

TCP/11/16(251)**Planning Application 12/02067/FLL – Erection of a wind turbine and associated infrastructure on land 800 metres north east of Roundlaw Farm Cottage, Trinity Gask**

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TCP/11/16(251)

Planning Application 12/02067/FLL – Erection of a wind turbine and associated infrastructure on land 800 metres north east of Roundlaw Farm Cottage, Trinity Gask

**PAPERS SUBMITTED
BY THE
APPLICANT**

NOTICE OF REVIEW

UNDER SECTION 43A(8) OF THE TOWN AND COUNTRY PLANNING (SCOTLAND) ACT 1997 (AS AMENDED) IN
RESPECT OF DECISIONS ON LOCAL DEVELOPMENTS

THE TOWN AND COUNTRY PLANNING (SCHEMES OF DELEGATION AND LOCAL REVIEW PROCEDURE)
(SCOTLAND) REGULATIONS 2008

THE TOWN AND COUNTRY PLANNING (APPEALS) (SCOTLAND) REGULATIONS 2008

IMPORTANT: Please read and follow the guidance notes provided when completing this form.
Failure to supply all the relevant information could invalidate your notice of review.

Use **BLOCK CAPITALS** if completing in manuscript

Applicant(s)

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Mark this box to confirm all contact should be
through this representative: ☒

Yes ☒ No ☐

* Do you agree to correspondence regarding your review being sent by e-mail?

Planning authority

PERTH & KINROSS COUNCIL

Planning authority's application reference number

12/02067/FLL

Site address

LAND 800m NORTH EAST OF ROUNDLAW FARM COTTAGE
TRINITY GASK

Description of proposed
development

ERECTION OF WIND TURBINE AND ASSOCIATED
INFRASTRUCTURE

Date of application

28 NOVEMBER 2012

Date of decision (if any)

04 FEBRUARY 2013

Note. This notice must be served on the planning authority within three months of the date of the decision notice or from the date of expiry of the period allowed for determining the application.

Nature of application

1. Application for planning permission (including householder application) ☒
2. Application for planning permission in principle ☐
3. Further application (including development that has not yet commenced and where a time limit has been imposed; renewal of planning permission; and/or modification, variation or removal of a planning condition) ☐
4. Application for approval of matters specified in conditions ☐

Reasons for seeking review

1. Refusal of application by appointed officer ☒
2. Failure by appointed officer to determine the application within the period allowed for determination of the application ☐
3. Conditions imposed on consent by appointed officer ☐

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.

Please indicate what procedure (or combination of procedures) you think is most appropriate for the handling of your review. You may tick more than one box if you wish the review to be conducted by a combination of procedures.

1. Further written submissions ☐
2. One or more hearing sessions ☐
3. Site inspection ☒
4. Assessment of review documents only, with no further procedure ☒

If you have marked box 1 or 2, please explain here which of the matters (as set out in your statement below) you believe ought to be subject of that procedure, and why you consider further submissions or a hearing are necessary:

Site inspection

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

1. Can the site be viewed entirely from public land? ☒ Yes ☐ No
2. Is it possible for the site to be accessed safely, and without barriers to entry? ☒ Yes ☐ No

If there are reasons why you think the Local Review Body would be unable to undertake an unaccompanied site inspection, please explain here:

FARM SECURITY

Statement

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. Note: 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.

If the Local Review Body issues a notice requesting further information from any other person or body, you will have a period of 14 days in which to comment on any additional matter which has been raised by that person or body.

State here the reasons for your notice of review and all matters you wish to raise. If necessary, this can be continued or provided in full in a separate document. You may also submit additional documentation with this form.

PLEASE SEE ATTACHED STATEMENTS

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

Yes No

☐
☒

If yes, you should explain in the box below, why you are raising new material, why it was not raised with the appointed officer before your application was determined and why you consider it should now be considered in your review.

N/A

List of documents and evidence

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.

1. Review Statement with 3 Appendices
2. Precis of Review Statement.

Note. The planning authority will make a copy of the notice of review, the review documents and any notice of the procedure of the review available for inspection at an office of the planning authority until such time as the review is determined. It may also be available on the planning authority website.

Checklist

Please mark the appropriate boxes to confirm you have provided all supporting documents and evidence relevant to your review:

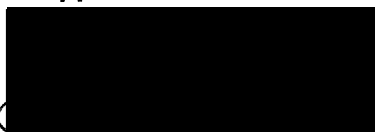
- ☒ Full completion of all parts of this form
- ☒ Statement of your reasons for requiring a review
- ☒ All documents, materials and evidence which you intend to rely on (e.g. plans and drawings or other documents) which are now the subject of this review.

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 from that earlier consent.

Declaration

I the applicant/agent [delete as appropriate] hereby serve notice on the planning authority to review the application as set out on this form and in the supporting documents.

Signed



Date

3 May 2013

Trinity Gask Wind Turbine Precis of appeal submission

This document has been prepared to assist the LRB with a bullet point summary of the appellants key points in submission:

INTRODUCTION

- This is a single, medium scaled wind turbine proposal;
- The turbine would be 50m to hub and 67m to blade tip;
- The turbine would be sited on land at Trinity Gask;
- The proposal constitutes a farm diversification project for the Trinity Gask Estate, a key local employer;

POLICY CONTEXT

- The proposal would meet the Scottish Government objectives for the delivery of medium and smaller scale renewable technologies;
- The proposal would accord with the broad objectives of Development Plan Policies for wind energy development;
- The proposal would meet the Scottish Government objective of delivering opportunity for small businesses to invest in ownership of renewable energy projects;
- The proposal would make a meaningful contribution towards the Scottish Governments commitment to carbon reduction targets and the delivery of energy from renewable resources;

- Development Plan policy encourages the use of the TLCA in appraising development proposals;

ECONOMIC JUSTIFICATION

- The turbine proposal would deliver an important sustainable economic development project;
- The proposal would ensure the long term viability and security of a key local employer;
- The proposal would provide energy security for the Estate;
- The proposal would assist the delivery of planned eco-tourism development elsewhere on the Estate;
- The appellants to use local contractors and Local consultancy services would deliver significant Local economic benefits;
- Because of high grid connection costs and a constrained wind flow, a smaller turbine as an alternative would render the project un-viable;

LANDSCAPE IMPACTS

- The landscape around and including the appeal site is not protected by any conservation designation;
- The Council's own landscape guidelines (Tay Landscape Character Assessment) confirms that the appeal site falls within an area which has the capacity for wind related development;
- The TLCA confirms that this part of Strathearn has potential for wind energy development and could serve to protect more sensitive landscape's elsewhere in Perthshire;
- Changes to the proposal were made prior to application submission and met with the support of the planning officer;

- Turbine position has been carefully selected to take advantage of natural forestry screening bordering the site on 3 sides;
- From some directions the turbine would be viewed against a backdrop of higher ground;
- Confirmation has been secured that the woodland will remain in place for 20 years;
- A comprehensive, professionally prepared landscape appraisal accompanies the planning application. That appraisal has been prepared following inspection in the field and incorporates a number of photomontage visual presentations;
- The appellants submitted landscape appraisal has been completed in accordance with the good practice guidance prepared by SNH;
- The proposal would secure an acceptable relationship to surrounding residential properties;
- The Council's Landscape Officer comments are limited in their extent. Those comments do not respond to the appellants professionally prepared Landscape Consultant Report;
- The proposal would not impact on Clathy;
- The proposal would not impact on Glen Eagles Hotel and Designed Landscape;
- The proposal , being of *medium* scale is significantly smaller than the turbines referred to in the Council's Landscape Officer comments;
- The *medium* scale of the proposal would meet the TLCA guidance objective of reinforcing the transition from upland to lowland landscape;

REPRESENTATIONS

- Significant local support for the project has been lodged;
- More than 50% of those letters submitted are in support of the proposal
- Material points raised in support letters have not been captured in the planning officers report and are given no weight in the decision

CONCLUSIONS

- Important planning considerations of economic and sustainability benefits have not been considered by the planning officer;
- The appellant has adopted a constructive and conservation based approach to the delivery of a renewable energy proposal in this location;
- The advice of the planning officer at pre-application meetings has been followed;
- The submitted Landscape Appraisal follows good practice guidelines;
- The Council's Landscape Officer has given limited consideration to the proposal and offers no response to the appellants professionally prepared and detailed Landscape Appraisal;
- The appellant requests that the LRB inspect the site and surrounds before finalising a decision on this appeal.

Trinity Gask Wind Turbine

INTRODUCTION

A single, three bladed wind turbine is proposed with a height of 50m to hub and 67m to blade tip, together with ancillary works comprising control kiosk, access tracks and borrow pit. The proposal is a *medium scale* wind turbine. The turbine would be sited on land at Trinity Gask.

This report has been prepared as a supporting document to an appeal to PKC Local Review Board by Mr J Roberts. This appeal responds to the officer Delegated decision to refuse planning application Ref. No. 12/02067/FLL.

The appeal will rely on the papers submitted in support of the Planning Application together with the comments set out in this Statement. It is not the intention to duplicate the environmental information set out in the planning application. That information is comprehensive and, in the appellant's opinion, provides a full justification in support of the proposal. However it is the considered view of the appellant that:

- the proposal is consistent with the broad objectives of the development plan and national planning guidance;
- the Officer Report of Handling gives insufficient weight to a number of important and material planning issues;
- clarification of a number of material matters would benefit the LRB's consideration of this proposal;
- insufficient weight has been given to the considerable volume of support and to the issues raised in those representations.

It will be noted from the Officer Report of Handling that no objections have been raised by Consultees in relation to any of the specific detailed material considerations raised by this proposal. As a consequence this appeal statement will focus only on those specific matters referred to in the refusal reasons together with the following:

- Policy Context
- Economic Justification

- Landscape Impacts
- Representations

It will be demonstrated that the proposal:

- represents a considered and balanced approach to the delivery of renewable energy in a manner which has regard to local landscape character,
- would make a meaningful contribution to the delivery of national targets for the generation of energy from renewable sources;
- would deliver significant economic benefits to the business of Trinity Gask Estate and the local economy;
- represents an acceptable form of sustainable economic development which is consistent with government guidance and the objectives of the Development Plan;
- enjoys considerable local support; and
- that insufficient weight in the decision making process has been afforded to the economic benefits arising from the proposal.

BACKGROUND

The turbine would be sited on land within the Trinity Gask Estate. The Estate itself is run by the appellant and comprises a 700ha land block, predominantly operated as an arable based farm enterprise. The Estate provides permanent employment for 3 workers together with many temporary employment opportunities generated by seasonal farm operations. The Estate also encompasses a number of residential, holiday and business properties that are let to provide both supplementary farm income and important local business and housing opportunity.

Conservation principles are at the heart of the Estate Management. To this end the appellant has delivered within the holding, over time, significant landscape and building improvements through woodland planting; hedgerow restoration and biodiversity initiatives. Furthermore, property restorations and improvements (often from a derelict status, requiring large financial outlay and including Listed Buildings) have incorporated sustainable build practices such as rainwater harvesting, the use of ground source heat pumps and hemp insulation.

It will be shown that the appellants approach to the appeal project has not been one of development at all costs. Conservation principles have been respected through choice of site and design whilst accepting a reduction in generating potential. The appellant is also a resident of the area and as a

consequence has sought to present a thoughtful and thoroughly researched proposal which could be sensitively integrated into the landscape.

For Conservation reasons the appellant has been firm in his intention to have respect to *place*. As a consequence he has had regard to community concerns and tailored his proposal following earlier discussions with PKC Planners. The appeal proposal, through choice of site and turbine now seeks to deliver for a small business, a modest wind energy development that would be limited in its impacts on amenity and communities, landscape, historic environment and natural heritage interests, and without giving rise to any significant cumulative impacts.

The appellant is firmly of the view that the proposal would deliver sustainable economic development, consistent with both Scottish Government and the Council's view for renewable energy proposals, and in an environmentally acceptable way.

POLICY CONTEXT

National Planning Guidance

Scottish Planning Policy 2010

Whilst the Report of Handling touches on the broad objectives set out in this important Planning document, relevant key guidance has not been referred to. The effects of these omissions is that a narrow landscape focus to the approach of decision making has been adopted in this case with insufficient weight given to other important material planning considerations. Namely the economic benefits arising from the proposal, its importance to an established rural business and its merits as a sustainable economic development initiative.

The following paragraphs from the Guidance demonstrate the proposals consistency with recent Government Planning advice:

Development Management

Para 25 makes clear that planning decisions are required to accord with the provisions of the development plan unless material considerations indicate otherwise. It is advised that:

Where a proposal is in accordance with the development plan, the principle of development should be taken to be established and the process of assessment should not be used by the planning authority or key agencies to revisit that.

Key Point

The environmental and planning report supporting the planning application has demonstrated a development that would accord with the broad objectives of the Development Plan.

Sustainable Economic Growth

Para 33 sets the context for the delivery of sustainable economic growth in Scotland by identifying that:

Increasing sustainable economic growth is the overarching purpose of the Scottish Government.

It is further advised that:

The planning system should proactively support development that will contribute to sustainable economic growth and to high quality sustainable places

The paragraph concludes by advising that:

Achieving sustainable economic growth requires a planning system that enables the development of growth enhancing activities across Scotland and protects and enhances the quality of the natural and built environment as an asset for that growth. Planning authorities should take a positive approach to development, recognising and responding to economic and financial conditions in considering proposals that could contribute to economic growth.

The guidance clearly accords emphasis to the economic implications of new development in the planning decision making process whilst adopting a positive approach to sustainable economic growth.

Key Point

In this context the appellant would contend that his proposal would rest comfortably with the Scottish Governments aspirations for the Planning system through the delivery of sustainable economic development.

Para 36 makes clear that:

The fundamental principle of sustainable development is that it integrates economic, social and environmental objectives. The aim is to achieve the right development in the right place. The planning system should promote Development that supports the move towards a more economically, socially and environmentally sustainable society.

Any wind turbine, by its nature, must have a certain exposure to wind to be viable. Invariably optimum sites will be elevated. Such new features may give rise to issues of landscape sensitivity . In this case, the appellant has sought to deliver an environmentally sustainable form of development. Visual impacts are minimised through a sensitive and careful approach to design and site selection.

Economic development

Para 45 identifies that:

Authorities should respond to the diverse needs and locational requirements of different sectors and sizes of businesses and take a flexible approach to ensure that changing circumstances can be accommodated and new economic opportunities realised.

And further:

The planning system should support economic development in all areas by:

- *taking account of the economic benefits of the proposed development in development plans and development management decisions;*
- *support development which will provide new employment opportunities and enhance local competitiveness.*

Key Point

This is a proposal seeking to take advantage of a new economic opportunity (Feed-in Tariff scheme) whilst ensuring the long-term viability and security of a key local employer. In turn this would enable further investment in tourism related development on the Estate. In addition new local employment opportunity would be provided through the local sourcing of materials and services and through increased employment opportunities on the Estate.

Rural Development

Para 92 advises that the aim should be:

.....to enable development in all rural areas which supports prosperous and sustainable communities whilst protecting and enhancing environmental quality.

Para 93 identifies that an important role for Development Plans will be to:

..promote economic activity and diversification in all small towns and rural areas , including development linked to tourism and farm diversification whilst ensuring that the distinctiveness of rural areas, the service function of small towns and the natural and cultural heritage are protected and enhanced..

Key Point

This is a proposal that would sustain the viability and long-term future of Trinity Gask Estate by means of a farm diversification activity whilst delivering broader environmental quality through the a reduction in the use of fossil fuels

Renewable Energy

Para 183 recognises that there is potential for small businesses in rural areas to invest in ownership of renewable energy projects and to develop their own projects for local benefit. It is advised that:

Planning authorities should support communities and small businesses in developing such initiatives in an environmentally acceptable way.

Para 184 in relation to Development Plans it is advised that:

....Development plans should support the wider application of medium and smaller scale renewable technologies such as decentralised energy supply systems, community and household projects.

Para 185 identifies that:

Factors relevant to the consideration of applications will depend on the scale of the development and its relationship with the surrounding area, but are likely to include impact on the landscape, historic environment, natural heritage and water environment, amenity and communities, and any cumulative impacts that are likely to arise.

Key point

This is a medium scaled proposal to support a small rural business seeking to deliver renewable energy in an environmentally acceptable way. The proposal successfully responds to all detailed planning issues.

In summary, this project would deliver sustainable economic development.

Development Plan Policy

The Report of Handling has reviewed relevant Development Plan policies. It is not proposed to duplicate that information but the following relevant and additional points should be noted.

TAYplan 2012 - Policy 6

Decisions on development proposals are required to be justified on the basis of the specific considerations set out through bullet points within that policy. It may be noted from the details contained in this statement, together with the environmental report supporting the planning application, that the wind turbine proposal at Trinity Gask fully meets those considerations.

Key Point

Bullet point 5 of the policy identifies that any appraisal in relation to sensitivity of landscape should be informed by landscape character

assessments.

Strathearn Area Local Plan 2001

The Plan is now 12 years old and pre-dates the current Government Planning Guidance for renewable energy proposals set out in SPP.

The policy section of the Report of Handling lists all the plan policies relevant to this proposal. However, the focus of the appraisal section is limited to perceived landscape detriment only with policies listed only those which encourage a conservation based approach to the delivery of new development.

This narrow focus is at odds with the broader approach to assessment of development proposals more recently encouraged by Scottish Government as a means of delivering sustainable economic growth through a supportive planning system.

Furthermore it should be noted that the specific Renewable Energy Policy of the Plan (Policy 11) is listed but not referred to in any detail in the appraisal section. That policy seeks to *encourage* the delivery of renewal energy development and may be considered to be more in tune with the very positive support offered by the more recent SPP to increase the amount of Scotland's electricity generated from renewable sources through appropriately sited and designed renewable energy proposals.

Whilst the appraisal section of the Report of Handling makes clear that landscape and visual impacts are key considerations in the determination of any new development proposal, the appellant's position is that this should not be the *only* or necessarily the *primary* consideration. Each case is required to be dealt with on its individual merits.

The appellant can recognise that a new 'point feature' within the landscape would result. The Case Officer regards this as a harmful visual change to landscape character albeit not a *significant* one. He concludes:

In my personal view, contrary to the representations, is that I do not necessarily consider this turbine to have a significant impact on the landscape character of the area (although it may have an impact), as this specific landscape type is in my opinion capable of accommodating some, modest wind developments albeit at a much reduced scale.

The appellant's case will show that the landscape within which the new turbine would be sited can accommodate this medium scale wind proposal. Although a new 'point feature' would result, site characteristics and design would ensure that visual impacts are mitigated to a level where *other material planning*

considerations should be weighted against any perception of visual harm. Accordingly the proposal would not conflict with the planning policies of the Strathearn Area Local Plan.

Key Point

The Local Plan does not reflect prevailing Government support for the delivery of sustainable economic development and in particular the commitment to the delivery of 50% of Scotland's energy by 2020 from renewable sources. Where more up-to-date guidance is available it would be appropriate to accord significant weight to such guidance in any planning decision.

Policy 3

Although Policy 3 is reproduced in full in the Report of Handling, the analysis section of the Report fails to identify that a key requirement of Policy 3 is that proposals deemed to have a significant landscape impact will be assessed against the principles set out in the Tayside Landscape Character Assessment produced by SNH (TLCA). The appellant's case will show that the TLCA recognises the potential for turbine development in this part of Perthshire and the proposal would not result in any significant landscape harm.

Key Point

The landscape character type of this part of Perthshire is recognised by SNH's Tayside Landscape Character Assessment 1999 as **LOWLAND HILLS**

Policy 11

The Renewable Energy Planning Policy within this document has not been explicitly referred to in the appraisal section of the Report of Handling. The LRB should note that:

- The appeal site does not form part of any protected landscape nor is it within or close to any designated site of national, regional or local conservation or archaeological interest;
- Any intrusion into the landscape character of the area would be limited and mitigated by ground profile and established planting;
- Any effects on the amenities of neighbouring occupiers would be limited. In this respect the comments of the Case Officer and consultees in

relation to noise; reflected light and electromagnetic disturbance should be noted;

- The appellant is agreeable to the use of planning conditions or a legal agreement to deliver site restoration works.

The appellant's case will show that the proposal would not conflict with the objectives of this Plan policy.

Key Point

In relation to point (b) it may be noted that the LOWLAND HILLS landscape character type and the appeal site is not the subject of any protective designation.

Proposed Local Development Plan 2012 -

Policy ER1A - This is the most up-to-date policy of the Council relating to wind energy developments.

It should be noted that the factors (a) - (h) set out in the policy, against which it is advised that renewable energy proposals will be assessed, are fully satisfied by the proposal. Furthermore:

- no concerns have been raised by consultees in relation to biodiversity, water or heritage interests. The appellant is firmly of the view that the individual and cumulative landscape effects of the proposal would be acceptable in this location (a),
- a meaningful contribution (400kw) towards carbon reduction targets would be delivered (b);
- an acceptable connection to the electricity distribution system can be achieved (c) ;
- acceptable site access for this medium-scale proposal can be secured (d);
- no adverse visual effects would arise from ancillary tracks and borrow pit would not (e);
- there would be no adverse effects on any carbon rich soils at this site (f);
- positive effects on the Perth economy would be delivered (g);
- the landscape section of this report details why the appeal site has been favoured over others on the estate (h).

In summary, a number of differing policy objectives are required to be considered and weighed before determining whether any perceived detriment

to landscape would justify planning refusal. The appellant's case will show that the proposal would not conflict with the objectives of this Plan policy.

Other Guidance

Tayside Landscape Character Assessment (TLCA)

Although a limited précis of the landscape character type is included in the Report of Handling under *Other Guidance*, the specific guidance set out in that document relating to the ability of the landscape to accommodate wind turbine development has been omitted.

Policies 3 and 11 of the Strathearn Area Local Plan and Policy 6 of the TAYplan 2012, would suggest that considerable weight be accorded to that guidance when assessing development proposals and determining applications. The LRB should note the following relevant points from the TLCA:

The appeal site lies within the Lowland Hills Landscape Character type.

Para 5.6.15 has been reproduced here in full:

At a small scale, wind power has been important in this area for many decades, being harnessed by wind pumps to raise water. With the development of modern wind turbines to generate power, it is possible that this area may come under pressure for wind farm development. Though wind speeds are likely to be significantly lower than in more elevated parts of the Highlands or the Sidlaws/Ochils, it is possible that the lower level of perceived constraint, together with the proximity to the electricity distribution network, could favour this area. This would be even more likely if the efficiency of wind turbines continues to improve, thereby making areas with lower wind speeds viable. It is acknowledged that development here could avoid the need to locate turbines in even more sensitive upland areas or in less sensitive, but more populated areas closer to settlements. It would also mean that from distance, and from some directions, turbines would be viewed against a backdrop of higher ground. However the insensitive development of wind turbines in this area could conflict with the small-scale, historic and deeply rural character of the landscape. It would also weaken and confuse the areas role of providing a transition from the unsettled uplands to the fertile and settled lowlands.

It is important to register that the TLCA does recognise the positive contribution that the Lowland Hills Landscape can make to the delivery of renewable energy provided that such development is appropriately sited and scaled.

Key Point

Policy 6 of the TAYplan 2012 determines that any appraisal of landscape sensitivity should be informed by landscape character assessments, such as the TLCA.

ECONOMIC JUSTIFICATION

At para 1.2 of the application Planning Report the appellants further proposals for eco-tourism development within the Estate are outlined (application 10/00827/FLL). The appellant seeks to broaden the viability of the farm business whilst taking advantage of the attractiveness of this part of Perthshire as a tourism destination. The appellant regards the appeal proposal as the enabling mechanism that can realise that aspiration.

The Estate is also a major energy user. The appellant considers that the proposal is an opportunity to: (i) offset rising operational costs by taking advantage of new and secure economic opportunities provided by the introduction of the feed-in tariff scheme; (ii) embrace the Scottish Governments aspiration for the generation of more renewable energy; and (iii) be consistent with Scottish Governments drive towards the decentralisation of energy generation through investment in ownership of renewable energy developments by communities and small businesses in rural areas.

In a responsible way the appellant has appraised his business and seeks to provide, by way of investment in a single wind turbine, a further farm diversification initiative. This turbine proposal represents a significant capital cost to the Estate business. The progression of the proposal, even through the planning stage, has entailed considerable costs and risks with no certainty of outcome. However in the opinion of the appellant further, significant investment would be justified as a means of securing the long-term viability of the farm and estate.

To defray those considerable costs and as a means of minimising risk to the farm business overall an option for the appellant may have been to seek to maximise return through a proposal for more than a single turbine. The Estate is a location that benefits from a steady and reliable wind resource. However, for good conservation reasons such an approach was discounted.

The appellant has used local professional consultants in assembling this project (Perth based); would use locally based turbine contractors for erection and future maintenance (Perth based); and intends to use local construction and

ground work companies for the construction of access tracks and foundations and ancillary works.

Key Point

The proposal is an integral part of a forward-looking business plan that has been prepared for the Estate. The new turbine will provide opportunity for off-setting rising operational costs for the holding, provide an additional and important income stream, whilst delivering planned conservation based eco-tourism development.

LANDSCAPE IMPACTS

The issue of site suitability is the key area of difference between the appellant and the Planning Officer.

Accompanying the application is a comprehensive landscape and visual impact appraisal (LVIA) prepared by professional Landscape consultants (*atmos consulting*). Section 6 of the planning environmental Report sets out the conclusions of that appraisal.

Methodology

The LVIA was completed in accordance with the good practice guidance prepared by SNH for the assessment of small scale wind energy projects and has drawn upon established industry methodology for Landscape Character Assessment. The consultation letter from SNH in relation to the first turbine application recommends the use of this Guidance. That letter is attached as APP 1.

The recommended methodology has been used in an objective and disciplined way to appraise the landscape and visual impacts of the proposal and to predict the significance of change. By employing good practice guidelines and agreed methodology the appellant has sought to remove the *subjectivity* of assessment which the Case Officer has relied on.

The LVIA incorporates a number of professionally prepared photographic and wireframe montages from viewpoints within and around Strathearn,

Site Choice and Design

The appellant, as a conscious decision in order to minimise landscape impacts, proposed to site the turbine on a part of the Estate which benefits from

planted woodland screening on 3 sides and where the undulating nature of the terrain would assist in assimilating the development into the landscape. A consequence of this site choice is that the flexibility of the site to capture wind from all directions is compromised and relative to the overall costs of the development the grid connection will be high.

Although the Estate is a location that benefits from a steady and reliable wind resource, detailed on-site monitoring has shown that this is only at a certain height and in certain locations.

The relative close proximity to the Ochil hills creates wind conditions that are inhibited and made variable in flow character and strength. Parts of the estate are low lying where wind speeds would consequently be lower. These are all operational factors that have influenced both the choice of site and the turbine design.

Following an earlier planning refusal and in direct response to the Planning Officers initial concerns about the impacts of a turbine in this location, the design was re-visited. Through changes to turbine position, hub height and rotor diameter the LRB is asked to note that the appellant adopted a constructive approach to those concerns.

The LRB is asked to note that support for the changes was given by the Case Officer through pre-application discussions whilst a consequence of those revisions is a diminution of energy generation and potential investment returns.

It was necessary to increase the hub height because of the interaction between the smaller rotor diameter and the particular wind characteristics at the site. Those changes could be introduced without significantly compromising operational efficiency or viability. Although the overall height of the structure remains the same as that previously applied for, the overall effect has been to reduce the visual assertiveness of the turbine, a point acknowledged by the planning officer.

The 50m hub height, combined with the smaller rotor blades now proposed, represents the *minimum* height which would provide for an economic return to investment and render the project, with its considerable capital costs, viable.

In this location, with the nature of wind speeds encountered, a smaller turbine would simply mean that the business of the Estate could not take advantage of the new economic opportunity provided by the feed-in tariff.

Within the constraints of this site (grid connection costs, landscape and wind resource) the revisions delivered by the appeal proposal balance the very important matters of (i) the environmental benefits of green energy production

(ii) countryside protection; and (iii) the important business requirement of sustaining both the local and the rural economy of the Trinity Gask Estate.

Landscape & Visual Impacts

Landscape and visual impact has been the subject of rigorous and disciplined professional appraisal using methodology recommended by SNH. A *subjective* approach to appraisal has not been adopted.

The Report of Handling acknowledges that the Case Officer has applied subjectivity to his assessment and the 'view' of his Landscape Colleague has been relied on in arriving at a refusal recommendation on this application. *Potential impacts on the local landscape associated with the localised Gask ridge* are cited but without further explanation. The 'views' of the Landscape Officer have not been made available on Public Access but have been forwarded by the Case Officer ahead of this appeal. Those comments are included here as Appendix APP2.

The LRB is asked to note that contrast between the comprehensive and considered Consultant's Report commissioned by the appellant and the very brief Officer Landscape note. Little consideration would appear to have been given to the contents of the professional Consultants Report. No explanation has been given as to why the conclusions of the professional Consultants are inappropriate or why the broad guidance set out in the TLCA should be set aside in this instance? Indeed the Landscape Officer would appear to be indicating that the TLCA guidance should not be applied to Strathearn and the Gask Ridge.

It is the view of the appellant that the proposal would not constitute an insensitive approach to the development of wind turbines in this area and, because of its siting and scale, would not conflict with the small-scale, historic and deeply rural character of the landscape. Furthermore this proposal would not weaken and confuse the areas role of providing a transition from the unsettled uplands to the fertile and settled lowlands - both key characteristics set out in the TLCA guidance.

The appellants landscape appraisal includes a total of 12 viewpoints within and around Strathearn selected and agreed in consultation with PKC Officers. These include viewpoints from prominent vantage points on the A822 Tourist route and A85(T).

The comprehensive Landscape and visual appraisal is available to the LRB and it is not proposed to précis its conclusions here. However by reference to the presented photomontages the appellant requests that the LRB note the following specific points:

- Viewpoint 1: in the broad expanse of view afforded from Roundlaw Cottage the turbine, as a new point feature would be apparent but not unduly assertive;
- Viewpoint 3: confirms the Gardens and Designed Landscape of the Glen Eagles Hotel would not be materially affected;
- Viewpoint 4: In the open expanse of Strathearn the scale of the turbine is diminished and the landscape could accommodate such a change;
- Viewpoint 7: viewed from the north, the backdrop of the Ochil Hills together with a forestry/woodland setting affords significant visual mitigation;
- Viewpoint 9: A diminishing effect to scale from the forestry setting can be noted;
- Viewpoint 10: The effectiveness of tree screening to close views from the north may be noted;
- Viewpoint 11: The woodland backdrop offers significant visual mitigation. The Gask Ridge is distinguishable; remains a dominant landscape feature and its pre-eminence would not be diluted by the proposal.
- Viewpoint 12: The turbine would not intrude on the rural setting of the hamlet of Clathy.

The LRB is asked to note that it has been confirmed through submitted representation that the woodland on the Gask Ridge surrounding the appeal site is subject to a recently signed 20 year Forestry Management Agreement. Much of this woodland would remain for the life of the turbine.

The LRB is asked to note that although this part of Strathearn has amenity value it is not subject to any protective landscape designation.

The Landscape Officer asserts that the re-configuration of raised hub and shorter blades would be *out of proportion* and thus make the tower and hub more visible. This view is strongly refuted by the appellant. The appeal proposal would realize a balanced and harmonious relationship between hub (50m) and rotor (17m) displaying a typical turbine proportion of between 1/3 and 1/2. In contrast the previously refused scheme featured a top heavy arrangement with shorter hub (40m) topped by a weighty, 27m rotor, uncharacteristic of other turbines within the area.

The Landscape Officer raises concerns about issues of cumulative impacts arising from the addition of this single *medium* scale turbine to this landscape. Whilst inter-visibility between the appeal site and those operational commercial wind farms is acknowledged, the LRB is asked to note the significant difference in scale between the appeal proposal and those other turbines, and the considerable distance between sites. Furthermore, all of the sites referred to by the Landscape Officer are multi-turbine installations whilst the appeal proposal is for on-farm, *medium* scaled single turbine proposal.

Representations suggest the scale of turbine proposed would be inappropriate to this lowland setting. The LRB is asked to note that the Greenknowes and Burnfoot commercial wind farms in the Ochil Hills are 102m in height to blade tip. In contrast the scale of the appeal proposal is significantly reduced (67m in height). This reduction in scale is considered to appropriately reflect the transition from upland to lowland landscape thereby according with the guidance set out in the TLCA.

In summary, the LRB is asked to note that the Lowland Hills Landscape Character type has the capacity to accommodate the *medium* scale turbine and the proposal would not diminish the quality of the landscape and natural environment at Trinity Gask.

Key Point

A turbine lower in height than those sited on the Ochil Hills is proposed.

REPRESENTATIONS:

The Report of Handling does not fully recount many of the matters raised in the numerous letters submitted in **support** of this proposal. The LRB is asked to note that more than 50% of the 208 letters of representation submitted were in **support** of the proposal, and from residents, many of who are local to the area. Many of those representations raise matters other than the acceptability of landscape impact or support for the principle of green energy, namely:

- Positive impacts of the development to the local economy;
- Positive nature of the proposal as a farm diversification initiative;
- Value of proposal in sustaining the viability of the Estate;
- Importance of contribution of the Estate to the local economy and in particular employment opportunities;
- The contribution towards national targets for the delivery of green energy;
- The good conservation practices adopted by the Estate in relation to land management.

Those support comments have not been *captured* in the Report of Handling. It is not clear what weight, if any, has been given to those matters when appraising the development?

The LRB is asked to note from the section on Scottish Planning Policy that those omitted social, environmental and economic support comments are important and relevant material planning considerations.

Key Point

Annexe A Circular 4/2009 - Development Management Procedures - 4. *It is for the decision maker to decide if a consideration is material and to assess both the weight to be attached to each material consideration and whether individually or together they are sufficient to outweigh the development plan. Where development plan policies are not directly relevant to the proposal, material considerations will be of particular importance.*

The appellant would respectfully request that significant weight is accorded to these other important material considerations.

Comment on representations:

The LRB is asked to note that of those matters raised in objections and listed in the Report of Handling it is only the *visual impact* and *residential amenity* concerns that the Case Officer determines to be overriding.

(i) Residential Amenity -

The last sentence in the section Compatibility with existing uses relates to impacts on residential amenity arising from the effects on *neighbouring properties*. However it is unclear from the Report which residential properties are considered to be adversely affected and in what way? The Report of Handling does confirm that noise is not a concern.

The LRB is asked to note that the closest residential properties to the site are:

- Cowgask House - 755m to the west of the site
- Blairadam - 640m to the north of the site
- Roundlaw Cottage - 830m to west of site;
- Woodside Meadows - 1.25 km to east of site

Key Point

- The occupier of Roundlaw Farm Cottage has written in support of the application (carrol)
- Cowgask House is orientated to the south

- Woodside Meadow is separated from the appeal site by Forestry Planting
- Blairadam is separated from the appeal site by Forestry Planting

As the Case Officer Report of Handling makes clear, a *right* to a cherished view cannot be safeguarded under Planning Law. This would suggest that the Officer concern is one of effect on outlook?

The appellant would acknowledge that the turbine would be visible from dwellings within the vicinity. However, this *visibility* is not the same as concluding that any amenity presently enjoyed by residents as a result of that countryside setting would be materially harmed.

In giving weight to this issue in any decision, it is appropriate to have regard to the extent to which the new turbine feature would impose itself or dominate the outlook from nearby dwellings.

Assessment

Having regard to the considerable distance between properties and appeal site; the broad and open aspect enjoyed by each of those dwellings; the undulating nature of ground contouring together with the presence of established intervening planting; the appellant would contend that the outlook from those dwellings and nearby settlements would not be dominated by this *medium* scale turbine and neither would the turbine be unduly assertive in the landscape.

If the LRB is not persuaded by this assessment, it is the appellant's case that the LRB panel would benefit from an inspection of the site and surrounds before arriving at a decision on this appeal. This is considered to be of great importance in the absence of a full justification for the amenity concerns raised in the Report of Handling. It would also enable the LRB to fully appraise (i) the orientation and proximity of dwellings in the locality to the appeal proposal; and(ii) the character of this part of Strtahearn as a landscape within which wind turbines are located, rather than a windfarm landscape.

Key Point

It is respectfully requested that the LRB undertakes a Site Inspection in this case.

Other Matters:

- (1) Reference has been made to another planning refusal for wind turbines within the *Lowland Hills* Landscape Character type at Standingfauld. The suggestion is made that a precedent for resisting turbines has been set. That application was dismissed at appeal. The LRB is asked to note that the Standingfauld application (09/02212/FLM) proposed 8 turbines with a hub height of 65m and a blade tip 100m - ie more than 40% higher than that proposed at Trinity Gask;
- (2) Concern has been expressed about the potential impact of the proposed turbine on the Gardens and Designed Landscape of the Glen Eagles Hotel. The LRB is asked to note from the submitted LVIA that inter-visibility between the site, the proposal and that heritage asset would not result and further, the Report of Handling records that Historic Scotland have not raised objection to the application.

CONCLUSION

The turbine proposed is not large scale and this is confirmed by the Consultation response from SNH to the first application - APP 1. Therein SNH identify the general guidance that should be followed in the assessment of small-scale turbine developments. The appellant has used that published guidance in formulating his proposals.

The appeal site lies within the Lowland Hills Landscape Character Type as identified by the Tayside Landscape Character Assessment. The potential of that area for accommodating appropriately sited and scaled wind energy development is identified. The proposal is for a *medium* scaled turbine.

The Case Officer has concluded that this proposal would not have a significant impact on the landscape character of the area. In an open way he has identified that his landscape architect colleague has another view.

The Landscape Officer provide only limited comments on the planning application and no comments at all on the professional Landscape Consultant's report commissioned by the appellant. It is not clear from the Landscape Officer's comments whether a specific site appraisal was carried out in this instance.

The stated opinion from the Council's Landscape Officer that the proposed turbine would be open to view and as a consequence would be visually harmful sits at odds with the Council's Recommended landscape guidance set out in the TLCA . That guidance acknowledges the contribution that the area of Strathearn, including the appeal site, can offer to the accommodation of wind energy development in Perthshire.

The appellant revised his initial proposal in a manner that was encouraged by the Planning Officer through pre-application discussions. Although overall height remains the same, a less assertive structure would result with a smaller, less imposing 'head'. The visual montages demonstrate that the bulk of the mast would be screened from many approaches by the established forestry planting to the north, east and south of the site.

The value of the established woodland around the site to mitigate visual impacts is acknowledged. The adjacent landowner has confirmed that the off-site woodland is the subject of a Forestry Commission 20 year management plan. These circumstances are unlikely to be mirrored in other locations with other turbine proposals and reinforce the appellants considered and careful approach to site choice and design.

These factors illustrate the careful attention to siting and design which has been embraced by the appellant. A consequence of the smaller turbine head is a reduction in generating potential (from 500kw to 400kw). The site is one where as a consequence of high grid connection charges and wind character and speed, a smaller turbine would not be a viable development option.

The proposal would comprise a farm diversification activity that would contribute to the viability and sustainability of an established farm business and a key local employer whilst providing scope to further increase employment in the coming years.

The proposal represents a sustainable economic development proposal. The economic benefits to the local economy arising from the development have been highlighted.

Those key important planning considerations have not been weighed in the balance in the decision to refuse this proposal. Such matters are material in planning terms and may be evidenced by the recent appeal decision attached - APP3. Although each case will be determined on its own individual merits that appeal demonstrates that in arriving at a planning decision all matters need to be weighed in the balance. The economic benefits to an established business and employer can, and should be, a significant factor when weighed against any concerns relating to visual impact.

The appellants failure to deliver this farm diversification project would impact on the viability of the farm holding and Estate.

Within the constraints of this site (grid connection costs, landscape character and wind resource) the appeal proposal represents a balanced approach to the delivery of a renewal energy development project in a manner which:

- would not be sited within a protected landscape;

- has regard to the need for countryside protection,
- makes a meaningful contribution to reducing Scotland's dependence on fossil fuels;
- provides security of energy production for a small business in a rural area,
- offers potential for that businesses to invest in ownership of a renewable energy project,
- meets the operational needs of an important local employer,
- would provide direct benefits to the local economy, and
- would enable the viability of the Estate to be sustained.

The appellant would contend that in this way the *medium* scale wind turbine would constitute an acceptable form of sustainable economic development that has respect for environmental protection. Such an approach to renewable energy development would be consistent with that advocated by Scotland's Planning Minister Derek Mackay when launching the consultation draft of the new SPP in May 2013.

Accordingly it is respectfully requested that this appeal be upheld.

Appendix 1

SNH Consultation letter (11/01855/FLL)



Scottish Natural Heritage
Dualchas Nàdair na h-Alba

All of nature for all of Scotland
Nàdar air fad airson Alba air fad

Perth and Kinross Council
Planning and Regeneration
Pullar House
Perth
PH1 5GD

Your ref: 11/01855/FLL
Our ref: CNS/REN/WF/P&KGen
30 November 2011

Dear Sirs

**Town and Country Planning (Scotland) Act 1997 as amended by Planning etc
(Scotland) Act 2006**

**Installation of a wind turbine. Land 800m north east of Roundlaw Farm Cottage,
Trinity Gask**

Thank you for your letter of 28 November 2011 requesting comments from Scottish Natural Heritage (SNH) on the above proposal.

As this is a small scale proposal of one turbines and in our view does not affect a protected site or /species we do not intend to offer advice or comment. This is in accordance with our Service Level Statement for Planning and Development, which confirms that we would not normally wish to be consulted on 'small scale wind energy proposals'. We are content that you identify any natural heritage impacts and address these without further reference to SNH.

Below is general guidance on the key issues for small-scale developments. These may include:

- proximity to areas of population, residential properties and transport routes, which can lead to adverse landscape and visual impacts;
- locations in lowland landscapes, which can be sensitive to larger turbines, and require careful landscape and visual assessment, particularly in terms of cumulative impacts;
- locations which can have particular bird species present e.g. geese on agricultural land;
- locations close to buildings and woodlands that may increase risks to legally protected species such as bats;
- Cumulative effects with other small and large scale wind development.

Yours sincerely

John Burrow
Operations Officer
Tayside & Grampian Area
john.burrow@snh.gov.uk



Scottish Natural Heritage, Battleby, Redgorton, Perth, PH1 3EW
Tel 01738 444177 Fax 01738 458611 www.snh.org.uk

Appendix 2

PKC Landscape Officer comments

Garry Dimeck

From: Douglas Cook [DCook@pkc.gov.uk]
Sent: 29 January 2013 16:14
To: Andy Baxter
Subject: RE: Trinity Gask (12/02067/FLL)

Hi Andy,

I didn't receive anything for this one. However, if the blades tip height is the same as the previous application then I can't see the overall impact changing as its overall height will remain the same. If anything it is likely to look worse as the blades would be out of proportion to the tower and the hub more visible.

The Gask ridge is a very sensitive area in landscape terms due to its elevation and prominence in Strathearn and any turbines located on it would be very visible throughout the strath. There are likely to be significant cumulative effects created by bringing wind development into lowland of Strathearn. This could also have a strange visual affect when it is viewed in the foreground to the Ochil Hills wind developments especially Green knows.

Given the cumulative and landscape and visual concerns arising in the area for previous proposals e.g. New Milne and not to mention various other Ochil Hills proposals, Mull Hill and Parks of Keillour, the proposed turbine at Trinity Gask it is likely to be highly visible and give rise to significant landscape and visual effects in the area.

From a landscape point of view the current proposal is no better than the original proposal and possible worse.

I'm happy to discuss this one with you when I'm next down if you like.

Cheers

Doug

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

From: Andy Baxter
Sent: 29 January 2013 15:20
To: Douglas Cook
Subject: Trinity Gask (12/02067/FLL)

Wind Turbine at Trinity Gask

Application Ref 12/02067/FLL

Hi Doug,

A consultation request should have appeared on your desk before Xmas for this one, however I appreciate your busy at the moment so you may not have had time to look at it. The application is a re-submission of an application which I refused last year (11/01855/FLL) for a 67m turbine, with the principle change being

a change of shorter blades and a higher hub height – with the intention of reducing the impact of the turbine whilst keeping the same blade tip height.

LVIA for both are available online, however I can give you hard copies if you want too.

Can you have a quick look and let me know your thoughts on the change of turbine?

Cheers

Andy Baxter

Planning Officer

Perth & Kinross Council

Planning & Regeneration

Pullar House

35 Kinoull Street

Perth

PH1 5GD

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Email - ABaxter@pkc.gov.uk

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Appendix 3

Local Review Decision Notice - Scottish Borders Council



**SCOTTISH BORDERS COUNCIL
LOCAL REVIEW BODY DECISION NOTICE**

**APPEAL UNDER SECTION 43A (8) OF THE TOWN AND COUNTRY PLANNING
(SCOTLAND) ACT 1997**

**THE TOWN AND COUNTRY PLANNING (SCHEMES OF DELEGATION AND
LOCAL REVIEW PROCEDURE) (SCOTLAND) REGULATIONS 2008**

Local Review Reference: 12/00050/RREF

Planning Application Reference: 12/00221/FUL

Development Proposal: Erection of 2 No wind turbines 110m high to tip and
installation of ancillary equipment

Location: Land South West of Neuk Farm, Cockburnspath

Applicant: Firm of S R Findlay

DECISION

The Local Review Body reverse the decision of the appointed officer and grants
planning permission subject to the conditions listed in this notice.

DEVELOPMENT PROPOSAL

The application is for the erection of 2 wind turbines 110m high to blade tip and the
installation of ancillary equipment on land South West of Neuk Farm, Cockburnspath.
The application drawings consisted of the following drawings:

Plan Type	Plan Reference No.
Location Plan	WPENG1480 Rev B
Site Plan	WPENG853 Rev G
Elevations	EIA-024 Figure 4
Elevations	EIA-121 Figure 7.1

PRELIMINARY MATTERS

The review was considered by Members at the meeting of the Review Body on 19th
March 2012. After examining the review documentation, which included: (a) Decision
Notice, (b) Notice of Review (c) Report of Handling, (d) Further papers referred to in
the Report of Handling, (e) Correspondence for objectors, (f) Correspondence from
Consultees, (g) Further representations in response to Review and (h) a List of
Policies, the Local Review Body determined that it had sufficient information to
determine the review and that no further procedure was required. In coming to this

conclusion, the Review Body considered the request from the applicant for further procedure in the form of written representations and a site visit.

The Review Body were advised that submissions relating to the report on the "Assessment of Cumulative Noise" (Appendix E.2 in the Notice of Review) had been received with the appeal. Whilst it was accepted that the report itself had been submitted during the processing of the application the responses submitted were issued after the decision on the application was made.

The submissions related to correspondence between the applicant, the appointed officer and the Environmental Health Officer in emails dated 13th and 14th November 2012 (Appendix E.3 and E.4). In these emails the appointed officer accepted that the Noise Report had not been properly taken into account during his determination of the case and that after considering the report the Environmental Health Officer was satisfied the development was acceptable subject to the imposition of conditions. The Review Body considered that this information was material to their determination of the case and met the qualifying tests set out in Section 43B of the Act.

The Local Review Body considered the Review competently made under section 43A (8) of the Town & Country Planning (Scotland) Act 1997.

REASONING

The determining issues in this review were:

- (1) whether the proposal would be in keeping with the Development Plan, and
- (2) whether there were any material considerations which would justify departure from the Development Plan.

The Development Plan comprises: consolidated Scottish Borders Structure Plan 2001-2018 and consolidated Scottish Border's Local Plan 2011. The Review Body considered that the most relevant of the listed policies were:

- Structure Plan Policies: Principle S1, N6, N7, N9, N11, N13, N14, N16, N18, E16, I19,, I20 and E22
- Local Plan Policies: G1, H2, D4, EP2 BE3, BE4 and NE5

Other material key considerations the Local Review Body took into account related to:

- SBC Supplementary Planning Guidance on Renewable Energy June 2007
- SBC Supplementary Planning Guidance on Wind Energy May 2011
- SBC Supplementary Planning Guidance on Local Landscapes Designations August 2012
- The Borders Landscape Assessment, 1998 (Ash Consulting Group)
- Scottish Planning Policy (Paragraphs 182 – 195)
- Web based renewable advice at <http://www.scotland.gov.uk/Topics/Built-Environment/planning/National-Planning-Policy/themes/renewables>
- PAN1/2011 – Planning and Noise

Members were of the opinion that, whilst their consideration of the matter was "de novo", the reasons for refusal highlighted the critical issues to which they should turn their attention. The other outstanding matters highlighted in the Environmental Statement, submitted in support of the application, could be controlled through the imposition of suitable planning conditions.

The Review Body noted from the information contained in Appendices E.3 and E.4 that the appointed officer could no longer sustain the second ground of refusal set out in the decision notice. The emails confirmed that the Environmental Health Officer was satisfied with the terms of the Noise Report, subject to the imposition of conditions. The Review Body concluded that the matter had been adequately dealt with and that the second reason for refusal should be struck off.

The Local Review Body noted that in the first reason for refusal the appointed officer focussed on the visual and landscape impact of the development, including impacts on Oldhamstock Conservation Area, the Lammermuir Hills and Berwickshire Coastal AGLV's (now Special Landscape Areas) and the cumulative visual impact with other approved schemes and those pending decision in the locality. Members debated the question of the level of impact and despite differing views being expressed, the Review Body did not fundamentally contradict the appointed officer's assertion that there would be adverse visual and landscape impact and that this may be significant. The Review Body noted that the height of blade tips of the nearby consented developments of Wester Dodd and Hoprigshiels were greater than the present application .

The Review Body then considered the terms of the economic justification for the development presented by the applicant. Members referred to Structure Plan Policy E16, which encourages and supports development that contributes to the wider rural economy, and also Local Plan Policy D4, which accepts that, even when there are significant adverse impacts, a development may be approved if the decision maker is satisfied that the contribution to wider economic and environmental benefits outweighs the potential damage to the environment.

In this regard, Members were conscious that they must be satisfied that there was a consequential link to planning matters, there was sufficient evidence of a wider economic benefit and that this benefit would actually occur. In considering the evidence, they noted that the turbine would assist the business in reducing its energy requirements. This would bring price stability and security of supply to a large consumer of energy and would assist in reducing its carbon footprint. Members were also aware that the quarry had permission for a major expansion of its extraction operations. The Review Body was satisfied that the proposed turbines would help to sustain a business, which is an important local employer, and help it realise its expansion plans. Members concluded that the impact of the development was outweighed by the economic benefit that would accrue.

CONCLUSION

After considering all relevant information, the Local Review Body concluded that the development was consistent to the Development Plan and that there were no other material considerations that would justify departure from the Development Plan.

CONDITIONS

1. The development hereby permitted shall be begun before the expiration of three years from the date of this permission.
Reason: To comply with Section 58 of the Town and Country Planning (Scotland) Act 1997, as amended by the Planning etc. (Scotland) Act 2006.
- 2 The development hereby permitted shall not be carried out otherwise than in complete accordance with the plans, specifications, requirements and obligations as set out in the Environmental Statement and associated

documentation submitted as part of the application. Any variation thereto must be agreed in writing by the Planning Authority.

Reason: To ensure that the development is carried out in accordance with the approved details.

3. This permission shall be for a period of 25 years from the date of final commissioning. No later than 18 months prior to the end of the period of this planning permission, or by such later date as may be agreed by the Planning Authority, unless a further planning application is submitted and approved, the applicants shall submit a method statement for the decommissioning of the windfarm and the restoration of the application site for the approval of the Planning Authority. Decommissioning in accordance with the approved method statement shall be completed within 6 months of the end of the period of this planning permission or any alternative timescale agreed with the Planning Authority in writing and shall include the dismantling and removal from the site of all turbines, buildings and ancillary development.

Reason: To ensure an indicative scheme is submitted by the developer and approved by the Planning Authority for the decommissioning of the wind farm at the end of its 25 year proposed lifespan.

4. No development shall commence on site until a full site specific Environmental Management Plan (EMP) has been submitted to and approved in writing by the Planning Authority, in consultation with SEPA and SNH. The EMP shall include a Construction Method Statement, which shall comprise:

- Details of all on-site construction, and construction of access tracks, including crane hard standing areas, drainage, mitigation, post-construction restoration, and reinstatement work, as well as the timetables for such work;
- Details of the phasing/timing of construction of the turbines;
- Details of water supply;
- Details of any temporary on-site diversions of rights of way and associated signage;
- Details of foul drainage measures to comply with national guidance on pollution prevention;
- Details of the (waste) management of materials, including recycling and use of secondary aggregate;
- Details of surface water drainage measures to comply with national guidance on pollution prevention, including surface water run off from internal access roads;
- Details of the arrangement for the on-site storage of chemicals and fuel oil;
- Details of measures to reduce soil erosion;
- Details relating to minimisation of the environmental impact of road construction;
- Details of any water course engineering works and measures for the implementation of buffer zones around existing water courses and features;
- Details and timescale for the restoration of the site, including the site compound and the crane hard standing areas;
- Details of the method, frequency and duration of ecological monitoring, potentially through the engagement of a suitably qualified scientist, particularly of watercourses, over the construction period of the windfarm development;
- Details of contingency planning in the event of accidental release of materials which could cause harm to the environment.

- Details of Reasonable Avoidance Measures including appropriate buffer zones to be adopted to minimise damage and disturbance to wetland and woodland habitats.

The development shall be carried out in strict accordance with the EMP as agreed in writing by the planning authority.

Reason: In the interests of the amenity of the area, to ensure the site is developed in accordance with best environmental practice safeguarding water courses/sources during the construction phase of the wind farm and that the site is satisfactorily restored.

5. No works shall be carried out during the breeding bird season (March-August) without the express written permission of the planning authority. Checking surveys for breeding birds will be required if works are to be carried out in this period, identifying measures to avoid impacts on breeding birds.

Reason: To afford protection to breeding birds, which are protected by law.

6. An activity survey for bats by a suitably qualified person will be required to assess use of the development area and adjacent area to determine any foraging or commuting movements within and across the area affected by development. Activity surveys should be conducted between May and September. No development shall commence on site until a scheme for the protection of bats has been submitted to and approved in writing by the planning authority. Any works shall, thereafter, be carried out in accordance with the approved scheme.

Reason: To afford protection to bats, which are protected by law.

7. No development shall commence on site until a Landscape Habitat Management and Enhancement Plan has been submitted to and approved in writing by the planning authority. The plan shall incorporate opportunities to enhance the local habitat network for bats and breeding birds through planting of native thorn species rich extended hedgerows, creation of areas of semi-natural woodland, creation of grass margins and wild bird cover areas. A pond or SUDS feature can also enhance the local habitat network for bats. Buffer strips (tree planted or grass margins) can be created around water bodies to enhance biodiversity and improve water quality. Any works shall, thereafter, be carried out in accordance with the approved plan

Reason: To ensure that the development makes a positive contribution to habitat protection and enhancement.

8. A botanical survey of Red Data Book plant species to be carried in June-August prior to the commencement of works. The results of such a survey are to be submitted to and approved in writing by the Planning Authority. Any mitigation works identified therein shall, thereafter, be carried out in accordance with the approved plan

Reason: To ensure protection to specified species.

9. No development shall commence until a further badger survey has been undertaken within a 500m buffer of all areas around and within the Planning application boundary. The results of such a survey are to be submitted to and approved in writing by the Planning Authority. Any mitigation works shall, thereafter, be carried out in accordance with the findings of the approved survey.

Reason: To afford protection to badgers, which are protected by law

10. Prior to the commencement of works a winter reconnaissance survey for geese to be carried out in accordance with standard SNH methodology. The results of such a survey are to be submitted to and approved in writing by the Planning Authority. Any mitigation works shall, thereafter, be carried out in accordance with the findings of the approved survey.
Reason: To afford protection to geese.
11. Prior to the importation of any turbine components to the site, the applicant shall provide for the approval of the Planning Authority, in liaison with the Truck Roads Authority, the route for abnormal loads, a programme of necessary traffic management measures and improvements to cater for abnormal vehicle movements. The measures to be implemented as set out in the approved programme during the construction phase of the development
Reason: In the interests of road safety.
12. No development shall take place until the applicant has secured the implementation of a programme of archaeological work in accordance with a Written Scheme of Investigation outlining an Archaeological Evaluation. This will be formulated by a contracted archaeologist and approved in writing by the Planning Authority. Access should be afforded to allow investigation by a contracted archaeologist(s) nominated by the developer and agreed to by the Planning Authority. The developer shall allow the archaeologist(s) to conduct a programme of evaluation prior to development. This will include the below ground excavation of evaluation trenches and the full recording of archaeological features and finds. Results will be submitted to the Planning Authority for review in the form of a Data Structure Report. If significant archaeology is discovered the nominated archaeologist(s) will contact the Archaeology Officer for further consultation. The developer will ensure that any significant data and finds undergo post-excavation analysis, the results of which will be submitted to the Planning Authority
Reason: The site is within an area where ground works may interfere with, or result in the destruction of, archaeological remains, and it is therefore desirable to afford a reasonable opportunity to record the history of the site.
13. No development shall take place until fencing has been erected, in a manner to be agreed in writing by the Planning Authority, about the identified area of archaeological interest and no works shall take place within the area inside that fencing without the prior written consent of the Planning Authority.
Reason: To safeguard a site of archaeological interest.
14. The developer shall give a minimum of two weeks notice of the commencement of the approved archaeological works in writing to the nominated archaeological contractor and to the Planning Authority. No works shall commence until the two week notice period has expired.
Reason: To allow sufficient time to prepare for the commencement of archaeological works.
15. Noise levels from the combined effects of the wind turbines where the occupier of the property has no financial interest in the development shall not exceed an external free field LA90, 10mm level of the greater of 35dB(A) or 5dB(A), at any 10 metre height wind speed up to 12m/s, above the agreed prevailing background noise level during amenity hours, and 43dB(A) during night hours.

