited with the scale of the turbine having little visual impact on the setting of the Loch. It would not limit views or add an easily discernible feature to the horizon around the area.

The turbine would be introduced to an area of landscape which is already busy and does not have a wild or remote nature, being characterised by its agricultural nature as well as by the upland landscape to the north-west. This area of the Igneous Hills has been identified by the *Supplementary Planning Guidance for Wind Energy Proposals in Perth & Kinross* as being within a broad area of search for wind development. The turbine scale has been specifically chosen to fit with the surrounding area and was found to have a limited impact on both the local landscape and the wider region.

6 Noise

6.1 Introduction

This section considers the potential noise impacts and effects associated with the proposed ACSA A27 wind turbine.

6.2 Potential Impacts

Noise can have an effect on the environment and on the quality of life enjoyed by individuals and communities. The impact of noise can therefore be an important consideration in the determination of planning applications. Noise impacts can arise from three distinct areas of the development:

- The construction of the wind turbine;
- During operation of the wind turbine; and
- Resulting from increased traffic flow during the construction and operation stages.

Given the scale of the development, construction noise will be short term and generally will not increase background noise levels beyond the recommended limits set out by the World Health Organisation and the former Department of the Environment. As such, a construction phase noise assessment has been scoped out. Due to the scale of the development, increased traffic flow is also unlikely to be significant, and an assessment of the noise impact of traffic has been scoped out.

There are currently no projects within the area that are built, consented or in planning that would contribute to cumulative noise levels at the properties considered within this assessment. As such, a cumulative noise assessment has been scoped out.

6.3 Terminology

The symbols used for noise levels in this report are:

- L_{WA} is the A-weighted sound power level, a measure of the total sound energy emitted by a source of noise;
- $L_{A,eq}$ is the A-weighted equivalent continuous sound pressure level, which is a measure of the total ambient noise at a given place at a given time; and
- $L_{A90,10min}$ is the A-weighted sound pressure level exceeded for 90 per cent of the time in the averaging time period specified, in this case 10 minutes, and is the normal index used for background noise level measurements.

The wind speeds referred to in this report:

- v_{10} are standardised wind speeds at 10m height above ground level and used to determine the correlation between wind speed and noise levels.

6.4 Guidance

Guidance for assessing operational noise from wind farms is given in:

- 'ETSU-R-97: the Assessment and Rating of Noise from Wind Farms (1997), The Department of Trade and Industry (usually referred to as the Noise Working Group Recommendations); and
- 'A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise', May 2013, IOA.

6.5 Methodology

Assessment Methodology

The ETSU-R-97 guidelines indicate that for single turbines or turbines located far from the nearest properties, a simplified approach can be taken. If it can be demonstrated that the noise levels due to the turbine would not exceed 35dB(A) $L_{A90,10min}$ at the nearest sensitive receptors, then that in itself would provide sufficient protection of amenity for those receptors.

Choice of Propagation Model

The International Standard ISO 9613, 'Acoustics – Attenuation of Sound During Propagation Outdoors - Part 2', noise propagation model has been used for the turbine noise calculations. L_{Aeq} noise propagation was modelled using WindFarm v4.2.1.7 by ReSoft. L_{A90} levels were derived by subtracting two decibels from the L_{Aeq} values as per the ETSU-R-97 guidance.

The input parameters shown in **Table 6.1** have been used and are consistent with the IOA good practice guidance.

Table 6.1 – Propagation input parameters

Atmospheric Attenuation Assumptions	
Temperature (°C)	10
Humidity (%)	70
Ground Attenuation Assumptions	
Attenuation factor, G	0.5 (semi-soft ground)
Receptor height (m)	4.0

The attenuation of noise as it travels through the air varies with frequency. The atmospheric attenuation coefficients used in the assessment, corresponding to the assumptions in **Table 6.1**, are tabulated in **Table 6.2**.

Table 6.2 – Attenuation coefficients used for the noise propagation model

Octave Band (Hz)	63	125	250	500	1000	2000	4000	8000
Attenuation Coefficient	0.0001	0.0004	0.0010	0.0019	0.0037	0.0097	0.0328	0.1170

6.6 Summary of Previous Noise Assessment

The previous proposal assessed the operational noise impacts associated with an Enercon E53 rated at 800kW with an overall sound power level of 102.5dB(A).

A broadband calculation was undertaken to determine the noise levels at the nearest properties from the previous proposal, which was in accordance with guidance at the time of submission. A 1dB(A) safety factor was added to give a maximum sound power level of 103.5d(A).

The outcome of the noise assessment for the previous application was that the predicted wind turbine noise levels met the simplified ETSU-R-97 fixed noise limit of 35dB(A) at all properties and, as such, the development could be accommodated in terms of noise.

6.7 Updated Assessment

The current proposal consists of a single ACSA A27 – 225kW wind turbine. As the development has been scaled down significantly and was previously assessed as acceptable in terms of noise impact, this suggests that the development will remain acceptable in terms of noise.

Baseline

Four properties have been identified within a 1km study radius of the proposed turbine location. These are shown on the map in **Figure 6.1**. Although the residential dwelling and amenity areas of property H4 is out-with the 1km study radius, a significant part of the land holding is within the study area and as such, has been included within this assessment. Operational noise levels have been predicted from the nearest part of the amenity area to the turbine, in accordance with the ETSU-R-97 guidelines.

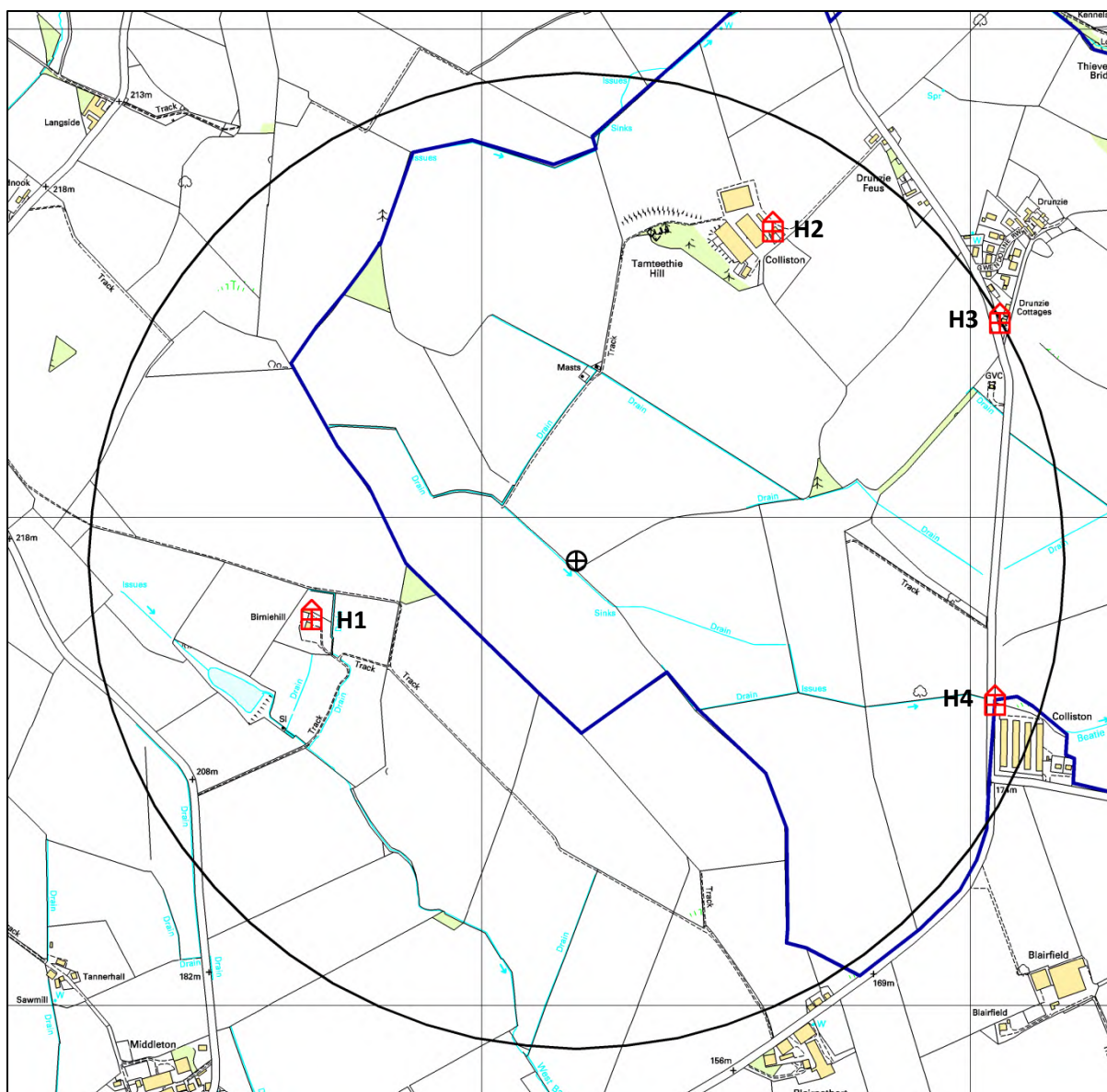
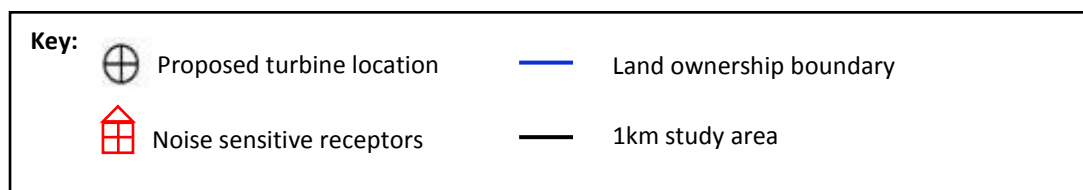


Figure 6.1 - Site layout showing proposed turbine location and nearest noise sensitive receptors



Wind Turbine Sound Power Levels

Octave band sound power levels were available at a v_{10} wind speed of 8ms^{-1} . A measured slope regression of 0.417 was supplied as part of the test report, allowing the octave band levels to be scaled up to 10ms^{-1} .

The IOA recommends that a margin of 1.645 times the measurement uncertainty value at each wind speed should be used as a clear indication that suitable uncertainties have been incorporated. The test report for the ACSA A27 states that the measurement uncertainty is estimated at 2-3dB(A) assuming a 90% confidence interval. A measurement uncertainty of

3dB(A) has been used for this assessment, resulting in an uncertainty factor of 4.9dB(A). This will give result in conservative levels because the manufacturer warrants that the wind turbine will not exceed the levels provided in their documentation.

The octave band sound power levels for a v_{10} wind speed of 8ms^{-1} are given in **Table 6.3**

Table 6.3 – Octave band sound power levels for the ACSA A27 at v_{10} wind speed of 8ms^{-1}

Octave Band (Hz)	63	125	250	500	1000	2000	4000	8000
Sound Power Level (dB(A))	71.4	80.5	86.3	91.6	93.1	89.0	76.3	65.1
Total [dB(A)]	97.0							
Uncertainty [dB(A)]	3.0							
Uncertainty Factor [dB(A)]	4.9							

The extrapolated octave band sound power levels a v_{10} wind speed of 10ms^{-1} , using a slope regression of 0.417, are given in **Table 6.4**.

Table 6.4 – Octave band sound power levels for the ACSA A27 at v_{10} wind speed of 10ms^{-1}

Octave Band (Hz)	63	125	250	500	1000	2000	4000	8000
Sound Power Level (dB(A))	72.2	81.3	87.1	92.4	93.9	89.8	77.1	65.9
Total [dB(A)]	97.8							
Uncertainty [dB(A)]	3.0							
Uncertainty Factor [dB(A)]	4.9							

6.8 Predicted Impacts & Effects

The calculated $L_{A90,10\text{min}}$ levels, including uncertainty factor, are shown in **Table 6.5**.

Table 6.5 - Predicted noise levels at nearby properties

ID	Property Name	Easting (to 10m)	Northing (to 10m)	Distance from Turbine (to 10m)	Wind turbine noise level $L_{A90, 10\text{min}}$ [dB(A)]
1	Birniehill	312650	707790	560	34.1
2	Drunzie Cottages	314060	708400	990	27.8
3	Colliston	313600	708580	780	30.5
4	Blairnathort	314050	707615	910	28.8

As can be seen, none of the properties are expected to experience noise levels greater than the ETSU-R-97 guidelines fixed noise limit of 35dB(A).

6.9 Mitigation

No mitigation is proposed as the 35dB(A) fixed noise limit set out by the ETSU-R-97 guidelines is not predicted to be breached at any of the assessed properties.

6.10 Conclusions

Wind turbine noise calculations have been carried out to assess the significance of noise impact from the proposed scheme on residential amenity.

Wind turbine noise levels at all third party properties meet the ETSU-R-97 fixed noise limit of 35dB(A).

It is concluded that this proposal can be accommodated in terms of noise.

7 Ecology

7.1 Introduction

A full set of ecological surveys and assessments were conducted in relation to the original 2012 submission. These considered the potential effects of the proposed wind turbine on the nature conservation interests on and around the proposed site, sets out the findings of the various surveys carried out and provides an assessment of impact on key sensitive species. These assessments were carried out by GLM Ecology, an established consultancy with extensive experience of ecological assessments at wind farm sites.

The surveys conducted for the original assessment have been revised and updated by GLM Ecology, the full report of which can be found in **Appendix 1**.

This section sets out the findings of the original surveys, considers the comments of statutory consultees to the original application and provides an assessment of how a single turbine of a significantly reduced height will impact on the results of the surveys and therefore the overall nature conservation interests on and around the proposed site.

7.2 Summary of Original Surveys

Appendix 2 sets out in detail the regulations, methodology and guidance in which the surveys have been conducted. The following information summarises what was identified and concluded during the original surveys.

Site Background and Context

The site is predominantly arable fields with a paucity of hedgerows and the occasional mature tree line. There are two small dense coniferous plantations on site and some mature beech trees near Colliston Farm. Photographs of these features can be found in **Appendix 2**. There is no standing or running water on site apart from ditches.

There are farmhouses in the area consisting of the usual mixture of older outbuildings and newer barns. To the east and southeast lies the Lomond Hills and Loch Leven.

Scope of Ecological Assessments

The scope of the EcIA was derived from the initial site background and context study, the local knowledge and experience of the ecologist. The EcIA considers the following issues:

- Breeding Birds;
- VP Surveys;
- Winter Walkover Surveys;
- Badger;
- Bats; and
- Phase 1 habitat.

Summary of Predicted Impacts

Breeding Birds

There was a poor breeding species list due to the majority of the habitat being arable fields. The majority of species recorded were in the small wooded areas near the farm well away

from the turbine location. Considering the observations noted above, no significant impact on high sensitivity species could be expected.

Schedule 1 Raptors

No Schedule 1 species were recorded breeding on any surveys and the habitat present would not be suitable for breeding and very limited for foraging.

Wintering Birds

The three SPAs within the 20km zone around Colliston are all designated for wintering geese species and it is known that there is regular connectivity between the three sites. No geese or wildfowl or species of concern were recorded foraging on site during surveys at any time. Flights of geese were recorded in the general area, however these flights were predominately at a high level and none were in the collision risk zone.

Badgers

No signs of badger were recorded.

Bats

No bats were recorded within 500m from the turbine. Very small numbers of soprano pipistrelles were recorded at the farm. No roosts are present within a 500m zone of the turbine location as no buildings or suitable trees are present.

Otters/Water Voles

No signs of otters or water voles were recorded.

Habitats

A total of eight habitats are present within the site survey areas, of which the majority is arable fields, within which the turbine is located. No nationally or internationally protected habitats were identified in this assessment. The habitat around the proposed access tracks and turbine location is arable fields.

7.3 Statutory Consultees Comments

No external consultees were consulted as part of the original application, however the Case Officer offered the following comments in the Report of Handling:

“In terms of the impact on protected species/habitats, I have no immediate concerns regarding this development which could not be adequately addressed or mitigated via appropriate planning conditions. I therefore consider the proposal to be consistent with the relevant Development Plan policies which relate to protected species/habitats, insofar as the proposal would not have an adverse impact on either element.”

7.4 Predicted Impact of Revised Proposal

All surveys and assessments have been updated in relation to the revised proposal by GLM Ecology. The revised report can be found in **Appendix 2**.

Given that the proposed development has been significantly reduced in size and scale, it is anticipated that the turbine will have a lesser impact on ecological and ornithological interests.

7.5 Conclusion

It is proposed to construct a single wind turbine of 46m in tip height and associated infrastructure on an area of improved grazing land near Glenfarg. A range of ecological assessments have been undertaken and revised to investigate the ornithological and other ecological interest of the site and it is concluded that potential for this to be adversely affected by the current proposal is extremely unlikely.

The EclA was conducted as part of the original application and has been updated for the revised proposal. The updated report can be found in **Appendix 2**.

8 Cultural Heritage/Archaeology

8.1 Introduction

Cultural heritage is represented by a wide range of features, both above and below ground, which result from past human use of the landscape. These include standing buildings, many still in use, sub-surface archaeological remains and artefact scatters. These also include earthwork monuments as well as landscape features such as field boundaries and industrial remains.

This chapter addresses any concerns raised during the original application and re-assesses the potential impacts of a turbine of reduced size and scale on surrounding features of cultural heritage interest.

8.2 Consultation & Consultee Responses

As part of the pre-planning consultation for the previous application, Historic Scotland and Perth and Kinross Council's Heritage Officer were contacted regarding the original development. Historic Scotland identified the Scheduled Monuments (SMs) at Arlary and Nether Tillyrie as being closest to the site, and asked that the setting of Burleigh Castle be paid particular attention.

The Council's Heritage Officer highlighted the potential direct impact upon the Tamteethie Hill enclosure, and asked that any disturbance as a result of the upgrade to the existing access track in this area be kept to a minimum.

These issues were given through consideration in the assessment, to which Historic Scotland provided comment on the original application: *"there is unlikely to be a significant adverse impact upon either of their settings [Burleigh Castle and Kinross House GDL] due to the distance between the turbine and the historic assets, and the nature of the surrounding topography. Historic Scotland thus does not object to this application"*.

The case officer wrote the following in the Report of Handling relating to Cultural Heritage impacts: *"There are several listed buildings and SAM potentially affected by the proposal, however any impact on their settings will not be of particular significance. In addition, Historic Scotland have raised no concerns in terms of the potential impact that the turbine will have on HGDL associated with Kinross House."*

8.3 Guidance

- SPP – Historic Environment
- Scottish Historic Environment Policy (SHEP) 2009
- Managing Change in the Historic Environment guidance note series –Setting
- Pan 2/2011 – Planning and Archaeology

8.4 Methodology

In the preparation for the original assessment, a range of historical and technical data was collected and analysed. It is normal practice to include a review of other potential issues that fall under the umbrella term of cultural heritage, such as historic buildings and

landscapes, in addition to purely archaeological factors. The following sources were consulted:

- Sites and Monuments Record (SMR);
- National Monuments Record Scotland (NMRS);
- National Library of Scotland (Map Library); and
- Aerial photograph collection held by the Royal Commission on the Ancient and Historical Monuments of Scotland (RCAHMS).

A phased approach to the assessment was adopted:

- Direct Impact: The area most at risk of direct impact was assessed to be all land within the application area, land 50m either side of the access track and within 200m from the turbine location.
- Indirect Impact on the setting, character and historical integrity of known cultural heritage sites: 'B' listed buildings were considered up to 2km from the turbine.
- Indirect Impact on the setting, character and historical integrity of known cultural heritage sites: Nationally designated features such as Scheduled Monuments (SMs), 'A' listed buildings, and Gardens and Designed Landscapes (GDLs) were further considered within a 5km study radius (**Figure 8.4**).

Analysis of a computer model of the proposed wind cluster and existing landform (DTM) to produce a zone of theoretical visibility (ZTV) was used to assess what the potential indirect visual impact of the wind turbine may be from a number of cultural heritage sites within the study area.

Historic Maps

Historic maps held at the National Library of Scotland (Map Library) were consulted via the internet. No significant changes to the immediate area were discernible from these maps, other than those already noted.

Aerial Photographs

A selection of aerial photography within the site boundary was viewed online. No features of potential cultural heritage interest, other than those already identified from other sources, were visible within the proposed development area on those aerial photographs viewed.

Information Gaps

An attempt has been made to consult all readily available documentary sources. However, it is possible that there may be other documentary sources held by RCAHMS and the National Archives of Scotland, which have not been consulted as part of this assessment. The site has not been visited by a qualified Archaeologist as part of this assessment.

Assessment Criteria

The criteria presented in **Tables 8.1 and 8.2** have been used in the assessment of significance of any direct or indirect impact on any site of cultural heritage importance.

Table 8.1– Sensitivity of built and cultural heritage features

Sensitivity	Definition
High	Category A listed buildings Scheduled Monument Non-statutory List of sites likely to be of national importance Gardens and Designed Landscapes World Heritage Sites
Medium	B & C(S) listed building Archaeological sites on the Sites and Monuments Record (of regional and local importance) Conservation Areas
Low	Archaeological sites of lesser importance Non-Inventory Gardens and Designed Landscapes

Table 8.2- Magnitude of built and cultural heritage effects

Magnitude	Definition
High	Any number of wind turbines and/or ancillary development that would result in: <ul style="list-style-type: none"> the removal or partial removal of key features, areas or evidence important to the historic character and integrity of the site, which could result in the substantial loss of physical integrity; and/or a substantial obstruction of existing view by the addition of uncharacteristic elements dominating the view, significantly altering the quality of the setting or the visual amenity of the site both to and from. <i>where the noise intrusion (mechanical or aerodynamic) is likely to detract from the amenity of a built or cultural heritage site</i>
Medium	Any number of wind turbines and/or ancillary development that would result in: <ul style="list-style-type: none"> the removal of one or more key features, parts of the designated site, or evidence at the secondary or peripheral level, but are not features fundamental to its historic character and integrity; and/or a partial obstruction of existing view by the addition of uncharacteristic elements which, although not affecting the key visual and physical relationships, could be an important feature in the views, and significantly alter the quality of the setting or visual amenity of the site both to and from. <i>where the noise intrusion (mechanical or aerodynamic) may detract from the amenity of a built or cultural heritage site</i>
Low	Any number of wind turbines or ancillary developments that may result in: <ul style="list-style-type: none"> a partial removal/minor loss, and/or alteration to one or more peripheral and/or secondary elements/features, but not significantly affecting the

	<p>historic integrity of the site or affect the key features of the site; and/or</p> <ul style="list-style-type: none"> • an introduction of elements that could be intrusive in views, and could alter to a small degree the quality of the setting or visual amenity of the site both to and from. • where the noise intrusion (mechanical or aerodynamic) is unlikely to detract from the amenity of a built or cultural heritage site
Negligible	<p>Any number of wind turbines or ancillary developments that may result in:</p> <ul style="list-style-type: none"> • a relatively small removal, and/or alteration to small, peripheral and/or unimportant elements/features, but not affect the historic integrity of the site or the quality of the surviving evidence; and/or • an introduction of elements that could be visible but not intrusive in views, and the overall quality of the setting or visual amenity of the site would not be affected both to and from. • where the noise intrusion (mechanical or aerodynamic) will not detract from the amenity of a built or cultural heritage site

The level of an effect is determined by the combination of sensitivity and magnitude of change. The following matrix is used to determine the overall significance of effect.

Table 8.3 – Significance of impact matrix

Magnitude	Sensitivity		
	High	Medium	Low
High	High	High	Medium
Medium	High	Medium	Low
Low	Medium	Low	Negligible
Negligible	Low	Negligible	Negligible
Key:		Significant in terms of the EIA Regulations	
		Not Significant	

The potential indirect impacts of the proposed wind turbine are temporary. After the 25 year life span of the development, the project will be de-commissioned and the surrounding landscape will be returned to its original state. Therefore, any adverse impacts upon historic features are considered to be temporary and reversible.

8.5 Baseline Data

Features of Historical Significance within 200m

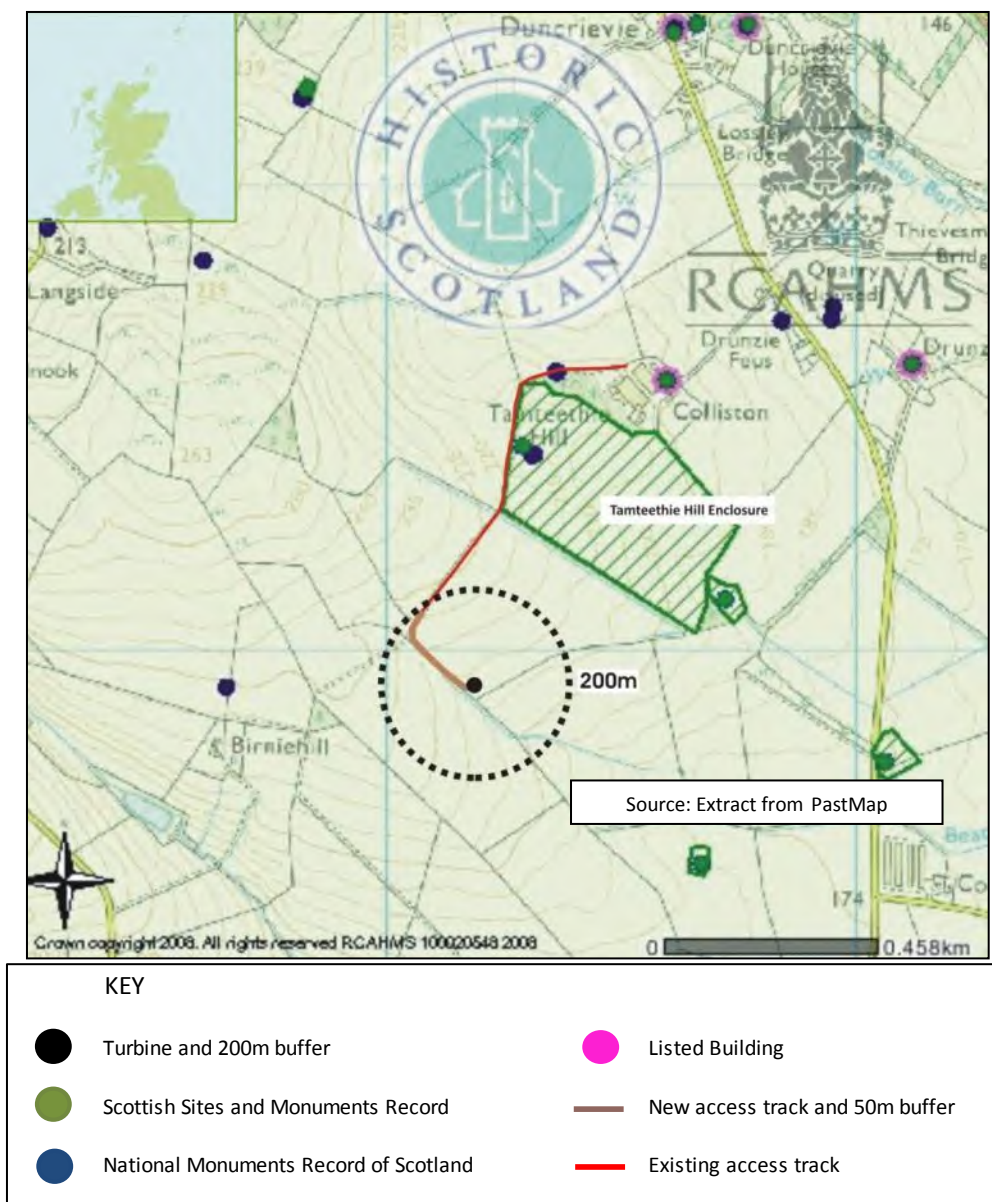


Figure 8.1 – Features of historical significance within 200m (Pastmap extract)

As is evident from **Figure 8.1** there is only one known feature of cultural heritage interest within the vicinity of the site, located near to the existing access track. The feature is known as Tamteethie Hill (SMR Ref: MPK15446), a post-medieval rectilinear enclosure showing possible rig and furrow markings. The fields that this feature is located in are subject to rigorous farming practices and are cultivated annually. The existing access track follows the western edge of the field containing the Tamteethie enclosure and is currently used by farm vehicles. The proposed new section of access track will be constructed to the west of the Enclosure, and is unlikely to have any direct impact upon the feature itself.

Features of Historical Significance 2km

Within 2km of the turbine location, two 'B' listed buildings were found. These features are briefly described in **Table 8.5** below.

Table 8.5 – Cultural heritage features within 2km

LB/SAM no.	Index no./ HBNUM	Distance	Name	Listing & Description	
LB 1	17650	~0.8km	Collieston Farmhouse and Steadings	'B'	A traditional 2-storeyed house, 3 bays wide with a slated roof. The Steading has a pantiled roof. Dating from the early 18th Century
LB2	17651	~1.4km	Drunzie Farmhouse and Steadings	'B'	Traditional rubble-built house with piended slated roof. Front court flanked by Steadings.

The setting of each of these features is discussed below:

- Colliston Farmhouse: the Farmhouse sits in an elevated position to the west of the hamlet of Drunzie, with its main aspect facing in a south-easterly direction. There are also long distance views from the side of the property in a north-easterly direction. Three large barns lie in close proximity to the west of the house, and the rear of the property looks out towards a farm yard and more outbuildings.
- Drunzie Farmhouse and Steading: the farmhouse is situated in the hamlet of Drunzie, to the north of a small estate of new houses which sit between the farmhouse and the minor road which runs to Duncreavie. The farmhouse faces into a courtyard flanked by the steadings, creating an enclosed setting. Immediately to the west of the farmhouse is a large farm building which further screens views in this direction. There are likely to be open views in a north-westerly direction from the rear of the Farmhouse.

'A' Listed Buildings, SMs and GDLs within 2-5km

Between 2km and 5km of the project, 12 SMs and 1 'A' listed building (which is also a SM) SAMs were identified. Brief details are given in **Table 8.6**. A portion of one GDL, Kinross House, was located within the study area.

Table 8.6 – 'A' listed buildings and SMs within 2-5km of project

LB/SM no.	HBNUM/ Index no.	Distance	Name	Listing & Description	
LB3 / SM7	351618 / 90045	3.9km	Burleigh Castle	'A'	The monument comprises Burleigh Castle, a now ruined towerhouse of medieval date, which is in the care of the Secretary of State for Scotland. The early 16th century tower house and a wall of a later courtyard with an arched gateway still survive.

LB/SM no.	HBNUM/ Index no.	Distance	Name	Listing & Description
				To the west of the castle are the remains of a substantial ditch, which survive as an irregular turf-covered depression some 25m long by up to 8m wide.
SM1	7610	2.9km	Nether Tillyrie, Settlement and Souterrain	The monument comprises the remains of an unenclosed settlement of prehistoric date, visible as cropmarks on oblique aerial photographs. To the south-west is a ring-ditch representing the remains of a timber roundhouse.
SM2	7634	3.0km	Nether Tillyrie, Souterrain	The monument comprises the remains of a single curved souterrain, ~11m long and of prehistoric date. This is visible as a cropmark on oblique aerial photographs.
SM3	7612	2.9km	Arlary, Square barrow	The monument comprises the remains of a square barrow of prehistoric date. It encloses an area of 12m by 12m and is defined by a narrow ditch. It is visible as a cropmark on oblique aerial photographs
SM4	7612	2.9km	Arlary, Barrow	The monument comprises the remains of a ploughed-down barrow of prehistoric date, visible as a cropmark on oblique aerial photographs. It comprises a single round barrow measuring about 22m in internal diameter, defined by a single ditch measuring about 2m in width
SM5	7609	3.3km	Mawcarse, Enclosure	The monument comprises the remains of an enclosed settlement of prehistoric date, visible as a cropmark on oblique aerial photographs. It comprises a D-shaped enclosure defined by a single ditch, measuring about 280m by 150m. The SE corner of the enclosure has been slightly truncated by a gas pipeline.
SM6	7611	3.6km	Mawcarse Cottage, Barrow	The monument comprises the remains of a square barrow and a round barrow, both of prehistoric date, visible as cropmarks on oblique aerial photographs. The square barrow measures about 10m by 10m, and is defined by a ditch measuring about 1m wide. A cropmark at the centre of the barrow indicates the position of a central grave pit. The round barrow measures about 12m in diameter. Again the position of a central grave pit is marked by a small cropmark
SM8	7623	4.5km	Orwell, Rectilinear enclosure	The monument comprises the remains of an enclosed settlement of prehistoric date, visible as a cropmark on oblique aerial photographs. It comprises a rectilinear enclosure measuring approximately 110m by 80m. The enclosure is defined by a single ditch measuring some 2m in width.
SM9	993	4.6km	Orwell, Two standing stones	The monument comprises two standing stones of prehistoric date. Both are substantial undressed boulders. Although no other stones are visible their disposition and topography suggests that they may represent the remains of a former stone circle.
SM10	9459	4.8km	Cairn Geddes	The monument comprises a cairn of prehistoric date, visible as a turf-covered mound. It comprises a turf-covered, flat-topped mound 21m in diameter and 0.5m high.
SM11	7614	4.9km	Lathro Cottage, Enclosure	The monument comprised the remains of an enclosed settlement of prehistoric date and was visible as cropmarks on oblique aerial photographs. However a community centre has been built at this location and there are no visible remains of the SAM.

LB/SM no.	HBNUM/ Index no.	Distance	Name	Listing & Description
SM12	7620	4.2km	Ballingall, Enclosure	<p>The monument comprises the remains of an enclosure of prehistoric date, visible as a cropmark on oblique aerial photographs.</p> <p>It comprises a rectilinear enclosure with rounded corners, which is defined by double ditches. The enclosed area measures approximately 50m by 40m. It is thought to date from the Iron Age c.500 BC to AD 500.</p>
GDL 1		4.7km	Kinross House	<p>Kinross House is a late 17th Century Palladian mansion designed by Sir William Bruce. It lies to the east of Kinross on the shores of Loch Leven, with its main aspect deliberately orientated over its formal gardens towards the 14th century Lochleven Castle situated on an island to the east.</p> <p>The house is situated in 54 acres of designed landscape, and is one of Scotland's earliest country houses. The house and formal gardens are located in the south of the GDL, which includes the Kinross golf courses to the north, which cover the majority of the designation.</p>

All the identified features within 5km of the project were found to be within the ZTV for the original application and therefore have theoretical visibility of the project. As the revised application comprises a reduced turbine height, the extent of the ZTV is reduced which results in SM 1, 2 and 10 no longer experiencing theoretical visibility of the project. These features are not considered to experience an indirect visual impact of the turbine and therefore have not been taken forward in the assessment.

SMs 3, 4, 5, 6, 8 and 12 are visible only as cropmarks when viewed from the air. Therefore their setting is not considered to be affected by the proposed development.

8.6 Evaluation of Effects

Direct Effects

Table 9.7 - Effects and Evaluation of Significance: Direct Effects

Effect	Probability	Sensitivity	Magnitude	Significance	Comment
Direct effects on known features within the site	Unlikely	Medium	Low	Low	The Tamteethie Hill enclosure is the only known cultural feature within the vicinity of the site. The upgraded access track will run to the west of the field that contains the enclosure, meaning that there is predicted to be no direct impact upon the feature itself.
Direct effect on presently unrecorded archaeology	Unlikely	Unknown	Unknown	Unknown	Given the small area of intrusive works and the lack of known features in the immediate area; the turbine is unlikely to have a significant impact on unknown archaeological remains.

Indirect Effects within 2km

Table 9.8 - Effects and Evaluation of Significance: Indirect Effects Features within 2km

Name	Distance	Sensitivity	Magnitude	Significance	Comment
LB1 – Collieston Farm-House and Steadings, 'B'	~0.8km	Medium	Low	Low	The hub and blade tips are predicted to be visible from Collieston Farm House. The main views from the house are to the south-east,

listed					away from the turbine. There are possible views of the turbine from one upper storey window on the side of the house, but it is likely that the turbine will be screened by the farm outbuildings immediately to the west of the farm house, or by the mature woodland which lies on higher ground 160m to the west.
LB2 - Drunzie Farm-House and Steadings, 'B' listed	~1.4km	Medium	Low	Low	<p>The blades of the turbine are predicted to be theoretically visible from this feature.</p> <p>The farm-house and steading form a self-contained courtyard, with all of the buildings facing into the centre, creating an enclosed sense of space. The mature trees that sit adjacent to Colliston Farm are likely to fully screen the turbine from views from the vicinity of the farmhouse.</p>

Indirect Effects within 2-5km

Table 9.9- Effects and Evaluation of Significance: Indirect Effects Features 2-5km

Name	Distance	Sensitivity	Magnitude	Significance	Comment
LB3 / SM7 - Burleigh Castle	3.9km	High	Negligible	Low	<p>The turbine tower, hub and tips will visible from the castle, viewed against the sky. A photomontage from the Castle has been produced, and is included as Figure 8.9 of the Landscape Graphics.</p> <p>The single turbine of this scale will occupy a small portion of the horizontal view, and views from ground level will be partially screened by intervening vegetation. No significant adverse impact on the setting of the SAM or its historical integrity and appreciation is predicted.</p>
SMs 3, 4, 5, 6, 8 & 12	2.9km – 4.5km	High	Negligible	Low	The remains of these SAMs are visible from aerial photography or from the air as cropmarks only. The historical understanding of these remains will not be adversely impacted upon by the proposed turbine.
SM 9 –Orwell Standing Stones	4.6km	High	Negligible	Low	The turbine and hub will be visible as part of the wider landscape from this feature. It will take up a small portion of the available 360 degree view. No significant adverse impact on the current settings or historical integrity of the standing stones is predicted.
GDL1 – Kinross House	4.7km	High	Negligible	Low	Only the northern portion of the GDL is within the 5km study area, which contains part of the Kinross Golf Course. Mature trees both within and bordering the GDL to the north are likely to screen the majority of views of the turbine. Where the turbine is viewed it will be glimpsed through gaps in the trees, and more noticeable during the winter months. No significant adverse impact on the current settings or historical integrity of the GDL is predicted.

With regard to cultural features beyond 5km, it is not expected that the project will have a significant detrimental impact on their setting. The turbine will appear as part of the wider landscape.

8.7 Summary of Predicted Impacts and Effects

Direct Impact

One known feature of cultural heritage interest was identified within the vicinity of the existing access track which will require upgrading. The new section of access track will be constructed to the west of the field that contains the feature, and therefore there will be no direct construction impact.

Indirect Impact

The study has identified 2 'B' listed buildings, 12 SMs (one of which is an 'A' listed building) and one GDL within the study area.

The revised findings do not differ significantly from the previous assessment conducted as part of the application for a 86.5m turbine, with the exception that three SMs that will no longer experience views of the turbine. The magnitude of change has reduced to from low negligible in the case of LB3/SM7 Burleigh Castle and SM9 Orwell Standing Stones.

The reduction in the magnitude of change is a direct result of the reduction in scale of the turbine. From these particular features, the turbine appears as small scale, occupying a very minor extent of the horizontal and vertical extents and is no longer the tallest feature in the view. The landscape to the west of the turbine from each feature rises to an elevation taller than the proposed turbine therefore reducing the impact visual impact of the turbine. From these features the turbine would be neither dominant nor prominent and would have a negligible impact on the setting of each.

8.8 Mitigation Incorporated into the Proposed Development

Planning guidance (SPP – Historic Environment) states that it is Government policy to protect and preserve archaeological sites and monuments *in situ* wherever feasible. Where preservation *in situ* is not possible planning authorities should ensure that an appropriate level of excavation, recording, analysis, publication and archiving is carried out before and/or during development.

Permanent Land-take and Operation

Current proposals indicate that the turbine location, road routes and other aspects of development avoid the locations of known features of cultural heritage interest and as such no direct impact has been identified.

While this assessment has found no indication of the survival of any archaeological features or deposits that are not visible above ground level, it is nevertheless possible that such features do exist within the application area.

In the event that archaeological features are encountered, a suitable program of archaeological works will be implemented to the satisfaction of the planning authority.

Restoration

No restoration measures are currently proposed.

8.9 Conclusion

No objections or concerns were raised from consultees or Perth and Kinross Council in relation to the cultural heritage impact of the previous application for a turbine of up to 86.5m in height.

The assessment has been revised and updated to assess the impact that a significantly reduced turbine of 46m in height may have on cultural heritage interests. The assessment has found that the revised proposal does not raise any concerns in relation to impact on features of cultural heritage interest.

9 Surface and Groundwater Hydrology

9.1 Introduction

This chapter presents the impact assessment of the proposed development on the water environment. The assessment has considered the development impacts on water quality, drainage and flood risk.

Understanding surface and groundwater environments is critically important to designing a successful project. Surface water includes watercourses, water bodies and runoff. Surface water provides important water resources for potable and other supply, amenity, aesthetic value, conservation, ecological environments and recharge to groundwater systems. Groundwater includes all water stored in permeable underground strata (or aquifers). Groundwater is also an important resource, providing more than a third of the potable water supply in the UK. In addition it provides essential baseflow to rivers and wetland areas, often supporting important ecological systems.

Although hydrological issues are likely to be relatively minor at this site, the risk of pollution or disruption of watercourses, groundwater bodies and private water sources within or near the site needs to be assessed and appropriately mitigated where necessary.

9.2 Potential Impacts

The potential impacts this development could have on the water environment of the site and the area around are broadly summarised as follows:

- Disruption to surface and subsurface runoff and watercourses;
- Sedimentation, erosion, and production of silt-laden runoff;
- Chemical pollution of watercourses or groundwater;
- Increase in run-off; and
- Lowering of the water table.

These impacts could occur during the construction, operational lifetime, and decommissioning of the development. They can potentially have many adverse effects to ecology and human amenity.

9.3 Guidance

Statutory, general, national and local guidance consulted during this assessment is listed as follows:

- SPP7: Flooding & Drainage
- SEPA Policy No.19: Groundwater Protection Policy for Scotland
- SEPA Pollution Prevention Guidance Notes (PPG):
 - PPG 1: General guide to the prevention of water pollution;
 - PPG 2: Above Ground Oil Storage Tanks;
 - PPG 5: Works in, near or liable to affect watercourses;

- PPG 6: Working at construction and demolition sites;
- PPG 21: Pollution incident response planning;
- SEPA Water quality classification interactive database (2009 data);
- CIRIA Report C532: Control of Water Pollution from Construction Sites; and
- CIRIA Report C502: Environmental Good Practice on Site.

9.4 Methodology

The method adopted to assess the impact on the water environment was:

- Determination of the baseline hydrological conditions and the sensitivity of the site and adjacent receptors;
- Review of the proposed development to determine the predicted impacts posed by the development itself;
- Evaluation of the significance of predicted impacts, taking into account impact magnitude (before and after mitigation) and baseline environmental sensitivity.

The assessment is primarily a desk-based study using qualitative assessment based on professional judgement and published material. The assessment also included consultations with statutory bodies, principally SEPA, the Local Planning Authority, and the land owner's own knowledge of the site were also utilised. A site walkover was also conducted by a suitably qualified engineer to support these findings and to check for any hydrological features that may be missing from the desk-based study.

Sources of information consulted included:

- Ordnance survey 1:10,000 map data;
- BGS – Hydrogeological Map of Scotland 1:625,000;
- BGS – Groundwater Vulnerability Map of Scotland 1:625,000;
- Consultation with statutory and non statutory organisations.

Given the scale of the development, a conservative study boundary of 1km radius around the turbine, has been used for this assessment. All sensitive receptors within this 1km study boundary, which can be seen in **Figure 9.1 (Appendix 3)**, have been identified and the impacts assessed.

The analysis of the significance of each impact is based on its magnitude, scale and the likelihood of occurrence. A significance rating of 'High', 'Medium', 'Low' or 'Negligible' is then given to each impact. By conducting this analysis before and after mitigating factors are taken into account, the significance of the predicted impact and the residual impact is determined.

9.5 Baseline

This section presents an overview of the baseline water environment at the site, including: the location and quality of surface and groundwater resources, drainage, and flood risk. **Figure 9.1** (attached as an appendix) shows the local context of the site.

Terrain description

The site is in a hilly area approximately 1.1km in south west of Duncrervie, Fife. The land around the site comprises a mix of arable fields and forestry. Tamteethie Hill, the summit of which lies 820m to the northwest of the proposed turbine location at an elevation of 263m above sea level, is the dominant terrain feature in the area. The site is positioned on the southeast facing slope with downwards slopes of up to 10%. The track and turbine lie at elevations of between approximately 209m and 220m above sea level.

Hydrology

Any runoff generated by rainfall on the proposed track hard standing areas currently tends to flow downhill to the southeast, as can be seen in the runoff catchment area shown on **Figure 9.1**. The runoff flows towards a system of field drains which combine to form the Beatie Burn. The Beatie burn, which flows to the south east, is located approximately 20m west of the proposed turbine location and the Lossley Burn which flows to the north east is located approximately 900m to the north of the proposed turbine location. The Beatie burn merges with other burns to form the River Eden, approximately 3km downstream to the east. The Greens Burn, also known as the West Bank Burn, issues approximately 935m directly west of the proposed turbine location and flows to the south east. The soil in the area of the site is boulder clay and generally of poor permeability.

From the OS 1:10,000 map data, and through discussions with the landowner and the local council, it has been established that there are no private water supplies within the study boundary. This was supported by the site walkover.

Local water supplies

All properties within 1km of the proposed development have been identified. It was determined that none of the properties in the study boundary draw from the water table, all are mains-fed. The properties considered are tabulated below.

Table 9.1. Properties within 1km of development

<i>ID</i>	<i>Property</i>	<i>NGR</i>
1	Grieves House	313600, 708590
2	Colliston Farmhouse	313540, 708500
3	Drunzie Cottages	314070, 708400
4	Birniehill	312640, 707780

Surface and Groundwater Classification

The Scottish Environment Protection Agency (SEPA) classifies all significant waters in Scotland. The nearest classified surface water features have been identified as the Beatie Burn located approximately 20m west of the proposed turbine location and the Greens Burn located approximately 935m directly south of the proposed turbine location.

SEPA have classified the Beatie Burn as ‘Bad’. This means SEPA have “classified this water body as having an overall status of Bad ecological potential with Medium confidence in 2008 with overall ecological status of Bad and overall chemical status of Pass”. The Greens Burn has been classified “as having an overall status of Poor ecological potential with Low confidence in 2008 with overall ecological status of Poor and overall chemical status of Pass”.

SEPA also classifies significant groundwater bodies, which, at the proposed site, are Glenfarg bedrock and localised sand and gravel aquifers. The quality of this groundwater has been classified as Poor with High confidence and the quantity of groundwater has been classified as Good with High confidence in 2008.

Flooding Risk

From the Indicative River & Coastal Flood Map (available on the SEPA website) it can be seen that there is no areas deemed to be at risk from flooding within the study boundary. The nearest area deemed to be at risk from flooding is small areas along the banks of the Lossley Burn approximately 1.5km to the east of the proposed turbine location. The project is unlikely to have any impact on the flooding risk of these areas.

Hydrogeology

The BGS groundwater Vulnerability Map of Scotland 1995 (1:625000) indicates that the strata beneath the site are classified as weakly permeable.

The BGS Hydrogeological Map of Scotland 1988 (1:625000) indicates that the project is located in a region underlain by extrusive rocks which are “*generally impermeable to groundwater, but rare springs may occur from systems of near surface dilated joints*”. The “Geology of Britain viewer” available on the BGS website (www.bgs.ac.uk) indicates that, more specifically, the site is underlain by Ochil Volcanic Formation - Pyroxene Andesite, which is lithologically described as: “*Pyroxene andesite and olivine basalt lavas and rhyodacite, trachyandesite, hornblende andesite and volcaniclastic rocks*”.

The “Geology of Britain viewer” indicates that there is superficial layer in region, and that it is diamicton, specifically Devensian Till.

Confirmation of baseline conditions

Intrusive ground investigations will be completed prior to turbine construction to gain site specific information such as groundwater levels, soil permeability and geology.

9.6 Predicted Impacts

This section presents an assessment of impacts on the water environment which may occur during the construction, operational and decommissioning phases of the development. The sensitive receptors are identified and the predicted impacts are assessed and their significance rated.

Details of the site and the works to be conducted can be found in Chapter 2: The Proposed Development. **Figure 9.1** (attached as an appendix) provides a plan of the development.

Sensitive Receptors

The identification of sensitive receptors, taking into account baseline conditions, is summarised in **Table 9.2** below. It should be noted that a distinction has been made between properties that draw water from the water table, and the overall condition of the water table itself.

Table 9.2. Sensitive Receptors

Receptor	Comment
Watercourse	The Beatie Burn and the Greens Burn which are classified by SEPA of bad and poor water quality respectively. The Newhill Burn and the Lossley Burn have local ecological significance, but are diminutive watercourses and have not been classified by SEPA.
Groundwater	The region is located in an area underlain by weakly permeable strata.

Predicted Construction Impacts

The most disruption, and therefore the greatest risk of impact to the water environment, will occur during the construction phase of the project.

Disruptions to flow paths

The development does not require the crossing of any streams or other surface watercourses, and so there is no risk of a watercourse being hydraulically impeded. As such, a drop in hydraulic gradient of a watercourse is predicted to be of negligible significance.

However, there could be active subsurface field drains around the site which may be affected during track excavation and construction. Furthermore, the track and associated drainage could impede existing surface runoff routes, particularly during periods of heavy rainfall. The impact caused by these disruptions to flow is predicted to be of low significance.

Sedimentation and Erosion

It is predicted there may be an impact caused by erosion of track and hard-standing surfaces and of excavated spoil material. This could lead to sediment being carried with the runoff and reaching a watercourse. Cable laying also has the potential to damage soils and introduce new drainage pathways which could generate silt laden run-off. The amount of the resultant suspended solids pollution will be greater during heavy rainfall events, although the dilution potential of the watercourses is also at its greatest during these periods. At times of low flow, it is very unlikely that silt could reach a watercourse. The significance of this impact is considered to be low.

Increase in runoff

Construction of the access tracks, sub-station and crane hard-standings will result in localised changes to the surface water hydrology. The cambered tracks may interrupt natural flow paths. The new track will also shed water more quickly than the existing ground. An increase in runoff in the area can compound various other predicted impacts, such as chemical pollution, erosion and sedimentation. Furthermore, increased runoff could add to a flood risk in the area.

Due to the small area of tracks and hardstanding in the site, there will be only a very slight increase to runoff. It is unlikely any runoff would affect the small flood areas on the banks of the River Eden which is over 3km downstream. The magnitude of the impact is taken to be low.

Chemical Pollution

There are several potential sources of chemical pollution to both surface water and groundwater during the construction phase of the development. The spillage or leakage of construction associated oil, grease, fuel, concrete, cement, foul water or other chemicals can have a serious negative impact on the quality of surface water and/or groundwater. Runoff or groundwater could also carry spills or leakages resulting in pollution of a sensitive receptor. Local topography limits the potential for polluted runoff to travel, so polluted runoff contaminating a watercourse is predicted to be of medium significance.

Due to the low permeability of the strata beneath the site, groundwater travel is likely to be limited, so polluted runoff contaminating groundwater is predicted to be of medium significance.

Lowering of the water table

Given what is known about the ground conditions in the area and the extents of the excavation works, groundwater is not expected to enter the foundation excavations. As such, dewatering should not be required and therefore the groundwater table would not be affected by the works. Furthermore, General Binding Rule (GBR) 15 (from the Water Environment (Controlled Activities) (Scotland) Regulations 2005) states that “(d) groundwater shall not be abstracted from any excavations, well or borehole that are within 250 metres of any abstraction that is not for the sole purpose of dewatering an excavation”. Therefore, any private water supply outwith a 250m ‘dewatering boundary’ is not predicted to suffer an impact. There is a presumption that cable trenches and access roads may disrupt the groundwater flow directions by creating shallow drainage and preferential pathways and, as such, a further boundary of 100m around cable trenches and access tracks has been applied. Given that there are no private water supplies in the study boundary, there will be no impact due to dewatering.

Predicted Operational Impacts

There will be a few on-site activities during operation of the wind turbine relating to regular maintenance or repair of the machines. During these activities there will be a need to bring small quantities of oil, greases and other materials on to the site. The sub-station, access tracks and crane hard-standings will result in localised changes to the surface water hydrology for the duration of the project, with the potential effects of erosion, sedimentation and increased runoff as discussed in Construction Impacts.

Predicted Decommissioning Impacts

The activities during decommissioning are broadly similar to those during construction, however, the level of activity will be less as some of the roads and sub-surface elements will be left in place.

9.7 Mitigation

The potential impact of the project on water quantity is minimal, so the mitigation measures focus on preventing water pollution. There are a number of recognised best practices and measures to mitigate and eliminate the predicted impacts previously discussed. A full intrusive ground investigation will be carried out to provide data for designing appropriate mitigating measures before construction begins.

Construction

The following measures will be implemented to manage the predicted impacts at the site during the construction phase. Construction will be carried out according to SEPA and CIRIA guidance for site works.

Disruption to existing flow

There are no crossings of burns or streams required in the development, and there will be no impeding of a surface watercourse. Should subsurface field drains be discovered during track excavation, there will be a design in place for drains to run under the track, thereby minimising disruption to existing field drainage paths.

Sedimentation and Erosion

During construction of the track, drainage will be controlled by placing drainage ditches on the uphill slopes. All earth bunds, soil and waste material storage areas will be located as far as possible from site watercourses and will be well managed to minimise runoff and erosion. The project drainage will be designed such that access tracks will be cambered to shed surface water into a suitable drainage system.

Adoption of sustainable drainage principles, such as making use of vegetation to slow water flows and filter sediments, should minimise the risk of sediments reaching watercourses. The new drainage network will be kept separate from the existing field drain network to avoid any potentially contaminated runoff from the new infrastructure discharging into local watercourses. If this is not practical, drains will be installed along the length of the tracks which would feed into a soak-away. The soak-away would incorporate an overflow for periods of heavy rainfall. A possible drainage layout solution is shown on **Figure 9.1**. Methods incorporated are designed to be sustainable and to cope with storm events.

To minimise disturbance impacts, cables will be laid in small trenches along the side of the access tracks as far as possible. Trenches will be dug during drier periods, as far as practicable, and spoil material will be temporarily placed on the uphill slope to reduce the likelihood of runoff entering the excavations. The electric cables will be laid quickly and backfilled to minimise water ingress to the trenches. Their actual impact in terms of creation of new drainage pathways, or damage to soil profile, is likely to be negligible provided the best practice methods are followed.

Chemical Pollution

Construction traffic will use specified roads and parking areas at all times, where practicable, to reduce compaction and associated run-off in the wider area. Appropriate control measures, such as shallow vegetated channels, will be installed to convey haul road and hardstanding runoff and treat pollutants.

Concrete will be delivered in ready-mix wagons which will only be allowed to ‘wash-out’ in designated areas where suitable control measures are in place. Full details of the foundation construction will be provided in the construction method statement. We anticipate this being required as a planning condition. Once construction is complete and the soil has been replaced over the foundation and reseeded, the change to surface water runoff and risk of pollution is predicted to be negligible.

A pollution incident response plan will be developed in accordance with SEPA PPG 21. Spill response measures will be put in place to ensure that any accidental spillages at the surface can be contained and quickly removed from site.

All fuel and other chemicals will be stored and managed in accordance with best practice procedures. Best practice is included in SEPA Pollution Prevention Guidance Notes (PPGs). All fuel will be stored in a bunded container. Oil spill kits will be stored in the site office. All oils, greases and chemicals will be stored in a locked bunded container near the site office. Where oils and diesel are brought on to site for refuelling or maintenance, these operations will be carried out in designated areas of hardstanding located at least 20m from the nearest watercourse or drain. Standard methods will be adopted within these designated areas that minimise the risk of spillage. Contingency plans will also be in place for dealing with any spillage that may occur.

Any contaminated material encountered during construction will be dealt with according to environmental best practice, following suitable chemical analysis. Such material will be contained, treated, or disposed of, to a suitably licensed disposal facility.

Implementation of the procedures described above will mitigate the significance of a chemical pollution impact to low.

Increase in runoff

Adoption of sustainable drainage, as discussed in the Sedimentation and Erosion section above, will allow for the capture of runoff from the site, and render impacts caused by runoff negligible.

Lowering of the water table

Should planning permission be granted, an intrusive investigation will be carried out and groundwater monitoring standpipes installed at the location of the turbine. The investigation will include an assessment of the ground permeability and water potential. Mitigating measures for any potential dewatering and disposal of groundwater will be provided in a construction method statement.

Operation

The proposed mitigation for the construction of the access roads will continue to function through the life of the project. Routine maintenance for the roads will be carried out in summer months when the tracks are dry. Operational best practice procedures will continue to be adopted, with the risk of water pollution from such activities considered to be negligible.

The proposed mitigation for fuels and chemicals used during the construction phase would be applied at all relevant times during the lifetime of the project. The concrete used will be of a high grade that is not prone to leaching alkalis. As such the ongoing risk of pollution on the site after construction is considered to be very low.

Decommissioning

It is envisaged that detailed method statements, in compliance with relevant current legislation, will be drawn up prior to decommissioning. However, similar mitigation methods to those employed during construction (updated to take account of legislation current at the time of decommissioning) are likely to be appropriate.

9.8 Assessment of Residual Impact

The residual impacts after mitigating factors have been taken into account are analysed with respect to their significance. **Table 9.3** below includes a summary of the residual impacts, and it can be seen that there are no residual impacts of major significance expected to occur as a result of the development.

Table 9.3 - Summary of Impact Assessment

Project Element	Effect	Sensitive Receptor	Initial Significance	Description of Mitigation	Residual Significance
Crossing of a watercourse	Drop in hydraulic gradient	Watercourses	Negligible	No crossings of a watercourse are required - no mitigation required.	Negligible
Access Track & cabling; Hardstandings	Disruption to field drainage flow paths	Watercourses	Medium	Incorporating lateral drainage across tracks in design	Negligible
	Erosion and the generation of silty runoff	Watercourses	Low	Implementation of a Sustainable Drainage system to capture runoff. Adherence to best practice procedures.	Negligible
	Increase in runoff adding to flooding	Watercourses	Low	Implementation of a Sustainable Drainage system to capture runoff.	Negligible
Keeping and using concrete, chemicals/ fuel onsite; refuelling.	Polluted runoff contaminating a watercourse	Watercourses	Medium	Implementation of a Sustainable Drainage system to capture runoff. Adherence to best practice procedures in the handling, use and storage of fuel, oils and chemicals. Concrete will be delivered in ready mix wagons. Wagons only to 'wash-out' in areas where suitable control measures are in place.	Low
	Polluted runoff contaminating groundwater	Groundwater	Medium	Implementation of a Sustainable Drainage system to capture runoff. Adherence to best practice procedures in the handling, use and storage of fuel, oils and chemicals. Concrete will be delivered in ready mix wagons. Wagons only to 'wash-out' in areas where suitable control measures are in place.	Low

9.9 Conclusion

A desk-based study and site walkover were conducted to establish the baseline water environment of the site, whereby predicted impacts caused by the development were identified. The majority of potentially significant negative impacts on water quality are only predicted to occur in the short term through potential increased sedimentation and pollution during the construction phase. The same would apply to the risk of contamination of groundwater. It is anticipated that the adoption of best practice management and control procedures by all site personnel, and the implementation of the mitigation methods proposed, will bring these risks down to acceptable levels.

10 Existing Infrastructure, Telecommunications, Television, Aviation and Electromagnetic Safety

10.1 Introduction

By their nature, operational wind turbines have the potential to interfere with:

- Communications networks that utilise electromagnetic signals;
- Civil aviation radars;
- Safeguarding radars; and
- Other types of infrastructures including seismic monitoring stations.

The potential impact of the proposed turbine on these types of infrastructure is considered in this section.

10.2 Guidance

Guidance for assessing the potential impact of wind turbines on electromagnetic infrastructure is given in:

- Scottish Government, 2010. Scottish Planning Policy, Subject Policy: *Renewable Energy*;
- Ofcom, 2009. Tall structures and their impact on broadcast and other wireless systems; and
- BBC, Ofcom. The impact of large buildings and structures, including wind farms, on terrestrial television reception.

Guidelines and publication available for assessing potential impact on aviation activities are:

- Wind Energy and Aviation Interim Guidelines;
- CAP 428 - Safety Standards at Unlicensed Aerodromes; and
- CAP 764 – Policy and Guidelines on Wind Turbines.

10.3 Methodology

A list of consultees with telecommunications, television and other infrastructure interests in the area was identified based upon advice given in Scottish Planning Policy. These consultees are listed in **Table 11.1**. Those with aviation interests, such as MoD, NATS, BAA and CAA, no longer comment on pre-application developments but will provide a comment during the planning process.

Table 11.1 – Infrastructure and telecommunications consultation

Consultee	Response Received	Comments
Telecommunication		
Ofcom	Yes	Identified one link operated by BT
BT	Yes	No links affected
Atkins	Yes	No links affected
Joint Radio Company (JRC)	Yes	1 link identified (approx 365m away)

10.4 Assessment of Impact

Civil aviation

The site lies outside the official 30km consultation zone for the closest civil aviation airports, which are Edinburgh and Dundee.

The British Aviation Authority (BAA), the Civil Aviation Authority (CAA) and National Air Traffic Services (NATS) now no longer comment on proposals at the pre-application stage.

No objections were raised in regard to a single 86.5m turbine; therefore a turbine of 46m at a lower elevation is not predicted to raise any concerns.

Ministry of Defence (MoD)

The MoD raised no objections to the original application and the revised proposal is not anticipated to impact any infrastructure operated by the MoD.

Telecommunication

After contacting the major telecommunication providers, Ofcom responded highlighting that there was a link operated by BT which passed within 500m of the project. BT subsequently confirmed that the turbine would not interfere with this link.

JRC identified one link within 1km of the turbine. Analysis by Green Cat Renewables has shown that this is ~365m from the turbine location, and therefore unlikely to cause interference.

Television

The digital switchover for the whole of the UK has been completed.

A 2009 Ofcom report stated that:

“Digital television signals are much better at coping with signal reflections, and digital television pictures do not suffer from ghosting. However a digital receiver that has to deal with reflections needs a somewhat higher signal level than one that has to deal with the direct path only. This can mean that viewers in areas where digital signals are fairly weak can experience interruptions to their reception should new reflections appear.

Over time, this problem is expected to diminish as the power of transmitters is increased as digital switchover continues across the UK. However, higher transmitter powers will not be a

solution in all situations which means that reflections may still affect digital television reception in some areas, although the extent of the problem should be far less than for analogue television.”

There are a number of technical solutions available should interference be proven as an issue as a result of the turbine and if there are any impacts they are considered to be of temporary nature until a technical alternative can be put in place. Overall, any potential effects on television are considered to be negligible.

10.5 Impacts, Issues and Mitigating Actions

No issues have been identified which require imminent mitigation or action.

Appendix 1 - Landscape and Visual Impact Viewpoint Analysis

Figure 5.10	Viewpoint 1: Close in from the south	
Description	<p>Viewpoint 1 is taken from E312426 N707434 looking in a north-easterly direction towards the site which is located ~932km away.</p> <p>The view feels fairly enclosed from this location. The land undulates in front of the viewer, with a slope running from left to right across the foreground, the land falls away behind this before rolling up across the middle ground forming a rolling horizon line, limiting any long distance views from this location. The landcover is made up of several large rectilinear arable fields, with a mixture of rough and improved grassland providing the dominant coverings. The fields are bound by hedgerows and post-and-wire fencing. There are several small areas of plantation woodland, two areas sit on the horizon line, whilst the other bounds the Birniehill Farm property which is sited in the middle of the view.</p>	
Sensitivity	The viewpoint is representative of local residents and is therefore considered to be of High sensitivity.	
Magnitude of Change	<p>Receptors of this view would be 932km from the Colliston Farm turbine.</p> <p>From this location the turbine would appear on the horizon, the intervening landscape provides a little screening, hiding the lower tower section from view, reducing the vertical extents of the development slightly. The visible portion of the turbine would be viewed solely against the sky. To the left of the view there is a cluster of mature woodland, also viewed on the horizon, the woodland provides a significant scaling feature within the view. The visible extents of the turbine appear in keeping with the scale of the other vertical features in the view including the electricity pylons and trees. The turbine would occupy a low to medium extent of the horizontal and vertical view.</p> <p>The overall magnitude of change for the development is considered to be Medium, leading to a major/moderate level of effect which would be significant.</p>	
Cumulative Impact	<p><u>Operational</u></p> <p>There are no operational turbines visible from this location.</p> <p>The cumulative magnitude of change for consented projects would be none.</p> <p><u>Operational, Consented</u></p> <p>There are no consented turbines visible from this location.</p> <p>The cumulative magnitude of change for consented projects would remain none.</p> <p><u>Operational, Consented, In Planning</u></p> <p>There are no planning turbines visible from this location.</p> <p>The cumulative magnitude of change for consented projects would remain none.</p>	
Type of Effect	On completion of the development the visual effect from this viewpoint would be permanent (reversible) and direct. The development would lead to a medium magnitude of change and despite the careful design of the project a man made vertical structure in this area would always lead to a negative effect.	
Assessment of Visual Effects	Sensitivity:	<i>High</i>
	Magnitude:	<i>Medium</i>
	Type of Effect:	<i>Permanent, direct and negative</i>
	Level of Effect:	Major/Moderate

Figure 5.11	Viewpoint 2: Close in from the north-east	
Description	<p>Viewpoint 2 is taken from E313687 N709098 looking in a south-westerly direction towards the site which is located ~1.3km away. The viewpoint is located on the south-east edge of the settlement of Duncruevie at the side of the minor road which runs through the settlement.</p> <p>The view feels fairly enclosed from this location. The land rolls up quickly in front of the viewer with the formation of the hill to the rear of Colliston Farm limiting any further views over the landscape to the south-west. The view is dominated by several large arable fields, with a variety of field coverings ranging from rough grazing land to plantation crops. These large fields are bound by a mixture of Drystone Dykes and hedgerows. Running across the near ground of the view is a run down dry-stone dyke. There are several small areas of woodland visible, these tend to mark the boundaries of the two properties, as well as these small areas of shelterbelt, there is an area of mature deciduous woodland on the summit of the local hilltop. To the left of the view a solitary wooden electricity pylon is visible cutting the horizon.</p>	
Sensitivity	The viewpoint is representative of the residents of Duncruevie and is therefore considered to be of High sensitivity.	
Magnitude of Change	<p>Receptors of this view would be ~1.3km from the proposed turbine.</p> <p>From this location the intervening landscape would provide a significant amount of screening, with only the blades of the turbine theoretically visible over the horizon. The remainder of the turbine tower and hub would be completely hidden from view. Further to the landscape screening there are further features in the view including the built features at Colliston Farm and nearby woodland which would combine to completely screen the visible portion of the turbine from this location.</p> <p>The overall magnitude of change for the development is considered to be Negligible, leading to a Moderate/Minor level of effect which would not be significant.</p>	
Cumulative Impact	<p><u>Operational</u></p> <p>There are no operational turbines visible from this location.</p> <p>The cumulative magnitude of change for consented projects would be none.</p> <p><u>Operational, Consented</u></p> <p>There are no consented turbines visible from this location.</p> <p>The cumulative magnitude of change for consented projects would remain none.</p> <p><u>Operational, Consented, In Planning</u></p> <p>There are no planning turbines visible from this location.</p> <p>The cumulative magnitude of change for consented projects would remain none.</p>	
Type of Effect	On completion of the development the visual effect from this viewpoint would be permanent (reversible) and direct. The development would lead to a negligible magnitude of change and despite the careful design of the project a man made vertical structure in this area would always lead to a negative effect.	
Assessment of Visual Effects	Sensitivity:	<i>High</i>
	Magnitude:	<i>Negligible</i>
	Type of Effect:	<i>Permanent, direct and negative</i>
	Level of Effect:	Moderate/Minor

Figure 5.12	Viewpoint 3: Minor Road between Newhill and Path of Condie	
Description	<p>Viewpoint 3 is taken from E311400 N708373 looking eastwards towards Colliston Farm which is located ~1.9km away. The viewpoint was taken from the side of the minor road which links Newhill to Path of Condie.</p> <p>The view feels fairly enclosed from this location. The land slopes quite significantly over the foreground from left to right, limiting any views over the left hand side of the vista. To the right of the view, the slope of the landscape allows for longer distance views with the distinctive peak of West Lomond visible. The landcover over the near ground is predominantly rough grassland with areas of brush and scrub. An area of shelterbelt follows the contour of the hill to the right of the view, serving to limit the views in this direction. A post-and-wire fence bound the field running along the near ground of the viewpoint by the roadside.</p>	
Sensitivity	The viewpoint is representative of road users and is therefore considered to be of Medium sensitivity.	
Magnitude of Change	<p>Receptors of this view would be ~1.9km from proposed development.</p> <p>From this location the turbine would be viewed against the large scale landscape of the Lomond Hills which form the upland landscape across the central areas of this vista. The intervening landscape provides screening of the development with the majority of the turbine tower hidden from view. This has the effect, along with the large scale backdrop of reducing the vertical extents of the development. The proposed turbine would occupy a negligible extent of both the horizontal and vertical view, sitting well below the nearby hummocky peaks in the foreground. The development does not block views of the Lomond Hills or dominate or control the view.</p> <p>The overall magnitude of change for the development is considered to be Low, leading to a moderate/Minor level of effect which would not be significant.</p>	
Cumulative Impact	<p><u>Operational</u></p> <p>There are no operational turbines visible from this location.</p> <p>The cumulative magnitude of change for consented projects would be none.</p> <p><u>Operational, Consented</u></p> <p>There are no consented turbines visible from this location.</p> <p>The cumulative magnitude of change for consented projects would remain none.</p> <p><u>Operational, Consented, In Planning</u></p> <p>There are no planning turbines visible from this location.</p> <p>The cumulative magnitude of change for consented projects would remain none.</p>	
Type of Effect	On completion of the development the visual effect from this viewpoint would be permanent (reversible) and direct. The development would lead to a low magnitude of change and despite the careful design of the project a man made vertical structure in this area would always lead to a negative effect.	
Assessment of Visual Effects	Sensitivity:	<i>Medium</i>
	Magnitude:	<i>Low</i>
	Type of Effect:	<i>Permanent, direct and negative</i>
	Level of Effect:	Moderate/Minor

Figure 5.13	Viewpoint 4: M90	
Description	<p>Viewpoint 4 is taken from E314569 N707170 looking in a north-westerly direction towards the site which is located ~1.5km away. The viewpoint is located near to the M90 motorway, by the over-bridge to the north of junction 8. The viewpoint was selected to represent motorists travelling on the M90, although the views would not be as prominent from the roadside as they are in this viewpoint, due to it sitting lower in the landscape.</p> <p>The view has an open feel to it, despite this the land rolls up in front of the viewer forming a gently undulating horizon line across the centre and right of the view, which serve to limit any further views across the landscape beyond. To the far left of the view, the land slopes away across the middle ground allowing for a slightly longer distance view across the landscape. The middle ground of the view is dominated by a large arable plantation field, the field is bound by post-and-wire fencing with some areas of drystone dyke still visible and hedgerow running alongside the road to the right of the view, screening the road from view. The access road to Blairfield Farm is visible running across the near ground of the view. Across the middle ground of the view there are some small areas of shelterbelt visible, marking the field edges and surrounding the property to the right of the view. Several wooden pylons are observed in the view, to the right hand side the run up the landscape towards the horizon, as well as these pylons another series runs across the middle ground of the view. The pylons add a significant vertical man made element to the landscape, viewed predominantly against the sky from this location.</p>	
Sensitivity	The viewpoint is representative of road users of the M90 and is therefore considered to be of Medium sensitivity.	
Magnitude of Change	<p>Receptors of this view would be ~1.5km from the proposed turbine.</p> <p>From this location the proposed turbine appears on the horizon above the viewer. The lower portion of the turbine is screened from view behind the lip of the field which rises in front of the viewer. The turbine is viewed breaking the horizon with the upper tower sections, hub and blades viewed against the sky. The turbine appears in the view alongside several strong vertical features including a series of wooded electricity pylons, the fixed portion of the turbine the tower and hub appears similar in scale with these features in this view. The turbine would add another vertical feature to a view which already contains a number of vertical elements, appearing as a balanced and sympathetic addition to the view rather than dominating or controlling the view.</p> <p>The overall magnitude of change for the development is considered to be Low leading to a Moderate/Minor level of effect which would not be significant.</p>	
Cumulative Impact	<p><u>Operational</u></p> <p>There are no operational turbines visible from this location.</p> <p>The cumulative magnitude of change for consented projects would be none.</p> <p><u>Operational, Consented</u></p> <p>There are theoretical views behind the viewer towards Gevens from this location, the development would be viewed at some distance across the landscape. It is not expected that the development will be a particularly discernible feature from this location and will more than likely be screened by vegetation.</p> <p>The cumulative magnitude of change for consented projects would become negligible.</p> <p><u>Operational, Consented, In Planning</u></p> <p>There are successive views towards the Blair Adam Forest windfarm and the Cleish wind turbines to the south of the viewpoint. These turbines appearing on the distant horizon, located over 15km from the viewer.</p> <p>To the north-west theoretical views towards are possible, the development is screened by roadside vegetation from this location.</p> <p>The cumulative magnitude of change for consented projects would remain negligible.</p>	
Type of Effect	On completion of the development the visual effect from this viewpoint would be permanent (reversible) and direct. The development would lead to a low magnitude of change and despite the careful design of the project a man made vertical structure in this area would always lead to a negative effect.	
Assessment of Visual Effects	Sensitivity:	<i>Medium</i>
	Magnitude:	<i>Low</i>
	Type of Effect:	<i>Permanent, direct and negative</i>
	Level of Effect:	Moderate/Minor

Figure 5.13	Viewpoint 4: M90	
Description	<p>Viewpoint 4 is taken from E314569 N707170 looking in a north-westerly direction towards the site which is located ~1.5km away. The viewpoint is located near to the M90 motorway, by the over-bridge to the north of junction 8. The viewpoint was selected to represent motorists travelling on the M90, although the views would not be as prominent from the roadside as they are in this viewpoint, due to it sitting lower in the landscape.</p> <p>The view has an open feel to it, despite this the land rolls up in front of the viewer forming a gently undulating horizon line across the centre and right of the view, which serve to limit any further views across the landscape beyond. To the far left of the view, the land slopes away across the middle ground allowing for a slightly longer distance view across the landscape. The middle ground of the view is dominated by a large arable plantation field, the field is bound by post-and-wire fencing with some areas of drystone dyke still visible and hedgerow running alongside the road to the right of the view, screening the road from view. The access road to Blairfield Farm is visible running across the near ground of the view. Across the middle ground of the view there are some small areas of shelterbelt visible, marking the field edges and surrounding the property to the right of the view. Several wooden pylons are observed in the view, to the right hand side the run up the landscape towards the horizon, as well as these pylons another series runs across the middle ground of the view. The pylons add a significant vertical man made element to the landscape, viewed predominantly against the sky from this location.</p>	
Sensitivity	The viewpoint is representative of road users of the M90 and is therefore considered to be of Medium sensitivity.	
Magnitude of Change	<p>Receptors of this view would be ~1.5km from the proposed turbine.</p> <p>From this location the proposed turbine appears on the horizon above the viewer. The lower portion of the turbine is screened from view behind the lip of the field which rises in front of the viewer. The turbine is viewed breaking the horizon with the upper tower sections, hub and blades viewed against the sky. The turbine appears in the view alongside several strong vertical features including a series of wooded electricity pylons, the fixed portion of the turbine the tower and hub appears similar in scale with these features in this view. The turbine would add another vertical feature to a view which already contains a number of vertical elements, appearing as a balanced and sympathetic addition to the view rather than dominating or controlling the view.</p> <p>The overall magnitude of change for the development is considered to be Low leading to a Moderate/Minor level of effect which would not be significant.</p>	
Cumulative Impact	<p><u>Operational</u></p> <p>There are no operational turbines visible from this location.</p> <p>The cumulative magnitude of change for consented projects would be none.</p> <p><u>Operational, Consented</u></p> <p>There are theoretical views behind the viewer towards Gevens from this location, the development would be viewed at some distance across the landscape. It is not expected that the development will be a particularly discernible feature from this location and will more than likely be screened by vegetation.</p> <p>The cumulative magnitude of change for consented projects would become negligible.</p> <p><u>Operational, Consented, In Planning</u></p> <p>There are successive views towards the Blair Adam Forest windfarm and the Cleish wind turbines to the south of the viewpoint. These turbines appearing on the distant horizon, located over 15km from the viewer.</p> <p>To the north-west theoretical views towards are possible, the development is screened by roadside vegetation from this location.</p> <p>The cumulative magnitude of change for consented projects would remain negligible.</p>	
Type of Effect	On completion of the development the visual effect from this viewpoint would be permanent (reversible) and direct. The development would lead to a low magnitude of change and despite the careful design of the project a man made vertical structure in this area would always lead to a negative effect.	
Assessment of Visual Effects	Sensitivity:	<i>Medium</i>
	Magnitude:	<i>Low</i>
	Type of Effect:	<i>Permanent, direct and negative</i>
	Level of Effect:	Moderate/Minor

Figure 5.14	Viewpoint 5: Burleigh Castle	
Description	<p>Viewpoint 5 is taken from E312902 N704599 looking north towards the site which is located ~3.3km away. The viewpoint was taken from the grounds of Burleigh Castle on the eastern edge of the settlement of Milnathort.</p> <p>The view feels fairly enclosed from this vantage point. The topography starts of fairly flat in the near ground before rolling up across the middle ground, becoming more undulating. This change in the landscape serves to limit visibility in part, particularly to the right of the view. Where the landscape falls away, slightly longer distance views do occur towards Tillyrie Hill and the surrounding areas of higher ground. The landcover is dominated by large areas of rough grassland across the foreground. A number of vertical elements appear in the view, several areas of shelterbelt woodland appear across the middle ground to the left and centre of the view. As well as these woodland features a number of wooded electricity pylons appear across the view, these are viewed cutting the horizon line to the right of the view, while across the middle ground they appear against the landscape. Over the horizon a small number of metal pylons are visible, these tend to follow the undulating nature of the horizon. The M90 is not visible although some of the road signs can be seen across the middle ground. Two properties appear in the landscape visible at the far left and right of the view. The view houses a significant number of man-made features.</p>	
Sensitivity	The viewpoint is representative of visitors to the castle and residents of Milnathort and is therefore considered to be of High sensitivity.	
Magnitude of Change	<p>Receptors of this view would be ~3.3km from Colliston Farm.</p> <p>From this location the turbine would be viewed on the distant horizon, backdropped solely by the sky in this view. The turbine appears in the view alongside a significant number of vertical features, these features particularly the electricity pylons reduce the scale significantly of the proposed turbine in this view. The turbine would occupy a negligible extent of both the horizontal and vertical view from this area of the settlement.</p> <p>The overall magnitude of change for the development is considered to be low, leading to a Moderate level of effect which would not be significant.</p>	
Cumulative Impact	<p><u>Operational</u></p> <p>There are no operational turbines visible from this location.</p> <p>The cumulative magnitude of change for consented projects would be none.</p> <p><u>Operational, Consented</u></p> <p>There are theoretical views of the Pitcarlie turbine from this location, although the views are screened by the intervening landscape from this location.</p> <p>The cumulative magnitude of change for consented projects would remain none.</p> <p><u>Operational, Consented, In Planning</u></p> <p>The blades of the Temple Hill turbine appears to the left of the view, the intervening landscape screening the majority of the turbine from view. The views would be further reduced by the vegetation present in the wider view, it is unlikely that the turbine will be a prominent feature within this view.</p> <p>The cumulative magnitude of change for consented projects would become negligible.</p>	
Type of Effect	On completion of the development the visual effect from this viewpoint would be permanent (reversible) and direct. The development would lead to a low magnitude of change and despite the careful design of the project a man made vertical structure in this area would always lead to a negative effect.	
Assessment of Visual Effects	Sensitivity:	<i>High</i>
	Magnitude:	<i>Low</i>
	Type of Effect:	<i>Permanent, direct and negative</i>
	Level of Effect:	Moderate

Figure 5.15	Viewpoint 6: B919	
Description	<p>Viewpoint 6 is taken from E316003 N704745 looking north-west towards the site which is located ~4.2km away. The viewpoint was taken at the side of the B919 between Newlands and Pittendreich Farms.</p> <p>The view has an open feel from this location. The land falls away from the viewer across the foreground, before rolling up across the middle distance, with the formation of the Ochil Hills, forming a significant horizon line, restricting any potential views over the landscape in this direction. The land cover over the near and middle ground has a distinctly agricultural feel, with several large fields the dominant feature, ranging from plantation crops to areas of grazing land, although these tend to be found over the higher ground. The B919 itself runs through the centre of the view, before disappearing behind an area of woodland in the middle distance. A mixture of shrubbery runs along both sides of the road marking the field edges. The farm and outbuildings of Newlands appear at the roadside as well as another property on the opposite side of the road, both properties are surrounded by bands of mature trees. There are various areas of shelter belt across the remainder of the view, marking field edges as well as more uniform policy plantation over higher ground. The landscape is littered with a number of wooden electricity and telegraph poles, particularly across the foreground, these do not break the horizon and are viewed against the landscape, but bring a number of vertical elements to the view. Over the horizon a small number of larger metal electricity pylons are also visible, these are viewed solely against the sky. The pylons as well as the farm buildings bring a strong man modified element to the view.</p>	
Sensitivity	The viewpoint is representative of road users of the B919, primarily local residents and is therefore considered to be of Medium sensitivity.	
Magnitude of Change	<p>Receptors of this view would be ~4.2km from Colliston Farm.</p> <p>From this location the proposed turbine appears predominantly backdropped by the landscape, the blades visible over the horizon. The turbine would be viewed in an open section of the landscape occupying a negligible extent of both the horizontal and vertical view. Sitting well below the nearby summits the proposed turbine would not be a prominent feature in this view.</p> <p>The overall magnitude of change for the development is considered to be Low, leading to a Moderate/Minor level of effect which would not be significant.</p>	
Cumulative Impact	<p><u>Operational</u></p> <p>The operational development of Lochelbank is visible on the horizon line to the right of Colliston Farm from this location, the development is heavily screened by the intervening vegetation, limiting visibility.</p> <p>The cumulative magnitude of change for consented projects would be negligible.</p> <p><u>Operational, Consented</u></p> <p>There are no consented turbines visible from this location.</p> <p>The cumulative magnitude of change for consented projects would remain negligible.</p> <p><u>Operational, Consented, In Planning</u></p> <p>The Temple Hill turbine appears over the horizon beyond the Colliston Farm turbine. The intervening landscape screening the majority of this development from view.</p> <p>Successive views occur with the Blair Adam Forest and Cleish Hill developments, appearing on the horizon to the south-west of the view. The Blair Adam windfarm is fairly prominent located on the horizon from this location, although located ~15km from the viewer the potential effects would be diminished.</p> <p>The cumulative magnitude of change for consented projects would remain negligible.</p>	
Type of Effect	On completion of the development the visual effect from this viewpoint would be permanent (reversible) and direct. The development would lead to a low magnitude of change and despite the careful design of the project a man made vertical structure in this area would always lead to a negative effect.	
Assessment of Visual Effects	Sensitivity:	<i>Medium</i>
	Magnitude:	<i>Low</i>
	Type of Effect:	<i>Permanent, direct and negative</i>
	Level of Effect:	<i>Moderate/Minor</i>

Figure 5.16	Viewpoint 7: Kinross Services	
Description	<p>Viewpoint 8 is taken from E313687 N709098 looking in a north-north-easterly direction towards the Colliston Farm turbine which is located ~5.6km away. The viewpoint was taken from the service station and travel lodge on the western edge of Kinross.</p> <p>The view has a fairly enclosed feel from this location. The land across the foreground of the view remains flat before rolling up over the middle ground, with the local summit of Tillyrie Hill forming the focal point on the horizon, the land slopes away from the hilltop to the right leaving a uniform horizon line, which limits any potential views over the landscape to the north. The view feels fairly busy from this location, particularly in the foreground where the quality of landscape is generally low, with a small number of fields mostly covered in rough grassland with post-and-wire fencing and areas of shelterbelt marking the field boundaries across the foreground of the view. The M90 is fleetingly visible running through the middle of the view although the road is screened by shrubbery for the most part. Across the higher ground to the rear of the view, the landscape takes on a slightly calmer feel with a number of small areas of policy woodland visible. Across Tillyrie Hill there are more significant areas of plantation. The view houses several significant man made features, a lamppost and wooden electricity pylon are visible in the foreground, while several large road signs are visible across the middle distance. A small number of large metal electricity pylons are also visible on the horizon on the down slope of Tillyrie Hill.</p>	
Sensitivity	The viewpoint is representative of travellers using the service station and is therefore considered to be of Medium sensitivity.	
Magnitude of Change	<p>Receptors of this view would be ~5.6km from the proposed turbine.</p> <p>From this location the proposed turbine would be viewed on the distant horizon, appearing solely against the sky. The Colliston Farm turbine sits lower in the landscape than the surrounding summits and would occupy a negligible extent of both the horizontal and vertical view. There are a number of prominent features in the foreground of the view including street lighting and electricity pylons these features diminish further any impacts the proposed development may have on this vista.</p> <p>The overall magnitude of change for the development is considered to be Negligible, leading to a Minor level of effect which would not be significant.</p>	
Cumulative Impact	<p><u>Operational</u></p> <p>There are no operational turbines visible from this location.</p> <p>The cumulative magnitude of change for consented projects would be none.</p> <p><u>Operational, Consented</u></p> <p>There are no consented turbines visible from this location.</p> <p>The cumulative magnitude of change for consented projects would remain none.</p> <p><u>Operational, Consented, In Planning</u></p> <p>There are theoretical views towards the single turbine developments of Pitcarlie (approved) and Dempsterston (Planning) from this location. The turbines would appear in the same general view as Colliston Farm. In reality all three developments would all be screened by vegetation</p> <p>The cumulative magnitude of change for consented projects would become negligible.</p>	
Type of Effect	On completion of the development the visual effect from this viewpoint would be permanent (reversible) and direct. The development would lead to a negligible magnitude of change and despite the careful design of the project a man made vertical structure in this area would always lead to a negative effect.	
Assessment of Visual Effects	Sensitivity:	<i>Medium</i>
	Magnitude:	<i>Negligible</i>
	Type of Effect:	<i>Permanent, direct and negative</i>
	Level of Effect:	<i>Minor</i>

Figure 5.17	Viewpoint 8: Bonnet Stane	
Description	<p>Viewpoint 8 is taken from E318987 N707062 looking westwards towards the site which is located ~5.8km away. The viewpoint was taken from the Bonnet Stane, near Gateside.</p> <p>The viewpoint was taken above the Bonnet Stane and due to the elevated location, the view in this direction feels very open with long distance views possible across the landscape. The fore and middle ground of the view remains relatively flat, a large scale farmland plateau with numerous large arable fields, intermittent shelterbelts, farm steadings and outbuildings scattered throughout. The other side of the valley sees the land begin to rise with the formation of the Ochil Hills forming a gently undulating horizon line. The large fields which dominate the land cover offer a variety of field coverings from plantation crops to rough and improved grazing land. The fields are bound in a variety of ways with, drystone dykes, post-and-wire fencing, hedgerows and shelterbelts all visible at field edges. As well as these large fields there are a number of significant areas of policy woodland scattered throughout the landscape, the most significant area appears in the foreground to the left of the view, flowing down the hillside from West Lomond to the rear of the view. There are a number of vertical elements present in the view, the operational turbines of Lochelbank appear on the horizon line alongside a number of metal electricity pylons.</p>	
Sensitivity	The viewpoint is representative of visitors to the Bonnet Stane and is therefore considered to be of High sensitivity.	
Magnitude of Change	<p>Receptors of this view would be ~5.8km from proposed development.</p> <p>From this location the Colliston Farm turbine would appear completely backdropped by the open farming landscape on the opposite side of the valley from the viewer. The open nature of the view allows the turbine to be absorbed slightly by the scale of the surrounding landscape. The proposed development would occupy a negligible extent of both the horizontal and vertical views. The turbine will not be a prominent feature in this view.</p> <p>The overall magnitude of change for the development is considered to be Low, leading to a Moderate level of effect which would not be significant.</p>	
Cumulative Impact	<p><u>Operational</u></p> <p>The operational turbines of Lochelbank, Green Knowes and Earlsburn appear in the same view as Colliston Farm. The most prominent development is Lochelbank due to its proximity to the viewpoint. The turbines are viewed predominantly against the landscape from this vantage point. The turbines of Green Knowes and Burnfoot Hill are heavily screen by the topography with only blade tips visible on the horizon line. Earlsburn is viewed at a significant distance and would not feature in views from this location.</p> <p>Sequential views occur with Braes O'Doune and Craigengelt to the west and Griffin Forrest to the north-west; however these developments are over 30km from the viewpoint and would not feature in the cumulative views from this location.</p> <p>The cumulative magnitude of change for consented projects would be negligible.</p> <p><u>Operational, Consented</u></p> <p>The single turbine at East Blair Farm is visible to the right of the view; viewed breaking the horizon it is a minor feature within the open view from this location.</p> <p>The cumulative magnitude of change for consented projects would remain negligible.</p> <p><u>Operational, Consented, In Planning</u></p> <p>The Temple Park Farm turbine appears in the same general view as the East Blair Farm and Colliston turbines. The larger scale turbine appearing as a slightly more prominent feature than the Colliston and East Blair developments.</p> <p>There are also theoretical successive views towards the Demperston turbine to the north of the view, the turbine would be viewed solely against the landscape from this location.</p> <p>The cumulative magnitude of change for consented projects would remain negligible.</p>	
Type of Effect	On completion of the development the visual effect from this viewpoint would be permanent (reversible) and direct. The development would lead to a low magnitude of change and despite the careful design of the project a man made vertical structure in this area would always lead to a negative effect.	
Assessment of Visual Effects	Sensitivity:	<i>High</i>
	Magnitude:	<i>Low</i>
	Type of Effect:	<i>Permanent, direct and negative</i>
	Level of Effect:	Moderate

Figure 5.18	Viewpoint 9: Loch Leven Lodges	
Description	<p>Viewpoint 9 is taken from E312902 N704599 looking north-north-west towards the site which is located ~9.4km away. The viewpoint was taken from the edge of Loch Leven, near to the Holiday Cabins located on the south eastern edge of the Loch.</p> <p>The view is very open from this location. The foreground is dominated by the large expanse of water of Loch Leven, with St Serf's Island visible in the middle of the Loch. The shoreline is heavily wooded with a mixture of vegetation lining the Loch side paths. The landscape on the opposite side of the loch rolls up from the water's edge, taking on a more upland feel. To the left of the view the skyline is dominated by the Ochil Hills, the horizon remains fairly uniform throughout the remainder of the view, with the Lomond Hills coming into the view to the far right of the view. The landcover is a mixture of arable fields with some significant areas of woodland visible over the areas of higher ground. The landcover is a mixture of plantation crops and rough and improved grazing land. A number of areas of shelterbelt also appear along the horizon line. The settlement of Kinross is visible on the opposite shore of the Loch as well as Kinnesswood partially visible on the far shore to the right of the view.</p>	
Sensitivity	The viewpoint is representative of visitors to the area and is therefore considered to be of High sensitivity.	
Magnitude of Change	<p>Receptors of this view would be ~9.4km from Colliston Farm.</p> <p>From this location the proposed turbine is viewed predominantly against the open landscape on the opposite side of the Loch. At this distance and viewed against the open landscape the turbine would be a barely discernible feature in the view. The open panorama would remain largely unaffected by the introduction of a single 45.7m to tip turbine from this location with the turbine occupying a negligible extent of both the horizontal and vertical view.</p> <p>The overall magnitude of change for the development is considered to be Negligible, leading to a Moderate/Minor level of effect which would not be significant.</p>	
Cumulative Impact	<p><u>Operational</u></p> <p>The Lochelbank development appears alongside the Colliston Farm turbine, the turbines are viewed on the horizon line to the right of the proposed turbine. The intervening topography provides screening over the lower section of the development with hubs and blades predominantly visible against the sky.</p> <p>There are theoretical successive views towards Green Knowes, however these views are heavily screened by areas of vegetation from this location.</p> <p>The cumulative magnitude of change for consented projects would be negligible.</p> <p><u>Operational, Consented</u></p> <p>There are theoretical views of the East Blair Farm turbine from this location, the single turbine is heavily screened by the intervening landscape, limiting potential views, and it is unlikely that it will be an easily discernible feature in this open vista.</p> <p>The cumulative magnitude of change for consented projects would remain negligible.</p> <p><u>Operational, Consented, In Planning</u></p> <p>The Temple Hill turbine also appears in this vista, the single turbine is also heavily screened by the landscape on the opposite banks of the Loch, appearing much smaller than the surrounding hill summits it is unlikely to be a prominent feature within the view and have a minimal impact on the setting of the views across the Loch.</p> <p>The cumulative magnitude of change for consented projects would remain negligible.</p>	
Type of Effect	On completion of the development the visual effect from this viewpoint would be permanent (reversible) and direct. The development would lead to a negligible magnitude of change and despite the careful design of the project a man made vertical structure in this area would always lead to a negative effect.	
Assessment of Visual Effects	Sensitivity:	<i>High</i>
	Magnitude:	<i>Negligible</i>
	Type of Effect:	<i>Permanent, direct and negative</i>
	Level of Effect:	Moderate/Minor

Figure 5.19	Viewpoint 10: Kinnoull Hill	
Description	<p>Viewpoint 10 is taken from E313655 N722709 looking south towards the site which is located ~14.6km away. The viewpoint is located near the summit of Kinnoull Hill to the east of Perth. Kinnoull Hill is a popular destination with walkers and runners as well as other recreational users.</p> <p>Due to its elevated position, the view to the south is very open, with long distance views possible. The peaks of east and west Lomond form the horizon line to the left of the view, while the Ochils form the skyline across the centre and right hand side of the view. Across the lower ground and in the foothills the land is dominated by large, predominantly rectilinear, arable fields. With a variety of field coverings on display ranging from rough and improved grassland to plantation crops. Over higher ground the arable farmland gives way to large areas of deciduous woodland with the land cover changing to a more upland moorland feel with rough grazing land and heather around the hilltops. Across the view there are several farms and associated outbuildings and infrastructure which reinforce the rural feel of the majority of the view. To the right of the view the edge of the settlement of Perth is almost visible, along with the River Tay and running alongside this the M90 motorway can be seen meandering through the landscape before disappearing over the middle distance behind the landscape. Along the horizon line the operational windfarm of Lochelbank is partially visible. Woodland screens views to the north from this location.</p>	
Sensitivity	The viewpoint is representative of the recreational users of Kinnoull Hill and is therefore considered to be of High sensitivity.	
Magnitude of Change	<p>Receptors of this view would be ~14.6km from the proposed turbine.</p> <p>The Colliston Farm turbine would be viewed on the horizon from this location, with the turbine viewed solely against the sky. The addition of a single turbine to this view would have little impact at this distance and would be a barely distinguishable feature in this wide open vista, occupying a negligible extent of both the horizontal and vertical view.</p> <p>The overall magnitude of change for the development is considered to be Negligible, leading to a low level of effect which would not be significant.</p>	
Cumulative Impact	<p><u>Operational</u></p> <p>Lochelbank appears on the horizon, sitting up in the landscape the development is a more noticeable feature than the Colliston Farm turbine from this location.</p> <p>Successive views occur with Green Knowes and Burnfoot Hill, although these developments are heavily screened by the landscape, neither development will feature prominently in this view.</p> <p>The cumulative magnitude of change for consented projects would be negligible.</p> <p><u>Operational, Consented</u></p> <p>There are successive views with the Pitcarlie turbine to the east to the east. The single turbine would not have an impact on the cumulative views from this location, viewed predominantly against the open landscape.</p> <p>The cumulative magnitude of change for consented projects would remain negligible.</p> <p><u>Operational, Consented, In Planning</u></p> <p>There are no planning turbines visible in the same view as Colliston Farm, however, there are successive partial views of Dempsterston to the east in a similar views to the consented Pitcarlie turbine. These developments would not have an impact on the cumulative views from this location, viewed predominantly against the open landscape.</p> <p>The cumulative magnitude of change for consented projects would remain negligible.</p>	
Type of Effect	On completion of the development the visual effect from this viewpoint would be permanent (reversible) and direct. The development would lead to a negligible magnitude of change and despite the careful design of the project a man made vertical structure in this area would always lead to a negative effect.	
Assessment of Visual Effects	Sensitivity:	<i>High</i>
	Magnitude:	<i>Negligible</i>
	Type of Effect:	<i>Permanent, direct and negative</i>
	Level of Effect:	Moderate/Minor

Figure 5.20	Viewpoint 11: Knock Hill	
Description	<p>Viewpoint 11 is taken from E305390 N693786 looking north-eastwards towards Colliston Farm which is located ~16.0km away. The viewpoint was taken from the summit of Knock Hill.</p> <p>Knock Hill is one of the highest points in west Fife and as such the view from this elevated location feels very open. Long distance views to the north and east are possible with the Ochil hills forming the horizon line to the north and the Lomond Hills to the east. The intervening landscape houses the Cleish Hills, these peaks sit slightly lower in the landscape than Knock Hill and are heavily wooded. The landcover is a mixture of arable farming with rough grazing the predominant land use in the foreground of the view. Significant areas of coniferous woodland are visible across the Cleish Hills in the middle ground, as well as across the areas of higher ground to the north. The settlement of Dollar is visible in the shadow of the Ochil Hills to the north-west, as well as numerous individual properties and farms which are spread across the relatively flat plateau of the loch basins below. The operational turbines of Green Knowes are visible on the horizon to the north-west of the viewpoint. Three prominent telecommunication masts occupy the southern edge of the summit.</p>	
Sensitivity	The viewpoint is representative of recreational visitors to Knock Hill and is therefore considered to be of High sensitivity.	
Magnitude of Change	<p>Receptors of this view would be ~16.0km from Colliston Farm.</p> <p>The proposed development would be viewed solely against the landscape from this location. At this distance, viewed against the vast landscape of Fife and Perth and Kinross it is unlikely to be a discernible feature.</p> <p>The overall magnitude of change for the development is considered to be Negligible, leading to a low level of effect which would not be significant.</p>	
Cumulative Impact	<p><u>Operational</u></p> <p>The operational development of Lochelbank appears to the left of Colliston Farm, the turbines are heavily screened by the surrounding topography.</p> <p>Successive views occur with Green Knowes which appear on the opposite horizon line to the north-west of the view, the turbines are clearly visible from this location, due to the relatively limited visibility of Colliston Farm.</p> <p>The cumulative magnitude of change for consented projects would be negligible.</p> <p><u>Operational, Consented</u></p> <p>The Pitcarlie turbine appears theoretically visible to the right of the Colliston Farm turbine, however, it is not predicted that there will be any views of this development from this location</p> <p>The cumulative magnitude of change for consented projects would remain negligible.</p> <p><u>Operational, Consented, In Planning</u></p> <p>The Cleish Hills and Blair Adam Forest windfarms appear much more prominently in the view from this location, located on the nearby summits within the neighbouring Cleish Hills the relatively insignificant visibility of Colliston farm would lead to The cumulative magnitude of change remaining negligible.</p>	
Type of Effect	On completion of the development the visual effect from this viewpoint would be permanent (reversible) and direct. The development would lead to a medium magnitude of change and despite the careful design of the project a man made vertical structure in this area would always lead to a negative effect.	
Assessment of Visual Effects	Sensitivity:	<i>High</i>
	Magnitude:	<i>Negligible</i>
	Type of Effect:	<i>Permanent, direct and negative</i>
	Level of Effect:	Moderate/Minor

Appendix 2 – Updated Ecological Assessments

Ecological Assessment

Colliston Farm



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1 ECOLOGY

1.1 Introduction

This section considers the potential effects of the proposed wind turbine on the nature conservation interests on and around the site, sets out the findings of the various surveys carried out and provides an assessment of impact on key sensitive species and habitats. These assessments were carried out by Garry Mortimer PhD, GLM Ecology, an experienced field ecologist with several years experience of ecological assessments at wind farm sites.