For properties where the occupier has a financial interest in the development the noise levels should not exceed the greater of 45dB(A) or 5dB(A), at any

10 metre height wind speed up to 12m/s, above the agreed prevailing background noise level at all times.

These levels shall be cumulative with all other wind energy developments in the area that have been granted Consent at the time of granting this Application. Any tonal elements in the noise spectra shall be assessed using the joint Nordic Method and the tone level shall not exceed 2dB above the 'Masking Threshold for Tones in Noise'

Reason: To protect the amenity of noise sensitive properties.

16. No development shall commence until a scheme for the ongoing monitoring of noise has been submitted to and agreed in writing by the Planning authority. Noise measurements shall be taken using the methodology contained in ETSU-R-9Z. Any remedial actions required as a result of the monitoring shall be undertaken following the written agreement of the Planning Authority.

Reason: To ensure that noise levels are monitored and the potential noise impact of the development is effectively controlled.

Notice Under Section 21 of the Town & Country Planning (Schemes of Delegation and Local Review procedure) (Scotland) Regulations 2008.

1. If the applicant is aggrieved by the decision of the planning authority to refuse permission for or approval required by a condition in respect of the proposed development, or to grant permission or approval subject to conditions, the applicant may question the validity of that decision by making an application to the Court of Session. An application to the Court of Session must be made within 6 weeks of the date of the decision.
2. If permission to develop land is refused or granted subject to conditions and the owner of the land claims that the land has become incapable of reasonably beneficial use in its existing state and cannot be rendered capable of reasonably beneficial use by the carrying out of any development which has been or would be permitted, the owner of the land may serve on the planning authority a purchase notice requiring the purchase of the owner of the land's interest in the land in accordance with Part V of the Town and Country Planning (Scotland) Act 1997.

Signed.....
Chairman of the Local Review Body

Date: 21 March 2013

TCP/11/16(251)

Planning Application 12/02067/FLL – Erection of a wind turbine and associated infrastructure on land 800 metres north east of Roundlaw Farm Cottage, Trinity Gask

PLANNING DECISION NOTICE

REPORT OF HANDLING

REFERENCE DOCUMENTS

PERTH AND KINROSS COUNCIL

Mr Jamie Roberts
c/o Realise Renewables
Clint Betteridge
East Lodge
East Lodge
Kindrogan
Enochdhu
PH10 7PF

Pullar House
35 Kinnoull Street
PERTH
PH1 5GD

Date 4th February 2013

TOWN AND COUNTRY PLANNING (SCOTLAND) ACT

Application Number: **12/02067/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 5th December 2012 for permission for **Erection of a wind turbine and associated infrastructure Land 800 Metres North East Of Roundlaw Farm Cottage Trinity Gask** for the reasons undernoted.

Development Quality Manager

Reasons for Refusal

1. As the proposed turbine will have a significant adverse impact on the visual amenity of the area, which is presently enjoyed by a host of receptors including (but not exclusively) existing residential properties and visiting recreational users, the proposal is contrary to Policy 2 of the Strathearn Local Plan 2001, which seeks to protect existing (visual) amenity from new developments within the landward area from inappropriate renewable energy developments.
2. As the proposed turbine will potentially have a significant adverse impact on the residential amenity of existing residential properties (by virtue of the turbines appearance and scale when viewed from their properties), the proposal is contrary to Policy 2 of the Strathearn Local Plan 2001, which seeks to protect existing (residential) amenity from new developments within the landward area.

- 3 As the proposal will have a detrimental impact on the sensitive landscape associated with the Gask Ridge, the proposal is contrary to Policy 3 of the Strathearn Local Plan 2001, which seeks to conserve local landscapes from inappropriate developments.
- 4 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 established Development Plan relevant policies.

Justification

The proposal is not in accordance with the Development Plan and there are no material reasons which merit approval of the planning application

Notes

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

12/02067/1

12/02067/2

12/02067/3

12/02067/4

12/02067/5

12/02067/6

12/02067/7

12/02067/8

12/02067/9

12/02067/10

12/02067/11

12/02067/12

12/02067/13

12/02067/14

12/02067/15

PERTH AND KINROSS COUNCIL

INSTALLATION OF A WIND TURBINE AT LAND 800 METRES NORTH EAST OF ROUNDLAW FARM COTTAGE, TRINITY GASK

DELEGATED REPORT OF HANDLING

Ref No	12/02067/FLL	Case Officer	Team Leader	Decision to be Issued?	
Ward	N9 – Almond			Yes	No
Target	4 Feb 2013				
RECOMMENDATION					
Refuse the planning application on the grounds that the proposed turbine will have an unacceptable visual impact on the local area, potentially have an adverse impact on the residential amenity of existing residents and potential impact on the local landscape.					

BACKGROUND & DESCRIPTION

The application site relates to a small area of agricultural land on the Trinity Gask Estate, at Roundlaw. The Trinity Gask estate is located approx south-east of Crieff and north-east of Auchterarder and west of the A9 corridor. The site at present is pasture land and is surrounded by a mix of conifer plantations and arable fields. Current vehicular access to the site is via an existing private track which joins the public road at Borestone Cottage/Mill of Gask.

A detailed planning application for the erection of a commercial scaled 67m turbine (40m hub) was refused planning permission last year largely on the grounds that the turbine would have an unacceptable impact on the visual amenity of the area, and on the residential amenity of the area. The Council's Landscape Architect was not involved in the decision making process of that planning application.

This planning application seeks detailed planning permission for the erection of a different model of turbine, with shorter blades (34m) and a higher hub height (50m), but still with a blade tip height of 67m. The turbine will still be of the three bladed version, with a generating capacity of approx 0.4MW. In addition to the turbine itself, an ancillary site compound, 700m of new access tracks and small borrow pit (for aggregates associated with the turbine foundations etc) are also proposed.

The proposed turbine will have a life of 25 years, after which the turbine and other development will be removed, and the site reinstated back to its current state.

PROCEDURAL MATTER

Supporting Information

To help demonstrate the impact that the proposal will have on the environment, the applicant has submitted a detailed supplementary information in the form of a detailed LVIA. I consider the LVIA to be accurate, and have no reason to question the professional creditability of the applicant's agents and consider the LVIA, and in particular the visualisations to be an accurate reflection of what is proposed.

Screening Opinion

A Screening Opinion was carried out by the Council for the previous proposal which concluded that the proposed turbine was not an EIA development. Although the appearance of the turbine has been amended from the previously undertaken screening opinion the principle characteristics have not changed (i.e. its height) therefore I consider it reasonable to adopt the previous opinion for this proposal.

APPRAISAL

Sections 25 and 37(2) of the TCP (S) Act 1997 (as amended by the 2006 act) requires the determination of the proposal to be made in accordance with the provisions of the Development Plan, unless other material considerations indicate otherwise.

The Development Plan for the area comprises the approved Tay Plan 2012 and the adopted Strathean Local Plan 2001.

In terms of the Tay Plan, *Policy 6* is directly applicable as are Policies *1, 4, 6, 11 and 12* of the Local 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 1 of the Local Plan promotes sustainability, whilst *Policy 2* of the Local Plan seeks (amongst other things) to ensure that all new developments within the landward area have a suitable landscape framework which is capable of absorbing the development which is proposed, and to ensure that new developments will not have an adverse impact on the character of the existing landscape. *Policy 2* also seeks to protect the amenity of existing areas.

Policy 3 of the Local Plan seeks to ensure that local landscapes are not adversely affected by new proposals, whilst *Policy 24* of the Local Plan and *ERP 8* of the Structure Plan both seek to protect cultural heritage assets.

In terms of other material considerations, this principally includes an assessment against national planning guidance in the form of the Scottish Planning Policy, consideration of the TLCA, consideration of the proposed LDP 2012 and consideration of the previously refused application for a similar proposal on the same site.

Accordingly, based on the above, I consider the key determining issues for this proposal to be a) whether or not the amended 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 the surrounding land uses, c) whether or not there will be an adverse impact on any protected species and / or habitats and d) whether or not the proposal will adversely affect any cultural heritage assets, bearing in mind the provisions of the Development Plan and other material considerations.

I shall assess these issues in turn starting with the landscape and visual impact issues.

Landscape and Visual impact

In terms of renewable proposals, Policy 2 of the Local Plan seeks (amongst other things) to ensure that amenity of existing areas are not adversely affected by new developments. In terms of amenity, I consider *visual* amenity as something which these policies seek to protect.

As per the previous proposal, the proposed turbine will introduce a relevantly new landscape feature into the local landscape, and based on the ZTV submitted with the planning application; both long and short views of the turbine will be theoretically achievable to the north, south and west, with reduced theoretical visibility from areas to the east. Nevertheless, the fact that a turbine is visible should not necessarily render it unacceptable.

I consider a more reasonable assessment of the acceptability of a turbine (in visual terms) to be whether or not the introduction of the turbine would have a detrimental impact on the visual amenity of the area enjoyed by those affected (i.e. residents and visitors), particularly with 15km. Although I appreciate there has been a number of objections to this proposal based on the visual impact, I do not consider the magnitude of impact to be as significant as is suggested within the representations.

However, as per the previous proposal I do have some concerns regarding the potential visual impact that the turbine may have.

Although the area is not specifically protected by any formal designation, the local area, in my opinion, does have a degree of high amenity value for both its residents and users. Consideration of the viewpoints selected, and others visited ad-hoc-ly during the site inspection, leads to me to have the opinion that this proposal would have a significant detrimental impact on the visual amenity of the area. I wholly appreciate that one person's opinion on what constitutes an attractive area may differ significantly from another, which makes this subject an extremely subjective matter, I am nevertheless not convinced that this size of turbine is suitable in this particular location. The change in turbine model, with a higher hub height and shorter blades does in my view alter the appearance of the turbine and it could be argued that the reduced sweep area of the turbine blades does reduce the prominence of the turbine to some degree. However, by ultimately retaining the height of the turbine at 67m, there is still a significant visual impact - albeit if slightly reduced from the previous scale. I also note that the majority of the objectors are principally concerned regarding the visual impact that the turbine will have.

In addition, it is worth noting that although the current, potential visibility of the turbine is screened to some extent by existing commercial plantations in several directions, some of these plantations are outwith the control of the applicant and could, in theory be felled at any point during the lifespan of the turbine (circa 25 years). There is therefore the potential for the visibility of the turbine to increase over the length of the consent if these plantations were to be removed. However, I do note that within the representations a neighbouring landowner has confirmed that the plantations are to retain in situ for the foreseeable future. In the event that an appeal is successful, securing these plantations via legal agreements should be considered.

On balance, and taking into account the difference between the previous proposal and the amended one, I still consider this proposal to potentially have a significant detrimental impact on the visual amenity of the area, and accordingly I consider the proposal to be contrary to Policy 2 of the Local Plan which seek to ensure that local amenity / environmental quality is protected.

Turning to landscape impact, in terms of renewable developments, Policies 2, 3 and 11 of the Local Plan seek similar key objectives with regard to protecting the landscape, i.e. restrict 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 impact on the landscape character, it is useful to consider the contents of the TLCA. Within the TLCA, the development site is described as being one of lowland hills that is defined as being '*generally smooth and well rounded. The transitional nature of the area is reflected in the land cover and vegetation. Pastoral and even, arable fields give way to rough grazing and open moorland as height is gained. Even on the low Gask Ridge, where farmlands extends onto the summit line, and the land is quite fertile, the greater exposure contributes to the transitional character. There is a considerable amount of coniferous forestry, with large plantations (along the Gask Ridge) and in places, extremely geometric. There are, however, signs of modern development including the busy A9 corridor where it climbs over the Gask Ridge to the west of Perth, the lines of the pylons which fan out from the highland glen carrying power to the lowlands, and a number of telecommunications masts exploiting the hills proximity to the settled lowland*'.

In my personal view, contrary to the representations, is that I do not necessary consider this turbine to have a significant impact on the landscape character of the area (although it may have an impact), as this specific landscape type is in my opinion capable of accommodating some, modest wind developments albeit at a much reduced scale. However, I note that my landscape architect colleague has a different view on this and has commented on this revised proposal raising concerns over its potential impact on the local landscape associated with the localised Gask Ridge. I appreciate that the previous scheme was considered to be generally acceptable in landscape terms by myself and the applicant may find his additional issue to be frustrating, however as it has now been raised by a professional colleague it would be inappropriate to discard this element – although the LRB should perhaps be aware of the change in position in terms of landscape impact.

Compatibility with Existing land uses

Turning to second issue, the compatibility with existing land uses, Policy 2 of the SALP seeks to ensure that all new developments are compatible with existing land uses. As per the previous planning application, 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 0.5km from the site. My Environmental Health colleagues have commented on the proposal and have raised no concerns regarding noise related issues. The principal conflict with the existing neighbouring properties would be the impact on their residential amenity. I appreciate that no one persons as a right to a view, however the presence of a 67m turbine on this site does have the potential to adversely affect the residential amenity of some residential properties, albeit to varying degrees.

Protected Species / Habitats

In terms of both the impact on protected species / habitats, I have no immediate concerns. A number of surveys have already been carried out on the site and further pre-commencement surveys could also be request prior to working commencing if deemed necessary. 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.

Cultural Heritage

There are a number of cultural heritage sites within close proximity to the site, including a SAM. With regard to the impact on the SAM, although Historic Scotland consider the proposal to have an adverse impact on the setting of the SAM's, the impact is not significant enough to merit a formal objection. I therefore consider the proposal to be consistent with the relevant Development Plan policies.

Other Material Issues

Shadow Flicker

As the closest residence is located approximately 0.5km away from the proposed turbine, I do not consider there to be any notable effects on residential amenity in terms of shadow flicker. I note that my EHO colleagues have not raised any concerns on this topic.

Aviation Lighting

Lighting of the turbine, as required by the MOD will 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 issues.

Noise

Lastly, within the representations, noise has been raised an issue. 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

In the event that a review to the LRB is successful, an appropriately worded condition could be attached to the consent which would provide mitigation measures for any person(s) affected directly by this proposal.

Road / Access Issues

Within the representations concerns have been raised with regard to access related 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 the concerns raised within the representations in relation to road and pedestrian safety.

LRB / Conditions

In the event that this planning application is presented to the LRB for review, it is requested that the Planning Service have an opportunity to recommend conditions. The Council now has a number of standard conditions which it would consider appropriate, and it is envisaged that a number of site specific conditions may also be necessary.

National Guidance

Although the proposal is of a relevantly small scale, the principle of renewable energy proposals 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.

Based on the above, although I appreciate that the majority of the concerns raised in the objections are unfounded or can be mitigated via conditions, I nevertheless do agree with some of the objections concerns regarding the visual impact that the turbine may have. I therefore recommend the planning application for a refusal, based on the likely visual impact on the area.

NATIONAL PLANNING GUIDANCE / POLICIES

The Scottish Government expresses its planning policies through The National Planning Framework 1 & 2, the Scottish Planning Policy (SPP), Planning Advice Notes (PAN), Designing Places, Designing Streets, and a series of Circulars.

The Scottish Planning Policy 2010

This SPP is a statement of Scottish Government policy on land use planning and contains:

- the Scottish Government's view of the purpose of planning,
- the core principles for the operation of the system and the objectives for key parts of the system,
- statutory guidance on sustainable development and planning under Section 3E of the Planning etc. (Scotland) Act 2006,
- concise subject planning policies, including the implications for development planning and development management, and
- the Scottish Government's expectations of the intended outcomes of the planning system.

Of relevance to this application are,

- Paragraphs 182-186 which relate to renewable energy
- Paragraphs 92-97 which relates to rural development

PAN - 1/2011 : Planning & Noise

This Planning Advice Note (PAN) provides advice on the role of the planning system in helping to prevent and limit the adverse effects of noise. It supersedes Circular 10/1999 *Planning and Noise* and PAN 56 *Planning and Noise*. Information and advice on noise impact assessment (NIA) methods is provided in the associated Technical Advice Note. It includes details of the legislation, technical standards and codes of practice for specific noise issues.

DEVELOPMENT PLAN

The Development Plan for the area comprises the approved Tay Plan 2012 and the adopted Strathearn Local Plan 2001

Tay Plan 2012

Policy 6 of the Tay Plan state 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 justified, at a minimum, on the basis of these considerations

- The specific land take requirements associated with the infrastructure technology and associated statutory safety exclusion zones where appropriate;
- Waste/resource management proposals are justified against the Scottish Government's Zero Waste Plan and support the delivery of the waste/resource management hierarchy;
- 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 of-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.

Strathearn Area Local Plan 2001

Within the Local Plan the site lies within the landward area, where the following policies are directly applicable.

Policy 1 (sustainable development) seeks to ensure that new, that development within the Plan area is carried out in a manner in keeping with the goal of sustainable development. Where development is considered to be incompatible with the pursuit of sustainable development, but has other benefits to the area which outweigh this issue, the developer will be required to take whatever mitigation measures are deemed both practical and necessary to minimise any adverse impact. The following principles will be used as guidelines in assessing whether projects pursue a commitment to sustainable development:

- (a) The consumption of non-renewable resources should be at levels that do not restrict the options for future generations;
- (b) Renewable resources should be used at rates that allow their natural replenishment;
- (c) The quality of the natural environment should be maintained or improved;
- (d) Where there is great complexity or there are unclear effects of development on the environment, the precautionary principle should be applied;
- (e) The costs and benefits (material and non-material) of any development should be equitably distributed;
- (f) Biodiversity is conserved;
- (g) The production of all types of waste should be minimised thereby minimising levels of pollution;
- (h) New development should meet local needs and enhance access to employment, facilities, services and goods.

Policy 2 (Development Criteria) states that all developments will also be judged against the following criteria (amongst other things)

- The sites should have a landscape framework capable of absorbing or, if necessary, screening the development and where required opportunities for landscape enhancement will be sought;
- In the case of built development, regard should be had to the scale, form, colour, and density of existing development within the locality;
- The development should be compatible with its surroundings in land use terms and should not result in a significant loss of amenity to the local community;
- The road network should be capable of absorbing the additional traffic generated by the development and a satisfactory access onto that network provided;
- The site should be large enough to accommodate the development satisfactorily in site planning terms;

Policy 3 (Landscape) states that development proposals should seek to conserve landscape features and sense of local identity, and strengthen and enhance landscape character. The Council will assess development that is viewed as having a significant landscape impact against the principles of the Tayside Landscape Character Assessment produced by Scottish Natural Heritage

Policy 11 (Renewable Energy) states that the Council will encourage, in appropriate locations, renewable energy projects. Such developments, including ancillary transmission lines and access roads, will be assessed against the following criteria:

- (a) The development will not have a significant detrimental effect on sites recognised by designation at a national, regional or local level, of nature conservation interest or sites of archaeological interest;
- (b) The development will not result in an unacceptable intrusion into the landscape character of the area;
- (c) The development will not result in an unacceptable loss of amenity to neighbouring occupiers by reasons of noise emission, visual dominance, electromagnetic disturbance or reflected light.

Developers will be required to enter into an agreement for the removal of the development and the restoration of the site following the completion of the development's useful life.

Policy 17 (Habitats) states that the Council will seek to protect and enhance habitats of local importance to nature conservation, including grasslands, wetlands and peatlands, habitats that support rare or endangered species, together with those habitats associated within the Earn and Almond river systems in the Plan area.

Policy 24 (Archaeology) states that the Council will seek to protect unscheduled sites of archaeological significance and their settings. Where development is proposed in such areas, there will be a strong presumption in favour of preservation in situ. Where, in exceptional circumstances, preservation of the archaeological features is not feasible, the developer, if necessary through appropriate conditions attached to planning consents, will be required to make provision for the excavation and recording of threatened features prior to development commencing.

Proposed LDP 2012

Policy ER1A states that renewable developments will be supported when they are well related to the resources needed for their operation. In assessing such proposals, a number of factors will be considered, such as individual and cumulative impact on biodiversity, landscape character, visual integrity, the historic environment, cultural heritage, tranquil qualities, wildness qualities, water resources and the residential amenity of the surrounding area.

OTHER COUNCIL POLICIES

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.

OTHER GUIDANCE

The application site lies within Strathearn which falls inside the the area is defined within the TLCA as being one of lowland hills. Within the TLCA, lowland hills is defined as being '*generally smooth and well rounded. The transitional nature of the are is reflected in the land cover and vegetation. Pastoral and even, arable fields give way to rough grazing and open moorland as height is gained. Even on the low Gask Ridge, where farmlands extends onto the summit line, and the land is quite fertile, the greater exposure contributes to the transitional character. There is a considerable*

amount of coniferous forestry, with large plantations (along the Gask Ridge) and in places, extremely geometric. There are, however, signs of modern development including the busy A9 corridor where it climbs over the Gask Ridge to the west of Perth, the lines of the pylons which fan out from the highland glen carrying power to the lowlands, and a number of telecommunications masts exploiting the hills proximity to the settled lowland’.

SITE HISTORY

A detailed planning application (11/01855/FLL) for the same size of turbine (with longer blades and lower hub height) was refused planning permission last year on the grounds that,

- 1 *As the proposed turbine will have a significant adverse impact on the visual amenity of the area, which is presently enjoyed by a host of receptors including (but not exclusively) existing residential properties and visiting recreational users, the proposal is contrary to Policy 2 of the Strathearn Local Plan 2001, which seeks to protect existing (visual) amenity from new developments within the landward area, and Environmental and Resource Policy 14 of the Perth and Kinross Structure Plan 2003 which seeks to protect existing local environmental quality from inappropriate renewable energy developments.*
- 2 *As the proposed turbine will potentially have a significant adverse impact on the residential amenity of existing residential properties (by virtue of the turbines appearance and scale when viewed from their properties), the proposal is contrary to Policy 2 of the Strathearn Local Plan 2001, which seeks to protect existing (residential) amenity from new developments within the landward area.*
- 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 established Development Plan relevant policies.*

PKC CONSULTATIONS

Transport Planning have commented on the planning application and have raised no concerns.

The Environmental Health Manager has commented on the planning application and raised no objections subject to appropriate noise conditions being attached to the consent.

PKHT have commented on the planning application and raised no concerns, subject to conditions.

Landscape Officer has commented on the proposal and raised concerns regarding the impact that the proposal may have on the local landscape character of the area.

EXTERNAL CONSULTATIONS

MOD have commented on the proposal and raised no objection.

Scottish Water have commented on the planning application and raised no objection.

SNH have commented on the planning application and raised no objection.

Historic Scotland have commented on the previous planning application in terms of the impact on SAM and although they have raised concerns, these concerns do not merit an objection.

REPRESENTATIONS RECEIVED

Approx 208 letters of representations have been received, of which approx 115 are letters of support and the remainder are letters of objection.

The main issues raised by the objectors are:-

- Impact on visual amenity
- Impact on landscape character
- Impact on protected species
- Noise concerns
- Road / Access related issues
- Impact on cultural heritage assets
- Loss of TV reception

These issues are addressed in elsewhere in this report.

The supporters comments are generally all based on the fact that they consider this a good site for proposal, and that the turbine will not impact on the visual amenity of the area, or on the wider landscape and that renewable energy proposals should be supported in suitable locations.

ADDITIONAL STATEMENTS

Environment Statement	Not required
Screening Opinion	A screening exercise has been undertaken by the Council which concluded the proposal was not an EIA development.
Environmental Impact Assessment	Not required
Appropriate Assessment	Not required
Design Statement / Design and Access Statement	Not required
Report on Impact or Potential Impact	Landscape & Visual information submitted in the form of photomontages and ZTV base maps.

PUBLICITY UNDERTAKEN

The planning application was advertised in the local press on the 14 December 2012.

LEGAL AGREEMENTS REQUIRED

None required.

DIRECTION BY SCOTTISH MINISTERS

None applicable to this proposal.

RECOMMENDED REASONS FOR REFUSAL

- 3 As the proposed turbine will have a significant adverse impact on the visual amenity of the area, which is presently enjoyed by a host of receptors including (but not exclusively) existing residential properties and visiting recreational users, the proposal is contrary to Policy 2 of the Strathearn Local Plan 2001, which seeks to protect existing (visual) amenity from new developments within the landward area from inappropriate renewable energy developments.
- 4 As the proposed turbine will potentially have a significant adverse impact on the residential amenity of existing residential properties (by virtue of the turbines appearance and scale when viewed from their properties), the proposal is contrary to Policy 2 of the Strathearn Local Plan 2001, which seeks to protect existing (residential) amenity from new developments within the landward area.
- 3 As the proposal will have a detrimental impact on the sensitive landscape associated with the Gask Ridge, the proposal is contrary to Policy 3 of the Strathearn Local Plan 2001, which seeks to conserve local landscapes from inappropriate developments.
- 4 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 established Development Plan relevant policies.

JUSTIFICATION

The proposal is not in accordance with the Development Plan and there are no material reasons which merit approval of the planning application.

INFORMATIVES

None

PROCEDURAL NOTES

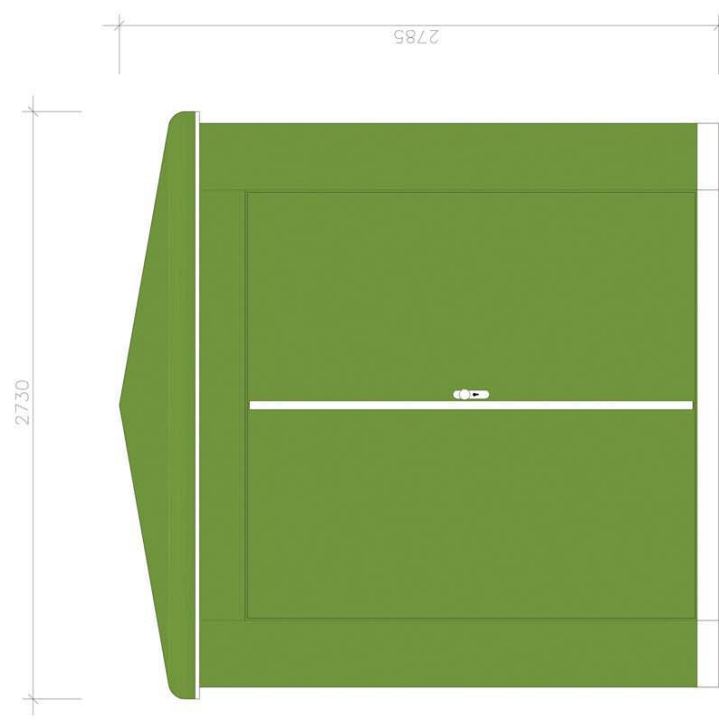
None

REFUSED PLANS

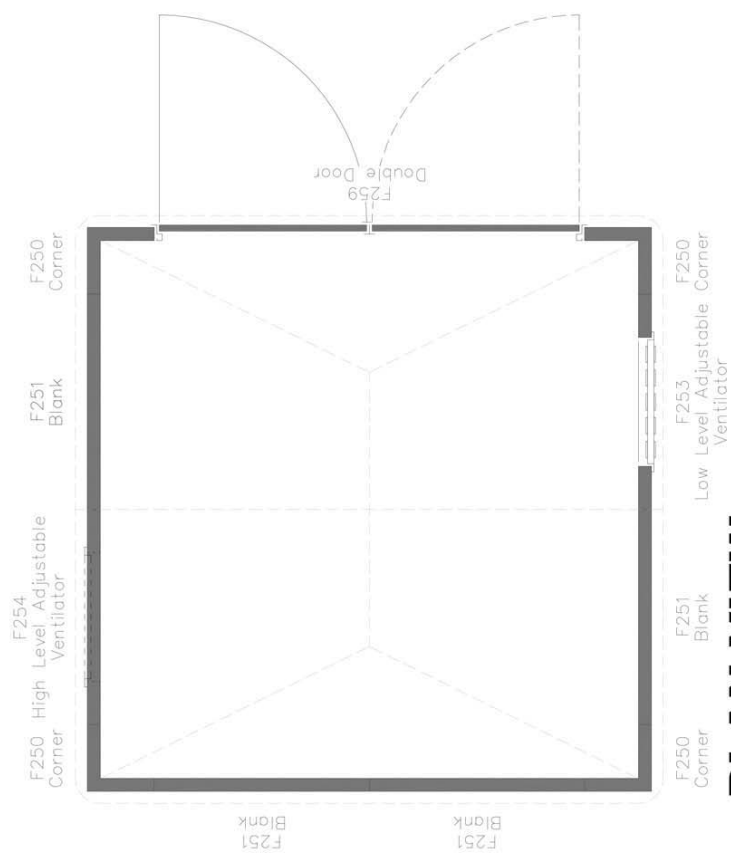
12/02067/1 - 11/02067/15 (inclusive)



FRONT ELEVATION



SIDE ELEVATION



PLAN VIEW

NOTES :

Colour – Standard 'Dark Green' approx. BS.4800 (12.B.27).

Colours shown on this drawing are for illustrative purposes only.

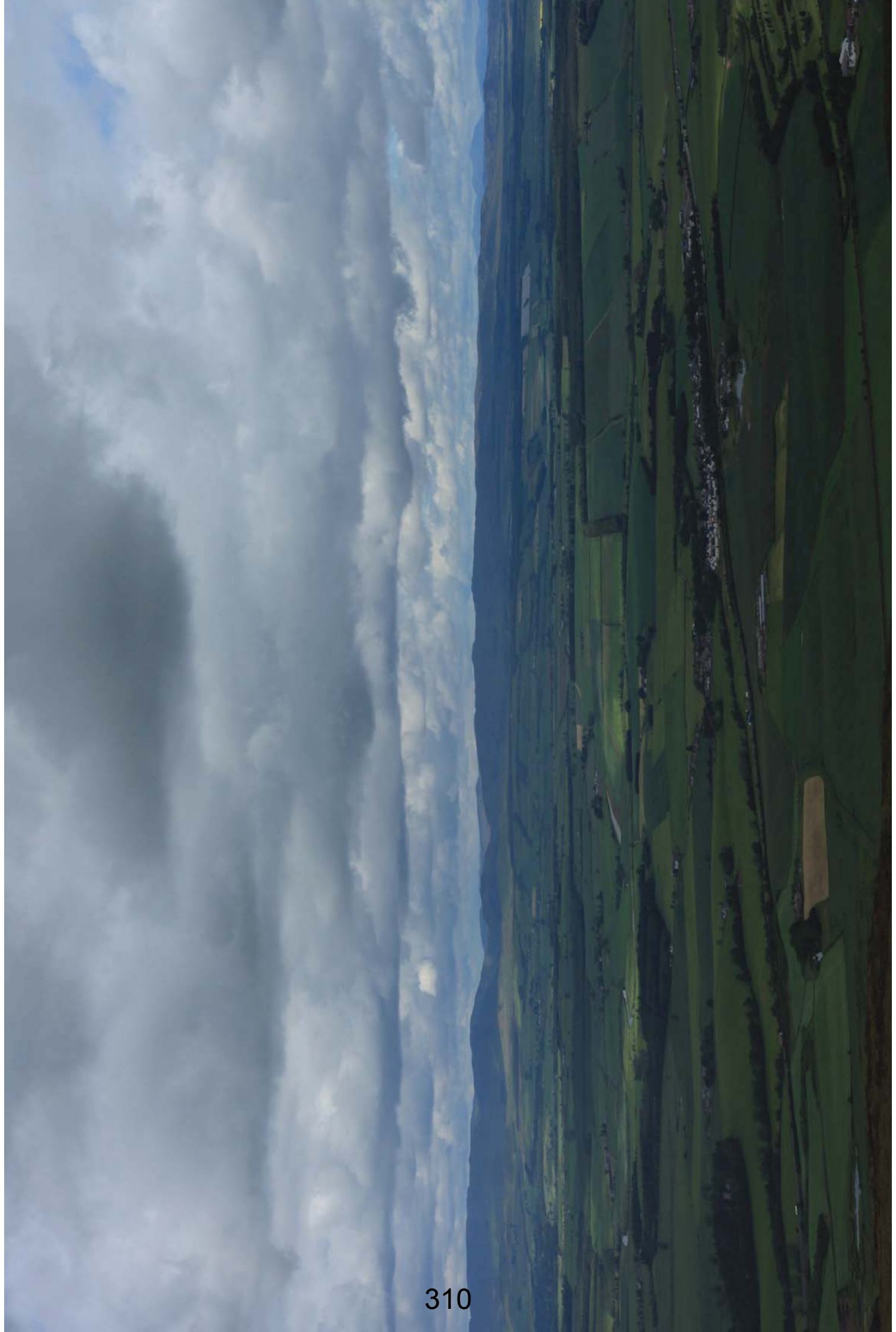
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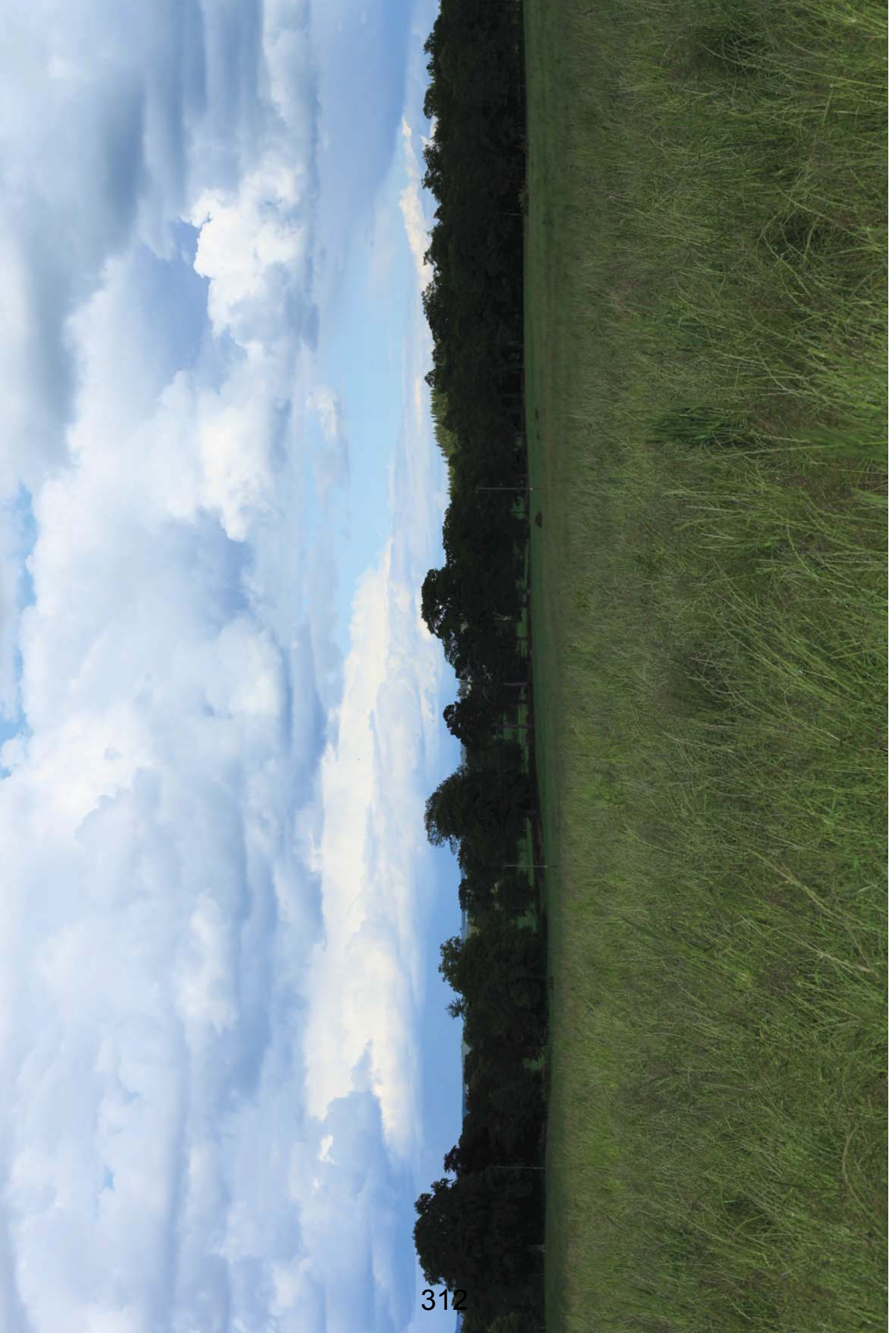
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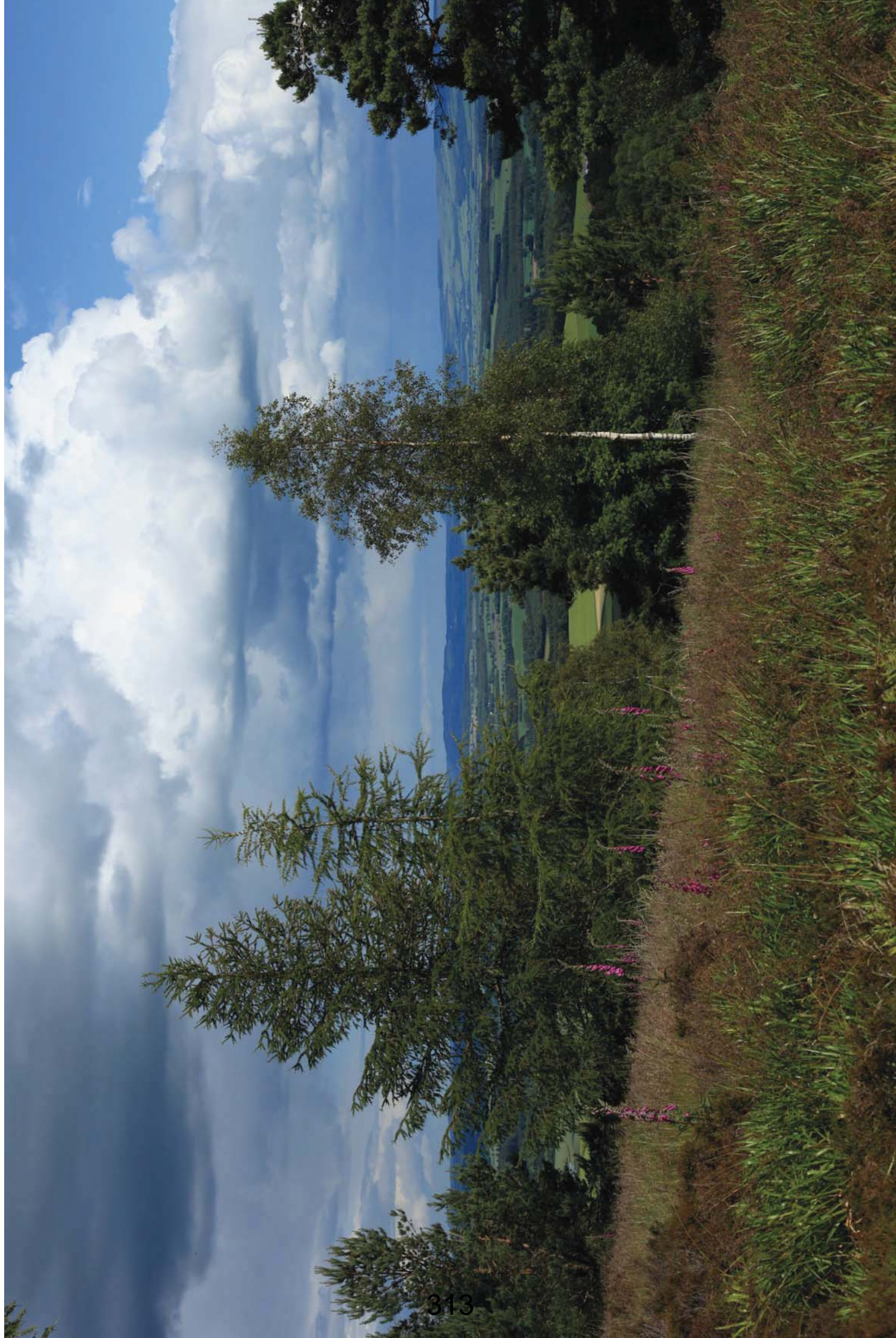


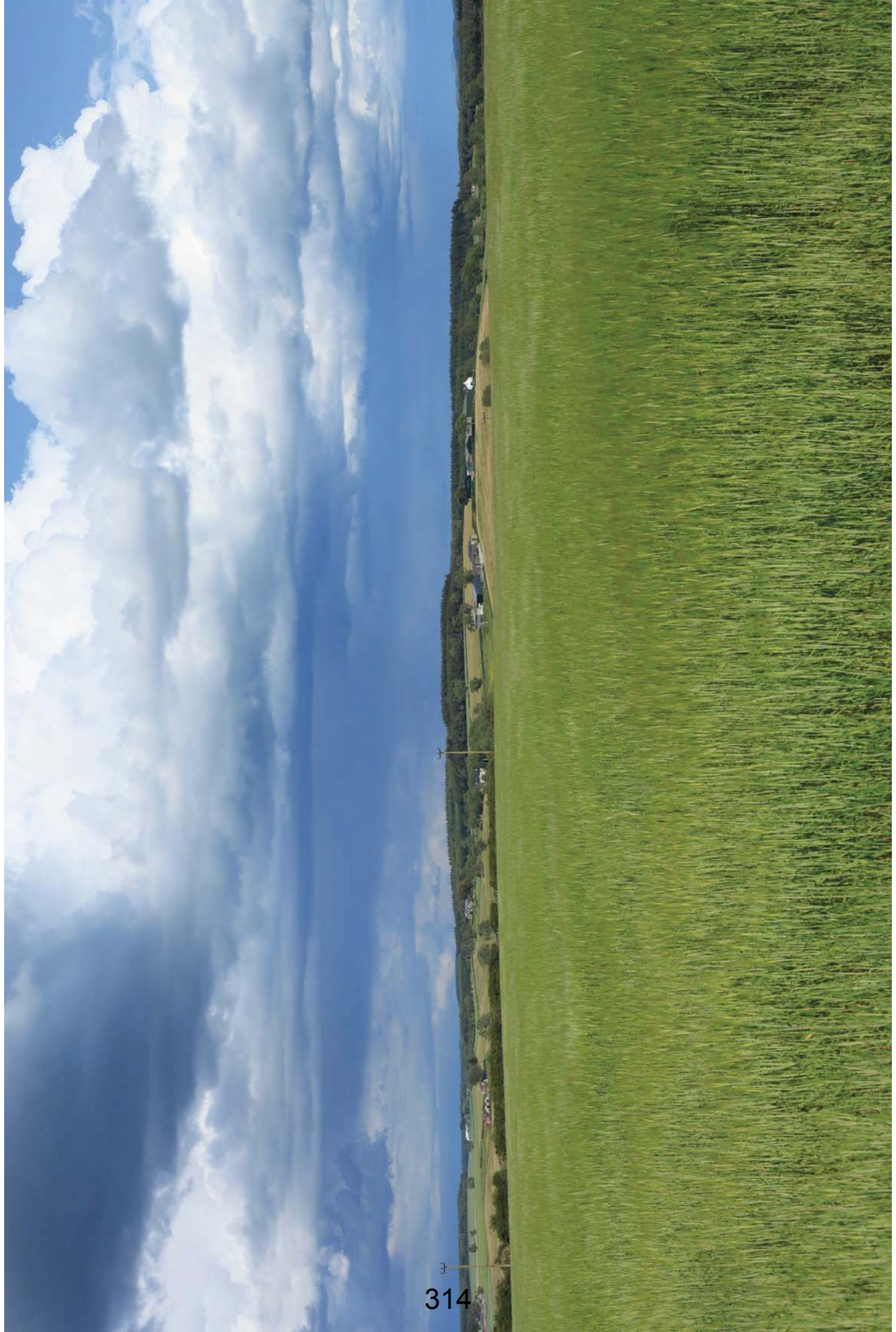


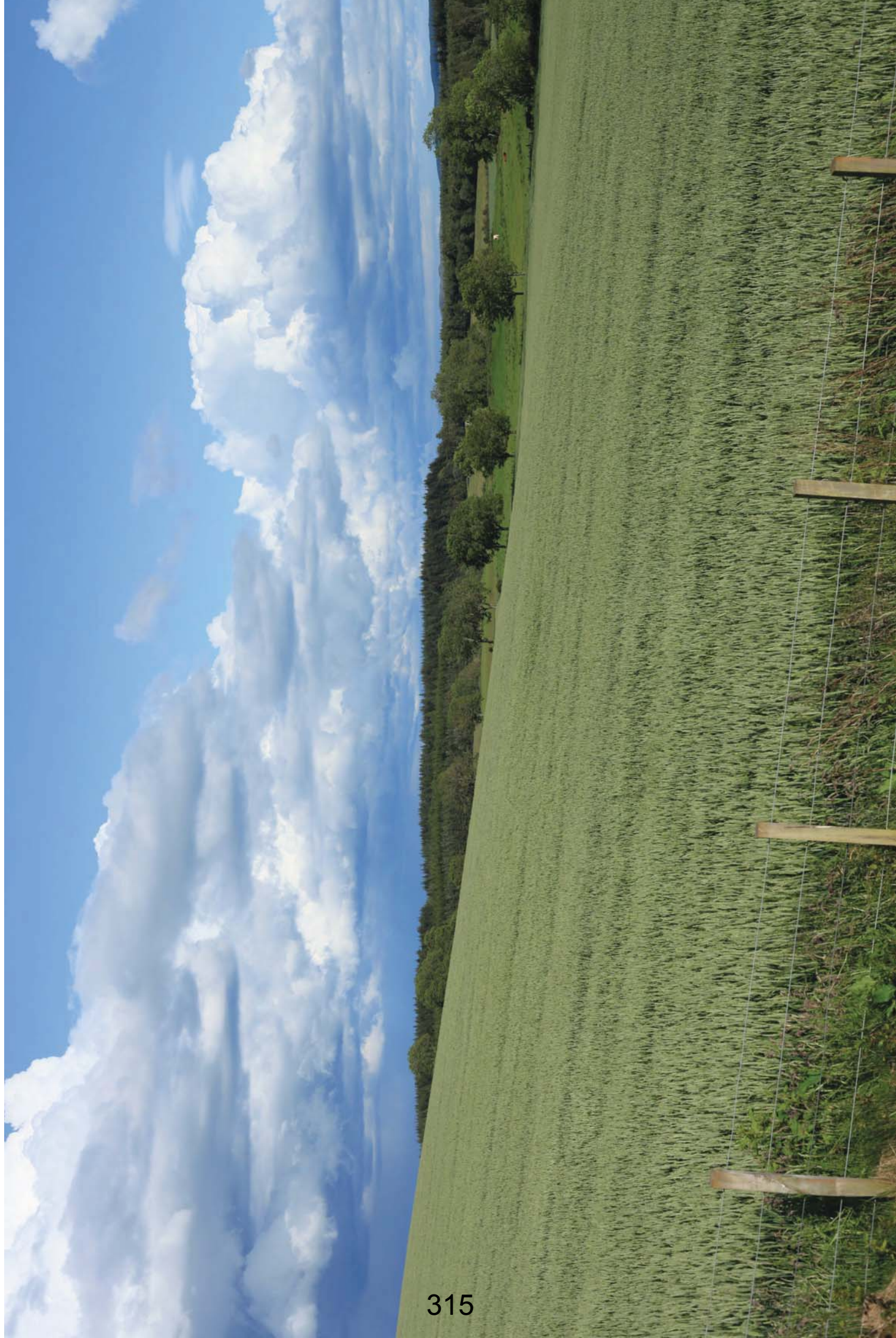




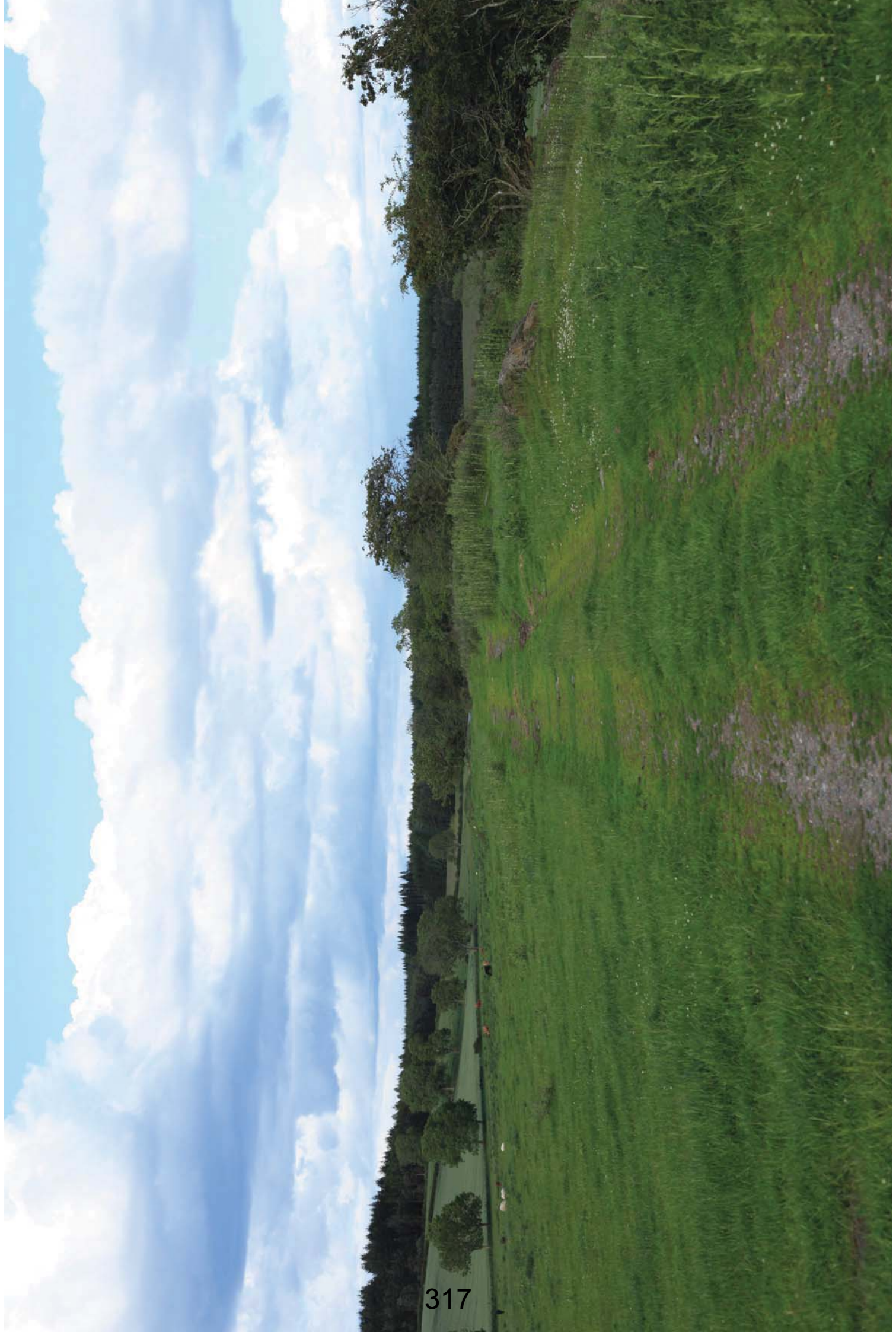


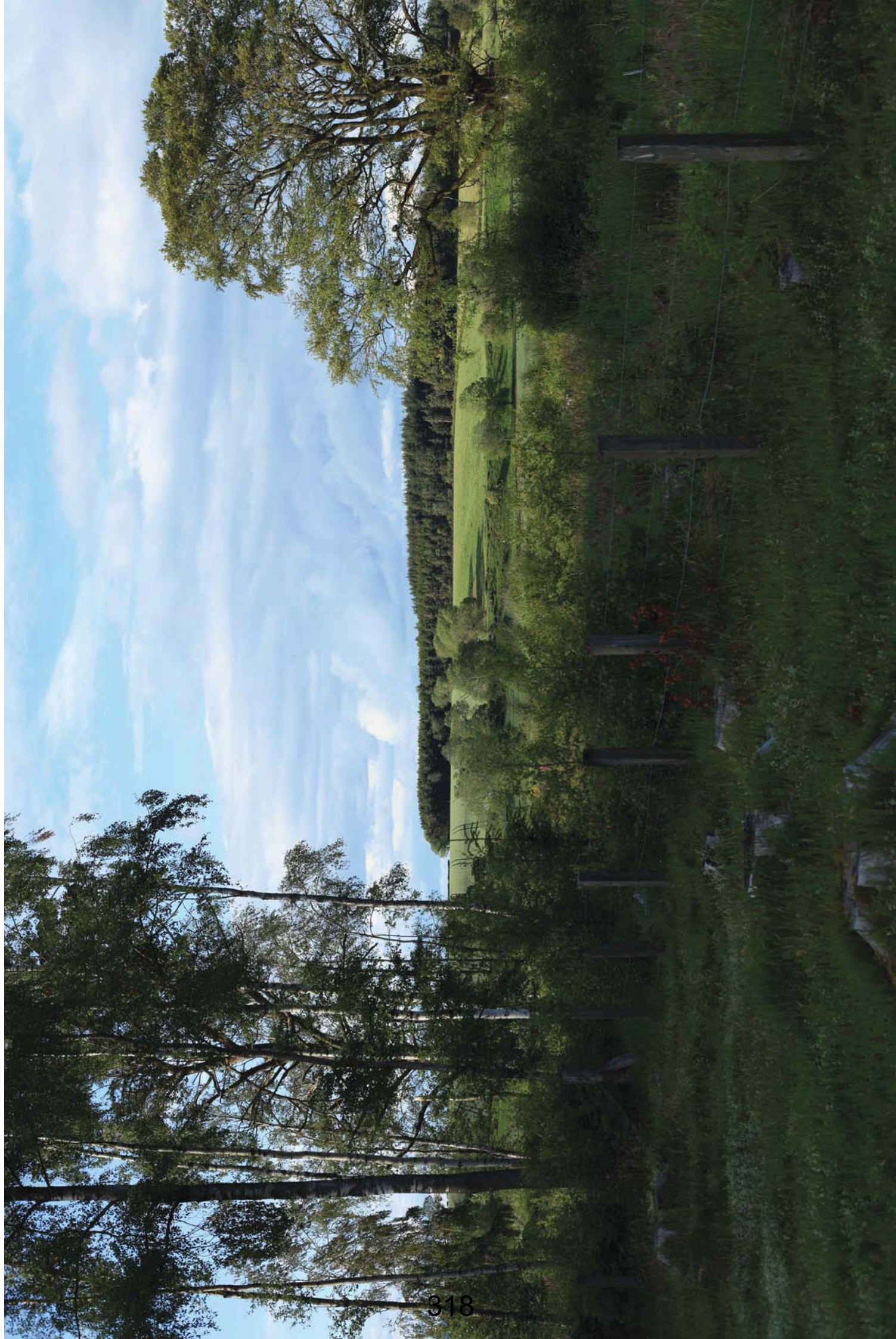












Trinity Gask Wind Turbine

Environmental Report

Volume 1 of 2



www.trinitygaskwind.co.uk

November 2012



Document Issue Record

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Note:

* Figure in Volume 2, separate from text in Volume 1.

** Figure with text in Volume 1 **AND** in Volume 2, separate from text.

Executive Summary

This Environmental Report (ER) seeks to address the local environmental effects of a proposed single wind turbine, 67m to tip and up to 400 kW capacity, at Trinity Gask Estate. A previous application for a larger wind turbine was submitted to and registered by Perth & Kinross Council in November 2011. Unfortunately, this original application had perceived unacceptable visual impact.

Following further consultation with the Council and following agreement of revised visualisations, it was considered that a wind turbine of reduced blade dimensions would be deemed more appropriately sited and have reduced visual impact.

This Environmental Report is therefore the revised wind turbine application. It is not a formal Environmental Statement for the purposes of the Planning EIA Regulations (the Environmental Impact Assessment (Scotland) Regulations 1999) but assesses the potential effects arising from the proposal.

A wind project is (in the terminology of the 1999 regulations) a Schedule 2 development which would *“require an EIA if it is likely to have significant environmental effect because of factors such as its nature, size or location”*.

Due to the small scale of the development, Perth & Kinross Council, in accordance with the provisions of the 1999 regulations, have stated that *‘the development is **not** likely to have significant effects on the environment’*, therefore *‘the development is not an EIA development’*.

The Council are satisfied the development *“would not be likely to have significant effects on the environment. Accordingly an Environmental Statement would not be required in this instance.”*

The project has been conceived and planned bearing in mind the contents of the UK Government’s Climate Change Act 2008 and the ensuing Low Carbon Transition Plan, and with further direct impetus from the Scottish Government’s even more rigorous Climate Change (Scotland) Act 2009. In addition, the actions needed by the applicant’s businesses in terms of rising energy usage and cost, within the context of the introduction of the Feed-in Tariff scheme, have also been a driving factor.

The applicant, Mr Jamie Roberts, has a farming business which is well-established in the west Perthshire rural economy and has a reasonably significant multiplier effect within the overall local economy of central Scotland.

The purpose of the application is to provide a more secure and sustainable supplementary income to the farm business by benefitting from the Government’s Feed-in Tariff scheme. This is aimed at supporting the development of medium-scale renewable energy projects and to encourage people to be part of the ‘green energy’ revolution. In addition, the farm business is a significant energy user and the turbine would help offset these rising costs.