1.2 Regulations and Guidance

This ecological impact assessment (EcIA) pays explicit regard to the requirements of:

- Council Directive 79/409/EEC on the conservation of wild birds (the “Birds Directive”);
- Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (the “Habitats Directive”);
- The Conservation (Natural Habitats, &c.) Amendment (Scotland) Regulations 2007 (the “Habitats Regulations”, which translates the Birds Directive and Habitats Directive into UK law);
- The Wildlife and Countryside Act 1981, as amended;
- Nature Conservation (Scotland) Act 2004;
- SPP – Scottish Planning Policy (subject policy: Landscape and Natural Heritage 2010; and
- The UK Biodiversity Action Plan (BAP).

The EcIA was carried out using the following documents:

- Siting and Designing Wind Farms in the Landscape, SNH 2009;
- Assessing the impact of small-scale wind energy proposals on the natural heritage, SNH 2011;
- Assessing the cumulative impact of onshore wind energy developments SNH 2012;
- Assessing connectivity with Special Protection Areas (SPAs), SNH 2012;
- Recommended bird survey methods to inform impact assessment of onshore wind farms, Scottish Natural Heritage, November 2013;
- Wind farms and birds: Calculating a theoretical collision risk assuming no avoiding action, Scottish Natural Heritage, 2000;
- Developing field and analytical methods to assess avian collision risk at wind farms, Band et al, 2007;
- Technical Information Note 59 Bats and single large wind turbines: joint agencies interim guidance Natural England 18 September 2009; and
- Technical Information Note 51 Bats and onshore wind turbines Interim guidance Natural England 11 February 200;
- BCT (2011) *Bat Surveys – Good Practice Guidelines; surveying for onshore wind farms*. Bat Conservation Trust, London, UK.

The EcIA has been carried out according to current guidance published by the Institute of Ecology and Environmental Management (2006), which is recognized as best practice.

1.3 Impact Assessment Methodology

The EcIA has been carried out according to current guidance published by the Institute of Ecology and Environmental Management (2006), which is recognized as best practice. These guidelines set out a process of identifying the value of each ecological receptor and then characterizing the effects that are predicted, before discussing the effects on the integrity or conservation status of the receptor, proposed mitigation and residual effects.

1.4 Ecological Features Evaluation Criteria

A value or sensitivity has been assigned to each ecological receptor based on the following factors:

- Importance at a geographical scale, from local to international level;
- Designation status, e.g., SPA, SSSI, non-statutory designated sites, etc.;
- Biodiversity value, e.g., national BAP habitat/species, local BAP species, etc.; and
- Social, community and economic value.

The rationale for the valuation of sensitivity has been included for each receptor for which a significant effect is predicted. Table 1 provides examples, which are designed to give guidance as to how levels of sensitivity are typically derived. The value of sensitivity of an ecological receptor refers to land within the development area and a recognised 500m zone of effect.

Table 1. Guideline definitions for the sensitivity of ecological receptors

Sensitivity of Receptor	Examples (Guidance to evaluation)
International	<p>An internationally designated site or candidate site (SPA, pSPA, SAC, pSAC , Ramsar site, Biogenetic Reserve) or an area which the country agency has determined meets the published selection criteria for such designation, irrespective of whether or not it has yet been notified.</p> <p>A viable area of a habitat type listed in Annex I of the Habitats Directive, EU 1992 or smaller areas of such habitat which are essential to maintain the viability of a larger whole.</p> <p>Any regularly occurring population of an internationally important species, which is threatened or rare in the UK, i.e. it is a UK Red Data Book species or listed as occurring in 15 or fewer 10km squares in the UK (categories 1 and 2 in the UK Biodiversity Action Plan (BAP)) or of uncertain conservation status or of global conservation concern in the UK BAP.</p> <p>A regularly occurring, nationally significant population/number of any internationally important species.</p>

Sensitivity of Receptor	Examples (Guidance to evaluation)
National	<p>A nationally designated site (SSSI, ASSI, NNR, Marine Nature Reserve) or a discrete area, which the country conservation agency has determined meets the published selection criteria for national designation (e.g. SSSI selection guidelines) irrespective of whether or not it has yet been notified.</p> <p>A viable area of a priority habitat identified in the UK BAP, or of smaller areas of such habitat, which are essential to maintain the viability of a larger whole.</p> <p>Any regularly occurring population of a nationally important species, which is threatened or rare in the region or county (see local BAP).</p> <p>A regularly occurring, regionally or county significant population/number of any nationally important species.</p> <p>A feature identified as of critical importance in the UK BAP.</p>
Regional	<p>Viable areas of key habitat identified in the Regional BAP or smaller areas of such habitat which are essential to maintain the viability of a larger whole.</p> <p>Viable areas of key habitat identified as being of Regional value in the appropriate Natural Area profile.</p> <p>Any regularly occurring, locally significant population of a species listed as being nationally scarce which occurs in 16-100 10km squares in the UK or in a Regional BAP or relevant Natural Area on account of its regional rarity or localisation.</p> <p>A regularly occurring, locally significant number of a regionally important species.</p> <p>Sites, which exceed the County-level designations but fall short of SSSI selection guidelines, where these occur.</p>
County	<p>Semi-natural ancient woodland greater than 0.25 ha.</p> <p>County/Metropolitan sites and other sites which the designating authority has determined meet the published ecological selection criteria for designation, including Local Nature Reserves selected on County/metropolitan ecological criteria (County/Metropolitan sites will often have been identified in local plans).</p> <p>A viable area of habitat identified in County BAP.</p> <p>Any regularly occurring, locally significant population of a species which is listed in a County/Metropolitan “red data book” or BAP on account of its regional rarity or localisation.</p> <p>A regularly occurring, locally significant number of a County important species.</p>
District	<p>Semi-natural ancient woodland smaller than 0.25 ha.</p> <p>Areas of habitat identified in a sub-County (District/Borough) BAP or in the relevant Natural Area profile.</p> <p>District sites that the designating authority has determined meet the published ecological selection criteria for designation, including Local Nature Reserves selected on District/ Borough ecological criteria (District sites, where they exist, will often have been identified in local plans).</p> <p>Sites/features that are scarce within the District/Borough or which appreciably enrich the District/Borough habitat resource.</p> <p>A diverse and/ or ecologically valuable hedgerow network.</p> <p>A population of a species that is listed in a District/Borough BAP because of its rarity in the locality or in the relevant Natural Area profile because of its regional rarity or localisation.</p> <p>A regularly occurring, locally significant number of a District / Borough important species during a critical phase of its life cycle.</p>

Sensitivity of Receptor	Examples (Guidance to evaluation)
Parish (Local)	Areas of habitat considered to appreciably enrich the habitat resource within the context of the Parish or neighbourhood, e.g. species-rich hedgerows. A regularly occurring but low number of locally common protected species within or adjacent to the Development area. Local Nature Reserves selected on Parish ecological criteria.
Very Local	Areas of habitat that have a limited ecological value. Plant assemblages tend to be species poor, but may be utilised by a small number of faunal species. Those habitats that have an effect of enriching and complimenting the local natural environment to a small degree.
Low	Areas of habitats considered to be of very limited ecological value. They are not representative of natural habitats and are very species poor. Those habitats that do not enrich the local natural environment.
NB: Where species of habitats occur in more than one category, the highest value is applicable.	

1.5 Characterisation of Effects/Magnitude of Effect

The effects on individual receptors are described in relation to a range of factors. These include the magnitude, extent (either in area or population terms), duration, timing and frequency of the effect on the structure and function of the ecosystem. Effects in combination may have a cumulative effect that is greater than when the same effects occur in isolation. Combination effects include the separate effects of the scheme upon a feature (e.g., effects as a result of the construction and operation stage), or the combined effects of a number of schemes that affect the same receptor. Consideration is given to the longevity of effects, based on the life span of the Development and reversibility of the effect.

The criteria used to determine the character (magnitude, scale, duration, reversibility) of the ecological effects are given in Table 2.

Table 2. Definition of terms relating to the Character of ecological effects

Character/Magnitude	Definition
Very high	Total loss or very major alteration to key elements or features of the baseline conditions such that post development character, composition or attributes will be fundamentally changed and may be lost from the site altogether. For example the loss of a great crested newt breeding pond or loss/destruction of a maternity roost of a rare species of bat, loss/destruction of hibernation roost for bats, destruction of a Annex1 priority habitat or a statutory designated site. Generally irreversible and permanent. Guide: >80% of population or habitat lost
High	Major alteration to key elements or features of the baseline (pre-development) conditions such that post development character, composition or attributes will be fundamentally changed. For example the loss of a bat maternity roost, damage to a great crested newt breeding pond, pollution of a stream containing white clawed crayfish, damage to annex 1 priority habitat. Generally reversible after long period of time. Guide: 20-80% of population or habitat lost
Medium	Loss or alteration to one or more key elements or features of the baseline conditions such that post development character, composition or attributes of baseline will be

Character/ Magnitude	Definition
	partially changed. For example loss of optimal foraging habitat for great crested newts, death or injury to a low number of a locally rare species, loss of species rich ancient hedgerow, severance of a bat flight path, temporary abandonment of a bat roost. Generally reversible with mitigation on a short timescale Guide: 5-20% of population or habitat lost
Low	Minor shift away from baseline conditions. Change arising from the loss or alteration will be discernible but underlying character, composition or attributes of baseline condition will be similar to pre-development circumstances or patterns. For example loss of sub optimal foraging habitat for Great crested newt, loss of species poor hedgerow, death or injury of a very small number of common species of bat. Generally reversible without mitigation in short timescale. Guide: 1-5% of population or habitat lost.
Negligible	Very slight change from baseline condition. Change barely distinguishable, approximating to the “no change” situation. Guide: <1% of population or habitat lost.

1.6 Significance Criteria

An ecologically significant effect is defined as an effect (adverse or positive) on the integrity of the site or ecosystem(s) and/or the conservation status of habitats or species within the identified zone of effect for the Development. The definitions of integrity and conservation used for this assessment are those detailed in the Institute of Ecology and Environmental Management (IEEM) Guidelines for Ecological Impact Assessment, namely:

- Integrity is the coherence of ecological structure and function, across a site's whole area, that enables it to sustain a habitat, complex of habitats and/or the levels of populations of species; and
- Conservation status for habitats is determined by the sum of the influences acting on the habitat and its typical species that may affect its long-term distribution, structure and functions as well as the long-term survival of its typical species within a given geographical area.

The combined assessment of the effect characterisation and the sensitivity of ecological receptors have been used to determine whether or not an effect is significant with respect to the EIA Regulations. These two criteria have been cross-tabulated to assess the overall significance of the effect in Table 4. Effects with significance of moderate or major are considered to be significant in terms of the EIA Regulations.

Table 3. Matrix used to assess the significance of potential effects upon ecological receptors.

Magnitude of effect	Sensitivity of receptor	High (International and National)	Medium (Regional and District)	Low (Parish/ (Local))	Negligible (Very Local/Low)
High		Major	Major	Moderate	Negligible
Medium		Major	Moderate	Moderate	Negligible
Low		Moderate	Moderate	Minor	Negligible
Negligible		Negligible	Negligible	Negligible	Negligible

1.7 Site Background and Context

An initial desk based search, walkover survey and scoping report was carried out in June 2011. Designated sites and associated protected species and habitats at a local and regional level have been identified through that process. A description of the local area in relation to designated sites with ecological interests and the findings of an initial desk based review of the area are presented in the context of the following sections. The following resources were used:

- NBN Gateway¹
- RSPB sensitivity maps²;
- Scottish Natural Heritage (SNH) Sitelink³;
- The Scottish Biodiversity List⁴;
- Scottish Raptor Group⁵; and
- Multi Agency Geographic Information for The Countryside⁶.

1.8 Designated Sites

The following sites were identified within 20km from the site:

Site	Designation	Features
Loch Leven	SPA	Designated for overwintering wildfowl.
Firth of Tay & Eden	SPA	Designated for overwintering wildfowl.
South Tayside Goose Roosts	SPA	Designated for overwintering wildfowl.
The following sites were identified within 5km from the site:		
Lacesston Muir	SSSI	Designated for dry heath.
The following sites were identified within 1km from the site:		
None		

1.9 Scope of Ecological Assessments

The scope of the present EcIA was derived from the initial site background and context study above, the local knowledge and experience of the ecologist and guidance from SNH. The EcIA considers the following issues:

- Breeding Birds;
- Winter Walkover Surveys;
- VP surveys
- Bats;
- Badgers;
- Phase 1 Habitat Survey.

The scope of ecological assessments was in accordance with the guidance given by SNH⁷ unless otherwise agreed with SNH.

2 SITE DESCRIPTION

The site at Colliston Farm (Figures 1, 2) is an area of hilly farmland to the south west of Glenfarg. The site is predominantly arable fields with a paucity of hedgerows and the occasional mature tree line (Figures 2, 3, 4). There are two small dense coniferous plantations on site and some mature beech trees near the farm house (Figure 5, 6, 7).

The proposed turbine location (see Figure 2) is to the south of the farmhouse in an arable field (Figure 8). There is a paucity of hedgerows and groundcover on site with virtually no demarcation between fields. There is no standing or running water on site apart from ditches.

There are farmhouses in the area consisting of the usual mixture of older outbuildings and newer barns.

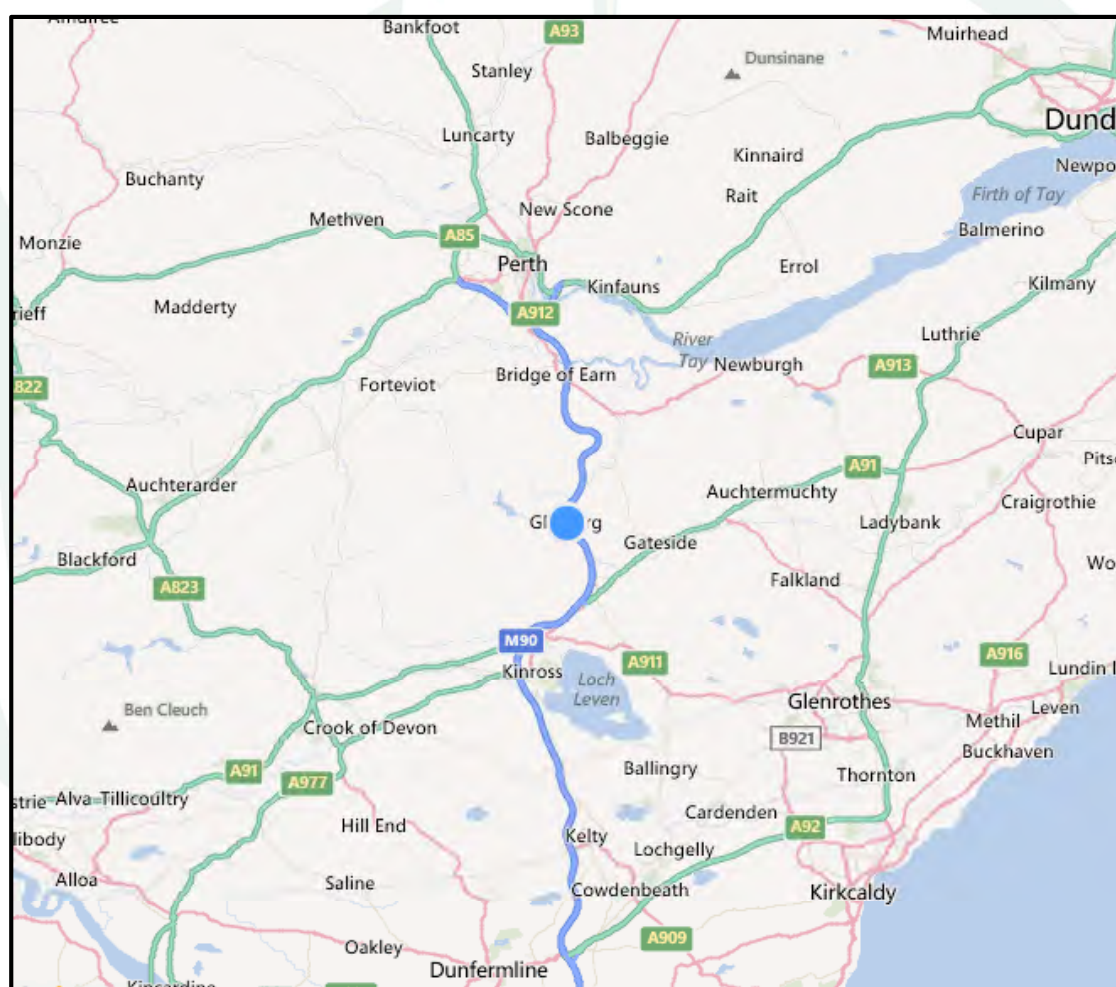


Figure 1. Site location north of Kinross.

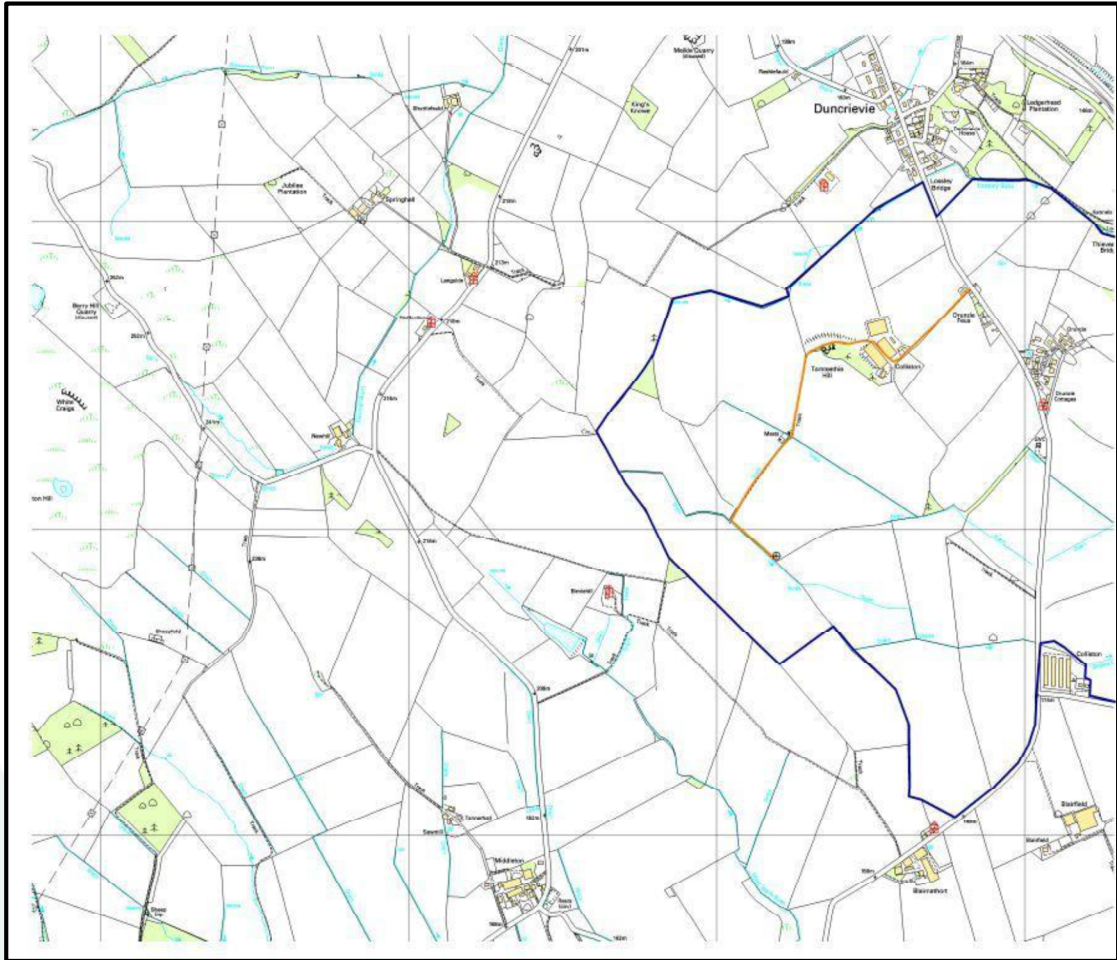


Figure 2. Turbine location and access track.



Figure 3. Arable fields



Figure 4. Arable fields



Figure 5. Arable fields and species poor hedgerows



Figure 6. Small conifer plantation.



Figure 7. Mature deciduous trees and coniferous plantations near farm.



Figure 8. Habitat near turbine location.

3 ORNITHOLOGY

Generally, ornithological surveys on and around the site are required to assess potential impacts of birds throughout the year, which could arise due to:

- Potential loss, fragmentation and degradation of bird habitats arising from the construction of turbine bases, crane pads, access tracks, a sub-station and temporary construction compounds and power lines;
- Potential displacement of hunting or migrating birds through avoidance of turbines, work staff and machinery;
- Disturbance to birds due to noise from operating turbines;
- Potential disturbance to nesting birds (for example, displacement of birds from breeding habitats) resulting from the construction activities; and
- Potential for birds to collide with turbine blades and power lines.

It should be noted that the issues identified above are more likely to be significant for larger wind turbine developments; however, these were considered for this application.

3.1 Survey Scope & Methodology

To assess the movements of birds year round and presence of breeding birds on site and in the surrounding area, a variety of survey methods were carried out, including Common Bird Census, Winter Walkovers and Vantage Point Surveys.

3.1.1 Breeding Bird Survey

The area surveyed was the area half a kilometer round the proposed turbine site (SNH 2006) on ground owned by the developer. Other ground was surveyed by listening along the boundary. The survey work was based on the standard BTO Common Bird Census (CBC) technique where the Survey Area is walked and the route varied each survey. The number of survey visits was the same as a BBS survey (three visits)

rather than the number required for a full CBC survey (ten visits). There were three day visits in approximately late April, mid May and early June. This is a standard technique for breeding bird surveys as used for many years as per BTO's Breeding Bird Survey Instructions⁸ for their Common Birds Census⁹. This involves making a series of visits throughout the breeding season, during which all birds seen or heard in the area are recorded on large-scale maps using standard codes denoting their species and behaviour. The area was searched by walking transects along field edges, roads and paths. During each visit, the location of each bird was mapped. By aggregating these individual records, breeding territories were revealed (Bibby et al. 2000)¹⁰ for each species, the number of breeding territories were then recorded. Birds of conservation concern (Eaton et al. 2009)¹¹ were identified. The designations used were: Breeds (B), Non Breeder (NB) and Possible Breeder (PB).

3.1.2 Winter Walk Over's

To survey the wintering bird populations a series of three-winter walk over's were carried out between October and March following the standard guidance from SNH. A pre-plotted route was taken that covered the entire site and starting points were varied for each visit. The survey area was within 500m of the proposed turbine. Transect lines were walked with all birds seen recorded. Care was taken not to record the same birds on consecutive transects

3.1.3 Vantage Point Surveys

Data from VP surveys are utilised as part of the assessment of potential impacts including: species presence, density, distribution and behaviour. A single VP was used as this gave clear views of the whole site, allowing all flights to be recorded in detail to 500m outwith the site. VP watches were 36 hours each for the autumn-winter-spring periods (September-May). Due to the proximity of SPAs with geese and wildfowl the VPs encompassed both dawn and dusk surveys as well as daytime periods as per SNH guidance. Primary target species were identified as all Special Protection Areas (SPA) qualifying species including geese, wildfowl, waders and Schedule 1 raptors. The location, direction of flight and estimated height above the ground of each target species were recorded. During the VPs flight data for both primary and secondary target species were recorded. Details of species, number of birds, flight height (in bands), duration and direction were recorded. The following height bands were used in the surveys: A- <20m, B- 20-125m, C- >125m. Any flights recorded at band B and within 200m of the proposed turbine location were classified as being within the collision risk window.

3.2 Survey Results

3.2.1 Breeding Birds

Thirteen species of birds were recorded as breeding within the survey area (Table 4). All of the recorded birds are recorded locally as common residents or summer visitors whose populations are not threatened and are in favorable conservation status in Scotland. None are specially protected. The number of breeding species is poor due to the lack of trees, hedgerows and groundcover. Nationally one species, yellowhammer is on the red list of birds of conservation concern with another six on the amber list (Eaton et al. 2009).

Table 4. Bird species list for Colliston: April – June.
Breeds (B), Non Breeder (NB), Possible Breeder (PB)

Species	Latin	April	May	June	Status
Buzzard	<i>Buteo buteo</i>	1 seen			NB
Swallow	<i>Hirundo rustica</i>		2 on	5 on	B
Skylark	<i>Alauda arvensis</i>	2 singing	3 singing	3 singing	B
Willow Warbler	<i>Phy. trochilus</i>		2 singing	3 singing	B
Whitethroat	<i>Sylvia communis</i>		4 singing	2 singing	B
Wren	<i>Troglodytes troglodytes</i>	Present	Present	Present	B
Dunnock	<i>Prunella modularis</i>	1 singing		Present	B
Blue Tit	<i>Parus caeruleus</i>	Present	Present	Present	B
Great Tit	<i>Parus major</i>	Present	Present	Present	B
Blackbird	<i>Turdus merula</i>	2 singing	4 seen		B
Mistle Thrush	<i>Turdus viscivorus</i>	1 singing	1 singing		B
Carrion Crow	<i>Corvus corone</i>	Present	Present	Present	B
Jackdaw	<i>Corvus monedula</i>	Small numbers	Small numbers	Small numbers	NB
Rook	<i>Corvus frugilegus</i>	Common	Common	Common	NB
Chaffinch	<i>Fringilla coelebs</i>	Small numbers	Small numbers	Small numbers	B
Siskin	<i>Spinus spinus</i>	50+ over			NB
Yellowhammer	<i>Emberiza citrinella</i>	3 singing	2 seen	2 singing	B

3.2.2 Protected Species

Schedule 1 Species

No species were recorded which are fully protected under Schedule 1 of the Wildlife and Countryside Act, 1981.

3.2.3 Wintering Birds – Walkovers.

In general there was a very poor selection of birds recorded in the study area due to the vast majority of the habitat being arable fields with limited groundcover present. In the walkovers common passerines that were recorded were mostly around the plantation and woodland near the farm and included flocks of tits, chaffinches, fieldfare and redwing. Rooks and jackdaws were frequently on and over site. No target species were seen and no geese were recorded foraging on site

3.2.4 VP Surveys

During the autumn-winter-spring periods a total of twenty-two flights of geese (approx. 3500 PG, 800 GJ) were recorded over the buffer zone or offsite. Only six flights were recorded over the site. The majority of flights were high and no flights were recorded in the collision risk zone. No geese were recorded foraging on site during any VP or any other survey work. Offsite flights of geese, particularly to the southeast were noted. No Schedule 1 raptors were recorded on site apart from one record of peregrine falcon in November and two juvenile white tailed sea eagles in March. Neither of these was in the collision risk zone.

Buzzards, sparrowhawk and kestrel were recorded intermittently. In autumn and in early spring small passages of lapwings and golden plover were recorded passing over the general area. None of these flights were classed as collision risk and were offsite.

4 BADGERS

4.1 Badger (*Meles meles*) Legislation

Both badgers and their setts are protected by law. The Protection of Badgers Act 1992 (Scottish Version) brings together all of the previous legislation specific to badgers (except their inclusion on Schedule 6 of the 1981 Wildlife and Countryside Act as amended Nature Conservation (Scotland) Act 2004). As a result it is an offence to:

- Willfully kill, injure, take, possess or cruelly ill-treat a badger, or to attempt to do so;
- To intentionally or recklessly interfere with a sett;
- To disturb a badger when it is occupying a sett;
- Damage or destroy a sett; and
- To obstruct access to, or any entrance of a badger sett.

A badger sett is defined in the legislation as '*any structure or place, which displays signs indicating current use by a badger*'. '*Current use*' does not simply mean 'current occupation' and for licensing purposes it is defined as '*any sett within an occupied badger territory regardless of when it may have last been used*'. A sett therefore, in an occupied territory, is classified as in current use even if it is only used seasonally or occasionally by badgers, and is afforded the same protection in law.

4.2 Aims & Objectives

The aims of this assessment were:

- To assess whether badgers were present on site;
- If badgers are present to assess local population status and usage of the site;
- To recommend further survey work if required.

4.3 Data Review

A data search was carried out using NBN Gateway to determine if badgers had been recorded in the 10km square of which Colliston is enclosed.

4.4 Survey Methodology

The surveys consisted of a walkover of the site in 2012 and 2014 and ground within 250m of its boundary to visually inspect and assess the site for its potential to support badgers. Badgers surveys were carried out according to recommended guidelines^{12, 13, 14 and 15}. Evidence of badger activity searched for included:

- Setts: badger setts typically have characteristic shapes and dimensions;
- Paw prints and badger hair caught on hedges and fences;
- Foraging signs: foraging badgers leave distinctive marks when foraging;
- Characteristic worn pathways; and
- Latrines: badgers defecate in pits, often clustering several pits into a latrine.

4.5 Results

4.5.1 Data Review

NBN Gateway recorded no badger within the 10km grid square of the site.

4.5.2 Field Survey

No signs of badger or any protected mammals were recorded in any surveys.

5 BATS

5.1 Bat Legislation

Bats of all species in Britain and their roosts are protected under the Conservation (Natural Habitats, &c) Amendment (Scotland) Regulations 2007. Following recent changes to legislation in Scotland under this law it is illegal intentionally or recklessly to kill or injure a bat, to disturb a roosting bat or to damage, destroy or obstruct access to any bat roost. This applies to both summer and winter roosts, which may be in different structures. Any action, which is likely to disturb or damage a bat roost, requires a license from the Scottish Executive.

5.2 Aims & Objectives

To determine what bat species are present on the site and whether the habitat is utilized for roosting, foraging or commuting by bats.

5.3 Data Review

A data search was carried out using NBN Gateway to determine if any bat species had been recorded in the 10km square of which Colliston is enclosed.

5.4 Survey Methodology

A habitat and bat assessment survey was carried out at the site in June 2012 followed by bat detector surveys in June and September in accordance with guidance from the Bat Conservation Trust¹⁶ and Natural England¹⁷. The objectives of the bat surveys were to identify whether the site would be considered suitable for roosting bats and whether bats were present on site. The aim was to provide sufficient evidence so that the potential impacts of the proposed development on any local bat populations could be assessed and if appropriate, mitigation suggested.

5.5 Habitat Survey

A daytime field survey was carried out in June 2012. The site was surveyed for potential flight lines/commuting routes, roosts and foraging areas and the habitat assessed for its overall suitability for bats. Any potential foraging areas were examined and linear features were assessed for their suitability as flight lines or commuting pathways.

5.6 Bat Detector Surveys

One visit was made on 10th July 2012. The dusk survey was carried out from approximately 30mins before sunset to 2.0hrs after sunset. The dawn survey was from approximately two hours before sunrise to 30mins after sunrise (Table 6) The site was divided into a circular transect which were surveyed constantly by two individual surveyors starting at opposite ends of the transect on each visit.

Table 6. Survey times and weather conditions.

Survey	Survey Area	Date	Sun Set	Sun Rise	Time	Weather
Night Surveys						
1	Dusk	09/07/12	21.55		21.30-23.45	W3. 3/8.14C
	Dawn	10/07/12		04.45	03.00-05.20	W2.2/8.12C
	Dusk	15/09/12	19.40		19.15-22.05	E2. 0/8. 10.C

The transect was focused on the proposed turbine location with strategic stopping points. These points encompassed all habitats found on site and included the proposed turbine location, open fields and tracks. Bats were surveyed at all times and at stopping points using Bat Box ultrasound bat detectors in conjunction with a mini-disc inline recorder between 20 - 120 MHz. Any potential bat calls on the mini discs were analysed using the Bat Sound software package and identified to species level.

5.7 Results

5.7.1 Data Review

NBS Gateway revealed the following bat species recorded in the 10km grid square based on Colliston.

- Common pipistrelle *Pipistrellus pipistrellus*.
- Soprano pipistrelle *Pipistrellus pygmaeus*
- Natterers bat *Myotis nattereri*
- Brown long eared bat *Plecotus auritus*

5.7.2 Habitat Survey Results

Buildings

No buildings are within 500m of the turbine.

Trees

No trees within 500m of the turbine would appear to have roost potential.

Foraging Areas

There would appear to be very limited foraging areas on site over arable fields.

Bat Detector Survey Results

Two soprano pipistrelles were recorded at Colliston Farm in both surveys.

6 PHASE 1 HABITAT SURVEY

6.1 Legislation

Legislation exists to protect habitats and floral species from destruction, degradation and loss as a result of development activities and include:

- The Conservation (Natural Habitats, & C.) Regulations 1994;
- Wildlife & Countryside Act 1981 (as amended); and
- The Nature Conservation (Scotland) Act 2004.

6.2 Aims & Objectives

The Phase 1 Habitat Survey aimed to:

- Identify and record broad habitats within the vicinity of the development area;
- Provide a description of habitat distributions and highlight any areas of ecological constraints in relation to the proposed development; and
- Contribute towards informing planning processes.

Whilst not a full botanical survey, the Phase I method enables a suitably experienced ecologist to obtain sufficient understanding of the ecology of a site so that it is possible either:

- To confirm the conservation significance of the site and assess the potential for impacts on habitats /species likely to represent a material consideration in planning terms; or
- To ascertain that further surveys of some aspect(s) of the site's ecology will be required before such confirmation can be made.

6.3 Data Review

An initial pre-visit desk study was conducted for the location of the proposed scheme at Colliston to establish ecological baseline context. These included consultation with Ordnance Survey (OS) maps and web-based satellite aerial imagery to familiarize with the site and to identify potential habitat features of nature conservation importance.

6.4 Survey Methodology

Phase I habitat survey is a standardised method of recording habitat types and characteristic vegetation, as set out in the Handbook for Phase I Habitat Survey – a technique for Environmental Audit¹⁸. The Phase I habitat survey undertaken in May 2012 covered the whole of the site and encompassed a 500m buffer envelope around this area. A colour coded GIS-based map in hard copy format was produced with associated colour key.

6.5 Results

6.5.1 Data Review

Review of OS maps and aerial imagery indicates the site at Colliston is located within a rural farmland locality. The contour information reveals a undulating rolling topography that rises from east to west. Dominant habitats present over the site comprise arable fields.

6.5.2 Field Survey

The habitats present within the 500-meter proposed turbine and track survey area are presented in Figure 12 and Table 8.

Phase 1 Habitat Type
A1.1.1 Broadleaved woodland - semi-natural
A1.2.2 Coniferous woodland - plantation
A2.2 Scrub - scattered
A3.1 Broadleaved scattered trees
B4 Improved grassland
G2 Ditch Systems
J1.1 Cultivated land - arable
J2.2.1 Defunct hedge - native species-rich
J2.4 Fence
J2.5 Wall
Road & Farm Tracks

Arable Farm Fields

The majority of fields at Colliston are used as arable fields (J1.1). The propose turbine location is within one of these arable fields.

Improved grazing farm fields

Some improved grassland grazing fields (B4) are also present on site and are utilised by livestock, such as sheep and contain agriculturally improved grasses, such as, perennial ryegrass (*Lolium perrene*) and also including clover (*Trifolium repens*), creeping buttercup, (*Rannunculus repens*), common daisy (*Bellis perennis*) and sheeps sorrell (*Rumex acetosella*).

Ditch systems

Ditch systems (G2) can be found on site. Most of the ditches are bordered with wire & post fencing (J2.4) for stock proofing, including the remains of old stone walls. Some of the ditch systems are dry.

Hedging, scattered trees and scrub

In some of the field boundaries and along ditch systems there is defunct hedging (J2.2.1) with gaps and consists of hawthorn (*Crataegus monynga*) with the occasional beech (*Fagus sylvatica*) tree. Trees (A3.1) are also located along some of the field boundaries and are of ash (*Fraxinus excelsior*) and beech (*Fagus sylvatica*) with some rowan (*Sorbus aucuparia*), and hawthorn (*Crataegus monynga*). Along some of the field boundaries and the ditch systems there are areas of scattered scrub (A2.2) such as gorse (*Ulex europaeus*).

Broadleaved woodland

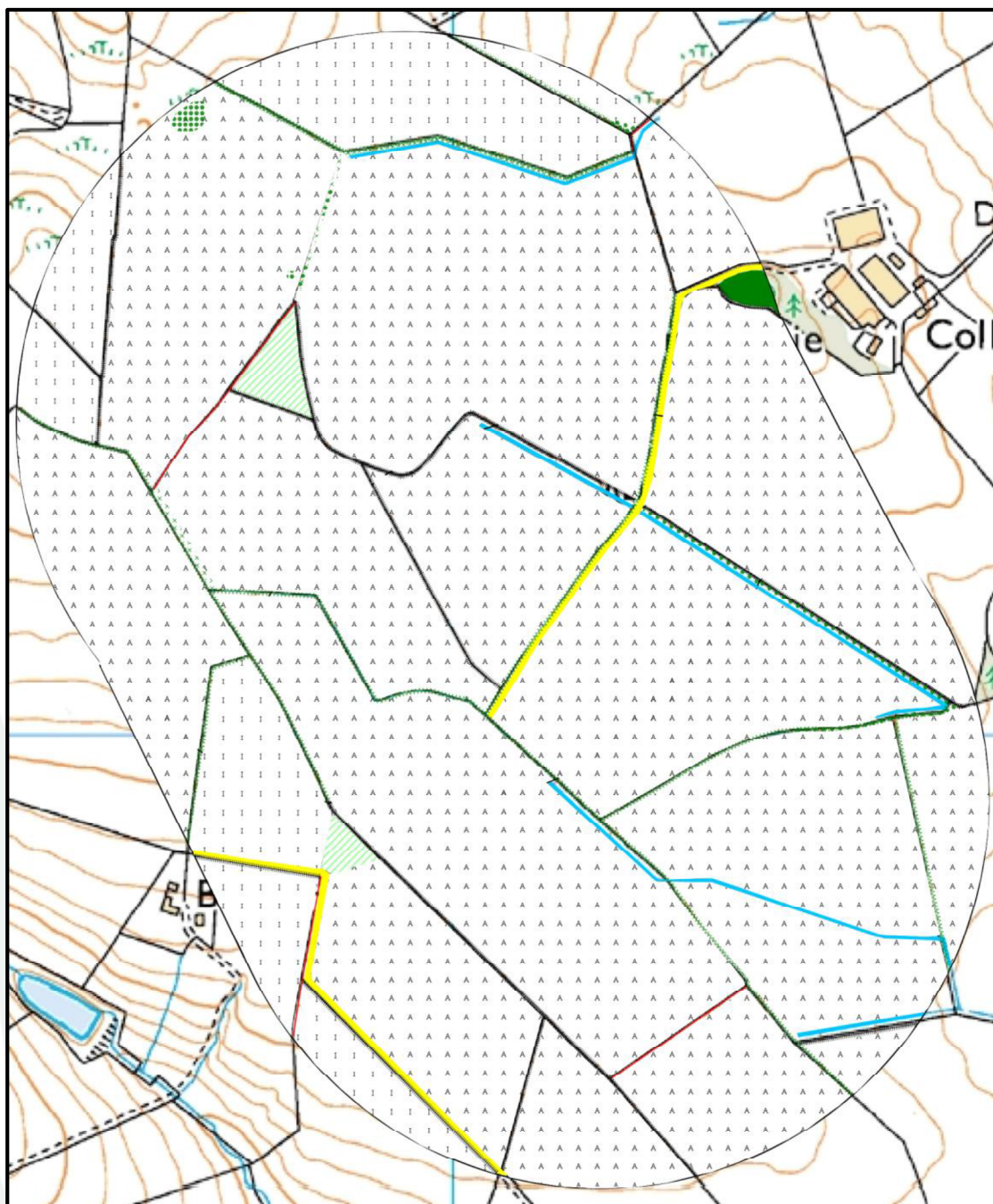
There is a small area of broadleaved trees (A1.1.1) close to the farm buildings. This joins on to a small area of coniferous trees.





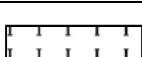
Coniferous woodland



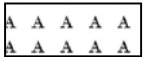
There are two triangular areas of coniferous woodland (A1.2.2) situated north and to the southwest on site, close to the proposed turbine location.

Farm tracks

There are two farm tracks on site, one originating from Colliston farm and one to the south west originating from another farm. There are no farm buildings within the site boundary.



Code	Phase 1 Habitats Description
	A1.1.1 Broadleaved woodland - semi-natural
	A1.2.2 Coniferous woodland - plantation
	A2.2 Scrub - scattered
	A3.1 Broadleaved scattered trees
	B4 Improved grassland

	J1.1 Cultivated/disturbed land - arable
	G2 Ditch Systems
	J1.1 Cultivated land - arable

Boundary Features




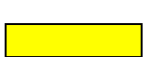
	J2.2.1 Defunct hedge - native species-rich
	J2.4 Fence
	J2.5 Wall
	Road & Farm Track

Figure 12. Habitats and associated legend

7 ASSESSMENT OF IMPACTS

7.1 Impacts on Breeding Birds

There was a poor breeding species list due to the majority of the habitat being arable fields. The majority of species recorded were in the small wooded areas near the farm well away from the turbine location. The species recorded would be considered as typical for these habitats and of low sensitivity. Considering the observations noted above, no significant impact on high sensitivity species could be expected, as the construction footprint will be on existing tracks and arable fields. No trees or groundcover are proposed to be removed. The magnitude of impact is considered to be negligible and overall the significance of impact to be no more than negligible.

8.1.1 Mitigation

No mitigation is deemed to be required.

8.2 Impacts on Schedule 1 Raptors

No Schedule 1 species were recorded breeding on any surveys and the habitat present would not be suitable for breeding and very limited for foraging.

8.2.1 Mitigation

No mitigation is deemed to be required.

8.3 Impacts on Wintering Birds

No Schedule 1 raptors apart from two juvenile white tailed sea eagles were recorded on site during any surveys. The sea eagles were recorded on 03/03/12 well offsite to the south displaying and calling. They were not recorded on subsequent visits. It is assumed that these birds are the regular birds that normally frequent Loch Leven. The only other raptors recorded were small numbers of buzzard, sparrowhawk and kestrel.

The three SPAs within the 20km zone around Colliston are all designated for wintering geese species and it is known that there is regular connectivity between the three sites. No geese or wildfowl or species of concern were recorded foraging on site during surveys at any time. Flights of geese were recorded in the general area, however these flights were predominately at a high level and none were in the collision risk zone.

The flights tended to be heading towards Loch Leven and none were considered as being in the collision risk zone. Flights were often noted at a much lower altitude towards the M90 and it appeared that the geese were following the motorway. The loss of a small area of arable land would not have an adverse affect on any wintering birds given the species present. Construction of the single turbine would be deemed to have a negligible significance of impact on any species.

8.3.1 Mitigation

No mitigation is deemed to be required.

8.4 Impacts on Badgers

No signs of badger were recorded.

8.4.1 Mitigation

No mitigation is deemed to be required.

8.5 Impacts on Bats

No bats were recorded within 500m from the turbine. Very small numbers of soprano pipistrelles were recorded at the farm. No roosts are present within a 500m zone of the turbine location as no buildings or suitable trees are present.

8.5.1 Mitigation

No mitigation is deemed to be required.

8.6 Impacts on Otters/Water Voles

No signs of otters or water voles were recorded.

8.6.1 Mitigation

No mitigation is deemed to be required.

8.7 Impacts on Habitats

A total of eight habitats are present within the site survey areas, of which the majority is arable fields. No nationally or internationally protected habitats were identified in this assessment. The habitat around the proposed access tracks and turbine location is arable fields.

There is the potential of a slight increase in run-off in to ditch systems through the ground disturbance of the construction phase but this is expected to be short lived, minor and further reduced through mitigation.

Some of the impacts predicted as a result of the proposed scheme can be considered generic impacts, which are typically associated with a development of this nature. The

development of the wind turbine scheme at Little Pinmore has been assessed as posing no significant impacts on commonly occurring habitats found on site. Therefore no specific prescriptions are recommended other than the general measures recommended below.

8.7.1 Mitigation

The following mitigation measures are proposed:

- Good construction site management should be implemented to minimise generation of litter, dust, noise and vibration. This should be controlled and monitored through the Contractor's Environmental Management Plan. Through adhering to best practices during construction and operation phases, fragmentation, disturbance and pollution to habitats present can be minimised;
- During construction management of excavated soil will focus on preventing silt runoff into the water environment during rainfall periods through careful design and maintenance of drainage/silt traps.

9 SUMMARY OF IMPACTS

Following the criteria set out in Tables 1, 2 & 3 the following table is an assessment of the impacts on flora and fauna at Colliston due to the proposed construction of a single turbine. It is also considered that the proposal would have no impact on any designated site within the relevant zones of impact.

Residual Effects	Value of receptor	Magnitude of change	Duration	Nature	Significance
Loss of foraging or breeding habitat to badgers/otters.	Parish (Local)	Low	Short term	Negative	Not significant
Loss of foraging or roosting habitat to bats	Parish (Local)	Low	Short term	Negative	Not significant
Bat mortality due to turbine collisions	Parish (Local)	Low	Short term	Negative	Not significant
Bird mortality due to turbine collisions	Parish (Local)	Low	Short term	Negative	Not significant
Loss of habitat to breeding birds	Parish (Local)	Low	Short term	Negative	Not significant
Loss of habitat to wintering birds	Parish (Local)	Low	Short term	Negative	Not significant
Loss of habitat/vegetation	Parish (Local)	Low	Short term	Negative	Not significant
Loch Leven SPA	International	Low	Short term	Negative	Not significant
South Tayside Goose Roosts SPA	International	Low	Short term	Negative	Not significant
Firth of Tay & Eden SPA	International	Low	Short term	Negative	Not significant
Lacesston Muir SSSI	National	Low	Short term	Negative	Not significant

10 CONCLUSION

It is proposed to construct a single wind turbine and associated infrastructure on an area of arable farmland situated at Colliston. A range of ecological assessments have been undertaken to investigate the ornithological and other ecological interest of the site and it is concluded that potential for this to be adversely affected by the current proposal is extremely unlikely.

=

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Best efforts were made to meet the objectives of this study through desktop study and field survey.

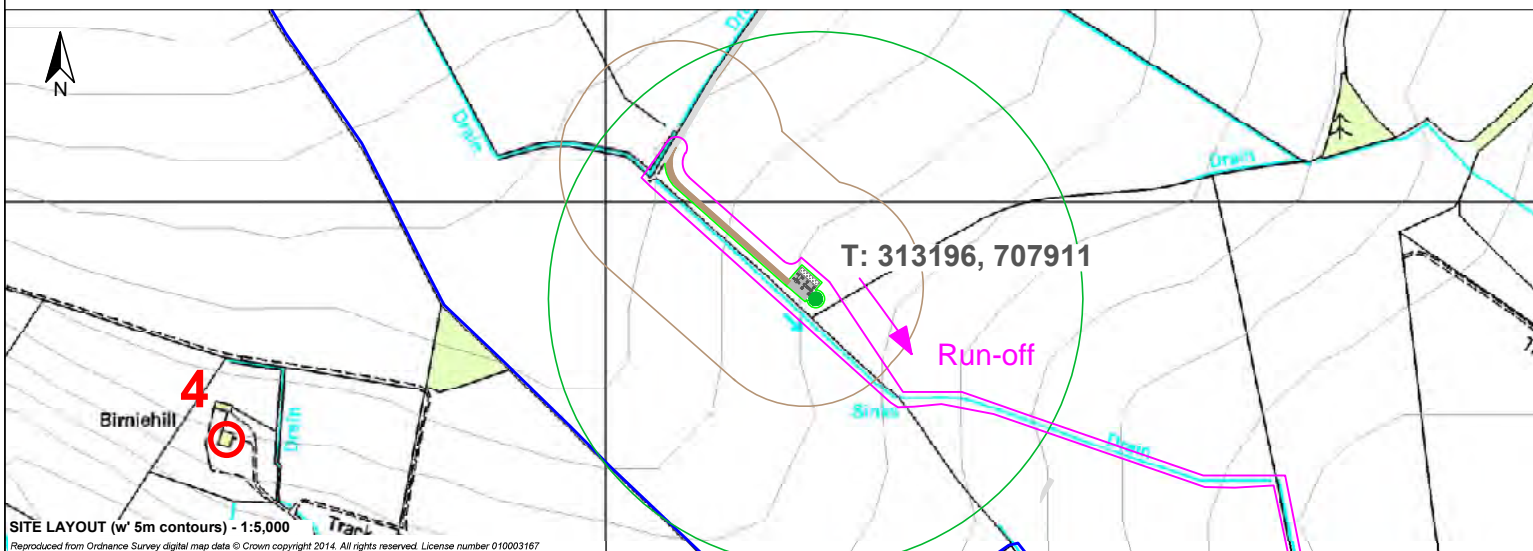
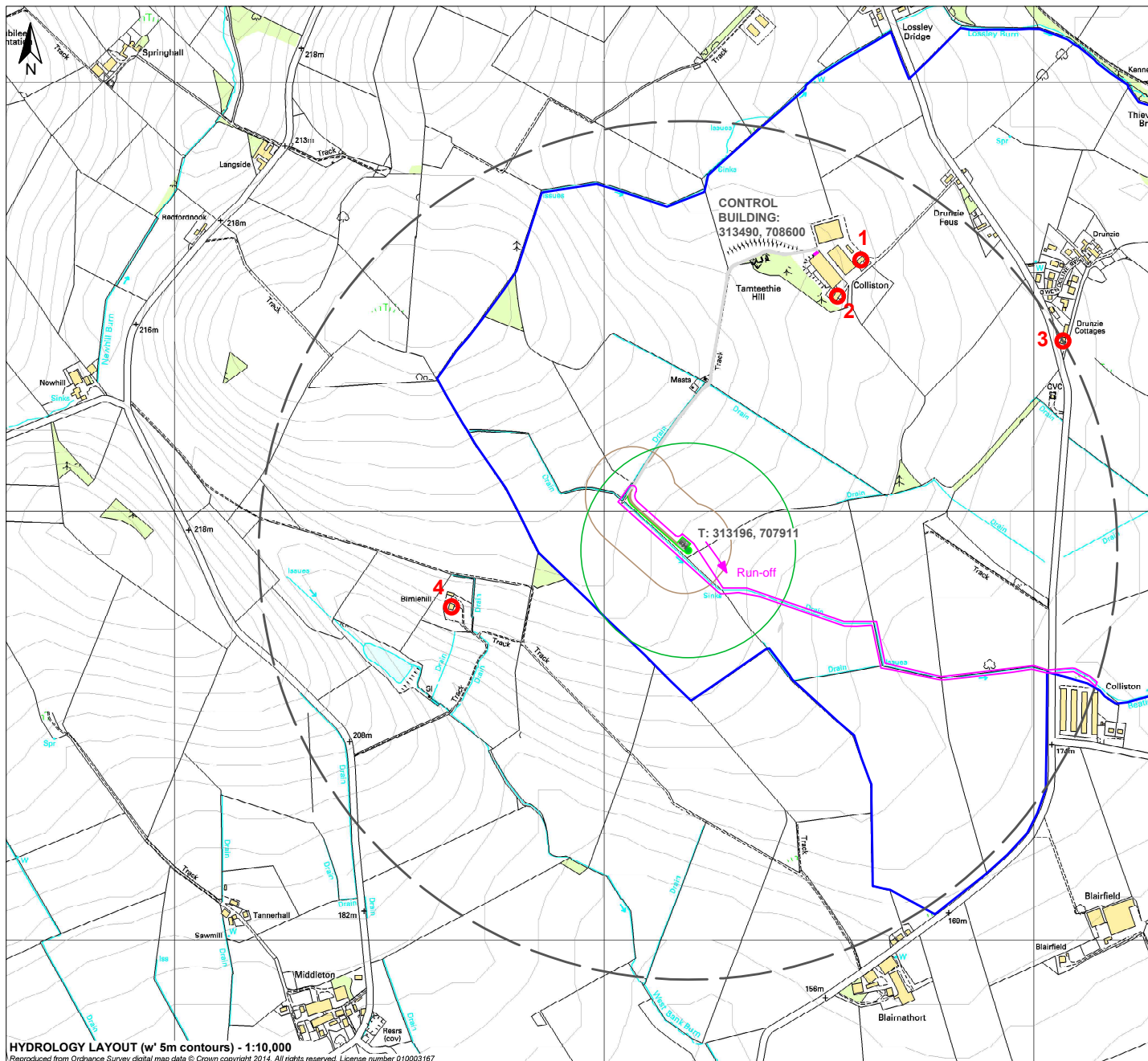
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It should be noted, that whilst every endeavour is made to meet the client's brief, no site investigation can guarantee absolute assessment or prediction of the natural environment. Numerous species are extremely mobile or only evident at certain times of year and habitats are subject to seasonal and temporal change.