The agricultural scale of the turbine proposed is affordable for SMEs, and the 400 kW rated capacity of the proposed machine will allow the applicant to offset a large percentage of their annual electricity usage. This project is pivotal in maintaining and enhancing the environmental and economic sustainability of the farm business for the long-term future.

The development will add over 450 MWh of energy from renewable sources annually, and in doing so, will contribute towards regional and national targets, specifically those which aim to reduce greenhouse gas emissions and alleviate the effects of climate change.

This ER covers a number of key issues associated with the project, to a level of detail we believe appropriate to the scale of the proposed development. The scope of the ER is as follows:

- Site selection and design
- Project description
- Planning policy
- Cultural heritage and archaeology
- Landscape and visual impact
- Ecology
- Ornithology
- Hydrology
- Noise
- Shadow flicker
- Aviation, telecommunications, television, existing infrastructure and safety
- Tourism and socio-economics

This report establishes that the proposed development complies with all the relevant national and local development policies and policy guidelines. Additionally, there are several material considerations which support the application and provide justification for the development being permitted.

Considerable care has been taken in the design of the development to avoid unacceptable environmental effects, whilst ensuring that the 'Application Site' can make a contribution to the UK and Scotland's long term strategic requirement for renewable energy generation from a secure, domestic source.

The report demonstrates that:

POLICY - The proposed development site is located within Perth & Kinross Council's Broad Area of Search for wind energy projects and is consistent with the local development plans and detailed policy guidelines found in the Supplementary Planning Guidance for Wind Energy Proposals in Perth & Kinross (2005). There are no landscape designations and the landscape is considered suitable to accommodate the opportunity for development. It is considered that this proposal is in favour with all local policies regarding development at the Trinity Gask site.

CONSULTATION - Community and statutory consultee engagement measures undertaken have been more than satisfactory for a project of this size. Local residents' and statutory consultee comments have been taken on-board and have helped to shape the final project proposal. Mitigation measures have been undertaken, including reduction in tip height from the initial proposed 80m, down to 67m; lowering of the location on topography and tree cover management proposals. The revised wind turbine proposal has been selected to further minimise any effects on local residents, and following additional consultation with Perth & Kinross Council.

AVAILABLE LAND AND ACCESS - The site is large enough to accommodate the development without significantly affecting the current land operations. Efforts have been made to minimise the necessary civil works. The site is accessible to construction traffic and abnormal loads, while causing minimum interruption to public roads during the construction phase.

ENVIRONMENTAL - The proposal is not located on any national or local designated sites for landscape and cultural heritage. In addition, there are no designated sites of ecological importance on or near the site.

CULTURAL HERITAGE - It is considered by Historic Scotland that the magnitude of the proposed impact is not of a level to trigger objection from an historic interest. It is further considered that the proposed development will not have a significant effect on local cultural heritage features.

LANDSCAPE AND VISUAL IMPACT - Given the location, nature and character of the receiving environment, the landscape has the ability to accommodate this minor change with a limited effect on the landscape and visual resource. In particular, the siting of the turbine will maximise its wooded backdrop (which is demonstrated to remain a permanent feature), to help assimilate it into the existing landscape whilst maximising the electricity generation capacity of the area. This wooded backdrop also provides an effective block of the project from the north and east, and totally screens any views of the turbine for the residents of Clathy. The revised proposal is also considered to have an overall reduced visual impact due to a smaller rotor diameter.

CUMULATIVE WIND DEVELOPMENTS - Cumulative effects of wind development at the site have been considered and will be minor due to the limited number of wind developments visible. In addition, the site itself is low lying and well screened by surrounding features and woodlands.

ECOLOGY - There is an overall low risk of effects on ecology interests at the site, with independent surveys for great-crested newts, mammals, and bats having been undertaken.

ORNITHOLOGY - There is an overall negligible impact on ornithology interests at the site, with independent surveys for various bird species having been undertaken.

HYDROLOGY - Any impacts on water quality are only predicted to occur during the construction phase. Mitigation measures undertaken throughout the construction phase will be carried out in accordance to relevant SEPA guidance and legislation, along with on-going discussions with SEPA.

NOISE - Noise emissions associated with the operation of the proposed wind turbine are highly unlikely to cause a loss of amenity to the occupants of the nearest properties. Noise levels assessed as part of the revised proposal are also shown to be less than the previous application.

SHADOW FLICKER - Shadow flicker has shown been shown to have no impact on any residential amenity. Potential shadow flicker impact assessed as part of the revised proposal is also shown to be less than the previous application.

OTHER CONSIDERATIONS - Various technical constraints have been investigated, including aviation impact, EMI microwave link and television interference, and underground services. All constraints investigated are unlikely to cause any operational problems - for the local residents' considerations and the smooth running of the turbine.

TOURISM AND SOCIO-ECONOMIC - The proposed development will have an insignificant effect on tourism and socio-economic factors in the area.

In conclusion, the proposed wind energy scheme accords with the Development Plan and all other known material planning considerations, and it is considered planning permission should be granted.

1 Introduction

This Environmental Report (ER) has been prepared to support a planning application submitted to Perth & Kinross Council (PKC) for the development of a single, medium-scale 400 kW wind turbine at Trinity Gask Estate.

A previous application was submitted to and registered by Perth and Kinross Council in November 2011. Unfortunately, this was refused primarily due to the perceived visual impact of the proposal.

Following the earlier decision, further consultation was undertaken with the Council and after agreement of revised visualisations; it was considered that a wind turbine of reduced blade dimensions would be deemed more appropriately sited.

This application and environmental report is therefore a revision of the original submission, the output of this scheme would be up to 400 kW and consist of a single wind turbine, up to 67 m tip height.

This Environmental Report (ER) has been prepared to support a planning application submitted to Perth and Kinross Council (PKC) for the development of a single medium-scale 400 kW wind turbine at Trinity Gask Estate.

This Environmental Report seeks to address the local environmental effects of the proposed wind turbine at Trinity Gask. This report is not a formal Environmental Statement as this was not required, as per screening opinion response. For the purposes of the Planning EIA Regulations (the Environmental Impact Assessment (Scotland) Regulations 1999), this report assesses the potential effects arising from the proposal.

The ER and Appendices make up Volume 1 of the supporting information for the proposal and should be read in conjunction with the A3 figures included in Volume 2.

1.1 Project Background

The landowner of Trinity Gask Estate is proposing a wind energy project on his land at Roundlaw, approximately 4 km to the north of Aberuthven in Perth & Kinross, see Figure 1.

The output of this scheme would be up to 400 kW rated capacity and consist of a single wind turbine only, up to 67 m tip height.

12 months of meteorological data has now been obtained and analysed for the site, and has confirmed that the candidate turbine in application will be suitable for the known wind conditions.

The purpose of the proposal is to provide a more secure and sustainable supplementary income to the farm business by benefitting from the Government's Feed-in Tariff scheme. This is aimed at supporting the development of medium-scale renewable energy projects and to encourage people to be part of the 'green energy' revolution.

The opportunity to have a wind turbine would provide the Estate's agricultural activity with a means of diversification; with an income stream which would allow improvements on the Estate - including maintenance and upkeep of buildings, landholdings, tracks and the section of the Roman Road that runs through Trinity Gask.

1.2 Economic Merits

Farming will always be at the heart of Trinity Gask Estate, as is estate management and letting of properties. In addition, there are plans for further diversification into more holiday lets.

As well as supplementing the farming business and offsetting its rising operational costs, an extra income stream from the operation of the turbine could assist in allowing this extra diversification to happen more easily. This would bring more (tourism) income to the region and create more jobs by using locally-sourced materials and employment.

It is strongly considered that the proposed development of carbon-neutral holiday accommodation - for which the wind turbine would be a major contributor - at Craigens and Borestone, would further secure long-term earning potential for the Estate, and thereby create a large economic benefit for the local economy.

This (unfulfilled) development proposal also involves a large requirement and cost for state-of-the-art architectural design and was to incorporate such ideas as using the Estate timbers in construction of the framing and building of the properties, thereby reducing the need for imported (higher carbon footprint) timbers dramatically. These sites remain undeveloped, yet still have potential to move ahead, all be it now on a more 'phased basis' than the previous proposal. Further information on the holiday cottage development plans is available on request.

The proposed site for a turbine is within the extent of the Gask Ridge at Roundlaw, where there is a steady and reliable wind resource; well-suited for a wind energy scheme. This is an excellent localised example of an opportunity to work towards achieving Scotland's targets for 100% renewable energy by 2020 (50% by 2015).

1.3 Project Location

The application site (Figure 1) is planned to extend to approximately one hectare with the turbine located at **NGR 297290, 719514**. The site itself is within permanent pasture, and in addition, is adjoined by conifer plantations to the north and east, as well as other arable fields to the south and west.

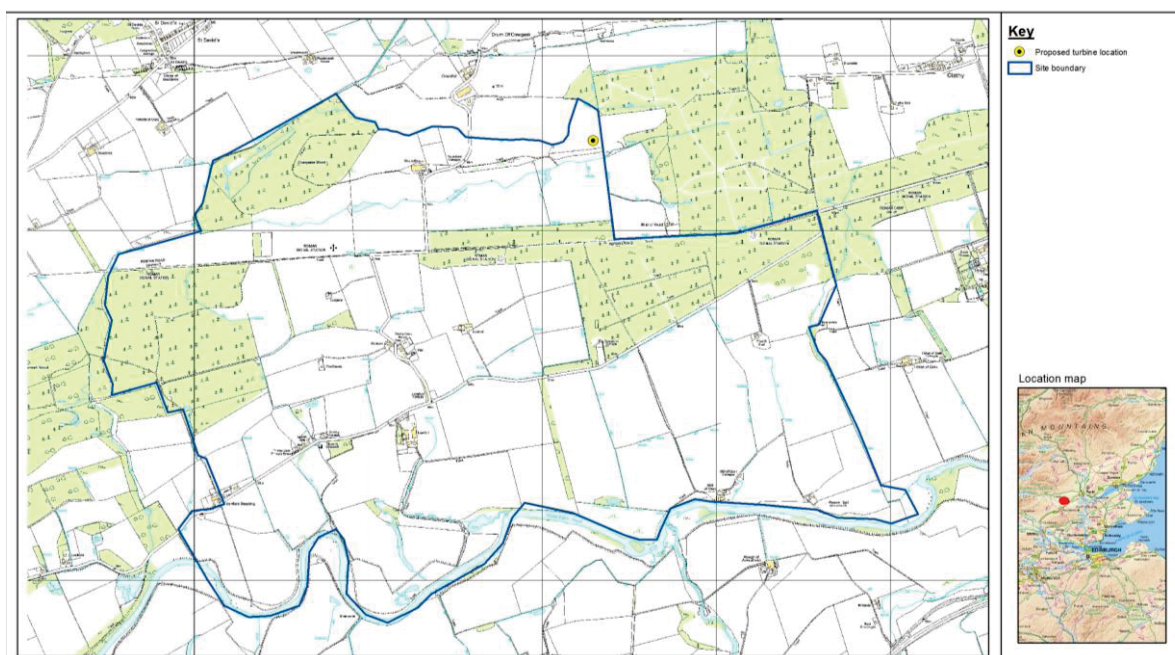


Figure 1: Site location (full-size version available in Volume 2)

1.4 The Application

Planning permission is sought for:

- A single wind turbine up to 67 metres, base to blade tip.
- Associated infrastructure including: foundations, access tracks, control hut, borrow pit, cabling and construction-related laydown areas

These elements are shown in the Project Description diagrams and Site Layout map, which accompany the planning application in the A3 Figures (Volume 2).

Planning permission is sought for this development for 25 years from the first generation of electricity on site, after which time the turbine will be removed and the site restored.

The application site is proposed to be accessed from the A9 to site via an existing track from the local road entrance at Borestone Cottage/Mill of Gask. From this point, approximately 700 m of new access track will be required to access the location of the turbine. All access routes not on the public road will pass over land within the control of the applicant.

1.5 The Applicant

The applicant is Mr Jamie Roberts who lives on and operates a working farm at Trinity Gask Estate, Perth and Kinross.

1.6 Contributors

Realise Renewables were appointed as planning consultants by Mr Roberts for the preparation of this application, the personnel who have been involved are:

- Clint Betteridge, Project Manager: Main report, GIS mapping, technical constraints
- Mark Jennison, Project Director: Planning review, overall review

Other associate personnel who have been involved in this study are:

- Naiad Environmental Consultancy: Ecology and ornithology assessment
- Atmos Consulting: Landscape and visual impact assessment
- Environmental Noise Solutions: Noise impact assessment

1.7 Status of Environmental Report

A wind project, such as that proposed at Trinity Gask is categorised by the Environmental Impact Assessment (Scotland) Regulations 1999 as a Schedule 2 Development which includes any wind development involving more than two turbines, or where the hub height exceeds 15m. Such a proposal would:

“require an EIA if it is likely to have significant environmental effect because of factors such as its nature, size or location”.

In October 2010, a screening opinion was sent to Perth and Kinross Council for a single wind turbine project. The response concluded that the proposal is not likely to have significant effects on the environment and therefore council have adopted a screening opinion to the effect the development is non-EIA development. The Council’s reasons for reaching this conclusion are set out below:

‘This is a Schedule 2 Development because: 3(i) is an installation for the harnessing of wind power for energy production with a hub height exceeding 15m in height. However having regard to the limited extent of the proposal (a single turbine only); the limited site

take-up for a single turbine proposal; the limited duration of construction works of potential environmental risk; and distance from the nearest sensitive environment it is considered that the Schedule 2 Development proposed would be unlikely to have significant effects on the environment.'

In the course of the subsequent design process, the proposed location of the turbine was altered within the site by 120 metres. This was primarily due to feedback gained during community engagement, with a revised location selected that was lower down the slope than originally planned. This site change moved the turbine location further away from the nearest houses, and confirmed a lower height turbine (67m as opposed to initial proposed 80m) - which in turn will assist in reducing its impression on the landscape.

With regards to the revised turbine position, it is important to note that on 26th September 2011 the area planning officer, Garry Dimeck, replied to an email sent from Realise Renewables on 3rd August 2011, stating that:

'In relation to the revised siting of proposed turbine, I can confirm that the proposal would trigger the need for a new Screening Opinion under the EIA Regs. This could be done now if a formal request is submitted. Do note however, that in the absence of that formal request screening would occur at application submission. My recollection is, based on the Screening exercise undertaken last time round, that there are no local sensitivities which would be compromised through re-siting so it would be unlikely that the need for an EIA would be triggered through re-positioning'.

After discussing this point further on the phone, it was confirmed that due to the unlikely need for an EIA due to the re-positioning, Realise Renewables would continue to progress the planning application for submission in October 2011 and it would be screened again once received by Council. However, we were given to understand this should be a relatively straightforward process given the previous screening notice for a site-coordinate only a short distance from the revised site.

Even without a formal EIA process, it remains necessary to consider the potential local environmental impacts arising from the proposal as part of the planning application and the appraisal report submitted to inform the Screening Opinion had set out a proposed methodology.

Accordingly this revised report follows the format proposed in the Screening request document.

1.8 Scope of Environmental Report

This report covers the following issues, in sufficient detail that we believe is appropriate to this size of project:

- Site selection and design
- Project description
- Planning policy
- Cultural heritage and archaeology
- Landscape and visual impact
- Ecology and ornithology
- Hydrology
- Noise
- Shadow flicker
- Aviation, telecommunications, television, existing infrastructure and safety
- Tourism and socio-economics

2 Site Selection & Design

2.1 Site Selection

The possibility of installing a wind turbine at Trinity Gask Estate was assessed as part of feasibility work undertaken by Atmos Consulting in 2010. The site at Roundlaw, Trinity Gask Estate was selected as a suitable site for wind energy development due to its wind resource, proximity to the electrical grid, avoidance of technical constraints and environmental acceptability. A number of other environmental and technical constraints were considered during the site selection and project development process (see Figure 1a, Volume 2), as further detailed in this chapter below.

2.2 Micro-Siting

Ancillary development will include a small control building, crane and hard-standing areas beside the turbine, temporary construction compound, expanded borrow pit and underground cabling between the turbine and control building. Works will also be carried out to ensure access to the turbine site via upgraded and new sections of track. A 25m micro-siting allowance is sought for all proposed infrastructure features.

2.3 Environmental Context

The design has considered wind regime, technical and environmental constraints, including particular consideration of landscape and visual impact. Considerations have included:

- **Environmental and cultural heritage:** The proposal is not located on any national or local designated sites for landscape and cultural heritage. In addition, there are no designated sites of ecological importance on or near the site.
- **Distance from residential buildings:** A key consideration, with the intent to maximise the distance between turbine site and nearby residential dwellings to mitigate potential concerns such as noise, shadow flicker and loss of visual amenity. 500 m residential exclusion zones were considered to mitigate these possible concerns from all properties.
- **Available land:** The site is large enough to accommodate the development without significantly affecting the current land operations.
- **Access:** Efforts have been made to minimise the necessary civil works. The site is accessible to construction traffic and abnormal loads, while not likely to cause a great deal of interruption to public roads during the construction phase.
- **Technical constraints:** Various technical constraints have been investigated including noise, shadow flicker, aviation impact, and EMI microwave link interference. All constraints investigated are unlikely to cause any operational problems - for both the smooth running of the turbine and local residents' considerations.
- **Cumulative wind developments:** Cumulative effects of wind development at the site have been considered and will be minor due to the limited number of wind developments visible. In addition, the site itself is low lying and well screened by surrounding features and woodlands.

2.4 Design Statement (including Community Engagement)

Detailed below is the design iteration/timeline including community engagement measures undertaken to get to final site design and proposal:

2010

June/July: Atmos Consulting carry out a feasibility study followed by a screening/scoping request for a small scale wind energy project at Trinity Gask Estate. A response was received from Perth & Kinross Council on 25 October, advising that a project involving a single 80 m wind turbine at Trinity Gask would not likely have significant effects on the environment and therefore has been screened as non-EIA.

2011

9 January: Realise Renewables begin work to progress the single turbine project through to planning.

4 April: Discussions / project information / leaflet drop with all local residents within 1.5 km of the development. An information leaflet was also distributed, detailing the proposal. 1.5 km chosen as an adequate neighbour consultation distance as per note from previously adapted PAN 45:

Landscape Officer

General Perception of a Wind Farm in and Open Landscape (adapted from PAN 45)

Perception for turbines:	100m high	60m high	50m high	20m high
<i>Likely to be a prominent feature</i>	<i>Up to 2 kms</i>	<i>Up to 1.2km</i>	<i>Up to 1 km</i>	<i>Up to 400m</i>
<i>Relatively prominent</i>	<i>2-5kms</i>	<i>1.2 – 3 km</i>	<i>1-2.5km</i>	<i>400 – 1000m</i>
<i>Only prominent in clear visibility – seen as part of the wider landscape</i>	<i>5-15 kms</i>	<i>3 – 9 km</i>	<i>2.5-7.5km</i>	<i>1 – 3 km</i>
<i>Only seen in very clear visibility – a minor element in the landscape</i>	<i>15-30 kms</i>	<i>9 – 18 km</i>	<i>7.5- 15km</i>	<i>3 – 6 km</i>

Following discussions with local residents on the proposal, we gathered some constructive feedback to help with regards to finalising project details.

19 - 31 May: A number of articles published in local newspapers making false claims about the size of proposal (claims made of a 10 turbine wind farm at Trinity Gask), and false claims made over the height of a single wind turbine at Trinity Gask (over 80 m).

This was addressed by discussion with the reporters who published the articles, and then a responding statement was issued by Realise Renewables on behalf of Jamie Roberts. This statement re-iterated the facts of the proposal, as stated in information leaflet distributed on 4 April, as well as rebuking and dismissing previous false claims made against it.

1 June: Decision made on site change due to local resident comments and contributions to the discussion which confirmed a turbine of no higher than 67 m to tip and at a location lower down the slope than originally planned. The site move also moved the turbine location further away from the nearest houses, and total distance of shift was approx. 120 m. A new turbine was also chosen as the candidate model which will be even quieter than the previously preferred turbine choice.

2 June: Planning application submitted for a 50 m met mast at revised site location.

6 June: Project update letter sent to inform local residents, advising of the site relocation. Project website www.trinitygaskwind.co.uk also set up to inform local residents and keep them up to date with the proposal. This update also advises that independent noise assessment will be carried out to confirm there should be no adverse noise concerns.

24 June: Section of woodlands directly between turbine site and Clathy is surveyed with assistance from a forestry consultant and tree height, tree type and tree age are recorded and mapped. This was carried out in order to address any potential concerns Clathy residents might have with the location of the turbine, and thereby to advise (if requested) how much screening would be provided by this tree cover, and to assess the likelihood of any future felling plans.

30 June: Jamie Roberts of Trinity Gask Estate and Realise Renewables attended the Auchterarder and District Community Council Meeting to further discuss the proposal and address any queries.

4 August: Auchterarder and District Community Council Chairman, Canon Michael Benton, visits the proposed site with applicant. The visit to the site went well and Canon Benton became better informed about the proposed project and the practical considerations of the site.

24 August: Planning permission granted for 50 m met mast, no objections received.

14 September: Independent noise assessment report completed confirming that using the selected turbine at the revised site location; noise emissions associated with the operation of the proposed wind turbine are highly unlikely to cause a loss of amenity to the occupants of the nearest sensitive receptors.

19 September: Met mast is installed, at 40 m variation, in-line with current candidate turbine hub height and to provide neighbourhood impression of development at this site.

September/October: LVIA completed along with other key environmental assessment and submitted to council as part of planning application.

2012

September: 12 months of measured wind data was completed which confirmed the viability for a single wind turbine at the site. It was agreed to submit this new planning application for an amended single wind turbine at the site, which has a reduced rotor diameter from 54 m (previous proposal) to 34 m and is considered to have an overall reduced visual impact at the site, due to a smaller visual profile and blade dimensions.

The revised wind turbine has been selected to further minimise any effects on local residents, and following additional consultation with Perth and Kinross Council.

November: Revised LVIA and noise reports were completed and are also attached to this application. These reports confirmed that the revised project continues to meet the relevant policies and guidelines, and would also result in less of an effect than the previous proposal.

2.5 Summary & Conclusions

It is felt that the community engagement and consultation measures undertaken have been more than satisfactory for a project of this size. Local residents' comments have been taken on-board and have helped to shape the revised project proposal and the included mitigation measures.

3 Project Description

3.1 Site Layout

The proposed development would comprise of the installation of a single wind turbine and associated infrastructure including: foundations, access tracks, control hut, borrow pit, cabling; and construction related laydown areas. The site is located on agricultural land at Roundlaw, Trinity Gask Estate (Figure 2). The footprint of the proposed site is small and will have little impact on the existing agricultural activity. Access to the turbine location is obtained across land that is owned by the applicant. The wind turbine position is **NGR 297290, 719514**.

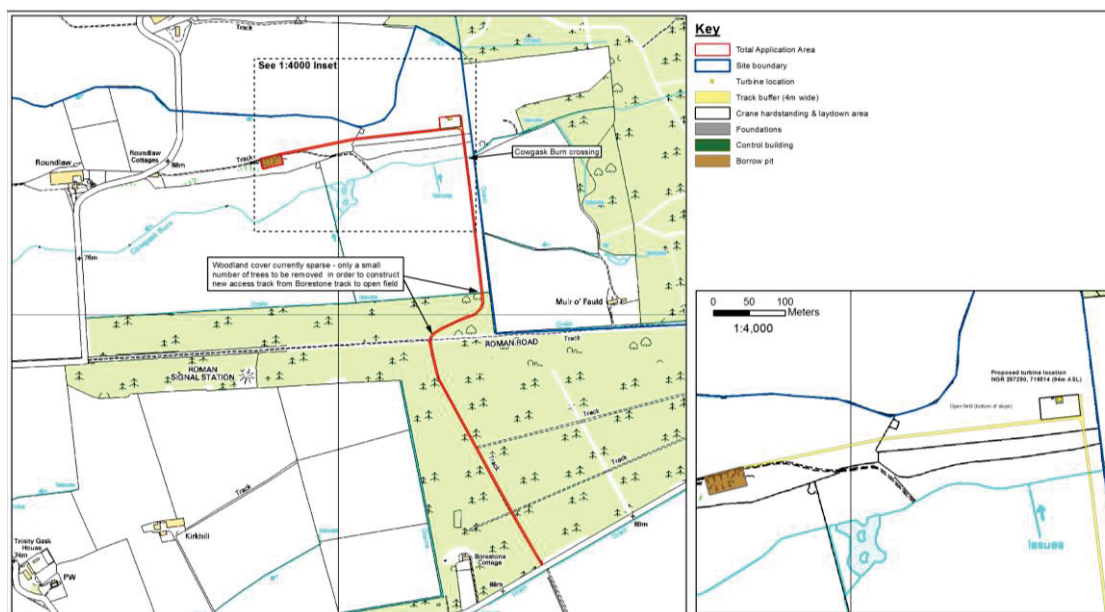


Figure 2: Site layout (Full size version available in Volume 2)

3.2 Proposed Wind Turbine

The applicant has identified a candidate turbine - the Turbowinds T400-34 turbine. The key statistics of this turbine:

- Hub height: 50 m
- Rotor diameter: 34 m
- Maximum tip height: 67 m
- Number of blades: 3
- Length of blades: 16.6 m
- Output rating: 400 kW

Due to technological advances and turbine manufacturers constantly improving the efficiency and design of their turbines in a fast paced and evolving market, a candidate turbine has been used as part of the environmental assessments. The applicant requires the flexibility to choose the most appropriate model for the site at the time of turbine purchase. Should planning permission be granted, the final turbine model selected will not exceed the proposed tip height, as set out in this planning application.

The T400-34 is a geared, dual-speed, pitch-regulated, upwind-rotor wind turbine. The induction generator is mounted in the hub. The turbine has a hub height of 50 m and a rotor diameter of 34 m, giving it a tip height of 67 m, see Figure 3 below. The wind turbine has a rated rotor speed of 22-33 RPM. The cut-in speed of the turbine is 3 m/s, with a cut-out speed of 25 m/s, which is typical of modern medium-sized wind turbines.

The turbine is estimated to generate approximately 450 MWh of renewable energy per annum; the equivalent of 102ⁱ households per year and enough to displace the equivalent of up to approximately 193ⁱⁱ tonnes of CO₂ emissions per year from conventional forms of electricity generation. This figure has been calculated, based on the measured average wind speed at site to date and the Turbowinds power curve data.

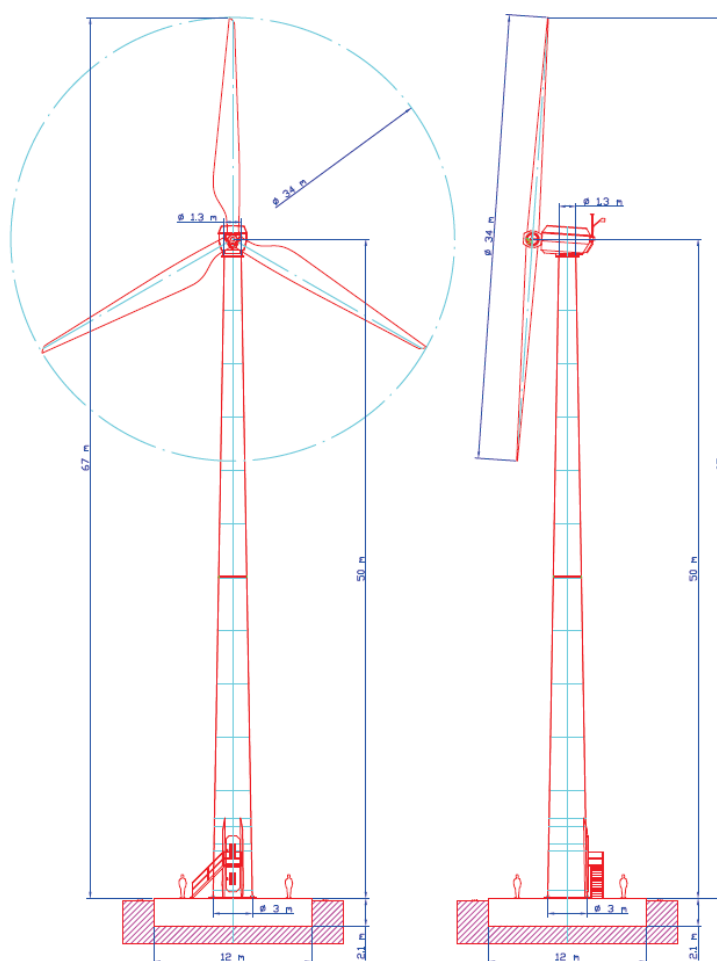


Figure 3: Turbine Elevations (full size version available in Volume 2)

ⁱ Based on 'average' UK domestic electricity consumption of 4,414 kWh/pa, as used by DECC. Derived using a carbon dioxide offset ratio of 430g carbon dioxide per kWh of wind generation. Note that future changes in the power generation mix and fuel costs in the UK over the operating life of the wind turbine, means that this figure may alter.

ⁱⁱ Derived using a carbon dioxide offset ratio of 430g carbon dioxide per kWh of wind generation. It should be noted that future changes in the power generation mix and fuel costs in the UK over the life of the wind turbine, means this figure may change over time.

The proposed turbine will consist of three blades, bolted to a hub to form a rotor, and 34 m rotor diameter. The rotor hub is attached to a nacelle which contains the mechanical drive-train and electrical generation mechanisms. The nacelle is supported on a steel tubular tower, and of a length sufficient to support the nacelle and rotor at 50 m hub height. The turbine is bolted-down to a steel ring, embedded in a reinforced concrete foundation.

The tower is made of tubular steel of approximately 3 m in diameter at the base; narrowing to approximately 1.3 m at the top. The tower contains an internal access ladder, with safety restraint systems to permit safe working access to the top of the tower and to the nacelle. A steel security door is set in the base of the tower to allow personnel access.

3.3 Foundations

Substantial foundations are required to resist the large overturning moments exerted by the wind turbine at the tower base. A typical foundation will take the form of a reinforced concrete raft, approximately 10 m x 10 m x 1.6 m depth; and set into an excavation dug into the terrain (see Turbine foundation plan, Volume 2).

The foundations will be specified by the turbine manufacturer. Additionally, the exact specification will be determined through an intrusive ground inspection to determine the most appropriate construction techniques.

A tubular-steel turbine foundation ring is cast into the foundation, to provide a fixing for the base of the turbine tower. The foundation will also incorporate formed ducts for the power and telemetry cables.

3.4 Access to Site

The tracks are required during the construction to permit the delivery of components within the site and to provide access for the movement of construction vehicles about the site. Post-construction, during the operational period of the proposed development, the tracks provide access for operations and maintenance staff to service the wind turbine, and other infrastructure.

Access to Site

Turbine components will be transported by sea to a suitable port, which will most likely be the Port of Dundee. As wind turbines have previously been delivered from Dundee to sites using the A90 and M90 roads, this access study has considered the route from the A9 Broxden Roundabout west towards the site.

The proposed route leaves the M90 at Broxden Roundabout, Perth and joins the A90 heading west, turning off at the unclassified road at Crossgate Junction. The site access is a further 5 miles along the unclassified road ending at the site access point opposite the Mill of Gask entrance (near Borestone Cottage), see Figure 4 overleaf.

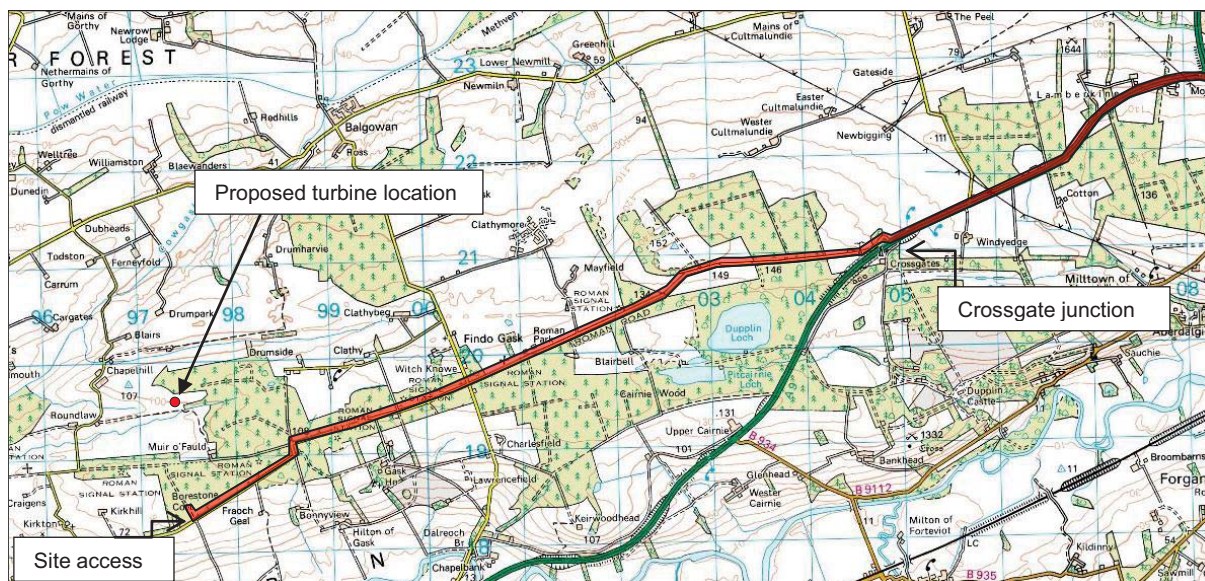


Figure 4: Proposed access route to site

The previous application (11/01855/FLL) contained an access study and report, due to the component lengths of the previous candidate turbine choice. However, as the new candidate T400-34 wind turbine is comparable/smaller in both tower sections and blade lengths, it has been deemed acceptable for delivering to site with only minor works considered likely along the route, and as such, no detailed access report has been revised for this planning application.

On-Site Access

The access to the site is broken down into two distinct areas. First, the existing track through the forest with access gained from the unclassified public road. Second, the new track to be formed from the end on the forest track to the site location. The following description gives an indication of access construction work.

Improvement of Access Point

The access point requires improvement on either side of the beginning of the forest track to ensure adequate room for the larger turbine component deliveries. This will be achieved by excavating each of the grass verge edges, sweetening and strengthening with imported crushed stone. The area cut away from each verge will be approximately 7 m² and require one load of crushed stone from a 6-wheeled tipper. There will be no impact on the deciduous tree (and its root system) found on the east side of the access track, with the edge of the canopy 9 metres north of the public road.

Improvement of Existing Forest Track

The forest track is generally in good condition but requires strengthening works along its edge and some drainage improvements. The shoulders of the forest track will be strengthened by compacting crushed stone. Crushed stone will be imported for this task with an estimated delivery of 10 loads from a 6 wheel tipper.

Construction of New Track

The section of new track consists of approximately 200 m through a forest clearing and 500 m over arable field, at the eastern edge of field.

The section through the forest clearing will take a route of 30° from the end of the existing forest track. This route was selected due to the absence of native birch and rowan trees. The proposed route encounters small shrubs and vegetation, which will be cut away using the excavator.

The exact final specification for the new access track will be approved by the wind turbine supplier or transport company, however the following is indicative of the type of road construction expected:

The full length of the new track will be excavated to 200 mm with excavated material being stored in the field for later use to form the track verges. The new track will be formed by compacting 300 mm of onsite borrow pit material and topped off with 200 mm of compacted clean imported crushed stone (typical track detail, see Figure 5). The new imported crushed stone equates to 18 loads on a 6-wheeled tipper.

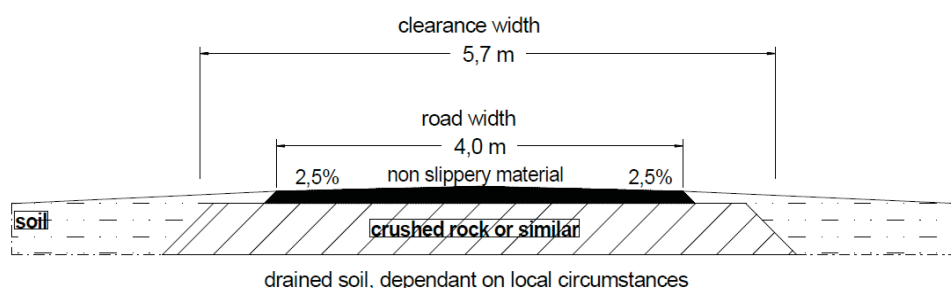


Figure 5: Typical access track section

Construction of Culvert

A water course, Cow Gask Burn runs east-to-west, approximately 100 m south of the proposed wind turbine location. A plastic culvert pipe will be installed with the new access track construction on top. Work will be authorised under the SEPA Controlled Activity Regulations.

3.5 Temporary Hard-Standing Area

A hard-standing area is required at the turbine location, to provide a stable working platform, from which a large mobile crane can assemble and erect the wind turbine. The hard-standing is also needed as a parking area and turning place for the transport and construction vehicles and for temporary storage of plant and equipment during construction.

The hard-standing will be finished as described for the tracks. Some parts of the hard-standing may be re-vegetated, retaining the capacity for future use, but minimising the visible extent of the works.

3.6 Borrow Pit

A borrow pit is located 450 m west of the turbine site. The borrow pit will be utilised to minimise the construction deliveries to site. It is assumed that there will be enough material in the borrow pit to assist the forming of the ramp up to the final turbine position and form the base for half of the new access track. However, this will be verified prior to any construction works. The borrow pit will be back-filled with material from the crane hard-standing and lay-down area excavations.

3.7 Control Building

The sub-station will be sited next to the turbine, outside of the turbine foundation area. It will consist of a prefabricated GRP pod sitting on a 3.5 m x 3.5 m x 200 mm deep reinforced slab. This slab will be poured on the same day as the wind turbine foundation.

3.8 Grid Connection

A cable trench will be dug between the turbine and sub-station. Excavated material will be stored alongside trench and reinstated after cable installation. Cable delivery is expected to equate to one load.

The underground cables from the turbine would be brought together at the on-site substation, within the site boundaries. The on-site control and metering building is required to convert the voltage to 11 kV for transmission to the main grid connection point which will be determined by Scottish & Southern Energy (SSE). An application for new grid connection has been lodged and is expected to be completed in February 2013.

The off-site grid connection route runs out of the site following onsite access tracks, where it will be undergrounded towards the nearest suitable grid connection point. The consenting of the new off-site grid connection route would be subject to a separate application to SSE.

A previous application was submitted to SSE in October 2011, which indicated that the new 11 kV connection point would be best sited at Drumpark. While it does not appear any major works have been carried out on any of these local lines in the past 12 months, it will still need to be re-assessed as the best site of connection, although we would consider this likely to still be the case.

3.9 Construction Programme

The construction period would last for approximately 3 - 4 months, from construction of the access track, through to erection of the wind turbine and commissioning. The indicative construction programme is shown in Table 1.

Activity	Duration	Timescale from Planning Consent (Months)					
		7	8	9	10	11	12
Roads, Hardstanding & Drainage	4 Weeks						
Foundation Excavation	1 Week						
Foundation Steelwork	1 Week						
Foundation Concrete	2-3 Days						
Control Building Construction	3 Weeks						
On-Site Cabling	1 Week						
Grid Connection	TBC						
Turbine Delivery	2 Days						
Turbine Erection	2 Days						
Turbine Commissioning	1 Week						
Site Reinstatement & De-Mobilisation	1 Week						

Table 1: Typical Construction Programme

3.10 Construction Procedure

Turbine Erection

The main crane will be positioned on-site and will erect the first two sections of tower, nacelle and generator. With the assistance of a smaller tail crane, the assembled rotor is lifted into place. Electrical connections are made and the turbine is commissioned.

3.11 Site Reinstatement

Temporary site construction elements, including the site compound and any temporary turning areas, will be removed and landscaped within six months from the date of final commissioning. The access track verges, cable backfill and area around the turbine base will be re-vegetated. The crane pad/hard-standing and access tracks will remain in place for any essential maintenance during wind farm operation.

Site reinstatement techniques may include, but are not be restricted to the following:

- Natural re-Growth;
- Re-distribution of stored seed-rich material;
- Re-seeding.

3.12 Decommissioning

At the end of the project's life (approximately 25 years) the site will be re-instated. Wind turbine components will be removed from site including electrical infrastructure. Underground cabling may be cut off below the surface and left, to minimise disruption to the re-establish ground. The whole area will be top-soiled over and re-seeded.

The decommissioning phase would take up to a month to complete.

4 Planning Policy

This chapter provides an overview of the most relevant national and local planning policy documentation which is applicable to a wind energy development of this scale. 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/local plan; and supplementary guidance.

4.1 Scottish Planning Policy

Introduction

National planning policy is set out in the Scottish Planning Policy (SPP), which includes support for the development of a range of renewable energy technologies and spatial guidance for wind farms.

In support of this, The Climate Change (Scotland) Act 2009 requires Scottish Ministers to take advice in relation to the setting of annual targets for the amount of electricity generated from renewable resources. Current advice is now set out in the 2020 Routemap for Renewable Energy (2011) and commits to what Scottish Government identifies as a ‘formidable but achievable’ goal of 100% of electricity from renewable energy by 2020. More recently in October 2012, the Scottish Government have announced an interim target of 50% by 2015, indicating a strong continued growth in the sector. The increase in renewable energy generation is viewed as a vital step in reducing Scotland’s greenhouse gas emissions.

The importance of the cumulative value of small-scale wind energy developments towards achieving that goal is highlighted, indicating that this target should be met by a range of technologies and sizes.

Government Planning Guidance is set out in the form of web based renewables advice (specific advice sheets) which replaced PAN45 in February 2011. Web based advice is seen as an advantage for renewable energy policy, considering the rate at which new technologies are becoming more widespread and introduced into the planning system.

Planning authorities should take national planning policy on renewables, as set out in SPP, into account in preparing their development plan. Authorities should take a proportionate and practical approach to placing detailed policies on individual technologies in Structural Development Plans, Local Development Plans or supplementary guidance.

SPP continues to state planning authorities should support the development of a diverse range of renewable energy technologies, guide development to appropriate locations and provide clarity on the issues that will be taken into account when specific proposals are assessed.

Development plans 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.

The Trinity Gask proposal is consistent with the objectives set out in National guidance and would make a positive contribution towards realising the national objective for Scotland set out in the 2020 Routemap for Renewable Energy (2011), namely meeting a 100% demand for Scotland’s electricity from renewable energy sources by 2020 - and more recently highlighted at 50% by 2015.

Legislative Context

The proposal would require planning permission under The Town and Country Planning (Scotland) Act 1997.

The Town and Country Planning (Hierarchy of Developments) (Scotland) Regulations 2009, relevant for this development, classify the proposal as a 'Local' development being below the threshold of 20MW capacity, above which it would be a 'Major' development. Accordingly, there has been no requirement for pre-application community engagement but this has still been undertaken regardless, as it was seen in the best interest of the project.

4.2 Perth & Kinross Planning Policy

Introduction

Perth and Kinross Council have a number of documents which form the development plan for the area and which have relevance to wind energy projects:

The relevant Development Plan consists of the recently approved TayPlan Strategic Development Plan, approved in June 2012, and the Strathearn Area local Plan, approved in 2001 but scheduled to be replaced by a new Local Development Plan. Both have specific policies relating to renewable energy and a number of general policies that would apply to an application.

The Supplementary Planning Guidance (SPG) of 2005 is more recent and more focussed and therefore will be the primary part of local policy used to determine a wind energy proposal.

TayPlan Strategic Development Plan (2012)

TayPlan Strategic Development Plan (SDP) is the key strategic land-use planning document produced by councils within the Tayside region and provides the long term land use planning vision for development and the environment in within Perth & Kinross and other Tayside areas to the year 2032. The SDP provides the framework for local plans which contain more detailed and site-specific policies.

The previous structure plan (Perth and Kinross Structure Plan, 2003) was formally replaced in June 2012 by TayPlan. The original planning application for a wind turbine at Trinity Gask Estate was considered under the former structure plan, however it is still considered that the proposal meets and adheres to the requirements of both old and new Strategic Plans.

Relevant Policies

TayPlan identifies the importance of Renewable Energy with Policy 6: Energy and Waste/Resource Management Infrastructure -

'To deliver a low/zero carbon future and contribute to meeting Scottish Government energy and waste targets'

Key criteria by which proposed wind energy schemes will be assessed against include:

- Consideration of the specific land take requirements associated with the infrastructure technology and associated safety exclusion zones where appropriate;
- Waste/resource management proposals are justified against the Scottish Government's Zero Waste Plan and support the delivery of the waste/resource management hierarchy;

- 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 of-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

It is considered that the revised wind turbine proposal at Trinity Gask is compliant with the new TayPlan guidance. The proposed development has a small footprint and will not produce waste once constructed. The local electricity network has a close proximity to the site and a number of local power consumers that would indirectly benefit from the development.

The assessment carried out as part of this planning application has addressed anticipated effects of construction and operation of a wind turbine at the site and demonstrates that, for the size and scale of the revised development (a single wind turbine at 67 m to tip height with reduced blade length); no effects are considered to be of concern.

Sensitivity of landscape is also considered to be acceptable for the proposal, as demonstrated in the subsequent detailed assessment. Cumulative impacts have been assessed as minor for the site and it is considered that the proposal would fit in well with the nearest wind energy developments.

Strathearn Local Plan (2001)

This document sets out the land-use plan covering the area which extends from the eastern edge of Loch Earn to the west, and the upland area around Ben Chonzie to the north, with the Earn Valley and the Ochil Hills to the south. It contains detailed guidance on where Council will encourage development and where it is unlikely to be allowed. It guides day-to-day planning decisions and influences the determination of planning applications.

The Strathearn Local Plan, along with other local plan areas in Perth and Kinross, are scheduled to be replaced by a single Local Development Plan (LDP) covering the whole of the Council area.

The key aims of the Plan are:

- To provide development opportunities in appropriate locations
- To protect and enhance the quality and diversity of Strathearn's environment

Relevant Policies

The Strathearn Local Plan identifies the importance of Renewable Energy with Policy 11 of the Policies Applicable to Entire Area section:

'The Council will encourage, in appropriate locations, renewable energy projects. Such developments, including ancillary transmission lines and access roads, will be assessed against the following criteria:

- a) The development will not have a significant detrimental effect on sites recognised by designation at a national, regional or local level of nature conservation interest or sites of archaeological interest.*
- b) The development will not result in an unacceptable intrusion into the landscape character of the area.*
- c) The development will not result in an unacceptable loss of amenity to neighboring occupiers by reasons of noise emission, visual dominance, electromagnetic disturbance or reflected light. Developers will be required to enter into an agreement for the removal of the development and the restoration of the site following the completion of the development's useful life.'*

Other Relevant Local Plan policies are:

- Policy 1 - Sustainable development - Four criteria for judging all development, aimed primarily at housing;
- Policy 2 - Development Criteria - A list of criteria for new build developments, aimed primarily at new buildings;
- Policy 3 - Landscape character - Development control will assess effects against the criteria in the landscape character assessment for Tayside prepared by SNH.

Also consistent with the TayPlan requirements, it is considered that the revised proposal is compliant with the Strathearn Local Plan and will not result in any significant effects on the area.

The revised proposal has been progressed with an amended wind turbine choice which is of a lesser visual impact and reduced noise levels from the previous application. This is considered further in the subsequent chapters.

Perth and Kinross Supplementary Planning Guidance

In addition to these general policies and criteria in the Development Plans, the Supplementary Planning Guidance for Wind Energy Proposals in Perth & Kinross 2005 (SPG) has considerably more detailed and prescriptive policies with regards to wind energy proposals.

The SPG contains two Policies and eleven Policy Guidelines. The Policies are supportive of renewable energy projects in principle and define the Broad Area of Search (Figure 10) which set the general locations in which wind turbines will be regarded acceptable. The Policy Guidelines then set out the detailed criteria by which any proposal will be assessed.

4.3 Compliance with Planning Policy

Wind Energy - Principles of Scale and Location

The SPG's two wind energy policies can be read together to define the Council's preferred locations for wind energy development.

Wind Energy Policy 1:

States the council wishes to contribute towards national renewable energy targets in locations least damaging to landscape character, amenity, habitats, and species in Perth and Kinross as shown in Figure 10. Council will look more favourable on proposed schemes within the Broad Area of Search.

It is considered that the proposed development would assist Perth and Kinross Council contribute towards national renewable energy targets, by being sited in a location that meets the appropriate requirements - through consideration of key constraints and design mitigation.

Wind Energy Policy 2:

States that in the Broad Area of Search (designated for guiding suitable wind energy projects), Community and Commercial wind energy developments will be supported where they would be consistent with the council's detailed Policy Guidelines and it had 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.

The proposal falls clearly within the broad area of search zone, as illustrated in Figure 6 below.

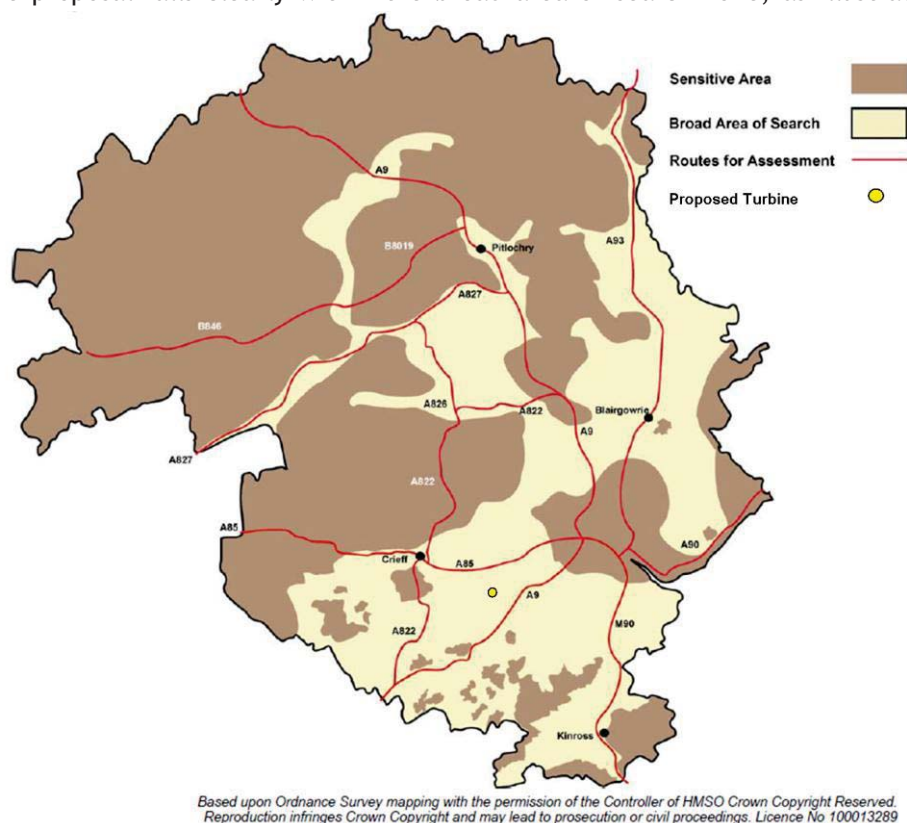


Figure 6: Wind energy development - PKC area of search

Detailed Policy Guidelines

Below is a table of the detailed policy guidelines taken from the Supplementary Planning Guidance.

It has been considered that each of these guidelines is consistent with the policies stated in the local development plans and is therefore a more structured form of clarifying how each policy guideline is met. Each guideline is stated and a comment is made with regards to the proposal at Trinity Gask.

Guideline 1 - Landscape Impact

Wind energy proposals will be encouraged except in locations where they will have a substantial or moderate adverse impact on landscape character which cannot be mitigated. A commercial or community wind farm or cluster is unlikely to be acceptable on prominent ridges, hills or sensitive skyline locations in or within 5km of any of the sensitive locations listed below unless it is demonstrated to the satisfaction of the Council that the impact will be slight or not significant.

Trinity Gask proposal - As demonstrated in the Landscape and Visual Impact Assessment, landscape impact will be of a minor change with overall limited effect and should therefore not be seen as an element of concern.

Guideline 2 - Visual Impact

Wind energy proposals will be encouraged except in locations where they will have a substantial or moderate adverse visual impact which cannot be mitigated. A commercial or community wind farm, cluster or turbine is unlikely to be acceptable within 20 times the height to blade tip (hbt) of: houses and settlements, locally prominent landforms, Scheduled Ancient Monuments, significant archaeological sites and their settings, Conservation Areas and Listed Buildings where no satisfactory assessment has been undertaken and where it has not been demonstrated, to the satisfaction of the council, that the visual impact will be slight or not significant. Domestic scale turbines will normally be acceptable beside existing buildings where visually and functionally related to and in proportion with them.

Trinity Gask proposal - This policy guideline refers to a guide threshold of 20 times hbt as a distance from neighbouring houses and other sensitive sites, such as Scheduled Monuments, where it is likely that effects will be acceptable without the need for detailed assessment.

For a 67m tip height turbine, this equates to 1,340m setback from sensitive sites and properties. In addition, this guideline also allows for detailed assessment to find that the significance of effects are slight or not significant and therefore acceptable. As demonstrated in the Landscape and Visual Impact Assessment, visual impact towards the nearest residential receptors will be of a moderate to minor effect with overall limited visual impact and should therefore not be seen as an element of concern with regards to receptors within 20 times hbt.

In addition, it is considered that the revised proposal will not have a significant adverse effect on local cultural heritage features within 20 times hbt, primarily due to the limited magnitude and scale of the proposal and now a reduced visual profile of the turbine. This is also due to the level of woodland and topographic screening elements present as well as future regeneration plans identified to enhance screening of the site.

Guideline 3 - Cumulative Landscapes and Visual Impacts

Wind energy proposals will be encouraged except in locations where they have a substantial or moderate adverse cumulative impact on important receptors. A commercial or community wind farm, cluster or turbine when located within 40km of another is unlikely to be acceptable where it has not been demonstrated, to the satisfaction of the Council, that the cumulative landscape and visual impact will be slight or not significant. The Council will encourage developers to co-operate over the exchange of information, where cumulative assessment has been identified as important and is needed in order to make such assessments.

Trinity Gask proposal - As demonstrated in the Landscape and Visual Impact Assessment, cumulative effects and visual impact is perceived to be no more than minor to moderate, given the scale and simple character of the landscape and the relevant distance and spacing between developments.

Guideline 4 - Biodiversity

Wind energy proposals will be supported except in locations where they would have a significant adverse impact on biodiversity. In instances where there is uncertainty about the potential impact, a precautionary approach will be adopted. Where impacts can be mitigated, a Section 75 Agreement may be required to ensure habitat enhancement work is undertaken elsewhere for habitat loss or loss of raptor hunting ground at the wind farm area.

Trinity Gask proposal - As demonstrated in the Ecology assessment, there appears to be an overall low risk of effects on ecology interests at the site and should therefore not be seen as an element of concern.

Guideline 5 - Cumulative Impact on Ornithological Interests

Wind energy proposals will be encouraged except in locations where they will have a significant adverse cumulative impact on birds. A commercial or community wind farm, cluster or turbine is unlikely to be acceptable where it has not been demonstrated, to the satisfaction of the Council, that the cumulative impact on birds will be slight or not significant. Where there is uncertainty about the potential impact, a precautionary approach will be adopted.

Trinity Gask proposal - As demonstrated in the Ornithology assessment, there appears to be an overall negligible impact on ornithology interests at the site and should therefore not be seen as an element of concern.

Guideline 6 - Operational Impacts

Wind energy proposals will be encouraged except in locations where it has been assessed that there would be a significant adverse impact on the amenity of any dwelling within 20 hbt (height to blade tip) distance of a turbine, which cannot be mitigated, or where no assessment, satisfactory to the Council, has been made of the effects of noise, shadow flicker, construction traffic, and electromagnetic interference. Planning conditions or agreements will set:

- *Appropriate noise levels and require a post construction noise monitoring survey (where sensitive residential receptors have been identified);*
- *Traffic management plans where appropriate; and*
- *Correction of any electromagnetic interference at the developer's expense.*

Trinity Gask proposal - As demonstrated in the various technical assessments, operational impacts will be minimal to slight and should therefore not be seen as an element of concern.

In addition to this, the revised wind turbine has lower noise levels and even less of a potential shadow flicker impact than the original application, which was previously shown as negligible.

Guideline 7 - Water Resources

Wind energy proposals will be encouraged except in locations where there is likely to be a significant adverse impact on the water environment generally and water supplies in particular and where such unacceptable adverse effects cannot be mitigated to the satisfaction of the Council. Where appropriate, measures which mitigate any identified adverse effects on groundwater will be incorporated into a planning condition.

Trinity Gask proposal - As demonstrated in the hydrology assessment, impacts on water resources will be minimal and should therefore not be seen as an element of concern. A number of potential environmental mitigation measures have been proposed.

Guideline 8 - Aviation Interests

Wind energy proposals will be encouraged except in locations where they would have a significant adverse effect on the safe use of airports and aerodromes/airfields (Dundee, Edinburgh, Leuchars, Perth or Portmoak) or on communications, navigation and surveillance (CNS) systems (including radar and other equipment including the air navigation beacon (Perth DVOR) at Perth Airport.

Trinity Gask proposal - As demonstrated in the aviation assessment, impacts on aviation interests will be minimal to none and should therefore not be seen as an element of concern.

Guideline 9 - Maintaining 'Carbon Sinks'

Wind energy proposals must demonstrate to the satisfaction of the Council that the erection of turbines, buildings and access tracks will not result in an unacceptable release of CO₂ from peat bogs.

Trinity Gask proposal - As demonstrated in the project description and site layout map, no impact is expected on any peat bogs and should therefore not be seen as an element of concern.

Guideline 10 - Decommissioning and Site Re-instatement

In order to ensure the satisfactory removal of hill tracks, turbine towers and blades, and any ancillary equipment associated including overhead power lines and pylons with the wind energy development a 'decommissioning statement' will be required at the time the proposal is submitted and it should be updated on a five yearly cycle and finalised at least 1 year before the cessation of generation from the site - it may be enforced by a condition or the use of a Section 75 Agreement. A financial bond or similar mechanism may also be required to ensure the site can be reinstated.

Trinity Gask proposal - As demonstrated in the Project Description, Decommissioning and site Re-Instatement has been addressed and should therefore not be seen as an element of concern.

Guideline 11 - Protection of Wind Energy Developments

Development proposals, including forestry, within 30 hbt of existing or approved wind energy sites will need to demonstrate, to the satisfaction of the Council, that the proposed development will not have a detrimental effect on productivity of any existing or approved wind energy site. Any development which would have such an adverse impact will be unacceptable.

Trinity Gask proposal - As demonstrated in the project description and cumulative assessment, the proposal will not have an impact on any existing or approved wind energy sites.

4.4 Conclusion

The proposed development is considered to be appropriately designed and sited; environmental and cumulative impacts would be satisfactorily addressed by the wind energy proposal, and the development would make a positive contribution towards Scottish Government's challenging goal of 100% of electricity from renewable energy sources by 2020 (50% by 2015).

It is considered that the revised proposal is in compliance with the recently adopted TayPlan Strategic Development Plan and the Strathearn Local Plan, and will not result in any significant adverse effects. This is primarily due to the magnitude and size of the proposal (a single wind turbine), and an amended turbine selection with reduced blade dimensions and lower noise levels.

In addition to this, the proposed site is located within Perth & Kinross Council's Broad Area of Search diagram for wind energy projects, and is consistent with the detailed policies found in the Supplementary Planning Guidance for Wind Energy Proposals in Perth & Kinross (2005), as justified

by the detailed consideration of relevant environmental criteria which follows in the subsequent sections of this ER.

This report has assessed relevant factors typical to wind energy development through the various chapters and it is considered that this proposal can be regarded as being in favour with all Perth & Kinross Council policies and policy guidelines regarding wind energy development at the Trinity Gask site.

5 Cultural Heritage & Archaeology

5.1 Introduction

This section assesses the impact of the proposed Trinity Gask wind turbine on the known cultural heritage and archaeological features within the surrounding area. Perth and Kinross Council consider the area to be of general significant archaeological interest due to the history of Roman occupation. The assessment primarily focuses on the impacts upon noted archaeological features within the immediate area of the turbine.

The assessment will also examine important Scheduled Monuments and Historic Gardens and Designed Landscapes within the wider area, up to 3 km around the site.

5.2 Approach to Assessment

A detailed assessment was carried out on the effect of wind energy development on any surrounding cultural heritage site with the area. This assessment focussed on the extent of landscape and visual impacts of the proposal, as well other potential impacts where relevant.

A desk based study was carried out using Historic Scotland's available GIS dataset, and all heritage sites listed as Scheduled Monuments within a 3 km radius were identified.

The following information sources have also been consulted as part of this assessment:

- Sites and Monuments Record (SMR)
- National Monuments Record Scotland (NMRS)

5.3 Baseline Conditions

There are a number of sites on the Sites and Monuments Record (SMR) in the vicinity of the proposal including on Chapelhill and along the existing track from near Roundlaw in toward the turbine location, including the old sandstone quarries identified for the borrow pit. None of these sites are designated, but as registered sites any direct impact on them has been assessed. The indirect effects to the setting of the other registered sites and any designated sites with visibility of the proposal have also been assessed.

The proposed site lies near the Gask Ridge, well known for its history of Roman activity in the area. There is the location of a Roman Road that runs near the site which has a number of nationally designated Scheduled Monuments associated with it, primarily several former signal stations. The nearest of these, Kirkhill Signal Station, is a promoted and managed site currently with some visibility of the site at approximately 900m. The Arduvie Watch Tower is approximately 2.7km from the proposed turbine location and will have a degree of visibility of the turbine also. As the focus for the setting of the signal stations is principally along the road and to other signal stations on the Ochils to the east, the impacts on the setting of these Scheduled Monuments are considered unlikely to suffer from significant adverse effects. The likely visibility effects on the Scheduled Monuments nearest to the site are detailed below, see Table 2.

There are a number of listed buildings in the vicinity. Of the nearest ones to the proposed turbine, those at Kirkton and Trinity Gask are Category C(S) and would have limited visibility of the turbine due to vegetation screening and orientation. Borestone Cottage is a Category B building, and consequently of higher sensitivity, but is currently visually shielded due to the abundance of woodlands surrounding the cottage. There are Category A listed buildings within the broader study

area including; Drummond Castle, Williamston House, Duncrub Dovecot, Abercairney sundial and the Innerpeffray library and chapel.

The direct and indirect impacts on the cultural heritage resource of the site and its surroundings require assessment by Historic Scotland. However, due to the magnitude and scale of proposal Historic Scotland would be unlikely to object. Detailed consultation with Historic Scotland included the provision of ZTVs highlighting any Scheduled Monuments near the site highlighted and a photomontage/wireframe for Kirkhill Signal Station.

5.4 Assessment of Effects

Below is a table and map (Figure 7) detailing the likely visibility effects from the nearest Scheduled Monument's (SAM) to the proposed turbine site. No Historic Garden and Designed Landscape areas exist within 3km of the site and as such, do not appear on the map.

Name	Feature Type	Distance (km)	Direction	Visibility
1. Arduvie Signal Station	SAM	2.7	SWW	Limited visibility of the turbine is predicted due to position within woodlands.
2. Roundlaw Signal Station	SAM	1.6	SW	The single turbine is likely to be fully visible, although future reforestation plans are likely to mitigate these effects through screening.
3. Kirkhill Signal Station	SAM	0.9	SW	As demonstrated in the photomontage (LVIA Figure 6), limited visibility of the turbine is predicted here due to woodland screening.
4. Muir o' Fauld Signal Station	SAM	1.1	SE	No visibility of the single turbine is predicted from this location, due to topographic and woodland screening.
5. Gask House, Signal Station	SAM	1.7	SEE	No visibility of the single turbine is predicted from this location, due to topographic and woodland screening.
6. Witch Knowe Signal Station	SAM	2.5	E	No visibility of the single turbine is predicted from this location, due to topographic and woodland screening.
7. Gascon Hall	SAM	2.4	SSE	No visibility of the single turbine is predicted from this location, due to topographic screening.
8. Orchard	SAM	2.6	SE	No visibility of the single turbine is predicted from this location, due to topographic screening.

Table 2: Historic features nearest site

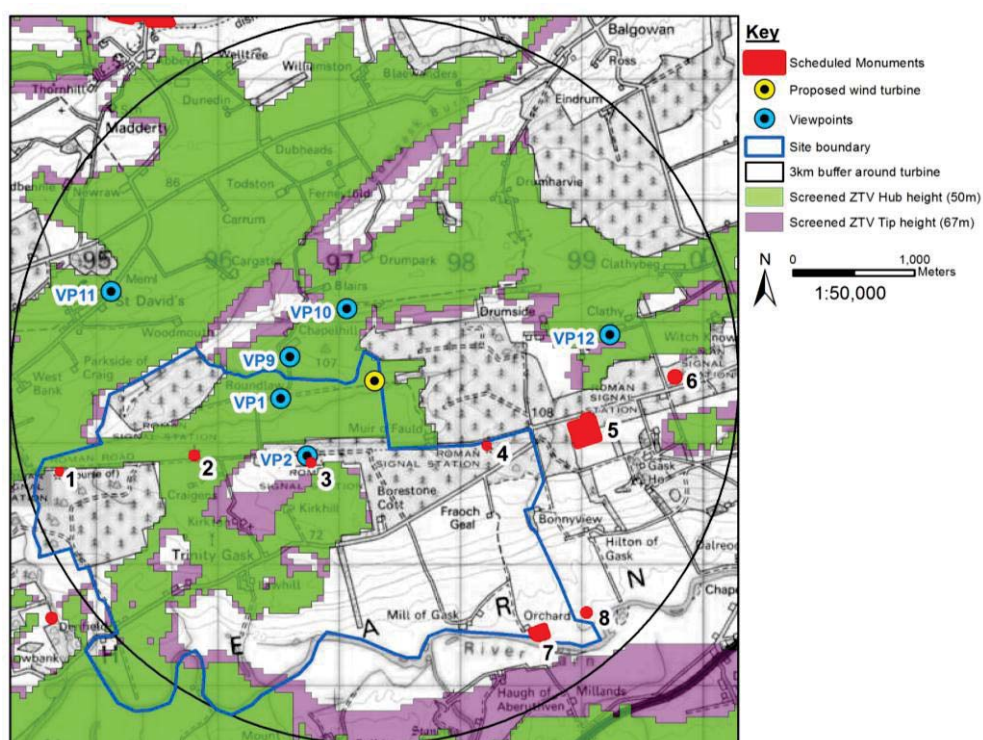


Figure 7: Scheduled monuments nearest site

In addition to this, consultation with Perth and Kinross Heritage Trust provided a map of their own monument record (Figure 8). Many of these sites are former quarries and although not a visual concern, should be avoided where possible. It has been clarified that there is no objection to using borrow pit at MPK7676.

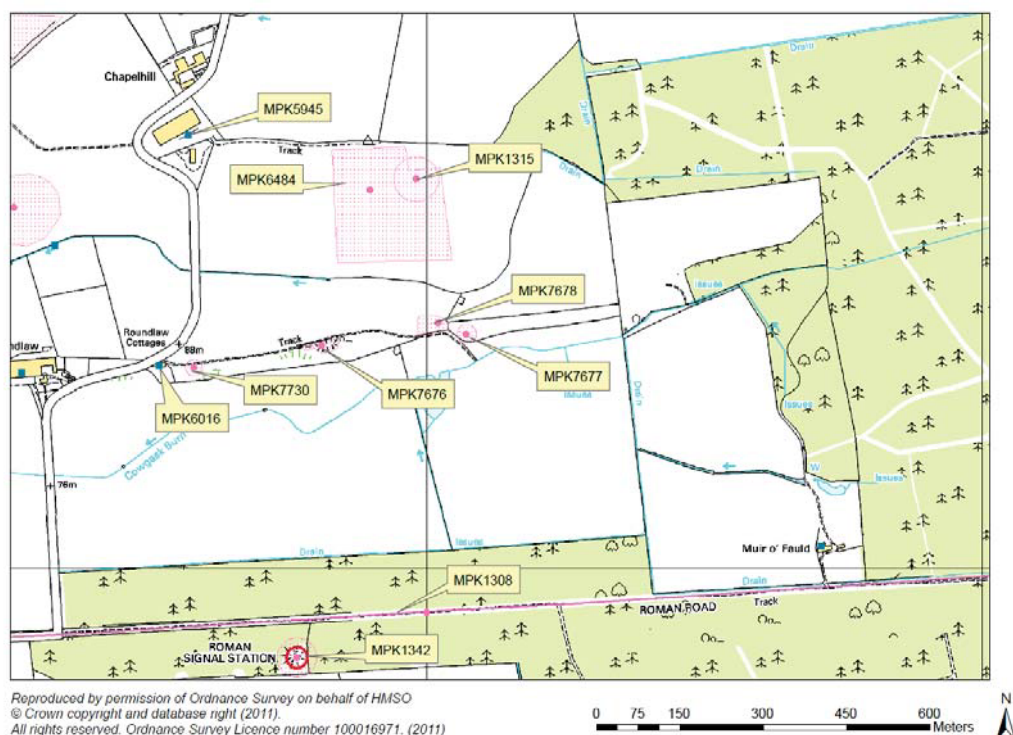


Figure 8: PKC Historic Environmental Records

5.5 Mitigation & Residual Effects

The photomontage at VP2, Kirkhill Signal Station (LVIA Figure 6) looking towards the current proposed site contains an amount of tree cover representing a few years growth. The applicant is working closely with Historic Scotland and will be sustaining the woodlands in this area which will provide future enhanced tree cover from this point. Within 3-5 years this will provide effective total screening of the project from the Signal Station.

With regards to the Roman Road, and more specifically access to the Kirkhill Signal Station, it should be noted that the landowner works very hard at maintaining this access and keeping a clear track along the Roman Road, something which has been neglected in the past. More people currently enjoy the use of the woodland access now that it has been improved and it will continue to be maintained for everyone's benefit.

As a result of consultation with residents and Historic Scotland, a number of additional mitigation measures have been undertaken which will further reduce any impact on cultural assets. These are a reduction in height from the initial proposed 80m to 67m, and lowering of the turbine location on the topography height to reduce its height in the setting.

The revised proposal is also considered to have an overall reduced visual impact due to a smaller rotor diameter - now at 34 m as opposed to the original 54 m diameter proposed in the previous application.

5.6 Conclusion

Consultations with Historic Scotland included the provision of ZTVs highlighting any Scheduled Monuments near the site and a photomontage/wireframe for Kirkhill Signal Station.

Whilst it was felt that the height and location of the turbine will affect the setting of some scheduled monuments associated with the Gask Ridge, it was considered by Historic Scotland that the magnitude of the proposed impact is not of a level to trigger objection from a historic interest. It was also noted that a number of mitigation measures have been undertaken, including reduction in tip height from the initial proposed 80m to 67m, lowering on the topography height, tree cover management and screening proposals, and reduction of blade dimensions of the turbine.

Therefore, following a review of the local cultural heritage context and assessment of the visibility of the proposed single turbine, it is considered that the revised proposal will not have a significant effect on local cultural heritage features.

6 Landscape & Visual Impact

6.1 Introduction and Scope of Assessment

This chapter considers the landscape and visual impact of the proposed wind turbine development. As well as examining the effects of the development individually, cumulative effects in combination with other existing, consented, or planned wind energy projects have been assessed. This section should be read in conjunction with the Landscape and Visual Impact (LVIA) appendix text (Appendix 1) and associated figures including ZTVs and photomontage/wireframes (Volume 2).

6.2 Viewpoint Selection

As part of the original screening/scoping exercise, six original viewpoints were selected for the original proposed site.

These were:

- VP1 Roundlaw Cottage
- VP2 Roman Signal Station
- VP3 Gleneagles Hotel
- VP4 Craig Rossie
- VP5 A9 west of Perth
- VP6 Knock of Crieff

Following consultation with the planning officer in March 2011, two more viewpoints were added as requested - one from a prominent vantage point on the A822 looking east to the site, and one from a prominent vantage point from the A85 looking south to the site:

- VP7 A85 roadside
- VP8 A822 roadside

Finally, following community consultation in April/May it was decided between Realise Renewables and the landowner to add another 4 viewpoints from nearer local receptors, including Clathy to the east of the site:

- VP9 Peock Household, Chapelhill (Cowgask)
- VP10 Drumgowan Household, Blairdams
- VP11 St David's roadside
- VP12 Clathy roadside

NOTE: It should be noted that during the LVIA figures production it was discovered that the viewpoint at VP5 (A9, west of Perth), is now not likely to capture any theoretical visibility of the site. Due to this, a new position along the A9 was selected to demonstrate wireframe visibility towards the site:

- VP5 A9 Aberuthven

6.3 Baseline and Assessment of Effects

Landscape Effects

Given the location of the turbine within a clearly separate landscape the extent of visibility is low. Also given the character and quality of the designations being predominantly gained from large landform features and views along the valley or across the hills, it is not considered that the proposed turbine would undermine the integrity or setting of these features. The overall magnitude and extent of effect is therefore considered to be insignificant. This is detailed in Table 4 of the LVIA appendix.

When considering the landscape setting of the Scheduled features on the Gask ridge, including the Roman Road and signal station scheduled monuments, the ZTVs and viewpoint assessment indicates that there will be some intermittent filtered views from isolated points around the monuments. However, given the secluded context and contained setting within local woodland, the visibility and potential for effect on the contained landscape setting will be limited. This is also the case for the nearest Scheduled features directly to the south of the proposal, where the existing tree cover and surrounding extensive coniferous plantation will help to partially screen the turbine from the immediate landscape setting. In addition the potential for effect on setting will be further moderated by on-going supplementary planting to restore original woodland features along the Roman road. The effects on the scheduled features are considered in detail in the Cultural Heritage report.

Visual Effects

Effects on the Residential Receptor Group

Given the dispersed nature of the immediate farmland context, only a small number of residents will experience any notable views of the proposal. The extent of effect upon the receptor group will primarily depend upon the distance from the proposed development, the orientation of the main views from their properties and the existence or otherwise of intervening, landform, built elements and/or vegetation. Visual effects arising from the Trinity Gask turbine is therefore likely to be greatest from the dispersed farmsteads within the immediate vicinity on the western fringes of the Gask Ridge and typically from elevated points to the west, where direct, open views are available and the prominence of turbines in the view will be increased. However, direct views will be limited from most of the nearest residents within 1-2km to the west, with the general orientation and intervening features, as noted in Table 6 on the LVIA appendix.

From other points to the north, south and east within 2km notable landform and land cover elements will restrict notable visibility to the site. Where the Trinity Gask turbine is visible, it will generally be seen within an expansive farmland context with extensive coniferous woodland plantations and notable intervening landform elements. While the turbine will provide a distinct new element at these local points, the overall proportions of the turbine, with a reduced rotor diameter, will not be noticeably out of scale with the wider balance and scale of elements in the view. The turbine will also be seen frequently in the wider view with other more prominent elevated turbines and will not therefore be seen as a separate, isolated development, in most cases.

Beyond these points and from the majority of settlements, visibility will be limited. These include the principal settlements at Crieff, Muthill and Auchterarder. The general context and orientation of these settlements also lie away from the proposed turbine. From most other points, particularly to the north, south and east, the turbine will then be seen notably to the rear of ascending

landform and landcover elements and from the west within a simple and expansive landscape. The extent of effect on this receptor group is, therefore, assessed to be Moderate to Minor.

Effects on Travellers

The ZTVs show that there will be potential visibility from intermittent points along the A85, A824 and the A9 to the northeast of Auchterarder. In reality, local intervening vegetation and landform will limit the extent of coverage from most sections. As a result the Trinity Gask turbine will not typically result in a significant change in the view for travellers on most sections of these main roads. From other routes including the A822 and the A823 the turbine will not be clearly visible with no notable effect.

Elsewhere from other local roads, the turbine will be seen in isolated points from the B8062, then to varying degrees along minor roads to the west of the proposed turbine, between St Davids, Kinkell Bridge and to the north of Kirkton, where the turbine will be seen at varying points within the expansive undulated and well vegetated farmland and even from the more localised points, often to the rear of landform and woodland features. As it passes the site there will be a localised Moderate effect for about 1km. From other local roads the proposed turbine will generally be seen away from the main direction of the road and in the context of a broader view. As a result the turbine will not result in a significant change in the view for most travellers given the transient nature of the views and the open expansive scale of the farmland context and only thus, on the whole, a Minor effect.

Effects on Visitors and the Tourism / Amenity Resource

This receptor group comprises a broad category with different objectives. The majority of the significant tourist areas in the study area are located within at the low-lying, well vegetated lowland valleys and are as such, generally screened from the proposed development, with no notable effect. Where views are available from more elevated remote hill top points from the Ochill Hills and Highland fringe areas like the Knock of Crieff, the Trinity Gask turbine will normally be seen within the context of a separate low lying landscape and in the wider context of other existing wind farm developments. The extent of effect on this receptor group is thus considered to be on the whole, no more than Minor.

Cumulative Effects

Cumulative Landscape Effects

Although the proposed Trinity Gask turbine will provide a new element in the local landscape it will not therefore constitute a new element in the overall landscape, but will add an appropriately scaled element, to the separate existing influence and pattern of wind turbines, which are a defining characteristic of the surrounding but separate elevated landscapes. Based on the assessment set out in the landscape effects section, it is also concluded that any development beyond the immediate Gask Ridge landscape is unlikely to result in significant cumulative landscape effects. Effects on landscape character are therefore restricted to localised sections of the Gask Ridge. Effects on landscape designations will then be limited given the degree of distance, screening and separation from the proposed development, where the existing wind turbine influences provide a clearer defined element in the context of those areas to the south. The cumulative extent of effects of the Trinity Gask turbine in addition to the cumulative sites in operation and consented, on the character and constituent elements of landscape is therefore considered to be no more than Minor to Moderate, given the scale and simple character of the landscape and the relevant distance and spacing between developments.

Cumulative Visual Effects

Although there is some potential for combined and sequential visibility from isolated distant and elevated points to the north and south of the proposed Trinity Gask development representing the combined view), the general scale, distance, orientation and existing nature of the area, will limit the potential for notable visual overlap or conflict in scale and proportion of the separate developments elements in the view. This is illustrated by the Cumulative photomontages from VP4 and VP7 in the A3 figures. As a result the Trinity Gask wind turbine is more likely to be seen in intermittent points of succession, where the observer has to turn to a different point in the view to see the separate developments. Also, given the distance between developments and the intermittency of visibility, sequential views will be very limited, where the traveller has to move a notable distance to see different developments.

It is therefore considered that the cumulative visual effect will not be significant from any of the identified sensitive receptors within the Trinity Gask ZTV. Taken together, the extent of the cumulative visual effect is assessed to be no more Minor.

6.4 Forestry Land-Use and Visual Impact

Forestry and woodland plantations form an important part of the landscape and character in the area of the project site. The project has therefore been designed to fit into and benefit from the screening and back-drop that this forestry provides.

The existing woodland strip, directly to the north of the Roman Road, and existing mature trees in and around the Kirkhill Signal Station, currently partially screens views to the turbine site from sections of this road and from the fort. Previously there was much more screening on the Roman fort site but Historic Scotland wished to clear these trees as part of a program to 'open' the site up visually. Trinity Gask Estate agreed to this work being undertaken in accordance with good practice.

Recent replanting on this strip (undertaken by Trinity Gask Estate) and a robust management policy to allow natural regeneration of varied tree species to flourish, will form a new more effective, natural long term screening of the site, thus reducing any perceived visual intrusion to the Roman Road and Fort to a minimum.

The forestry to the north and east of the turbine currently forms an effective 'block' of the proposed turbine in these directions, in particular to the residents of Clathy, preventing any views of the turbine in this direction. This forestry has a wide range of species and woodland types and the landowner has confirmed that he will be following a commercially driven phased felling and re-planting programme. Such commercial felling / re-planting, due to economic market drivers, will be in small coupes and a study of the age class in the plantation confirms that following such a practice will always result in an effective screen of trees being in place. This is further reinforced by the constraints imposed by current forestry policy and guidance which is designed to prevent wide-spread felling taking place.

Forestry Policy

Guidance contained in the UK Forestry Standard, UK Woodland Assurance scheme etc. has been taken into account. This requires landowners to restructure age class through phased felling programmes and puts limits on coupe sizes.

Any felling and restocking grant applications must now, as from 2011, be carried out under a Forest Plan approved by FC, the complexity of the plan depending on the size of the woodland. The plan

has to address the UK Forestry Standard and other guidance. An owner could still submit a felling licence application to fell and restock without grant, but FC will still treat it in the same robust manner.

Dialogue with the forest owner to the north and south of the site has further confirmed that the surrounding woodlands between the Trinity Gask turbine site and Clathy will not be clear felled and therefore can be regarded as a permanent feature with forestry screening always in existence between the two. If any felling occurs, this will only be in small sections and, (supported by policy, guidance and best commercial practice), the landowner has indicated he has no intention to clear fell multiple forestry compartments as a whole.

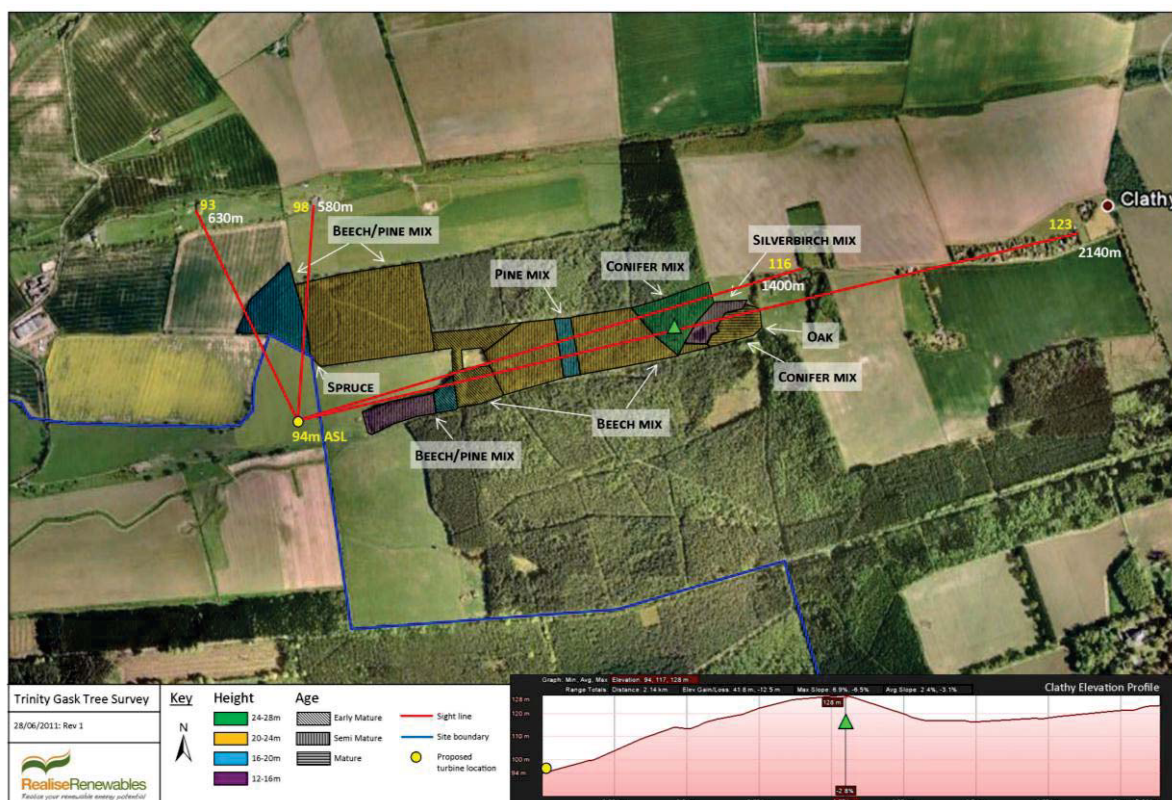


Figure 9: Trinity Gask tree survey

Figure 9 above shows there are quite a range of ages, species and woodland types in the forestry blocks surrounding the site. This means that (from a policy point of view) it is unlikely that any areas would ever be clear-felled, and accordingly unlikely to provide uninterrupted views of the turbine.

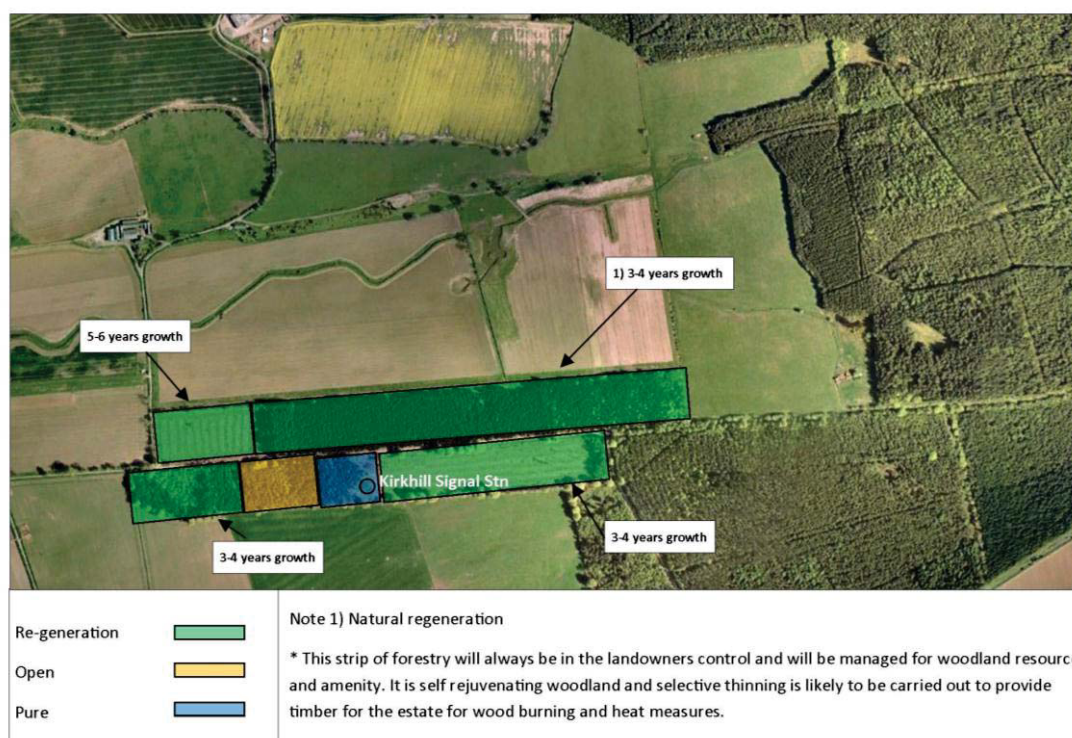


Figure 10: Future forestry plans

As indicated in Figure 10 above, the landowner (the applicant) is already underway with regeneration measures for the strip of woodland illustrated. This will be continuously managed for resource and amenity factors and will provide a lasting a lasting screen from the Roman Road and Signal Station to the site.

It is therefore reasonable to conclude that the forestry surrounding the turbine site should be regarded as an established landscape feature which can be relied upon to provide an element of permanent screening/assimilation for the lifetime of the development.

6.5 Conclusion

Following the landscape and visual appraisal, it is considered that both the revised scale of the Trinity Gask turbine and its location within a relatively sheltered, simple section of the Gask Ridge landscape are both appropriate and in line with Policy 6 of the TayPlan SDP, and Policy 11 of the Local Plan, and PKC SPG Policy Guidelines where it will not be seen to dominate the significant surrounding features.

Given the location, nature and character of the receiving environment, the landscape has the ability to accommodate this minor change with a limited effect on the landscape and visual resource. The scheme has also included design changes to minimise adverse effects on the landscape and other sensitive landscape and visual amenity receptors, particularly local residential amenity. In doing so the scheme has been reduced in scale and moved to a more contained point on the southern slopes of the Gask Ridge so that it sits appropriately with the scale of the site landscape. The revised proposal also demonstrates that a smaller rotor diameter will result in an overall reduced visual impact.

As indicated, future forestry plans will also contribute towards natural screening features for the lifetime of the development. Furthermore, whilst there will be acknowledged changes in the local landscape, these will be completely reversible and temporary given the turbine's anticipated life span of no more than 25 years.

7 Ecology

7.1 Introduction

This section considers the potential impact on ecology and biodiversity from the proposed wind turbine during operation.

Policy Guideline 4 (Biodiversity) of the PKC Supplementary Planning Guidance is relevant for the development and outlines the requirement for ornithological considerations:

'Wind energy proposals will be supported except in locations where they would have a significant adverse impact on biodiversity. In instances where there is uncertainty about the potential impact, a precautionary approach will be adopted. Where impacts can be mitigated, a Section 75 Agreement may be required to ensure habitat enhancement work is undertaken elsewhere for habitat loss or loss of raptor hunting ground at the wind farm area.'

The ecology reports undertaken for this proposal have been included within the appendices, see Appendix 2:

- 1) Phase 1 Habitat Report
- 2) Great Crested Newt Report
- 3) Mammal Report
- 4) Bat Report

Site Context

There are no designated nature conservations sites within or near to the application area. The nearest Site of Special Scientific Interest (Dupplin Lakes) is located approximately 5km east from the proposed Trinity Gask site (see Ecology Figure 8). The nearest Special Area of Conservation (Methven Moss) is located approximately 5km north east from the proposed site. These areas were marked as a constraint and identified as sensitive areas to avoid.

7.2 Surveys and Assessment of Effects

Phase 1 Habitat Survey

A Phase 1 Habitat Survey was carried out by Atmos Consulting in November 2010 and has been included as an appendix to this report. This report indicates there are no major ecological constraints that must be taken into consideration in the design of the proposed development, although several areas may be subject to further surveys or mitigation strategies - these of which have now been completed and discussed in the reports completed by Naiad Environmental Consultancy.

Great-Crested Newts:

The survey did not record the presence of great-crested newts on the site and this finding was supported by historical and the most recent national surveys.

Mammals:

There were no signs of badgers, and pine martens in the development area.

Red squirrels were recorded as feeding within the forest areas but no dreys (shelters) were recorded. The plantation on the east side of the site is likely to hold a good population of red squirrels because of its size, maturity and tree composition. The development is unlikely to impact on red squirrels.

Otters were also recorded on site along the margins of the burn and pond. However activity is likely to be very low and the area is generally agricultural in origin and does not support large populations of fish, otters, and main prey. A potential otter holt (very unlikely to be a breeding holt) occurs under a small elder (*Sambucus nigra*) shrub but this is over 100m away from the development access and borrow pits. Otters are unlikely to be affected by the development.

It has been assessed, that in this instance there is likely to be a negligible effect on protected mammals.

Bats:

Bats use a variety of habitats at Trinity Gask. Bats are a species of Conservation Concern in the UK Biodiversity Action Plan. In general they tend to move along the hedgerows and treelines on the field boundaries and margins of the site as well as watercourses and hill features to feed and commute. Bat activity was generally by pipistrelle bats with very occasional use by Myotis species, Brown Long eared and Noctules.

Noctule bats are not common in Scotland and little is known of their status in Perthshire although they are considered vulnerable in the UK. It is unlikely that Noctules are roosting in the immediate area given the time they are on site therefore the risk is most likely from collision while commuting. Given existing information, Noctules are likely to be medium risk although difficult to predict accurately. The static detector was located next to a tree and hedgeline and this may have increased records of bats due to bats preference to use such features. Therefore, these results should be assessed as a worst case scenario.

A landscape and habitat restoration plan should address mitigation with planting of native tree species and shrubs around the site but not near the turbine.

The analysis for the most common bats on site *Pipistrellus* spp. and *Myotis* species is predicted as low risk.

7.3 Conclusion

As detailed in the above and further described in the ecology appendices, there appears to be an overall low risk of effects on ecology interests at the site - with surveys for great-crested newts, mammals, and bats all undertaken and completed with results assessed.

8 Ornithology

8.1 Introduction

This section considers the potential impact on local and regional ornithology from the proposed wind turbine during operation.

Policy Guideline 5 (Cumulative Impact on Ornithological Interests) of the PKC Supplementary Planning Guidance is relevant for the development and outlines the requirement for ornithological considerations:

‘Wind energy proposals will be encouraged except in locations where they will have a significant adverse cumulative impact on birds. A commercial or community wind farm, cluster or turbine is unlikely to be acceptable where it has not been demonstrated, to the satisfaction of the Council, that the cumulative impact on birds will be slight or not significant. Where there is uncertainty about the potential impact, a precautionary approach will be adopted.’

The ornithology report undertaken for this proposal has been included within the appendices, see Appendix 3.

Site Context

There were no Schedule 1 Wildlife & Countryside 1981 (& later amendments) birds found on the site. There were no Annex 1 EC Birds Directive species recorded during the survey. The RSPB’s “Birds of Conservation Concern 3”, identified other birds of concern of key conservation importance and seven ‘Red List’ species were found breeding on-site and two adjacent to it.

8.2 Surveys and Assessment of Effects

None of the species identified during the survey were likely to be directly affected by the development and all the breeding sites for these birds were over 100 m distance from the proposed turbine location. There is always likely to be a small risk from turbine collisions but very few bird flights were made near or over the ground where the turbine will be placed, and no red listed species flew in this direction. The birds most likely to be at risk at Trinity Gask are ground nesting birds such as skylark, and meadow pipit. The access track also passes close to some nest sites and care must be taken not to disturb birds on hedgerows and other features. Skylark and meadow pipits are in good numbers on this site and require open grassland and heathland in which to breed but there are no nest sites within 100 m of the turbine location.

There is little impact on the general area of the habitats which support these species in the long term. It is an offence to disturb birds on their nests during the breeding season therefore construction activities should take place outwith the breeding bird season especially near the turbine likely to be from April to August.

In addition, data obtained from the Tayside Raptor Study Group indicate no protected raptors (this includes Ospreys and Hen Harriers) were recorded within a 5km radius of the site with the exception of Goshawk but this was deemed too far away to be of concern. Geese were recorded overwintering in the valley and these records are discussed in the results under the section overwintering birds.

Due to the scale of the development, the likely impact on birds (combined with any required mitigation measures) is likely to be negligible. Should any construction activity take place during the bird breeding season an ecological clerk of works should be employed to advise on nest sites and how to avoid them to fulfil any legal obligations. There is unlikely to be any impact on overwintering birds.

Any landscape and habitat management plan should identify new tree, shrub and hedgerow planting as part of any required mitigation measures, to enhance wildlife on the site.

8.3 Conclusion

As detailed in the above and further described in the ornithology appendix, there appears to be an overall negligible impact on ornithological interests at the site - with surveys for various bird species having been undertaken and completed with results assessed.

Some habitat mitigation is possible as outlined above and with habitat creation should offset land take for the proposal. This should include creation of small-scale tree and scrub planting in lower areas and on field boundaries with open grassland and scattered plantings.

9 Hydrology

9.1 Introduction

This section considers the potential impact on hydrology and water resources from the proposed wind turbine during construction and operation.

Policy Guideline 7 (Water resources) of the PKC Supplementary Planning Guidance is relevant for the development and outlines the requirement for water considerations:

Wind energy proposals will be encouraged except in locations where there is likely to be a significant adverse impact on the water environment generally and water supplies in particular and where such unacceptable adverse effects cannot be mitigated to the satisfaction of the Council. Where appropriate, measures which mitigate any identified adverse effects on groundwater will be incorporated into a planning condition.

The construction and operational phases of the proposed development have the potential to affect the hydrology within the localised area, including draining patterns and watercourses. Although hydrological issues are expected to be relatively minor at this site, the risk of pollution of watercourses, groundwater bodies and private water supplies within or near the site should be assessed and appropriately mitigated where required.

Specific Site Works

A new crossing of the Cow Gask Burn is required to reach proposed turbine location. The stream crossing would be covered by the Controlled Activity Regulations (CAR), administered by SEPA and separate to the planning process.

All construction work shall be authorised under SEPA CAR. A silt mitigation method statement will be produced before construction.

9.2 Guidance

This assessment has been undertaken primarily using a qualitative assessment based on professional judgement and statutory and general, national and local guidance as follows:

- 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 of 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 construction and pollution guidance documents

Other sources of information consulted included:

- Ordnance Survey map data at 1:10k and 1:50k scales;
- SEPA online flood risk map
- Groundwater Vulnerability Map of Scotland;
- Hydro-geological Map of Scotland;

- Perth and Kinross Council for private water supplies;
- Scottish Water for information on public water supply infrastructure;

9.3 Methodology

The methodology of this assessment is based on the collection of data from published material as well as consultation with statutory bodies - primarily SEPA, Council, and the land owner's knowledge of the site.

The assessment methods used to assess the impacts on the water environment at the proposed development are described as follows:

- All hydrological information is gathered and potential receptors that may be at risk from the proposed development are identified;
- Each activity of the development including construction, operation and decommissioning is assessed for the potential to create a pollution risk;
- Proposed mitigation measures and preventative actions are detailed

9.4 Baseline

Surface Water

All mapped watercourse were mapped as a constraint and a minimum 20m buffer was applied to protect watercourses from disturbance and potential effects on water quality during construction.

There are a number of drainage ditches that run around the lower field, just south of the turbine site, and that will be near to any works for access track requirements. Also, the Cow Gask Burn runs through the site, and although not a major water course - this should be assessed due to required culvert operation for crossing. Any potential run-off is likely to flow towards the Cow Gask burn, which is part of the River Earn catchment area.

There is a small pond (man-made) that is located approximately 300m from the turbine site but is unlikely to be affected due to adequate separation distance. All hydrological features within 1km are shown in Figure 11.

The water courses identified in the site region (Figure 11) are as follows:

- Cow Gask burn runs across the field east to west 100 metres below the wind turbine position.
- Drainage ditch (1) running south from Cow Gask burn.
- Drainage ditch (2) running east of the new track in field south of the turbine position.
- Drainage ditch (3) running north to south of Cow Gask burn.
- Drainage ditch (4) at the boundary of forest clearing and field.
- Small pond (5) fed by Cow Gask burn.

In addition, a review of the SEPA flood risk map for the application site confirmed that it is not located within a designated flood risk zone.

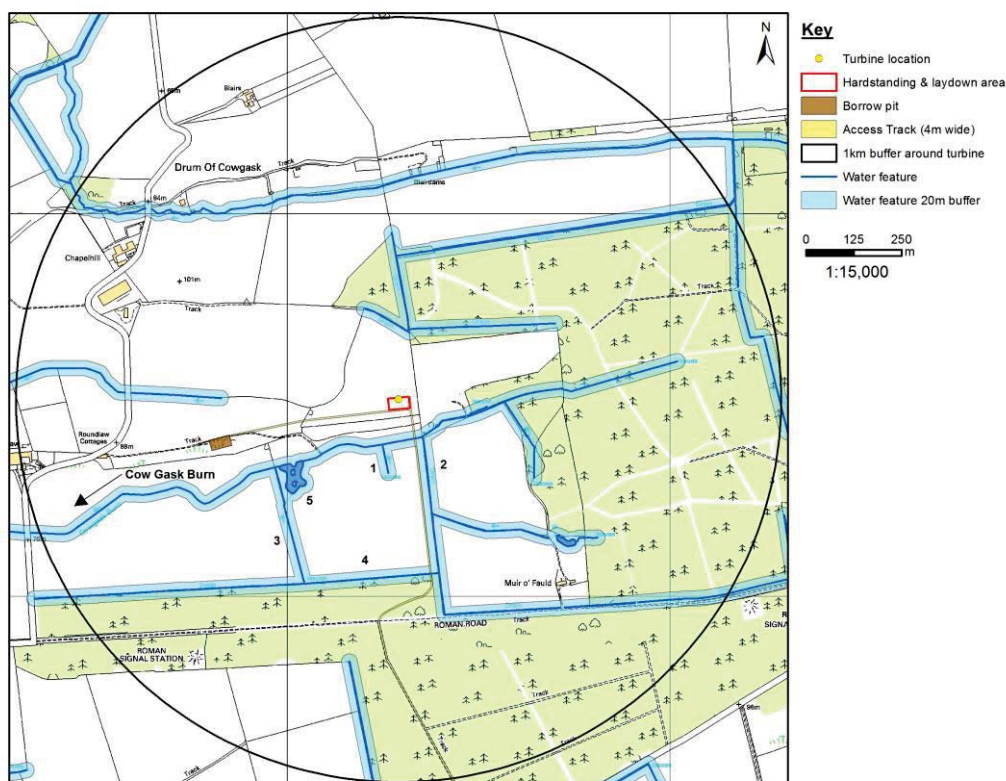


Figure 11: Water courses (as shown on OS 1:10k map)

Groundwater

Groundwater is present under most landforms, although some geological formations are more permeable than others.

A review of the Groundwater Vulnerability Map of Scotland indicates that the site is located within an area of low to medium vulnerability of groundwater in the uppermost aquifer and should therefore not pose any major problems on groundwater aquifers in the general area.

Consultation was carried out with Perth and Kinross Council's Environmental Services to better understand the presence of any private water supplies that may be in use within the development area. The response indicated that although there are records of private water supplies in the area, none are within 1km of the site location and are therefore unlikely to be the cause of any concern.

There are no known wells within 1km of the development site and therefore no further assessment was on groundwater aquifer's was carried out.

Hydrogeology

Any ground water within the area may be used as a source of water and is also important for irrigation within agricultural areas. The hydrogeology at the site has been assessed to determine whether any groundwater at the site is at risk of contamination.

A GIS review of the bedrock geology for the area indicates the site is likely to be made up of rocks belonging to the Arbutnott - Garvock group sandstone. The superficial geology consists of a mix of till sedimentary deposits.

A review of the Hydrogeological Map of Scotland indicates that the site is primarily made up of lower and middle old red sandstone and is considered to have a medium aquifer production rate due to its fissures and other discontinuities present. These strata are therefore classified as locally important aquifers within the Strathearn area.

Water Resources

Consultation carried out with Scottish Water indicates that none of their assets would be affected by the proposed development.

Perth and Kinross have advised of a number of private water abstractions around the site but none within 500m of the exact turbine site. Little information is available on exact details for these private supplies but a map courtesy of Scottish Water (Figure 12) indicates approximate positions below. The primary water main is shown as the light blue line, with private connections indicatively displayed as dark grey lines from the water main to relevant residential property.

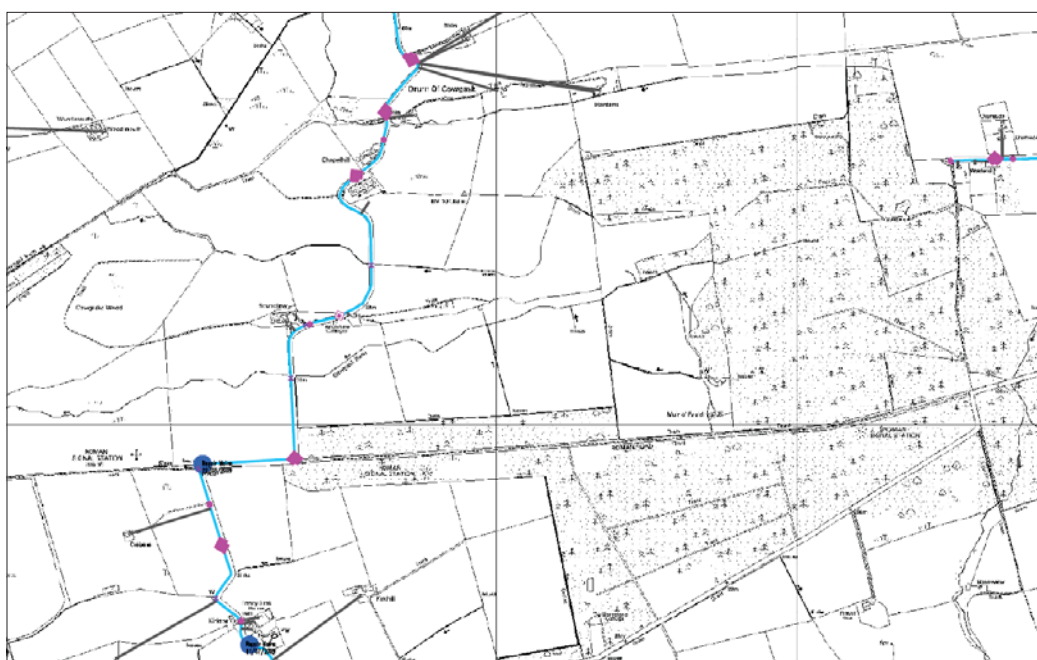


Figure 12: Water resources map

9.5 Assessment & Significance of Potential Effects

Surface Water

As previously described there are a number of drainage water courses that feed Cow Gask Burn. As the turbine will not be in the lower field, any impact on turbine foundations at required depth is therefore unlikely.

With regards to the risk of pollution during the install phase, trenching activities during construction have the potential to introduce new drainage pathways at the site and produce silt laden run-off. There is also the risk that the drainage ditches could be contaminated by chemical spillages at the site. These risks can be mitigated during the construction phases, as shown in Table 3 of this section.

Groundwater

As described previously, there are not considered to be any private water supplies within the area that utilise groundwater from the site. It is therefore deemed to be a negligible potential risk that any useable groundwater beneath the site may be vulnerable to contamination from required works during construction.

In order to protect the bedrock from entry of contaminants, mitigation measures will be put in place to deal with possible (however unlikely) concrete displacement within the bedrock.

The turbine foundations will be dug at a depth of approximately 1.4 m, and it is considered unlikely that groundwater may be present at this level. This will be examined during the ground truth works and will determine whether disposal of groundwater at the foundations is necessary.

9.6 Site Design - Effects & Mitigation

Mitigation measures for this development primarily focus on preventing the pollution of watercourses and groundwater aquifers.

Access Works

A new crossing of the Cow Gask Burn is required to reach proposed turbine location. The stream crossing would be covered by the Controlled Activity Regulations (CAR), administered by SEPA and separate to the planning process.

All construction work shall be authorised under SEPA CAR. A silt mitigation method statement will be produced before construction.

Environmental Construction Best Practice

As with any construction project, there is a risk of a pollution spill that may flow into nearby watercourses or sink into the water table and contaminate groundwater. These risks can be dealt with satisfactorily through use of best practice construction methods.

Environmental damage, as a result of the inadequate storage or misuse of any substance hazardous to health, will be avoided by adopting the principal contractor's COSHH procedures.

During construction, any oil, fuel or other chemicals will be stored in a suitable temporary storage area. Oil and lubricants will be stored within the confines of a bund and or banded container. Locks will be fitted to all fuel storage tanks or containers. There shall be a nominated trained person to oversee refuelling and delivery and to ensure there is no spillage.

In event of potential risk, emergency procedures will be prepared and pollution control equipment provided, such as "spill kits" and absorbent granules. These will also be carried by appropriate vehicles on site. The above arrangements shall be adopted both during the construction period and the operational phase of the development.

Table 3: Potential Environmental Mitigation Measures

	Drainage System	Why?	Where?	Incorporated Features?	Restrictions
1	Open Ditches	To utilise naturally occurring ditches.	Primarily within hags as the natural watercourse usually exists along the base at one side.	Baffles can be introduced to reduce flow velocities where necessary. Straw bales can also be used in addition to these to reduce flow. Regular maintenance of straw bales required to remove silt build up behind the straw bales.	None.
2	Pipelines	To allow water to be transferred in areas where access track construction would dissect watercourses or where flows need to be channelled to other watercourses.	In areas where the natural watercourse would intersect the location of proposed access track construction or into adjacent hags/ditches where no construction is taking place and the water can be further diverted to a settlement lagoon.	Base boarding or stone pitching can be implemented beneath the resurgence of the pipeline to minimise the effect of erosion caused by the water.	None.
3	Flow reduction by sumps and filtration	To reduce fast flows and thus reduce the scale of potential erosion. Material within the water flow can also be collected effectively.	At frequent intervals where heavy material collection is a problem, primarily in areas which have been freshly disturbed. Areas with high flows and/or steep gradients are more susceptible to material problems and the locations of these traps should cater for this.	Silt build up shall be monitored weekly and the sumps will be cleaned to ensure that the maximum available volume is maintained. Removed material will be disposed of as appropriate. Filtration methods include installation of straw bales and baffles. These two methods will reduce the flow rate and trap silt. Sump depth will be attained by the extent of flow and volume of water within the drainage ditch.	Sumps will be inspected on a weekly basis and cleaned out at regular intervals to maintain their effectiveness. Sumps can only be constructed within the hags/ditches. No peat can be excavated to accommodate sumps.
4	Settlement Lagoons	To act as a temporary storage area whilst the suspended solids settle before dispersing the cleansed water into the natural vegetation or onto a further watercourse	Mainly at the foot of hags/ditches to collect water which has travelled down within them. The size of the lagoon is dependent on the allowable area within the hag/ditch. It would also be advantageous to position lagoons nearby the areas set for turbine construction.	Constructed above or below ground using straw bales and/or suitable clays. The bales will be held in place with wooden stakes and the lagoon lined with a Terram membrane to assist in filtration. A clean stone base may be incorporated to hold the Terram in place. Silt build up shall be monitored weekly and the lagoons will be cleaned to ensure that the maximum available volume is maintained.	To be in agreement with the Environmental Clerk of Works (ECOW) and geotechnical advisor prior to draining. Settlement lagoons shall be inspected and regularly cleaned out
5	Pumping	The primary use of pumps will be to dewater the deep excavations formed for the turbine bases.	Turbine base and anemometer locations.	None.	Pumped water may be fed to a settlement lagoon or "Siltbuster" prior to any further discharge: The resulting clean water will only be allowed to discharge into vegetation where agreed with the ECOW, otherwise it must be released into a watercourse via straw bales to minimise the risk of bed scour.
6	Siltbusters	To remove silt from water that is heavily contaminated.	Primarily turbine base locations, however their site wide use may be applicable if necessary.	None.	None.

9.7 Conclusion

The majority of potentially significant negative impacts on water quality are only predicted to occur in the short term through potential increased sediment run-off and pollution/spillage during the construction phase.

It is therefore anticipated that the adoption of best practice management and control procedures by all site personnel and the implementation of the mitigation measures outlined, will reduce the amount of overall risk. Mitigation measures undertaken throughout the construction phase will be carried out in accordance to relevant SEPA guidance and legislation, along with on-going discussions with these groups.

10 Noise

The following noise assessment was undertaken by Environmental Noise Solutions Limited, for the single turbine proposal at Trinity Gask.

10.1 Introduction

Environmental Noise Solutions Limited (ENS) has been commissioned to undertake an assessment of the potential noise impact on local residents associated with the proposed installation of a single wind turbine at Trinity Gask Estate, Perth & Kinross.

The proposal consists of the erection of a single 400 kW wind turbine (Model No. T400-34, manufactured by Turbowinds) on a 50 m free-standing tower with a cut in wind speed specified as 3 metres per second.

The proposed wind turbine is to be installed on an open tract of land near the northern boundary of the estate, at grid reference **E297290 N719514**, with the nearest noise sensitive receptors (NSRs) considered to be:

- **NSR1** - 'Blairdams' (a pair of residential dwellings) to the north, with the assumed garden areas of these properties situated at approximately 580 metres to the proposed wind turbine;
- **NSR2** - 'Drumgowan' (residential dwelling) to the north north west, with the assumed garden area of this property situated at approximately 630 metres to the proposed wind turbine;
- **NSR3** - 'Chapelhill Robertson' (residential dwelling) to the north west, with the assumed garden area of this property situated at approximately 725 metres to the proposed wind turbine;
- **NSR4** - 'Chapelhill Peock' (residential dwelling) to the west north west, with the assumed garden area of this property situated at approximately 725 metres to the proposed wind turbine; and
- **NSR5** - 'Roundlaw Cottage' (residential dwelling) to the west, situated at least 775 metres to the proposed wind turbine.

A site plan illustrating the relative location of the proposed wind turbine and the nearest NSRs is contained in Noise Appendix 1 for reference.

This report has been prepared to accompany a planning application to be submitted to Perth & Kinross Council for the proposed wind turbine.

This report has been prepared for Realise Renewables LLP for the sole purpose described above and no extended duty of care to any third party is implied or offered. Third parties making reference to the report should consult ENS and Realise Renewables LLP as to the extent to which the findings may be appropriate for their use.

The information reported herein has been based on the wind turbine manufacturer's noise emission data and has been accepted in good faith as being accurate and valid.

A glossary of acoustic terms is contained in Noise Appendix 2 for reference.

10.2 ETSU-R-97 Assessment Criteria

Principles and guidelines for the environmental assessment of wind turbine related noise are given in the report entitled ETSU-R-97 'The Assessment and Rating of Noise from Wind Farms', based on the findings of the Working Group on Noise from Wind Turbines.

This document describes a framework for the measurement of wind turbine noise and suggests noise limits to offer a reasonable degree of protection to the neighbouring properties, whilst, at the same time, bearing in mind the significance of wind turbine development as a renewable energy source.

ETSU-R-97 recommends the imposition of noise limits set relative to the existing background noise (except in low noise environments, where lower absolute noise limits apply) at the nearest noise sensitive properties, taking into consideration the variation in both turbine source noise and background noise with wind speed.

ETSU-R-97 considers that the $L_{A90, 10 \text{ min}}$ descriptor should be used for both the background noise and wind turbine noise for assessment purposes. It further states that the $L_{A90, 10 \text{ min}}$ for wind turbines is of the order of 1.5-2.5 dB lower than the L_{Aeq} over the same time period.

The following table shows the recommended noise limits for wind turbine related noise at the nearest noise sensitive properties in line with ETSU-R-97.

Noise Table 1 – ETSU-R-97 Noise Limits for Wind Turbine Related Noise

Period	Lower absolute noise limit $L_{A90, 10 \text{ min}}$ (dB)	Relative noise limit $L_{A90, 10 \text{ min}}$ (dB)
Daytime (07:00–23:00)	35 – 40	5 dB(A) above background noise
Night time (23:00–07:00)	43	5 dB(A) above background noise

Note: At low wind speeds (where background noise is expected to be quieter), the lower absolute noise limits apply, until the background noise has risen to within 5 dB of this level (as wind speed increases) wherein the relative noise limits come into force.

10.3 Turbine Noise Emissions

The noise emission data for a 'Turbowinds T400-34' Wind Turbine has been taken from the Wind Turbine Noise Performance Assessment prepared by Dragonfly Acoustics (Report Reference DACC0617-R1 dated October 2011).

The noise performance assessment states that the sound power level (L_{WA}) of the wind turbine varies from 95.4 dB(A) to 96.1 dB(A), respectively, under wind speeds ranging from 5 metres per second to 10 metres per second (measured at 10 metres height).