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Document Prepared By
Dr Garry Mortimer
GLM Ecology

Appendix 3: Hydrology Context of Site



PROJECT TITLE: COLLISTON FARM WIND TURBINE

JOB No.
C0387-266

DRAWING TITLE: HYDROLOGICAL CONTEXT OF SITE

DRAWING No.
FIGURE 10.1

SCALE: AS STATED

ORIGINAL DRAWING: A3

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Colliston Farm Wind Turbine Landscape Figures

to accompany

Colliston Farm Wind Turbine Environmental Statement

Chapter 5: Landscape and Visual Impact

for

D.A Baillie & Sons

produced by

Green Cat Renewables Ltd.



Colliston Farm Wind Turbine Landscape Figures

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Project Name: Colliston Farm Wind Turbine
Document Title: Study Area Map

Scale: 1:200,000 @ A3

Key:

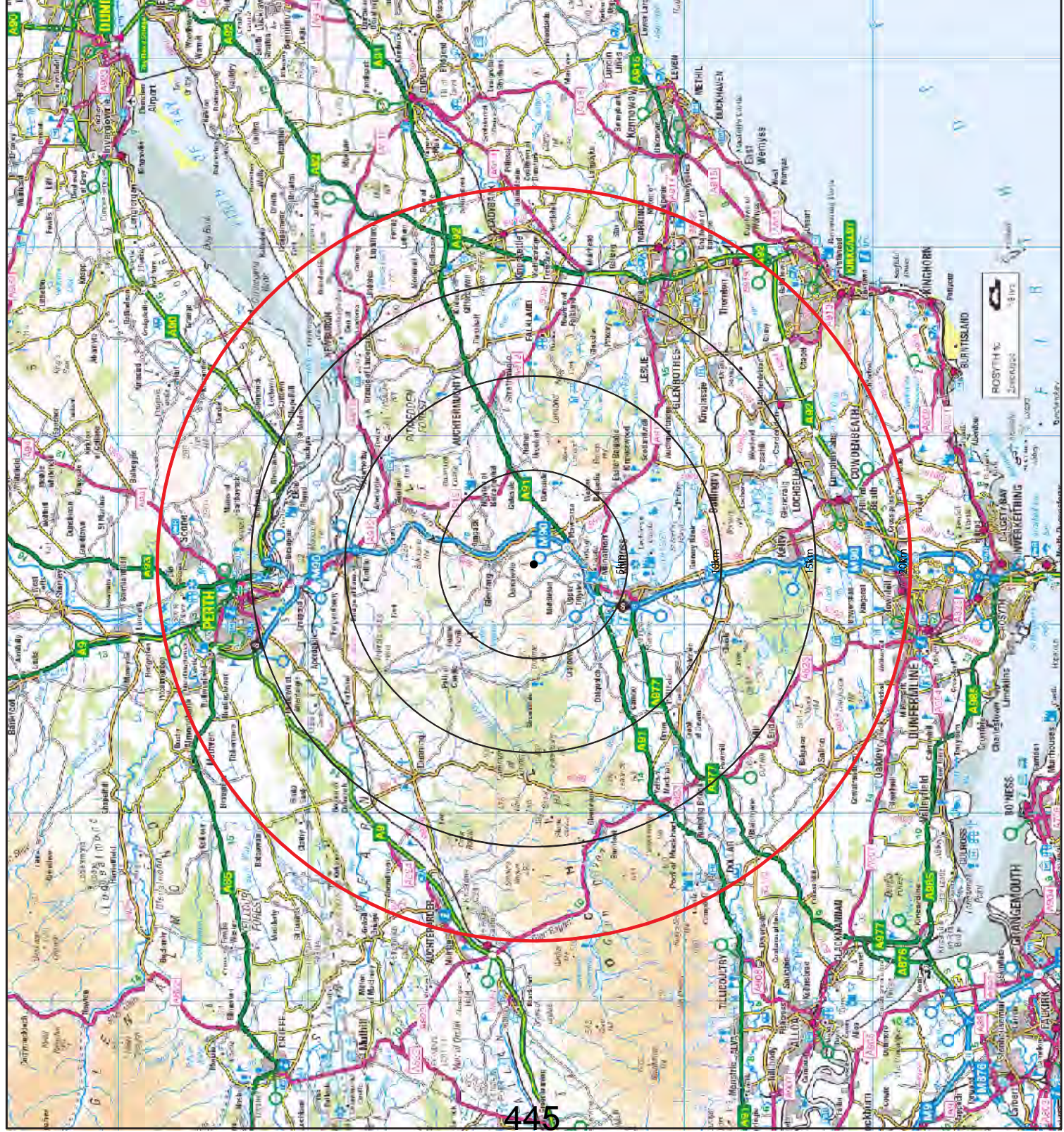
- Proposed Wind Turbine Location
- 5, 10 & 15km Radii from Wind Turbine
- 20km Landscape and Visual Study Area



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Document Number: C387-266/ Fig 5.1
Version: 1.0
Author: SS
Checked by: RC
Approved By: GM
Date: 04/03/2014
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Project Name: Colliston Farm Wind Turbine
Document Title: Site and Viewpoint Location Map

Scale: 1:200,000 @ A3

Key:

- Proposed Wind Turbine Location
- 5, 10 & 15km Radii from Wind Turbine
- 20km Landscape and Visual Study Area

Viewpoint Locator & Identifier

Viewpoint Name:

- 1 - Close in from the South
- 2 - Close in from the North-East
- 3 - Minor Road, Newhill to Path of Condie
- 4 - M90
- 5 - Burleigh Castle
- 6 - B919
- 7 - Kinross Services
- 8 - Bonnet Stane
- 9 - Loch Leven Cottages
- 10 - Kinnoull Hill
- 11 - Knock Hill
- 12 - M90 Overbridge at Glenfarg

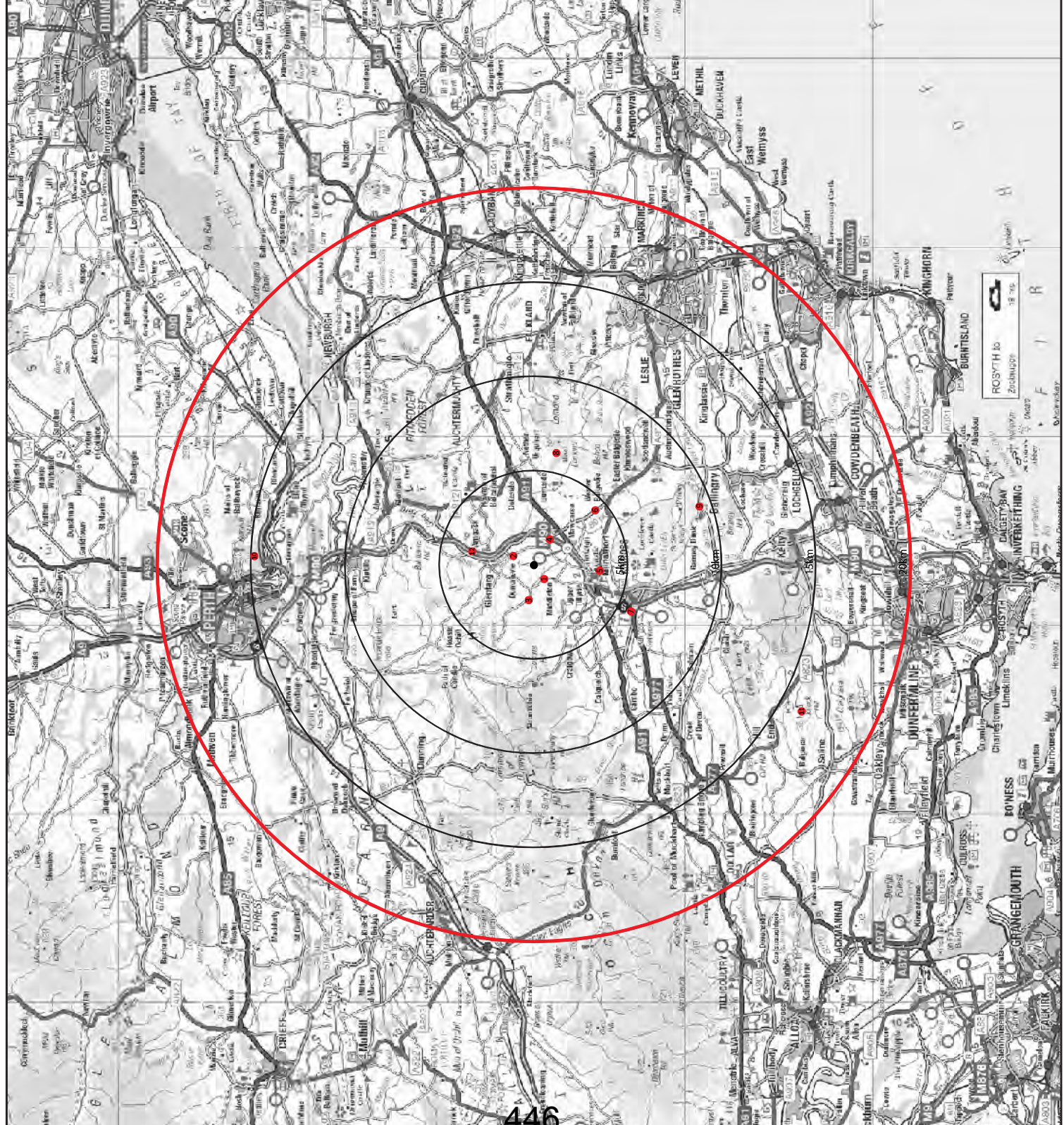


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Version: 1.0
Author: SS
Checked by: RC
Approved By: GM
Date: 04/03/2014

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Project Name: Colliston Farm Wind Turbine
Document Title: Landscape Character Types
Scale: 1:200,000 @ A3

Key:

- Proposed Wind Turbine Location
- 5, 10 & 15km Radii from Wind Turbine
- 20km Landscape and Visual Study Area
- Landscape Character Boundary

Landscape Character Types:

Tavish Landscape Assessment

- 1 Firth Lowlands
- 2 Broad Valley Lowlands
- 3 Dolerite Hills
- 4 Igneous Hills
- 5 Lowland Hills
- 6 Lowland Basin
- 7 Lowland River Corridors

Fife Landscape Assessment

- 1 Coastal Hills
- 2 Coastal Terraces
- 3 Coastal Flats
- 4 Lowland Hills and Valleys
- 5 Lowland Glacial Melwater Valleys
- 6 Upland Slopes
- 7 Upland Foothills
- 8 Pronounced Volcanic Hill and Craigs
- 9 The Uplands
- 10 Lollards River Basins
- 11 Lowland Loch Basins

Clackmannanshire Landscape Assessment

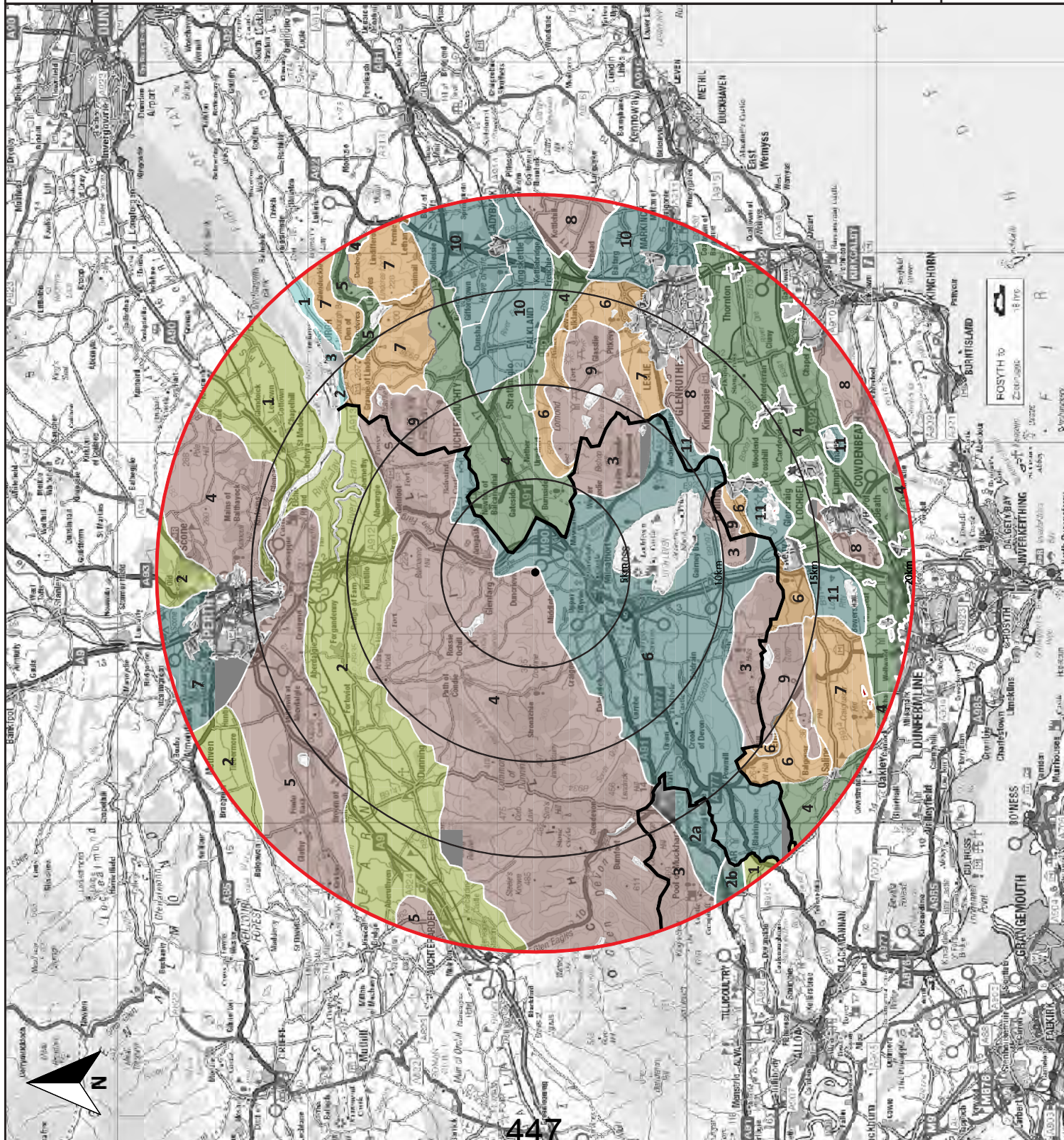
- 1 Devon/Forth
- 2a Middle Devon Water
- 2b Lower Devon Canals
- 2 Ochil Hills

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Client: D.A Baillie & Sons
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Author: SS
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Project Name: Colliston Farm Wind Turbine
Document Title: Landscape Designation Map

Scale: 1:200,000 @ A3

Key:

- Proposed Wind Turbine Location
- 5, 10 & 15km Radii from Wind Turbine
- 20km Landscape and Visual Study Area
- Local Authority Boundary

- Special Landscape Areas
- Areas of Great Landscape Value
- Regional Parks
- Gardens and Designated Landscapes

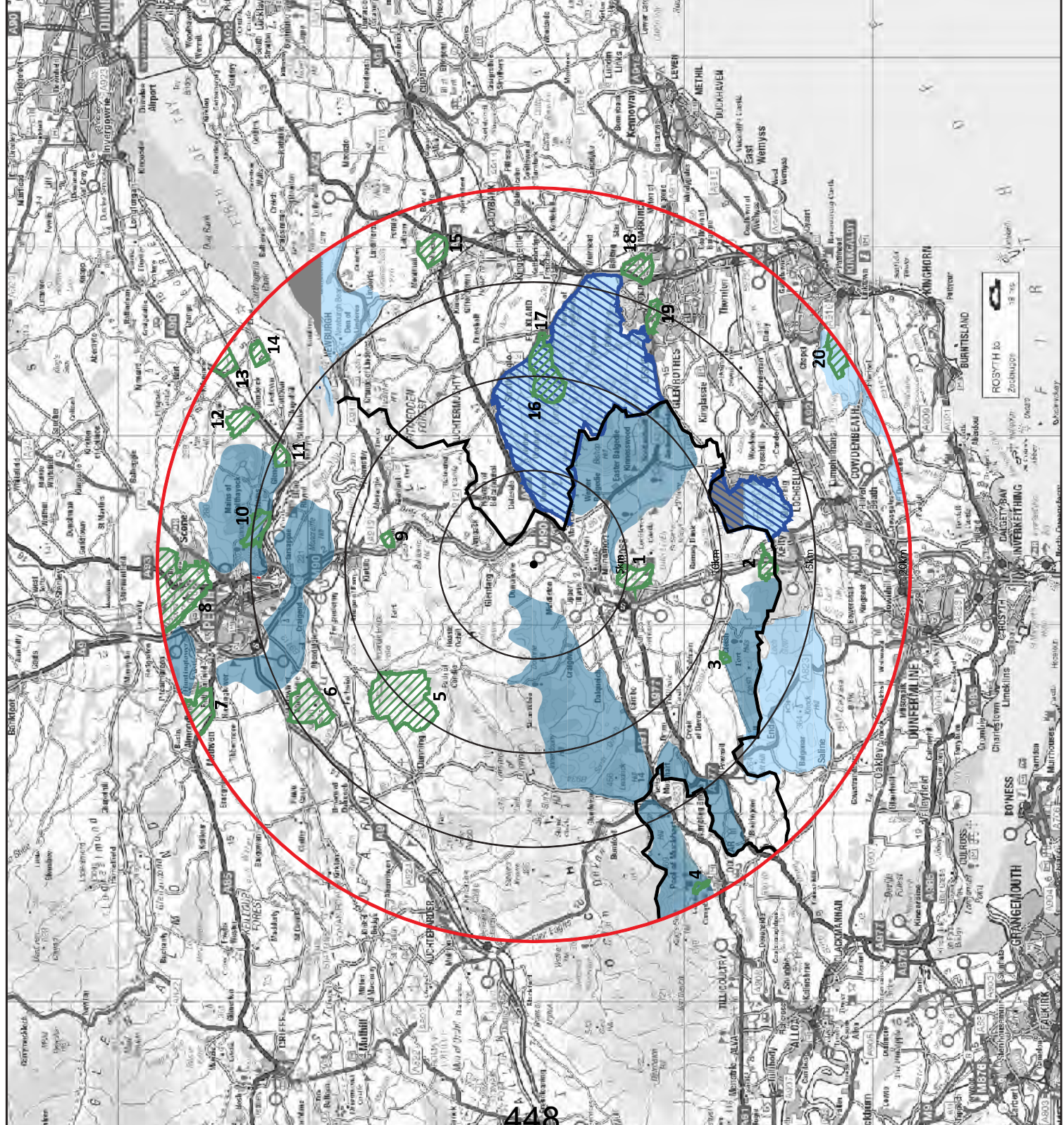
- 1 - Kinross House
- 2 - Blair Adam
- 3 - Clais Castle
- 4 - Castle Campbell
- 5 - Invermay
- 6 - Dupplin Castle
- 7 - Methven Castle
- 8 - Scone Palace
- 9 - Balmanno
- 10 - Kinfauns Castle
- 11 - Inchyra
- 12 - Glendoick
- 13 - Megginch Castle
- 14 - Errol Park
- 15 - Melville House
- 16 - House of Falkland
- 17 - Falkland Palace
- 18 - Balbirnie
- 19 - Leslie House
- 20 - Raith Park & Beveridge Park

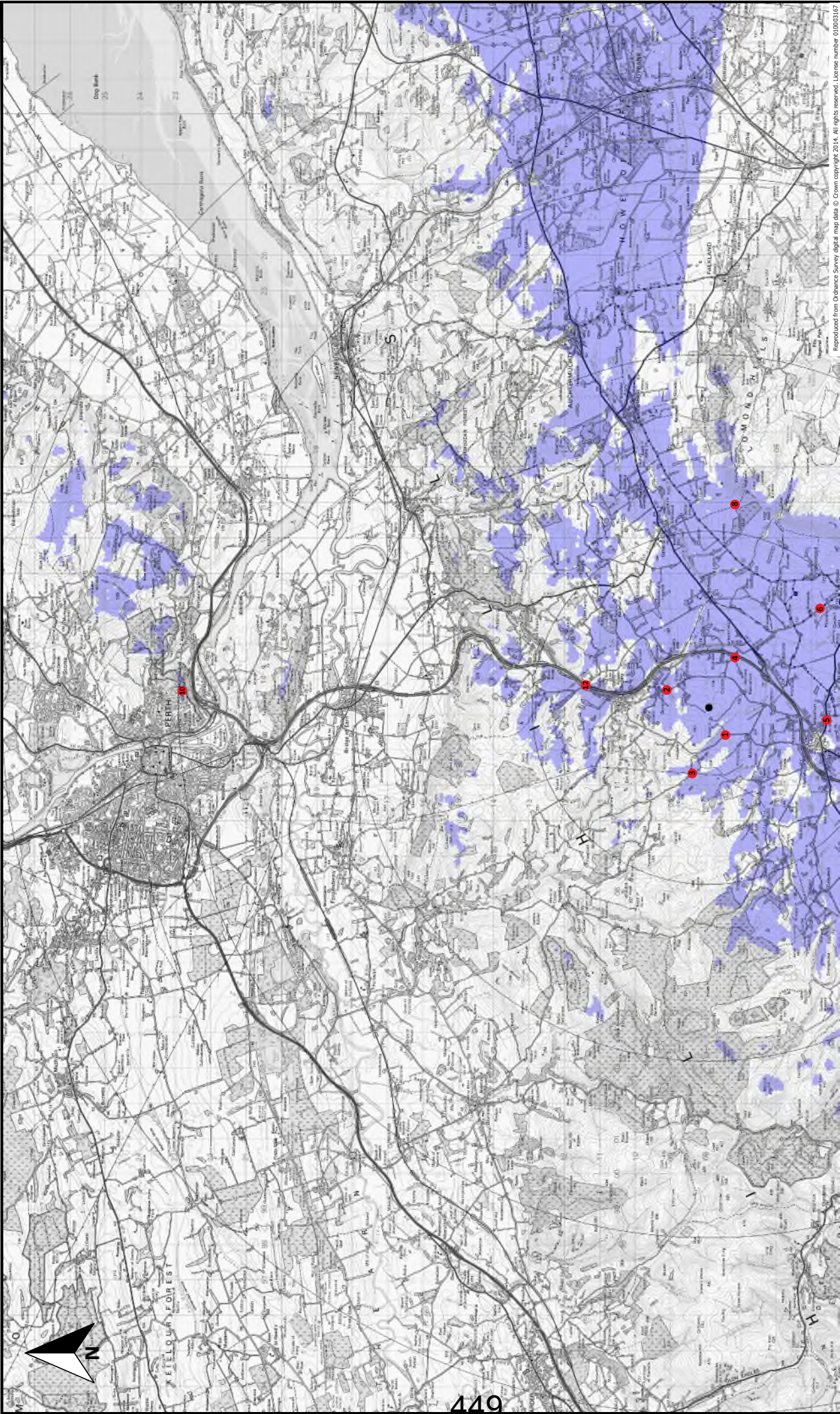


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Client: D.A Baillie & Sons
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Document Number: C387-266/ Fig 5.4
Version: 1.0
Author: SS
Checked by: RC
Approved By: GM
Date: 04/03/2014
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Project Name: Colliston Farm Wind Turbine

Document Title: Detailed ZTV to 45.5m Tip Height - North Zone

Scale: 1:100,000 @ A3

Key:

- Proposed Wind Turbine Location
- Zone of Theoretical Visibility
- 5, 10, 15 & 20km Radii from Turbine

Viewpoint Locator & Identifier

Viewpoint Name:	Identifier
1 - Close in from the South	1
2 - Close in from the North East	2
3 - Major Road, Newhill to Path of Condie	3
4 - M90	4
5 - Burleigh Castle	5
6 - B919	6
7 - Kinross Services	7
8 - Bonnet Stone	8
9 - Loch of Gortages	9
10 - Kinross Hill	10
11 - Knecht Hill	11
12 - M90 Overbridge at Glenfarg	12

Document Number: C387-266/ Fig 5.5a

Version: 1.0

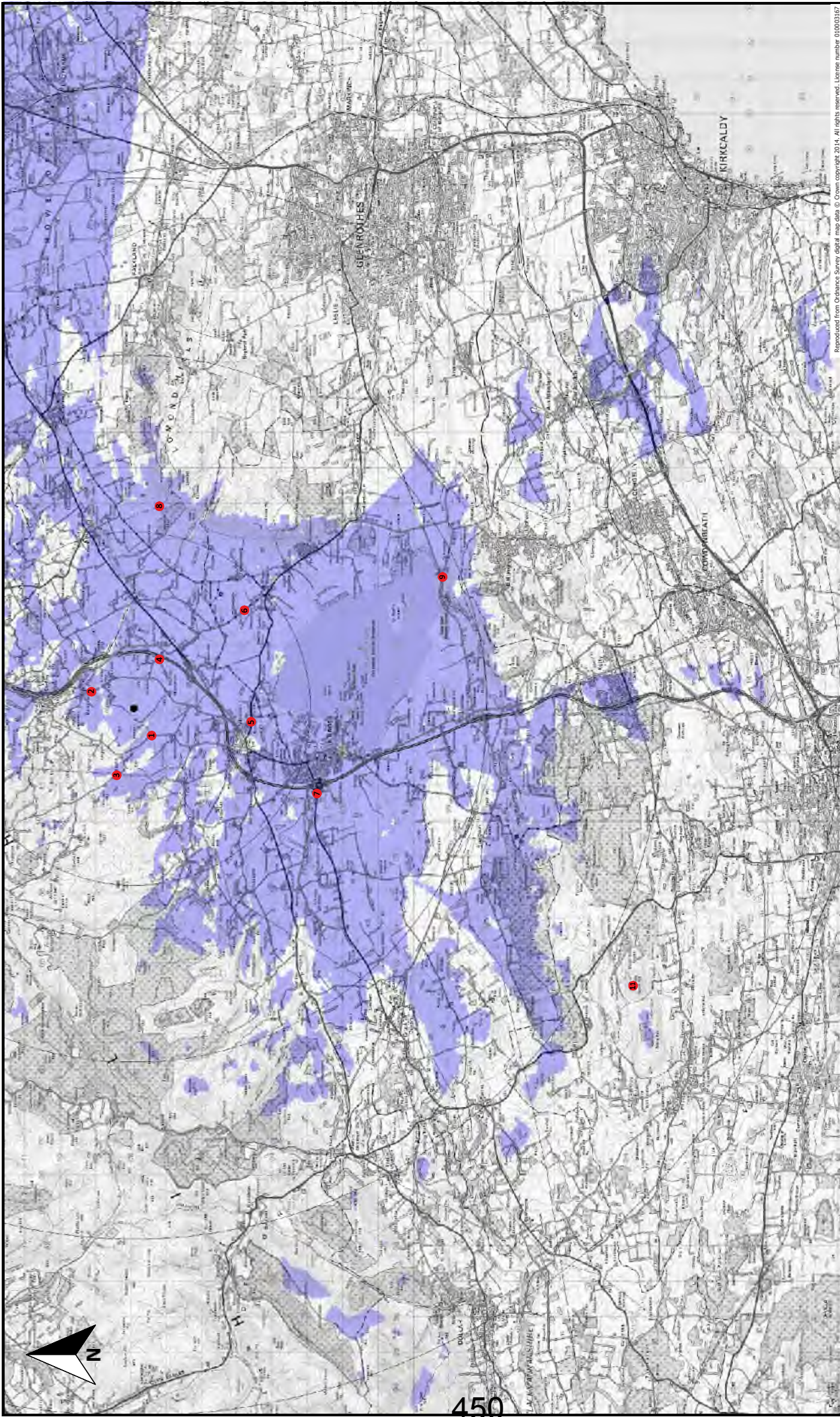
Author: SS

Checked By: RM

Approved By: GM

Date: 04/03/2014

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Project Name: Colliston Farm Wind Turbine

Document Title: Detailed ZTV to 45.5m Tip Height - South Zone

Scale: 1:100,000 @ A3

Key:

- Proposed Wind Turbine Location
- Zone of Theoretical Visibility
- 5, 10, 15 & 20km Radii from Turbine

Viewpoint Locator & Identifier

Viewpoint Name:

- 1 - Close in from the South
- 2 - Close in from the North East
- 3 - Major Road, Newhill to Path of Condie
- 4 - M90
- 5 - Burleigh Castle
- 6 - B919
- 7 - Kinross Services
- 8 - Kinross Station
- 9 - Kinross Cottages
- 10 - Kinross Hill
- 11 - Kinross Hill
- 12 - M90 Overbridge at Glenfarg

Document Number: C387-266/Fig 5.5b

Version: 1.0

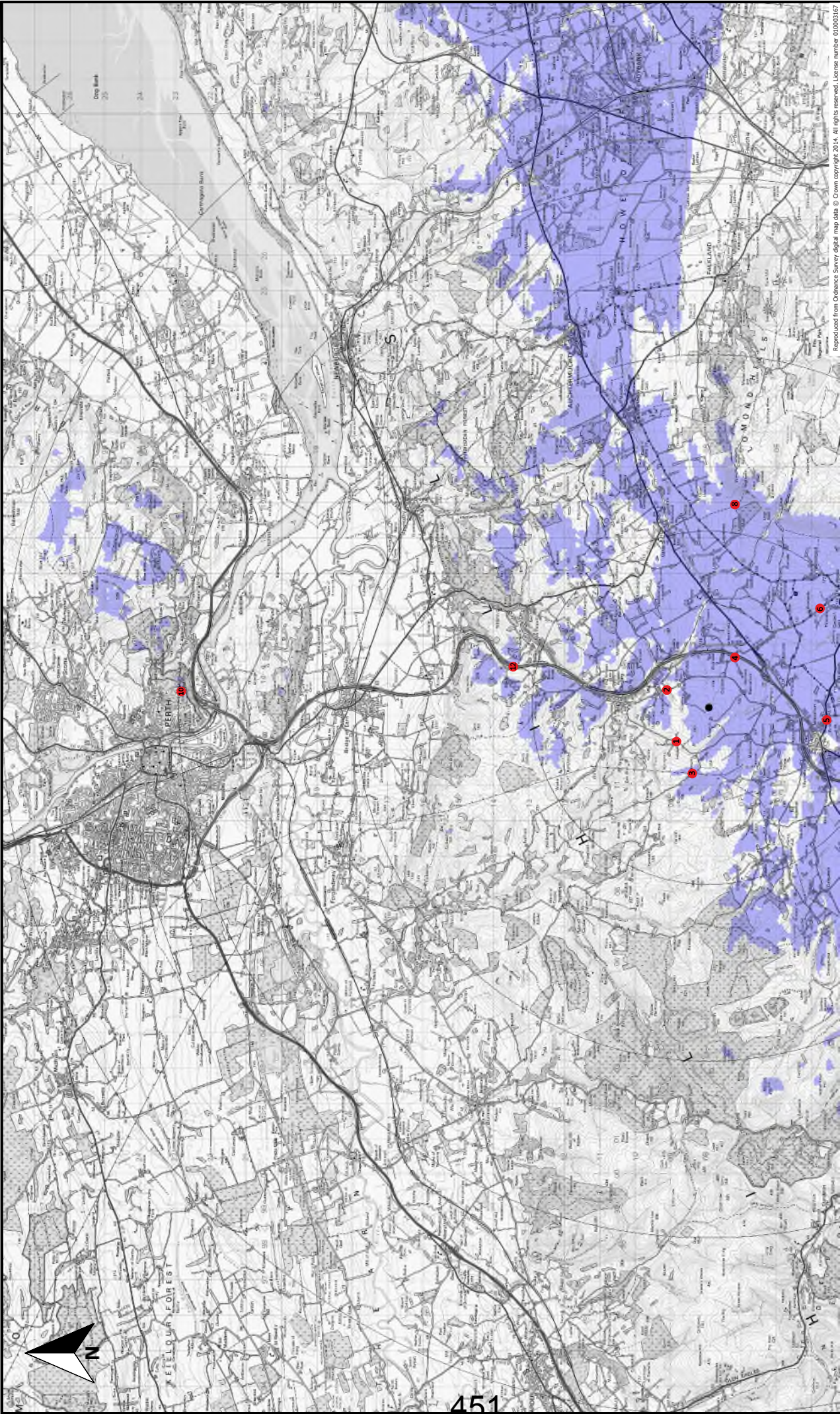
Author: SS

Checked by: RM

Approved By: GM

Date: 04/03/2014

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Project Name: Colliston Farm Wind Turbine

Document Title: Detailed ZTV to 32m Hub Height - North Zone

Scale: 1:100,000 @ A3

Key:

- Proposed Wind Turbine Location
- Zone of Theoretical Visibility
- 5, 10, 15 & 20km Radii from Turbine

Viewpoint Locator & Identifier

Viewpoint Name:	Identifier
1 - Close in from the South	1
2 - Close in from the North East	2
3 - Major Road, Newhill to Path of Condie	3
4 - M90	4
5 - Burleigh Castle	5
6 - B919	6
7 - Kinross Services	7
8 - Bonnet Stone	8
9 - Loch of Gortages	9
10 - Kinross Hill	10
11 - Knecht Hill	11
12 - M90 Overbridge at Glenfarg	12

Document Number: C387-266/Fig 5.5c

Version: 1.0

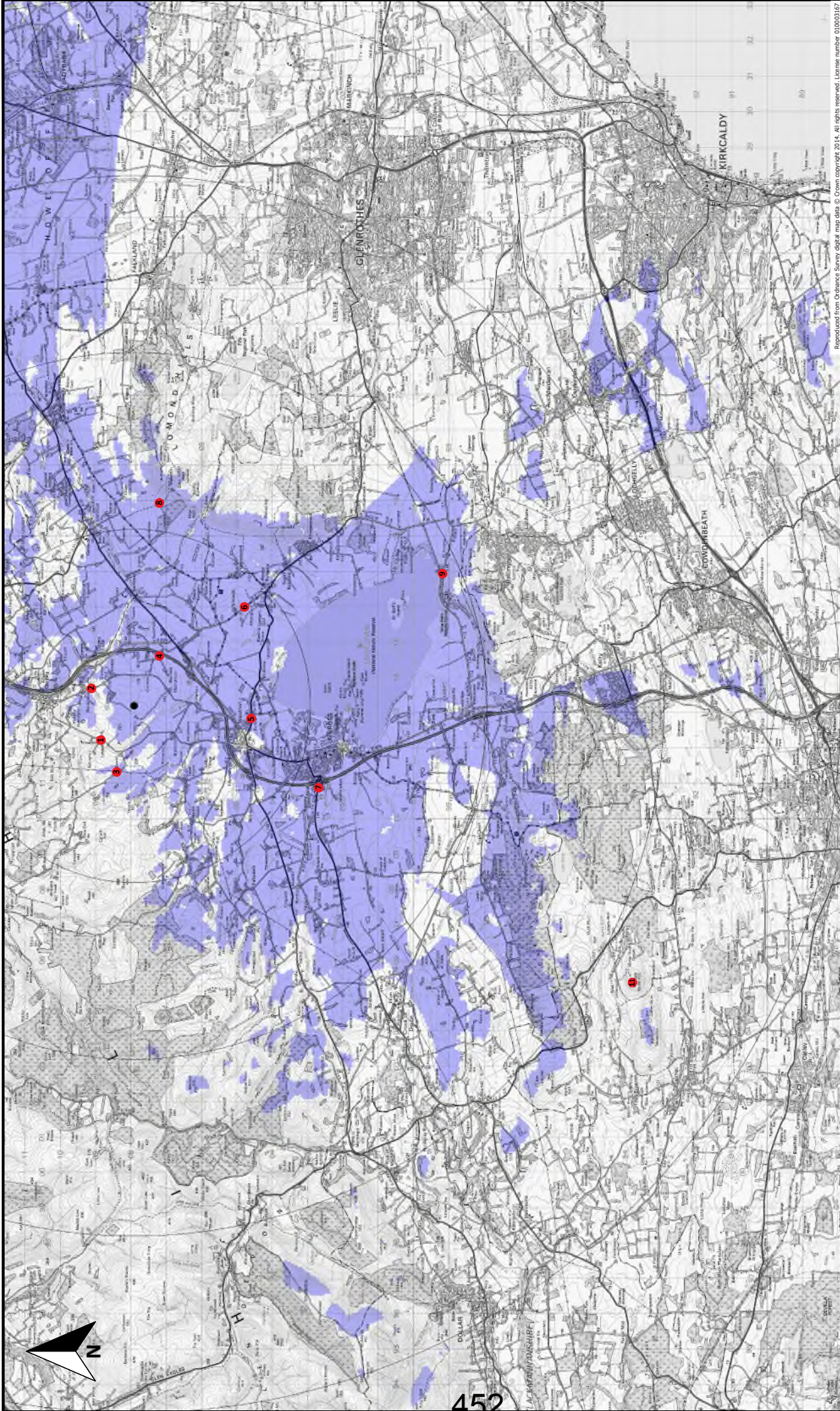
Author: SS

Checked By: RM

Approved By: GM

Date: 04/03/2014

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Project Name: Colliston Farm Wind Turbine

Document Title: Detailed ZTV to 32m Hub Height - South Zone

Scale: 1:100,000 @ A3

Key:

- Proposed Wind Turbine Location
- Zone of Theoretical Visibility
- 5, 10, 15 & 20km Radii from Turbine

Viewpoint Locator & Identifier

Viewpoint Name:

- 1 - Close in from the South
- 2 - Close in from the North East
- 3 - Major Road, Newhill to Path of Condle
- 4 - M90
- 5 - Burleigh Castle
- 6 - B919
- 7 - Kinross Services
- 8 - Bonnet Stone
- 9 - Localised Cottages
- 10 - Kinross Hill
- 11 - Knock Hill
- 12 - M90 Overbridge at Glenfarg

Document Number: C387-266/Fig 5.5d

Version: 1.0

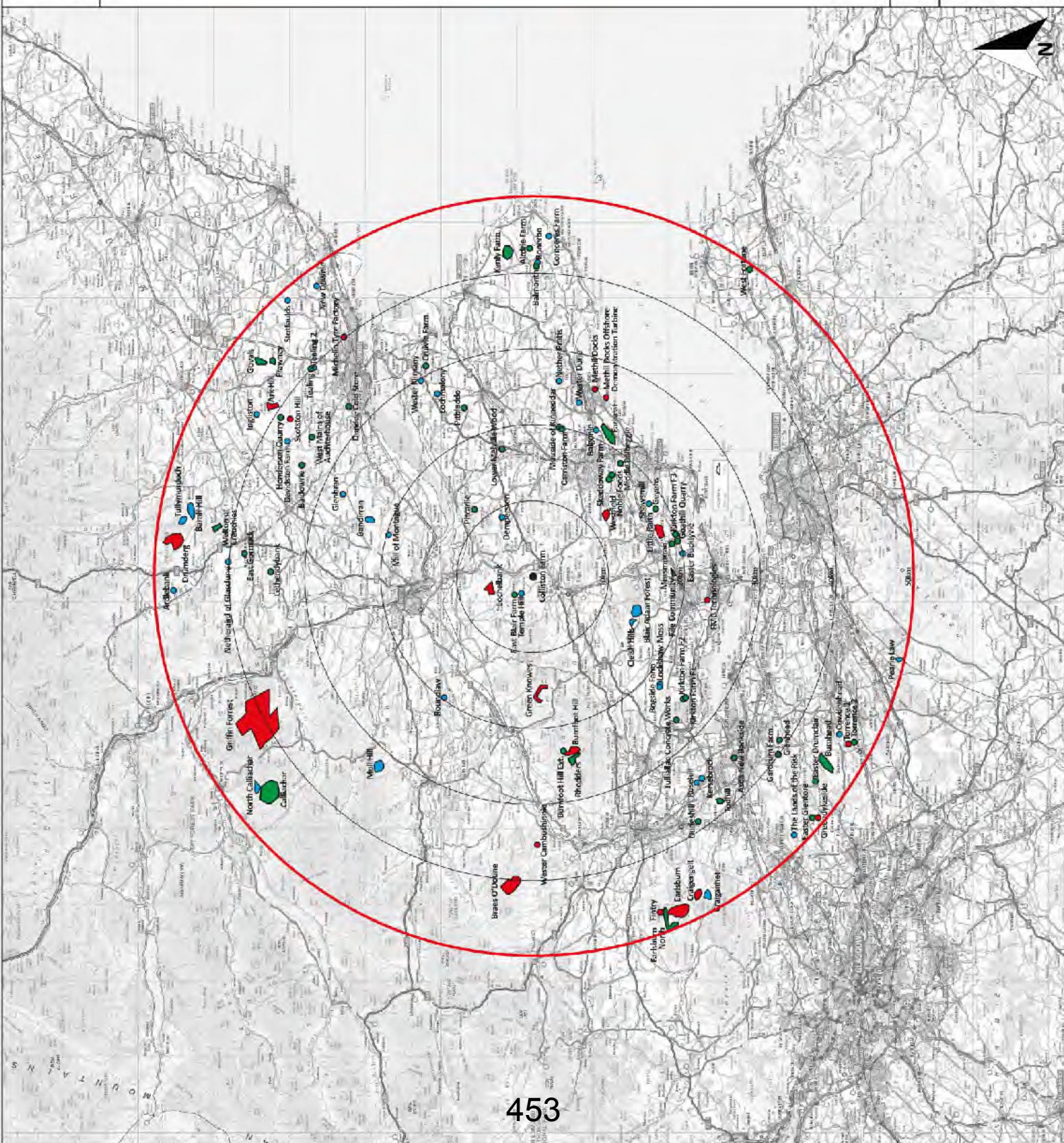
Author: SS

Checked by: RM

Approved By: GM

Date: 04/03/2014

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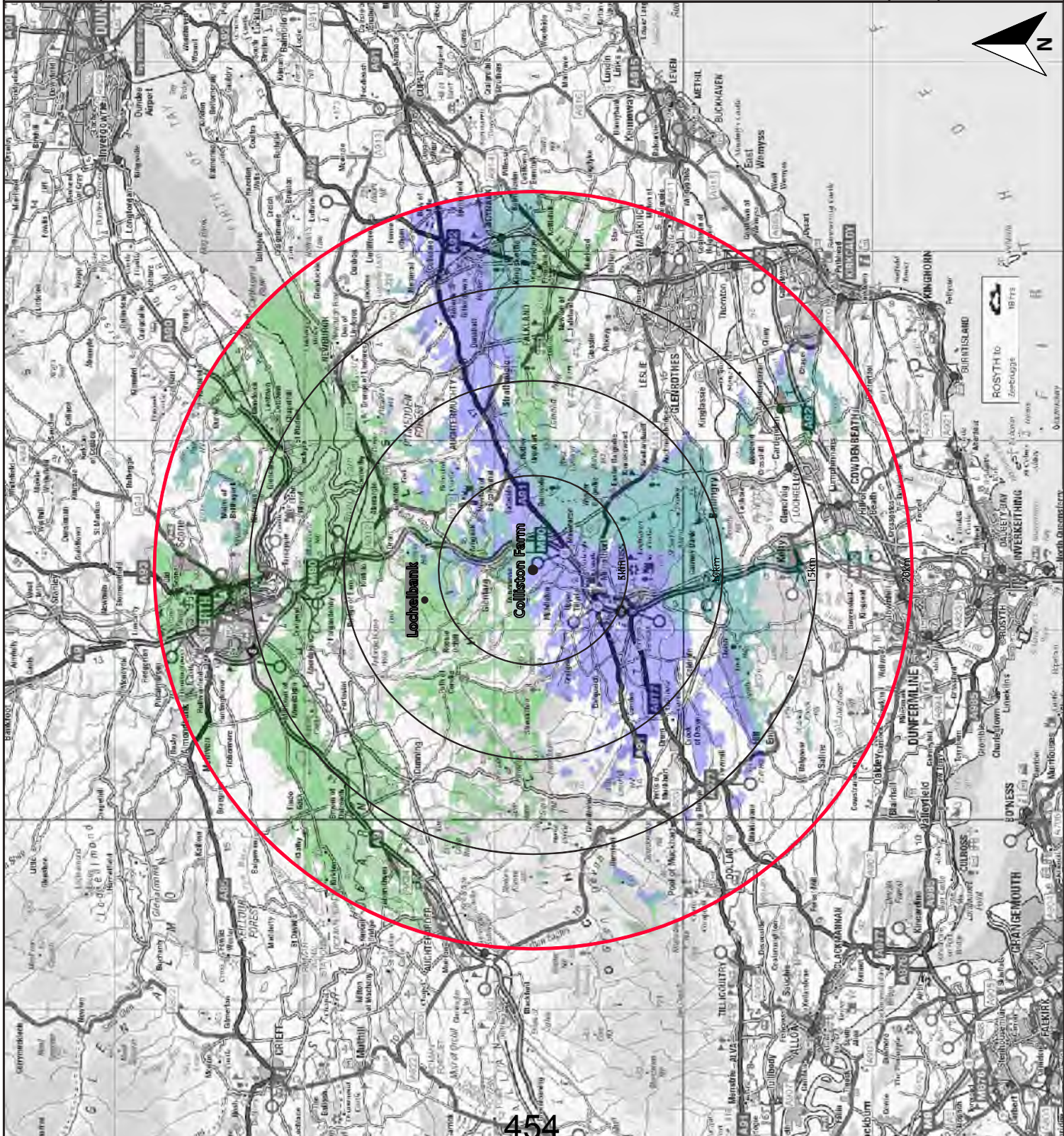


Project Name: Colliston Farm Wind Turbine
Document Title: Cumulative ZTV to Tip Height for 20km Radii - Lochelbank (Operational)
Scale: 1:200,000 @ A3

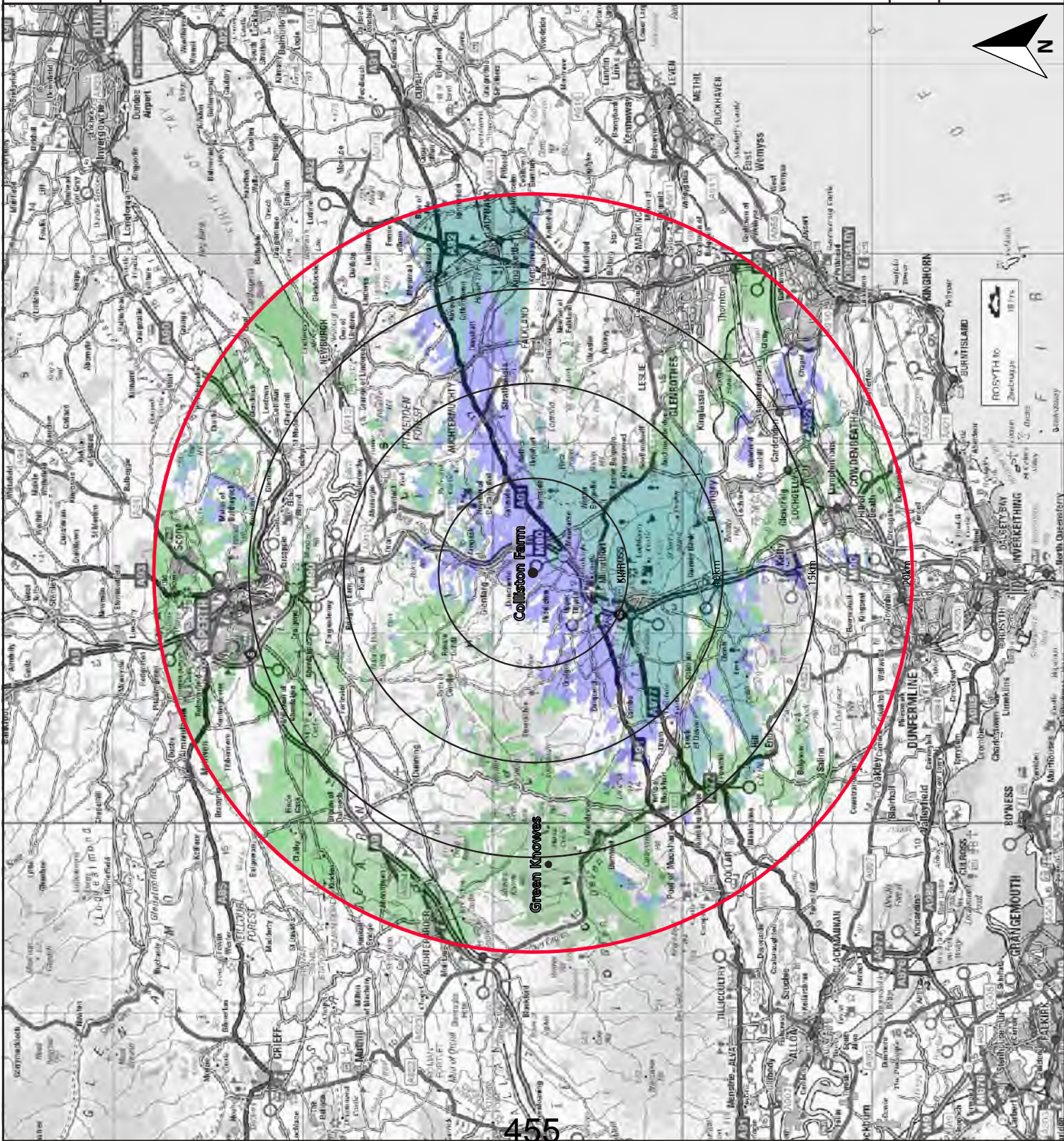
Key:
● Proposed Wind Turbine Location
● Other Project Location
— 5, 10 & 15km Radii from Wind Turbine
— 20km Landscape and Visual Study Area