The assessment further states in Para 5.2 that '*The presence of tones has been determined for wind speeds of 4-10 m/s following the procedure set out in IEC EN 61400-11*', although the tonal audibility (and associated level of ETSU-R-97 tonal penalty) is not stated. For the purpose of this assessment, a robust, worst case position has been adopted and the maximum ETSU-R-97 tonal penalty of 5 decibels has been applied.

In accordance with ETSU-R-97, the $L_{A90, 10 \text{ min}}$ descriptor has been used for the purpose of this assessment, by applying a -2 dB correction to the predicted SPL at the receptor positions.

Of particular importance is the way noise propagation from wind turbines is modeled since this is not covered by the ETSU-R-97 guidance which only deals with assessment of any such predicted noise levels. This issue was covered by a recent statement on agreed practice by a number of consultants acting for wind farm developers, local authorities and third party groups in an article published in the Institute of Acoustics Bulletin in 2009 (as reproduced in the Hayes McKenzie Partnership Ltd Research Contract 'Analysis of How Noise Impacts are Considered in the Determination of Wind Farm Planning Applications', dated 6 April 2011 prepared for Department of Energy and Climate Change). In summary:

- Atmospheric absorption increases linearly with distance, affecting higher frequency sound more than lower frequency sound and varying with temperature and relative humidity. It is not appropriate to model all the possible variations in temperature and relative humidity so a reasonable worst case is usually assumed. It should be noted that this is covered by the Institute of Acoustics Bulletin Article which recommends the assumption of a temperature of 10 degrees Celsius and relative humidity of 70 percent.
- Ground attenuation is caused by the interaction of the direct sound wave from the source with that reflected by the ground which depends, in turn, on the acoustic impedance of the ground between the source and receiver. This is modeled in different ways by different prediction methodologies but all categorize the ground around and between the source and receiver as hard, porous, semi-porous or other variant. In general terms 'hard' ground represents a more conservative approach (higher predicted noise levels) than 'porous' ground (lower predicted noise levels). This is also covered by the Institute of Acoustics Bulletin Article which recommends the assumption of semi-porous ground ($G=0.5$) where manufacturers' warranted sound power level data is assumed, or alternatively where reported sound power level data including measurement uncertainty is assumed. Where test report data alone is assumed, it recommends the use of $G=0$ (hard ground).
- Although the assumed receiver height can have a very small (miniscule) effect on the separation distance between source and receiver and also (similarly miniscule in most cases) on barrier/screening attenuation, it can have a more significant effect on the ground attenuation. The Institute of Acoustics Bulletin Article recommends the assumption of a 4 m receiver height.

In order to calculate the free field equivalent continuous sound pressure level ($L_{Aeq, T}$) associated with the operation of the wind turbine at the nearest NSRs, the following relationship may be employed:

$$SPL = SWL - 20 \log(r) - 11 - A \quad \text{dB(A)} \quad \text{where:}$$

- SWL is the rated sound power level of the wind turbine (dB(A))
- SPL is the predicted sound pressure level at the receptor position (dB(A))
- r is the distance to the receptor (580 metres to NSR1, 630 metres to NSR2, 725 metres to NSR3 & NSR4 and 775 metres to NSR5)
- A is attenuation due to atmospheric absorption, ground effect, barriers and miscellaneous effects.

On the basis of the above, and with reference to the noise emission data, noise emissions associated with the proposed wind turbine have been calculated at the nearest NSRs as detailed in the table below (rounded to the nearest tenth of a decibel).

Noise Table 2 – Predicted noise levels (dB L_{A90, 10 min}) due to proposed wind turbine

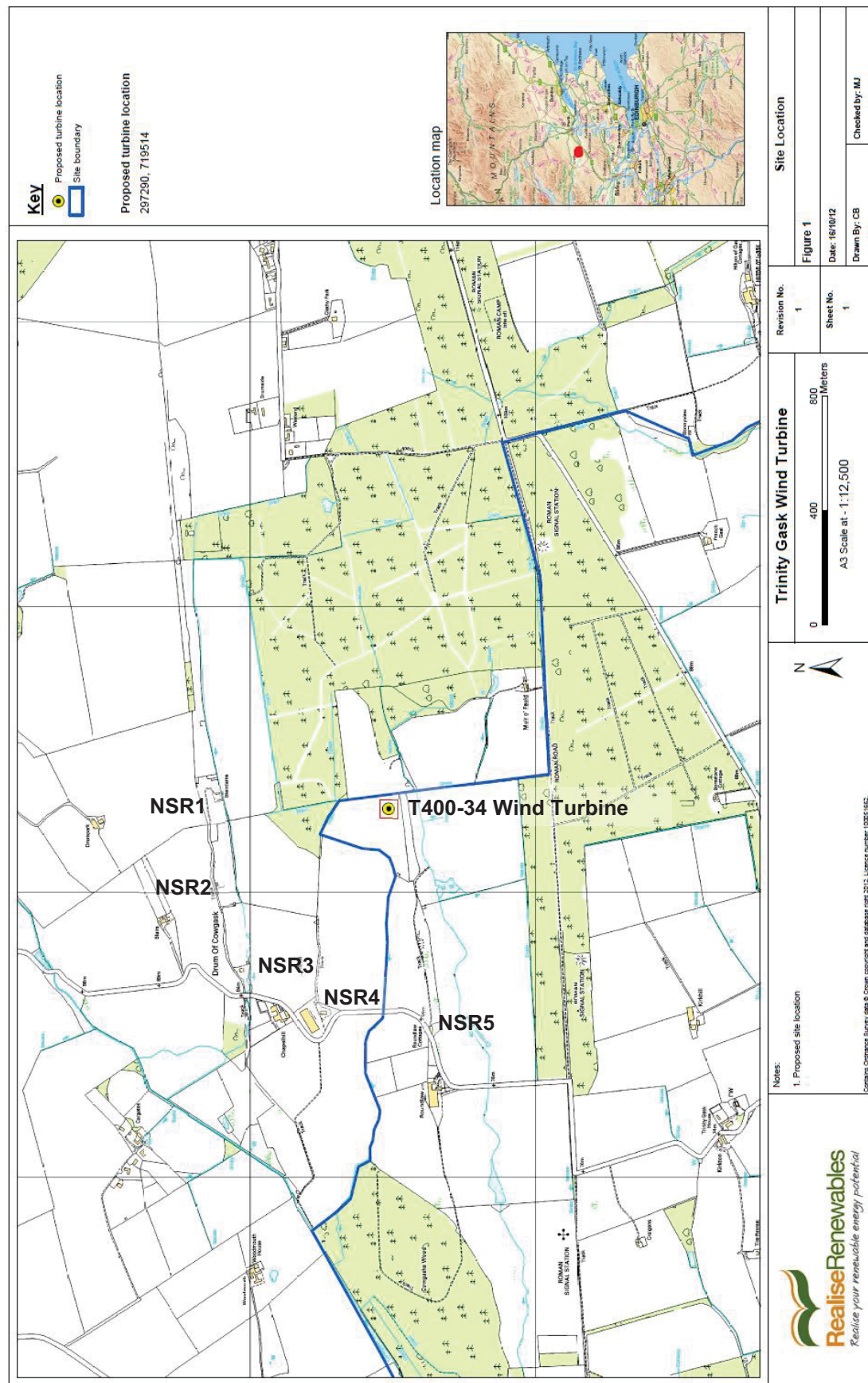
Wind Speed	Sound Power Level plus Tonal Penalty dB(A)	Predicted Wind Turbine Noise Level at NSR1	Predicted Wind Turbine Noise Level at NSR2	Predicted Wind Turbine Noise Level at NSR3 & NSR4	Predicted Wind Turbine Noise Level at NSR5
5	100.4 (95.4+5.0)	33.0	32.2	30.7	30.0
6	100.4 (95.4+5.0)	33.0	32.2	30.7	30.0
7	100.4 (95.4+5.0)	33.0	32.2	30.7	30.0
8	100.9 (95.9+5.0)	33.5	32.7	31.2	30.5
9	101.0 (96.0+5.0)	33.6	32.8	31.3	30.6
10	101.1 (96.1+5.0)	33.7	32.9	31.4	30.7

10.4 Conclusion

On the basis of the predicted noise levels detailed in Table 2, it is evident that noise emissions at the surrounding noise sensitive receptors due to the operation of the proposed Turbowinds T400-34 wind turbine will be less than 35 dB L_{A90, 10min} up to a wind speed of 10 metres per second at 10 m height. In accordance with the guidance contained in ETSU-R-97, this is deemed sufficient to provide an adequate level of protection against noise.

It is therefore considered that noise emissions associated with the operation of the proposed Turbowinds T400-34 wind turbine should not cause any unacceptable loss of amenity to the occupants of the surrounding noise sensitive receptors.

NOISE APPENDIX 1 – PROPOSED WIND TURBINE LOCATION WITH NEAREST NSRs



NOISE APPENDIX 2 – GLOSSARY OF ACOUSTIC TERMS

Sound Pressure Level (L_p)

The basic unit of sound measurement is the sound pressure level. As the pressures to which the human ear responds can range from 20 μPa to 200 Pa, a linear measurement of sound levels would involve many orders of magnitude. Consequently, the pressures are converted to a logarithmic scale and expressed in decibels (dB) as follows:

$$L_p = 20 \log_{10}(p/p_0)$$

Where L_p = sound pressure level in dB; p = rms sound pressure in Pa; and p_0 = reference sound pressure (20 μPa).

A-weighting Network

A frequency filtering system in a sound level meter, which approximates under defined conditions the frequency response of the human ear. The A-weighted sound pressure level, expressed in dB(A), has been shown to correlate well with subjective response to noise.

Equivalent continuous A-weighted sound pressure level, $L_{Aeq, T}$

The value of the A-weighted sound pressure level in decibels of continuous steady sound that within a specified time interval, T , has the same mean-square sound pressure as a sound that varies with time. $L_{Aeq, 16h}$ (07:00 to 23:00 hours) and $L_{Aeq, 8h}$ (23:00 to 07:00 hours) are used to qualify daytime and night time noise levels.

$L_{A10, T}$

The A-weighted sound pressure level in decibels exceeded for 10% of the measurement period, T . $L_{A10, 18h}$ is the arithmetic mean of the 18 hourly values from 06:00 to 24:00 hours.

$L_{A90, T}$

The A-weighted sound pressure level of the residual noise in decibels exceeded 90% of a given time interval, T . L_{A90} is typically taken as representative of background noise.

$L_{AF \max}$

The maximum A-weighted noise level recorded during the measurement period. The subscript 'F' denotes fast time weighting, slow time weighting 'S' is also used.

Sound Exposure Level (SEL or L_{AE})

The energy produced by a discrete noise event averaged over one second, no matter how long the event actually took. This allows for comparison between different noise events which occur over different lengths of time.

Weighted Sound Reduction Index (R_w)

Single number quantity which characterises the airborne sound insulation properties of a material or building element over a defined range of frequencies (R_w is used to characterise the insulation of a material or product that has been measured in a laboratory).

NOISE APPENDIX 3 – SOUND POWER LEVEL DATA

DACC0617 – R1 – Turbowinds T400-34 Noise Performance Assessment
October 2011



5.0 CALCULATION OF SOUND POWER LEVEL

The corrected Operational Noise Levels have been used to calculate the values for the Apparent Emission Sound Power Level at each integer wind speed as explained above.

Table 5.1
Calculation of Apparent Emission Sound Power Levels, dB

Wind Speed, m/s, at Reference Height	3	4	5	6	7	8	9	10
Operational Noise Level corrected for Background Noise, dB	51.4	51.7	52.0	52.0	52.0	52.5	52.6	52.7
Apparent Sound Power Level, dB L_{WA}	--	--	95.4	95.4	95.4	95.9	96.0	96.1

5.1 1/3rd Octave Band Levels

As stipulated by IEC 61400-11, the two 1-minute average periods closest to each integer wind speed have been used to calculate the energy average 1/3 octave band spectra between 20 and 20kHz for the operational turbine noise.

The results are plotted at Appendix E, It should be noted that for the wind speed of 10m/s no background noise data was available so data for 9m/s was substituted.

5.2 Tonality

The presence of tones has been determined for wind speeds of 4-10 m/s following the procedure set out in IEC EN 61400-11. The results of the assessment are shown at Appendix F.

It should be noted that this tonality assessment can only be considered valid for this specific test location; the identified tonal characteristics may be due to particular local maintenance factors rather than any inherent design feature or material quality of this type of turbine. It is recommended that further testing be undertaken for tonality on a new installation test bed as soon as one is available.

5.3 Uncertainty

The uncertainty of the measurements completed has been assessed in accordance with the procedure detailed in BS EN 61400-11, Annex D. This evaluation of the uncertainty uses calculated values which are based on the measured values and it also uses assumed values provided in the guidance within the standard.

11 Shadow Flicker

11.1 Introduction

This section considers the potential shadow flicker impact on local properties from the proposed wind turbine during operation.

Policy Guideline 6 (Operational Impacts) of the PKC Supplementary Planning Guidance is relevant for the development and outlines the requirement for considering shadow flicker effect on residents.

‘Wind energy proposals will be encouraged except in locations where it has been assessed that there would be a significant adverse impact on the amenity of any dwelling within 20 hbt (height to blade tip) distance of a turbine, which cannot be mitigated, or where no assessment, satisfactory to the Council, has been made of the effects of noise, shadow flicker, construction traffic, and electromagnetic interference.’

As there are a number of house within 20 hbt distance of the proposed turbine, shadow flicker assessment has been carried out as per detailed below.

11.2 Guidance

The Scottish Government online guidance for Onshore Wind Turbines (updated 24/10/2012), addresses shadow flicker:

‘Under certain combinations of geographical position, time of day and time of year, the sun may pass behind the rotor and cast a shadow over neighbouring properties. When the blades rotate, the shadow flicks on and off; the effect is known as “shadow flicker”. It occurs only within buildings where the flicker appears through a narrow window opening. The seasonal duration of this effect can be calculated from the geometry of the machine and the latitude of the potential site.

Where this could be a problem, developers should provide calculations to quantify the effect. In most cases however, where separation is provided between wind turbines and nearby dwellings (as a general rule 10 rotor diameters), “shadow flicker” should not be a problem, However, there is scope to vary layout/reduce the height of turbines in extreme cases.’

11.3 Impact Assessment

There are no residential dwellings within the 10 x rotor diameter distance from the proposed turbine location.

With regards to the shadow flicker assessment guidance, the proposed turbine should be located at least 340m (10 x rotor diameter) from the nearest residential dwelling for shadow flicker to be not considered an issue.

Given that the closest residence is located approximately 580m away (H7) from the proposed turbine no effects on residential amenity, in terms of shadow flicker, are anticipated.

11.4 Conclusion

Based on the above, it has been demonstrated that the effect of shadow flicker is considered to have no actual impact on residents’ amenity.

12 Other Considerations

12.1 Aviation & Radar

Ministry of Defence

The Ministry of Defence was consulted on the proposed turbine at the original position and received clearance for a single wind turbine the site location. On further revision (received 12/10/2011), this has been stated clearance for the revised position of **NGR 297290, 719514** at 67 m to blade tip with a request for aviation lighting only. The MOD response is contained in Appendix 5.

Civil Aviation

The NATS self-assessment maps have been reviewed and a turbine of the height proposed is shown as not visible on the maps and as a result of this no issues are anticipated. In addition to this, consultation with NATS confirmed that the site is outside the consultation zones for Aberdeen, Edinburgh and Glasgow Radars. Dundee Airport does not have a radar so is of no concern.

Dundee Airport is approx. 40 km from the site and according to CAA Policy and Guidelines on Wind Turbines (CAP 764). This should present no concern to the operation of Dundee Airport, being outside of the 17 km consultation zone required here. Further consultation with Highland and Islands Group of Airports (HIAL) has also confirmed this.

Perth Airport is approx. 20 km from the site and according to CAP 764, this should present no concern to the operation of Perth Airport being outside of the 5 km consultation zone required here. Further consultation with the airport operator suggested anything outside a 10 km distance would not be a major concern.

The private airfield at Strathallan, which is a parachute training centre, is approximately 6 km from the site and according to CAP 764, this should present no concern to the operation of the airfield, being outside of the guideline 3 km consultation zone stated.

12.2 Telecommunications & Television

Telecommunications

Consultee	Response
Ofcom	Identified one link within a 500 m radius from the proposed turbine. Link ref: 0458214/2 (Everything Everywhere Limited)
Atkins Global	No objections
Joint Radio Company	No objections
Cable & Wireless Worldwide	No objections

The end co-ordinates of the fixed link identified by Ofcom was requested from the link operator and plotted, as described below:

- 0458215/2 (Everything Everywhere Ltd): Further consultation was carried out and it was confirmed that there were no objections to the proposal.

Television

A BBC online assessment check was carried out which highlighted that a small number of homes in the area may be affected. In the unlikely occurrence of any adverse effects with regards to television interference, these can be resolved through technical solutions and will be agreed between the applicant and Council if appropriate.

Possible mitigation measures may include:

- Upgrading of existing receivers;
- Replacement of receiving aerials;
- Retuning of television receivers; and
- Provision of satellite/digital services to affected households.

12.3 Existing Infrastructure

A Linesearch request was submitted for the proposal to identify the proximity of existing infrastructure in the vicinity of the proposed turbine. A response was received that no further actions was necessary.

Additionally, Scottish Water was consulted. No infrastructure was identified within the vicinity of the turbine location. However, there is a water main identified which runs along the local road through Roundlaw/Chapelhill. As the access track will come from the Borestone Cottage side, there will be no need to cross the water main at any stage of the install.

12.4 Conclusion

It has been assessed that all listed items as part of this chapter are unlikely to cause any operational problems - for local residents' considerations and the smooth running of the turbine.

13 Tourism and Socio-economic Impact

13.1 Introduction

This section will outline the socio-economic profile of the area as well as describing the tourism and recreational activity within the area. An assessment has been made on the effect of the proposed wind development on the local economy and tourism sector through consideration of the key business and tourist sites in the region and any relevant study regarding the social/economic impact of wind farms. Socio-economic effects may include direct effects such as job creation, and indirect effects such as potential effects on tourism in the area.

The assessment was based mainly on a review of published information, and on outputs produced in support of this planning application.

13.2 Baseline and Assessment of Potential Effects

Tourism

Scottish Government Research

In terms of effects to tourism, research commissioned by the Scottish Government (The Economic Impacts of Wind Farms on Scottish Tourism, 2008), indicates that harnessing Scotland's renewable potential will have minimal impact on the growth of Scotland's already thriving tourism industry.

The majority of tourists who were surveyed as part of the study felt that wind farms had a positive or neutral effect on the landscape and it was almost unanimous that the presence of wind farms would have no impact on making a return visit to Scotland.

As this study is primarily focussed on 'wind farms' and not smaller scale developments such as single wind turbines it is important to note that while much of the report will still be relevant towards all scales of wind energy, the magnitude of development is generally reduced with only a single wind turbine proposed.

Local Tourism

The economy of Perth and Kinross has a higher than average reliance on service industries, including tourism. It is anticipated that the proposed wind turbine will become a positive feature along the A822 Perthshire Tourist Route, with only minor vantage points present.

The wind turbine will not detract from tourism in Perth and Kinross and will not prevent access to the area for informal recreation, with effects on recreation being neutral.

An assessment of the key driving routes within 15km of the site has been carried out by looking at primary roads on the ZTV results.

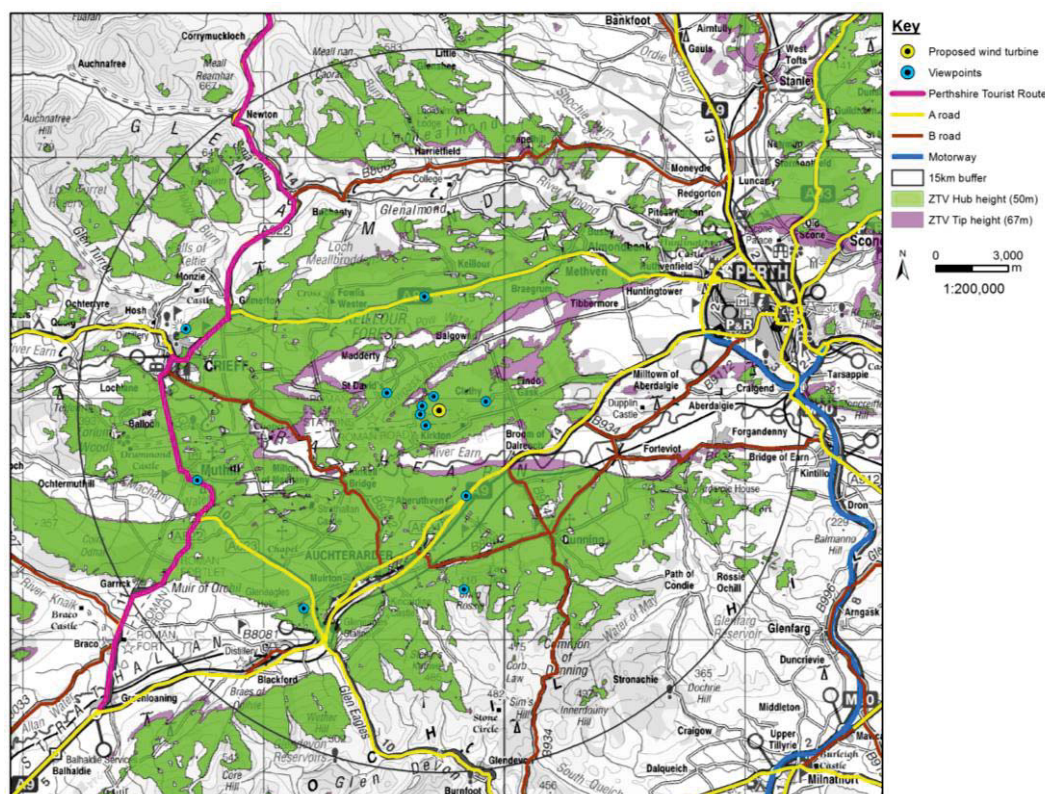


Figure 13: Primary driving routes/ZTV map

Figure 13 above indicates primary driving routes with selected viewpoints overlaid on the unscreened ZTV results.

As indicated, there are a number of areas where visibility is likely, however this does not take into account the effect of screening of natural woodlands and existing development, which can be compared in LVIA Figure 4.

In addition, while these areas are assessed to have theoretical visibility of some part of the turbine, it is important to note the magnitude of the development - this being a single turbine, and the fact it has been located and designed within the existing landscape and not on a locally prominent high point.

Site of Specific Tourism Interest

Gleneagles

Gleneagles is an important area for tourism in Perth and Kinross and is home to a number of coveted hotels and golf courses. As shown on the map above, visibility of the turbine is thought likely if screening is excluded, but once screening elements are introduced, this likelihood is diminished. Gleneagles is approximately 10km away from the site, which is considered to be more than adequate clearance - both from a visual and tourist amenity point of view.

Roman History

As demonstrated in the Cultural Heritage and LVIA chapters, the impact on Roman history sites of interest have been managed and mitigation measures introduced. It is not considered there will be

any adverse significant impact on any sites of Roman history due to its siting within the landscape and magnitude of development.

Perthshire Tourist Route

The Perthshire tourist route is an alternative to the main trunk roads in the region. It helps to show the diverse local landscapes, with its many attractions and recreational sites. The route is approximately 45 miles in length and extends from just north of Dunblane to Ballinluig near Pitlochry. A section of the route appears within coverage of the ZTV area between Garrick and Crieff, although due to natural screening elements and existing development it is considered there will be no adverse significant effects towards users of this road.

A9

The A9 between Perth and Stirling is a key travelling route for both tourists and locals alike. As shown in Figure 13, likely ZTV coverage is only predominant in the section of highway between Aberuthven and Gleneagles. It is considered that due to the magnitude of development proposed and existing woodland screening and development that the effects on view towards the A9 will be moderate to minor, and therefore not of great concern.

Views from Crieff

Views from the Crieff area have been assessed from the recreational location at VP6 (Knock of Crieff) and visual impact here is considered moderate to minor, as further detailed in the LVIA.

Views from Ochils

Views from the Ochils towards the site have been assessed from the recreational location at VP4 (Craig Rossie summit) and visual impact here is considered moderate to minor, as further detailed in the LVIA.

Socio-Economic Impact

The wind turbine provides the opportunity for the Trinity Gask Estate to receive a steady income through diversification, which should provide for on-going investment into the estate with subsequent indirect benefits for the local economy. The economic effects of the proposed wind turbine will be long-term and on the whole will be positive and far reaching as more income is generated and distributed in to local community businesses.

Overall it is considered that the proposed wind turbine will have positive socio-economic effects.

13.3 Conclusion

Based on the above, it is considered that the proposed development will have an insignificant effect on tourism and a positive effect on socio-economic factors in the area. This is primarily due to the assessments carried out from reviewing the ZTV and specific tourist viewpoint outputs, but also due to the small scale and magnitude of the proposed development.

14 Safety

14.1 Introduction

Safety is an important consideration for any development project, as there are a number of potential hazards for the general public and contractors.

The greatest hazards occur during construction, repair works and decommissioning of turbines but the risks will be minimised by ensuring work is done by competent staff, following established methodologies which have been risk assessed in advance of the work. During the construction period, public access will be prevented and the site supervisor will ensure that safety is paramount.

14.2 Legislation & Safety

A nominated Health and Safety officer will be allocated to the site during construction phases and all works will be carried out in accordance with CDM regulations.

The wind turbine being considered for use at Trinity Gask Estate is designed and manufactured to industry standard and will withstand the weather extremes which can arise in Scotland.

14.3 Construction Best Practice

During the construction, decommissioning and operational phases; relevant guidance and standards as well as the SNH document 'Good practice during wind farm construction', will be adopted to maintain site safety and for the protection of ecology and hydrology interests.

All personnel working on the site will be formally inducted, covering topics including health and safety, environmental protection and pollution prevention.

Prior to commencing works, a detailed health, safety and environmental plan would be submitted to ensure a safe and coordinated approach to delivering the project.

15 Conclusion

This report establishes that this revised single wind turbine proposal complies with all the relevant national and local development policies and policy guidelines, and together with other specific assessments, demonstrates all key planning considerations have been addressed.

Key considerations have included:

- **Available land and access:** The site is large enough to accommodate the development without significantly affecting the current land operations, as well as maintaining sufficient clearance from other nearby properties in terms of visual impact and residential amenity. The revised proposal also demonstrates that a smaller rotor diameter will result in an overall reduced visual impact. The site is accessible to construction traffic and abnormal loads, and interruption during the construction phase is considered likely to be minimal.
- **Environmental and cultural heritage:** The application site is not located on any national or local designated sites for landscape and cultural heritage. In addition, there are no designated sites of ecological importance on the site.
- **Technical constraints:** Various technical constraints have been investigated, including noise, shadow flicker, aviation impact, and EMI microwave link interference. All constraints investigated are unlikely to cause any operational problems - for both optimal running of the turbine and local resident's considerations. It is also shown that the revised wind turbine has lower noise levels and even less of a shadow flicker impact than the previous application.

National planning policy is supportive of the principle of wind energy development, whilst highlighting the relevant planning and environmental criteria that will need to be considered for individual development proposals. Projects such as Trinity Gask Estate, which is estimated to generate enough electricity to supply the equivalent of 102 households per year and displace the equivalent of up to approximately 193 tonnes of CO₂ emissions per year from conventional forms of electricity generation, will make a significant contribution to achieving renewable energy targets and is considered a good example of a medium-scale wind energy scheme in the proposed location.

The proposed development is appropriately designed and sited (within an area of search for wind proposals); environmental and cumulative impacts would be satisfactorily addressed by the wind energy proposal, and the development would make a positive contribution towards Scottish Government's challenging goal of 100% of electricity from renewable energy sources by 2020.

This submission is the culmination of an iterative design process following consultation with a number of statutory agencies, including Perth and Kinross Council. In a responsible way and in the interests of good design this proposal has been significantly reduced in scale - firstly from 80m to 67m; and secondly - reducing the size of the blades, which has helped to reduce the potential for dominating the scale of other landscape features and helped to moderate the visual profile from the previous application.

Taking into account all policies relevant to the proposed development and material considerations, the development is in compliance with the overarching aims and objectives of the development plan policy and as such, it is requested that consent is granted for the development.

Appendix 1 - Landscape & Visual Impact

1) Landscape and Visual Impact Assessment Report

** All Landscape & Visual Impact figures
included in Volume 2*

Appendix 2 - Ecology

- 1) Phase 1 Habitat Report
- 2) Great Crested Newt Report
- 3) Mammal Report
- 4) Bat Report

** All Ecology figures
included in Volume 2*

Appendix 3 - Ornithology

1) Bird Report

** All Ornithology figures
included in Volume 2*

Appendix 4 - Visualisations Quality Statement

With reference to Perth and Kinross Council 'Guidance for the Preparation and Submission of Photographs and Photomontages to illustrate the impacts of Wind Energy Development; for inclusion in Planning Applications and Environmental Statements', the following points are noted:

1) ZTV Production Software

All ZTV figures have been produced in Resoft Windfarm software, and then presented in a final GIS map using ESRI ArcView.

2) Photograph Information

- a) The photography was taken by Atmos Consulting using a full frame fixed 50mm lens. The Camera used was a Canon 5D Mark II.
- b) The ISO rating, colour/white balance adjustments, date, time, aperture 'f' stop and shutter speed are all included in the metadata which is stored with each photograph. This is viewable in most photo viewing software. As an example, double clicking on a photograph in Microsoft picture viewer and then selecting to view more details will show all the metadata. Additionally, all metadata can be viewed in the image properties.
- c) The height of the photography was at 1.6m unless specified otherwise on the figure text.
- d) The photography conforms to the fields of view described in the SNH Good practice guidelines table (pg. 167).
- e) The electronic photograph images with associated metadata have been provided on CD ROM.

3) Photomontage Standards

The photomontage and wireframes have been produced using Resoft Windfarm software. The terrain dataset used was Ordnance Survey's Landform Panorama.

All photomontages are single frame only and have been produced as per specification, along with points taken from SNH Good Practice Guidelines and Highland Council's Visualisation Standards for Wind Energy Developments.

All photomontages have been produced for viewing in A3, at a correct viewing distance of 500mm.

Appendix 5 - Consultee Responses

- 1) MOD response - dated 12 October 2011
 - 2) Perth and Kinross Council screening response - dated 25 October 2010
 - 3) Email from Garry Dimeck re: screening matter - dated 26 September 2011
 - 4) Email from Oliver Lewis, Historic Scotland - dated 3 October 2011
-



MINISTRY OF DEFENCE

Clint Betteridge
 Realise renewables
 26 Forth Street
 Edinburgh
 EH1 3LH

Your Reference:**Our Reference:** DE/C/SUT/43/10/1/12397

Dear Mr Betteridge

COMMERCIAL IN CONFIDENCE

Defence Infrastructure Organisation

Beverly Fletcher
 Assistant Safeguarding Officer
 Safeguarding - Wind Energy
 Defence Infrastructure Organisation
 Kingston Road
 Sutton Coldfield
 West Midlands
 B75 7RL

Tel: 0121 311 2010
 Facsimile: 0121 311 2218
 E-mail: beverly.fletcher@de.MOD.uk
 Internet Site: www.defence-estates.MOD.uk

12 October 2011

DE Reference Number: 12397**Site Name: Trinity Gask**

I am writing to tell you that the Ministry of Defence (MOD) has no concerns with the proposal as set out in your pro-forma dated 15 July 2011.

The application is for 1 turbine at 67 metres to blade tip. This has been assessed using the grid reference below as submitted in your pro-forma.

Turbine	100km Square Letter	Easting	Northing
1	NN	97290	19514

In the interests of air safety, the MOD requests that the turbine is fitted with aviation lighting. All turbines should be fitted with 25 candela omni-directional red lighting or infrared lighting with an optimised flash pattern of 60 flashes per minute of 200ms to 500ms duration at the highest practicable point.

If the application is altered in any way we must be consulted again as even the slightest change could unacceptably affect us.

If you apply for planning permission you must ensure that the relevant planning authority consults this office to ensure that no concerns have arisen since the date of this letter.

If planning permission is granted you must tell us;

- 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.

It should be noted that this response is based on current levels of wind farm development in the area. If additional wind farms are consented or built prior to this development being submitted for planning consent, our position may change.

COMMERCIAL IN CONFIDENCE

1) MOD response, dated 12 October 2011

Delayed Office Opening for Employee Training
This Office will be closed from 8.45 am – 11.00 am on the 1st Thursday of each month.

Atmos Consulting Ltd
 In-Business Centre
 Stadium Business Park
 24 Longman Drive
 Inverness
 IV1 1SU

Fao Chris Yendell

Dear Chris,

**Re: EIA Screening Opinion
 Schedule 2 Development 3(i) – Erection of single 80m Wind Turbine on land at Trinity Gask, nr Perth**

I attach here the Council's formal response to your recent request received in this Office on the 6th October 2010, for a Screening opinion under the EIA Regulations.


You will note that the Council has adopted a screening opinion to the effect that, on the basis of the submitted information, this Schedule 2 Development would not be likely to have significant effects on the environment. Accordingly an Environmental Statement would not be required in this instance and I have not initiated a Scoping exercise.

I am satisfied that the appraisal report submitted for the screening/scoping exercise forms a good basis for identifying the environmental and planning information which should accompany any future planning application. In terms of the presentation of photomontage visual analysis, I attach here, for your attention, Guidance produced by the Council.


In terms of local issues of sensitivity not specifically covered by your report, I would also identify that the potential impacts of the development on tourism in the area should be addressed.

In terms of highway safety, the impacts of development when viewed from western and eastern approaches to the site from the A9T, should be considered.

I would also advise that consultation with Perth and Kinross Heritage Trust prior to finalising the archaeological appraisal is undertaken. The area generally is of significant archaeological interest because of the history of Roman occupation.

Yours Sincerely

 Garry Dimeck
 Planning Officer

p&t/supportservice/wp/current/2008/dstds/



PERTH & KINROSS COUNCIL
 The Environment Service

Planning
 Head of Service **Roland Bean**

Pullar House 35 Kinnoull Street
 Perth PH1 5GD
 Tel 01738 475300 Fax 01738 475310


Contact Garry Dimeck
 Direct Dial (01738) 475337
 E-mail: gdimeck@pkc.gov.uk

Our ref 10/01082/Pre App

Your ref

Date October 25 2010

Roads, Transport & Environment Services Tel 01738 476476
 Planning Tel 01738 475300
 Economic Development Tel 01738 477940


 Jim Irons
 Executive Director

2) Perth and Kinross Council screening response, dated 25 October 2010

Clint Betteridge

Subject: FW: Cumulative windfarms: Trinity Gask

From: Garry Dimeck [mailto:GDimeck@pkc.gov.uk]

Sent: 26 September 2011 11:45

To: Clint Betteridge

Subject: RE: Cumulative windfarms: Trinity Gask

Re: Trinity Gask Wind Turbine Proposal:

Clint – apologies for the delay in responding to the many emails you have sent through in the last couple of weeks relating to Trinity Gask. Other workload priorities have impacted on correspondence response times but I hope from our telephone discussions that you have not been hampered by the lack of formal replies to the queries you have raised.

From those calls I can confirm that:

- In relation to cumulative assessments I hope you have managed to make contact with Graham Esson in relation to the record of consented and proposed sites within the 50km radius you have identified. I am aware of a current 3 turbine proposal at Newburgh (Fife Council); we have just received a proposal at Glen Devon for Gleneagles Estates (2x turbines ref 11/01560/FLL) ; and discussions are on-going in relation to a proposal to increase the number of turbines at Burnfoot;
- The reduction in height of the approved met mast from 50m to 40m is agreed. I will separately write to you on this today formally agreeing this as a non-material variation to Planning Consent 11/00928/FLL;
- The bird diverter details submitted are agreed and would satisfy the requirements of condition 4 of that consent;
- The notification of commencement and completion is noted and I have updated my records accordingly. Condition 3 will now take effect;
- In relation to the revised siting of proposed mast, I can confirm that the proposal would trigger the need for a new Screening Opinion under the EIA Regs. This could be done now if a formal request is submitted. Do note however, that in the absence of that formal request screening would occur at application submission. My recollection is, based on the Screening exercise undertaken last time round, that there are no local sensitivities which would be compromised through re-siting so it would be unlikely that the need for an EIA would be triggered through re-positioning.

I hope this response is a help to you.

Regards

Garry Dimeck, Planner
26/09/11

Clint Betteridge

From: Oliver.Lewis@scotland.gsi.gov.uk
Sent: 03 October 2011 18:58
To: clint.betteridge@realiserenewables.com
Cc: SRMalone@pkc.gov.uk; gdimeck@pkc.gov.uk
Subject: RE: Pre-planning application consultation on a proposed 80m wind turbine at Trinity Gask, Strathearn

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Mr Betteridge,

Thank you very much for your emails of last week enclosing a photomontage of the revised turbine in its relocated position. I understand that the turbine has now been reduced in height from 77m to 67m, and it has been relocated slightly closer to the Gask Ridge.

I have taken a look through the photomontages provided, and have also looked at the ZTV, and have the following comments to make in addition to those made by email on 21 June 2011.

It is national policy that development which will have a significant adverse effect on the setting of a scheduled monument or the integrity of its setting should not be permitted unless there are exceptional circumstances.

It is considered likely, given the height of the proposed turbine, its location, and the local topography, that it will adversely affect the setting of several scheduled monuments associated with the Gask Ridge Roman frontier. It will be prominent in some outward views (northwards) from the frontier, and in more distant views when looking along the frontier.

As you are probably aware, significant adverse impact upon the setting of a scheduled monument would be contrary to national and local policy. However, in this instance we do not feel it likely that the magnitude of the proposed impact is such that we would raise an objection should this proposal come forward in its current form as a planning application in the future. Instead, it is more likely that we would express concerns about the turbine, but note that some mitigation has been undertaken (reduction in height) and that steps have been taken to assess what impact the turbine may have on various heritage assets.

However, should additional turbines be proposed for this location then we would need to reconsider our position.

I hope this is helpful for you, and I thank you for engaging in pre-application discussions with us.

Regards,

Oliver Lewis | Senior Heritage Management Officer (Ancient Monuments - North)

Historic Scotland | Alba Aosmhor
 Longmore House, Salisbury Place, Edinburgh, EH9 1SH
 t| 0131 668 8092
 m| 07824 518 200
 e| oliver.lewis@scotland.gsi.gov.uk

www.historic-scotland.gov.uk

1

4) Email from Oliver Lewis, Historic Scotland – dated 3 October 2011

**Trinity Gask, Perthshire
Extended Phase 1 Ecological Report**

A report to
Jamie Roberts, Trinity Gask Estate

Disclaimer

This report has been prepared by Atmos Consulting Ltd with all reasonable skill and care within the terms of the agreement with the Client and the time available. We disclaim any responsibility to any parties in respect of matters outside this scope.

Information supplied by the Client or any other parties and used in this report is assumed to be correct and Atmos Consulting Ltd accepts no responsibility for inaccuracies in the data supplied.

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Issue number	Reason for issue
10500-02/R1/Rev1	Report issued to client 3 rd November 2010
10500-02/R1/Rev2	Report reissued to client 18 th October 2011

Document prepared for

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APPENDICES

Appendix 1	NBN Gateway Listing for NN91
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FIGURES

Figure 1 Phase 1 habitats and target note locations

1 INTRODUCTION

Terms of Reference

- 1.1 Atmos Consulting Ltd was commissioned by Jamie Roberts of the Trinity Gask Estate, Perthshire to undertake an Extended Phase 1 Habitat Survey and prepare a summary report for a proposed single turbine, Feed-in-Tariff wind power scheme at a site on the Trinity Gask Estate, Perthshire. This report considers all aspects of terrestrial and aquatic ecology. In relation to ornithological issues the results of the NBN search and incidental records are listed but no further comment is made.
- 1.2 The application site (hereafter referred to as the Site) extends to approximately 92.5ha, and is situated approximately 15km to the west of Perth. It comprises lowland farmland which is currently used for mixed livestock grazing and crop production and sections of plantation woodland.
- 1.3 The main purpose of this extended Phase 1 habitat survey was to:
 - describe and map the habitats of the Site;
 - target note (TN) flora, evidence of protected species and other ecologically significant features;
 - assess the ecological value of the flora and habitats;
 - assess the potential of the habitats as suitable for protected species; and
 - collate species lists and TNs.
- 1.4 It is our understanding that the single turbine is to be located within an existing agricultural field to the north of the site at NN 97290 19514. Borrowpit and laydown areas will be located at approximately NN 968 194 with construction traffic access likely to access the site along the track from Roundlaw Cottages (NN 965 193). Additional access from the public highway will also be required at the south of the site (NN 975 183) along existing forestry track to meet the Roman Road at NN 972 189 then travelling west to meet the public highway again at NN 963 188 before travelling north to the track at Roundlaw Cottages.

2 LEGISLATIVE AND PLANNING POLICY CONTEXT

National Planning Policy and Legislation

- 2.1 National guidance on planning policy in Scotland is provided by the Scottish Executive in the form of **National Planning Policy Guidelines (NPPGs)**, which are presently being replaced by **Scottish Planning Policies (SPPs)**. **Planning Advice Notes (PANs)** and Circulars also provide guidance on planning issues.
- 2.2 The SPPs have three primary objectives for the planning system:
 - To set the land use framework for promoting sustainable economic development;
 - To encourage and support regeneration; and
 - To maintain and enhance the quality of the natural heritage and built environment.
- 2.3 Guidance on nature conservation planning policy is provided by the Scottish Executive's **Scottish Planning Policy (SPP)** and **Planning Advice Note (PAN) 60: Planning and Natural Heritage**. These documents are concerned with protection through the planning system of statutory and non-statutory sites of

biodiversity value, as well as species protection and conservation in the wider countryside. They recognise that careful planning can be used to reconcile nature conservation and development, even in sensitive areas.

Regional and Local Planning Policy

- 2.4 Structure and Local Development Plans form the basis on which decisions about development and future land use are made in Scotland, and effectively incorporate national, regional and strategic policies within the local framework.
- 2.5 The Planning etc. (Scotland) Act 2006 introduced changes to the planning system which were implemented in 2009. Under this new system future development planning is made up of a Strategic Development Plan (SDP) and a Local Development Plan (LDP).
- 2.6 The new SDP, is known as the TAYplan, and was prepared by a new Strategic Development Planning Authority, which was designated by Scottish Ministers in June 2008. This SDPA comprises Dundee City, Perth and Kinross, Angus and Fife Councils and will in time replace the existing adopted Structure Plans for each area, including the Perth and Kinross Structure Plan (2003). However, at present the Perth and Kinross Structure Plan remains in force for regional planning, and the Strathearn Local Plan for local planning.

Local Planning Policy

- 2.7 Within the area covered by the Perth and Kinross Council, there are six local councils and six corresponding local plans which direct the development planning decisions for each local area. The local plan area where the proposed scheme is located is the **Strathearn Area Local Plan**, which was adopted in November 2000 and intended to provide a land use framework until 2006. As a result of the changes initiated by the Planning etc. (Scotland) Act 2006, the Local Plan is scheduled for replacement by a Local Development Plan (LDP). According to the timeline published in the **Development Plan Scheme** Document in March 2009, the new LDP is currently scheduled for adoption in October 2014, and will then replace all six local area plans with just one planning document. Until this occurs, the Highland Area Local Plan contains the relevant policies against which development proposals will be tested.
- 2.8 The rich natural environment within the Highland Area, which contains Ramsar, SPA, SAC, SSSI, NNR and local wildlife sites, is protected under the nature conservation subset of Environment and Conservation policies of the plan, including those below:
 - Policy 13: International Sites
 - Policy 14: Protected Species
 - Policy 15: National Sites
 - Policy 16: Local Sites
 - Policy 17: Habitat Enhancement
 - Policy 22: Trees

Other Nature Conservation Initiatives

- 2.9 Biodiversity Action Plans (BAPs) are part of the British government's strategy for the implementation of the **1992 Convention on Biological Diversity**, to which it is a signatory. BAPs have been developed for the UK and devolved to local levels (LBAPs), to protect a number of rare species and habitats and reverse the declines of more widespread, but declining, species and habitats. BAPs may also include for species which are more common and widespread but are of interest to the public i.e. those listed in the Scottish Biodiversity Strategy. The species and habitats listed in the following biodiversity strategies have been taken into consideration in the planning as part of the assessment process:

- The UK Biodiversity Action Plan (BAP) January 1994;
 - The Scottish Biodiversity Strategy (Scottish Executive, 2004); and
 - Tayside Biodiversity Action Plan.
- 2.10 The proposed scheme site is covered by the Tayside LBAP, which focuses on priority species, broad and local habitats. The full plan can be viewed at <http://www.taysidebiodiversity.co.uk/>.

3 METHODOLOGY

- 3.1 In accordance with good practice, as set out in the Guidelines for Baseline Ecological Assessment (IEA, 1995), this report has been informed by baseline data gathered through a combination of surveys and a desk-top study. The desk-top study included review of internet searches.
- 3.2 An Extended Phase 1 habitat survey was undertaken across the proposed application area. Phase 1 habitat survey is a standardised method of recording habitat types and characteristic vegetation, as set out in the "Handbook for Phase 1 Habitat Survey – a technique for Environmental Audit" (JNCC, 2003). This habitat survey method was extended in accordance with the "Guidelines for Baseline Ecological Assessment" (IEA, 1995) through the additional recording of specific features indicating the presence, or likely presence, of protected species or other species of nature conservation significance. Descriptive "target notes" were recorded to provide details of characteristic habitats, features of ecological interest, or any other features which required note to aid ecologically sensitive design or mitigation. Species lists, including plants which were present at the time of survey (albeit given the time of survey spring species may be under-recorded), as well as incidental records of other faunal species, are also provided. Higher plant species nomenclature follows that provided in Stace (1997) for vascular plants and Atherton *et. al.* (2010) for bryophytes. Information on threat categories have been consulted using the Red Data Book (Cheffings and Farrell, 2005).

Limitations

- 3.3 There were no significant limitations to the extended Phase I habitat survey as it was undertaken at the end of the optimum biological survey season. Although it should be noted that spring and early flowering species may not be visible the habitats present on site are generally modified agricultural or forestry types and it is considered that the survey data is sufficient for a robust assessment of the site to be made.

4 DESK STUDY

Designations

- 4.1 A review of the SNH website <http://www.snh.org.uk/snhi> highlighted that no statutory or non-statutory sites of conservation importance are located within 2km of the site.
- 4.2 There are no Scottish Wildlife Trust reserves or wildlife sites within 2km of the site.
- 4.3 Within a 5km radius of the site, statutory designated sites where birds were a designating feature include Dupplin Lakes SSSI, South Tayside Goose Roost Special Protection Area (SPA) and RAMSAR site. These designations relate to ornithological value and are not considered further within this report.

Web Search

- 4.4 A search for protected species records for the 10 km square (NN 91) in which the development lies was also completed on the National Biodiversity Network (NBN) Gateway (<http://www.searchnbn.net/>). Appendix 1 displays the species listings for the tetrad. These provide background and contextual information only and do not identify presence of species on site. The site boundary did not encompass any areas of woodland on the semi-natural woodland as accessed through the SNHi portal.

5 FIELD SURVEYS

Surveys

- 5.1 The following field surveys were completed:
- Extended Phase 1 Habitat survey – September 2010.

Results

- 5.2 The habitats present on site are listed above (Table 1) in the order of abundance. These are mapped on Figure 1 with target notes in Appendix 2 and a summary of the habitat composition is shown.

Table 1: Habitat composition for site

Description	Area (ha)	%
Cultivated/disturbed land - arable	30.6	33.0
Coniferous woodland - plantation	16.9	18.3
Coniferous woodland - recently felled	11.2	12.1
Improved grassland	10.5	11.3
Mixed woodland – plantation	5.3	5.7
Neutral grassland - semi-improved	4.9	5.3
Coniferous woodland - plantation	3.9	4.2
Other tall herb and fern - ruderal	2.8	3.0
Broadleaved woodland - semi-natural	2.6	2.8
Track	1.5	1.7
Scrub - dense/continuous	1.5	1.6
Cultivated/disturbed land - amenity grassland	0.6	<1
Standing water	0.3	<1
Total	92.462	100.00

Habitats

Cultivated/disturbed land – arable

- 5.3 The majority of the site was comprised of agricultural fields used for barley and beans at the time of survey. The bean field to the west of the site has narrow field margins with presence of rosebay willowherb *Chamerion angustifolium*, crucifers, common ramping-fumitory *Fumaria muralis*, field forget me not *Myosotis arvensis* and smooth hawk's-beard *Crepis capillaris*.

Coniferous woodland – plantation

- 5.4 Plantations are dense and formed of sitka spruce *Picea sitchensis*.

Coniferous woodland - recently felled

- 5.5 Sections of recently felled woodland are present along the Roman Road. These areas are undergoing natural regeneration and are dominated by young silver birch *Betula pendula* with species such as ash *Fraxinus excelsior* on the edges of the area. The ground flora include Yorkshire fog *Holcus lanatus*, raspberry *Rubus idaeus*, silver birch saplings, soft rush *Juncus effusus*, bracken *Pteridium aquilinum*, groundsel *Senecio vulgaris*, annual meadow-grass *Poa annua*, bilberry *Vaccinium myrtillus*, common sorrel *Rumex acetosa*, wood sorrel *Oxalis acetosella*, common ramping-fumitory and patches of Himalayan balsam *Impatiens glandulifera*.

Improved grassland

- 5.6 The sections of improved grassland are subject to heavy grazing from cattle and as such have a sparse floral assemblage with grasses dominated by perennial rye grass *Lolium perenne*, annual meadow grass and some Yorkshire fog. Some areas of these fields appear disturbed and are dominated by early colonisers including spear thistle *Cirsium arvense*, greater stitchwort *Stellaria holostea*, scentless mayweed *Tripleurospermum inodorum*, dandelion *Taraxacum officinale*, annual meadow-grass, wood burdock *Arctium nemorosum*, redshank *Persicaria maculosa*, field forget-me-not, common mouse-ear *Cerastium fontanum* and red dead nettle *Lamium purpureum*.

Mixed woodland – plantation

- 5.7 Woodland areas supporting a mix of silver birch and coniferous species such as Scots pine *Pinus sylvestris* and sitka spruce. Areas adjacent to the track support ragwort *Senecio jacobaea*, foxglove *digitalis purpurea*, lady's mantle, bramble *Rubus fruticosus*, meadow buttercup, honeysuckle *Lonicera periclymenum*, grey willow *Salix cinerea*, hogweed *Heracleum sphondylium*, common nettles *Urtica dioica*, knapweed *Centurea nigra* and common vetch *vicia sativa*. Ground flora decrease rapidly into the interior of the woodland blocks.

Neutral grassland - semi-improved

- 5.8 Areas of neutral grassland include species such as Yorkshire fog, Timothy *Phleum pratense* and annual meadow grass along with gorse *Ulex europeaus*, hawthorn *Crataegus monogyna*, blackthorn *Prunus spinosa*, creeping thistle, soft rush, field horsetail *Equisetum arvense*, cleavers *Galium aparine*, field forget-me-not, redshank, bird's-foot trefoil *Lotus corniculatus*, common nettle, common vetch, and meadow vetchling *Lathyrus pratensis*.
- 5.9 Areas also exist along the Cowgask Burn dominated by similar grass species with an increase in creeping thistle, field horsetail, silverweed *Potentilla anserina*, knapweed, dock, common vetch, meadow vetchling and lesser stitchwort *Stellaria graminea*
- 5.10 Sections along the south facing slope to the north of the agricultural fields support a number of small rocky outcrops with the surrounding soils relatively thin and free draining. As such the area supports slightly more diverse flora than adjacent improved grassland with yarrow *Achillea millefolium*, ribwort plantain *Plantago lanceolata*, harebell *Campanula rotundifolia*, dock, annual meadow grass, doves foot cranesbill *Geranium molle*, knapweed, lady's bedstraw *Galium verum*, smooth hawk's-beard, ragwort, creeping thistle, white clover *trifolium repens* and red clover *Trifolium pratense* with male fern *Dryopteris filix-mas* within crevices of rocks, diversity of the slope decreases towards the east where soil becomes thicker and more affected by the impact of grazing animals and agricultural runoff. Also present are a number of hawthorn trees, elder *Sambucus nigra*, gorse, oak *Quercus robur* and several mature ash trees.

Other tall herb and fern – ruderal

- 5.11 Floral assemblages within the tall herb communities surrounding the pond are dominated by creeping thistle, broad-leaved dock *Rumex obtusifolius*, common nettles, meadow vetchling, cleavers and common vetch with soft rush in patches. Grasses include cock's-foot, false oat grass, perennial rye grass and Timothy. This area also has several deer resting places.

Broadleaved woodland - semi-natural

- 5.12 The areas of broadleaved woodland to the west of the site are relatively open with predominantly broad-leaved species including beech *Fagus sylvatica*, silver birch, and oak along with occasional occurrence of sitka spruce. Ground flora is dominated by patches of moss, bramble, raspberry and patches of bracken.

Track

- 5.13 The Roman Road itself bisects these areas of woodland and is formed of a slightly raised gravel track with shallow ditches on both sides which are mostly dry but with areas of standing water. The track itself has a degree of colonisation by ephemeral species and grasses along the central area and on the verges including ribwort plantain and annual meadow grass. The margins of the track support a narrow strip of semi-improved grassland communities with cocksfoot *Dactylis glomerata*, annual meadow grass, Yorkshire fog, bird's foot trefoil, soft rush, selfheal *Prunella vulgaris*, clover *Trifolium* sp., with pockets of gorse, grey willow. The ditches alongside the track support a slightly more diverse and damper community with the floral components including knapweed, creeping buttercup *Ranunculus repens*, silver birch saplings, broom *Cytisus scoparius*, lady's mantle *Alchemilla xanthochlora*, wood sorrel *Oxalis acetosella*, bracken, smooth hawk's beard, raspberry, rosebay willow herb, heather *Calluna vulgaris*, black medick *Medicago lupulina* and encroachment of willow *Salix* sp.

Scrub

- 5.14 Areas of dense scrub exist along the south facing slope and are comprised of gorse although small pockets of more open grassland exist. In addition this section appears to support low numbers of rabbits *Oryctolagus cuniculus*.
- 5.15 Also present within the scrub are a series of disturbed areas including refuse pits and old manure piles which are now heavily colonised by common nettles, broad-leaved dock and creeping thistle. These areas are the approximate location of the borrow pit and laydown area for the proposed scheme.

Cultivated/disturbed land - amenity grassland

- 5.16 Within the woodland to the south of the Roman Road is the former location of a Roman signal station which is located within a small clearing fenced and maintained to display the archaeological remains of the signal station. This area is maintained as short amenity style grassland.

Standing water

- 5.17 The Cowgask Burn passes through a large pond area with two islands, which appears to be man made with an additional burn running in from the south with the Cowgask Burn continuing to the west through the adjacent bean field. Waterfowl present at the time of the survey include approximately 20 mallard *Anas platyrhynchos*. The banks of the pond are near vertical and heavily vegetated with approximately 1m drop to the water surface. The water surface has 75% cover from floating vegetation comprising of broad-leaved pondweed *Potamogeton natans*, some areas also have extensive cover from algae.

- 5.18 Several sections of the ditches appear to support ephemeral water bodies which are generally heavily silted and support float grass *Glyceria fluitans*, yellow iris *Iris pseudocorus*, branched bur-reed *Sparganium erectum* and creeping buttercup.

Other Habitats

- 5.19 Burns throughout the site supported varying degrees of flowing water with banks supporting grassland or tall herb communities. Emergent vegetation included water mint *Mentha aquatica* and branched bur-reed is present. The banks of the channel are steep, heavily vegetated and approximately 2m in height.
- 5.20 Hedgerows on site were generally species poor comprised of blackthorn, hawthorn, rose, ash and gorse. Where grazing animals were present hedges were heavily browsed and no under storey existed. Some hedges had become defunct and stock fence lines maintained the field boundary.

Fauna

- 5.21 The areas of standing water within ditches offer some suitable habitat as they are ephemeral pools free of fish with suitable vegetation for egg laying also present. However, these areas are expected to remain dry for the majority of the year including through parts of the breeding season. The larger pond on site is within the network of burns and offers some suitable habitat for breeding great crested newts with suitable water quality and egg laying vegetation. The suitability of the pond is reduced to some degree by the presence of both waterfowl and potentially fish.
- 5.22 The site may offer some degree of suitability for reptiles although disturbance from forestry activities and the ephemeral nature of suitable areas combined with limited connectivity suggest that this is unlikely. No evidence of reptiles was observed during the survey.
- 5.23 The site does not offer any highly suitable bat roost potential. Only a few buildings were present on site. These included Roundlaw Cottages and Roundlaw Farm. External assessments of these properties identified no high potential for supporting bat roosts, with Roundlaw Farm buildings generally of metal framed construction with the farmhouse building in good condition. Roundlaw Cottages are single storey buildings again in good condition with no obvious ingress points for bats.
- 5.24 Some trees exist on site that may offer some potential but in general these opportunities are low and unlikely to be affected by the proposed scheme. The site does offer a number of suitable areas for foraging. These include the burns and pond area which is likely to offer ideal foraging habitat for bat species. The forestry edges in the south of the site are likely to offer low to moderate foraging opportunities with the farmland to the north of the site adjacent to the proposed location of the single turbine supporting suboptimal foraging habitat for bats. Although some coniferous forest edges do exist on the northern boundary of the site although these are relatively exposed and are expected to offer only low suitability for foraging bats.
- 5.25 Common and widespread bird species associated with lowland farmland and mixed/coniferous woodland are likely to use the site. During the survey only a few species of bird were identified to be using the site. These included magpie *Pica pica*, buzzard *buteo buteo*, pheasant *Phasianus colchicus*, crow *Corvus corone corone*, pigeon *Columba livia*, chaffinch *Fringilla coelebs*, goldfinch *Carduelis carduelis*, house martin *Delichon urbica*, greater spotted woodpecker *Dendrocopos major* and pied wagtail *Motacilla alba*.
- 5.26 The burns offer suitable habitat for water voles *Arvicola terrestris* although no records exist from the area. The areas of exposed banks within the pond supported no holes visible above the waterline and although an in depth survey for field signs of this

species was not undertaken a brief search revealed no field signs (latrines, feeding remains, nests or holes) of the species.