Colliston Farm Visible
Lochelbank Visible
Colliston Farm & Lochelbank Visible

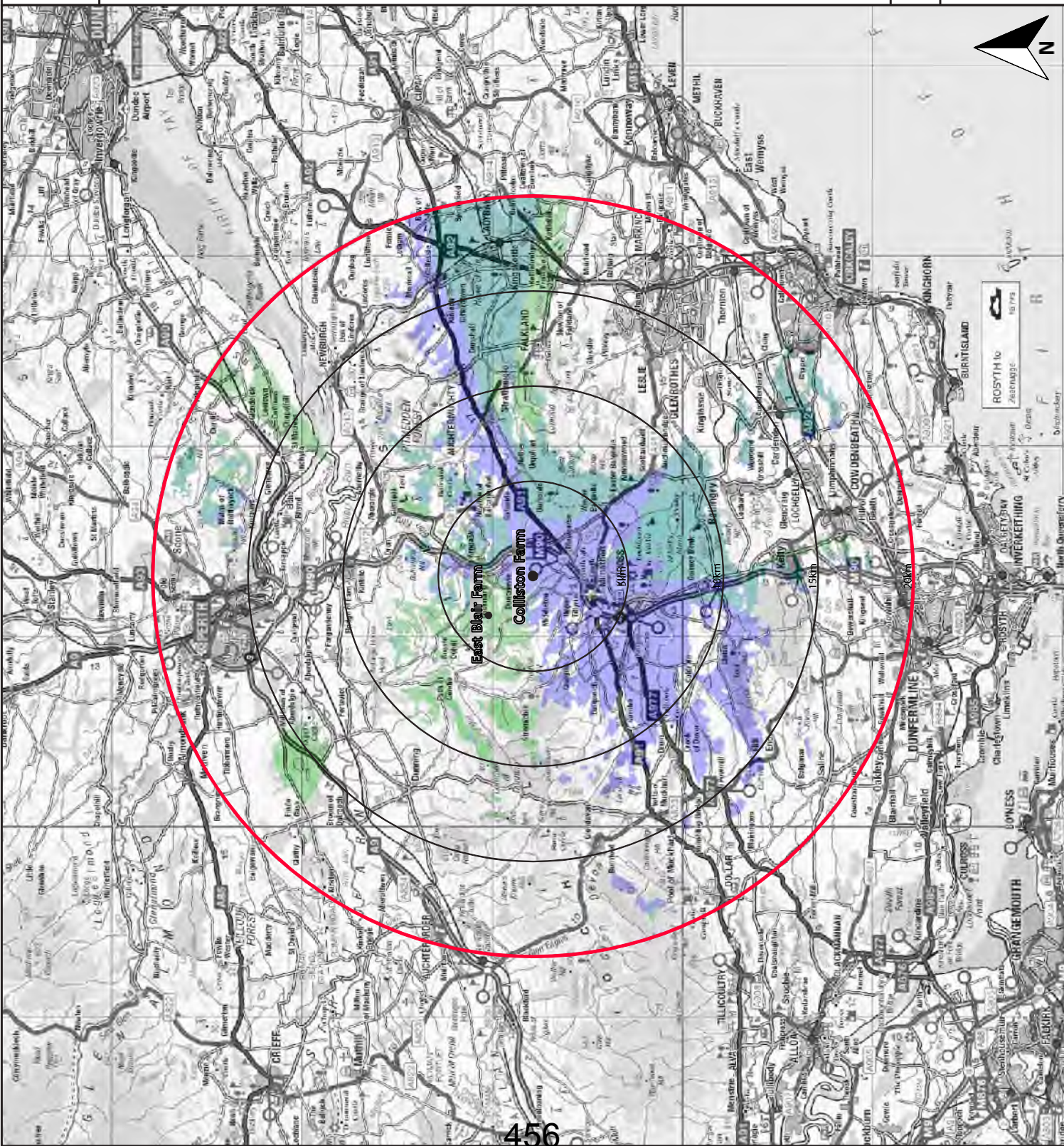
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Drawing by: Green Cat Renewables Ltd
Document Number: C387-266/ Fig. 5.7a
Version: 1.0
Author: SS
Checked by: RC
Approved By: GM
Date: 04/03/2014
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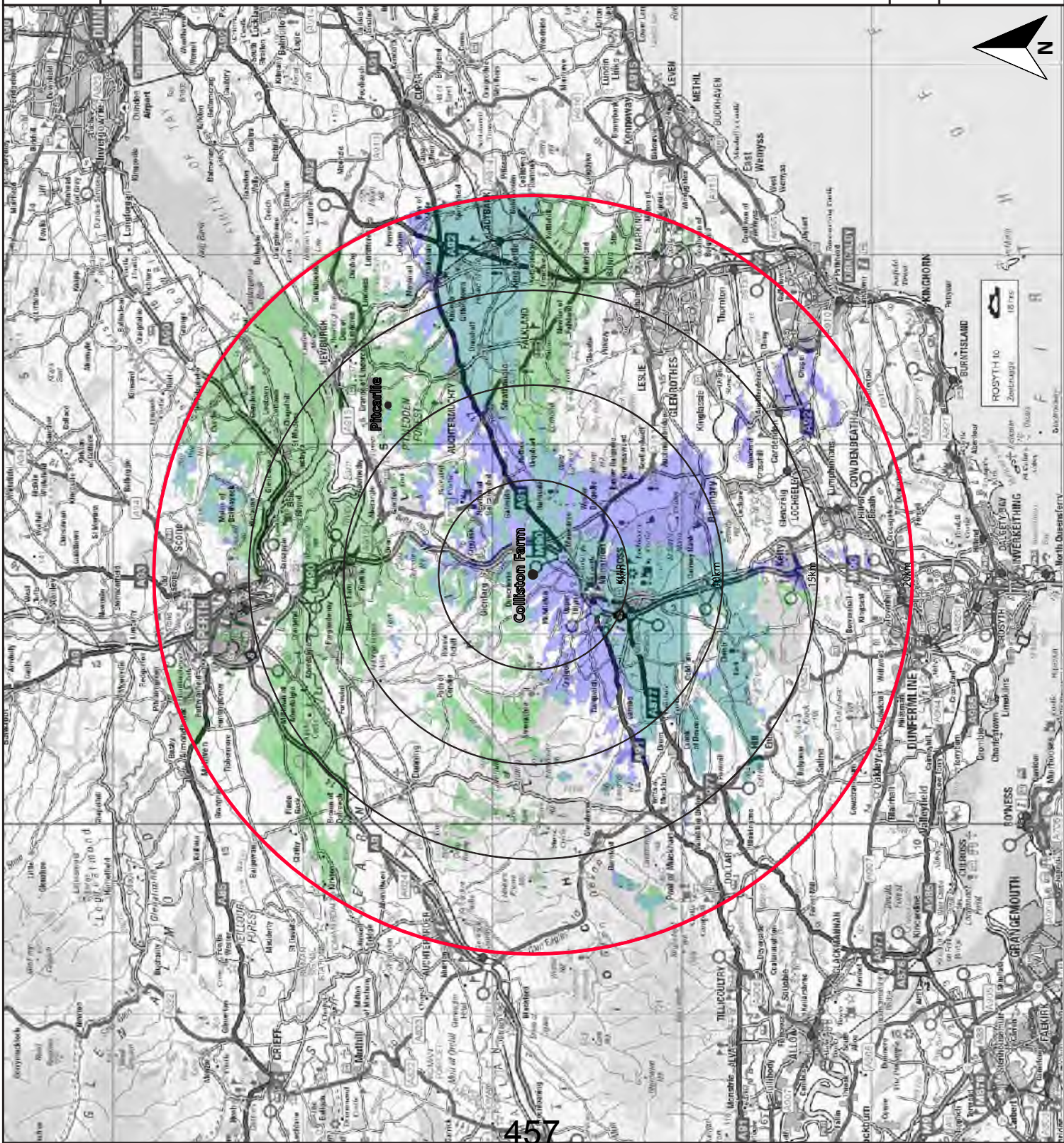
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Scale:	1:200,000 @ A3
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Drawing by:	Green Cat Renewables Ltd
Document Number:	C387-266/Fig. 5.7b
Version:	1.0
Author:	SS
Checked by:	GM
Approved By:	RC
Date:	04/03/2014
	



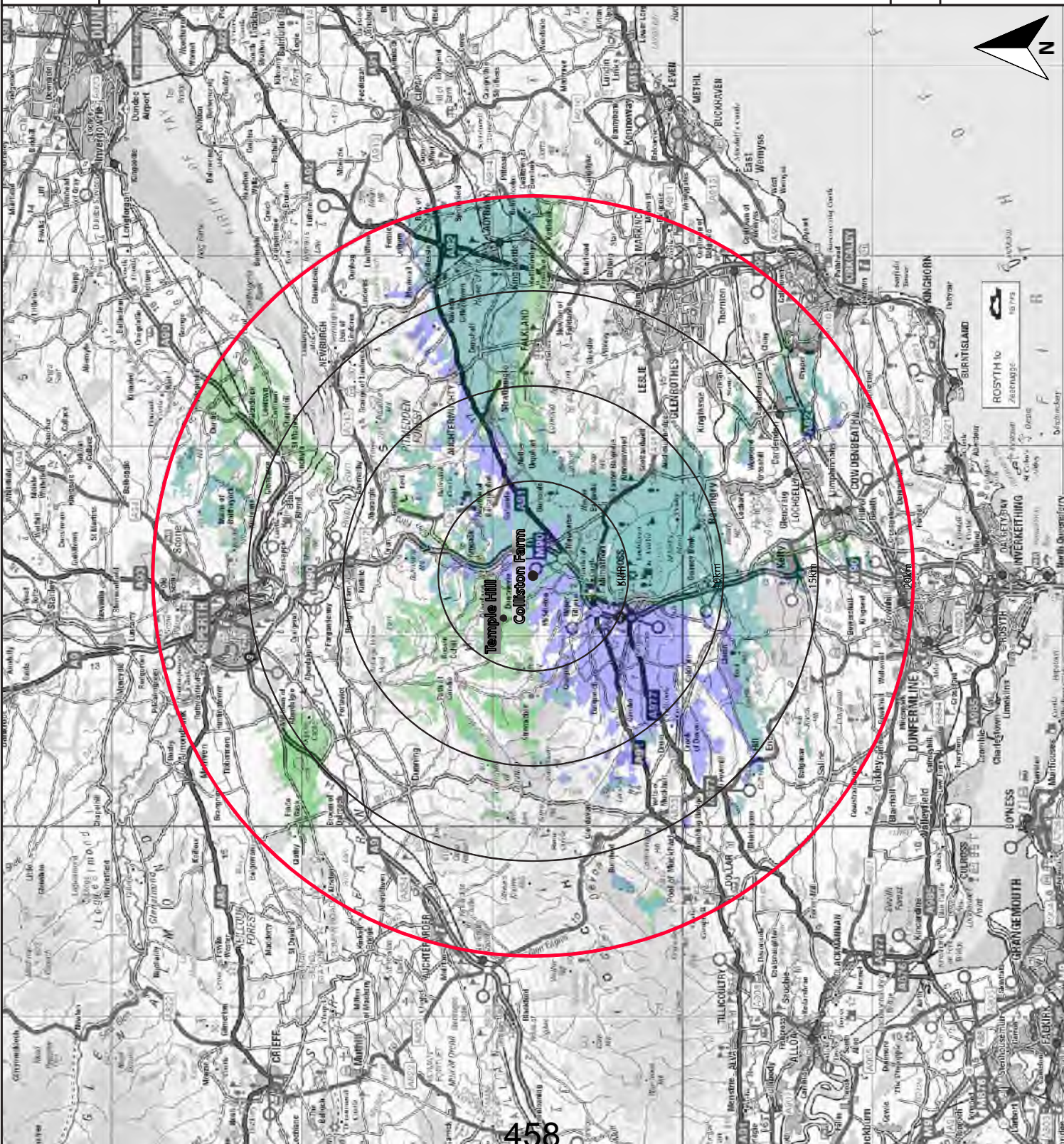
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Document Title:	Cumulative ZTV to Tip Height for 20km Radii - East Blair Farm (Consented)
Scale:	1:200,000 @ A3
Key:	<div> <div>●</div> <div>●</div> <div>—</div> <div>—</div> <div>■</div> <div>■</div> <div>■</div> </div> <div> <div>Proposed Wind Turbine Location</div> <div>Other Project Location</div> <div>5, 10 & 15km Radii from Wind Turbine</div> <div>20km Landscape and Visual Study Area</div> <div>Colliston Farm Visible</div> <div>East Blair Farm Visible</div> <div>Colliston Farm & East Blair Farm Visible</div> </div>
Client:	D.A. Baillie & Sons
Drawing by:	Green Cat Renewables Ltd
Document Number:	C387-266/ Fig. 5.8a
Version:	1.0
Author:	SS
Checked by:	RC
Approved By:	GM
Date:	04/03/2014
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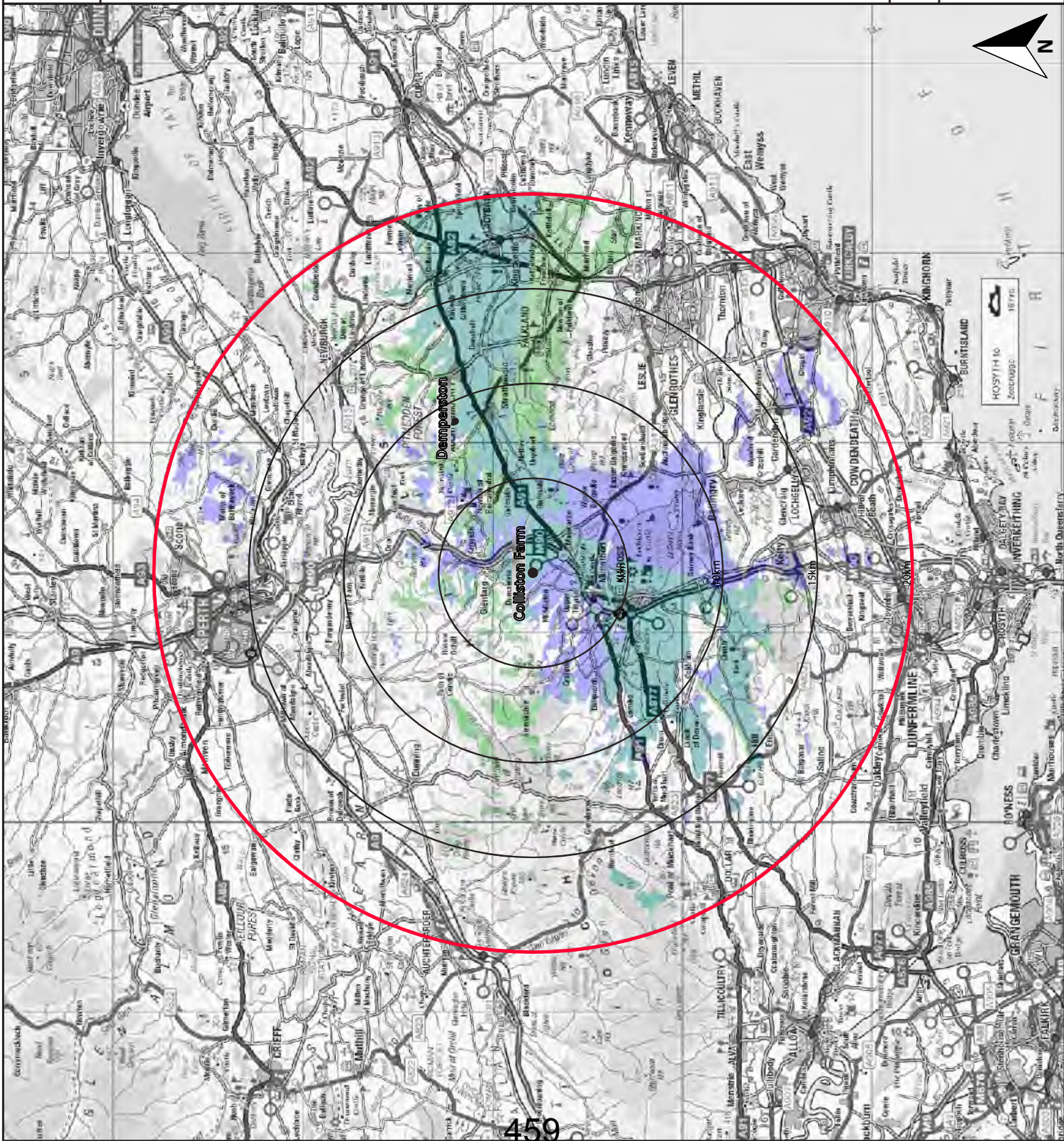
Project Name:	Colliston Farm Wind Turbine
Document Title:	Cumulative ZTV to Tip Height for 20km Radii - Pitcarlie (Consented)
Scale:	1:200,000 @ A3
Key:	<div> <div>●</div> <div>●</div> <div>—</div> <div>—</div> <div>■</div> <div>■</div> <div>■</div> </div> <div> <div>Proposed Wind Turbine Location</div> <div>Other Project Location</div> <div>5, 10 & 15km Radii from Wind Turbine</div> <div>20km Landscape and Visual Study Area</div> <div>Colliston Farm Visible</div> <div>Pitcarlie Visible</div> <div>Colliston Farm & Pitcarlie Visible</div> </div>
Client:	D.A. Baillie & Sons
Drawing by:	Green Cat Renewables Ltd
Document Number:	C387-266/ Fig. 5.8b
Version:	1.0
Author:	SS
Checked by:	RC
Approved By:	GM
Date:	04/03/2014
	



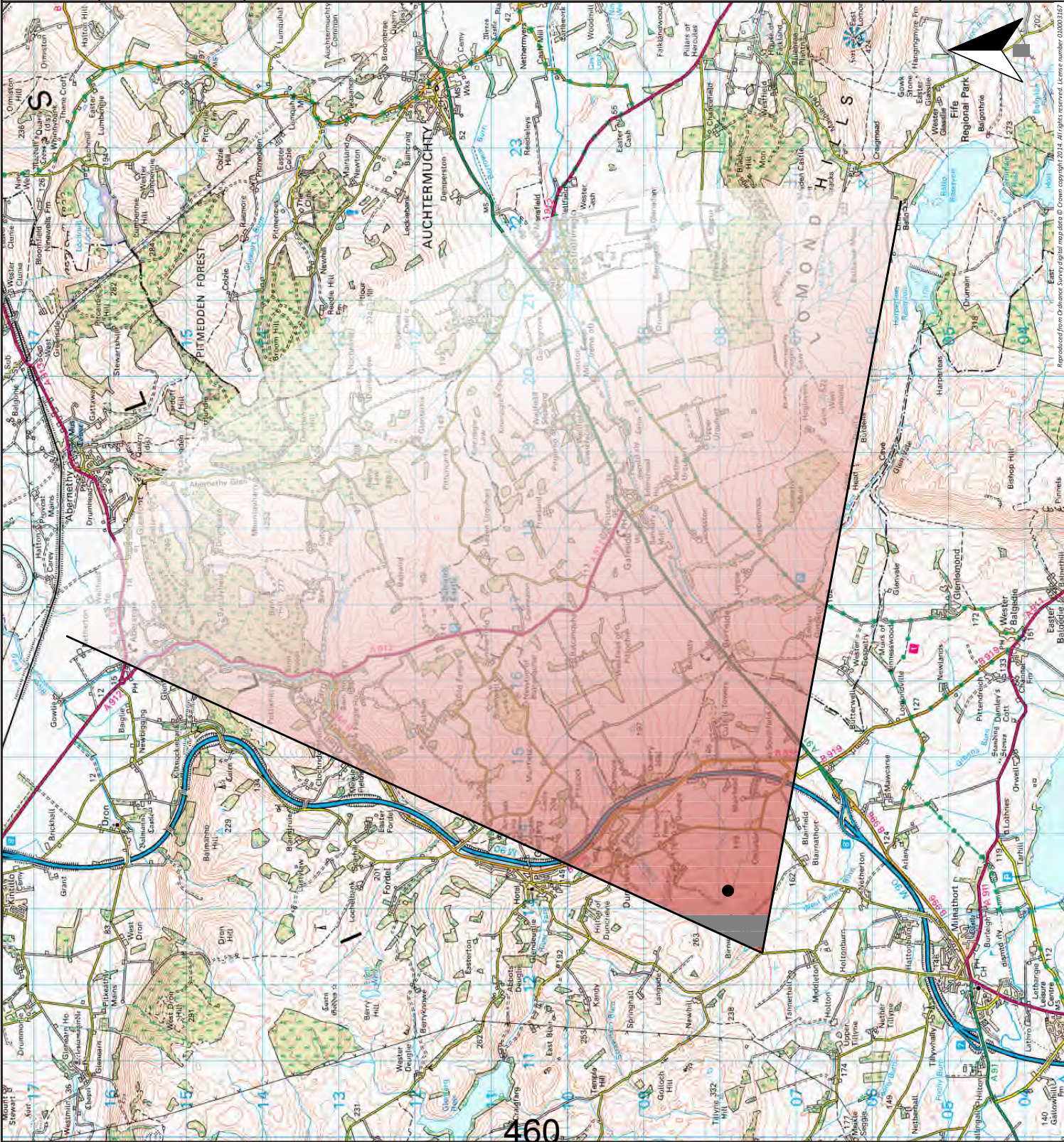
Project Name:	Colliston Farm Wind Turbine
Document Title:	Cumulative ZTV to Tip Height for 20km Radii - Temple Hill (Planning)
Scale:	1:200,000 @ A3
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Client:	D.A. Baillie & Sons
Drawing by:	Green Cat Renewables Ltd
Document Number:	C387-266/ Fig. 5.9a
Version:	1.0
Author:	SS
Checked by:	RC
Approved By:	GM
Date:	04/03/2014
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Project Name:	Colliston Farm Wind Turbine
Document Title:	Cumulative ZTV to Tip Height for 20km Radii - Demperston (Planning)
Scale:	1:200,000 @ A3
Key:	<div> <div>●</div> <div>●</div> <div>—</div> <div>—</div> <div>■</div> <div>■</div> <div>■</div> </div> <div> <div>Proposed Wind Turbine Location</div> <div>Other Project Location</div> <div>5, 10 & 15km Radii from Wind Turbine</div> <div>20km Landscape and Visual Study Area</div> <div>Colliston Farm Visible</div> <div>Demperston Visible</div> <div>Colliston Farm & Demperston Visible</div> </div>
Client:	D.A. Baillie & Sons
Drawing by:	Green Cat Renewables Ltd
Document Number:	C387-266/ Fig. 5.9b
Version:	1.0
Author:	SS
Checked by:	RC
Approved By:	GM
Date:	04/03/2014
	



Project Name: Colliston Farm Wind Turbine	
Document Title: VP01 - Close in from the South	
Scale: 1:50,000 @ A3	
Key: <ul style="list-style-type: none"> Proposed Turbine Location 76° Field of View 	
Viewpoint Information	
Viewpoint Location: E312426 N707434	
Viewpoint Elevation: 203m (A.O.D)	
View Direction: 60°	
Distance to Turbine: 905m	
Visibility: Hub	
Camera Type: Nikon D3100	
Focal Length: 35mm	
Effective Focal Length: 54.6mm	
Date Taken: 23/08/2012	
Time Taken: 11:17	
Height above elevation: 1.5m	
Visual Impact	
Sensitivity: High	
Magnitude: Medium	
Overall: Major/Moderate	
Please note for a 76° field of view, a viewing distance of 300mm is recommended.	
Client: D.A Baillie & Sons	
Drawing by: Green Cat Renewables Ltd	
Document Number: C387-266/ Fig 5.10	
Version: 1.0	
Author: SS	
Checked by: RC	
Approved By: GM	
Date: 04/03/2014	

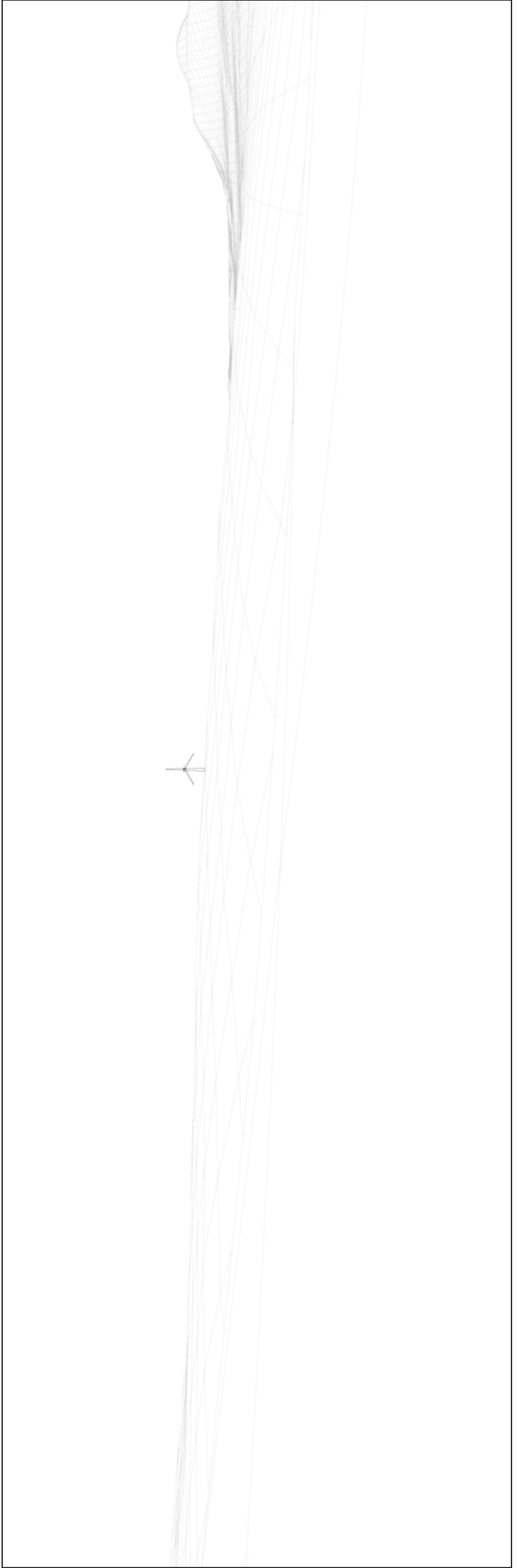


VP01 CLOSE IN FROM THE SOUTH - PHOTOGRAPH OF EXISTING VIEW



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VP01 CLOSE IN FROM THE SOUTH - WIRELINE DRAWING



76° VIEWING ANGLE
300MM VIEWING DISTANCE

VP01 CLOSE IN FROM THE SOUTH - PHOTOMONTAGE OF PROPOSAL

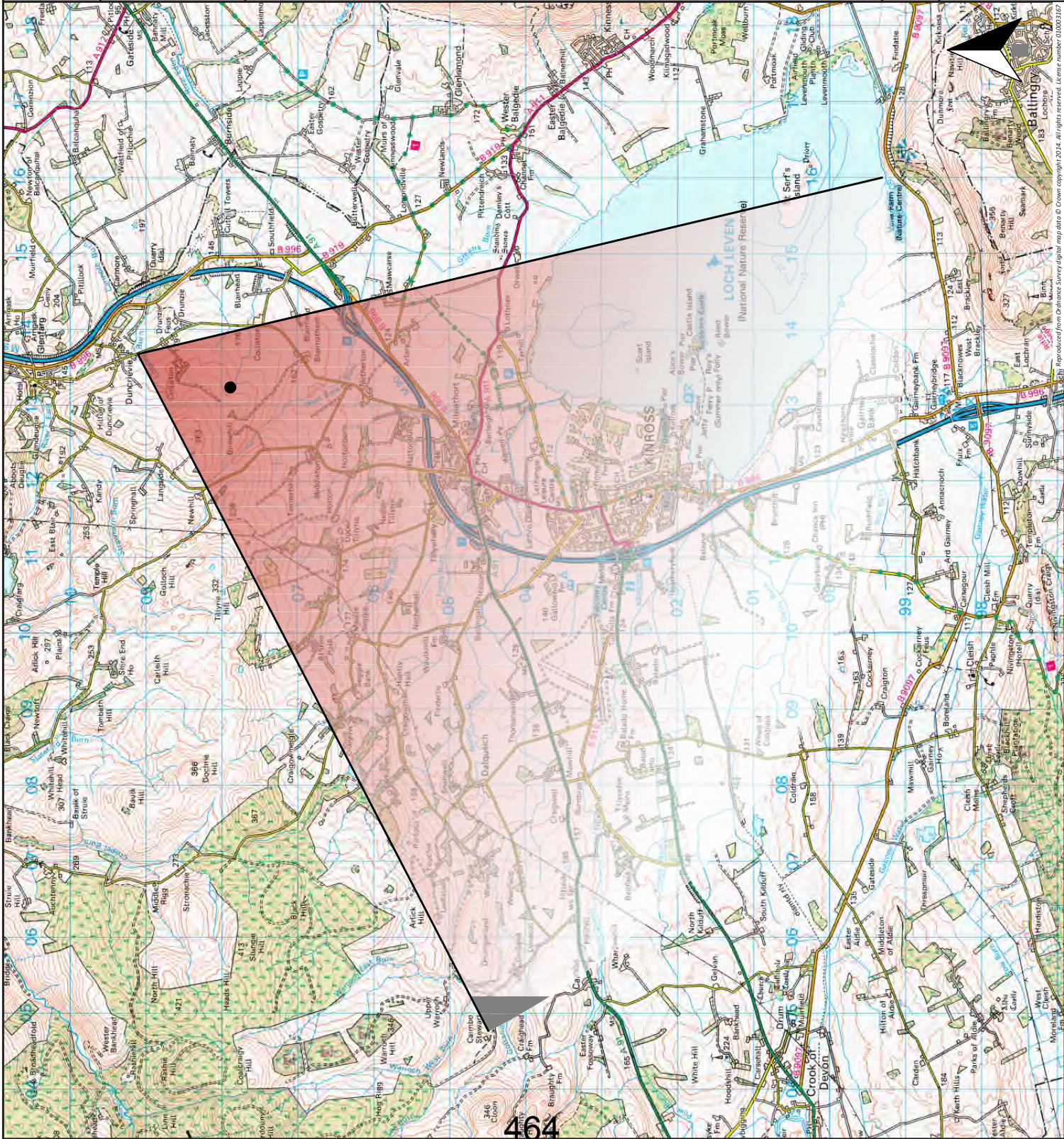


VP01 CLOSE IN FROM THE SOUTH - 70MM PHOTOMONTAGE OF PROPOSAL



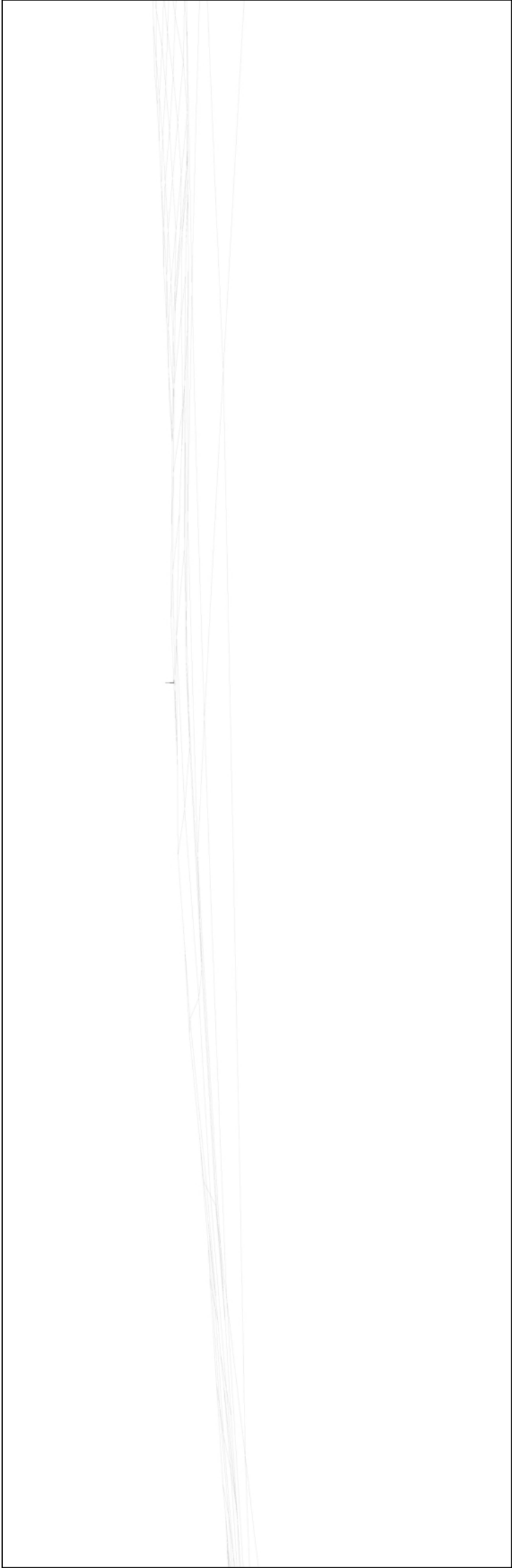
26° VIEWING ANGLE
500MM VIEWING DISTANCE

Project Name: Colliston Farm Wind Turbine Document Title: VP02 - Close in from the North-East Scale: 1:50,000 @ A3	
Key:   Proposed Turbine Location 76° Field of View	
Viewpoint Information Viewpoint Location: E313687 N709098 Viewpoint Elevation: 181m (A.O.D) View Direction: 198° Distance to Turbine: 1.3km Visibility: Tip Camera Type: Nikon D3000 Focal Length: 35mm Effective Focal Length: 53.4mm Date Taken: 17/07/2012 Time Taken: 10:14 Height above elevation: 1.5m	
Visual Impact Sensitivity: High Magnitude: Negligible Overall: Moderate/Minor	
Please note for a 76° field of view, a viewing distance of 300mm is recommended.	
Client: D.A Baillie & Sons Drawing by: Green Cat Renewables Ltd	
Document Number: C387-266/ Fig 5.11 Version: 1.0 Author: SS Checked by: RM Approved By: GM Date: 04/03/2014	

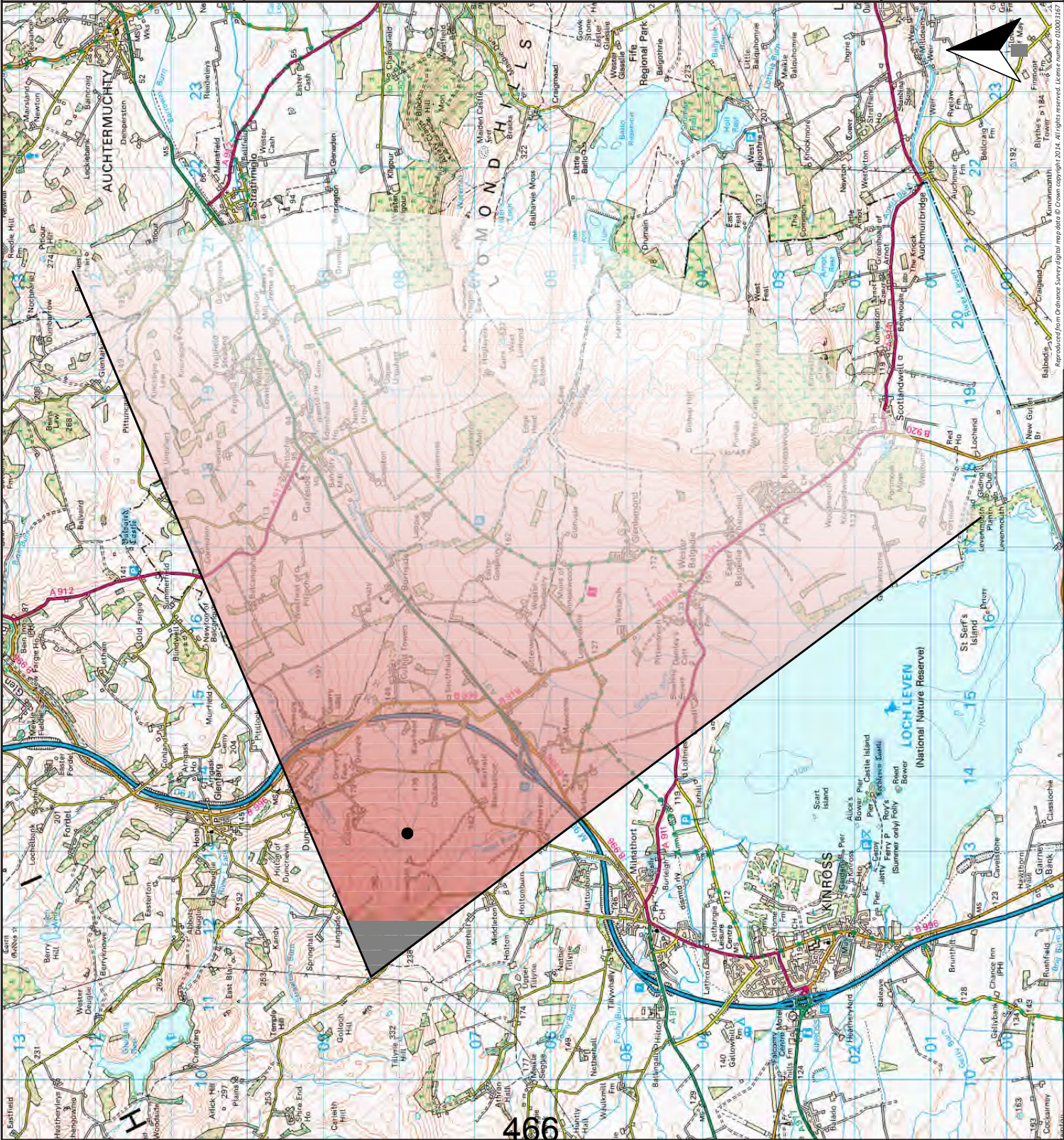


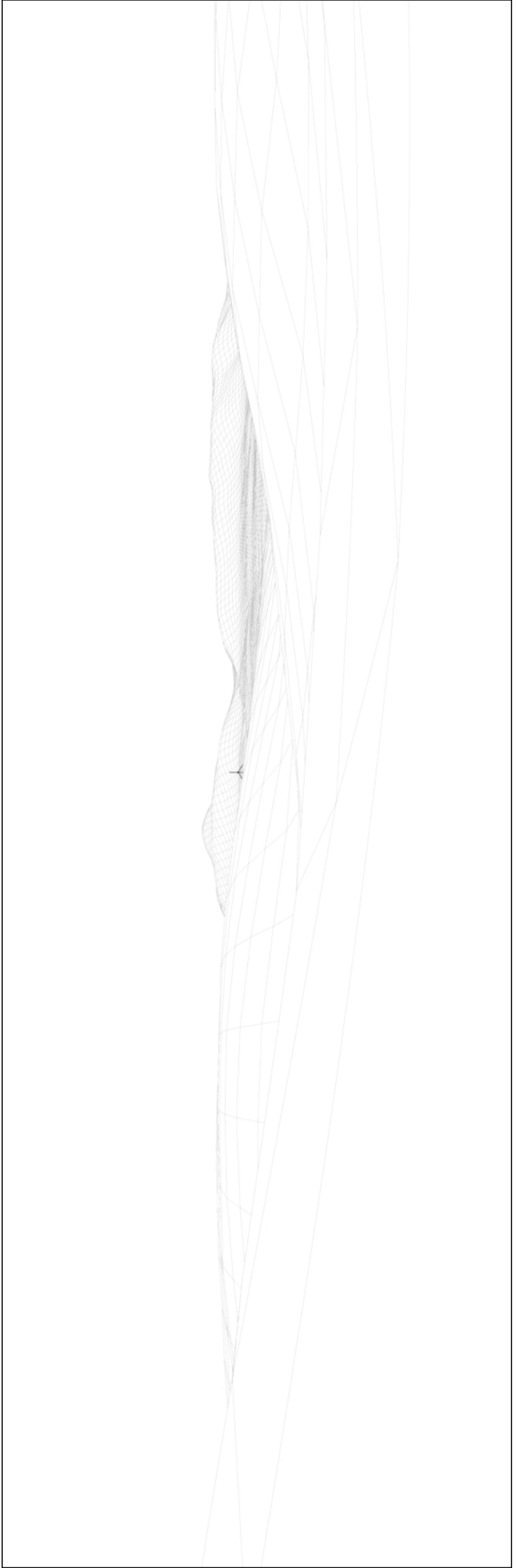


465



Project Name: Colliston Farm Wind Turbine	Document Title: VP03 - Minor Road, Newhill to Path of Condie
Scale: 1:50,000 @ A3	
Key: <div> <div>●</div> <div>Proposed Turbine Location</div> </div> <div> <div></div> <div>76° Field of View</div> </div>	
Viewpoint Information Viewpoint Location: E311400 N708373 Viewpoint Elevation: 238m (A.O.D) View Direction: 103° Distance to Turbine: 1.9km Visibility: Hub Camera Type: Nikon D3000 Focal Length: 35mm Effective Focal Length: 53.4mm Date Taken: 17/07/2012 Time Taken: 11:29 Height above elevation: 1.5m	
Visual Impact Sensitivity: Medium Magnitude: Low Overall: Moderate/Minor	
Please note for a 76° field of view, a viewing distance of 300mm is recommended.	
Client: D.A Baillie & Sons	Drawing by: Green Cat Renewables Ltd
Document Number: C387-266/Fig 5.12	Version: 1.0
Author: SS	Checked by: RC
Approved by: GM	Date: 04/03/2014



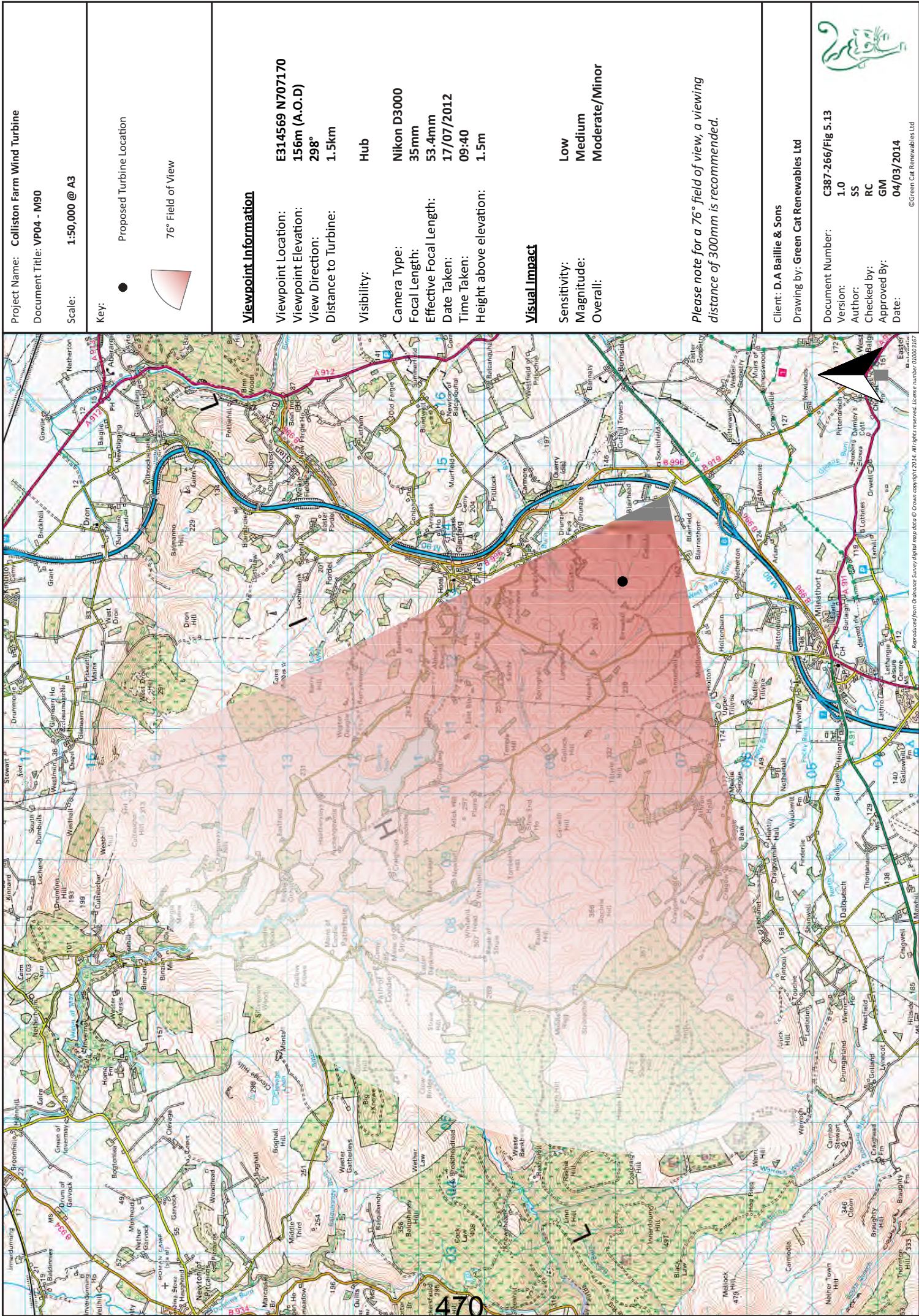




VP03 MINOR ROAD, NEWHILL TO PATH OF CONDIE - 70MM PHOTOMONTAGE OF PROPOSAL




26° VIEWING ANGLE
500MM VIEWING DISTANCE



Project Name: Colliston Farm Wind Turbine
Document Title: VP04 - M90
Scale: 1:50,000 @ A3

Key:

- Proposed Turbine Location
-  76° Field of View

Viewpoint Information

Viewpoint Location: E314569 N707170
Viewpoint Elevation: 156m (A.O.D)
View Direction: 298°
Distance to Turbine: 1.5km
Visibility: Hub
Camera Type: Nikon D3000
Focal Length: 35mm
Effective Focal Length: 53.4mm
Date Taken: 17/07/2012
Time Taken: 09:40
Height above elevation: 1.5m

Visual Impact

Sensitivity: Low
Magnitude: Medium
Overall: Moderate/Minor

Please note for a 76° field of view, a viewing distance of 300mm is recommended.