- 5.27 With respect to otters *Lutra lutra*, records do exist within the area for the species but no field signs or sites of potential holts or couches were identified. The upper reaches of the Cowgask Burn are not optimal for otters as prey levels are expected to be low but use on an infrequent basis would be expected.
- 5.28 A thorough search of the interior of woodland blocks was not undertaken but it is possible that the area may support species such as red squirrel *Sciurus vulgaris* and pine marten *Martes martes* although the area is now isolated due to recent forestry activities. Indeed a single pine marten scat with a high content of rowan *Sorbus aucuparia* berries was identified on the track (TN53). Distribution maps indicate that both red and grey squirrels may exist within this area.
- 5.29 No definitive signs of badger *Meles meles* were identified from the site although an animal track with foraging signs, possibly badger was present within woodland to the east of the site.

6 DISCUSSION

- 6.1 There are no major ecological constraints that must be taken into consideration in the design of the proposed development, although several areas may be subject to further surveys or mitigation strategies.

Habitats

- 6.2 This physical disturbance to habitats on site is limited to areas of low ecological value as the areas to be affected by the turbine and associated areas are restricted to agricultural fields and existing tracks.
- 6.3 There are no statutory designated sites within the proposed development site itself or within 2km of the site; although there are several sites designated for bird assemblages within 5km. Due to the extent of the proposed development and distance of designated sites the proposed works will have no negative impact upon the terrestrial fauna or habitats at these designated sites.
- 6.4 The majority of the site is comprised predominantly of a mix of forestry plantations and open farmland (arable and pasture) offering limited ecological value. Areas of increased ecological interest are centred around the Cowgask Burn, sections of semi-natural woodland and areas of semi-natural grassland, especially those situated on the steep free draining south facing slope. These areas should ideally remain unaffected to any significant degree by the proposed development.
- 6.5 Hedgerows and areas of woodland outside of the plantations, although, not of high ecological value, should where possible be retained.

Fauna

- 6.6 Legislation under Section 1 of the Wildlife and Countryside Act 1981 (as amended), makes it an offence to kill, injure or take any wild bird; take damage or destroy the nest of any bird whilst in use or being built, or take or destroy an egg(s) of any wild bird. As such care should be taken to ensure that no nesting wild birds are disturbed during clearance works of non agricultural land e.g. scrub and trees. Should for good reason clearance of such areas be undertaken during the bird breeding months then a suitably qualified ecologist should be engaged prior to any work commencing to check for nesting birds and advise accordingly on the most appropriate way to proceed. Areas of particular concern will be woodland edges where clearance of scrub or arboricultural work is required to increase access space for vehicles and clearance

of scrub in areas where the proposed borrow pits or lay down areas are to be located.

- 6.7 No definitive evidence of badgers was found on site, although occasional mammal trackways were identified on the eastern side of the site with some evidence of ground foraging which may be attributed to badgers. As a result, there are no immediate and obvious implications regarding this species and the proposed works. Although no records exist on the NBN Gateway, badgers are often found within habitats such as those of the site and the wider landscape and could cross the site during construction works. As a result, to ensure that badgers and any other mammals do not become trapped all trenches should be covered when not in use and provided with a 45° escape ramp. In the unlikely event that large mammal burrows are identified on site during vegetation clearance, advice should be sought from a suitably qualified ecologist prior to further disturbance of the area.
- 6.8 As no records for great crested newts exist through the NBN Gateway and the site and the surrounding habitat being dominated by forestry activities or intensive agriculture, it is thought unlikely that the ditch networks which hold areas of ephemeral standing water will be utilised by great crested newts.
- 6.9 The pond within the Cowgask Burn network offers suitable habitat for breeding amphibians and two additional ponds are located within the wider Cowgask catchment, although these are both approximately 1km away. Although it is understood that the pond and burn are to remain unaffected by the proposals, disturbance of terrestrial habitats within 250m are expected due to the excavation of the borrow pit and laydown area. It is recommended that further investigations are undertaken to obtain more detailed knowledge of the distribution of great crested newts within this area through consultations. Due to the high level of statutory protection, including against disturbance to both the animal and the terrestrial habitats that it uses, these investigations may ultimately lead to the requirement for a full presence/absence survey to ascertain whether the pond presently acts as a great crested newt breeding pond. Dependent on the results of such a survey mitigation measures may need to be agreed with SNH and the Scottish Executive to safeguard the favourable conservation status of the species at the site.
- 6.10 No extensive highly suitable habitat or evidence of reptiles was found on site. However, some areas of the site where forestry has been felled in recent years may offer some suitable habitat but due to the disturbance of forestry operations and the ephemeral suitability of site it is highly unlikely that any reptile species (in this case adder *Vipera berus* or common lizard *Zootoca vivipara*) would be found to be using the site. A record within the NN91 10km grid cell for adder does exist although no further location information is available. In addition it is anticipated that the proposed works would not significantly affect any of these suitable areas and mitigation activities to safeguard populations could be introduced. However, during the works should any reptile be encountered on site, all work should stop immediately and a suitably qualified ecologist contacted.
- 6.11 The site does not offer any high quality roosting habitat for bats with only a small number of trees offering any suitability. It is recommended that these trees are retained. The buildings located on the edge of the site do not appear to offer high potential for use by bats although the presence of roost cannot be ruled out. With respect to foraging and commuting habitat, the tall herb and rank grassland areas along with the wetland areas will undoubtedly offer some suitability for foraging bats.
- 6.12 The area in close proximity (within 50m) of the turbine location offers very little in the way of foraging or commuting habitat and the majority of hedges are poor in structure and diversity. However, it is strongly recommended that a minimum of a

50m buffer is retained between blade tips and hedgerow/forest edge, in accordance with SNH guidance with respect to bats.

- 6.13 Whilst no evidence to suggest bats are using trees within the site was identified, due to their high level of statutory protection it is recommended that pre-construction checks for roosts be undertaken within any areas that require tree felling or significant arboricultural works prior to commencement of the development.
- 6.14 With regards to otters and water voles the water courses within the site do offer some degree of suitability for both species. However, the lack of field signs picked up during this initial survey combined with the lack of records from NBN Gateway suggest that the presence of water voles is unlikely. With respect to otters, although the upper reaches of the Cowgask Burn are likely to support fish prey, no signs of the presence of otter were identified during the survey and no obviously suitable areas for use as holts was identified. As it is not expected that the degree of disturbance from the proposed works would affect populations of otter or water vole in the unlikely event of their presence within the site, no further surveys are recommended. However, should the proposed plans alter, with respect to turbine, borrow pit, lay down area or access track location then a suitably qualified ecologist should be consulted to check that further surveys are not required.
- 6.15 Areas of the existing mixed and coniferous forest may be suitable to support red squirrel and pine marten populations although no definitive signs were identified during the baseline survey. Red squirrel and pine marten both receive protection under the Wildlife and Countryside Act 1981 as amended. Under this legislation they receive protection from intentional or reckless disturbance or destruction of a place of shelter. Whilst no drays or dens have been identified during the surveys it is recommended that pre-construction checks for drays or dens is undertaken within any areas that require tree felling or significant arboricultural works prior to commencement
- 6.16 No evidence of wildcat was identified during the survey and no records for the species were identified through the NBN Gateway. The distribution of wildcats remains uncertain, however, proximity of the site to residential areas, lack of records and extent of the proposed development suggest that the risk of wildcats being disturbed is very low and, if present, any habitat loss will not be significant.
- 6.17 In summary impacts from the construction phase of the proposed project will be limited with the installation of the turbine affecting land of limited ecological value. The proposed site of the turbine is within intensively grazed improved grassland with negligible conservation value and the location of the borrow pit will affect areas of gorse scrub and pockets of semi-improved and improved grassland with low conservation value. It is recommended that clearance of scrub is undertaken at a suitable time of year (October to February) to avoid the disturbance of nesting birds. In addition sediment run off should be restricted to prevent increased sediment loading of the upper reaches of the Cowgask Burn.

7 REFERENCES

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APPENDIX 1: NBN GATEWAY LISTING FOR NN91

All species listed on BAP2007, Bats and Scottish List are displayed.

Species Name	Common Name	Species Group	Listings
<i>Bufo bufo</i>	Common Toad	amphibian	BAP 2007
<i>Alauda arvensis</i>	Sky Lark	bird	Scottish List
<i>Anthus trivialis</i>	Tree Pipit	bird	BAP 2007
<i>Apus apus</i>	Common Swift	bird	Scottish List
<i>Aquila chrysaetos</i>	Golden Eagle	bird	Scottish List
<i>Asio flammeus</i>	Short-eared Owl	bird	Scottish List
<i>Aythya ferina</i>	Common Pochard	bird	Scottish List
<i>Branta leucopsis</i>	Barnacle Goose	bird	Scottish List
<i>Carduelis cabaret</i>	Lesser Redpoll	bird	BAP 2007
<i>Carduelis cannabina</i>	Common Linnet	bird	Scottish List
<i>Carduelis cannabina</i>	Common Linnet	bird	Scottish List
<i>Carduelis spinus</i>	Eurasian Siskin	bird	Scottish List
<i>Crex crex</i>	Corn Crake	bird	BAP 2007 Scottish List
<i>Cuculus canorus</i>	Common Cuckoo	bird	BAP 2007
<i>Emberiza calandra</i>	Corn Bunting	bird	Scottish List
<i>Emberiza citrinella</i>	Yellowhammer	bird	BAP 2007
<i>Emberiza schoeniclus</i>	Reed Bunting	bird	BAP 2007 Scottish List
<i>Erithacus rubecula</i>	European Robin	bird	Scottish List
<i>Falco peregrinus</i>	Peregrine Falcon	bird	Scottish List
<i>Falco tinnunculus</i>	Common Kestrel	bird	Scottish List
<i>Fringilla montifringilla</i>	Brambling	bird	Scottish List
<i>Larus argentatus</i>	Herring Gull	bird	Scottish List
<i>Larus ridibundus</i>	Black-headed Gull	bird	Scottish List
<i>Locustella naevia</i>	Common Grasshopper Warbler	bird	BAP 2007
<i>Milvus milvus</i>	Red Kite	bird	Scottish List
<i>Muscicapa striata</i>	Spotted Flycatcher	bird	BAP 2007 Scottish List
<i>Numenius arquata</i>	Eurasian Curlew	bird	BAP 2007 Scottish List
<i>Passer domesticus</i>	House Sparrow	bird	BAP 2007
<i>Passer montanus</i>	Eurasian Tree Sparrow	bird	BAP 2007 Scottish List
<i>Perdix perdix</i>	Grey Partridge	bird	BAP 2007 Scottish List
<i>Podiceps nigricollis</i>	Black-necked Grebe	bird	Scottish List
<i>Pyrrhula pyrrhula</i>	Common Bullfinch	bird	Scottish List
<i>Scolopax rusticola</i>	Eurasian Woodcock	bird	Scottish List
<i>Sterna hirundo</i>	Common Tern	bird	Scottish List
<i>Tetrao tetrix</i>	Black Grouse	bird	Scottish List
<i>Tetrao urogallus</i>	Western Capercaillie	bird	BAP 2007
<i>Tetrao urogallus</i>	Western Capercaillie	bird	Scottish List
<i>Turdus iliacus</i>	Redwing	bird	Scottish List
<i>Turdus philomelos</i>	Song Thrush	bird	Scottish List
<i>Vanellus vanellus</i>	Northern Lapwing	bird	BAP 2007 Scottish List

<i>Vanellus vanellus</i>	Northern Lapwing	bird	
<i>Vanellus vanellus</i>	Northern Lapwing	bird	Scottish List
<i>Vanellus vanellus</i>	Northern Lapwing	bird	Scottish List
<i>Anguilla anguilla</i>	European Eel	bony fish	BAP 2007 Scottish List
<i>Anguilla anguilla</i>	European Eel	bony fish	
<i>Salmo salar</i>	Atlantic Salmon	bony fish	BAP 2007 Scottish List
<i>Salmo trutta</i>	Brown/Sea Trout	bony fish	BAP 2007
<i>Pinus sylvestris</i>	Scots Pine	conifer	Scottish List
<i>Pilularia globulifera</i>	Pillwort	fern	BAP 2007 Scottish List
<i>Pilularia globulifera</i>	Pillwort	fern	
<i>Arabis glabra</i>	Tower Mustard	flowering plant	BAP 2007
<i>Calluna vulgaris</i>	Heather	flowering plant	Scottish List
<i>Campanula patula</i>	Spreading Bellflower	flowering plant	BAP 2007
<i>Campanula rotundifolia</i>	Harebell	flowering plant	Scottish List
<i>Chelidonium majus</i>	Greater Celandine	flowering plant	Scottish List
<i>Euphorbia helioscopia</i>	Sun Spurge	flowering plant	Scottish List
<i>Fallopia convolvulus</i>	Black-bindweed	flowering plant	Scottish List
<i>Filago vulgaris</i>	Common Cudweed	flowering plant	Scottish List
<i>Galeopsis speciosa</i>	Large-flowered Hemp-nettle	flowering plant	Scottish List
<i>Gnaphalium sylvaticum</i>	Heath Cudweed	flowering plant	Scottish List
<i>Hyacinthoides non-scripta</i>	Bluebell	flowering plant	Scottish List
<i>Mentha arvensis</i>	Corn Mint	flowering plant	Scottish List
<i>Pseudorchis albida</i>	Small-white Orchid	flowering plant	BAP 2007
<i>Sinapis arvensis</i>	Charlock	flowering plant	Scottish List
<i>Viola tricolor</i>	Wild Pansy	flowering plant	Scottish List
<i>Hydnellum caeruleum</i>	Blue Tooth	fungus	BAP 2007 Scottish List
<i>Hydnellum peckii</i>	Devil's Tooth	fungus	BAP 2007 Scottish List
<i>Phellodon tomentosus</i>	Woolly Tooth	fungus	BAP 2007 Scottish List
<i>Sarcodon glaucopus</i>	Greenfoot Tooth	fungus	BAP 2007 Scottish List
<i>Sarcodon squamosus</i>		fungus	BAP 2007 Scottish List
<i>Tricholoma colossus</i>	Giant Knight	fungus	BAP 2007 Scottish List
<i>Boloria selene</i>	Small Pearl-bordered Fritillary	insect - butterfly	BAP 2007
<i>Coenonympha pamphilus</i>	Small Heath	insect - butterfly	BAP 2007
<i>Osmia (Osmia) rufa</i>	Red Mason Bee	insect - hymenopteran	Scottish List
<i>Amphipyra tragopoginis</i>	Mouse Moth	insect - moth	BAP 2007
<i>Apamea remissa</i>	Dusky Brocade	insect - moth	BAP 2007
<i>Arctia caja</i>	Garden Tiger	insect - moth	BAP 2007
<i>Brachylomia viminalis</i>	Minor Shoulder-knot	insect - moth	BAP 2007
<i>Diarsia rubi</i>	Small Square-spot	insect - moth	BAP 2007
<i>Hepialus humuli</i>	Ghost Moth	insect - moth	BAP 2007
<i>Hoplodrina blanda</i>	Rustic	insect - moth	BAP 2007
<i>Hydraecia micacea</i>	Rosy Rustic	insect - moth	BAP 2007
<i>Scotopteryx chenopodiata</i>	Shaded Broad-bar	insect - moth	BAP 2007

<i>Spilosoma lubricipeda</i>	White Ermine	insect - moth	BAP 2007
<i>Tipula limbata</i>		insect - true fly (Diptera)	Scottish List
<i>Lampetra fluviatilis</i>	River Lamprey	jawless fish (Agnatha)	BAP 2007 Scottish List
<i>Lampetra planeri</i>	Brook Lamprey	jawless fish (Agnatha)	Scottish List
<i>Caloplaca ferruginea</i>		lichen	Scottish List
<i>Margaritifera</i> (<i>Margaritifera</i>) <i>margaritifera</i>	Freshwater Pearl Mussel	mollusc	BAP 2007 Scottish List
<i>Pisidium henslowanum</i>	Henslow's Pea Mussel	mollusc	Scottish List
<i>Dichodontium</i> <i>flavescens</i>	Yellowish Fork-moss	moss	Scottish List
<i>Vipera berus</i>	Adder	reptile	BAP 2007
<i>Capreolus capreolus</i>	Roe Deer	terrestrial mammal	Scottish List
<i>Cervus elaphus</i>	Red Deer	terrestrial mammal	Scottish List
<i>Erinaceus europaeus</i>	West European Hedgehog	terrestrial mammal	BAP 2007
<i>Lepus europaeus</i>	Brown Hare	terrestrial mammal	BAP 2007 Scottish List
<i>Lutra lutra</i>	European Otter	terrestrial mammal	BAP 2007 Scottish List
<i>Mustela putorius</i>	Polecat	terrestrial mammal	BAP 2007
<i>Pipistrellus pipistrellus</i>	Pipistrelle	terrestrial mammal	Bats Scottish List
<i>Pipistrellus pygmaeus</i>	Soprano Pipistrelle	terrestrial mammal	BAP 2007 Bats Scottish List
<i>Plecotus auritus</i>	Brown Long-eared Bat	terrestrial mammal	BAP 2007 Bats Scottish List
<i>Sciurus vulgaris</i>	Eurasian Red Squirrel	terrestrial mammal	BAP 2007 Scottish List

APPENDIX 2: TARGET NOTES

TN1

Road junction with access track (Roman Road) through site. Roman road bisects narrow sections of plantation woodland. Woodland to the south is comprised predominantly of coniferous plantation of sitka spruce *Picea sitchensis* with a small section woodland to the west of the site more semi natural with a mixture of broadleaved and coniferous species dominated by beech *Fagus sylvatica*, silver birch *Betula pendula*, oak *Quercus robur* and sitka spruce.

TN2

Running along both sides of the Roman Road track are shallow ditches, mostly dry but with areas of standing water. The road is gravel with the central section colonised by a variety of ephemeral species including ribwort plantain *Plantago lanceolata* and annual meadow grass *Poa annua*. The margins of the track support a narrow strip of semi-improved grassland communities with cocksfoot *Dactylis glomerata*, annual meadow grass, Yorkshire fog *Holcus lanatus*, bird's foot trefoil *Lotus corniculatus*, soft rush *Juncus effusus*, selfheal *Prunella vulgaris*, clover *Trifolium* sp., with pockets of gorse *Ulex europeaus* and grey willow *Salix cinerea*. On both sides of the track shallow ditches are also present which are predominantly dry although some areas support standing water. These ditches are more diverse in the floral components with black knapweed *Centura nigra*, creeping buttercup *Ranunculus repens*, silver birch saplings, broom *Cytisus scoparius*, lady's mantle *Alchemilla xanthochlora*, wood sorrel *Oxalis acetosella*, bracken *Pteridium aquilinum*, smooth hawks beard *Crepis capillaries*, raspberry *Rubus idaeus*, rosebay willowherb, heather *Calluna vulgaris*, black medick *Medicago lupulina* and encroachment of willow *Salix* sp.

TN3

Along the verges of the track damper grassland communities are also supported with an increased abundance of mosses, sedges and rushes along with presence of male fern *Dryopteris filix-mas*.

TN4

Large standing dead beech tree with extensive flaky bark and small holes offering some potential for roosting bats.

TN5

More significant areas of standing water within ditch, mostly with heavy silt supporting patches of vegetation including float grass *Glyceria fluitans* and creeping buttercup with patches of dock *Rumex* sp.

TN6

Small area of more permanent water with colonisation from yellow iris *Iris pseudocorus* and sedges *Carex* sp.

TN7

Although the site supports a number of small log piles at various locations which are not detailed fully in this report this area supports a more significant log pile offering potential habitat for a wide variety of species including invertebrates, mammals and potentially herpetofauna.

TN8

Small area (approximately 20m in length) of more permanent water with colonisation from yellow iris, branched bur-reed *Sparganium erectum* and meadow buttercup.

TN9

Large beech tree.

TN10

Small area (approximately 15m in length) of more permanent water with colonisation from yellow iris, branched bur-reed and meadow buttercup.

TN11

A series of large beech trees along southern side of track.

TN12

Recently felled section of coniferous forest, colonisation by various species including Yorkshire fog, heather, silver birch, rosebay willowherb, wood sorrel and soft rush.

TN13

Small area (approximately 5m in length) of more permanent water again with colonisation from yellow iris, branched bur-reed and meadow buttercup.

TN14

Longer section (approximately 25m in length) of more permanent water again with colonisation from yellow iris, branched bur-reed and meadow buttercup.

TN15

Small area colonised by Himalayan balsam *Impatiens glandulifera*. Focus of growth appears to be associated with small spoil mound of soil and gravel, possibly imported from elsewhere. It would be sensible to control the growth over coming years before the species becomes too established and spreads throughout the site.

TN16

Roman road no longer obvious, area has become colonised by mixed semi natural woodland.

TN17

Small remaining stand of Scots pine, also present is a number of standing dead trees not removed during felling of plantation but not offering any suitable habitat for use by bats.

TN18

Small pond area within ditch with heavy cover from pond weed *lemna* sp. along with soft rush, creeping buttercup and brooklime *Veronica beccabunga*.

TN19

Woodland to the west of the track is dominated by sitka spruce plantations. The track is colonised by grasses and herbs along the sides including ragwort *Senecio jacobaea*, foxglove *digitalis purpurea*, lady's mantle, bramble *Rubus fruticosus*, meadow buttercup, honeysuckle *Lonicera periclymenum*, grey willow, hogweed *Heracleum sphondylium*, common nettles *Urtica dioica*, knapweed and common vetch *vicia sativa*.

TN20

Small woodpile in heavy shading, suitable for invertebrates and potentially mammals.

TN21

Two large beech trees close to bend in track, ideally these should remain unaffected by any works to the track for access purposes.

TN22

Area of recently felled mixed woodland. Many mature silver birch trees remain throughout the area. The ground flora include a domination by Yorkshire fog with other species including raspberry, silver birch saplings, soft rush, bracken, groundsel *Senecio vulgaris*, annual meadow grass, bilberry *Vaccinium myrtillus*, common sorrel *Rumex acetosa*, wood sorrel, common ramping-fumitory *Fumaria muralis* and patches of Himalayan balsam along southern section (see TN73).

TN23

Animal track with foraging signs, possibly badger *meles meles* although no definitive evidence.

TN24

Drainage burn on west of site boundary, mostly dry at time of survey. Vegetation includes a dense covering of gorse, common nettles, silver weed *Potentilla anserina*, Yorkshire fog and small patches of common reed *Phragmites australis*.

TN25

Narrow field margin along west side of arable field (barley) again dominated by tall grass communities including Yorkshire fog, Timothy *Phleum pratense* and annual meadow grass along with gorse, hawthorn *Crataegus monogyna*, blackthorn *Prunus spinosa*, creeping thistle *Cirsium arvense*, soft rush, field horsetail *Equisetum arvense*, cleavers *Galium aparine*, field forget me not *Myosotis arvensis*, redshank *Persicaria maculosa*, birds foot trefoil, common nettle, common vetch, and meadow vetchling *Lathyrus pratensis*.

TN26

At junction of burn to east of site small area of wet ground is dominated by water mint *Mentha aquatica*.

TN27

The hedgerow along this northern section of the field becomes thicker with a dominance of blackthorn which is encroaching across the field margin along with smaller pockets of hawthorn. Flock of approximately 30 goldfinch *Carduelis carduelis* seen foraging along hedgerow and field margin.

TN28

Narrow buffer strips (approximately 5m) along the burn are dominated by similar grass species as along the field margins along with an increase in creeping thistle. Other species present include field horsetail, silverweed, knapweed, dock species, common vetch, meadow vetchling and lesser stitchwort *Stellaria graminea* with water mint and branched bur-reed within the narrow channel. Water within the burn is within a narrow channel and flowing slowly.

TN29

Five roe deer *Capreolus capreolus* observed.

TN30

Large pond area with two islands, appears man made with two burns running in from the south and east with outflow running to the west through the adjacent arable fields. Waterfowl present include approximately 20 mallard *Anas platyrhynchos*. The banks of the pond are near vertical and vegetated with approximately 1m drop to the water surface. The water surface has about 75% cover from floating vegetation comprising of broad leaved pondweed, some areas also have extensive algal cover. The two islands are both small and heavily vegetated. Floral assemblages within the tall herb communities surrounding the pond are dominated by creeping thistle, broad-leaved dock, common nettles, meadow vetchling, cleavers and common vetch with hard rush and soft rush in patches. Grasses include

cocksfoot, false oat grass, perennial rye grass and Timothy. Area has several deer resting places. Extensive use by house martins *Delichon urbicum* for foraging.

TN31

Field edges of small arable field are dominated by cleavers, creeping thistle with occasional spear thistle *Cirsium vulgare*. No field margins exist around bean field to west.

TN32

Large ash *Fraxinus excelsior* tree in corner of field.

TN33

Kill site of pigeon *Columba livia*, probably by raptor.

TN34

Badger scat, not in latrine, old, somewhat degraded.

TN35

Steep semi-improved grassland slope (approximately 45 degrees) with small rocky outcrops. Slightly more diverse flora than adjacent improved grassland with yarrow *Achillea millefolium*, ribwort plantain, harebell *Campanula rotundifolia*, dock, annual meadow grass, doves foot cranesbill *Geranium molle*, knapweed, lady's bedstraw *Galium verum*, smooth hawk's-beard *Crepis capillaris*, ragwort, creeping thistle, white clover *trifolium repens* and red clover *Trifolium pratense* with male fern within crevices of rocks, diversity of the slope decreases towards east where soil becomes thicker and more affected by grazing animals. Also present are a number of hawthorn trees, elder *Sambucus nigra*, gorse and oak.

TN36

Hedge with a fence present comprised of hawthorn, rose *Rosa* sp. and gorse with a number of ash trees and a common nettle under storey. Grazing animals have prevented colonisation of more diverse flora.

TN37

Approximate location of proposed turbine. Field is poor quality improved grassland that has been heavily grazed.

TN38

Pigeon egg remains

TN39

The northern boundary of the field is fenced with a Scots pine plantation to the north. Edge of plantation also supports birch, goat willow, gorse, broom, bramble, raspberry and common nettles.

TN40

Hedge with a fence present comprised of hawthorn, rose and gorse with a number of ash trees and a common nettle understorey. Grazing animals have prevented colonisation of more diverse flora.

TN41

Area of disturbed ground, possible once fenced off. Area is dominated by early colonisers including spear thistle, greater stitchwort *Stellaria holostea*, scentless mayweed *Tripleurospermum inodorum*, dandelion *Taraxacum* sp., annual meadow grass, wood burdock *Arctium nemorosum*, redshank, field forget me not, common mouse ear *Cerastium fontanum* and red dead nettle *Lamium purpureum*.

TN42

Approximate location of substation within disturbed area.

TN43

Small fenced exclusion area dominated by thistles

TN44

Old manure pile dominated by grasses, common nettles, broad-leaved dock and creeping thistles

TN45

Remains of old tin shed.

TN46

Approximate location of borrow pit and laydown area.

TN47

Area of disturbed ground, spoil.

TN48

South facing slope similar to TN93 but less diverse flora and increased encroachment from gorse and presence of rabbits *Oryctolagus cuniculus* evident.

TN49

Refuse pile

TN50

Bean field with narrow field margin with presence of rosebay willowherb, crucifers, common ramping-fumitory, field forget me not and smooth hawk's-beard.

TN51

Area of felled woodland now becoming colonised by young birch community with some ash on edges of area.

TN52

Division of more recently felled area to the east and young birch colony to west marked by a number of mature birch trees.

TN53

Pine marten scat on track.

APPENDIX 3: SPECIES LIST

Flora

yarrow	<i>Achillea millefolium</i>
lady's mantle	<i>Alchemilla xanthochlora</i>
wood burdock	<i>Arctium nemorosum</i>
silver birch	<i>Betula pendula</i>
heather	<i>Calluna vulgaris</i>
harebell	<i>Campanula rotundifolia</i>
sedges	<i>Carex sp.</i>
black knapweed	<i>Centura nigra</i>
Common mouse-ear	<i>Cerastium fontanum</i>
rosebay willowherb	<i>Chamerion angustifolium</i>
creeping thistle	<i>Cirsium arvense</i>
spear thistle	<i>Cirsium vulgare</i>
doves foot cranesbill	<i>Geranium molle</i>
hawthorn	<i>Crataegus monogyna</i>
smooth hawk's-beard	<i>Crepis capillaris</i>
broom	<i>Cytisus scoparius</i>
cocksfoot	<i>Dactylis glomerata</i>
foxglove	<i>Digitalis purpurea</i>
male fern	<i>Dryopteris filix-mas</i>
field horsetail	<i>Equisetum arvense</i>
beech	<i>Fagus sylvatica</i>
ash	<i>Fraxinus excelsior</i>
common ramping-fumitory	<i>Fumaria muralis</i>
cleavers	<i>Galium aparine</i>
lady's bedstraw	<i>Galium verum</i>
float grass	<i>Glyceria fluitans</i>
hogweed	<i>Heracleum sphondylium</i>
Yorkshire fog	<i>Holcus lanatus</i>
Himalayan balsam	<i>Impatiens glandulifera</i>
yellow iris	<i>Iris pseudocorus</i>
soft rush	<i>Juncus effuses</i>
red dead-nettle	<i>Lamium purpureum</i>
meadow vetchling	<i>Lathyrus pratensis</i>
honeysuckle	<i>Lonicera periclymenum</i>
bird's foot trefoil	<i>Lotus corniculatus</i>
black medick	<i>Medicago lupulina</i>
water mint	<i>Mentha aquatic</i>
field forget-me-not	<i>Myosotis arvensis</i>
wood sorrel	<i>Oxalis acetosella</i>
redshank	<i>Persicaria maculosa</i>
Timothy	<i>Phleum pratense</i>
common reed	<i>Phragmites australis</i>

sitka spruce	<i>Picea sitchensis</i>
Scots pine	<i>Pinus sylvestris</i>
ribwort plantain	<i>Plantago lanceolata</i>
annual meadow grass	<i>Poa annua</i>
silver weed	<i>Potentilla anserine</i>
selfheal	<i>Prunella vulgaris</i>
blackthorn	<i>Prunus spinosa</i>
bracken	<i>Pteridium aquilinum</i>
oak	<i>Quercus robur</i>
creeping buttercup	<i>Ranunculus repens</i>
bramble	<i>Rubus fruticosus</i>
raspberry	<i>Rubus idaeus</i>
common sorrel	<i>Rumex acetosa</i>
dock	<i>Rumex sp.</i>
grey willow	<i>Salix cinerea</i>
willow	<i>Salix sp.</i>
elder	<i>Sambucus nigra</i>
ragwort	<i>Senecio jacobaea</i>
groundsel	<i>Senecio vulgaris</i>
branched bur-reed	<i>Sparganium erectum</i>
lesser stitchwort	<i>Stellaria graminea</i>
greater stitchwort	<i>Stellaria holostea</i>
dandelion	<i>Taraxacum sp.</i>
red clover	<i>Trifolium pratense</i>
white clover	<i>Trifolium repens</i>
clover	<i>Trifolium sp.</i>
scentless mayweed	<i>Tripleurospermum inodorum</i>
gorse	<i>Ulex europeus</i>
common nettles	<i>Urtica dioica</i>
bilberry	<i>Vaccinium myrtillus</i>
brooklime	<i>Veronica beccabunga</i>
common vetch	<i>Vicia sativa</i>

Fauna

buzzard	<i>Buteo buteo</i>
goldfinch	<i>Carduelis carduelis</i>
pigeon	<i>Columba livia</i>
carrion crow	<i>Corvus corone corone</i>
house martin	<i>Delichon urbicum</i>
greater spotted woodpecker	<i>Dendrocopos major</i>
chaffinch	<i>Fringilla coelebs</i>
pied wagtail	<i>Motacilla alba</i>
pheasant	<i>Phasianus colchicus</i>
magpie	<i>Pica pica</i>

APPENDIX 4: SITE PHOTOS



Plate 1: View east along south facing bank close to centre of site. TN35



Plate 2: View west over pond within Cowgask Burn. TN30



Plate 3: View west along upper reaches of Cowgask burn from eastern edge of site.



Plate 4: View north along eastern boundary towards south facing slope from upper reaches of Cowgask Burn.



Plate 5: View of sparse woodland to east of site where majority of trees has been recently felled but many birch trees remain. TN22



Plate 6: View south down forestry track.



Plate 7: One of the several small wetland areas within ditches alongside main forestry tracks and Roman Road. TN18



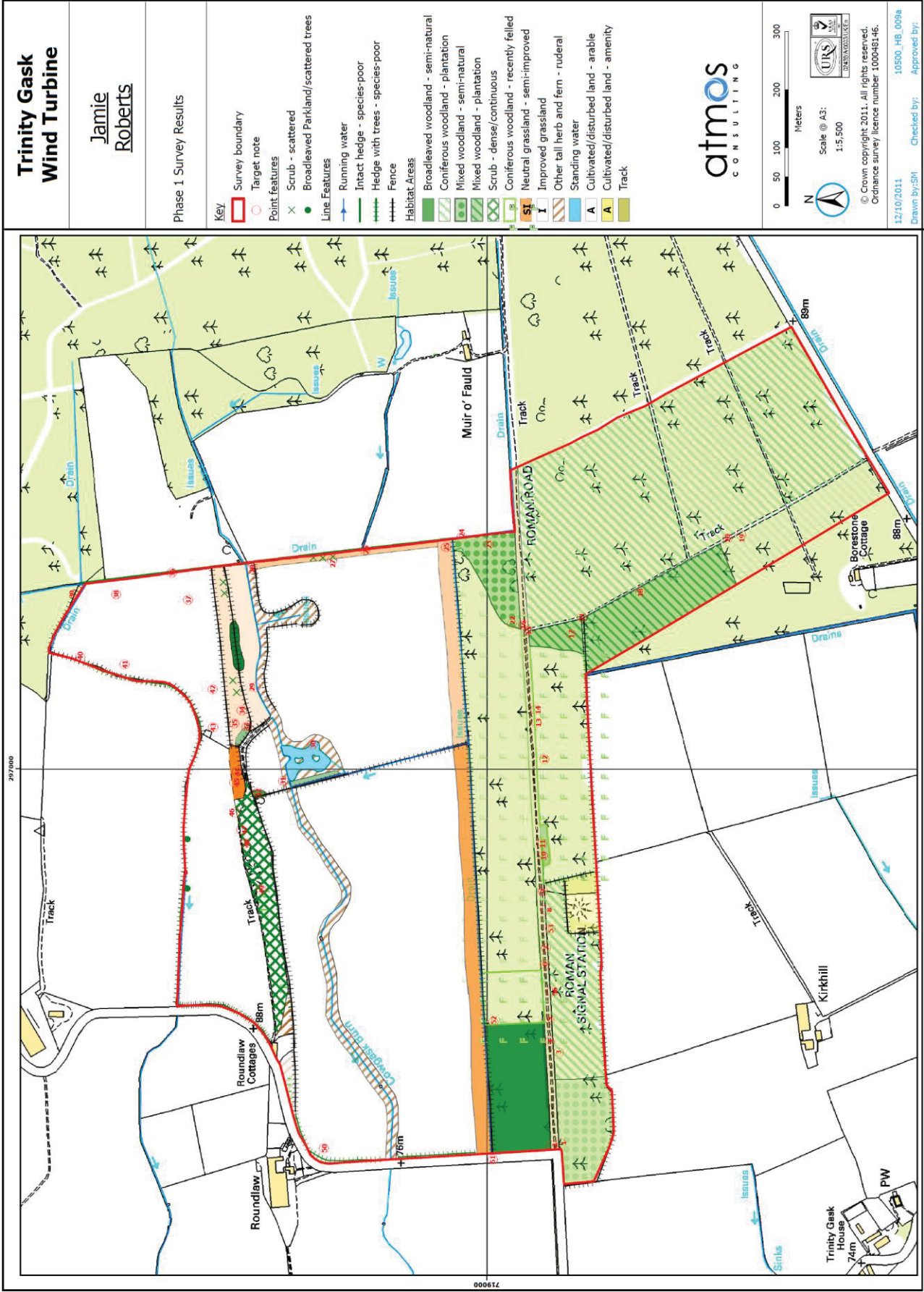
Plate 8: View from gate east onto Roman Road from public road. TN01



Plate 9: View south from approximate turbine location. TN37



Plate 10: View north from approximate turbine location. TN37





Trinity Gask Wind Turbine Landscape and Visual Impact Assessment

A report to
Realise Renewables

Date
November 2012



02438/A/0003/UK/En

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1 INTRODUCTION AND SCOPE OF ASSESSMENT

- 1.1 This report presents the Landscape and Visual Impact Assessment (LVIA) for the revised Trinity Gask single turbine, with a reduced rotor diameter. The purpose of the assessment is to determine the potential magnitude and extent of impact (or effect) on the landscape and visual resource of the area. Landscape effects relate to the direct physical changes to the fabric or individual elements of the landscape. They also relate to the potential indirect changes to the wider patterns of landuse, landcover and the arrangement of landscape features which determine the character and value of the landscape. Visual impacts (effects) relate to the potential changes in views and perception of the proposed development on visual amenity and receptor groups within the Zone of Theoretical Visibility (ZTV). It is based on the provision of scheme details and supporting graphic material from Realise Renewables.

The Proposed Development

- 1.2 The proposed site for the Trinity Gask Wind Turbine is located on the Strathearn Lowland Hills, approximately 8km to the north east of Auchterader, 10km to the south east of Crieff, and 12.5km to the west of Perth. The assessment of landscape and visual effects is based on the scheme description provided by Realise Renewables. It includes the key elements of 1 turbine, with a reduced rotor diameter of 34m on a 50m high hub. This will provide a turbine up to a maximum of 67m in height. The proposal will also include a control building, access tracks, temporary construction and laydown areas, an onsite borrow pit and underground cabling to the control building. The assessment of these associated elements is considered, where relevant, to the assessment of effects upon the landscape and visual resource.

The Study Area

- 1.3 It is accepted practice within landscape assessment work that the extent of the study area is broadly defined by the visual envelope or the Zone of Theoretical Visibility (ZTV) arising from the development site (the area within which it may be possible to see any part of the proposed development). Within the ZTV, the extent of visibility of a proposed development depends upon a variety of factors including the scale of development, the nature of the receiving environment, the range and distribution of visual receptor groups and the relationship between the viewpoint and the development itself, including orientation, distance and local screening and curvature of the earth. It will also include the prevailing meteorological and weather conditions available at any one time, visual acuity and the duration (permanency) of the development
- 1.4 Following initial ZTV studies, a 25km radius study area from the proposed turbine was identified to cover all potential significant effects within the ZTV. This radius was then consulted on with Perth and Kinross Council (PKC) and SNH.

Assessment Methodology

Scope Guidance

- 1.5 This appraisal has been completed in accordance with the Scottish Natural Heritage (SNH) guidance on the "Natural Heritage assessment of small scale wind energy projects which do

not require formal Environmental Impact Assessment (EIA)", March 2008 in accordance with the PKC screening response. This guidance indicates that for turbines of over 50m in height, the following should be undertaken:

- Consultation with the planning authority over the scope of the assessment;
 - Production of a Zone of Theoretical Visibility (ZTV) map;
 - Visualisations and photomontages, focusing on key viewpoints;
 - Assessment of the sensitivity of the landscape, magnitude of change and residual effects;
 - Map of all wind turbine proposals in the public domain within the study area;
- Assessment of all applied, consented or constructed proposals within 30km (or agreed 25km) of the application proposal.

Data Sources and Guidance

- 1.6 The appraisal has also drawn upon the established Countryside Agency methodology (Landscape Character Assessment Guidance, 2002) and other recognised guidelines, in particular the Landscape Institute and Institute of Environmental Management & Assessment's Guidelines for Landscape and Visual Impact Assessment, second edition, published in 2002 (GLVIA); the Scottish Natural Heritage Commissioned Report F01AA303A, Visual Assessment of Windfarms Best Practice, University of Newcastle (2002); the Visual Representation of Windfarms: Good Practice Guide, SNH (May, 2007); the Strategic Locational Guidance for Onshore Wind Turbines in respect of the Natural Heritage, SNH Policy Statement No 02/02; the Cumulative Effect Of Windfarms Version 2 revised 13.04.05; SNH Policy Statement No 01/ 02 Policy on Renewable Energy and Wildness in Scotland's Countryside, SNH Policy Statement No 02/ 03(2002). TayPlan Strategic Development Plan 2012, Perth and Kinross Structure Plan 2003 and the Strathearn Area Local Plan 2001.

Methodology

- 1.7 The methodologies and guidance identified above, aim to systematically appraise the existing landscape condition, to identify all the significant physical and visual characteristics and assess their quality or value as well as the perceived visual amenity value and sensitivity. These then provide a baseline against which the key landscape and visual effects can be predicted and evaluated and their magnitude and significance assessed in a logical and well reasoned fashion. The methodology is outlined below.

Defining Baseline Quality (Condition) and Sensitivity

- 1.8 In determining the significance of landscape and visual effects of the proposed Trinity Gask Wind Turbine, the quality (condition) and sensitivity of the existing landscape and visual resource are first considered.
- 1.9 Landscape and visual quality (or condition) is based on judgements about the physical state of the landscape and its degree of intactness, from visual, functional and ecological perspectives. It also reflects the state of repair of individual features and elements which make up the character of any one place. The categorisation of Landscape and Visual quality is defined as High, Medium or Low or by a combination of two categories i.e. High to Medium or Medium to High.

- 1.10 Landscape sensitivity is then defined within GLVIA as 'the extent to which a landscape type or area can accept change of a particular type and scale without unacceptable adverse effects on its character'. The identification of sensitivity therefore needs to be considered in relation to the nature of the change, i.e. the type and scale of development proposed within a particular area or type of landscape. The sensitivity of visual amenity is then dependent upon a combination of parameters, including the location and context of the view; the quality or importance of the existing view; the proprietary or secondary interest of the view; the direction and extent of the view; the ability of the view to absorb the type of development; the activity/occupation/pastime of the receptor and the frequency and duration of the view. Landscape and visual sensitivity is categorised as High, Medium or Low, or by a combination of two categories to provide a more subtle, intermediate and detailed group i.e. High to Medium or Medium to High.

Defining Magnitude of Effect

- 1.11 Once the quality and sensitivity is established, the magnitude of the anticipated effect needs to then be identified. This is defined within GLVIA as '*a combination of the scale, extent and duration of an effect*' and is categorised as High, Medium, Low or Negligible, or as a combination of two categories to provide a more subtle, intermediate and detailed group i.e. High to Medium or Medium to High.

Establishing Extent (Significance) of Effect

- 1.12 The extent of an effect is then determined by assessing the magnitude, in the context of the sensitivity of the landscape or visual receptor, to the change. For example, a change of Low magnitude in a Highly sensitive view or landscape may be more significant than a change of Medium magnitude to a view or landscape considered to have Low sensitivity. Other key criteria used in determining significance levels include the spatial extent and duration of the effect; the degree of reversibility; and (related to prevailing weather conditions) the percentage incidence of the effect. The significance of the effect is then determined in accordance with table 1, where, likely significant effects are generally considered to be Moderate or more, as outlined in Environmental Impact Assessment (EIA) Regulations. Where these occur the greatest weight in decision making will be given to Moderate - Major effects or more, with Moderate effects generally less important.

Table 1 – Extent (Significance) of Landscape / Visual Effect

		SENSITIVITY (of the landscape or visual receptor)		
		Low	Medium	High
MAGNITUDE (of the predicted effect upon the landscape and visual resource)	High	Moderate	Moderate/Major	Major
	Medium	Minor/Moderate	Moderate	Moderate/Major
	Low	Minor	Minor/Moderate	Moderate
	Negligible	Negligible	Negligible	Negligible

Scope of Work

- 1.13 In order to undertake a full assessment, a number of key stages of work have been identified. These are
- a desk study of current development plans for the site and surrounding area;

- a desk study of existing landscape character assessments for the study area;
- the preparation of a preliminary computer-generated ZTV study, to indicate the potential visibility of the Trinity Gask Wind Turbine and to assist in identifying potential viewpoints;
- the preparation of preliminary wireframes to indicate the potential extent of visibility, from a range of potentially sensitive viewpoints within the study area, to assist with defining the scope for the representative viewpoint assessment;
- the identification and agreement, through consultation with SNH and PKC, upon the number and location of various representative viewpoints within the study area;
- identification of the range of visual receptor groups within the study area;
- the preparation of computer-generated ZTV studies to nacelle and blade tip height and with/without significant woodland and settlement obstructions modelled, based on the finalised turbine locations;
- the preparation of computer generated wireframes showing the proposed development from the agreed representative viewpoints;
- the production of photomontages, showing the anticipated view following construction of the proposed development, from the agreed viewpoints;
- an assessment of the magnitude and extent of effects on the landscape character and visual environment during construction, operational and decommissioning stages of the proposed development;
- an assessment of the cumulative effects with other known Wind Turbine developments within the study area, as identified and agreed, through consultation; and
- an assessment of any mitigation measures incorporated within the proposals to help reduce identified potential landscape and visual effects

Consultation

- 1.14 A revised scheme for a 67m high turbine with a smaller (34m) rotor diameter has been proposed to address the original concerns of PKC, with regard to localised visual impact. This proposed turbine revision was discussed with PKC's planning officer during a project meeting in September 2012. During this meeting it was considered that the smaller rotor diameter would potentially have a 'perceived lower profile' in local views and would therefore be more visually recessive in the landscape.

2 THE LANDSCAPE BASELINE

- 2.1 The proposed development site lies within the Crieff & Strathearn area of Perthshire on the Strathearn Lowland Hills to the west of Perth. These hills straddle the glens, lochs and mountains of the Scottish Highlands to the north and the rich farmland and lowlands towns to the south. The identified study area embraces an area of open, slightly elevated, undulating agricultural farmland, with far-reaching, expansive views typical. Whilst considerable areas exhibit a large, open character with coniferous forestry plantations and woodland, human influence is also evident, with a dispersed settlement pattern and notable built influences at various points, including power lines, pylons, communication masts and existing wind turbines at elevated points, notably across the Ochil Hills to the south.

The Site Context

- 2.2 The landscape fabric of the site consists of slightly elevated, rolling terrain, a medium scaled irregular field pattern defined by hedgerows, intermittent mature trees and interspersed with notable areas of coniferous woodland. It is considered to be of **Medium** quality and sensitivity to change on account of its scale, frequency and contrast of moderately valued elements and coverage of woodland plantation.

Landscape Policy and Designation

- 2.3 The National and Development Plan policy framework recognises the importance of renewable energy. However, it also requires that due consideration is given to areas of designated landscape value. The development of renewable energy sources are generally encouraged but also need to be without significant adverse or detrimental impact upon the existing landscape and visual resource.
- 2.4 Within the study area a number of designated landscapes exist (Figure 1). They generally cover areas of attractive, mature and undeveloped landscapes and are relevant insofar as they cover areas which are valued for either landscape and /or visual amenity reasons, which are of importance in the context of the wider landscape. There are no national landscape designations within 20km. There are, however, two areas on the fringes of the 25km study area at River Earn and The River Tay (Dunkeld). There are then several local landscape designations in districts of Perth and Kinross and Fife. Their baseline quality and sensitivity is summarised in table 2. They are:
- Areas of Great Landscape Value (AGLV) – 9km to the east and 14km to the south at the nearest points
 - Gardens and Designed Landscapes (GDL) – Abercairny (5km northwest), Keillour Castle (6km north), Dupplin Castle (7.5km east), Gleneagles (8km southwest), Invermay (8.5km southeast), Methven Castle (9km northeast), Drummond Castle (10km west) and Monzie Castle / Ochertyre Castle (10km northwest), Braco Castle (14km southwest)
 - Conservation Areas (CA) – include Fowlis Wester (6km northwest), Dunning (7km southeast), Creif and Muthill (10km west) and Forgandenny, Pitcairngreen and Perth between 11-13km to the east.

Landscape Character

- 2.5 The Trinity Gask turbine will be visible from sections of the surrounding landscape, and will have the potential to affect the landscape character of the area. The landscape character of most of the study area is defined within the SNH Review No. 122 - Tayside Landscape Character Assessment (LCA). To the south east the character is then defined within the Fife LCA (SNH Review No.113, CRC, 1997). In common these reviews classify the area into broad Landscape Character Types (LCT) with sub-character units, defined by landform and landcover.
- 2.6 Within the study area and of relevance to the proposed Trinity Gask turbine, where there is a high potential for theoretical visibility and effect on key characteristics, two principal areas are present, (Figure 2). These include the Lowland Hills and the Broad Valley Lowland. Beyond these areas, at distances in excess of 8km, even with some intermittent visibility

(Figures 3-4) from the fringes of the Igneous Hills, Lowland River Corridors and the Highland Glens and Summits areas (listed in table 2), the expansive nature of the intervening landscape and its key characteristics, combined with general distance and orientation of these areas, will generally reduce the degree to which the character is affected. The site itself lies within the Lowland Hills area. A summary of the condition and sensitivity to change is recorded below for this area and the surrounding areas.

Lowland Hills

- 2.7 The proposed Trinity Gask turbine is located within the Lowland Hills LCT and the landscape character unit of Gask Ridge. This intermittent LCT extends to cover much of the surrounding context within 10-15km, forming a series of low ridges and hills running typically northeast to southwest and separating the lowland valleys. As a result any direct effects on character will be limited to this LCT and the Gask Ridge area. The Tayside Landscape Assessment summarises the landscape characteristics of the LCT as follows:

'...these hills are generally smooth and well-rounded. The transitional nature of the area is reflected in landcover and vegetation. Pastoral and even, arable fields give way to rough grazing and open moorland as height is gained. Even on the low Gask Ridge, where farmland extends onto the summit line, and the land is quite fertile, the greater exposure contributes to the transitional character. There is a considerable amount of coniferous forestry, with large plantations (along the Gask Ridge) and in places, extremely geometric. There are, however, signs of modern development including the busy A9 corridor where it climbs over the Gask Ridge to the west of Perth, the lines of pylons which fan out from the highland glens carrying power to the lowlands, and a number of telecommunication masts exploiting the hills' proximity to settled lowland.'

Baseline Sensitivity

- 2.8 These transitional areas of broad ridges and rounded hills rise between 150 and 600m AOD and are also described in the Tayside Landscape Assessment as being interrupted, tamed, and varied to simple, open to semi enclosed areas of medium scale with panoramic views available. The report also states *'...it is possible that the lower level of perceived constraint, together with the proximity to the existing electricity distribution network, could favour this area (for wind). It is acknowledged that development here could avoid the need to locate turbines in even more sensitive upland areas or in less sensitive, but more populated areas closer to settlements. It would also mean that, from a distance, and from some directions, turbines would be viewed against a backdrop of higher ground.'*
- 2.9 The quality of the LCT is therefore considered to be, on the whole, **Medium to High** and the sensitivity to the type of change is also considered to be **Medium to High** on account of its contrast of scale, openness, transition and intermittent historic focus, moderate value across most of Gask Ridge and general simplicity of key characteristics.

Surrounding Landscape Character Types

- 2.10 The surrounding areas will have differing levels of sensitivity to development depending on the composition and quality value of the key characteristics, their location and the related tolerance to the nature of the change, as detailed in section 1.

- 2.11 The lower lying and more settled character of the Broad Valley Lowland of the Strathallan and Strathearn area are considered to be slightly more sensitive, given the location and relationship with the lowland hills LCT and the coverage of designated historic landscapes. In the wider landscape the distinctive topography, intimate settled character and key built heritage characteristics of the Highland Glens areas to the west and the Lowland River Corridors (River Tay) to the northeast are considered to be slightly more sensitive given the lack of comparable vertical features scale and level of natural character, albeit with a reduced connection to the lowland hills. The quality of these LCTs is also recognised by the designations of National Scenic Areas and Areas of Great Landscape Value (AGLV). Although further local landscape designations then exist with elevated areas of the Igneous Hills LCT across the Ochil Hills, the general scale, elevation, distance and orientation away from the proposed site, combined with the open scale of the intervening landscape and an emerging baseline of wind turbine characteristics will reduce the potential sensitivity. This is also the case for the Highland Summits and Plateaux to the north. The baseline quality and sensitivity of these LCT's is detailed in the landscape baseline summary Table 2 below.

Historic Landscape (Setting)

- 2.12 A number of historic features exist within the study area. They include the GDL's and Conservation Areas identified above and illustrated on Figure 1. Whilst the effects on these features are considered in detail within the Cultural Heritage report, they have been identified as part of the landscape chapter, as they have a setting in the landscape and can be important elements in determining the landscape character of the baseline.
- 2.13 In terms of the landscape setting of these features (their visual and contextual relationship with their surroundings) a number of historic features exist along the lower lying, settled areas of the broad valley lowlands. Of relevance to the assessment, where there is a high potential for effect on the landscape setting, there is only one GDL area within 5km at Abercairny. Others then exist at 6-10km. The nearest CA's to the Trinity Gask turbine site are then located at Fowls Wester (6km) and Dunning (7km). The character and appearance of these areas is often strongly defined by a low lying, well vegetated context and by their relationship to broad valley context rather than by more elevated hill or ridge elements at more distant points. The quality of these areas is generally High but the sensitivity to the type of change proposed is reduced slightly given the relationship with the surrounding lowland hill context. This is summarised in table 2 below.

Non Designated Natural Heritage Areas

- 2.14 The SNH Policy Statement No 02/ 02 'Strategic Locational Guidance for Onshore Wind Farms in respect of the Natural Heritage', has identified different areas of natural heritage sensitivity across Scotland. With regard to the Trinity Gask site it is located just on the fringes of a zone defined as having a Medium Natural Heritage Sensitivity to Wind Turbines (Map 5 within the guidance) with zones of lower sensitivity bordering the site to the north and south. These areas represents the relative levels of opportunity and constraint in the area, where the medium sensitivity zone will provide;

'...areas with some sensitivities to wind farms. However, by careful choice of location within these areas there is often scope to accommodate development of an appropriate scale, siting and design (again having regard to cumulative effects) in a way which is acceptable in natural heritage terms'

- 2.15 This does not necessarily imply the absence of natural heritage interest, but with good siting and design it should however enable such localised interests to be respected. It is therefore considered that although the development site lies in an open, lightly populated landscape, the location of the turbine will not affect any significant areas of defined natural heritage.

Landscape Baseline Summary

- 2.16 The following table highlights the key character areas, landscape designations and areas of value which are of relevance to the proposed development. It then summarises the baseline quality and records the sensitivity to change. These judgements are made on the basis of site work, undertaken in accordance with recognised guidance identified above. It also incorporates the findings of the existing landscape character assessment identified above.

Table 2 - Landscape baseline summary table

Character Type (Vol 122)	Distance (min/max)	Condition (Quality)	Sensitivity to the (type of) change
Lowland Hills (LH) - Gask Ridge	0-19km	Medium	Medium – High
LH - Keillour/Bankfoot/Dunkeld	5-25km		Medium
Broad Valley Lowland - Strathallan and Strathearn area	2-25km	Medium	Medium
Igneous Hills	7-25km	Medium - High	Medium - Low
Lowland River Corridors	9-25km	High -Medium	Medium
Highland Glens	8-25km	High -Medium	Medium
Highland Summits and Plateaux	11-25km+	Medium - High	Medium - Low
Designated Landscape			
NSA's beyond 20km	21-25km+	High	High - Medium
AGLV's	9-25km+	High – Medium	High - Medium
Conservation Areas (setting)			
Within 10km - Fowlis Wester, Dunning, Crieff and Muthill	6-10km	High	High
Beyond 10km- Forgandenny, Pitcairngreen and Perth	11-13km east	High	Medium
Gardens & Designed Landscapes			
N/ NW – Abercairny / Keillour Castle Drummond Castle / Monzie Castle / Ochertyre Castle	5-10km	High	Medium - High
SW – Gleneagles and Braco Castle	8-14km	High	Medium - High
E/SE - Dupplin Castle / Invermay / Methven Castle	7-11km	High	Medium - High
Application Site			
Landscape Fabric	0km	Medium - High	Medium

3 VISUAL BASELINE

- 3.1 The purpose of the visual assessment is to define the Zone of Theoretical Visibility (ZTV) of the development (the extent of land/sea, from which it may be possible to see any part of the proposed development) and to determine how visible the proposals would be on general visual amenity, from principal representative viewpoints and on various visual receptor groups. Integral to this is the need to identify and define the character of the existing visual environment and assess its sensitivity to change. This will then provide a baseline against which the assessment of effects can be made using the methodology identified.