Client: D.A Baillie & Sons
Drawing by: Green Cat Renewables Ltd

Document Number: C387-266/ Fig 5.13
Version: 1.0
Author: SS
Checked by: RC
Approved By: GM
Date: 04/03/2014



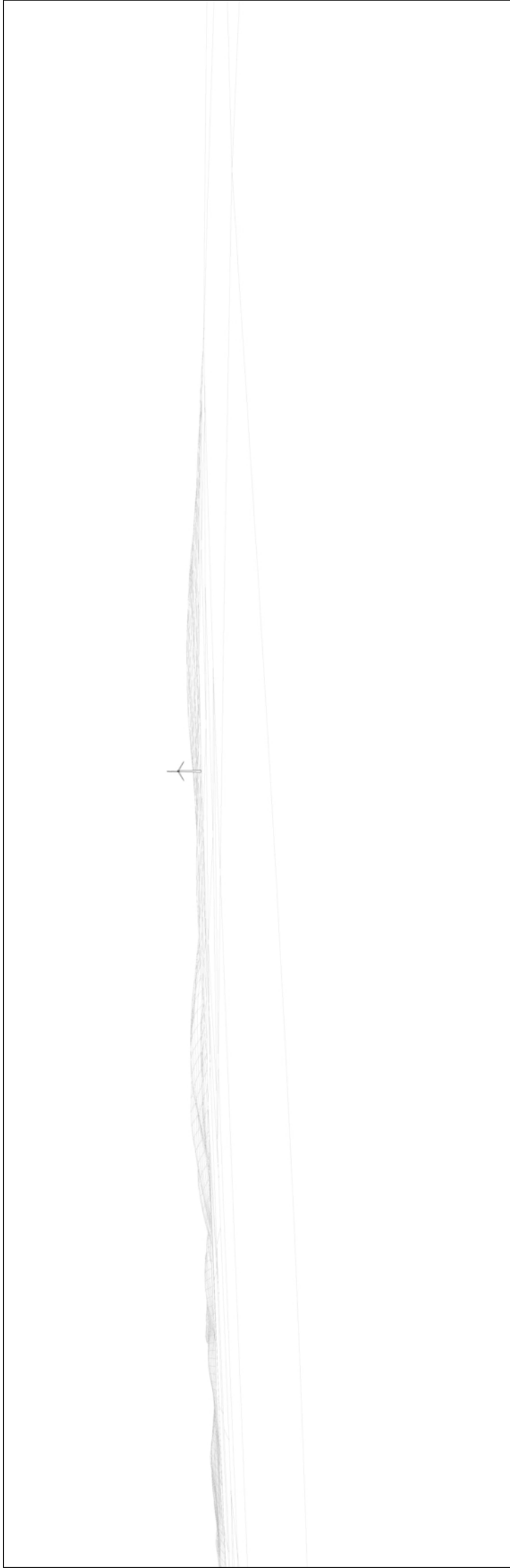
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VP04 M90 - PHOTOGRAPH OF EXISTING VIEW



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VP04 M90 - WIRELINE DRAWING



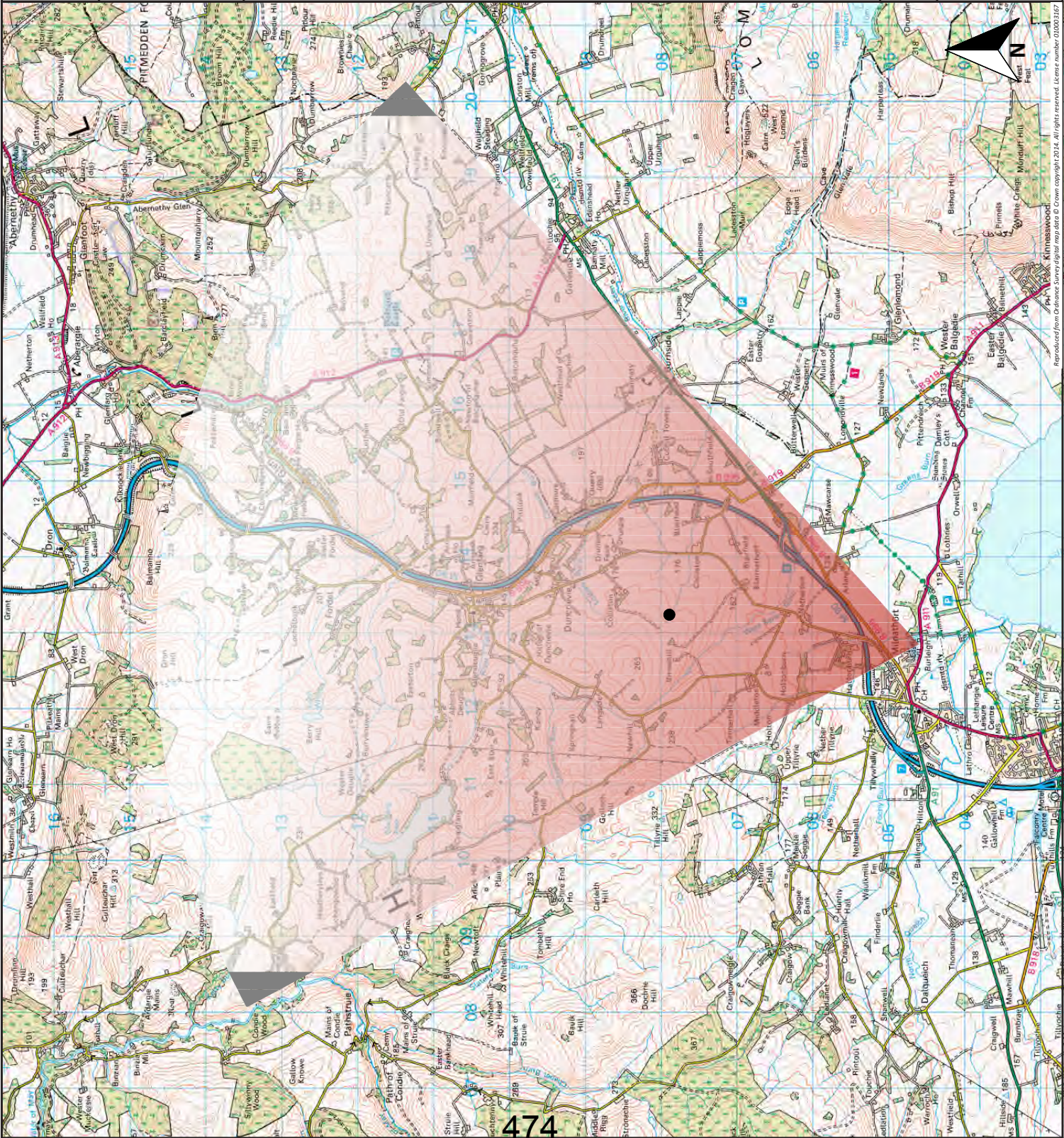


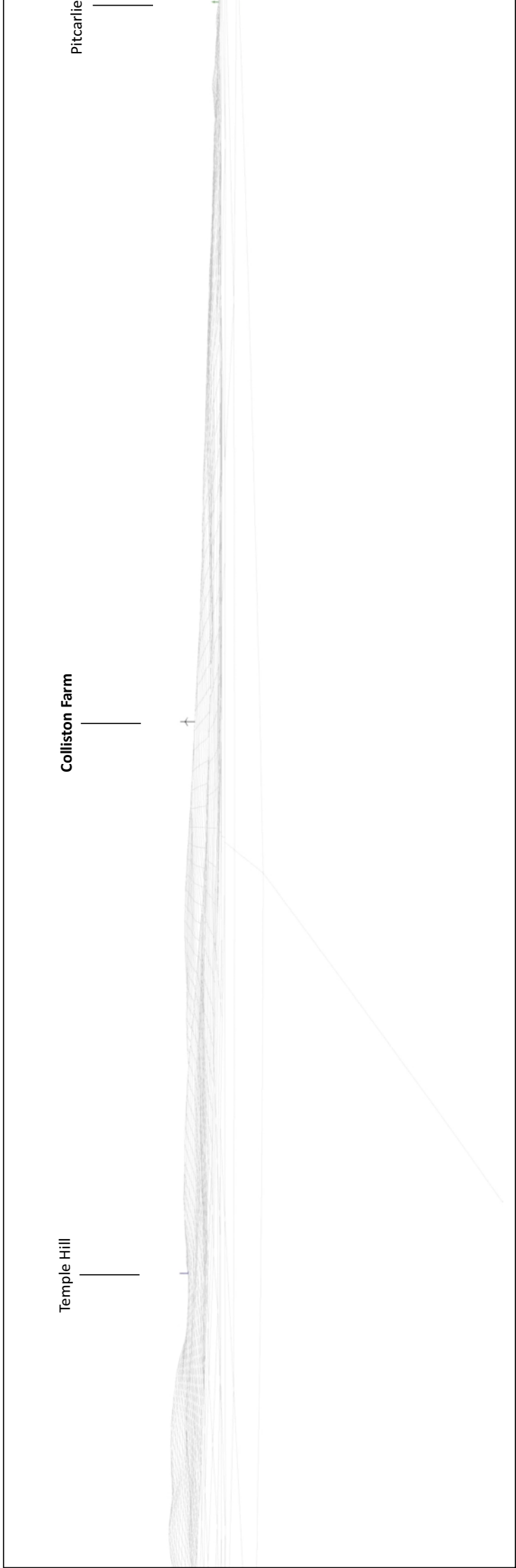
VP04 M90 - 70MM PHOTOMONTAGE OF PROPOSAL



26° VIEWING ANGLE
500MM VIEWING DISTANCE

<p>Project Name: Colliston Farm Wind Turbine</p> <p>Document Title: VP05 - Burleigh Castle</p> <p>Scale: 1:50,000 @ A3</p>	<p>Key:</p> <p>● Proposed Turbine Location</p> <p>76° Field of View</p>	<p>Viewpoint Information</p> <p>Viewpoint Location: E312902 N704599</p> <p>Viewpoint Elevation: 117m (A.O.D)</p> <p>View Direction: 2°</p> <p>Distance to Turbine: 3.3km</p> <p>Visibility: 3 Projects</p> <p>Camera Type: Nikon D3000</p> <p>Focal Length: 35mm</p> <p>Effective Focal Length: 53.4mm</p> <p>Date Taken: 17/07/2012</p> <p>Time Taken: 11:56</p> <p>Height above elevation: 1.5m</p> <p>Visual Impact</p> <p>Sensitivity: High</p> <p>Magnitude: Low</p> <p>Overall: Moderate</p> <p>Please note for a 76° field of view, a viewing distance of 300mm is recommended.</p>	<p>Client: D.A Baillie & Sons</p> <p>Drawing by: Green Cat Renewables Ltd</p>	<p>Document Number: C387-266/ Fig 5.14</p> <p>Version: 1.0</p> <p>Author: SS</p> <p>Checked by: RC</p> <p>Approved By: GM</p> <p>Date: 04/03/2014</p>
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VP05 BURLEIGH CASTLE - 70MM PHOTOMONTAGE OF PROPOSAL



26° VIEWING ANGLE
500MM VIEWING DISTANCE

Project Name: Colliston Farm Wind Turbine
Document Title: VP06 - B919

Scale: 1:50,000 @ A3

Key: Proposed Turbine Location

76° Field of View

Viewpoint Information

Viewpoint Location: E316003 N704745
Viewpoint Elevation: 130m (A.O.D)
View Direction: 330°
Distance to Turbine: 4.2km

Visibility: 3 Projects

Camera Type:	Nikon D3000
Focal Length:	35mm
Effective Focal Length:	53.4mm
Date Taken:	17/07/2012
Time Taken:	09:11
Height above elevation:	1.5m

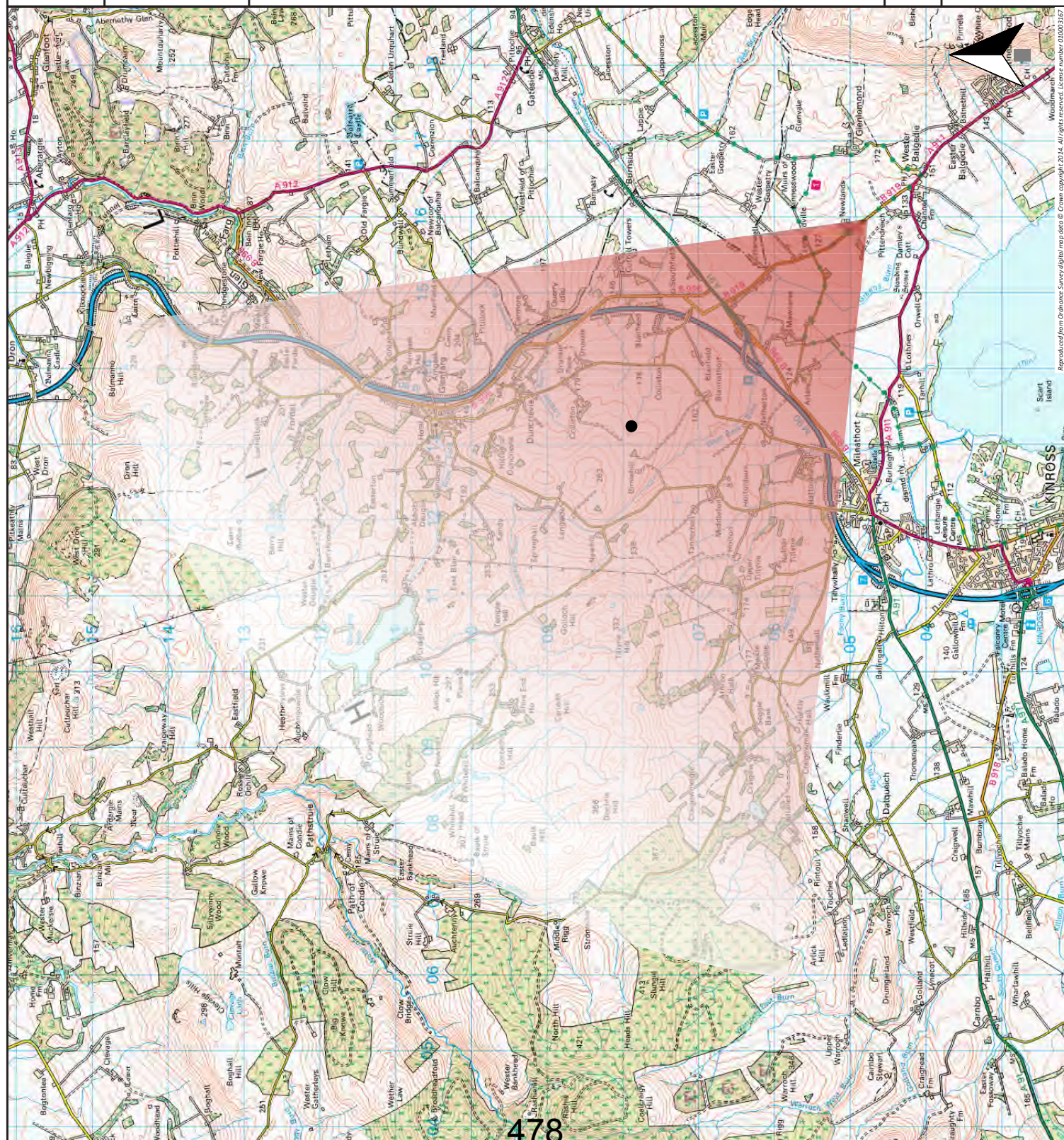
Visual Impact

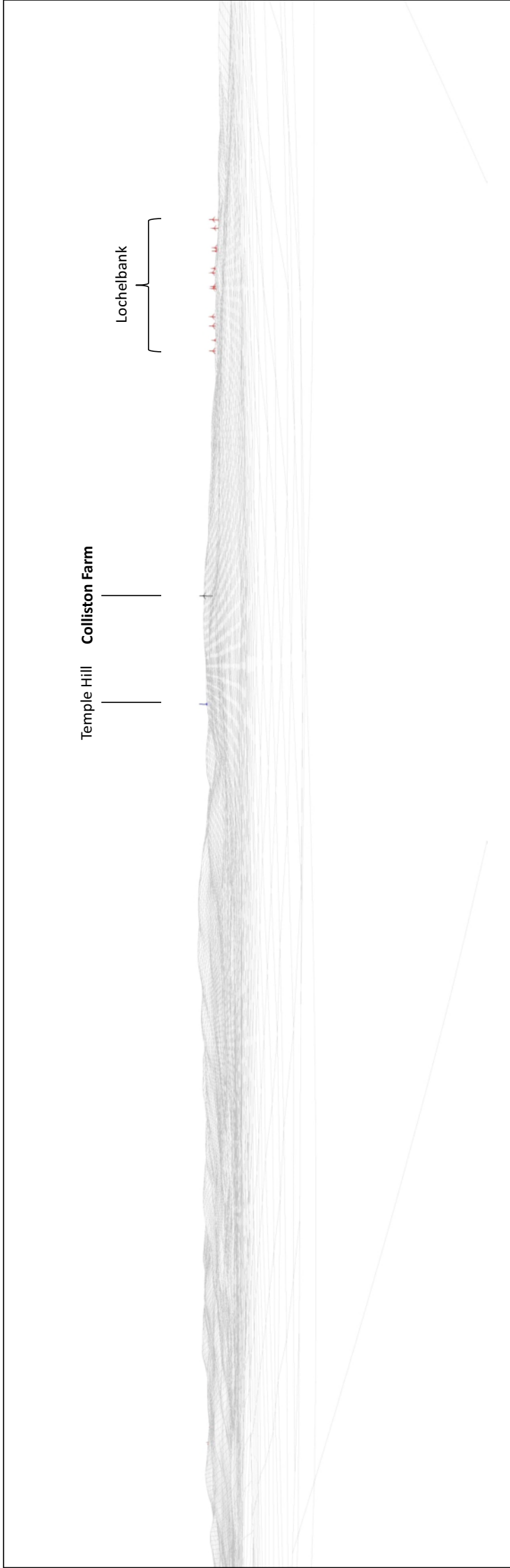
	High	Low	Moderate
Sensitivity:			
Magnitude:			
Overall:			

Please note for a 76° field of view, a viewing distance of 300mm is recommended.

Client: **D.A Baillie & Sons**
Drawing by: **Green Cat Renewables Ltd**

Document Number: C387-266/Fig 5.15
Version: 1.0
Author: SS
Checked by: RC
Approved By: GM
Date: 04/03/2014





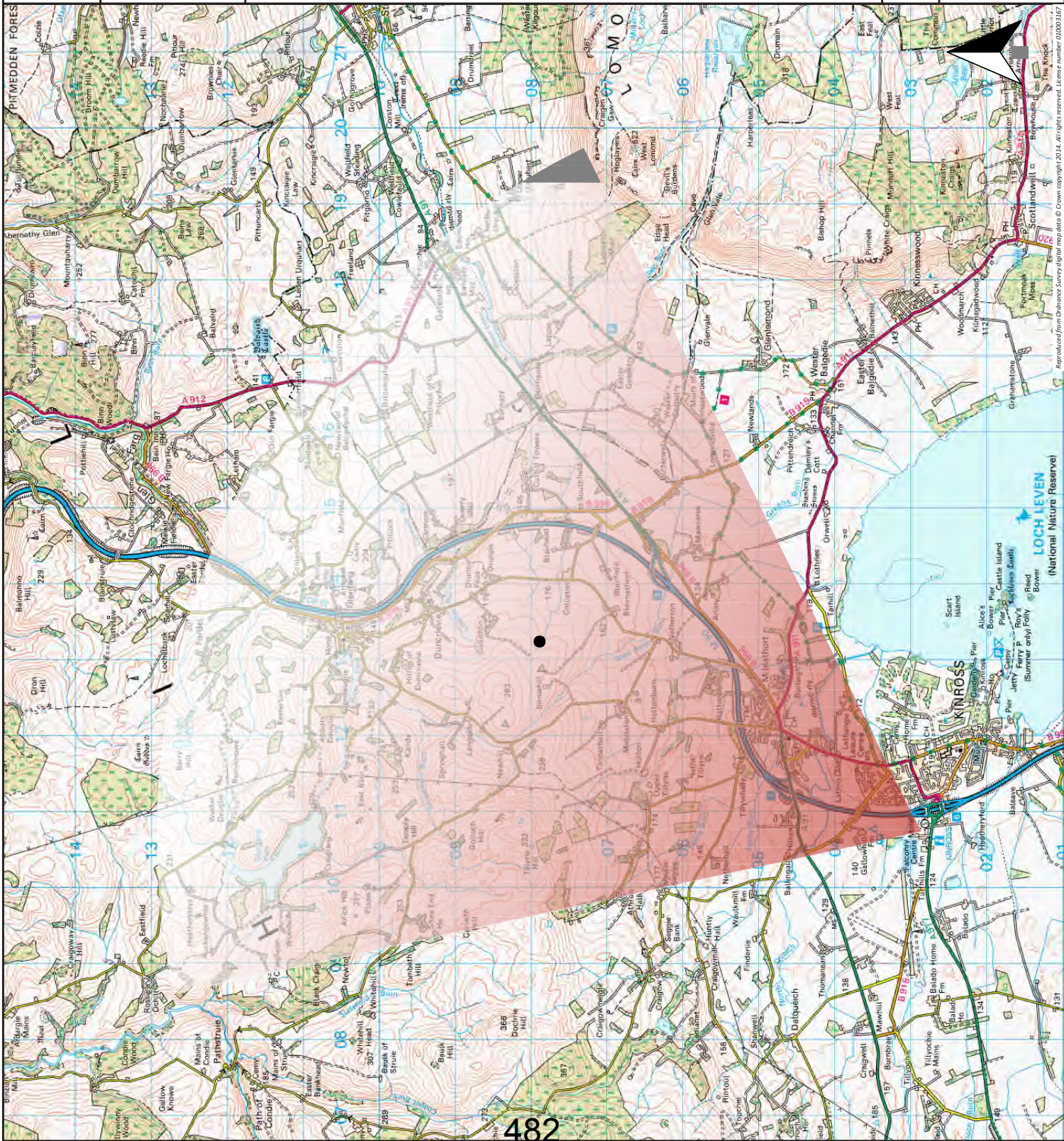


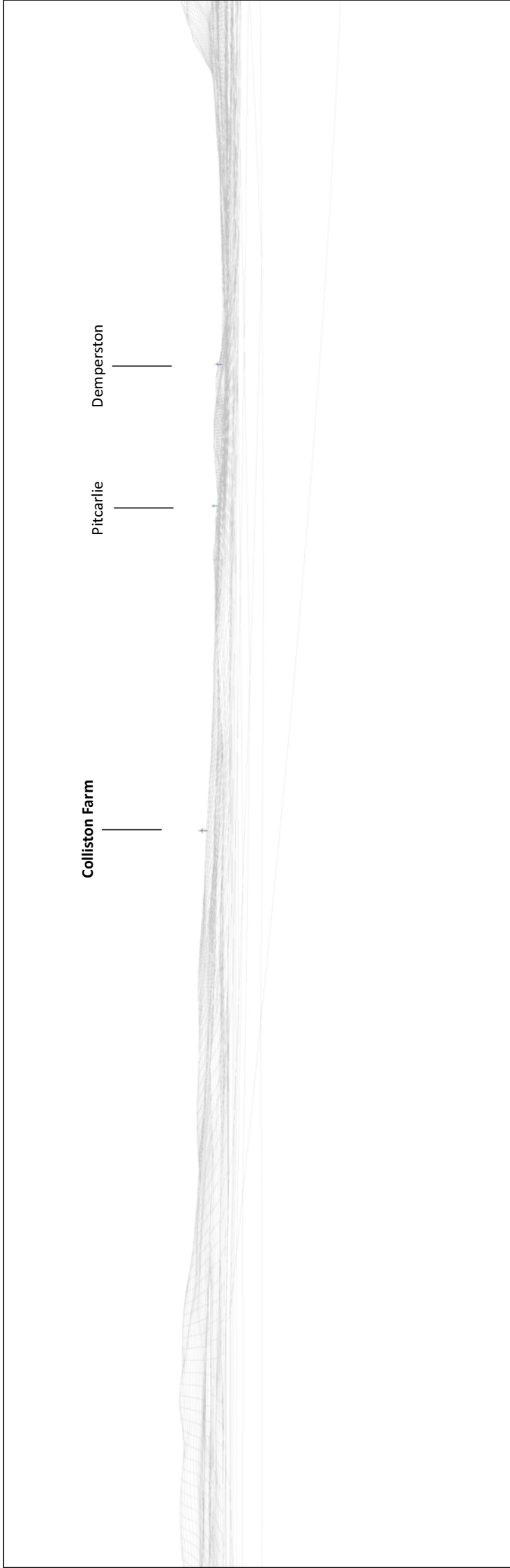
VP06 B919 - 70MM PHOTOMONTAGE OF PROPOSAL



26° VIEWING ANGLE
500MM VIEWING DISTANCE

Project Name: Colliston Farm Wind Turbine	Document Title: VP07 - Kinross Services
Scale: 1:50,000 @ A3	
Key: <ul style="list-style-type: none"> Proposed Turbine Location 76° Field of View 	
Viewpoint Information Viewpoint Location: E310736 N702853 Viewpoint Elevation: 127m (A.O.D) View Direction: 28° Distance to Turbine: 5.6km Visibility: 3 Projects Camera Type: Nikon D3000 Focal Length: 35mm Effective Focal Length: 53.4mm Date Taken: 17/07/2012 Time Taken: 13:11 Height above elevation: 1.5m	
Visual Impact Sensitivity: Medium Magnitude: Negligible Overall: Minor	
Please note for a 76° field of view, a viewing distance of 300mm is recommended.	
Client: D.A Baillie & Sons Drawing by: Green Cat Renewables Ltd	
Document Number: C387-266/Fig 5.16 Version: 1.0 Author: SS Checked by: RC Approved By: GM Date: 04/03/2014	







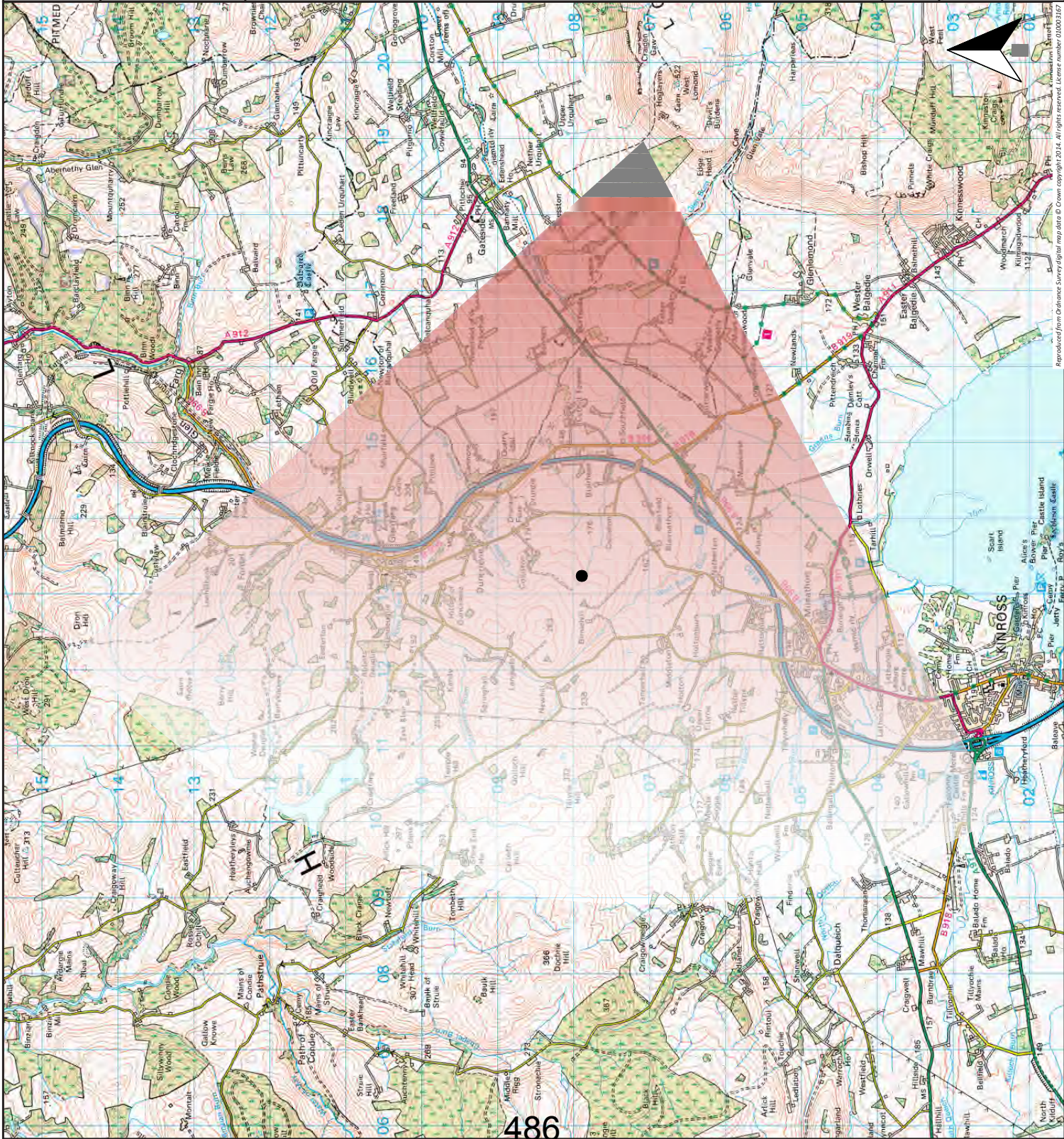


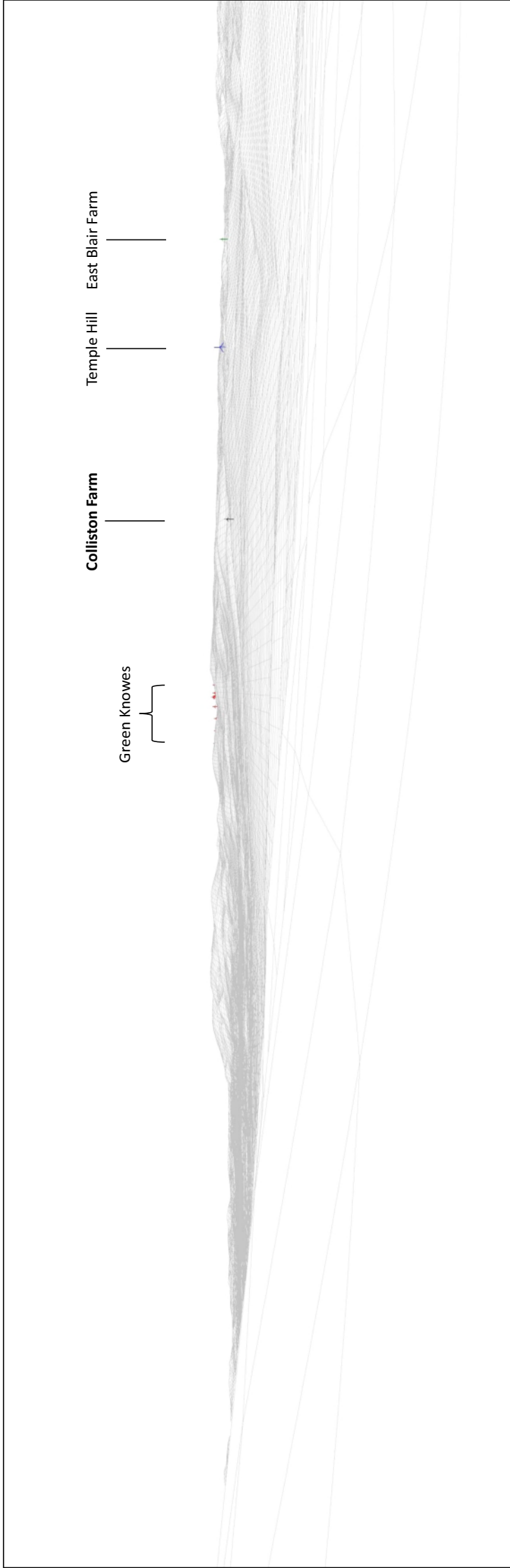
VP07 KINROSS SERVICES - 70MM PHOTOMONTAGE OF PROPOSAL

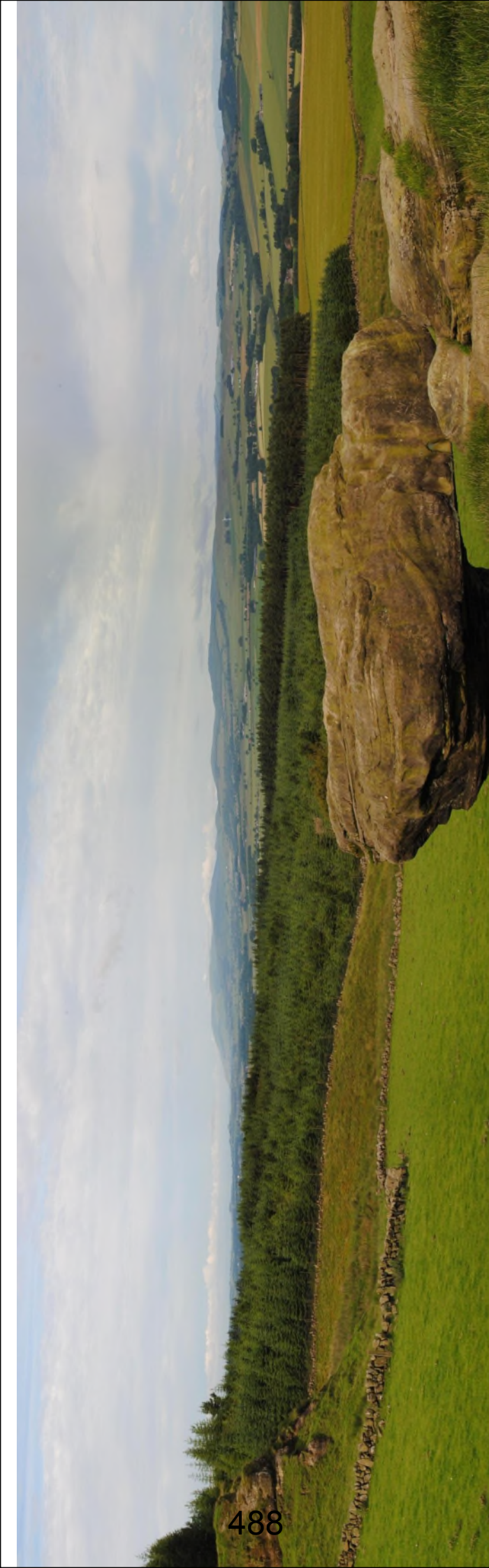


26° VIEWING ANGLE
500MM VIEWING DISTANCE

Project Name: Colliston Farm Wind Turbine Document Title: VP08 - Bonnet Stane Scale: 1:50,000 @ A3	Key:   76° Field of View	Viewpoint Information Viewpoint Location: E318987 N707062 Viewpoint Elevation: 231m (A.O.D) View Direction: 265° Distance to Turbine: 5.8km Visibility: 4 Projects Camera Type: Nikon D3000 Focal Length: 35mm Effective Focal Length: 53.4mm Date Taken: 17/07/2012 Time Taken: 08:08 Height above elevation: 1.5m	Visual Impact Sensitivity: High Magnitude: Low Overall: Moderate	Please note for a 76° field of view, a viewing distance of 300mm is recommended.	Client: D.A Baillie & Sons Drawing by: Green Cat Renewables Ltd	Document Number: C387-266/Fig 5.17 Version: 1.0 Author: SS Checked by: RC Approved By: GM Date: 04/03/2014
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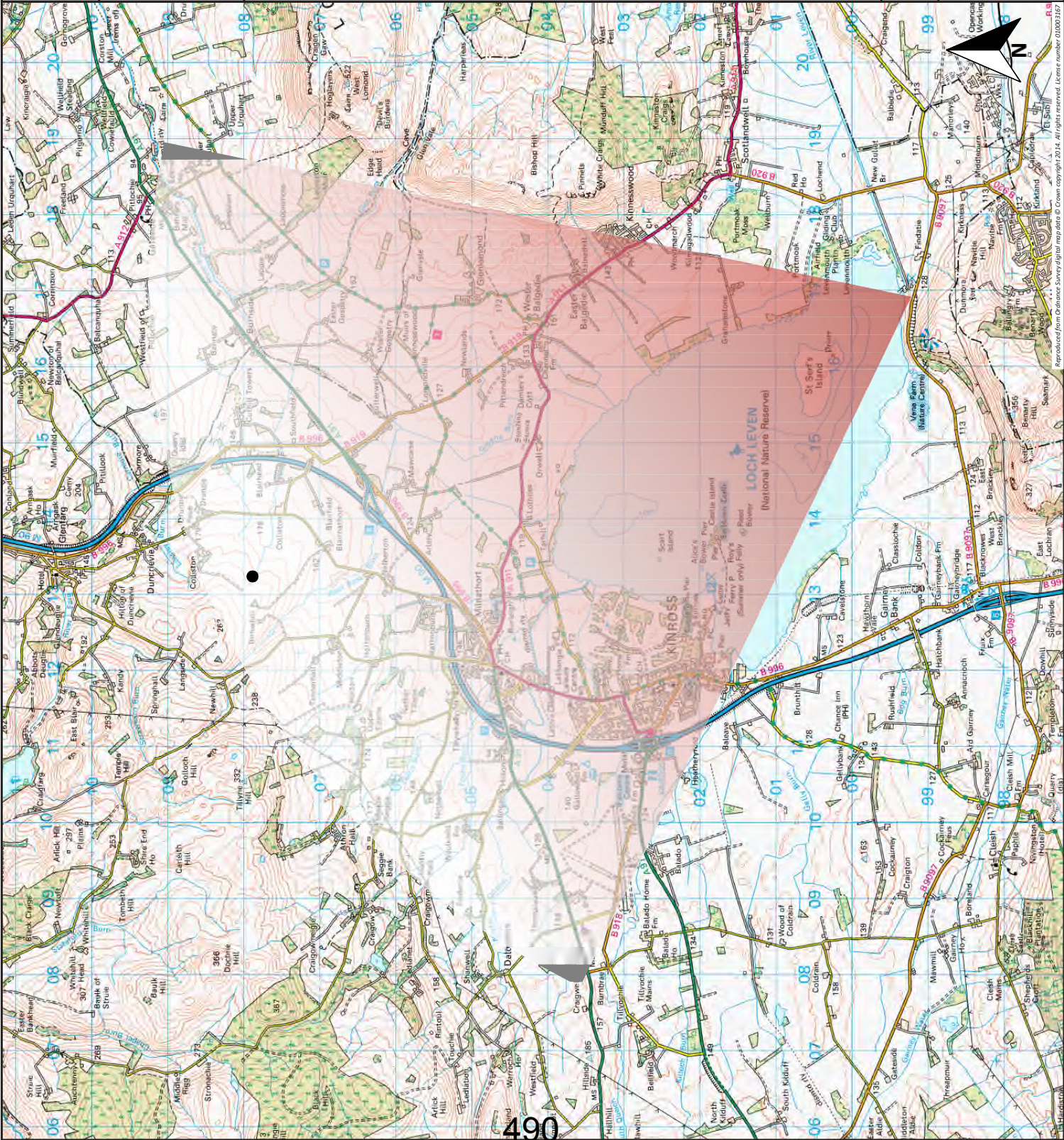


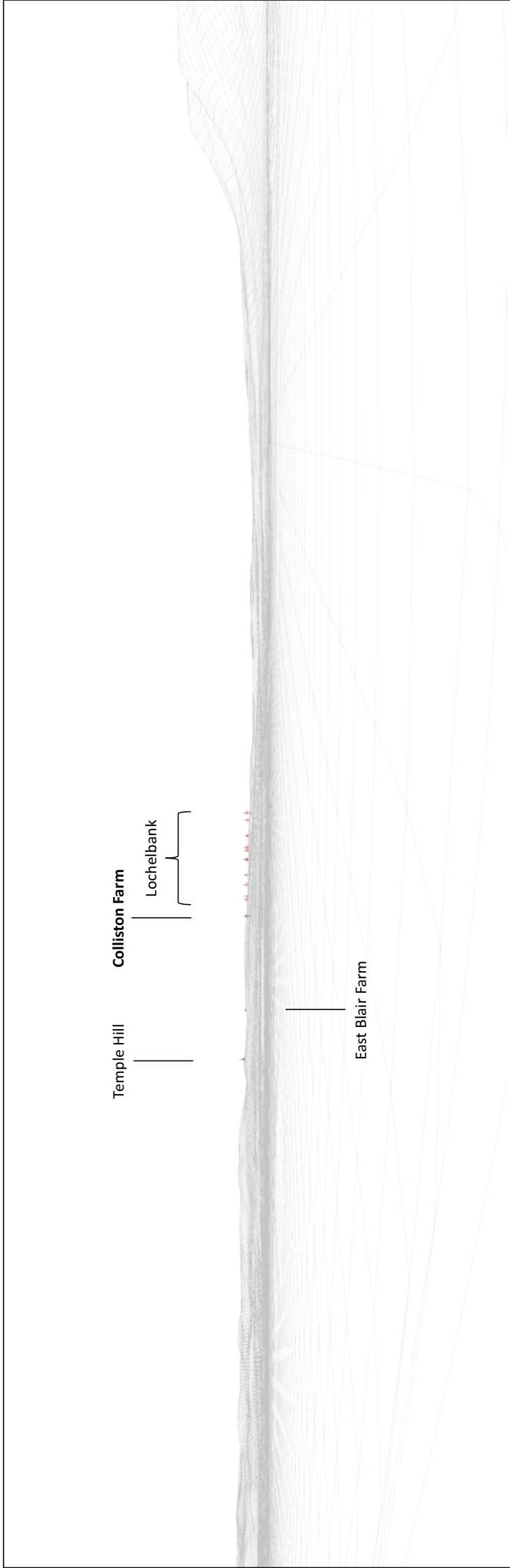
VP08 BONNET STANE - 70MM PHOTOMONTAGE OF PROPOSAL

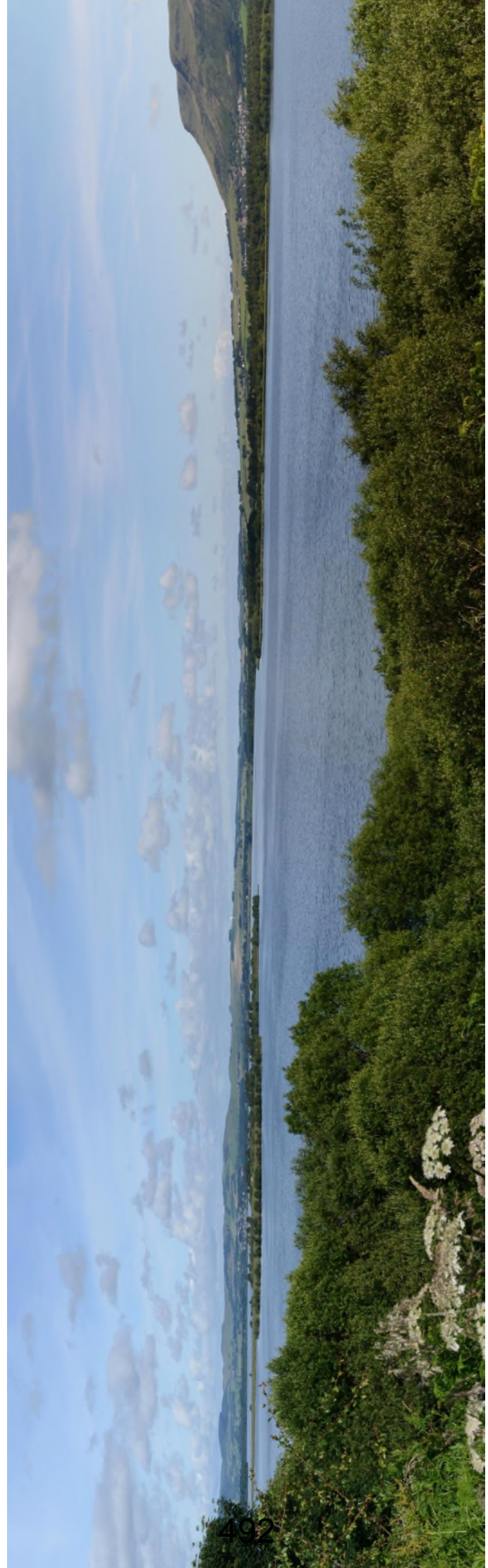


26° VIEWING ANGLE
500MM VIEWING DISTANCE

<p>Project Name: Colliston Farm Wind Turbine</p> <p>Document Title: VP09 - Loch Leven Cottages</p> <p>Scale: 1:50,000 @ A3</p>	<p>Key:</p> <p>● Proposed Turbine Location</p> <p>76° Field of View</p>	<p>Viewpoint Information</p> <p>Viewpoint Location: E316905 N699229</p> <p>Viewpoint Elevation: 127m (A.O.D)</p> <p>View Direction: 343°</p> <p>Distance to Turbine: 9.4km</p> <p>Visibility: 4 Projects</p> <p>Camera Type: Nikon D3100</p> <p>Focal Length: 35mm</p> <p>Effective Focal Length: 54.6mm</p> <p>Date Taken: 25/07/2012</p> <p>Time Taken: 10:09</p> <p>Height above elevation: 1.5m</p> <p>Visual Impact</p> <p>Sensitivity: High</p> <p>Magnitude: Negligible</p> <p>Overall: Moderate/Minor</p>	<p>Please note for a 76° field of view, a viewing distance of 300mm is recommended.</p>	<p>Client: D.A Baillie & Sons</p> <p>Drawing by: Green Cat Renewables Ltd</p>	<p>Document Number: C387-266/ Fig 5.18</p> <p>Version: 1.0</p> <p>Author: SS</p> <p>Checked by: RC</p> <p>Approved By: GM</p> <p>Date: 04/03/2014</p>
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


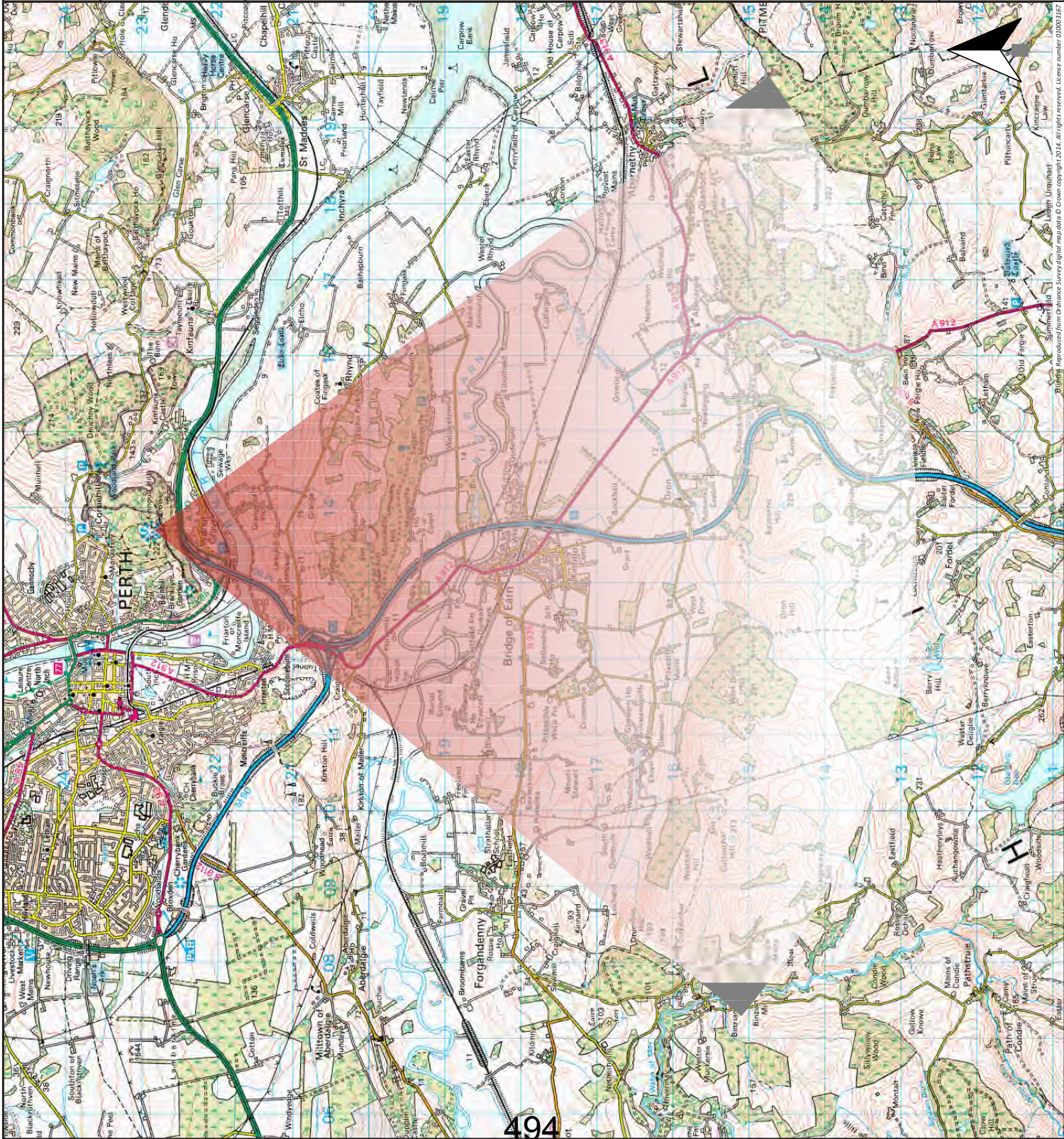


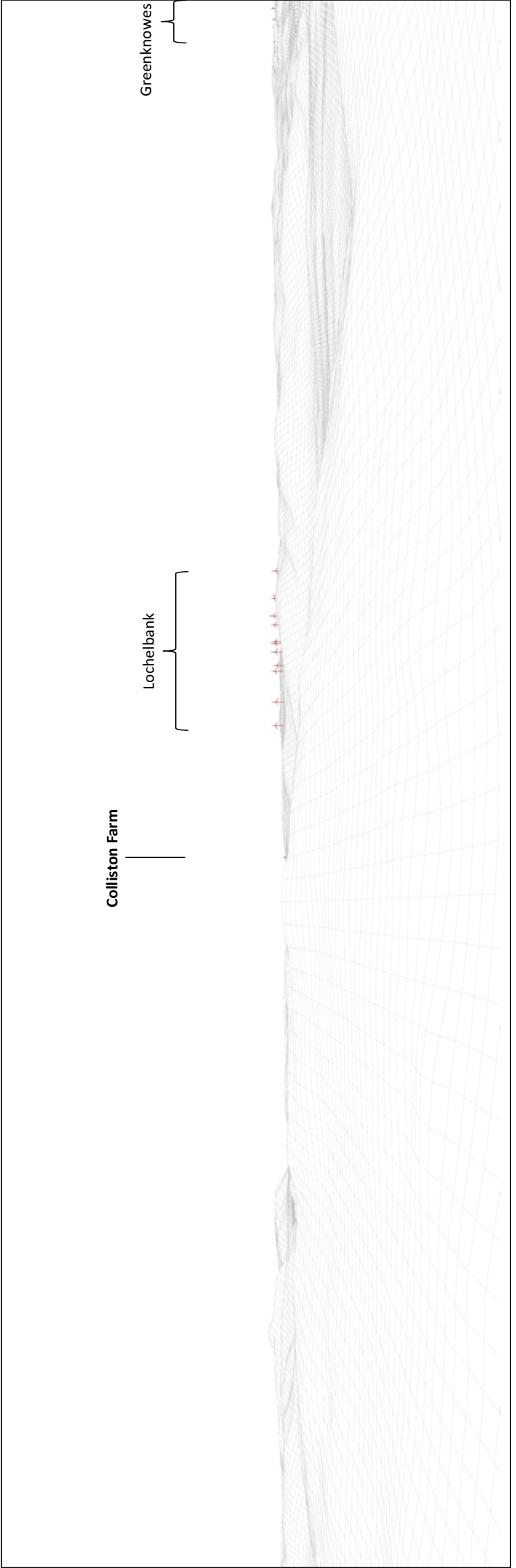
VP09 LOCH LEVEN COTTAGES - 70MM PHOTOMONTAGE OF PROPOSAL



26° VIEWING ANGLE
500MM VIEWING DISTANCE



Project Name: Colliston Farm Wind Turbine Document Title: VP10 - Kinnoull Hill Scale: 1:50,000 @ A3	Key:   Proposed Turbine Location 76° Field of View	Viewpoint Information Viewpoint Location: E313663 N722709 Viewpoint Elevation: 177m (A.O.D) View Direction: 186° Distance to Turbine: 14.6km Visibility: 3 Projects Camera Type: Nikon D3100 Focal Length: 35mm Effective Focal Length: 54.6mm Date Taken: 18/06/2012 Time Taken: 17:02 Height above elevation: 1.5m	Visual Impact Sensitivity: High Magnitude: Negligible Overall: Moderate/Minor	Please note for a 76° field of view, a viewing distance of 300mm is recommended.	Client: D.A Baillie & Sons Drawing by: Green Cat Renewables Ltd	Document Number: C387-266/ Fig 5.19 Version: 1.0 Author: SS Checked by: RC Approved By: GM Date: 04/03/2014
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Project Name: Colliston Farm Wind Turbine
Document Title: VP11 - Knock Hill

Scale: 1:50,000 @ A3

Key:  Proposed Turbine Location
 76° Field of View

Viewpoint Information

Viewpoint Location: E305390 N693786
Viewpoint Elevation: 360m (A.O.D)
View Direction: 18°
Distance to Turbine: 16km
Visibility: 5 Projects

Camera Type: Nikon D3100
Focal Length: 35mm
Effective Focal Length: 54.6mm
Date Taken: 25/07/2012
Time Taken: 09:22
Height above elevation: 1.5m

Visual Impact

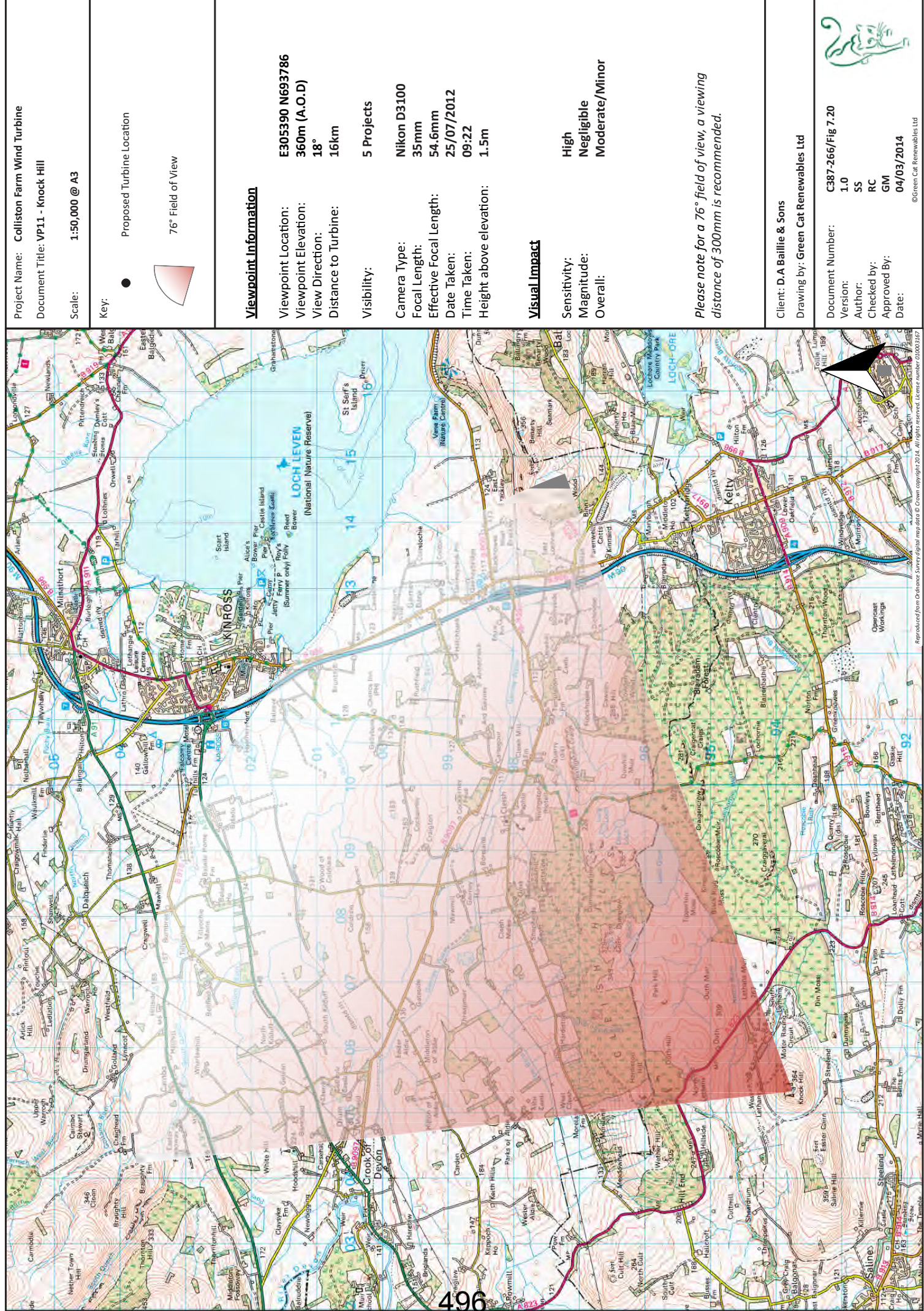
Sensitivity: High
Magnitude: Negligible
Overall: Moderate/Minor

Please note for a 76° field of view, a viewing distance of 300mm is recommended.

Client: D.A Baillie & Sons
Drawing by: Green Cat Renewables Ltd

Document Number: C387-266/ Fig 7.20
Version: 1.0
Author: SS
Checked by: RC
Approved By: GM
Date: 04/03/2014

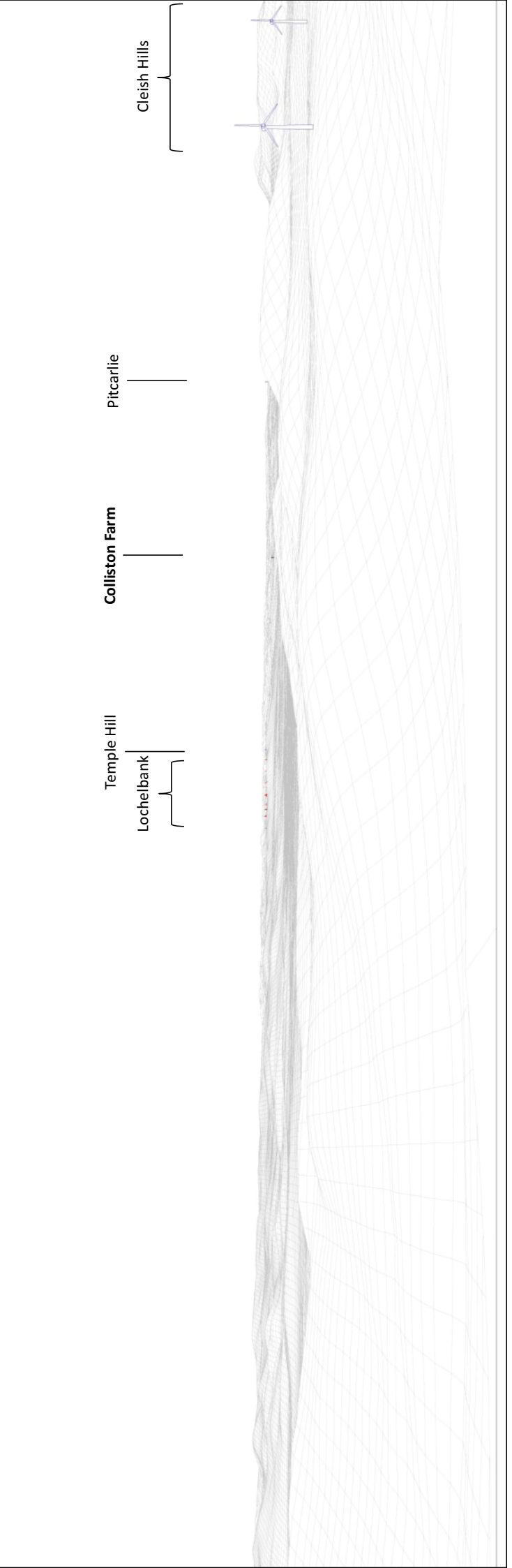
©Green Cat Renewables Ltd



The figure is a topographic map of the Knock Hill area, showing the proposed wind turbine location and its field of view. The map includes contour lines, roads, and various geographical features. A pink shaded area indicates the 76° field of view from the proposed turbine location. The map is oriented with North at the top. A scale bar indicates a distance of 16km. The map is titled 'VP11 - Knock Hill' and is part of a project for the Colliston Farm Wind Turbine. The map is drawn by Green Cat Renewables Ltd and is dated 04/03/2014.



VP12 KNOCK HILL - WIRELINE DRAWING




Project Name: Colliston Farm Wind Turbine
Document Title: VP12 - M90 Overbridge at Glenfarg
Scale: 1:50,000 @ A3

Key:

●

Proposed Turbine Location

76° Field of View

Viewpoint Information

Viewpoint Location: E313805 N711455
Viewpoint Elevation: 136m (A.O.D)
View Direction: 190°
Distance to Turbine: 3.6km
Visibility: No Visibility
Camera Type: Nikon D3000
Focal Length: 35mm
Effective Focal Length: 53.4mm
Date Taken: 17/07/2012
Time Taken: 10:41
Height above elevation: 1.5m

Visual Impact

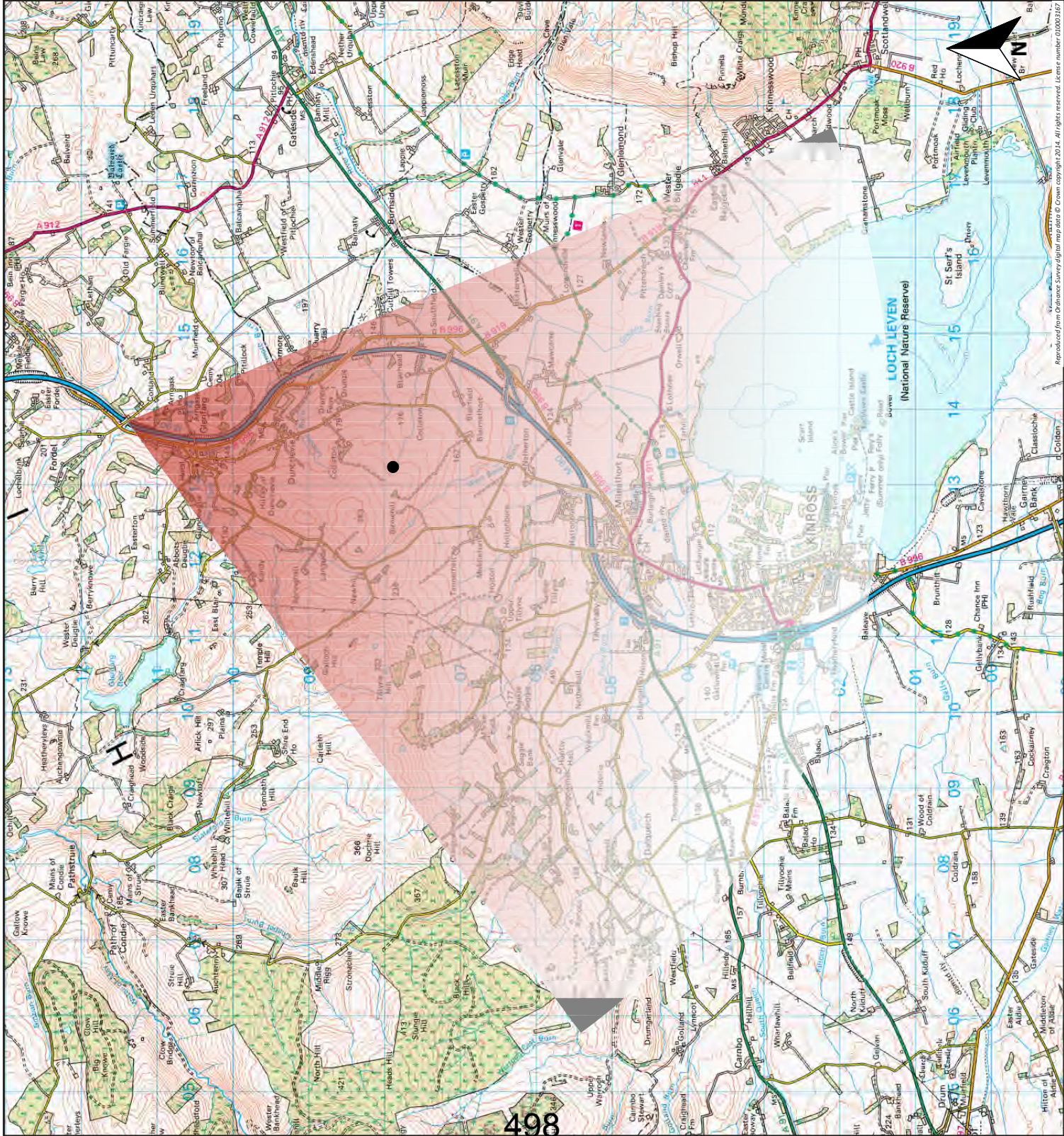
Sensitivity: -
Magnitude: -
Overall: -

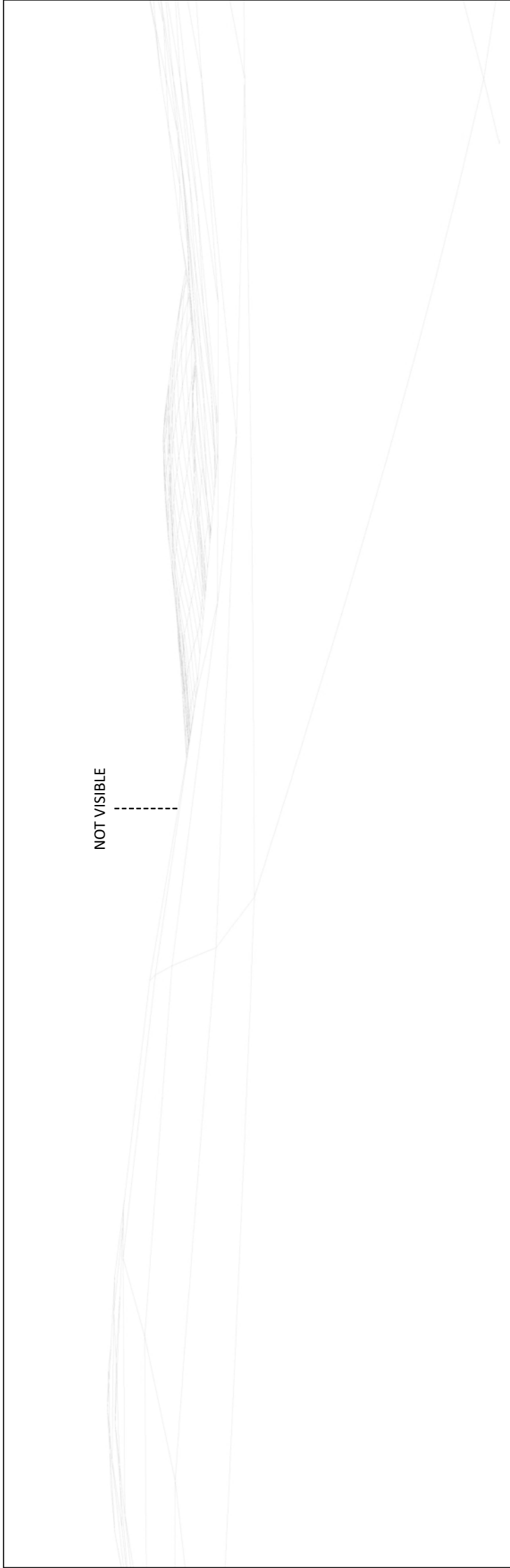
Please note for a 76° field of view, a viewing distance of 300mm is recommended.

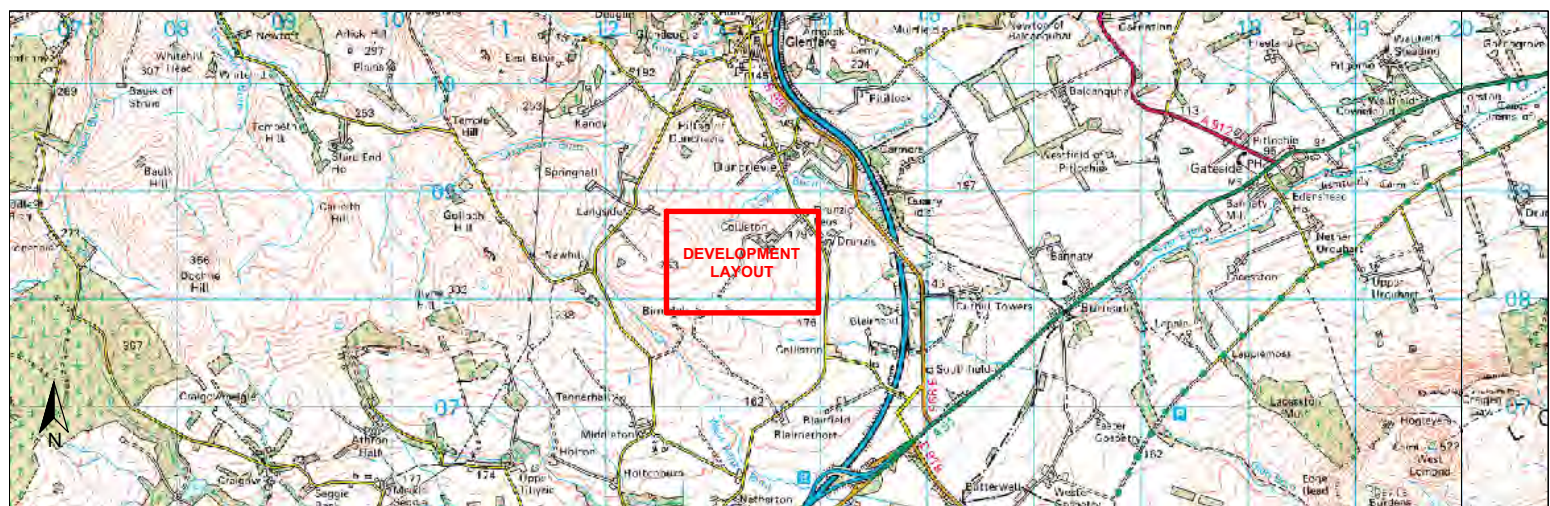
Client: D.A Baillie & Sons
Drawing by: Green Cat Renewables Ltd



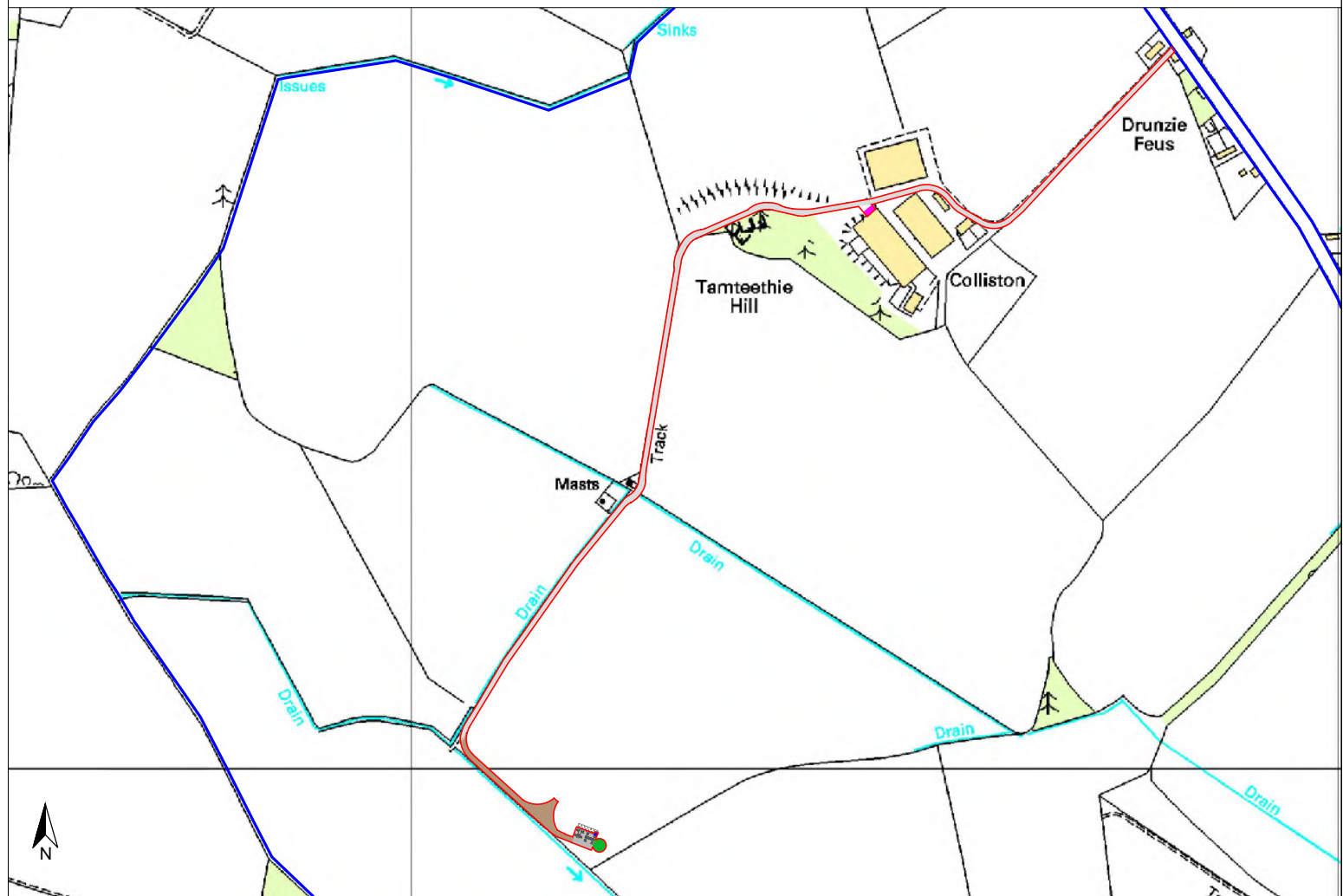
Document Number: C387-266/ Fig 5.21
Version: 1.0
Author: SS
Checked by: RC
Approved By: GM
Date: 04/03/2014



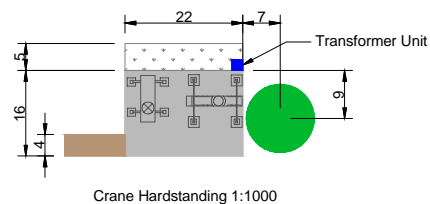




DEVELOPMENT SITE LOCATION - 1:50,000
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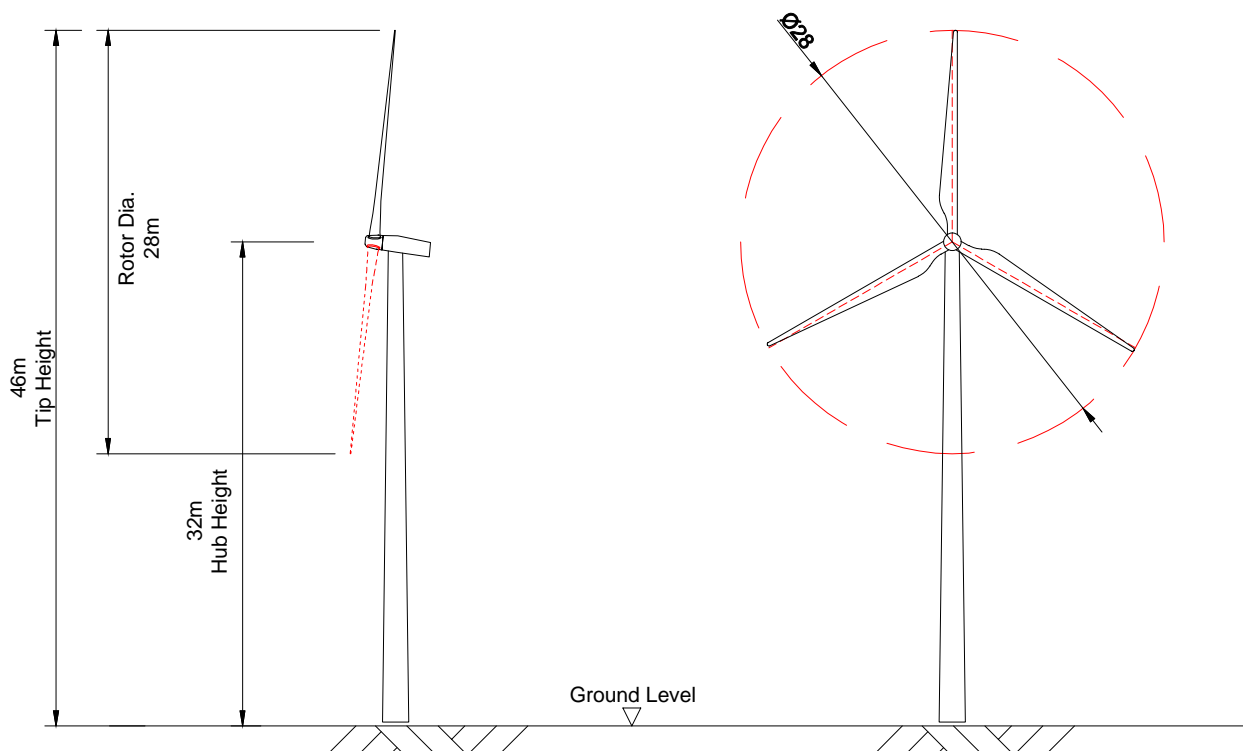
DEVELOPMENT LAYOUT - 1:5,000
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- KEY**
- PROPOSED TURBINE / FOUNDATION
NGR: 313200,707920
 - SUB-STATION / METERING POINT
NGR: 313500,708600
 - UPGRADED ACCESS TRACK
 - NEW ACCESS TRACK
 - CRANE HARDSTANDING & LEVELED ASSEMBLY AREA
 - LAND OWNERSHIP BOUNDARY
 - APPLICATION BOUNDARY

APPLICATION AREA:
1.1 HECTARES (TURBINE, ACCESS TRACK, HARD-STANDING & SUBSTATION)

Project Title: Colliston Farm Wind Turbine		Date drawn: 27.02.14		Rev.	Date	Chk'd	Client: D A Baillie & Sons	GREEN CAT RENEWABLES LTD Midlothian Innovation Centre, Pentlandsfield, Edinburgh, EH25 9RE. Tel: 0131 440 9053 www.greencatrenewables.co.uk
Drawing Title: Planning Application - Site Plan		Drawn by: LS		-	-	-		
Job No. C387-266		Drawing No. APP-001		Checked by: AE		-		
Scale: Shown @ A3		Approved by: SD		500		-		



Project Title:			Date drawn:	Client:	GREEN CAT RENEWABLES LTD  Midlothian Innovation Centre, Pentlandfield, Edinburgh, EH25 9RE. Tel:0131 440 9053 www.greencatrenewables.co.uk
Colliston Farm Wind Turbine			13.03.14		
Drawing Title:			Stage:		
Turbine Elevation			Planning		
Job No. C387-266			Drawn by: AF		
Drawing No. APP-002			Checked by: GD		
Scale: 1:500 @ A4			Approved by:		



Perth & Kinross Council
Planning Department
Pullar House
35 Kinoull Street
Perth
PH1 5GD

Graham Donnachie
Tel: 0131 440 6155
e-mail:
graham@greencatrenewables.co.uk
web: www.greencatrenewables.co.uk

18/07/2014

Colliston Farm Wind Turbine (14/00468/FLL) – Response to Landscape Architect Comments

Dear Andy,

Thank you for your email on the 16/07/2014 in which you passed on comments from the Perth and Kinross Council Landscape Architect relating to the proposed Colliston Farm Wind Turbine (14/00468/FLL).

As I am sure you will appreciate, a great deal of time and consideration has gone into the re-design process of this application, and we are confident that the application fully address the concerns of the original application and complies with local and national policies. We feel that the landscape and visual impacts of the proposed 46m wind turbine have been overstated and would like to take the opportunity to respond to the concerns raised:

- *“The location is on the south facing slopes of the Ochils and would therefore be prominent in views from the south and this is likely to have a significant effect on the Kinross AGLV.”*

The Kinross AGLV is located to the east of Kinross, covering the landscape between Loch Leven and the Lomond Regional Park.

The impact on the AGLV was assessed as part of the ER, where it was referred to as the Lomond Hills AGLV. The impacts on this area are considered to be negligible. There is no suggestion that the proposed turbine at this scale will have a significant effect on the setting of the AGLV.

Viewpoints 6 & 9 are taken from locations relatively close to the AGLV and neither location depicts an overly dominant or prominent feature within the landscape. The photomontages are shown in **Figure 1.1 and 1.2** below – A3 versions are in the Landscape Figures document.



Figure 1.1 - VP06 – B919



Figure 1.2 - VP09 – Loch Leven Cottages

The ZTV associated with the proposed Colliston turbine shows theoretical visibility over the western half of the AGLV, covering around 50% of the AGLV area. Views from within this section of the AGLV will be further limited by vegetation and other features present in the wider landscape.

The AGLV abuts the Regional Park around the Lomond Hills. From these elevated positions the views from within the AGLV will be open and panoramic, offering fairly broad views in all directions across the surrounding landscapes. From these more elevated locations the Colliston Farm turbine would be viewed solely against the landscape. As well as these open views, the Loch Leven vistas are also important. The proposed turbine would not appear in the views to the west towards the Loch from these areas.

From the southern banks of Loch Leven (**Viewpoint 9**) the turbine is almost completely absorbed by the Lochelbank Windfarm, marginally extending the horizontal influence of the turbines already present in the view, although the change to the view is negligible.

Exiting the AGLV to the north, **Viewpoint 6**, located at the side of the B919, depicts a turbine predominantly viewed against the upland landscape of the Ochils. The turbine does not create a feature on the skyline and would be absorbed to some extent by the large scale of the Ochils which spread to the left of the receptor. The proposed turbine appears more akin in scale with the electricity pylons which traverse the horizon beyond. The Lochelbank turbines appear in this view, although they are heavily screened by both the intervening landscape and vegetation features present in the landscape. The Lochelbank turbines are present in the photograph in **Figure 1.1**, highlighting how unobtrusive the turbines are in this particular view, they are not easily discernible on the horizon.

The impact on the AGLV is considered to be minimal.

- *“It would be worth having a look at the Tillyrie report as some of the reasons for refusal may apply to this application.”*

We do not think that a comparison with the refused Tillyrie development is valid or appropriate.

The Colliston site sits at an elevation of 207m AOD, whilst the Tillyrie site is almost 100m higher, at an elevation of 300m AOD. The turbines proposed at Tillyrie also differ in number and scale, with the Tillyrie development proposing 3 x 74m tip turbines, compared to the single 47m turbine at Colliston. The two sites are 3.5km apart and differ in their appearance in both the immediate and wider landscape. The Colliston turbine, which is located at a much lower altitude away from the more sensitive summits of the Ochils and near the transition with the lowland landscape to the south, would not have the same visual impact as the Tillyrie cluster. We are concerned by the suggestion that refusal reasons for Tillyrie could simply be applied to a development in a different location, with differing turbine scale and numbers.

- *“The design rationale fails to explain how the proposed site relates to the existing wind farms in the area – would it appear to be an outlier on the skyline and/or reduce the spacing between Green Knowes and Lochelbank?”*

The proposed turbine at Colliston Farm is located over 15km from Green Knowes and the two schemes rarely occupy the same view. It is therefore unlikely that there would be any significant cumulative effects arising between the two developments. **Figure 1.3** shows the CZTV, with only the area around Loch Leven showing any significant cumulative intervisibility, highlighted in the darker green coloration. As has been demonstrated from these areas views of Green Knowes are extremely limited, with the wind farm located over 15km from the area.

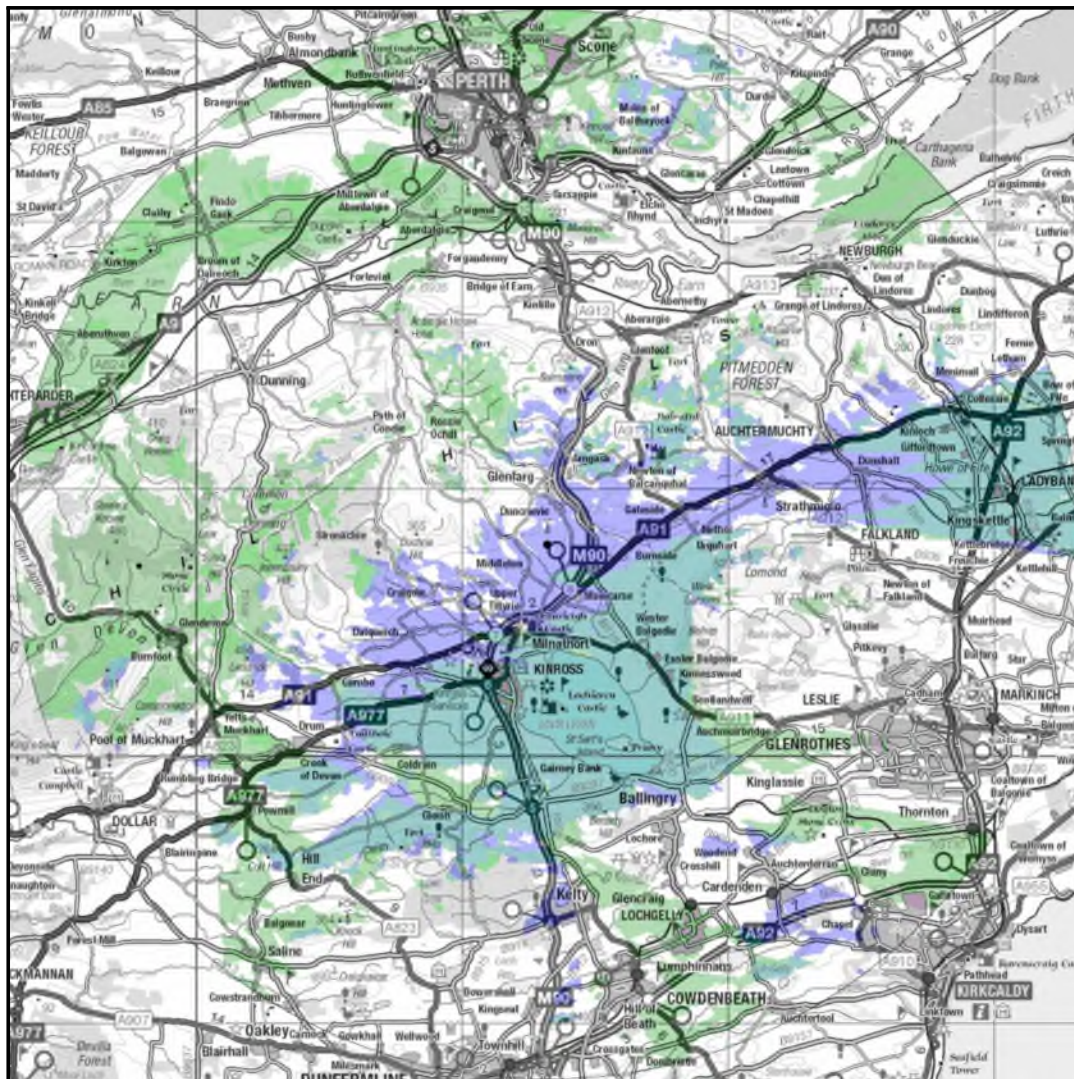


Figure 1.3 – CZTV with Green Knowes

The Lochelbank Windfarm is located ~6km to the north of the Colliston Farm site.

There are relatively few views where all three developments would appear together, with the view from the Bonnet Stane being one of relatively few locations that all three developments appear visible in successive views. The photomontage is shown in **Figure 1.4**.



Figure 1.4 – VP08 – Bonnet Stane looking towards Colliston Farm and Green Knowes, Lochelbank to the right of the view

At this distance Green Knowes (20.2km distant) forms a barely discernible feature on the horizon, while the Lochelbank Windfarm is in a relatively prominent feature on the horizon to the right of the view. From the Bonnet Stane the Colliston Farm turbine is viewed against the landscape, and absorbed by the large scale and openness of the vista. There is little visual confusion between any of the developments. The Colliston turbine does not reduce the spacing between the Green Knowes and Lochelbank Windfarms, appearing fleetingly in cumulative views from across the wider area to the south.

- *“The location of the turbine would bring it closer to the lowlands and when viewed from the south it would visually appear to be a similar size as Lochelbank in some views whilst in reality the two schemes are not related to one another (this illusion is similar to the existing relationship between the turbines at East Gormack, Stuart Tower with Drumderg) and therefore creates a confusing and adhoc image of wind energy in the landscape.”*

The only viewpoint where the turbines appear “similar” in scale is that taken from the south banks of Loch Leven, see **Figure 1.2**. At this point the Lochelbank turbines are partially screened by the intervening landscape and the Colliston Farm turbine appears predominantly against the landscape. Due to the relative perspective in the landscape the two schemes do appear related, although there is no visual confusion as the Colliston Farm turbine is absorbed by the operating Windfarm, appearing as a natural extension and increasing the horizontal extent of Lochelbank marginally.

The most prominent views of the Colliston turbine occur in the immediate areas around the site, with some views from the M90 to the south-east. From these areas there are no cumulative impacts with any other local developments within the Ochil Hills such as Lochelbank or Green Knowes. Views from the wider areas to the south, will see some cumulative effects as discussed, although these never become overbearing and there would be no feeling of cluttering within the views with

the addition of the Colliston Farm turbine, due to the fact that there are relatively few developments within the area.

Conclusion

The proposal for a single 46m tip turbine on land at Colliston Farm is a carefully re-designed resubmission taking into account the comments received for the previously proposed single 86.5m turbine.

The new proposal has moved the turbine a significant distance downhill from the previous more prominent location. As well as this reduction in siting elevation the overall height of the proposed turbine has dropped to under 50m. We feel that the conclusions reached regarding the turbine's visual impact on the Kinross AGLV and cumulative impacts are over-stated in this instance.

The turbine where visible is a minor feature and located away from any prominent hill summits; indeed the turbine often appears backdropped by the landscape to the north. When visible on the horizon the turbine is viewed backdropped by the sky, never becoming a dominant feature within the views, and appears more in scale with other man made features such as electricity pylons and farm infrastructure than the larger scale upland wind turbines at Lochelbank and Green Knowes.

Kind Regards,
Graham Donnachie



Planning and Regeneration
Head of Service David Littlejohn

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35 Kinnoull Street
PERTH
PH1 5GD
Tel 01738 475300 Fax 01738 475310

D A Baillie And Sons
c/o Green Cat Renewables
Glen Moon
Stobo House
Midlothian Innovation Centre
Roslyn
EH25 9RE

Telephone 01738 475300

Ref No 14/00468/FLL

Date 25th March 2014

Dear Sir / Madam,

Town and Country Planning (Scotland) Act, 1997 as amended by Planning etc (Scotland) Act 2006

RE: Erection of a wind turbine and ancillary infrastructure at Colliston Farm Drunzie Glenfarg Perth PH2 9PE

Thank you for your recent application for planning permission or for the approval of conditions arising from a planning permission in principle for the above proposal. I write to confirm that your application has been registered. This letter is accompanied by a guidance note on "What Happens to my Planning Application?". This explains the process of assessing and deciding your application. Your application is for a 'Local Development' as defined in the Town and Country Planning (Hierarchy of Development)(Scotland) Regulations 2009.

Registration Details

Application reference number - 14/00468/FLL
Date of registration - 20th March 2014

Description of proposed development

The description of the proposed development and/or the site address may have been changed from the planning application form in order to make the description more explicit and legally correct. This revised description will appear on the decision notice. It will be assumed that the amended description is acceptable to you unless you indicate otherwise.

Statutory Advertisement

If this application requires to be advertised under the Town and Country Planning (Development management Procedure)(Scotland) Regulations 2008, and payment has not yet been made, then I will re-contact you concerning payment for the cost of the advert.

Timescale for a decision

In most cases with a Local Development, if you do not receive a decision from the Council within two months of the date of registration you may request a review by the Council's Local Review Body, or in a few cases, you may appeal to Scottish Ministers. The form to request a review may be obtained from The Secretary, Local Review Body, Perth and Kinross Council, Committee Services, Council Building, 2 High Street, Perth PH1 5PH or email to planninglrp@pkc.gov.uk. The form to request appeal may be obtained from the Scottish Government Directorate for Planning and Environmental Appeals, 4 The Courtyard, Callendar Business Park, Callendar Road, Falkirk FK1 1XR Tel no. 01324 696 400.

Many applications take longer than two months to resolve and in these cases we will write to you to explain the reason and if appropriate ask for an extension to the two-month time period. If you have not heard from us after two months you should contact the case officer.

Please note that **work must not start** until you have received planning permission from the Council.

Yours faithfully

Nick Brian

Development Quality Manager

Receipt of Application Fee Payment

Payment Type	cheque
Receipt Number	05758
Amount Received	£4202.00
Payment Date	20th March 2014
Total Received	£4202.00

What Happens to My Planning Application ?

- A Guide for Applicants



This guide is normally sent out with the acknowledgement of a “valid” application. The acknowledgement letter confirms the brief description of the proposed development, the application reference number, whether the application is for a ‘Local’ or ‘Major’ development and the date of registration. It explains the initial statutory period from the date of registration for dealing with the application and your right of appeal thereafter, if you have not agreed to an extension of time. The initial statutory period is two months for Local Developments and four months for Major Developments.

Can I speak to the case officer?

You are asked not to contact the planning officer during the initial statutory period for dealing with your application. This allows the case officer to concentrate on assessing your application. You will normally only be contacted during that period if we need you to give further consideration to a particular issue or if we wish to extend the statutory period.

What happens if I am asked to change my application?

Applicants will usually be requested to **withdraw** an application with a view to subsequent re-submission of the revised proposals if the change requested by the Planning Service is “material”. In such cases, it is not possible to amend the current application.

Where the changes are so minor as not to be material, applicants will normally be allowed 14 days for the submission of the requested change. If this is unlikely within 14 days, the applicant will be requested to withdraw the application and resubmit a new application once the changes have been finalised. A new application for a similar development does not normally require a fee provided it is submitted within one year of the registration of the previous application.

How can I present information if I don’t speak to the case officer?

To avoid the need to re-submit an application and to avoid the need to contact the case officer, any information you wish to provide which is intended to explain or support your application should be included **in writing with the initial application**. Additional information should not in any case be provided verbally to the case officer. By providing information in writing at the start, the information is available to all those involved in the decision making process from the outset. You can follow the progress of your application on "[PublicAccess](#)" which is accessible from the “Online Planning Applications” webpage on the Council’s website at www.pkc.gov.uk

What does the case officer do with the application?

The planning case officer will initially undertake appropriate consultations with other statutory agencies (such as Scottish Natural Heritage), arrange for the application to be advertised in a local newspaper and on site where this is necessary, study the application and inspect the site. The case officer will not normally arrange a set time to make the site visit or arrange to meet the applicant on site.

Once all the necessary information and comments have been received, the case officer will undertake a professional assessment of the proposed development in relation to the site itself, the policies in the Development Plan, other relevant Council Policies, government guidance, comments received from the public, comments received from Statutory Consultees and any other material considerations. In some cases this may lead to a request to alter the application or provide more information.

As explained above, this may be accompanied by a request to withdraw the application and re-submit it once the revised proposals or additional information are available.

As the final stage in this assessment, the case officer will prepare a recommendation for either the Councillors on the Development Control Committee or a senior planning officer to determine the application. If it is considered likely that your planning application will take more than the statutory period to determine, you will be contacted before that date with an explanation and a request to agree a continuation of the application, if that is appropriate.

Who will decide my application?

The determination of the majority of planning applications is delegated to senior planning staff in the Environment Service. Some planning applications are referred for decision to Councillors on the Development Control Committee of the Council, which meets monthly. A very few applications have to be decided by the full Council and separate guidance will be issued to applicants in these cases. Applicants and the public may attend these meetings.

The decision as to whether or not an application has to be decided by the Committee is dependent on such matters as the number of objections received and whether the application is proposed for approval or refusal by the planning officer. It is therefore not possible in most cases to predict before the end of the application process whether an application will be referred to the Committee. The Council's "Scheme of Administration" laying down what may be delegated to officials and what has to be referred to the Committee is available from the Planning Service and from the Council's website.

Can I speak at the Committee?

Where an application will be determined by the Development Control Committee, applicants (and objectors) are informed in advance and they may ask to be heard at that meeting. This is at the discretion of the Committee but is normally allowed. If there are a number of objectors they are likely to be asked to have only one representative to speak. The presentation to the Committee by applicants or objectors cannot include additional written information, photographs etc.

What is in the decision letter?

In due course, you will receive a formal decision letter from the Council approving, approving with conditions, or refusing the planning application. Reasons will be given for any approval, for any conditions attached to an approval and for any refusal. You will also be given details of your right to have any refusal or any condition on an approval reviewed. Depending on the scale of the application and whether or not the decision was made by the Committee, this will either be through a review by the Council's Local Review Body or an Appeal to the Scottish Ministers.

If you do receive permission, you should **read the letter granting permission** carefully, including any Conditions and any Notes. Sometimes the conditions on an approval will require the submission of further details for written approval **prior to starting** the development or they may require that certain work, such as the formation of the access, is carried out prior to other work. If these conditions are not complied with at the specified time then the whole planning permission can not be legally implemented. This applies even if, for example, the required details are subsequently submitted. In addition the decision letter will include information on the requirement for applicants to submit notices to the Council concerning commencement and completion of works and, in some cases, to display information on site during the development. These also have to be complied with to ensure that the development is lawful. It is therefore essential for the developer's own protection that these conditions and notices are fully complied with.

Perth and Kinross Council
August 2009

Graham Donnachie

From: Andy Baxter [ABaxter@pkc.gov.uk]
Sent: 16 July 2014 15:59
To: Graham Donnachie
Subject: FW: Wind Turbine @ Colliston Farm (14/00468/FLL)

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Graham,

Here are the comments from Doug, in terms landscape matters which I would appreciate your comments on.

On aside, you should also note that the application at Temple Hill was refused at the DM Committee this morning.

Cheers,

Andy

From: Douglas Cook
Sent: 01 July 2014 11:18
To: Andy Baxter
Subject: RE: Wind Turbine @ Colliston Farm (14/00468/FLL)

Hi Andy,

The location is on the south facing slopes of the Ochils and would therefore be prominent in views from the south and this is likely to have a significant effect on the Kinross AGLV. It would be worth having a look at the Tillyrie report as some of the reasons for refusal may apply to this application.

The design rationale fails to explain how the proposed site relates to the existing wind farms in the area – would it appear to be an outlier on the skyline and/or reduce the spacing between Green Knowes and Lochelbank? The location of the turbine would bring it closer to the lowlands and when viewed from the south it would visually appear to be a similar size as Lochelbank in some views whilst in reality the two schemes are not related to one another (this illusion is similar to the existing relationship between the turbines at East Gormack, Stuart Tower with Drumderg) and therefore creates a confusing and adhoc image of wind energy in the landscape.

Please give me a call if you wish to discuss this further.

Regards

Douglas

Douglas Cook
Landscape Architect
Community Greenspace

Perth and Kinross Council, Pullar House, 35 Kinnoull Street, Perth, PH1 5GD
Tel: 01738-475279 **Fax:** 01738-476410 **Email:** dcook@pkc.gov.uk

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REPORT OF HANDLING

DELEGATED REPORT

Ref No	14/00468/FLL	
Ward No	N8- Kinross-shire	
Due Determination Date	19.05.2014	
Case Officer	Andy Baxter	
Report Issued by		Date
Countersigned by		Date

PROPOSAL: Erection of a wind turbine and ancillary infrastructure

LOCATION: Colliston Farm, Drunzie, Glenfarg, Perth, PH2 9PE

SUMMARY:

This report recommends **refusal** of a detailed planning application for the erection of a single 46m (tip) wind turbine at Colliston Farm, Glenfarg as the development is considered to be contrary to the relevant provisions of the Development Plan and there are no material considerations apparent which justify setting aside the Development Plan.

DATE OF SITE VISIT: 29 September 2014 (re-visit)

BACKGROUND AND DESCRIPTION OF PROPOSAL

The application site relates to a small area of farmland at Colliskton Farm, a small hill farm at Drunzie which is located approx. 1.9km south of Glenfarg and 2km west of the M90. The site is surrounded by pasture land which appears to be predominately used for the grazing of animals. Approx. 5km to the south of the site is Kinross House, which is surrounded by a Historic Garden and Designed Landscape.

Planning consent was refused in 2012 (12/01727/FLL) for a larger turbine on a site approx. 550m to the north on the grounds that the proposal would have an adverse impact on the visual amenity of the area, both individually and collectively. The height of previously refused turbine was 86.5m to blade tip, with a hub height of approx. 60m.

This planning application seeks to obtain detailed planning consent for a far smaller turbine measuring 46m to its blade tip with a hub height of approx. 32m which will result in an estimated output of approx. 225kW. The turbine will be of the three blade variety, and in addition to the turbine itself it is likely that a small ancillary building will be sited close to the base of the turbine, and there may be the need for a small borrow pit for obtaining aggregate. The

applicant has also proposed approx. 190m of new access track to facilitate the delivery of the turbine. In addition to this, approx. 800m of an existing track will require an upgrade.

PROCEDURAL MATTERS

Screening Opinion

A Screening Opinion has been carried out by the Council which concluded that the proposal was not an EIA development

Additional Information

Although a formal EIA was not required, the applicant has nevertheless opted to lodge a detailed LVIA assessment which includes a series of ZTVs, wirelines and photomontages to help demonstrate the likely impact that the turbine will have on the visual amenity of the area and on the landscape. A series of background reports also accompany the planning application.