Extent of Visibility

- 3.2 The computer generated ZTVs to hub height (50m) and blade tip height (67m) (Figures 3-4) identify key stretches of the landscape, from which the proposed wind turbine development may theoretically be visible within the defined 25km radius. This is in line with the Visual Representation of Windfarms Good Practice Guidance (SNH). However it is important to note that ZTVs are tools for assessment and these are limited in several ways, including that, bare ground ZTVs make no allowance for any screening effects that may arise due to existing vegetation or built development (Figure 3). To limit this exaggerated impression, significant areas of vegetation and forest plantation woodland have been modelled into the terrain model to provide a more realistic impression of anticipated visibility using woodland areas identified on the 1:50k OS base (Figures 4a-b). The areas of woodland surrounding the site context on the Gask Ridge are also anticipated to remain for the lifetime of the proposed turbine and the assessment of visual effects is therefore based on this. The real extent of the ZTV will also be influenced further, by the subtle variations of landform and landcover that are not covered by the digital terrain modelling data (DTM).

Key Visual Receptors

- 3.3 A range of visual receptors and receptor groups can be expected to be affected by the proposed development. These receptors will include, but not be limited to residents, travellers and those visiting the area for recreational, amenity and tourism purposes. The extent of the effect upon certain groups will then vary according to their level of sensitivity to the type of development. For ease of presentation the assessment identifies 3 key groups. These are (1) local residents; (2) the travelling public; and (3) visitors to the area.
- 3.4 It is generally considered (GVLIA) that local residents with primary and immediate views from their homes and also visitors, whose principal preoccupation is with the enjoyment of the outdoor environment and with principal views, particularly from valued scenic points, will be most sensitive to changes in the visual environment, as these views will be consistently available.
- 3.5 Local residents and tourists with secondary views, away from the principal context of the proposal, may be less preoccupied with the scenic quality of the intervening view and therefore less sensitive. These include those who are travelling through the area or who are working outdoors. Travellers are then judged to be less sensitive to changes within their visual environment given that the visual experience and view available will be transient and changing. The visitors and tourists receptor group also embraces a broad category with

often different objectives, and thus levels of sensitivity. Those receptor groups with a proprietary interest and focus on the landscape context (i.e hill walkers) will generally have a higher level of sensitivity to change in their landscape and visual environment than those, whose attention may be more focused on their occupation/pastime.

Representative Viewpoint Appraisal

- 3.6 To help define the extent of visual effect, it is accepted practice to select and agree upon a number of representative viewpoints within the visual envelope of the development. These ideally include a broad range of sensitive viewpoints and visual receptor groups, from which the assessment of both of the existing baseline conditions and of the impacts arising from the proposed development will be assessed. This will establish how visible the proposals will be from specific locations and to gauge the anticipated effects upon wider visual amenity.
- 3.7 Guidance in the Visual Representation of Wind Farms (SNH) states that there is need to balance the likely significance of effects and how typical or representative the view is from the area, whilst avoiding the inclusion of atypical features. The viewpoint photomontages have therefore, also been taken from a range of publically accessible points, to cover a representative range of viewing distances, elevations, orientations, with different viewing experiences. The micro-siting of viewpoints on-site has, as a result, sought to maximise an open and clear view where available, whilst remaining tied to the identified 'key receptor group' for the viewpoint in question. Where the view is more restricted it is noted that this is due to the defined view being related to a specific receptor, identified in consultation. These include local residents, the Roman signal station and within the GDL at Gleneagles.
- 3.8 A total of 12 viewpoints have been assessed. The location of these was selected and agreed in consultation with PKC in March 2011 and include additional viewpoints from prominent vantage points on the A822 and A85. Subsequently, following community consultation in April/May 2011 it was decided between Realise Renewables and the landowner to add another 4 viewpoints from nearer local receptors, including Clathy to the east of the site. It is also noted that Viewpoint 5, had to be relocated as a result of scheme changes which reduced the height of the turbine and thus extent of visibility. The locations are shown on Figure 3 with the existing and predicted views illustrated on Figures 5 – 12. The existing viewpoint characteristics have been reviewed in accordance with current guidance and the methodology above. The baseline quality and sensitivity to change is detailed below in Table 3 and the visual characteristics of each viewpoint are provided in the Visual Effects section below, along with a description of the predicted magnitude and extent of effect.

Table 3: Representative Viewpoint Baseline

VP	Location	Grid Ref	Distance / Direction of View	Key Receptor Group	Quality of View	Baseline Sensitivity
1	Roundlaw Cottage	E296516 N719366	788m E	Residents	Medium	High
2	Roman Signal Station	E296735 N718894	500m N	Tourists Cultural Heritage	Medium	Medium
3	Gleneagles Hotel	E291666 N711307	9.9km NE	Tourists	Medium - High	High
4	Craig Rossie	E298325 N712101	7.5km N	Tourists/ Walkers	High - Medium	High
5	A9 Aberuthven (west of Perth)	E298419, N715980	3.7km N	Travellers	Medium	Medium-Low
6	Knock of Crieff	E286780 N722940	11km SE	Tourists/ Walkers	Medium - High	High
7	A85 Aldie	E296686, N724244	4.8km S	Travellers	Medium	Medium-Low
8	A822, Muthill	E287254 N716618	10.4km E	Travellers	Medium	Medium - Low
9	Chapelhill	E296598 N719725	724m SE	Residents	Medium	High
10	Drumgowan	E297063 N720108	635m S	Residents	Medium - Low	High
11	St David's	E295118, N720250	2.3km SE	Residents	Medium - High	High
12	Clathy	E299230, N719893	1.9km W	Residents	Medium - Low	High

4 LANDSCAPE EFFECTS

- 4.1 Judgments on the extent of effects arising from the proposed Trinity Gask wind turbine, on the existing landscape, are based on an assessment of the magnitude of the proposed change in light of the sensitivity of the landscape to the change proposed. This is done in line with the IEMA/LI Guidelines for Landscape and Visual Effect Assessment, 2nd edition 2002. Criteria influencing magnitude and significance levels include the spatial extent of the effect, the duration of the effect, the degree to which the effect is reversible and, related to prevailing weather conditions, the percentage incidence of the effect. The assessment methodology for this is summarised in section 2.

The Site

- 4.2 There will be temporary effects on the landscape fabric of the site as the result of ground disturbance during the construction phase. This will include some minor tree loss within existing woodland areas for the temporary access track and local changes in ground levels around the borrow pit. However, this will be minimised by utilising existing tracks as far as possible and containing earthworks within the site. This will also be short-term. Good site management plus reinstatement of at the end of the construction phase will minimise the extent and duration of these effects.
- 4.3 The turbine location has also been revised from the original feasibility layout and has been chosen to sit at a more southern point away from the highpoints of the ridge and from any notable site fabric elements. This has helped to moderate the effect on the site fabric and character, its amenity value and its contribution to the wider landscape context. The magnitude of effect on the landscape fabric of the site is therefore considered to be, on the whole, **Medium**. When combined with a **Medium** baseline sensitivity to the proposed change, the extent of effect is judged to be **Moderate**. All effects on the fabric are also considered to be substantially reversible in the long-term, following de-commissioning of the turbine.

Effects on Landscape Character

- 4.4 The ZTV studies (Figures 3 and 4) indicate that there will be some intervisibility between the Trinity Gask turbine and a number of the surrounding LCT's, identified above. Many of these types are, however, a considerable distance from the site and there will only be very limited visibility, typically beyond 10-12km. With no intervisibility there can be no potential for visibility of the development effecting landscape character. The potential effects on landscape character will, therefore, be restricted to the LCTs identified below.

Lowland Hills LCT

- 4.5 The development will be situated within a central section of the Lowland Hills LCT at Gask Ridge. This area then extends to cover the immediate landscape context for up to 5km to the west, 19km to the east and 2km to the north and south. It is therefore the area of landscape most immediately susceptible to being affected by the proposal. Further areas of the LCT then cover much of the study area within 15km. As the bare ground ZTV (Figure 3) indicates, there will be potential for a high theoretical visual exposure within 4-5km of the site along the ridge to the east and west, then 1-2km to the north and south, from the open

areas of farmland. As the screened ZTV (Figure 4) then indicates, the existing pattern woodland will restrict the degree of visibility across the Gask Ridge more typically to the hub of the turbine to 1km to the east and to intermittent points within 4km to the west. There will also be some further intermittent visual exposure to just the tip for around 2km to the east of Clathy. From other areas of the LCT there will be some visual exposure from the southern fringes of Keillour Forest along the A85 and from the eastern slopes of the Dunkeld area to the northwest of Auchterarder. Elsewhere within this LCT, to the north, east and west of these separate areas, the visual exposure of the turbine and hence opportunities to affect the key characteristics, will generally be limited due to the prominence of the characteristic landform hills and notable coniferous plantations.

- 4.6 Where the turbine is visible, the views toward it will range in distance, orientation, elevation and extent. From intermittent high points within 3km to the west the turbine will provide a new focus in the area, but from the majority of these views it will be seen within an open farmland context and the '*generally smooth and well-rounded*' landform with a '*considerable amount of coniferous forestry*' present. These provide a simple palette of open, uniform, large scaled characteristics, the strength, consistency and open nature of which will help accommodate the profile of the turbine. The turbine will also be seen from other points along Gask Ridge to the north, east and south, but at a substantial point to the rear of the characteristic coniferous plantation. From further areas at Keillour and Dunkeld, the turbine again will be seen in the context of extensive large scale coniferous woodland, open fields and the simple smooth domed terrain. With a reduced rotor diameter the proportional scale of the turbine and the prominence of the blades will also be reduced. This will lessen the potential for contrast of scale with the existing composition of features across the ridge. As a result it will not compromise the general scale of key characteristics of the area. Its size, scale and location is therefore considered to be appropriate for a landscape of this scale and visual simplicity with characteristics of moderate value.
- 4.7 The magnitude of effect on this area is therefore considered to be **Medium to High** within 3km to the west and typically **Low** elsewhere on the ridge and the adjacent areas. When combined with a baseline sensitivity of **Medium to High** on the Gask Ridge the extent of effect on the LCT area at Gask Ridge is judged to be **Moderate to Major** within 3km to the west, then to no more than **Moderate to Minor** elsewhere on the ridge and the surrounding areas.

Broad Valley Lowland

- 4.8 From the Broad Valley Lowland area the screening effect of intervening topography and notable coniferous woodland, will restrict visibility from much of the low lying points to the west towards Crieff and Muthill, then from the areas to the southeast to the north of Dunning. This is illustrated by the ZTVs. Where there is coverage, it is limited to an area between Auchterarder and Aberuthven within the Strathallan area as the valley orientates towards the Gask Ridge area for around 5km. At this point the turbine will be seen to the side of the valley context and orientation on the slightly elevated landform of the Gask Ridge to the northwest and typically away from the orientation of the key characteristics associated with the valley.

- 4.9 From the Strathearn area, where visible to the south side of the A85, the turbine will be seen across the valley rather than along it and within a separate, landscape notably to the rear of existing coniferous woodland. It will therefore sit away from the context of the key characteristics of the broad, medium scaled, flat-bottomed straths and will be backclothed by higher distant landform that is characterised by existing wind turbines which reduce the prominence of the turbine from this area. The magnitude of effect on these areas is therefore considered to be, **Low to Medium**. When combined with the **Medium** sensitivity to the proposed change, the extent of effect on the characteristics is judged to be on the whole **Minor to Moderate**.

Igneous Hills

- 4.10 Located at a minimum of 7km to the south along the Ochil Hills but extending in excess of 25km, this sparse, open, large-scale landscape cover large sections of the study area to the south. The key characteristics include conical summits, unimproved grass moorland, distinctive scarp and dipslopes, short steep glens, and considerable areas of coniferous forestry. As the ZTVs indicate the theoretical extent of visibility is limited to the open north faces slopes between 7km and 20km within this LCT to the southwest of the proposed turbine. The orientation and elevation of the key characteristics then lie in a separate section of the study area to the east and west. The proposed turbine will then sit as a minor element in a separate landscape to the north and will be seen in the context of wind turbine characteristics within this area. As a result there will be limited opportunity to affect the key character of this area. When the proposed turbine is then viewed against this elevated LCT, from the north, only the turbine blades and occasionally the hub will be visible as a minor indistinct element beneath the skyline of the hills. As a result the magnitude of effect is considered to be **Low** and the extent of effect **Minor to Moderate** when combined with the **Medium to Low** sensitivity to the proposed change.

Lowland River Corridors

- 4.11 As the ZTVs indicate, the theoretical exposure will be limited from the vast majority of this area, being confined to isolated points to the northwest of Perth, in excess of 10km from the proposed turbine. Elsewhere and more typically from the higher valued, lower lying sections along the valley, the turbine will be screened by a combination of intervening topography, vegetation and settlement. Also from these points the turbine will only be seen from the fringes of the area and not in the context of the key characteristics, appearing as a separate indistinct element, lying well beyond the area. The extent of effect is therefore not considered to be significant. This is summarised below, in table 4.

Highland Glens

- 4.12 The ZTVs indicate very limited exposure from this area, being limited to the nearest slopes to the east side of Crieff. Elsewhere and more typically from the higher valued sections along the intimate and intact glens, the turbine will be screened by a combination of notable intervening topography from the Highland summits. Also from the nearest points it will only be seen from and across the separate well vegetated Broad Valley lowland areas where it will only appear as a minor element, lying well beyond the context of the glens area and

within the wider context of other wind turbine influences. The extent of effect is therefore not considered to be significant. This is summarised below, in table 4.

Highland Summits and Plateaux

- 4.13 From the large elevated Highland Summits and Plateaux areas to the north, visibility will be gained from isolated, remote areas across the south facing slopes between 11km and 25km. From these points the orientation and focus of the key characteristics of the area exist along to the east and west with the proposed turbine sitting in a separate section of the lower lying landscape. It will therefore sit notably beyond the context of the area and its characteristics and will therefore have a limited potential to affect the large scale characteristics. Also, when the proposed turbine is viewed against this elevated landform of the LCT, from isolated points to the south, the turbine will normally sit well beneath the skyline and any distinctive peaks. As a result the magnitude and extent of effect is not considered to be significant. This is summarised below in table 4.

Effects on Landscape Designation

- 4.14 The Area's of Great Landscape Value (AGLV) along the Ochil Hills and to the west/ north of Perth, is the nearest landscape designation to the Trinity Gask turbine, but it typically lies well in excess of 9km. The character of the designation within the study area is varied. It is generally of notable scale and grandeur across the elevated sections of the Ochil Hills and intimacy and enclosure around the river corridors of Perth. It is typically influenced by the significant landform and topographical features, with expansive views from or across the Ochil Hills but limited visibility from the river valleys around Perth, to surrounding landscapes. This is also then the case for the two distant NSA's.
- 4.15 As noted above, given the location of the turbine within a clearly separate landscape the extent of visibility is low. Also given the character and quality of the designations being predominantly gained from large landform features and views along the valley or across the hills, it is not considered that the proposed turbine would undermine the integrity or setting of these features. The overall magnitude and extent of effect is therefore considered to be insignificant. This is detailed in table 4.

Effects on Historic Landscape (Setting)

- 4.16 The majority of Conservation Areas and GDL's within the study area are connected with the lower lying well vegetated strath landscapes and these are identified on Figure 1. In terms of landscape setting, there are no Conservation Areas within 5km of the proposed turbine. The nearest areas lie at Fowlis Wester to the northwest and Dunning to the southeast, with further areas in excess of 10km. Although there will be some visibility from the fringes of Fowlis Wester the turbine will be seen as a relatively minor element in the wider landscape and will have no effect on the setting of the conservation area. From the other areas visibility will be restricted by intervening landform and landcover, with no significant effect on view or the historic setting. This is also the case of the GDLs, which is indicated by the extent of coverage shown on the screened ZTVs. The underlying nature, setting, sense of place and historical focus of these areas will thus remain intact with the turbine proposal being physically, culturally and visually separate from these areas.

4.17 When considering the landscape setting of the Scheduled features on the Gask ridge, including the Roman Road and signal station scheduled monuments, the ZTVs and viewpoint assessment indicates that there will be some intermittent filtered views from isolated points around the monuments. However, given the secluded context and contained setting within local woodland, the visibility and potential for effect on the contained landscape setting will be limited. This is also the case for the nearest Scheduled features directly to the south of the proposal, where the existing tree cover and surrounding extensive coniferous plantation will help to partially screen the turbine from the immediate landscape setting. In addition the potential for effect on setting will be further moderated by supplementary planting to restore original woodland features along the Roman road. The effects on the scheduled features are considered in detail in the Cultural Heritage report.

Summary

4.18 The following table provides a summary of the effects upon the identified landscape resource and the character types and areas within the study area.

4.19 Table 4 - Landscape Effects

Character Type(Vol. 122)	Baseline Sensitivity	Intervisibility with the site	Magnitude of Effect	Extent of Effect
Lowland Hills - Gask Ridge and Keillour, Dunkeld	Medium – High Medium	Medium-Low	Medium-High (3km W) Low (+3km W)	Moderate – Major Moderate - Minor
Broad Valley Lowland - Strathallan/ Strathearn	Medium	Low - Medium	Low - Medium	Minor - Moderate
Igneous Hills	Medium - Low	Low	Low	Minor - Moderate
Lowland River Corridors	Medium	Low - Negligible	Low - Negligible	Minor - Negligible
Highland Glens	Medium	Low - Negligible	Low - Negligible	Minor - Negligible
Highland Summits and Plateaux	Medium - Low	Low - Medium	Low - Medium	Minor - Moderate
Designated Landscape				
NSA's beyond 20km	High - Medium	Low - Negligible	Negligible	Negligible
AGLV's	High - Medium	Low - Negligible	Low - Negligible	Minor - Negligible
Conservation Areas (setting)				
Within 10km	High	Medium - Low	Low-Negligible	Minor
Beyond 10km	Medium	Negligible	Low - Negligible	Negligible
Gardens & Designed Landscapes (setting)				
N/NW	Medium - High	Low - Negligible	Low	Minor-Moderate
SW	Medium- High	Low - Negligible	Low - Negligible	Minor - Negligible
E/SE	Medium- High	Negligible	Low - Negligible	Minor - Negligible
Application Site				
Landscape Fabric	Medium	Medium	Medium	Moderate

5 VISUAL EFFECTS

5.1 The approach to undertaking a visual assessment is to first establish the extent of the Zone of Theoretical Visibility (ZTV) for the development and then to determine how visible the proposals would be from a range of representative viewpoints (detailed below) and visual receptor groups, this will then help gauge the extent of effects upon general visual amenity within the ZTV.

5.2 The ZTVs illustrated in Figures 3 and 4 indicate the theoretical worst case scenario in terms of the extent of visual exposure. Although the Screened ZTV in Figure 4 provides some indication of the level of screening provided by key elements of woodland, in reality, the extent of visual effect arising from the proposed development over land will be reduced further due to the subtleties of intervening landform, built form and localised vegetation, including hedgerows and other blocks of woodland (although it is recognised that vegetation screening can vary over time leading to changes in actual visibility). The methodology for this is set out in more detail in section 2.

Principal Zones of Theoretical Visibility

5.3 As the ZTVs illustrate, the principal zones of visibility will be concentrated to the north, west and south with notable visibility restricted to within 3km to the northwest and southwest across the immediate sections of the Gask Ridge. More extended intermittent visibility is then found at various points, along the A85 to the north between 4-8km, across the Lowland Hills at Dunkeld and adjacent Strathallan valley between 3-9km. It is then restricted to remote, elevated slopes, facing the proposed site within the Ochill Hills and Highland Summits and Plateaux area to the north and south at distances in excess of 10km. Elsewhere, notable changes in elevation along the Gask Ridge combined with notable areas of conifer plantation, will restrict views to the east and sections to the west and positively assist in screening the proposed turbine from most of these low lying settled landscapes.

Representative Viewpoint Effects

5.4 The following analysis detailed below in Table 5, refers to the potential visual effects on the 12 representative viewpoints identified in the visual baseline. To help understand the assessment, reference should be made to the existing panoramas, wireframes and photomontages (Figures 5 – 16), which illustrate the existing and proposed view from each location. Reference should also be made to section 7, which discusses the cumulative effects in more detail.

Table 5 - Viewpoints Effects

No	Location	Key Receptor Sensitivity	Visual Effect / Cumulative Effect	Magnitude of Visual Effect	Extent of Effect - Key Receptor
1	Roundlaw Cottage	High	From this local point to the west, the proposed Trinity Gask (TG) turbine will be clearly visible as a prominent new element in this locally contained view across the proposed site context, to the east. As Figure 5 a-b illustrates, the full height of the turbine will be visible in the view, with the hub and blades sitting above the skyline, which is defined uniformly by coniferous woodland along the Gask Ridge. In this context the hub and blades will also be seen at a similar height to the elevated sections of woodland and landform to the north side of the view. While the turbine will add a distinctive element to the local view, the proportions of the turbine blades will help to reduce the apparent scale and visual profile of the turbine in the view compared to the original proposal. The magnitude of visual effect of this revision to the proposed turbine is considered to be Medium to High from this localised point, which is peripheral to the main context and orientation of views from the cottage, which are south to the Ochil Hills. When combined with a High level of sensitivity, from the key receptor group of residents, the extent of effect in this peripheral localised point is judged to be Moderate to Major . When considered for other receptors including travellers along the minor road, a combination of vegetation coverage and landform orientation will intervene to screen or filter views to a degree from most points and the magnitude of effect will be reduced more typically to Moderate to Minor .	Medium - High	Moderate - Major
2	Roman Signal Station	Medium	From the Roman Signal station within the site at 500m to the south, the tower and blades of the TG turbine will be seen as a clear element in isolated filtered views, within the undulating semi enclosed view to the north. This is indicated in Figure 6 a-b. As the photomontage shows the turbine will sit on the ascending open slopes of the Gask Ridge with part of the tower backclothed by ascending terrain and elevated coniferous woodland. These combine to define a simple contained view. Although the illustrated photomontage shows that the proposed turbine will be partially screened by foreground vegetation at this point, it is noted that this type of view will be typical from most points along the footway. The turbine will then extend above the simple, moderately flat backdrop, but will not dominate the balance of elements in the view or conflict with any wider distinctive landform or landcover elements. As a result the magnitude of effect is considered to be Medium . When combined with the Medium sensitivity from the key receptor group of tourists at the signal station the extent of visual effect is considered to be Moderate . This will then be reduced more typically to Moderate to Minor from other stretches of the footway with vegetation and orientation redirecting and restricting the view.	Medium	Moderate
3	Gleneagles	High	From this low lying point within the Gleneagles Estate, at 9.9km to the southwest and from a notable	Negligible	Negligible

	Hotel		point within the historic GDL area, the view to the northeast is contained by a well vegetated foreground with limited views towards the distant ascending Gask Ridge slopes. As a result there is no visibility of the proposed turbine from this point on the fringes of the ZTV with visibility more generally limited to just the northern side of the Auchterarder area. This is shown on Figures 7a-b. As a result the magnitude and extent of effect will be Negligible from within the designated area and much of its immediate context.		
4	Craig Rossie	High	From a notably elevated point at 7.5km to the south, the tower and blades of the proposed TG turbine will be visible in the distinctly separate, low lying expansive farmland area. At this point it will be seen as a minor element, surrounded by extensive areas of coniferous woodland and open fields on the south side of the Gask Ridge (Figure 8 a-b). It will also be seen wholly beneath the distant horizon and beneath the upland slopes of the highlands. It will also be seen in the context of a large scaled panorama with notable and dramatically scaled landform features to the north and away from any other distinctive landform or landcover elements including settled areas. It will then be seen in the wider context of large wind turbine influences in the same context as the viewpoint. The magnitude of visual effect is thus considered to be Low to Negligible and the extent of visual effect Moderate to Minor when combined with a baseline sensitivity of High for the key receptor group of tourists and walkers to this viewpoint.	Low- Negligible	Moderate- Minor
5	A9 Aberuthven (west of Perth)	Medium - Low	The Trinity Gask turbine will be visible from this point on the eastbound A9 to the south, as it sits to the rear of the ascending slopes of Gask Ridge in the mid distance. This is illustrated in the wireframe (Figure 9) which shows that the tower, hub and blades will be visible above the moderately flat ridgeline. It also shows that the tower will be backclothed by the elevated highland peaks to the north. The hub will then sit just on the elevated skyline and the blades will extend above it. The turbine will also be seen to sit notably behind characteristic coniferous woodland planting. As a result the magnitude of effect is considered to be Low to Medium . When combined with a Medium to Low baseline sensitivity from the key receptors of local travellers on the A9 the extent of visual effect will be no more than Moderate to Minor .	Low - Medium	Moderate - Minor
6	Knock of Crieff	High	From this elevated point at 11km to the northwest, the full height of the proposed TG turbine will be visible, sitting in a filtered, sharply descending view towards a separate low lying farmland area (Figure 10a-b). The turbine will be seen in the general context of a well vegetated farmland area with notable sections of coniferous woodland defining most of the central area to the north side of the Gask Ridge. It will also be seen at a considerable point below the distant elevated skyline which rises up to a clearly separate defined section of the view. These elements of landform and landcover help to reduce the profile of the turbine in the view where it will be seen as a minor element and in addition to more prominent wind turbine influences in the same view to the elevated southeast at Greenknowes. As a result the magnitude of effect is considered to be Low to Negligible . When	Low- Negligible	Moderate- Minor

			combined with the High sensitivity from the key receptor group of recreational tourists, the extent of visual effect is considered to be Moderate to Minor .		
7	A85 Aldie	Medium - Low	At 4.8km to the north, the proposed TG turbine will be seen to sit substantially to the rear of the vegetated Gask Ridge with the hub and blades apparent above the coniferous woodland area (Figure 11a-b). The blades will then sit at a substantial point below the distant elevated backdrop of the Ochil Hills in the far distance and the turbine will also be seen in the same context as the prominent existing turbines of Greenknowes. Furthermore the turbine will be seen across and simple open farmland area with a large scale field pattern and few other landscape features which help to accommodate the profile of the turbine in the view. It will therefore only form a minor element to the rear of the immediate context of the panorama. The magnitude of visual effect is thus no more than Low . The extent of visual effect is then judged to be no more than Minor to Moderate when combined with a baseline sensitivity of Medium to Low for the key receptor of travellers on the A85.	Low	Minor - Moderate
8	A822 Muthill	Medium - Low	The Trinity Gask turbine will only be faintly visible from this well vegetated low lying area to the east on the fringes of the Muthill Conservation Area. In this view the proposed turbine it will sit notably to the rear of the flat, slightly descending and well vegetated farmland, which encloses any notable views to the distant Gask Ridge. This is illustrated in the wireframe (Figure 12 a) which shows that the hub and blades will be visible above the moderately flat horizon in the far distance. However, as the photomontage shows (Figure 12 b) the turbine will typically sit behind characteristic woodland and field boundary planting from this point. This is also the case for sections of the road around Muthill to the north. Elsewhere from this area, the elevation falls away to the east and the turbine will not be visible. To the southwest the landform rises but few receptors will be present, with clear distant views to the northeast. As a result the magnitude of effect is considered to be Low to Negligible . When combined with a Medium to Low baseline sensitivity from the key receptors of travellers at this high point the extent of visual effect will be Minor to Negligible .	Low to Negligible	Minor - Moderate
9	Chapelhill	High	From this local point to the northwest, the Trinity Gask turbine will be seen at a prominent point within a short, sloping view to the southeast. As Figure 13a-b shows, the tower, hub and blades will be visible across the western slopes of the Gask Ridge and in a view characterised by large open sweeping terrain, enclosed fields and by extensive consistent backdrop of coniferous woodland which contribute to the relatively simple scaled view in this direction. The hub and blades will also be visible above the wooded horizon and while it will provide a new tall focus in the view to the southeast, the proportion of the turbine elements will not be overbearing against the scale of other elements in the view or detract from the remaining focus of the view and general orientation of longer, broader views to the southwest. The visual profile of the turbine will also be reduced by the ascending landform, which rises above the height of the turbine to the north. The magnitude of effect is thus considered to be Medium to High . When combined with the High sensitivity from the key receptors of residents	Medium - High	Moderate - Major

			at Chapelhill, the extent of visual effect is considered to be Moderate to Major at this isolated point. For other representative groups, the extent of effect for travellers on the minor road will be changeable but reduced to no more than Moderate .		
10	Drum-gowan,	High	The Trinity Gask turbine will be barely visible from this local point to the north, as it sits substantially to the rear of the immediate ascending slopes of Gask Ridge. This is illustrated in the wireframe (Figure 14 a) which shows that the turbine will be visible above the moderately flat horizon in the near distance, rising to a similar vertical height to the existing coniferous woodland. As the photomontage shows (Figure 14 b) the turbine will, therefore, sit notably behind the existing coniferous woodland planting. While the visual effect would be higher as a result of felling this woodland it is anticipated that the woodland will remain in place for the lifetime of the proposed turbine. Elsewhere from this area to the north of the Gask Ridge, the elevation falls away to the north and the turbine will not be visible. As a result the magnitude of effect is considered to be Low to Negligible . When combined with a High baseline sensitivity from the key receptors of local residents the extent of visual effect will be no more than Moderate to Minor .	Low - Negligible	Moderate - Minor
11	St David's main road	High	At a distance of 2.3km to the north west the proposed Trinity Gask turbine will be seen as a clear element within the broad, open view to the southeast. As Figure 15a-b shows, the tower, hub and blades will be visible across the smooth western slopes of the Gask Ridge with the hub sitting on the skyline and blades rising above. The lower half of the tower will then be sheltered within the descending landform of the Gask Ridge and further enclosed by the consistent backdrop of coniferous woodland, which provide some scale and simplicity in the view. While the turbine will provide a clear change in a small section of the view, the proportions of the turbine will not appear obviously out of scale with the remaining elements of this broad and expansive panorama nor will it conflict with any distinctive elevated peaks across the Ochil Hills to the south. Also it will be seen with other more prominently elevated wind turbine influences to the south. The magnitude of effect is thus considered to be Medium to Low . When combined with the High sensitivity from the key receptors of residents at Chapelhill, the extent of visual effect is considered to be no more than Moderate at this point.	Medium - Low	Moderate
12	Clathy	High	From this local point on the Gask Ridge at nearly 2km to the east, the view to the west is contained locally by significant coniferous woodland, with limited views along the Gask Ridge. As a result there is no visibility of the proposed turbine from this point as a result of forestry screening, with visibility more generally limited beyond the settlement of Clathy at intermittent points to the east where visibility will only be gained to the blade tips (similar in context to VP10). This is shown on Figures 16a-b. As a result the magnitude and extent of effect from this area will be Negligible. In addition the key focus and context of more valued views from this area is directly to the south and north towards the distant hill ridges, where to the south, the ridge is defined by prominent wind turbine influences.	Negligible	Negligible

Effects on the Residential Receptor Group

- 5.5 Given the dispersed nature of the immediate farmland context, only a small number of residents will experience any significant views of the proposal. The extent of effect upon the receptor group will primarily depend upon the distance from the proposed development, the orientation of the main views from their properties and the existence or otherwise of intervening, landform, built elements and/or vegetation. Visual effects arising from the Trinity Gask turbine are therefore likely to be greatest from the dispersed farmsteads within the immediate vicinity on the western fringes of the Gask Ridge and typically from elevated points to the west, where direct, open views are available and the prominence of a turbine in the view will be increased. However, direct views will be limited from most of the nearest residents within 1-2km to the west, with the general orientation and intervening features, as noted in Table 6 below.

Table 6: Local Residential Amenity

Residential Receptor	Distance to Site	Direction of site	Key Orientation / Views	Intervisibility with the proposed turbine
Roundlaw Farmhouse	1000m	East	North - South	Screened by landform and vegetation.
Roundlaw Cottage	775m	East	North - South	Open, level but peripheral view
Chapelhill P	725m	Southeast	Southwest	Open, peripheral view
Chapelhill F	820m	Southeast	Southeast	Screened by farm buildings
Chapelhill R	725m	Southeast	East - West	Partially screened by landform and vegetation and peripheral
Drumgowan	630m	Southeast	East - West	Mostly screened by landform and woodland
Blairdams	580m	South	North - South	screened by landform and woodland
Blairs	850m	Southeast	East - West	Screened by landform and woodland
Drumpark	1000m	South	North - South	Mostly screened by landform and woodland

- 5.6 From other points to the north, south and east within 2km notable landform and landcover elements will restrict notable visibility to the site. Where the Trinity Gask turbine is visible, it will generally be seen within an expansive farmland context with extensive coniferous woodland plantations and notable intervening landform elements. While the turbine will provide a distinct new element at these local points, the overall proportions of the turbine, with a reduced rotor diameter, will not be noticeably out of scale with the wider balance and scale of elements in the view. The turbine will also be seen frequently in the wider view with other more prominent elevated turbines and will not therefore be seen as a separate, isolated development, in most cases.
- 5.7 Beyond these points and from the majority of settlements, visibility will be limited. These include the principal settlements at Crieff, Muthill and Auchterarder. The general context and orientation of these settlements also lie away from the proposed turbine. From most other

points, particularly to the north, south and east, the turbine will then be seen notably to the rear of ascending landform and landcover elements and from the west within a simple and expansive landscape. The extent of effect on this receptor group is, therefore, assessed to be **Moderate to Minor**.

Effects on Travellers

- 5.8 The ZTVs show that there will be potential visibility from intermittent points along the A85, A824 and the A9 to the northeast of Auchterarder. In reality, local intervening vegetation and landform will limit the extent of coverage from most sections. As a result the Trinity Gask turbine will not typically result in a significant change in the view for travellers on most sections of these main roads. From other routes including the A822 and the A823 the turbine will not be clearly visible with no notable effect.
- 5.9 Elsewhere from other local roads, the turbine will be seen in isolated points from the B8062, then to varying degrees along minor roads to the west of the proposed turbine, between St Davids, Kinkell Bride and to the north of Kirkton, where the turbine will be seen at varying points within the expansive undulated and well vegetated farmland and even from the more localised points, often to the rear of landform and woodland features. As it passes the site there will be a localised **Moderate** effect for about 1km. From other local roads the proposed turbine will generally be seen away from the main direction of the road and in the context of a broader view. As a result the turbine will not result in a significant change in the view for most travellers given the transient nature of the views and the open expansive scale of the farmland context and only thus, on the whole, a **Minor** effect.

Effects on Visitors and the Tourism / Amenity Resource

- 5.10 This receptor group comprises a broad category with different objectives. The majority of the significant tourist areas in the study area are located within at the low-lying, well vegetated lowland valleys and are as such, generally screened from the proposed development, with no notable effect. Where views are available from more elevated remote hill top points from the Ochill Hills and Highland fringe areas like the Knock of Crieff, the Trinity Gask turbine will normally be seen within the context of a separate low lying landscape and in the wider context of other existing wind farm developments. The extent of effect on this receptor group is thus considered to be on the whole, no more than **Minor**.

6 MITIGATION DESIGN

- 6.1 The principal opportunity for incorporating mitigation into the scheme has evolved, during the scheme development and consultation process in April 2011, where consideration was given firstly, to reducing the overall height of the turbine from 80 to 67m. The proportions of turbine components have also now been reviewed from the original submission, to help moderate the apparent scale and visual profile of the rotor diameter in local views from a number of locally sensitive receptors across the western end of the Gask Ridge.
- 6.2 Consideration was also given to issues such as the sensitive routing and construction of access tracks and the siting of the turbine to avoid any potential tree, vegetation or field

boundary loss and to limit the potential for notable views of the base, foundations and general height of the turbine. On-going supplementary on site planting will also be carried out to restore original woodland features along the Roman road and mitigate effects on the contained setting.

7 CUMULATIVE EFFECTS

- 7.1 Collectively, should all of the identified wind farms be built (Figure 17), they will provide an intermittent built influence across the area, particularly at elevated skyline points across the Ochill Hills to the south.
- 7.2 Given that the extent of proposed cumulative sites within the central section's of the study area has not changed since the previous application, particularly within 8-10km, it is considered that there will be no significant change to the cumulative effects identified within the previous application. The proposed turbine will, therefore, rarely add to the existing extent of visual exposure, and will only provide a minor addition to the influence of wind turbine elements in a separate section of the landscape, with limited opportunity for notable complexity or visual overlap in developments. For further details refer to the assessment within the previously submitted application.

8 LANDSCAPE AND VISUAL IMPACT SUMMARY

- 8.1 Following the landscape and visual appraisal, it is considered that both the revised scale of the Trinity Gask turbine and its location within a relatively sheltered, simple section of the Gask Ridge landscape are both appropriate and in line with Policy 6 of the TayPlan SDP, and Policy 11 of the Local Plan. Given the reduction in the size of the turbine blades, this has helped to reduce the potential for dominating the balance and scale of other landscape features on the Gask Ridge, and has helped to moderate the visual profile and how it is perceived in local views.
- 8.2 Given the location and the nature and character of the receiving environment, the landscape has the ability to accommodate this change with a limited effect on the landscape and visual resource. The scheme has also included a number of design changes to minimise adverse effects on the landscape and other sensitive landscape and visual amenity receptors, particularly local residential amenity, so that it sits appropriately with the scale of the site landscape. Furthermore, whilst there will be acknowledged changes in the local landscape, these will be completely reversible and temporary given the turbine's anticipated life span of no more than 25 years.

**Trinity Gask
Wind Turbine**

**Great Crested Newt
Survey
April-May 2011**

Version 2, 24th October 2011

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EXECUTIVE SUMMARY.

During April and May 2011, David Bell, ECOS Countryside Services LLP undertook a survey of great crested newt (GCN) of possible breeding sites within 500m of a proposed wind turbine at Trinity Gask, by Perth, Perthshire.

The survey method was agreed in advance with Scottish Natural Heritage (SNH) and comprised one day-time visit and four night-time visits to record GCN and any other amphibian species.

No signs of any presence of GCN were identified from surveys and it would appear that they are absent from the survey site and this concurs with historical data. Low breeding populations of frog, toad and palmate newt breed in one local pond and in two ditches.

**TRINITY GASK WIND TURBINE
GREAT CRESTED NEWT SURVEY
APRIL- May 2011**

1.0 INTRODUCTION

David Bell, ECOS Countryside Services LLP was invited to undertake a great crested newt (*Triturus cristatus*) (GCN) survey of a proposed wind turbine site at Trinity Gask, Perthshire, see appendix 1. The scope and methodology used for survey was agreed in advance with SNH.

David Bell is an ecologist with over 30 years of professional experience in researching, assessing and evaluating Scottish ecological data, twenty three years since establishing ECOS in 1987. He has excellent field skills in botany and ornithology as well as special expertise in protected species and macrophytes and is familiar with current regulations and guidelines in relation to the environment, flora and fauna. He has studied GCN in Scotland for over 20 years, is secretary of Fife Amphibian and Reptile Group and holds a current Scotland-wide SNH licence for this species. His amphibian expertise has been used in providing training schemes for local groups, local authorities and SNH staff as well as part of the national NARRS training scheme.

2.0 AIM AND ADEQUACY OF SCOPE OF REPORT

The scope of the works and report is defined by the elements listed below.

1. To undertake a desk-top study to collate known data for the site and its immediate environs.
2. To undertake a daytime survey to identify ponds and assess the habitat suitability for GCN.
3. To undertake four night-time survey of ponds identified as suitable for GCN by ECOS.
4. To report the ECOS 2011 survey.

3.0 SOURCES OF GUIDANCE AND DATA

3.1 Key sources of information and guidance

Consultation

- Development masterplan and background ecological survey data, as provided by NAIAD Consultancy.

Legislation and guidance

- Nature Conservation (Natural Habitats etc) Regulations 1994.
- Nature Conservation (Scotland) Act 2004.
- Wildlife and Countryside Act 1981, as amended.
- UK Biodiversity Action Plan.
- Scottish Biodiversity Strategy.
- Tayside Biodiversity Action Plan.
- English Nature (2001). Great Crested Newt Mitigation Guidelines.

- Froglife (2001). Great Crested Newt Conservation Handbook.
- Gent, T. and Gibson, S. (1998). Herpetofauna Workers Manual. JNCC.
- Oldham et al (2000). Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). Herpetological Journal, Vol. 10 pp 143-155.

Data

- Alexander et al (1997). National Survey for the Great Crested Newt (*Triturus cristatus*). Report to Scottish Natural Heritage.

3.2 Summary of available desk-top data

3.2.1 National GCN Survey 1997

The National Great Crested Newt Survey 1995-96, reported in January 1997, collated all known historical sites and re-surveyed them and any ponds likely to be within the breeding locus, to standard methods.

Reference to the National Survey report confirms:

- There are no historical records of GCN in the Trinity Gask area, the nearest known extant site being Pitmedden Forest, approximately 24 miles to the east.

4.0 ECOS SURVEY 2011

4.1 Site location and general description

- The site, see Appendix 1, is situated in intensively farmed land with significant proportions of planted woodland. Typical farmland features were present on agricultural land and included hedgerows, farm ponds and ditches.

4.2 Amphibian resource

The potential resource for amphibians was determined from:

- aerial photographs and OS maps; and
- a daytime walkover survey on 6th April 2011.

The site is not known to hold GCN, however, it is often the case that distribution is determined by survey effort and for the purpose of this survey it was assumed that GCN could be present and that surveys were justified. Ponds within a land area up to 500m from development are generally considered to be at risk of impact. Although in the case of a single turbine this is likely to be much more limited and restricted to access roads and the pads of the turbines.

A total of two ponds were identified within the site redline boundary, see Appendix 2. Another pond, B1, was identified in the 200m buffer zone and another four in the land immediately adjacent to the buffer.

Table 1. Ponds and waterbodies on, and adjacent to the site

Pond No	NGR	Approx. Distance to turbine	Outline Description
Roman road ditch south	NN 97181 18918	700m	Ditch draining access road on line of Roman Road. No drought-resistance therefore reflected in very limited riparian vegetation, present only on short sections and in association with deeper "sumps". <i>Juncus articulatus</i> , <i>Sparganium erectum</i> , <i>Potamogeton natans</i> and <i>Veronica beccabunga</i> ,
Roman road ditch north	NN97175 18928	700m	The ditch was similar in nature to the south but was holding deeper water over greater length.
Farm Flight Pond	NN 97014 19326	400m	Farm pond with an island created for wither abstraction or wildfowling. It fed by a ditch was greater than 1m in depth. It appeared drought resistant and of moderate exposure. At the time of visit the water was slightly turbid. Sticklebacks were numerous. A pair of mute swans were attempting to breed and

Pond No	NGR	Approx. Distance to turbine	Outline Description
			3 mallard and 4 tufted duck were also noted. The pond is visited by otter with spraints recorded on the bank and the inflow.
Muir o' Fauld Pond	NN 97736 19156	700m	A man-made pond enclosed by a semi-mature plantation to the north and scrub to the east and south. Water is retained by a sluice at the west end. It was steep-sided and greater than one metre in depth and with extensive floating mats of <i>Potamogeton natans</i> . <i>Alisma plantago-aquatica</i> is an occasional whilst dense <i>Chara spp.</i> mat the solum.

4.4 Survey methodology

Amphibian surveys were undertaken at the correct time of year to collect credible data. Day-time visits were followed by four night-time visits within two hours of dusk using the four basic techniques as described in Gent & Gibson (1998).

These techniques were:

1. Searching for newt eggs amongst vegetation;
2. Netting around the banks for adult amphibians and their larvae;
3. Counts of any amphibian in the ponds by torchlight;
4. Hand-searching refugia (under wood and stones) in the vicinity of the ponds.

4.5 Survey results

The day-time survey was carried out on 6th April 2011 and involved visiting two ditches along the side of the Roman Road, one farm pond and a mill to east at Muir of Fauld.

4.5.1 Water chemistry

Basic water chemistry parameters were recorded for each waterbody on 6th April 2011, as summarised in Table 2.

Table 2. Basic water parameters

Pond	NGR	Temp (Deg C)	pH	ORP (mV)	Conductivity (Micro-seimens)
Roman Road ditch south	NN 97181 18918	10.6	6.5	126	60

Pond	NGR	Temp (Deg C)	pH	ORP (mV)	Conductivity (Micro-seimens)
Roman Road ditch north	NN 97175 18928	8.8	6.6	127	68
Farm Flight Pond	NN 97014 19326	9.3	8.2	129	84
Muir o' Fauld Pond	NN 97736 19156	8.3	8.3	131	103

All ponds are in the range mesotrophic-eutrophic in status with a pH 6.5-6.3. The run off from adjacent peatland lowered pH in the adjacent ditches. Conductivity is indicative of the local substrate and shows a relatively wide range of readings, which are lower than might be expected, given the arable catchment. The ORP, which crudely reflects the oxygen levels of the water, where any record of less than 100 micro-seimens suggests poorly oxygenated water, ranged from 126 to 131 and were in the lower range.

4.5.2 Habitat suitability

The habitat suitability of the ponds was assessed by ECOS using the Oldham evaluation method. This method assumes that habitat determines population size and assigns qualitative and quantitative measurements to each feature and uses the figures to calculate the Habitat Suitability Index (HSI). The HSI is determined as a geometric mean, the tenth root of the product of all the suitability indices. The ten key habitat features for which suitability indices were assigned were - geographic location, pond area, pond permanence, water quality, shade, waterfowl presence, fish presence, pond density, terrestrial habitat availability and area and macrophyte cover. The HSI were calculated and are presented in Appendix 2. The HSI range is from 0.55 (Roman Road south Ditch)) to 0.74 (Mill Pond).

- There is positive correlation between the HSI and the amphibian population size, or potential population size, in a pond. In general the higher the HSI the more suitable the pond and the higher the population it may support.
- A lower threshold HSI for GCN is approximately 0.43 and below this a pond would not be expected to support a breeding population of these amphibians.
- In theory, any pond within the HSI range of 0.55-0.74, as recorded at Trinity Gask, could support GCN, with the most likely being the Mill Pond.

4.5.3 Results of survey

The results of the night-time torchlight survey and sweep net on 24th May 2011 is summarised in Appendix 3.

- There were no records of GCN or Smooth Newt in any of the key ponds.
- There is a low breeding population of Frog, Toad and Palmate Newt.

4.6 Amphibian population sizes

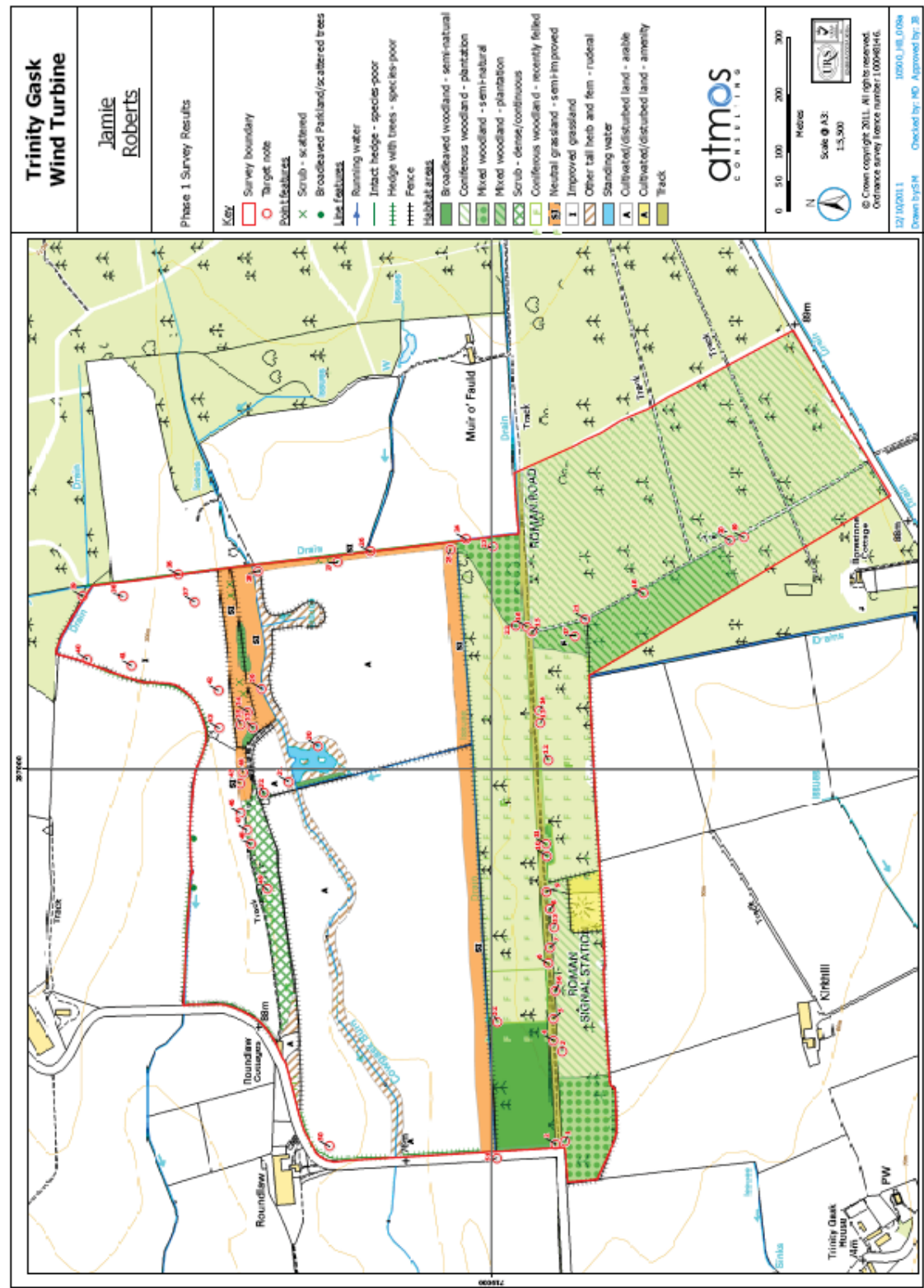
Population size class is estimated using the advice provided in the Herpetofauna Workers Manual, JNCC 1998. The size class for the ponds found that the frog, toad and palmate newt populations are **Low**.

5.0 CONCLUSION

The survey did not record the presence of great crested newts on the site and this finding was supported by historical and the most recent national survey and there are therefore no known legal obligations regarding this species.

Appendix 1. Habitat map.

From: Trinity Gask, Perthshire Extended Phase 1 Ecological Report. Atmos consulting , November 2010.



Appendix 2. Habitat Suitability Index calculations.

Oldham Pond Criteria	<i>Roman Road Ditch South</i>	<i>Roman Road Ditch North</i>	<i>Farm Pond</i>	<i>Mill Pond</i>
SI1	0.5	0.5	0.5	0.5
SI2	0.4	0.4	1	0.6
SI3	0.1	0.1	1	1
SI4	0.33	0.33	0.67	0.67
SI5	1	1	1	1
SI6	1	1	0.25	1
SI7	1	1	0.33	0.67
SI8	0.825	0.825	0.825	0.825
SI9	1	1	0.67	1
SI10	0.5	0.5	0.5	0.5
Habitat Suitability Index	0.554	0.564	0.614	0.749

Appendix 3. Field survey data.

+ = present

(a) 6th April 2011

Pond Number	Frog		Toad		Palmate Newt	
	Adult	Tadpoles	Adult	Toadpoles	Male	Female
Roman Road ditch south	0	8 spawn masses	2	0	16	2
Roman Road ditch north	0	2 spawn masses	0	0	6	2
Farm pond	1	0	3	0	0	0
Mill pond	0	0	4	0	4	8
Total newts	-	-	-	Present	26	12

(b) 24th April 2011

Pond Number	Frog		Toad		Palmate Newt	
	Adult	Tadpoles	Adult	Toadpoles	Male	Female
Roman Road ditch south	0	0	0	0	0	0
Roman Road ditch north	0	0	0	0	0	0
Farm pond	1	0	0	+	0	0
Mill pond	0	0	1	+	3	4
Total newts	-	Present	1	Present	3	4

(c) 2nd May 2011

Pond Number	Frog		Toad		Palmate Newt	
	Adult	Tadpoles	Adult	Toadpoles	Male	Female
Roman Road ditch south	0	0	0	0	0	0
Roman Road ditch north	0	0	0	0	0	0
Farm pond	0	0	0	+	0	0
Mill pond	0	0	0	+	0	2
Total newts	-	Present	-	Present	0	2

(d) 24th May 2011

Pond Number	Frog		Toad		Palmate Newt	
	Adult	Tadpoles	Adult	Toadpoles	Male	Female
Roman Road ditch south	0	0	0	0	0	0
Roman Road ditch north	0	0	0	0	0	0
Farm pond	0	0	0	+	0	0
Mill pond	0	0	0	+	0	3
Totals	-	Present	-	Present	-	3



**Trinity Gask Turbine
for
Realise Renewables**

**Confidential Report
Mammals**

**September 2011
(revised November 2012)**

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CONTENTS

- 1.0 Introduction
- 2.0 Wildlife Legislation
- 3.0 Mammal Survey Methodology
- 4.0 Results
- 5.0 Impacts on Mammals
- 6.0 Mitigation
- 7.0 Conclusions and Recommendations

A3 Figures (relevant to Mammals report)

- Figure 2 Turbine Drawing
- Figure 3 Habitat Map (Atmos)
- Figure 4 Mammal Records

1.0 INTRODUCTION and BACKGROUND

- 1.1 Naiad was asked to provide an ecological assessment of a series of mammals including badgers (*Meles meles*), otters (*Lutra lutra*), red squirrels (*Sciurus vulgaris*), and pine marten (*Martes martes*) on a proposed new turbine at Trinity Gask in the Carse of Earn near Auchterarder. A bat survey is reported elsewhere. This assessment was based on field survey to determine the presence or absence of protected mammals in the area.
- 1.2 Adrian Davis of Naiad has over 20 years' experience in flora and fauna surveys in the UK and Scotland. Adrian has worked for over 8 years with Scottish Natural Heritage, the Government's advisors on nature conservation, habitats and species as an area officer and an ecological advisor. He has 12 years' experience as an ecological consultant and has particular specialism in Scottish mammals including wildcats, pine martens and red squirrels as well as water voles. He has delivered mammal training courses for the Institute of Ecology and Environmental Management and Wild Scotland as well as published research on wildcats.
- 1.3 Detailed work proposals are outlined in Section 2 and the development site is shown in Figure 1 below.

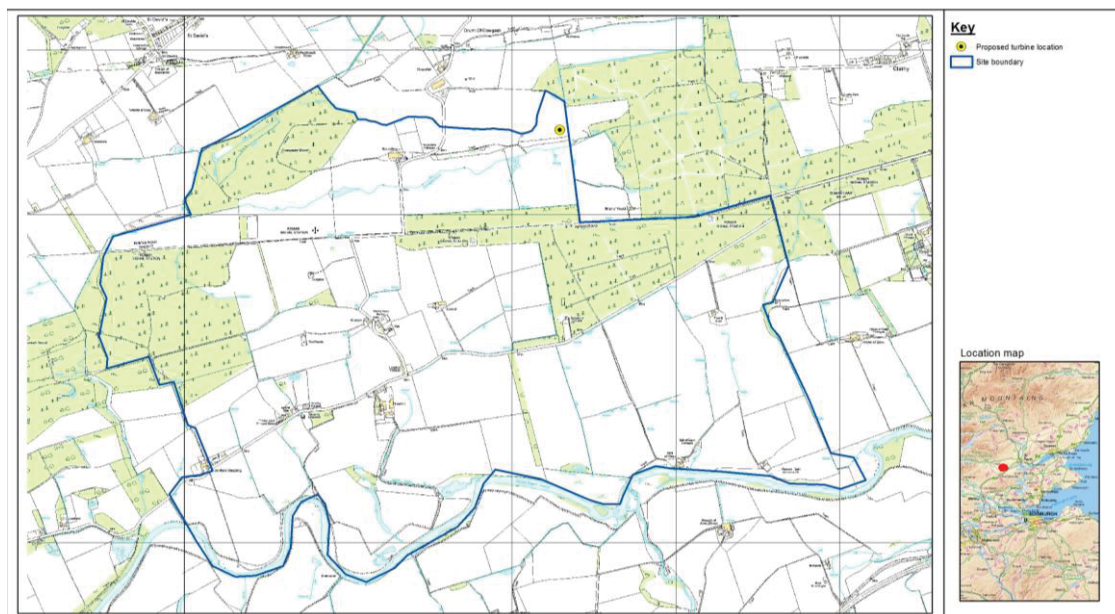


Figure 1: Site Location

Project Description

- 1.4 The proposed development would comprise of the installation of a single wind turbine, associated substation, crane hard standing and access track construction. The site is located on agricultural land at Roundlaw, Trinity Gask Estate (Figure 1). The foot print of the proposed site is small and will have little impact on the existing agricultural activity. Access to the turbine location is obtained over land that is owned by the proposed wind turbine owner. The

wind turbine position is NGR 297290, 719514. The proposed assessment will need to investigate the following issues to determine the ecological impacts:

- duration for construction of project and post construction management
- timing of works
- type of construction including tower locations, borrow pits, access works and links to power supply (grid)

1.5 In addition to these factors, vehicle movements, haulage of rock and other materials including assembly and dismantling of site plant are important considerations. Location of site plant is a key consideration to prevent undue disturbance to habitats and species especially wooded areas and water features.