SITE HISTORY

A detailed planning application (12/01727/FLL) on an adjacent site approx. 550m to the north for a larger wind turbine (approx. 86.5m) was refused planning consent on the grounds that,

- 1 *As the proposed scale of the turbine will not be absorbed by the existing landscape framework surrounding the site, which in turn will lead to the turbine becoming a dominant feature within the landscape resulting in a significant adverse impact on the visual amenity and landscape character of the area), the proposal is contrary to Policy 2 of the Kinross Area Local Plan 2004 which seeks to ensure that all new developments have a good landscape framework and will not adversely impact on the amenity of existing areas and Policy 5 of the Kinross Area Local Plan 2004, which seeks to conserve the existing landscape character.*
- 2 *As the proposal will potentially result in a significant cumulative, adverse visual impact on the landscape of the area by virtue of it being viewed in combination with both existing and proposed wind turbines in the surrounding area, the proposal is contrary to Policy 2 of the Kinross Area Local Plan 2004, which seeks to ensure that new developments do not adversely impact on the amenity of existing areas and Policy 5 of the Kinross Area Local Plan 2004 which seeks to conserve the existing landscape character.*
- 3 *The approval of this proposal would establish an undesirable precedent for similar sized developments within the local area, which would be to the detriment of the overall visual character of the area, and which in*

turn could potentially undermine (and weaken) the Councils established relevant Development Plan policies.

- 4 *An approval of the proposal would contravene the recommendations contained within the Tayside Landscape Character Assessment 1999 and Kinross-shire Landscape Character Assessment 1995, in relation to tall structures on the landscape surrounding Loch Leven Basin.*

PRE-APPLICATION CONSULTATION

Following the previous refusal, the applicant sought advice from the Planning Service on other potential sites and also potential sizes of turbines which might be appropriate. General advice was offered to the applicant, however in the absence of a full LVIA it was not possible to offer specific comment on a revised proposal.

NATIONAL POLICY AND GUIDANCE

The Scottish Government expresses its planning policies through The National Planning Frameworks, the Scottish Planning Policy (SPP), Planning Advice Notes (PAN), Creating Places, Designing Streets, and a series of Circulars.

Of specific relevance to this proposal are,

Scottish Planning Policy 2014

The Scottish Planning Policy (SPP) was published on 23 June 2014. It sets out national planning policies which reflect the Scottish Ministers' priorities for operation of the planning system and for the development and use of land.

The SPP promotes consistency in the application of policy across Scotland whilst allowing sufficient flexibility to reflect local circumstances. It directly relates to:

- ☐ the preparation of development plans;
- ☐ the design of development, from initial concept through to delivery; and
- ☐ the determination of planning applications and appeals.

The following sections of SPP are of particular importance in the assessment of this planning application:-

- ☐ Paragraphs 24 – 35, which relate to Sustainability
- ☐ Paragraphs 74 – 83, which relate to Promoting Rural Development
- ☐ Paragraphs 135 – 151, which relate to Valuing the Historic Environment

- ☐ Paragraphs 152 -174, which relate to Delivering Heat and Electricity
- ☐ Paragraphs, 193 -218 which relate to Valuing the Natural Environment

Planning Advice Notes

The following Scottish Government Planning Advice Notes (PAN) are relevant to this planning application,

- ☐ PAN 1/2011 Planning and Noise
- ☐ PAN 2/2011 Planning and Archaeology
- ☐ PAN 1/2013 Environmental Impact Assessment
- ☐ PAN 40 Development Management
- ☐ PAN 51 Planning, Environmental Protection and Regulation
- ☐ PAN 60 Planning for Natural Heritage

Onshore wind turbines – Online Renewables Advice December 2013

Provides specific topic guidance to Planning Authorities from Scottish Government.

The topic guidance includes encouragement to planning authorities to:

- develop spatial strategies for wind farms;
- ensure that Development Plan Policy provide clear guidance for design, location, impacts on scale and character of landscape; and the assessment of cumulative effects.
- involve key consultees including SNH in the application determination process;
- direct the decision maker to published best practice guidance from SNH in relation to visual assessment, siting and design and cumulative impacts.

DEVELOPMENT PLAN

The Development Plan for the area comprises the TAYplan Strategic Development Plan 2012-2032 and the Perth and Kinross Local Development Plan 2014.

TAYplan Strategic Development Plan 2012 – 2032 - Approved June 2012

The vision states *“By 2032 the TAYplan region will be sustainable, more attractive, competitive and vibrant without creating an unacceptable burden on our planet. The quality of life will make it a place of first choice, where more*

people choose to live, work and visit and where businesses choose to invest and create jobs.”

Policy 3 - Managing TAYplan's Assets

Seeks to respect the regional distinctiveness and scenic value of the TAYplan area and presumes against development which would adversely affect environmental assets.

Policy 6 - Energy and Waste/Resource Management Infrastructure

Relates to delivering a low/zero carbon future for the city region to contribute to meeting Scottish Government energy targets and indicates that, in determining proposals for energy development, consideration should be given to the effect on off-site properties, the sensitivity of landscapes and cumulative impacts.

Perth and Kinross Local Development Plan 2014 – Adopted February 2014

The Local Development Plan was adopted by Perth and Kinross Council on 3 February 2014. It is the most recent statement of Council policy and is augmented by Supplementary Guidance.

Within the Local Development Plan the site lies within the landward area, where the following policies are directly applicable.

Policy PM1A – Placemaking

Development must contribute positively to the quality of the surrounding built and natural environment, respecting the character and amenity of the place. All development should be planned and designed with reference to climate change mitigation and adaption.

Policy HE1B - Non Designated Archaeology

Areas or sites of known archaeological interest and their settings will be protected and there will be a strong presumption in favour of preservation in situ. If not possible provision will be required for survey, excavation, recording and analysis.

Policy NE3 – Biodiversity

All wildlife and wildlife habitats, whether formally designated or not should be protected and enhanced in accordance with the criteria set out. Planning permission will not be granted for development likely to have an adverse effect on protected species.

Policy ER1A - Renewable and Low Carbon Energy Generation

Proposals for the utilisation, distribution and development of renewable and low carbon sources of energy will be supported where they are in accordance with the 8 criteria set out. Proposals made for such schemes by a community may be supported, provided it has been demonstrated that there will not be significant environmental effects and the only community significantly affected by the proposal is the community proposing and developing it.

Policy ED3 – Rural Business and Diversification

Identifies favourable support for the expansion of existing businesses in rural areas.

Policy ER6 - Managing Future Landscape Change to Conserve and Enhance the Diversity and Quality of the Areas Landscapes

Development proposals will be supported where they do not conflict with the aim of maintaining and enhancing the landscape qualities of Perth and Kinross and they meet the tests set out in the 7 criteria.

Policy EP5 - Nuisance from Artificial Light and Light Pollution

Consent will not be granted for proposals where the lighting would result in obtrusive and / or intrusive effects.

Policy EP8 - Noise Pollution

There is a presumption against the siting of proposals which will generate high levels of noise in the locality of noise sensitive uses, and the location of noise sensitive uses near to sources of noise generation.

OTHER COUNCIL POLICIES

Perth & Kinross Wind Energy Policy & Guidelines (WEPG) 2005

None specifically applicable to the proposal, although it should be noted that the Council's SPG on Wind Energy Proposals is presently under review. I therefore consider its existence should be acknowledged, but the weighing given to its contents should be limited at this stage.

CONSULTATION RESPONSES

Environmental Health have commented on the planning application and raised no concerns regarding the proposal.

Scottish Water have commented on the planning application and raised no concerns.

Shell UK Exploration And Production have commented on the planning application and raised no objections.

BP Consultations have commented on the planning application and raised no objections.

Ministry Of Defence – Windfarms has commented on the planning application and raised no objections.

Civil Aviation Authority have commented on the planning application and raised no objections.

Historic Scotland have commented on the planning application and raised no objections.

REPRESENTATIONS

Five letters of representations have been received in relation to the proposal.

All five representations are offering support for the proposal. The main reasons raised within the letters of support relate primarily to the need for the country as a whole to provide more renewables, reduce CO2 emissions. Specific comment is also made in relation to the fact that the approval of this turbine would allow the applicant to remain economically competitive. The supports also state that the proposed turbine will not dominate the landscape and will not have an adverse impact on the surrounding countryside.

ADDITIONAL STATEMENTS RECEIVED

Environment Statement	Not Required
Screening Opinion	Carried out by the Council
Environmental Impact Assessment	Not Required
Appropriate Assessment	Not Required
Design Statement or Design and Access Statement	Submitted
Report on Impact or Potential Impact	Submitted (<i>LVA submitted in support of the application</i>)

APPRAISAL

Sections 25 and 37 (2) of the Town and Country Planning (Scotland) Act 1997 require that planning decisions be made in accordance with the development plan unless material considerations indicate otherwise.

The Development Plan for the area comprises the approved TAYplan 2012 and the adopted Perth and Kinross Local Development Plan 2014.

In terms of other material considerations, the content and advice offerered in the Tayside Landscape Character Assessment and the Kinross-shire Landscape Character Assessment are material considerations.

Policy Appraisal

In terms of Policy issues, both the Tay Plan and the Local Development Plan contain policies which are applicable to this proposal.

Policy 6 of the Tay Plan is directly applicable to this proposal as are *Policies ER1A (Renewals), PM1A (Placemaking), ED3 (Rural Development), NE3 (Biodiversity) EP5 (pollution), EP8 (pollution), ER6 (landscape), HE1 (archaeology)* of the Local Development Plan.

Policy 6 of the Tay Plan states that Local Development Plans and development proposals should ensure that all areas of search, allocated sites, routes and decisions on development proposals for energy and waste/resource management infrastructure have been fully justified.

Policy ER1A of the Local Development Plan offers general support for renewable proposals providing they are in suitable locations which will not adversely affect the existing environment whilst *Policy ER6* states that new proposals will only be supported when they do not conflict with the landscapes qualities of the surrounding land.

Policy PM1A seeks to ensure (amongst other things) that all new developments contribute positively to the natural and built environment, whilst *Policies EP5 and EP6* seek to ensure that new proposals do not create an unacceptable level of noise or light pollution.

Policy ED3 of the Local Development Plan offers favourable support for the expansion of existing businesses in rural areas, whilst *Policy NE3* seeks to protect and enhance existing wildlife and their habitats - regardless of whether they are statutory protected or not.

Accordingly, based on the above, I ultimately consider the key policy issues for this proposal to be:-

- a) whether or not the proposal (by virtue of its siting and height) will have an unacceptable impact on the landscape / visual amenity of the area,
- b) whether or not the proposal is compatible with existing, surrounding land uses and,

- c) whether or not there will be an adverse impact on any protected species / habitats or local wildlife

For reasons stated below, I consider the proposal to be inconsistent with Council policy, namely in respect of point a).

Landscape / Visual Impact

In terms of the impact that the development will have on both the local landscape and the visual amenity of the area, there is no doubt that this proposal will have a significantly less of an impact than the larger turbines (70m+) which are being proposed in the southern part of Perth and Kinross.

However, this alone is not a reason for approving the planning application, so an assessment of the proposal's likely visual and landscape impacts in isolation (and cumulatively) is necessary.

Landscape Impact

In terms of renewable developments, *Policy ER1A* of the Local Development Plan key objective is to protect the existing landscapes, and in terms of wind turbines this would mean restricting renewable developments within the landward area if the proposal would have an adverse, negative impact on the landscape of the area concerned.

In considering the likely impact that the proposal would have on the local landscape, it is useful to consider the contents of the TLCA. Within the TLCA the application site lies within the Ochil Hills which falls into the Igneous Hills classification. The TLCA states that the Ochil Hills form an essential part of a distinctive landscape character type (LCT), particularly when viewed from the flat, open landscape of the Loch Leven Basin to the south and the TLCA states that this LCT will exert an influence over the adjacent Lowland Basin landscape character type, which includes Loch Leven.

The TLCA also states that the Ochils may be one of the most suitable areas for wind turbine developments in Tayside, subject to evaluation in terms of the sensitivity of the landscape and the capacity of the local area to absorb the development proposed. Wind farm developments should be steered away from exposed and steep ridgelines and summits, and away from locations where their visual influence would extend both north and south. Areas with shallow bowls and valleys away from ridges should instead be considered and new development steered towards areas already affected by masts, roads or forestry.

The TLCA goes on to say that whilst these hills are not particularly high, the stark transition between the flat open landscape of the basin and the hills accentuate their size. As such the introduction of large scale structures within the Ochil Hills could potentially upset the perception of the surrounding hills when viewed from the basin, making the hills appear smaller and thereby

diluting their visual influence over the landscape and that this is a particular issue where tall structures, such as wind turbines, are introduced on undeveloped parts of the Ochils.

The significance of the skyline to the landscape character of the basin is referred to in the TLCA and also in the earlier, but more detailed Kinross-shire Landscape Character Assessment (KLCA). This identifies one of the key characteristics of the basin as the dominance and enclosure of the distinctive upland skylines and slopes. Within the KLCA, it is stated that *“The skylines of the Ochils, Lendrick, Benarty and Lomond Hills should be regarded as landscape features of national importance and should be safeguarded from all development proposals that may affect the skylines or landform or visual horizons”*. The KLCA also goes on to say that the Ochils should be safeguarded from all development proposals that may affect the skyline, landform or visual horizons. The TLCA and KLCA both recognise that Loch Leven has a very special ‘sense of place’ which occurs through the combination of landscape types typified by the loch, the Lomond and Ochil Hills and the surrounding agricultural landscape, which are all perceived in a relatively small area.

This position is also echoed in the text of *Policy EP6* of the Local Development Plan which states that new proposals (which affect existing landscapes) must not erode local distinctiveness, diversity and quality of Perth and Kinross’s landscape character areas.

To this end, key issue for this proposal is therefore whether or not the introduction of a 46m structure would result in an adverse impact on the landscape of the area. Whilst it has not been possible due to workloads issues to obtain a detailed response from the Council’s landscape architect on this issue, he has nevertheless made some general comments on the proposal which I consider to hold significant weighting.

The general view of the Council’s Landscape Architect is that the location of the proposed turbine, high on the south facing slopes of the Ochils will result in the turbine being prominent from views from the south, which in turn will have a significant effect on character of the Loch Leven Basin.

However, it must be noted that the local landscape is not protected by any specific local, regional or national designations, and whilst it perhaps has some local amenity value to the local community, it is not of exceptional quality in landscape terms. Within the local area, the natural landscape has already been altered by the influence of man-made developments (such as existing turbines) and there is perhaps an argument to be made that this proposal would be another stage in the evolution of this landscape – which has been identified in the TLCA as perhaps being one of the most suitable areas for wind turbine development in the old Tayside region.

The impact that a proposal has on a landscape is regrettably an extremely subjective matter, with often a fine line being drawn between a proposal having an adverse impact and a proposal simply changing the appearance of the landscape. In this case, I consider there to be sufficient impact on the character on the local landscape both individually, and in combination with other installed, consented and proposed turbines in the local area to potentially result in an adverse impact which would be to detriment to the landscape character of the area, particularly when viewed from the south.

Visual Amenity

Assessing the potential impact on existing visual amenity is again an extremely subjective matter, particularly as everyone has their own idea of what they consider to be a pleasant environment with attractive vistas. To this end, and to enable an assessment of the likely impact on the visual amenity of the area, the applicant has submitted supplementary information in the form of a series of wireframes and visualisations from a number of selected viewpoints which helps demonstrate the likely visual impact that the development would have.

This information was also useful in assessing the landscaping impact.

Viewpoint 1 is taken from a public road at approx. E312426 N707434 and shows the view looking in a north-easterly direction towards the site. This viewpoint is located approx. 0.9km away from the proposed turbine. The visualisation provided from this viewpoint shows the turbine to be positioned on the skyline of rising land, with the majority of the turbine tower being visible.

Viewpoint 2 is taken at approx. E313687 N709098 from the south-east edge of the settlement of Duncricvie at the side of the minor road which runs through the settlement and shows the view looking in a south-westerly direction towards the site which is approx. 1.3km away. The viewpoint shows the turbine will not readily be visible from this viewpoint. In addition to this, it was clear from visiting this viewpoint, and associated stretches of road, the view of the turbine from this section of road will be significantly screened by existing vegetation and land form.

Viewpoint 3 is taken from the side of the minor road which links Newhill to Path of Condie at approx. E311400 N708373 looking eastwards towards the turbine which is approx. 1.9km away. The viewpoint shows the hub and a small section of tower appearing above a small hill, with the turbine set within the backdrop of rising land to the rear.

Viewpoint 4 is taken near to the M90 motorway, by the over-bridge to the north of junction 8 at E314569 N707170 looking in a north-westerly direction towards the site approx. 1.5km away from the turbine. The viewpoint was selected to try and represent the view that motorist will have travelling on the M90, although the view from this point would not be as prominent from the

roadside due to it sitting lower in the landscape. From this viewpoint, the full height of the turbine is visible with only a small area of rising land behind.

Viewpoint 5 is taken directly south of the site from the grounds of Burleigh Castle on the eastern edge of the settlement of Milnathort at approx. E312902 N704599 looking north towards the site with the turbine being approx. 3.3km away. From this viewpoint, the full height of the turbine will be visible. The general view between the turbine and the viewpoint is 'busy' one, with a number of pylons crisscrossing the view. From this viewpoint, a proposed turbine at Temple Hill will be visible in the same view.

Viewpoint 6 is taken from a point south east of the site from the side of the B919 between Newlands and Pittendreich Farms at approx. E316003 N704745 looking north-west towards the site. The turbine will be located approx. 4.2km away. From this viewpoint, the full height of the turbine will be visible directly in front of the road users (travelling north). Whilst the turbine will be positioned on rising land as opposed to a skyline, the blades of the turbine will nevertheless still break the skyline with the hills behind. In addition to this, the proposed turbine would be seen in combination with both the proposed turbine at Temple Hill to the left (west) and the operational windfarm of Lochelbank to the right (east). The prominence of the turbine will also increase the further north along the road.

Viewpoint 7 is taken from the south of the site at local services on the western edge of Kinross from approx. E313687 N709098 looking in a north-north-easterly direction towards the site. The turbine will be located approx. 5.6km away. From this viewpoint the turbine will be visible on the skyline with almost the full height of the turbine visible.

Viewpoint 8 is taken from the east of the site at the Bonnet Stane, near Gateside approx. at E318987 N707062 looking westwards towards the site. The turbine will be located approx. 5.8km away. From this viewpoint, the turbine will be clearly visible and will be seen in combination with both Lochelbank and also Green Knowes as stated in the ES. However, this relationship is not shown on the visualisation submitted.

Viewpoint 9 is taken from the edge of Loch Leven, near to the Holiday Cabins located on the south eastern edge of the Loch at approx. E312902 N704599 looking north-north-west towards the site and approx. 9.4km away from the proposed turbine. From this viewpoint, the turbine will be clearly visible on the southern side of the hills on which it sits, and will likely be seen in combination with Lochelbank. However, it is noted that relationship is not shown on the visualisations submitted.

Viewpoint 10 is taken near the summit of Kinnoull Hill to the east of Perth on Kinnoull Hill which is a popular destination with walkers and runners as well as other recreational users at approx. E313655 N722709. The view is looking south towards the turbine site which is approx. 14.6km away. From this viewpoint, there will be limited visibility of the turbine due to the intermitting land form.

Viewpoint 11 is taken from the summit of Knock Hill at approx. E305390 N693786 looking north-eastwards towards the site, approx. 16.0km away from the turbine. From this viewpoint, there will be limited visibility of the turbine due the distances involved and the intermitting land form.

Viewpoint 12 is taken at the over bridge at Glenfarg on the M90 at approx. E313805 N711455 looking south towards the site. From this viewpoint, the view shows the proposed turbine not to be visible, however based on the submitted ZTV; the turbine could potentially be visible from points further south on the M90.

Reviewing the visuals, and based on my site visit to the area and surrounding local roads, there are a number of public areas from which the turbine will be clearly visible, particularly from the south. However I do note that the visual impact of this proposal has been significantly reduced in some areas from the previous scheme by a combination of re-positioning and the reduction in height and this is clearly seen from VP3 which is the minor road between Newhill and Path of Condie and also VP6 along the B919. However, from the south the face of the hill on which the turbine is proposed is exposed and I have no doubt that the siting of a turbine in this location will have a significant impact on the visual amenity of the area which will ultimately be to its detriment.

To this end, as per the eventual outcome of the landscape impact issues, I consider the proposal to be unacceptable on visual grounds.

Compatibility with Existing land uses

In terms of the compatibility with existing land uses, I have no concerns regarding the impact that the turbine will have on the commercial activities of the land, and in terms of the impact on any existing residential properties, it is noted that that the closest residential properties are approx. of 0.6km from the site. My Environmental Health colleagues have commented on the proposal and have raised no concerns regarding noise related issues.

Protected Species / Habitats

In terms of the impact on protected species / habitats, I have no immediate concerns regarding this development which could not be adequately addressed or mitigated via appropriate planning conditions. I therefore consider the proposal to be consistent with the relevant Development Plan policies which relate to protected species / habitats, insofar as the proposal would not have an adverse impact on either element.

Other Material Issues

Cultural Heritage

There are several listed buildings, and schedule monuments potentially affected by the proposal; however any impact on their individual settings will not be of a particular significance, and I note that Historic Scotland have no raised any concerns over the development. In addition to this, my Conservation colleagues have indicated that the proposal is unlikely to have any adverse effect on the HGDL associated with Kinross House.

Shadow Flicker

I note that my EHO colleagues have not raised any specific concerns on this topic, and I have no reason to offer a different view.

Aviation Lighting

Any lighting of the turbine, as may be required by the MOD would only be visible from the air, and I do not consider there to be any need for ground based lighting. I therefore have no concerns regarding lighting.

Noise

With regard to noise, I note there are a number of residential properties within the vicinity of the site (the closest one approx. 0.5km away), however my EHO colleagues have raised no concerns regarding this proposal. I therefore do not consider noise to be issue.

TV reception

An appropriately worded condition will be attached to the consent which will provide mitigation measures for any person(s) affected directly by this proposal.

Road / Access Issues

My road colleagues have commented on the proposal and have raised no objection. If the LRB were to support a review of this refusal, a number of conditions could be attached to the consent that would mitigate any potential impact on road and pedestrian safety.

Health & Safety

Following recent national press coverage of turbine failures and subsequent explosions, there are greater concerns amongst the public regarding the safety of wind turbines. Nevertheless, I do not consider this to be a valid planning consideration.

National Guidance

Although the proposal is of a relevantly small scale, the principle of renewable energy developments is supported by the Scottish Government through its planning policies and guidance. However, the Scottish Government also suggests that renewable projects should be sited in appropriate locations which have the ability to absorb the development that is proposed.

Developer Contributions

The Developer Contributions Guidance (in relation to both Education and Transport Infrastructure) is not applicable to this application and therefore no contributions are required in this instance.

Economic Impact

The applicant has indicated that the wind turbine will be an enabling mechanism that can deliver increased competitiveness to the farm whilst sustaining the long term viability of those enterprises. I agree with the applicant, insofar as an approval of this application would (potentially) allow the existing business to remain competitive.

Conclusion

In conclusion, the application must be determined in accordance with the Development Plan unless material considerations indicate otherwise. In this respect, the proposal is considered to be contrary to the approved TAYplan 2012 and the adopted Local Development Plan 2014. I have taken account of material considerations and find none that would justify overriding the adopted Development Plan and on that basis the planning application is recommended for a refusal.

APPLICATION PROCESSING TIME

The recommendation for this application has not been made within the statutory determination period.

LEGAL AGREEMENTS

None required.

DIRECTION BY SCOTTISH MINISTERS

None applicable to this proposal.

RECOMMENDATION

Refuse the application based on the following grounds,

- 1 As the proposed scale of the turbine would not be absorbed by the existing landscape framework surrounding the site, which in turn will lead to the turbine becoming a dominant feature within the landscape which would have a significant adverse impact on the visual amenity and landscape character of the area (in isolation and in combination with other wind energy proposals), the proposal is contrary to Policy 6 of the Tay Plan 2012 and Policies ER1A and ER6 of the adopted Local Development Plan 2014, all of which seek to ensure that all new developments do not have a significant impact on existing landscapes.
- 2 An approval of the proposal would contravene the recommendations contained within the Tayside Landscape Character Assessment 1999 and Kinross-shire Landscape Character Assessment 1995, in relation to tall structures on the landscape surrounding Loch Leven Basin.

Justification

The proposal is not in accordance with the Development Plan and there are no material reasons which justify departing from the Development Plan

Informatives

None

Procedural Notes

Not Applicable.

PLANS AND DOCUMENTS RELATING TO THIS DECISION

14/00468/1 - 14/00468/46 (*inclusive*)

Date of Report 3.10.2014

PERTH AND KINROSS COUNCIL

D A Baillie And Sons
c/o Green Cat Renewables
Glen Moon
Stobo House
Midlothian Innovation Centre
Roslyn
EH25 9RE

Pullar House
35 Kinnoull Street
PERTH
PH1 5GD

Date 9th October 2014

TOWN AND COUNTRY PLANNING (SCOTLAND) ACT

Application Number: **14/00468/FLL**

I am directed by the Planning Authority under the Town and Country Planning (Scotland) Acts currently in force, to refuse your application registered on 20th March 2014 for permission for **Erection of a wind turbine and ancillary infrastructure Colliston Farm Drunzie Glenfarg Perth PH2 9PE** for the reasons undernoted.




Development Quality Manager

Reasons for Refusal

1. As the proposed scale of the turbine would not be absorbed by the existing landscape framework surrounding the site, which in turn will lead to the turbine becoming a dominant feature within the landscape which would have a significant adverse impact on the visual amenity and landscape character of the area (in isolation and in combination with other wind energy proposals), the proposal is contrary to Policy 6 of the Tay Plan 2012 and Policies ER1A and ER6 of the adopted Local Development Plan 2014, all of which seek to ensure that all new developments do not have a significant impact on existing landscapes.
2. An approval of the proposal would contravene the recommendations contained within the Tayside Landscape Character Assessment 1999 and Kinross-shire Landscape Character Assessment 1995, in relation to tall structures on the landscape surrounding Loch Leven Basin.

Justification

The proposal is not in accordance with the Development Plan and there are no material reasons which justify departing from the Development Plan

The plans relating to this decision are listed below and are displayed on Perth and Kinross Council's website at www.pkc.gov.uk "Online Planning Applications" page

Plan Reference

14/00468/1 to 14/00468/46 inclusive

TCP/11/16(332)
Planning Application 14/00468/FLL – Erection of a wind turbine and ancillary infrastructure, Colliston Farm, Drunzie, Glenfarg, PH2 9PE

PLANNING DECISION NOTICE *(included in applicant's submission, see page 533-534)*

REPORT OF HANDLING *(included in applicant's submission, see pages 517-532)*

REFERENCE DOCUMENT *(part included in applicant's submission, see pages 291-501)*

TCP/11/16(332)
Planning Application 14/00468/FLL – Erection of a wind turbine and ancillary infrastructure, Colliston Farm, Drunzie, Glenfarg, PH2 9PE

REPRESENTATIONS

- Representation from Regulatory Service Manager, dated 1 April 2014
- Representation from Historic Scotland, dated 2 April 2014
- Representation from Conservation, dated 3 April 2014
- Representation from Shell UK Limited, dated 4 April 2014
- Letter of support from Mr and Mrs Smith, dated 13 April 2014
- Letter of support from Mr Meldrum, dated 14 April 2014
- Representation from MOD, dated 14 April 2014
- Letter of support from Mr Graham-Jones, dated 15 April 2014
- Letter of support from Mr Weir, dated 18 April 2014
- Objection from Mr Black, dated 19 April 2014
- Representation from Transport Planning, dated 22 April 2014
- Representation from Scottish Water, dated 7 May 2014

Memorandum

To	Development Quality Manager	From	Regulatory Services Manager
Your ref	PK14/00468/FLL	Our ref	NK
Date	1 April 2014	Tel No	(01738) 476 444

The Environment Service

Pullar House, 35 Kinnoull Street, Perth PH1 5GD

Consultation on an Application for Planning Permission

14/00468/FLL RE: Erection of a wind turbine and ancillary infrastructure Colliston Farm Drunzie Glenfarg Perth PH2 9PE for D a Baillie and Sons

I refer to your letter dated 25 March 2014 in connection with the above application and have the following comments to make.

Environmental Health (assessment date 31/04/2014)

Recommendation

I have no objections to the application but recommend the undernoted conditions be included in any given consent

Comments

A previous application (12/01727/FLL) on the same site proposed the erection of an 800kW Enercon E53 commercial wind turbine on a 60 metre self supporting tower within an agricultural location to the west of Colliston Farm, Glenfarg. This application was refused due to the visual impact the turbine would have on the surrounding area.

The applicant has now submitted a proposal to erect an ACSA A27 225Kw turbine with a hub height of 36 metres.

The site is in a relatively remote location south of Tamteethie Hill with the closest noise sensitive property outwith the applicant's ownership (Birniehill) some 560 metres to the west of the application site.

The technical report submitted by the applicant states that the predicted noise levels at Birniehill would be 34.1dB $L_{A90, 10 \text{ min}}$.

Rural background noise is typically taken to be within the range of 20-40dB. At that level the noise from the turbine may be audible at nearby noise-sensitive receptors and you may wish to consider this in your determination of amenity. Guidance on satisfactory internal noise levels is provided by the World Health Organisation (WHO) and British Standard 8233: 1999. BS8233 suggests that internal levels within living rooms and bedrooms should be 30-40dB and 30-35dB respectively; assuming a reduction of 10-15dB for a partially open window any noise from the operation of the turbines should satisfy these criteria. Furthermore, WHO recommend that an internal level of $L_{Aeq, 8 \text{ hour}}$ 30dB is required to prevent sleep disturbance and recommends that external noise levels at night should be restricted to 40dB; the predicted internal noise level would be within these limits.

Planning Advice Note (PAN) 45 suggests the use of a simplified noise condition for a single turbine or wind farms with large separation distances between the turbines and nearest properties. I am reasonably satisfied in this case that the proposed turbine at Colliston Farm can meet this condition and offer sufficient protection of amenity.

I therefore recommend that the undernoted condition be included on any given consent.

Conditions

1. Noise arising from the wind turbine shall not exceed an LA90, 10mins of 35 dB (A) at the nearest noise sensitive premises. The foregoing condition shall apply at wind speeds not exceeding 10m/s, as measured at a height of 10 meters above ground at the wind turbine site. In the event of audible tones being generated by the wind turbine a 5dB (A) penalty for tonal noise shall be added to measured noise level.
2. The applicant shall, upon written request and unless otherwise agreed in writing with the planning authority, carry out measurements and assessments of noise from the wind turbines in accordance with ETSU report for the DTI – The Assessment and rating Noise from Wind Farms (ETSU –R-97) to the satisfaction of the planning authority and make all related data available to the planning authority.

N/K.



HISTORIC SCOTLAND
ALBA AOSMHOR

Sent by email:

DevelopmentManagement@pkc.gov.uk

Longmore House
Salisbury Place
Edinburgh
EH9 1SH

Direct Line: 0131 668 8092
Direct Fax: 0131 668 8722
Switchboard: 0131 668 8600
Oliver.Lewis@scotland.gsi.gov.uk

Our ref: AMH/90204/10
Our Case ID: 201307753
Your ref: 14/00468/FLL

Mr Andrew Baxter
Planning
Perth and Kinross Council
Pullar House
35 Kinnoull Street
PERTH
PH1 5GD

02 April 2014

Dear Mr Baxter,

Town And Country Planning (Development Management Procedure) (Scotland) Regulations 2013

14/00468/FLL Erection of one 225kw turbine on a 32m mast (total height 46m) on land at Colliston Farm, Drunzie, near Glenfarg

Thank you for your consultation of 25 March 2014 requesting comments on the above application for the erection of one 225kw turbine on a 32m mast (total height 46m) on land at Colliston Farm, Drunzie, near Glenfarg.

There are several scheduled monuments within the wider vicinity of the development site, of which the closest of relevance are known as '**SM 90204 Lochleven Castle**' which is located approximately 6km S of the development site and '**SM 90045 Burleigh Castle**' which is located approximately 3.4km S of the development site. There are closer monuments to the proposed turbine, but these have settings that are more localised. Lochleven Castle is fourteenth century in date and occupies an island in the centre of Loch Leven, and its setting includes its inaccessibility and sense of isolation. Burleigh Castle is sixteenth century in date and comprises a towerhouse defended by a deep ditch. Its setting includes a sense of prominence within the landscape

Whilst the proposed wind turbine will be visible from the above scheduled monuments and others, as demonstrated by the ZTV and the photomontages (VP05 and VP09), there is unlikely to be a significant adverse impact upon their settings due to the distance between the turbine and the scheduled monuments, the size of the turbine, and the nature of the surrounding topography. Historic Scotland thus does not object to this application.

Yours sincerely,

Oliver Lewis

Senior HM Officer (Ancient Monuments - North)



www.historic-scotland.gov.uk

Memorandum

To	Andy Baxter	From	Diane Barbary
Your ref	14/00468/FLL	Our ref	*
Date	03/04/14	Tel No	75357

The Environment Service

Pullar House, 35 Kinnoull Street, Perth PH1 5GD

Conservation comments

Colliston Farm, Drunzie, Glenfarg – Erection of a wind turbine and ancillary infrastructure

The proposed single turbine is located to the south west of the category C listed 18th century Grieve's House. The steading associated with the house has been demolished, with the house now bounded to the south- and north-west by modern farm buildings. Its setting is unlikely to be further compromised by the proposed turbine, as the enclosed setting and screening by mature trees should serve to reduce any adverse impact.

In terms of the impact on views from and to more distant heritage designations, the turbine is substantially reduced in height and located in a less prominent site than a previous refused application. Within the environmental report associated with the application, the impact on the category A listed Burleigh Castle is examined, and on the Kinross House site on the Historic Scotland Inventory of Gardens and Designed Landscapes. The report concludes that there will be no significant adverse impact on either as result of the turbine.

Given the open aspect of the landscape south of the proposed site, the turbine will be visible from Burleigh Castle, and in views of the castle from the south. The reduced height of the turbine should ensure that it is visible in this context on a similar scale to existing electricity pylons and poles closer to the castle, and is therefore acceptable.

The turbine is unlikely to have any significant impact on the Kinross House GDL, given the nature of the topography, and screening from mature trees around Kinross House itself and to the north of the designated site. The more significant impact will be on views north from Loch Leven itself, particularly the approach to the category A listed Lochleven Castle. As the principal view of the castle is looking east from the vicinity of Kinross House, and the island setting of the castle has considerable tree cover, the overall impact on the listed building and its setting is likely to be acceptable.



11 APR 2014

SCANNED

Mr N Brian
Development Quality Manager
Perth & Kinross Council
Planning and Regeneration
The Environment Service
Pullar House
35 Kinnoull Street
PERTH
PH1 5GD



Shell U.K. Limited
Onshore Pipelines
Orchardbank Industrial Estate
Forfar
Angus DD8 1TD
United Kingdom
Switchboard +44 (0) 1307 462225
Tel +44 (0) 1307 475351
Fax +44 (0) 1307 468522
Internet <http://www.shell.com/eandp>

4th April 2014

Your ref: 14/00468/FLL
Our ref: UIE/P/SDP/CB/kc

Dear Sir

**The Town and Country Planning (Scotland) Act 1997
as amended by Planning etc (Scotland) Act 2006
Consultation on an application
Erection of a wind turbine and ancillary infrastructure
Colliston Farm, Drunzie, Glenfarg, Perth, PH2 9PE
for D A Baillie And Sons**

Thank you for your recent consultation regarding the above planning application no 14/00468/FLL. From the information provided on your website, there is no reason why the development and associated construction works would directly affect our pipeline servitude strip or the safety and integrity of our pipeline.

While we have no objection in principal to the development we have areas of concern that should be considered:

1. The risk of a blade tower failure causing severe damage to, or failure of the pipeline. The location of all masts and towers should be such that there is no possibility of impact to our pipeline in event of a tower collapse, e.g. see UKOPA guidelines (1.5m x mast height).
2. The effect of the generated power and buried conductors on the pipeline cathodic protection system, the contractor should consider this in the design stage and communicate what measures have been taken to prevent interference to the pipeline.

Shell U.K. Limited
Registered in England number 140141
Registered office Shell Centre London SE1 7NA
VAT reg number GB 235 7632 55

Letter Wind Turbine.doc

2

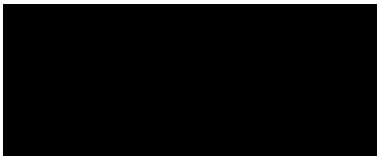
4th April 2014

Mr N Brian

3. The protection of the pipeline during construction activities such as heavy loads crossing the pipeline, construction of access roads and the installation of both overhead and underground cables. The developer should keep Shell informed and agree a method statement prior to work commencement.
4. The pipeline should also be considered when selecting standpoints for the cranes, this is to mitigate damage against impact should a lifting problem occur.
5. In the circumstance that heavy loads should have to cross the NGL pipeline the developer should construct a crossing which would prevent any extra loading over the pipeline.
6. The design of earthing systems should ensure that under fault conditions our pipeline would not experience earth fault currents.

Yours faithfully
Shell U.K. Limited

1.2



Colin Ballantine
Pipeline Engineer

HILDA + ROBERT SMITH

CUSTOMER SERVICE
POINT

17 APR 2014

RECEIVED

STIRLING ROAD

RECEIVED

22 APR 2014

MILNATHORT

KINROSS

KY13 9XS

Re Planning Application 14/00468/FLL.

We approve of Green, Renewable, Energy and fully support

planning for a single wind turbine at Collieston Farm.

Yours truly

[Redacted Signature]

13/4/14.



Ashburn Cottage,
Glenfarg,
Perth.

RECEIVED

PH2 9NW

22 APR 2014th April, 2014.



Dear Sir,

Planning application 14/00468/FLL

I support the above application for a single wind turbine. The applicant uses a considerable amount of electricity for storage of farm produce and every effort to generate the power required, whilst lowering carbon emissions, should be supported.

Yours faithfully,



Defence Infrastructure Organisation

Mr Michael Billings
Safeguarding Assistant
Ministry of Defence
Safeguarding – Wind Energy
Kingston Road
Sutton Coldfield
West Midlands B75 7RL
United Kingdom

Your Reference: 14/00468/FLL

Telephone [MOD]: +44 (0)121 3112025

Facsimile [MOD]: +44 (0)121 3112218

Our Reference: DIO/SUT/43/10/1/11707

E-mail: DIOODC-IPSSG2a1a@mod.uk

Nick Brian
Perth & Kinross Council
PH1 5GD

14 April 2014

Dear Mr Brian

Please quote in any correspondence: 11707

Site Name: Colliston Farm

Proposal: Erection of Wind Turbine

Planning Application Number: 14/00468/FLL

Site Address: Drunzie, Glenfarg, Perth, PH2 9PE

Thank you for consulting the Ministry of Defence (MOD) on the above Planning Application in your communication dated 25 March 2014.

I am writing to tell you that the MOD has no objection to the proposal.

The application is for 1 turbine at 46 metres to blade tip. This has been assessed using the grid references below as submitted in the planning application or in the developers' your pro-forma.

Turbine	100km Square Letter	Easting	Northing
1	NO	13196	07911

The principal safeguarding concern of the MOD with respect to the development of wind turbines relates to their potential to create a physical obstruction to air traffic movements and cause interference to Air Traffic Control and Air Defence radar installations.

Defence Infrastructure Organisation Safeguarding wishes to be consulted and notified of the progression of planning applications and submissions relating to this proposal to verify that it will not adversely affect defence interests.

If planning permission is granted we would like to be advised of the following;

- the date construction starts and ends;
- the maximum height of construction equipment;
- the latitude and longitude of every turbine.

This information is vital as it will be plotted on flying charts to make sure that military aircraft avoid this area.

If the application is altered in any way we must be consulted again as even the slightest change could unacceptably affect us.

I hope this adequately explains our position on the matter. If you require further information or would like to discuss this matter further please do not hesitate to contact me.

Further information about the effects of wind turbines on MOD interests can be obtained from the following websites:

MOD: <http://www.mod.uk/DefenceInternet/MicroSite/DIO/WhatWeDo/Operations/ModSafeguarding.htm>

Yours sincerely

Michael Billings
Safeguarding Assistant – Wind Energy
Defence Infrastructure Organisation

SAFEGUARDING SOLUTIONS TO DEFENCE NEEDS

Mr Paddy Graham-Jones (Supports)**Comment submitted date: Tue 15 Apr 2014**

Albert Bartlett, as a leading UK potato supplier, is responding to climate change and need to invest in the long term sustainability of the business, by applying efficiency measures, new technologies, sound carbon management and renewable energy sources.

The applicant is a key member of our Potato Grower Group and supplies us with some 7000 tonnes of Rooster, Desiree, Maris Piper, Saxon and Osprey potatoes per year. In making this application to erect a wind turbine the applicant is aiming to become self-sufficient in renewable electricity and to reduce his costs of production.

Commercial Pressure to demonstrate reduced carbon emissions:

We are under pressure from our retail customers to demonstrate a reduction in our Group non-renewable energy consumption. This application to erect a single wind turbine comes directly from pressures put on our key customers by Government to respond to the climate change agenda. Our main customers, including Sainsbury's, Tesco, Asda and Morrisons have all set challenging targets to reduce carbon emissions across their supply chains and increase their use of renewable energy. These targets are passed onto their supply base and therefore onto our grower base. To illustrate this download pressure I quote Sainsbury's 20 by 2020 Environmental targets. Target 8 ? ?By 2020 our suppliers will be leaders in meeting or exceeding our environmental standards. ?If over the long term, suppliers do not meet our environmental standards we will cease to do business with them? Target 14 ? By 2020 we?ll have worked with our own brand suppliers to reduce carbon emissions across all our own brand products by 50%.

Sainsbury's have developed a carbon foot printing tool specifically to measure and bench mark the energy efficiency, production costs and carbon emissions of all supplier farming operations. Tesco measures the carbon footprint of its potato supply chain, tasking all suppliers with measured reductions and efficiencies. Our other customers are making similar demands. Both our own and our growers performance is under intense and competitive scrutiny. We have to work hard to remain competitive in this market. The actions of our growers and their success in contributing towards the overall targets are imperative.

Mr John Weir (Supports)

Comment submitted date: Fri 18 Apr 2014

I am in favour of the wind turbine proposal. I think they are a good renewable energy option for a potato farm. In order to maintain fresh potato quality a large amount of energy is required to reffridgerate the crop. The majority of the potatoes are in store in the windiest winter months. I believe every farm should have a turbine to match their consumption.

Linda Al-Ibrahimi

From: Richard Black <[REDACTED]>
Sent: 19 April 2014 23:05
To: Enquiries
Cc: Development Management - Generic Email Account
Subject: Planning Ref 14/00468/FLL

I am writing in connection with planning reference 14/00468/FLL Erection of a wind turbine and ancillary infrastructure at Colliston Farm, Drunzie Glenfarg, Perth.

I have tried to make a comment on the planning website recently but the system has been down so hopefully you will allow for an extension for this comment.

I fully support the erection of a wind turbine at Colliston Farm. This is exactly the type of project that should be given full backing. The farm will be using the electricity produced itself helping future proof the business against ever increasing energy costs allowing it to stay competitive within a market where margins are being continually squeezed.

The turbine itself is of a size that will not dominate the landscape and will have no significant effect on the surrounding countryside.

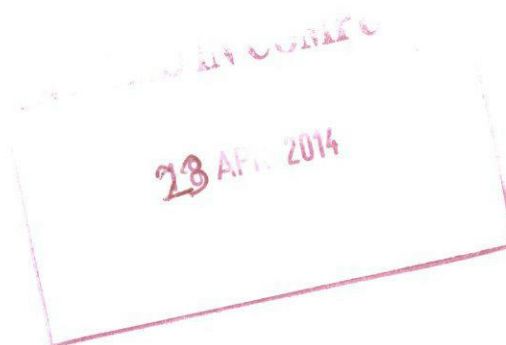
If the Scottish Government are to achieve their target of having the equivalent of 100 per cent from renewable sources by 2020, projects like this must be allowed to develop.

I hope you give it your full backing.

Yours Sincerely

Richard Black

Braeside of Lindores
Newburgh
Fife
KY14 6HU





MEMORANDUM

To	Andy Baxter Planning Officer	From	Niall Moran Transport Planning Officer Transport Planning
Our ref:	NM	Tel No.	Ext 76512
Your ref:	14/00468/FLL	Date	22 April 2014

Pullar House, 35 Kinnoull Street, Perth, PH1 5GD

TOWN AND COUNTRY PLANNING (SCOTLAND) ACT 1997 & ROADS (SCOTLAND) ACT 1984

With reference to the application 14/00468/FLL for planning consent for:- **Erection of a wind turbine and ancillary infrastructure Colliston Farm Drunzie Glenfarg Perth PH2 9PE for D A Baillie And Sons**

Insofar as the Roads matters are concerned I do not object to the proposed development provided the conditions indicated below are applied, in the interests of pedestrian and traffic safety.

- Prior to the commencement of works, all matters regarding the site access and associated works shall be in accordance with the standards and specification required by the Council as Roads Authority and to the satisfaction of the Council as Planning Authority.
- Prior to the commencement of works the applicant shall agree a traffic management scheme for abnormal loads with the Council as Roads Authority in accordance with the Roads Traffic Act 1982, the Road Vehicles (Authorisations of Special Types) (General) Order 2003 and the Council's procedure for Abnormal Loads Routing to the satisfaction of the Council as Planning Authority.
- Prior to the commencement of works on the development, the applicant shall submit for the written approval of the Planning Authority a Construction Traffic Management Scheme (TMS) which shall include the following:
 - a) restriction of construction traffic to approved routes and the measures to be put in place to avoid other routes being used;
 - b) timing of construction traffic to minimise impact on local communities particularly at school start and finishing times, on days when refuse collection is undertaken, on Sundays and during local events;
 - c) a code of conduct for HGV drivers to allow for queuing traffic to pass;
 - d) arrangements for liaison with the Roads Authority regarding winter maintenance;
 - e) emergency arrangements detailing communication and contingency arrangements in the event of vehicle breakdown;
 - f) arrangements for the cleaning of wheels and chassis of vehicles to prevent material from construction sites associated with the development being deposited on the road;
 - g) arrangements for cleaning of roads affected by material deposited from construction sites associated with the development;
 - h) arrangements for signage at site accesses and crossovers and on roads to be used by construction traffic in order to provide safe access for pedestrians, cyclists and equestrians;
 - i) details of information signs to inform other road users of construction traffic;
 - j) arrangements to ensure that access for emergency service vehicles are not impeded;
 - k) co-ordination with other major commercial users known to use roads affected by construction traffic;
 - l) traffic arrangements in the immediate vicinity of temporary construction compounds;

- m) the provision and installation of traffic counters at the applicant's expense at locations to be agreed prior to the commencement of construction;
- n) monitoring, reporting and implementation arrangements; and
- o) arrangements for dealing with non-compliance.

The TMS as approved shall be strictly adhered to during the entire site construction programme all to the satisfaction of the Council as Planning Authority.

The applicant should be advised that in terms of Section 56 of the Roads (Scotland) Act 1984 he must obtain from the Council as Roads Authority consent to open an existing road or footway prior to the commencement of works. Advice on the disposal of surface water must be sought at the initial stages of design from Scottish Water and the Scottish Environmental Protection Agency.

I trust these comments are of assistance.

07/05/2014

Perth & Kinross Council
Pullar House, 35 Kinnoull Street
Perth
PH1 5GD



SCOTTISH WATER

Customer Connections
The Bridge
Buchannan Gate Business Park
Cumbernauld Rd
Stepps
G33 6FB

Tel – 0141 414 7660

Dear Sir Madam

PLANNING APPLICATION NUMBER: 14/00468/FLL
DEVELOPMENT: WT Perth Glenfarg Drunzie Co
OUR REFERENCE: 686672

Please quote our reference in all future correspondence

Scottish Water has no objection to this planning application. This response is made based on the information available to us at this time and does not guarantee a connection to Scottish Water's infrastructure. A separate application should be submitted to us made for connection to our infrastructure after full planning has been granted.

Tarbert Water Treatment Works – has limited capacity available for new demand.
The Developer should discuss their development directly with Scottish Water.

In some circumstances it may be necessary for the Developer to fund works on existing infrastructure to enable their development to connect. Should we become aware of any issues such as flooding, low pressure, etc the Developer will be required to fund works to mitigate the effect of the development on existing customers. Scottish Water can make a contribution to these costs through Reasonable Cost funding rules.

A totally separate drainage system will be required with the surface water discharging to a suitable outlet. Scottish Water requires a sustainable urban drainage system (SUDS) as detailed in Sewers for Scotland 2 if the system is to be considered for adoption.

Scottish Water's current minimum level of service for water pressure is 1.0 bar or 10m head at the customer's boundary internal outlet. Any property which cannot be adequately serviced from the available pressure may require private pumping arrangements installed, subject to compliance with the current water byelaws. If the developer wishes to enquire about Scottish Water's procedure for checking the water pressure in the area then they should write to the Customer Connections department at the above address.

If the connection to public sewer and/or water main requires to be laid through land out-with public ownership, the developer must provide evidence of formal approval from the affected landowner(s). This should be done through a deed of servitude.

Should the developer require information regarding the location of Scottish Water infrastructure they should contact our Property Searches Department, Bullion House, Dundee, DD2 5BB. Tel – 0845 601 8855.

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If the developer requires any further assistance or information on our response, please contact me on the above number or alternatively additional information is available on our website:
www.scottishwater.co.uk.

Yours faithfully

Janine Franssen
Customer Connections Administrator

TCP/11/16(332)
Planning Application 14/00468/FLL – Erection of a wind turbine and ancillary infrastructure, Colliston Farm, Drunzie, Glenfarg, PH2 9PE

FURTHER INFORMATION

- Further information submitted by the Agent, as requested by the LRB on 3 March 2015