1.6 The applicant has identified a candidate turbine - the Turbowind T400-34 400kW turbine. The key statistics of this turbine:

- Hub height: 50m
- Rotor diameter: 34m
- Maximum tip height: 67m
- Number of blades: 3
- Length of blades: 16.6m
- Output rating: 400kW

2.0 WILDLIFE LEGISLATION

2.1 There is specific international legislation from the European Union to protect otters, pine martens, red squirrels and wildcats. The Habitats Directive is transposed into the law of Scotland by means of The Conservation (Natural Habitats, &c.) Regulations 1994 and The Conservation (Natural Habitats, &c.) Amendment (Scotland) Regulations 2007 which enhanced protection. European protected species are part of these 1994 regulations (Schedules 2 and 4). The protection of a particular species is quite distinct from the arrangements that govern the protection of European Sites (e.g. SPA and SAC) as it covers them wherever they occur. Within part III regime and under the 2007 amendment, Regulation 39 gives particular effect to the provisions of article 12 of the Directive, by making it an offence to:

- deliberately or recklessly kill, injure or take (capture) a listed animal
- deliberately or recklessly disturb or harass a listed animal
- damage, destroy or obstruct access to its resting place or place of shelter

2.2 Thus, otter, red squirrels, pine martens and wildcat shelters are legally protected whether or not they are present in the shelter/den site or drey.

2.3 Badgers are protected in Britain by the Protection of Badgers Act 1992. The purpose of this Act is to protect the animals from deliberate cruelty and from the incidental effects of lawful activities, which could cause them harm. Under this legislation it is an offence to:

- willfully kill, injure, take, possess or cruelly ill-treat a badger, or attempt to do so
- interfere with a sett by damaging or destroying it
- obstruct access to, or any entrance of, a badger sett

- disturb a badger when it is occupying a sett
- 2.4 Note that if any of the above resulted from a person being reckless, even if they had no intention of committing the offence, their action would still be considered an offence. Thus, badger shelters are legally protected whether or not a badger is present.

3.0 MAMMAL SURVEY METHODS

Badgers

- 3.1 A number of consultations took place to determine the status of badgers in the area. Badgers were noted by SNH as present in Tayside but the exact location was not specified.
- 3.2 There are a number of features including ditches, drainage lines, forests and banks within the moor marked on the OS plan of the development site which may be suitable for badgers.

Badger survey and methodology

- 3.3 Badger surveys follow guidelines produced by the Mammal Society. Field signs include identifying setts (badger shelters) and faeces (droppings) often found in latrines. Badgers also show quite territorial behaviour and signs can be found on fences (in the form of hairs), in hedgerows and on grassy sites where they form large tracks and routes through vegetation. Badger footprints may also be observed on mud. Badgers may be observed at night in areas where they are present as they tend to be nocturnal and therefore much of this survey work was undertaken at night.

Otters

- 3.4 A number of consultations took place to determine the status of otters in the area. However there appeared to be little data on otter populations and behaviour to determine their status in terms of the numbers of breeding otters. The last otter survey of Scotland (R. and J. Green, "Otter survey of Scotland 1991-94", VWT) shows a good level of positive samples throughout the Perthshire area.
- 3.5 There are a number of water features including ditches and drainage lines within the moor marked on the OS plan.

Otter survey and methodology

- 3.6 Otter surveys were based on guidelines produced by the Mammal Society. Field signs include otter spraint (droppings), which are generally characteristic, rolling and feeding signs, signs of shelters (often hollows in the bank of a river, stream or under a tree or a small amount of bedding in or near a watercourse) and slides in vegetation or on mud adjacent to a watercourse. A comprehensive survey involves walking within the watercourse or on the banks to find signs of otters.

Pine marten

- 3.7 A number of consultations took place to determine the status of pine marten in the area. However there appeared to be little data on pine marten presence in the area, their populations and behaviour to determine their status in terms of the numbers of breeding pine marten.

Pine marten survey and methodology

- 3.8 A definitive survey methodology for pine marten has not been developed because they are elusive animals, often crepuscular and are very shy of humans. Pine marten scats are generally quite distinctive and it is usual to see them in prominent places but they can be confused with stoat and weasel droppings. Shelters for both these animals are difficult to find but they may have shelters in small trees, under trees and large root systems, in thickets, bushes or down holes in banks for example. Therefore other evidence and local sightings of pine martens are useful (to establish presence in the area).

Red Squirrels

- 3.9 The red squirrel surveys were based on records of them within the plantations and forestry adjacent or within the site. The most suitable habitat to the south in the large Scots pine plantation is a medium aged pine and spruce plantation and runs parallel with the site.

Red squirrel survey and methodology

- 3.10 Practical Techniques for Surveying and Monitoring Squirrels have been developed by the Forestry Commission Pepper and Gurnel 2001. Red squirrels are native to Britain but their future survival is threatened by loss of habitat (Pepper and Patterson, 1998) and by the spread of the grey squirrel, a native of North America introduced into Britain in the 1870s. There is some evidence (Pepper et al., 2001) that, given the right conditions, the native red can compete successfully with the introduced grey. But in managing habitats to create these conditions (Gurnell and Pepper, 1991) it is advisable to monitor squirrel populations to assess how numbers and distribution are responding to changes in habitat and management practices. Techniques for monitoring squirrel populations must be cost-effective, preferably capable of being carried out by volunteer labour and harmless to the squirrel population. Direct or indirect methods of monitoring can be used. Indirect methods do not involve handling squirrels and while not so accurate in assessing population densities they can be sufficiently accurate for monitoring purposes. Naiad have used observation, drey and to a lesser extent transect surveys for this survey work.
- 3.11 Naiad mammal surveys were carried out in August and September 2011 and the weather conditions at the time of the survey were showery with some sunny interludes. The temperature was approximately 17°C. The survey was carried out along all the boundaries marked on the survey map and on surrounding features. The land was surveyed from boundary fences and along all internal drainage ditches on a plan supplied by RR and a thorough inspection of old ruins and buildings on the site and the forestry areas and associated furrows was made.
- 3.12 Previous Phase 1 habitat survey was carried out by Atmos in 2010 and is referred to in the main report. The habitat map was used to identify key areas for wildlife during the survey and is found in Figure 3.

4.0 RESULTS

- 4.1 No badgers, otters, or pine martens were observed during the survey. No badger, or pine marten signs were observed on any features and on adjacent vegetation. No badger hair or shelters were found on the boundaries of the site.
- 4.2 Red squirrels were recorded as present at the site although none were seen. Transect surveys on the margins of the plantations revealed no red squirrels or dreys although this could change at any time. The remains of pine cones had been stripped by red squirrels in the plantation on the east of the site and the small linear plantation as marked on Figure 4. No dreys were found in either location and only two sites were found with red squirrels using pine cones to feed, one site in each block of woodland.
- 4.3 Otter signs in the form of spraint and potential den sites occurred on the site. A potential otter holt (very unlikely to be a breeding holt) occurs under a small elder (*Sambucus nigra*) shrub along the burn but this is over 100m away from the development access and borrow pits. These are noted in Figure 4. The otter signs were recorded along the burn. Signs of activity were noted in one or two locations and otter activity was generally thought to be low within the area.

5.0 IMPACTS ON MAMMALS

- 5.1 The development is unlikely to affect or disturb the protected species listed in the surveys above.
- 5.2 There were no signs of badgers, and pine martens in the development area.

Red Squirrels

- 5.3 Red squirrels were recorded as feeding within the forest area but no dreys (shelters) were recorded. The plantations which are utilised by red squirrels are adjacent to the site and therefore it is very unlikely that red squirrels will be impacted by the development. The access route for the turbine route dissects one plantation but it is unlikely red squirrels will be affected by this route unless trees are removed. In this instance further survey may be required. Future forestry management should reflect the use by red squirrels and its importance in this area. The plantation on the east side of the site is likely to hold a good population of red squirrels because of its size, maturity and tree composition. Red squirrels are unlikely to be effected by the development.

Otters

- 5.4 Otters were also recorded on site along the margins of the burn and pond. However activity is likely to be very low and the area which is generally agricultural in origin does not support large populations of fish, otters main prey. A potential otter holt (very unlikely to be a breeding holt) occurs under a small elder (*Sambucus nigra*) shrub but this is over 100m away from the development access and borrow pits. Otters are unlikely to be effected by the development.

6 MITIGATION

- 6.1 The habitats on site are currently suitable for the mammals surveyed but only red squirrels and otters appear to be present.

Red squirrels

- 6.2 Red squirrels are currently located in the larger plantations around the site. Better linkage of the plantations and woodland areas would help red squirrel distribution and therefore we suggest some tree planting to provide a habitat corridor for red squirrels may help in their movement around the site.

Otters

- 6.3 Otters do not appear to be using the site on a regular basis given the amount of otter spraint and suitable shelters. However the spraint suggests they occasionally use the ponds on site and use the small burn to move from different watercourses and possibly catchments. Ground cover for otters is limited and not unlike the suggestions above, otters would benefit from additional cover along the burns and around ponds. There is likely to be limited food available for otters because of the small size of the burn and pond and the proximity to other water features. Any creation of additional water features would benefit otters as would additional tree planting along watercourses.

7 CONCLUSIONS AND RECOMMENDATIONS

- 7.1 In this instance there is likely to be a negligible effect on protected mammals.
- 7.2 We recommend some planting along the margins and watercourses on the site with native tree species. Ideally this should include ash (*Fraxinus excelsior*), alder (*Alnus glutinosa*), hazel (*Corylus avellana*) and willow (*Salix* spp). Some scots pine (*Pinus sylvestris*) would also provide food in the form of pine cone seeds along with hazel (hazelnuts) in the longer term for red squirrels.
- 7.3 The above planting could form part of a landscape and habitat management plan, to be implemented prior to construction.

Trinity Gask Wind Turbine

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Figure 1a	Site Constraints
Figure 2	Site Layout
Figure 2a	Cross Sections/ Block Plan
T400-34	Elevations Plan
T400-34	Foundation Plan

Appendix 1: Landscape and Visual Impact Assessment

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LVIA Figure 17	Windfarms within 50km
LVIA Figure 18	Cumulative ZTV 1 - Operational
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Appendix 2: Ecology

Ecology Figure 2	Turbine Drawing
Ecology Figure 3	Phase 1 Habitat Map
Ecology Figure 4	Mammal Records Map
Ecology Figure 5	Bat Activity May
Ecology Figure 6	Bat Activity July
Ecology Figure 7	Bat Activity August
Ecology Figure 8	Ecological Designations

Appendix 3: Ornithology

Figure 4 (Ornithology)	Breeding Bird Survey - Red List
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PERTH AND KINROSS COUNCIL

DRAWING REF: 1202067110



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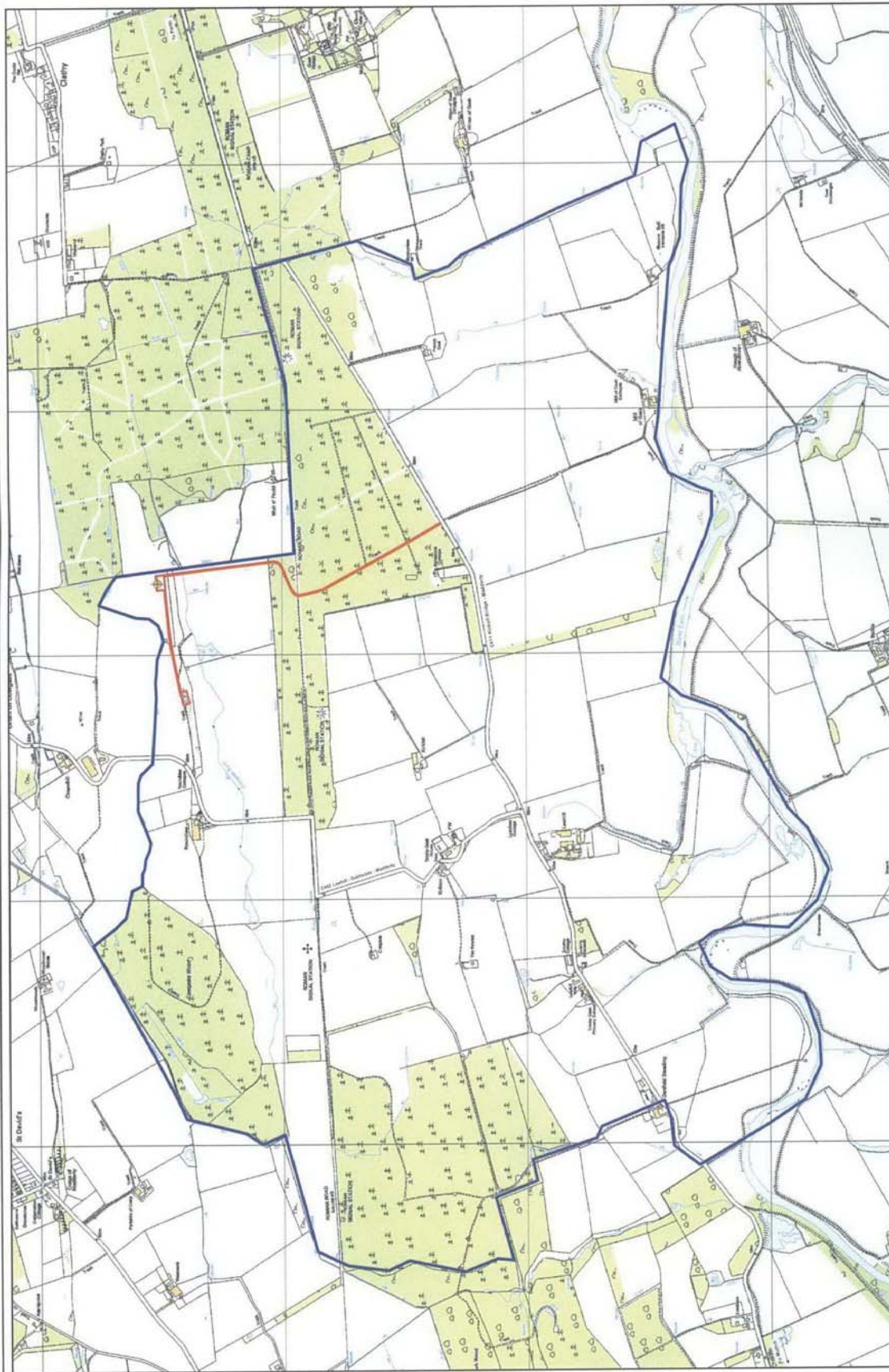
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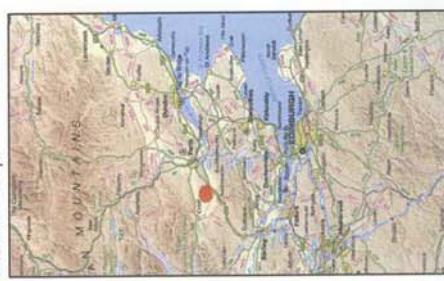



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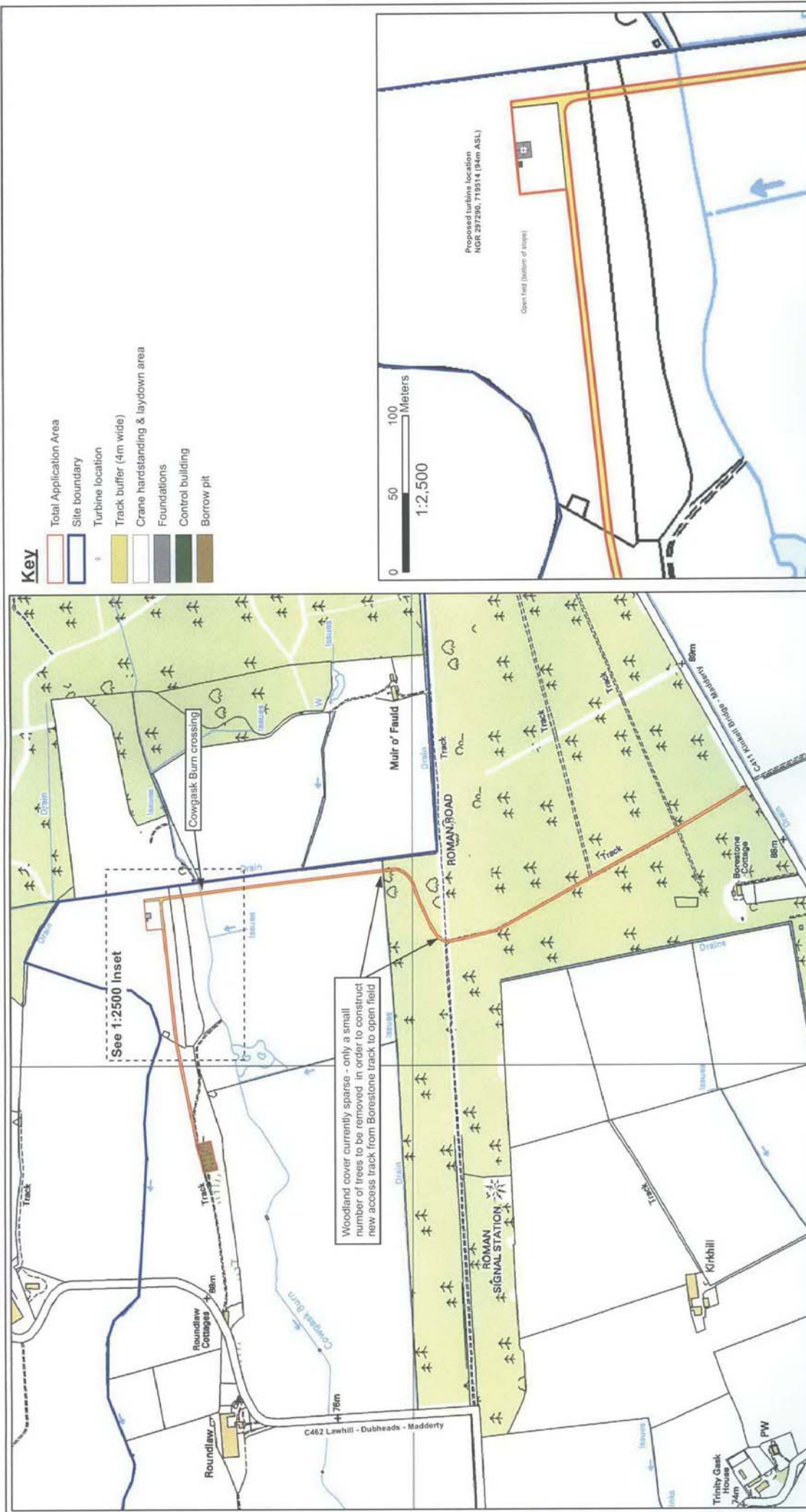
- Proposed turbine location
- Total application area
- Site boundary

Proposed turbine location
297290, 719514

Location map



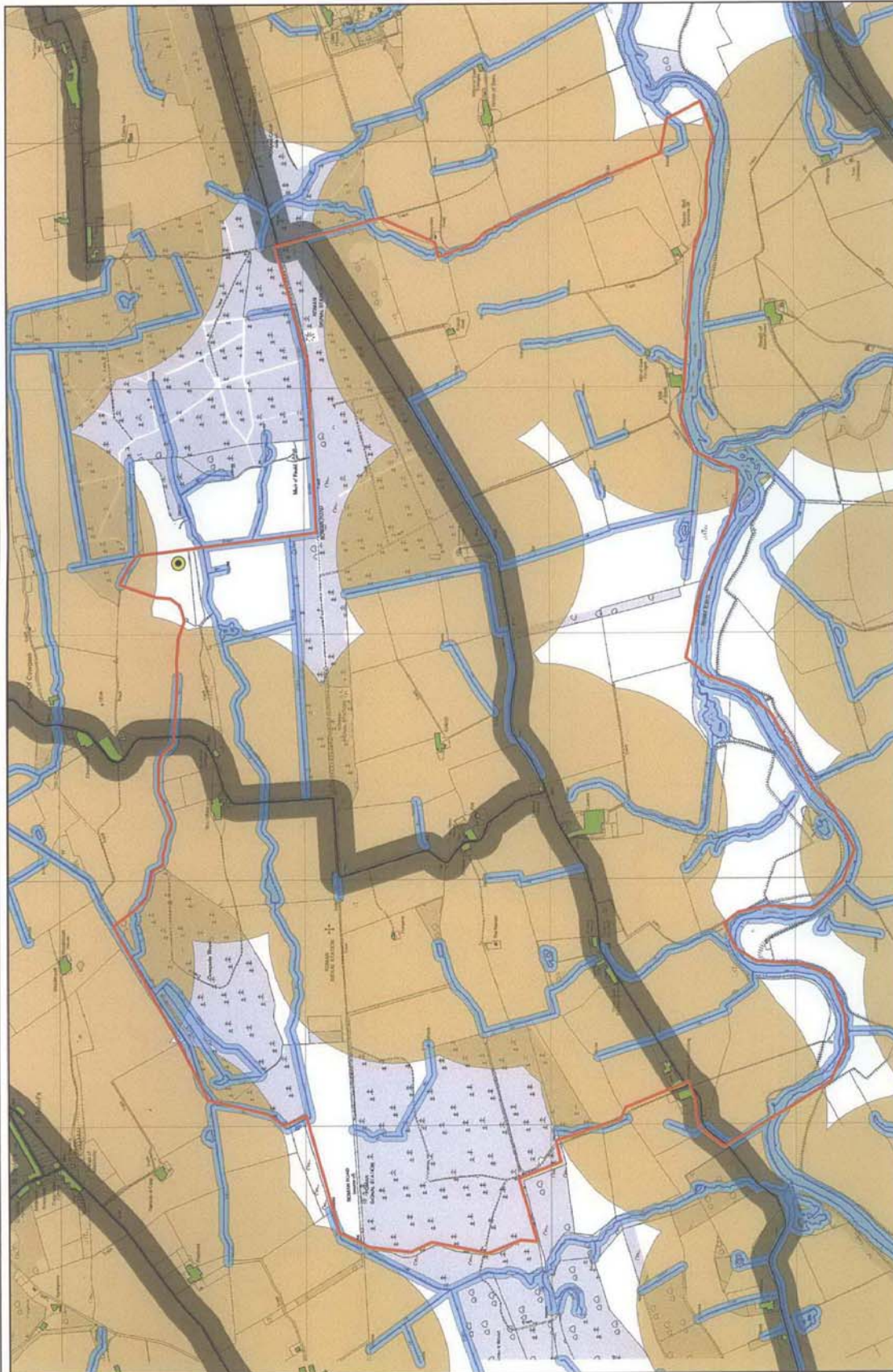
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			<p>0 500 1,000 Meters</p> <p>A3 Scale at - 1:17,500</p>		Figure 1			
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					Drawn By: CB		Checked by: MJ	
<p><small>Contains Ordnance Survey data © Crown copyright and database right 2012. Licence number: 100051862.</small></p>								



<p>RealiseRenewables Realise your renewable energy potential</p>	<p>Notes:</p> <p>1. Site layout and access track</p>		<p>Trinity Gask Wind Turbine</p> <p>0 200 400 Metres</p> <p>A3 scale at - 1:7,500</p>		<p>Revision No.</p> <p>1</p>	<p>Site Layout</p>
					<p>Sheet No.</p> <p>1</p>	<p>Figure 2 - 1:7500 plan</p>
					<p>Date: 16/10/12</p> <p>Drawn By: CB</p> <p>Checked by: MJ</p>	

PERTH AND KINROSS COUNCIL

DRAWING REF: 121020671v2



- Key**
- Proposed turbine location
 - Site boundary
 - Buildings
 - Watercourse
 - Road
 - 20m buffer from watercourses
 - 74m buffer from roads
 - 500m buffer from buildings
- Proposed turbine location**
297290, 719514

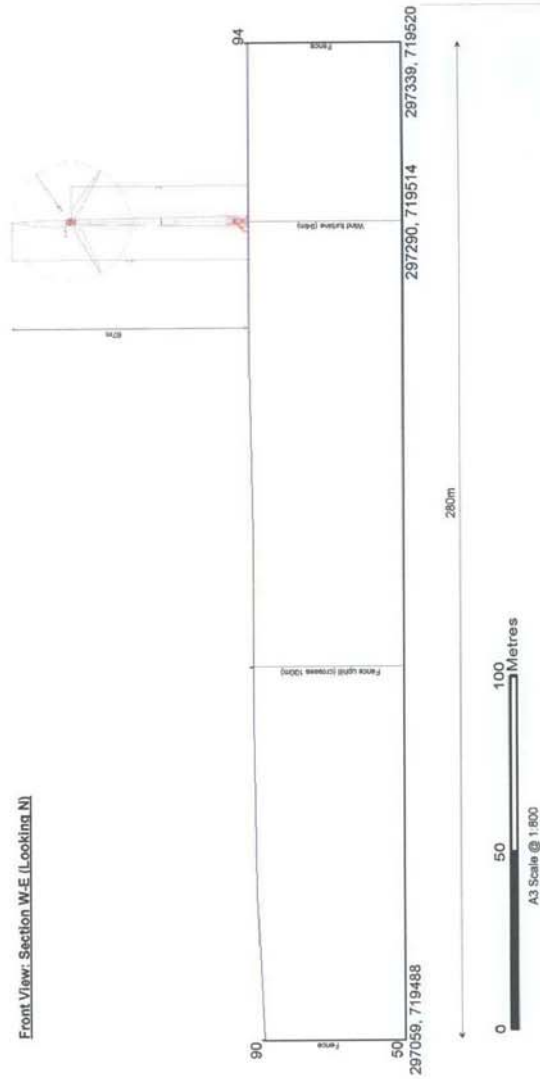
Location map



Side View: Section N-S (Looking E)



Front View: Section W-E (Looking N)



PERTH AND KINCROSS COUNCIL

DRAWING REF: 1202067/13

Key

- Turbine location
- Foundations
- Control building
- Site boundary
- Access track
- Application area



Notes:
1. 1:1000 block plan of proposed turbine layout.
2. Side and front view cross sections of proposed turbine location.



Trinity Gask Wind Turbine

0 25 50 Meters
A3 scale at - 1:1,000

Revision No.
1

Cross Sections/Block Plan

Figure 2a - 1:1000 plan

Date: 16/10/12

Sheet No.
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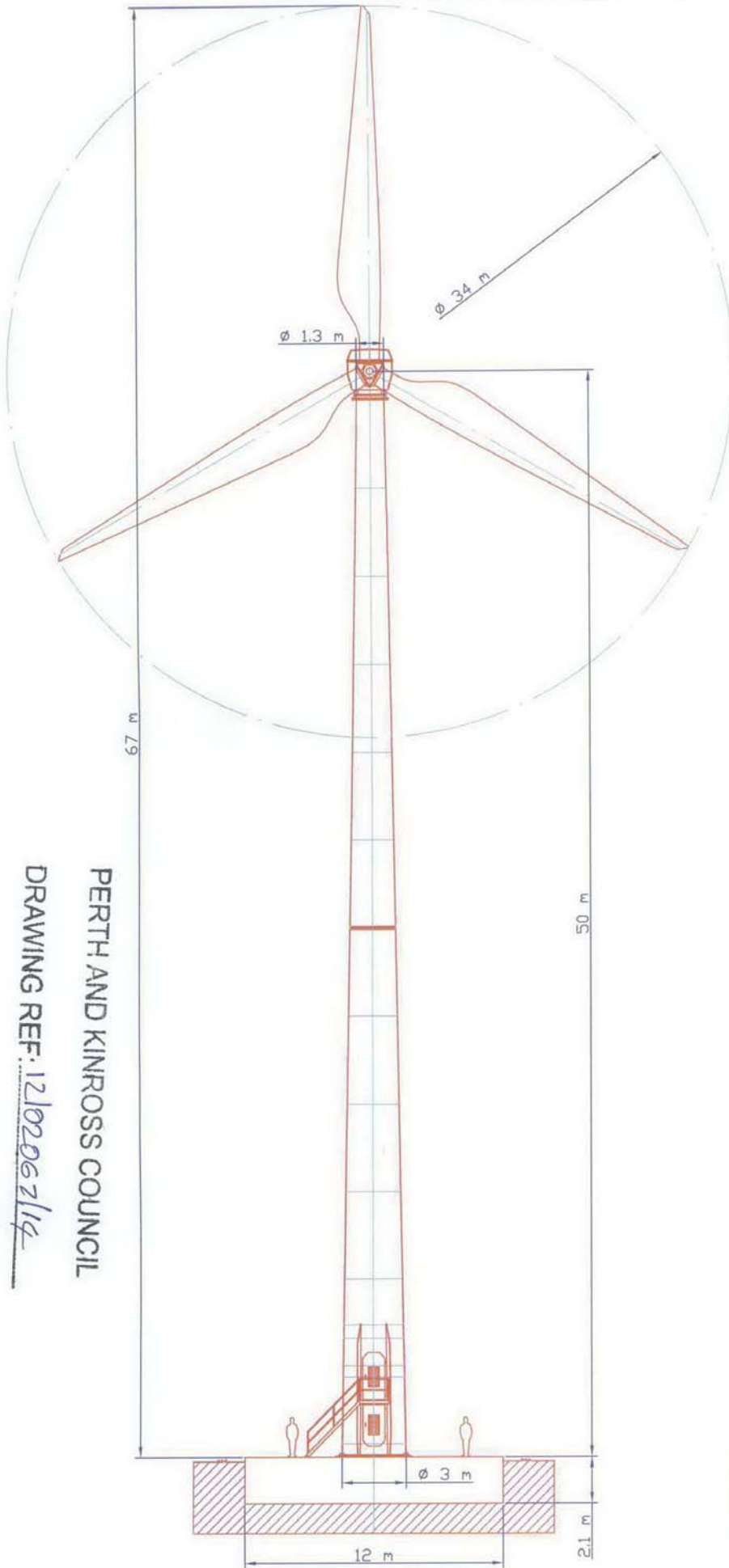
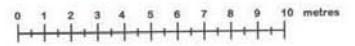
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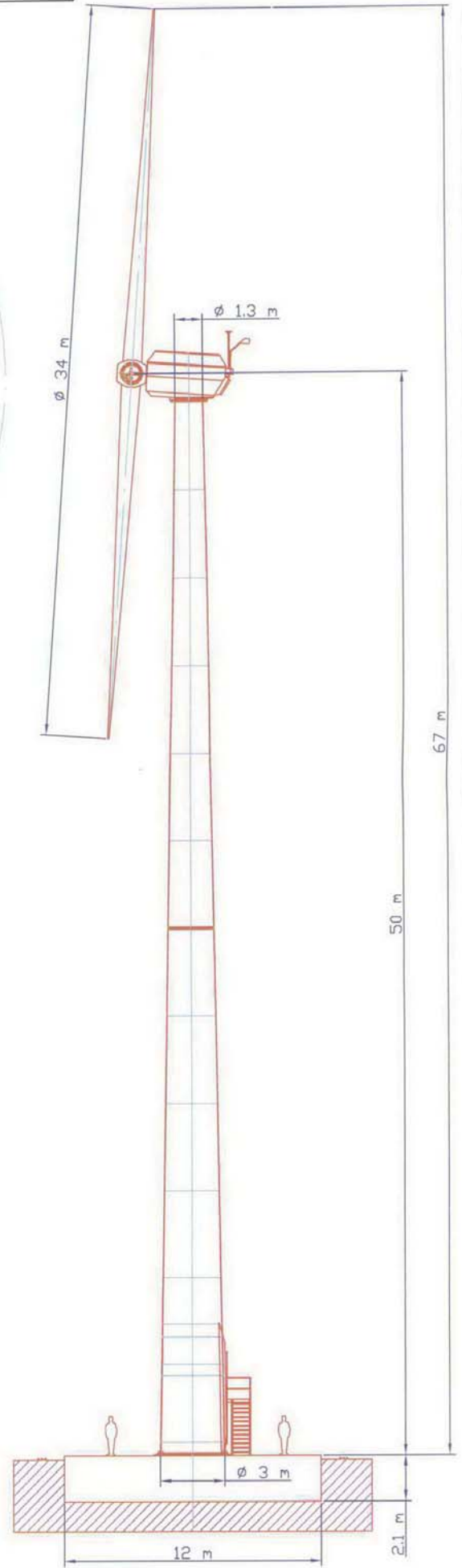
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TURBOWINDS T400-34
 Hub height: 50 m Tip height: 67 m
 IEC wind class: 2
 Rotor speed: 22 / 33 rpm

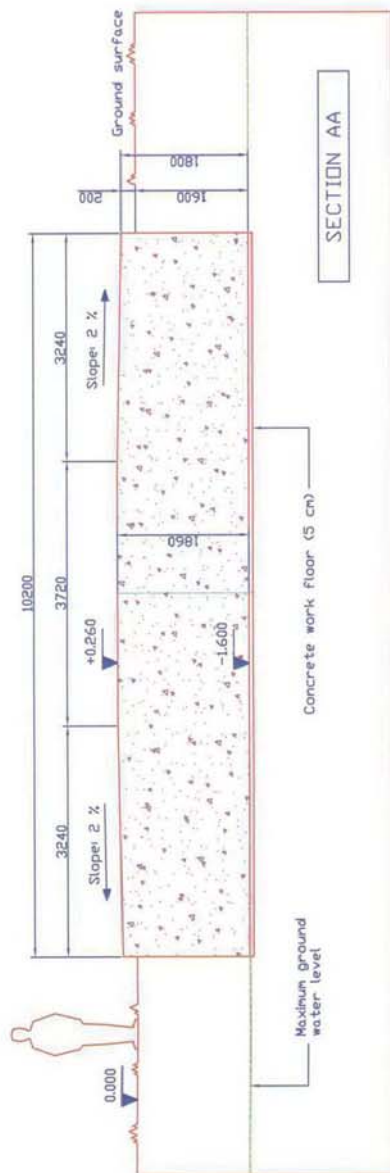
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Front view



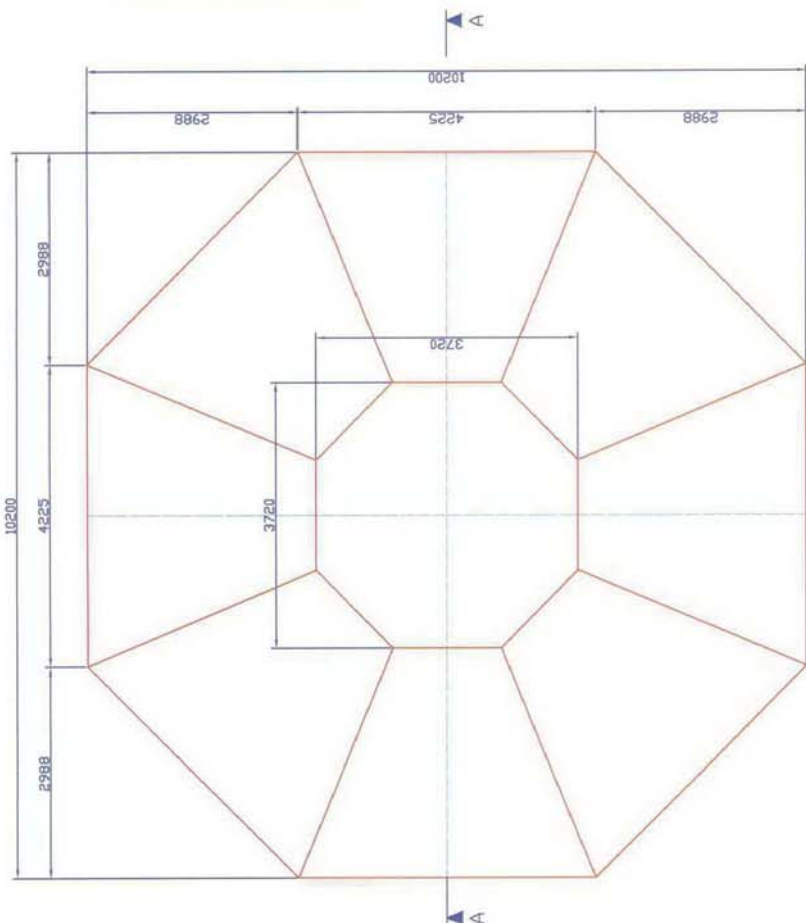
Side view



Foundation concrete:
Total volume: 155 m3
Minimum compressive strength: 35 Mpa To be demonstrated by means of compression tests on representative concrete samples.
Positioning of anchor bolts according to drawing nr: F01/10-1-002.
Positioning of cable conduits and grounding according to drawing nr: F01/10-1-008.
Assumed soil characteristics: (according to soil test report)
Allowable bearing pressure: 3 kg/cm2
Maximum ground water level: L -1.600 m

PERTH AND KINROSS COUNCIL
DRAWING REF: 12/02067/15

Concept drawing



TOP VIEW

Foundation design characteristics:
Turbine type: TURBOWINDS T400-34 DS
Hub height: 50 m
Wind class: 2
Maximum annual average windspeed at hub height: 8.5 m/s
Maximum 50 year gust (5 sec peak): 59.5 m/s
Design overturning moment including load safety factor: 13200 kNm

Construction reinforcement:

A light reinforcement mesh has to be provided against the vertical outer surfaces of the foundation block, to prevent shrink cracks in the concrete.
This construction reinforcement is not shown on the drawings but is an integral part of the scope of work of the contractor.

TURBOWINDS		Turbine:	T400-34 DS
		Hub height:	50 m
		Wind class:	2
Part:	Foundation	Drawn:	GD
Drawing nr:	F01/10-1-001	Approval mark:	VC
Drawing scale:	1/80	Approval mark:	VC
Remarks:	xxx	Revision:	AA
		Date:	22/11/2012
		Paper size:	A3

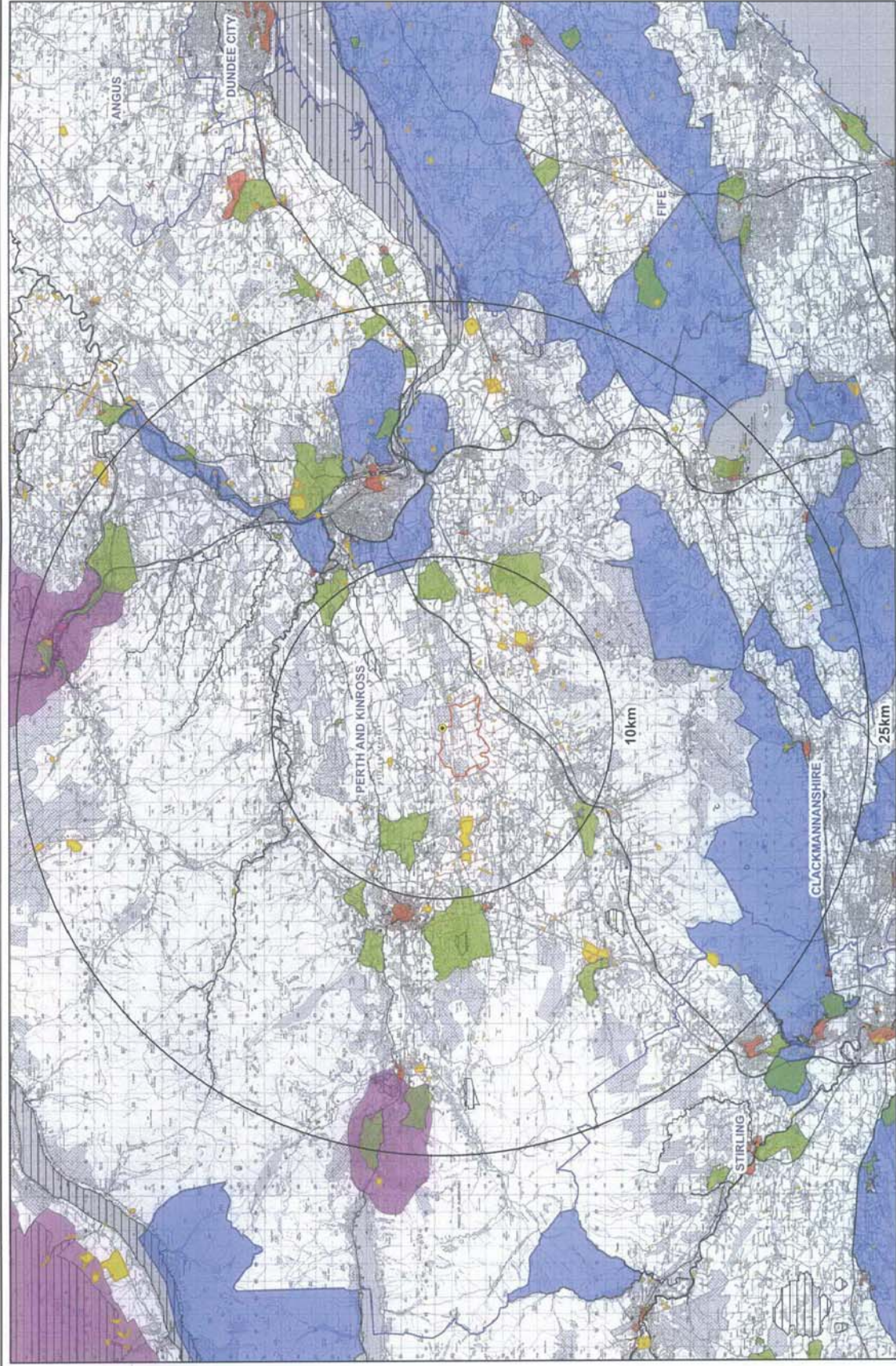
Trinity Gask Wind Turbine

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Appendix 1: Landscape and Visual Impact Assessment

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L VIA Figure 20	Cumulative ZTV 3 - Operational
L VIA Figure 21	Cumulative ZTV 4 - Consented
L VIA Figure 22	Cumulative ZTV 5 - Consented



Key

- Proposed turbine location
- Site boundary
- Buffer
- Council boundary
- Area of great landscape value
- National scenic area
- Special area of conservation
- Historic gardens & designed landscapes
- Conservation areas
- Scheduled monuments

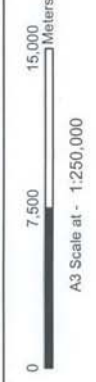
Location map



Notes:
1. Map data sourced from Scottish Natural Heritage and Historic Scotland datasets.
AGLV data sourced from councils and digitised from current maps.



Trinity Gask Wind Turbine



Revision No.

1

Sheet No.

1

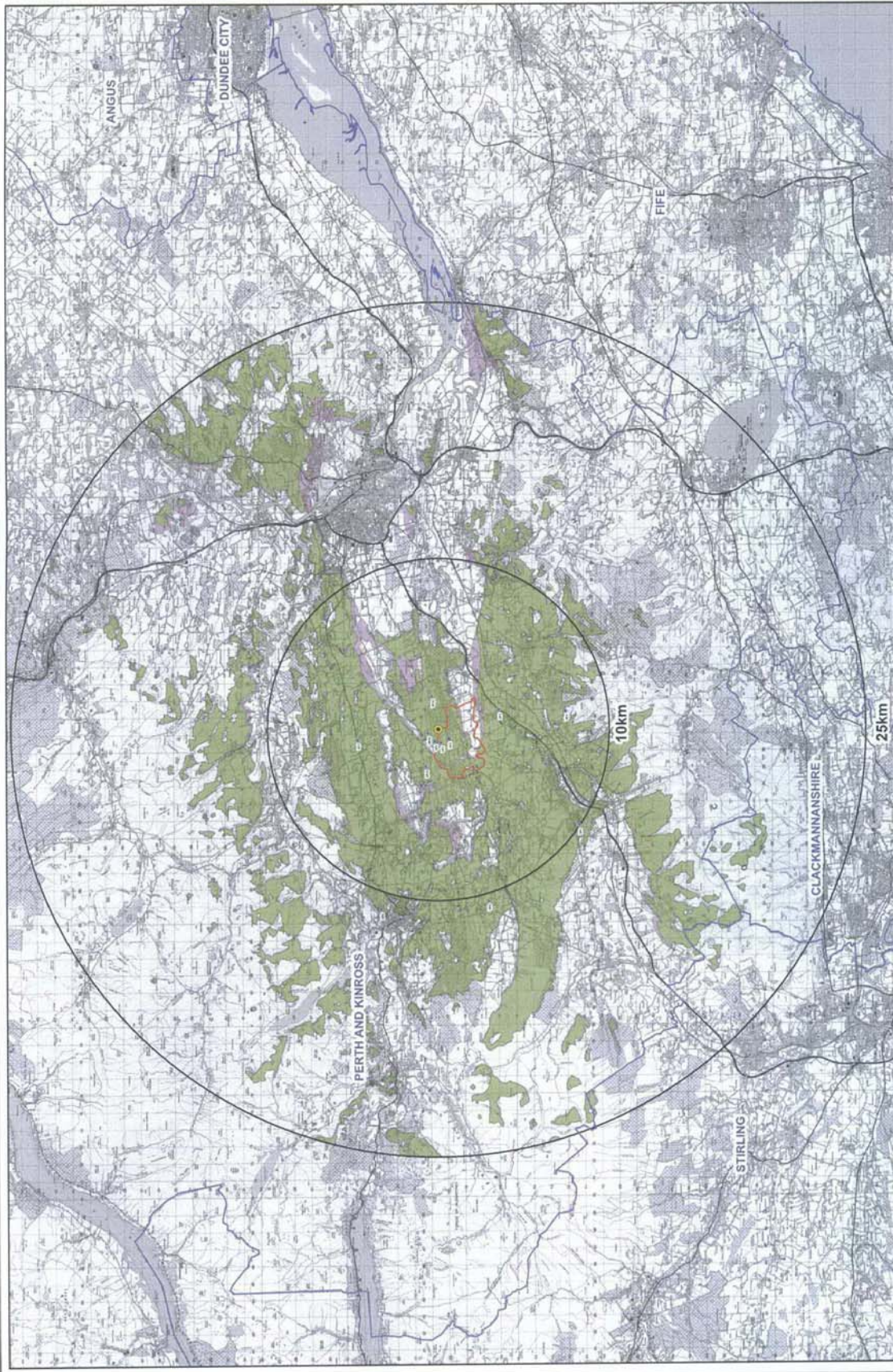
Landscape Policy Context

LVA Figure 1

Date: 15/10/12

Drawn By: CB

Checked by: MJ

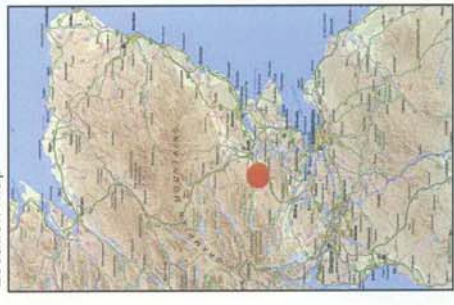


- Key**
- Proposed wind turbine
 - Viewpoints
 - Site boundary
 - Council boundary
 - Buffer
 - Hub height (50m)
 - Tip height (67m)

Viewpoints

- VP1: Roundlaw Cottage
- VP2: Roman Signal Station, Kirkhill
- VP3: Gleneagles Hotel
- VP4: Craig Rossie summit
- VP5: A9 Aberuthven
- VP6: Knock of Crieff
- VP7: A85
- VP8: A822
- VP9: Chapelhill
- VP10: Drumgowan
- VP11: St Davids
- VP12: Clatthy

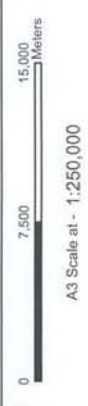
Location map



Notes:

1. ZTV generated using Ordnance Survey's landform panoramas data set which does not take into account the screening effects of buildings or vegetation.
2. Earth curvature has been allowed for.
3. Observer eye height 2m above ground has been used.

Trinity Gask Wind Turbine



Revision No.

1

Sheet No.

1

Zone of Theoretical Visibility

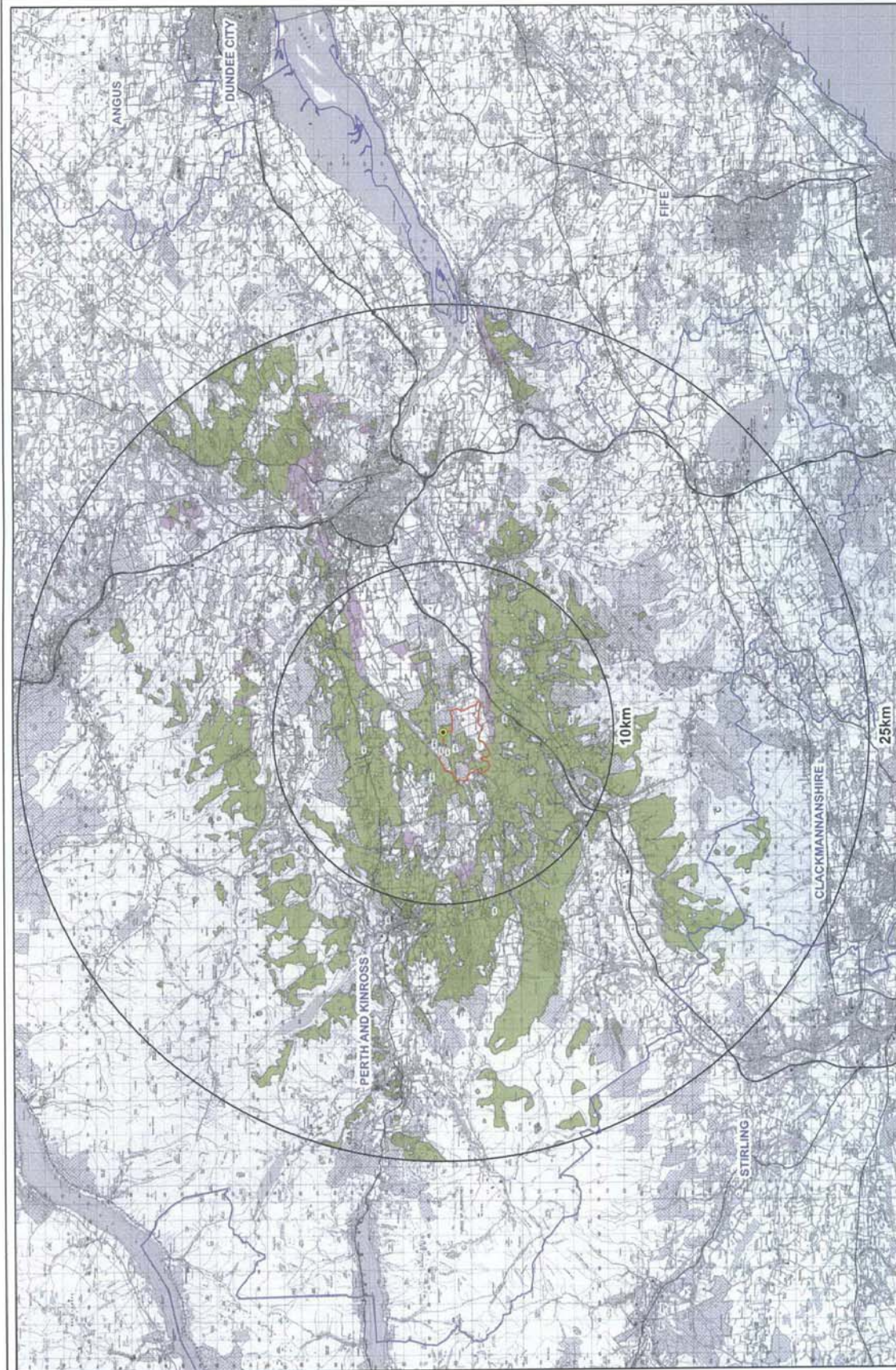
LVIA Figure 3: Bare Ground ZTV to 25km

Date: 15/10/12

Drawn By: CB

Checked by: MJ





Key

- Proposed wind turbine
- Viewpoints
- Site boundary
- Council boundary
- Buffer
- Hub height screened (50m)
- Tip height screened (67m)

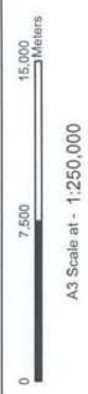
Viewpoints

- VP1: Roundlaw Cottage
- VP2: Roman Signal Station, Kirkhill
- VP3: Gleneagles Hotel
- VP4: Craig Rossie summit
- VP5: A9 Aberuthven
- VP6: Knock of Crieff
- VP7: A85
- VP8: A822
- VP9: Chapelhill
- VP10: Drumgowan
- VP11: St Davids
- VP12: Clathy

Location map



Trinity Gask Wind Turbine



Revision No.

1

Sheet No.

1

Zone of Theoretical Visibility

LVIA Figure 4: Screened ZTV to 25km

Date: 15/01/12

Drawn By: CB

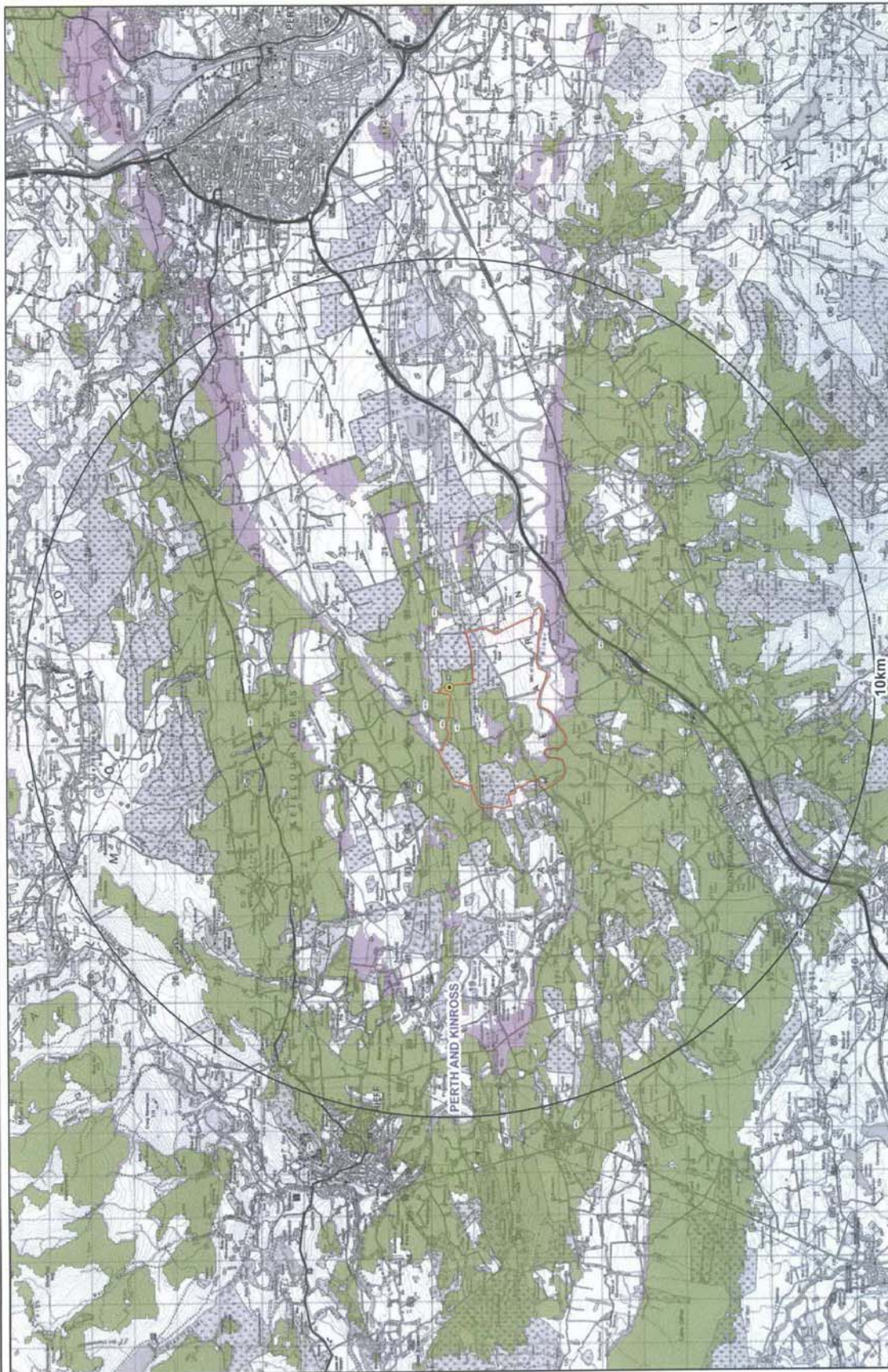
Checked by: MJ

Notes:

1. ZTV generated using Ordnance Survey's landform panorama data set which does not take into account the visual effects of buildings or vegetation. However, within 10km of proposed turbine: woodlands have been digitised and excluded at 10m height, settlements have been digitised and excluded at 5m height.
2. Earth curvature has been allowed for.
3. Observer eye height 2m above ground has been used.

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Key

- Proposed wind turbine
- Viewpoints
- Site boundary
- Council boundary
- Buffer
- Hub height screened (50m)
- Tip height screened (67m)

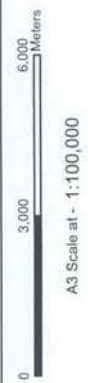
Viewpoints

- VP1: Roundlaw Cottage
- VP2: Roman Signal Station, Kirkhill
- VP3: Gleneagles Hotel
- VP4: Craig Rossie summit
- VP5: A9 Aberuthven
- VP6: Knock of Crieff
- VP7: A85
- VP8: A822
- VP9: Chapelhill
- VP10: Drumgowlan
- VP11: St. Davids
- VP12: Clathy

Location map



Trinity Gask Wind Turbine



Revision No.

1

Zone of Theoretical Visibility

LVA Figure 4a: Screened ZTV to 10km

Date: 15/10/12

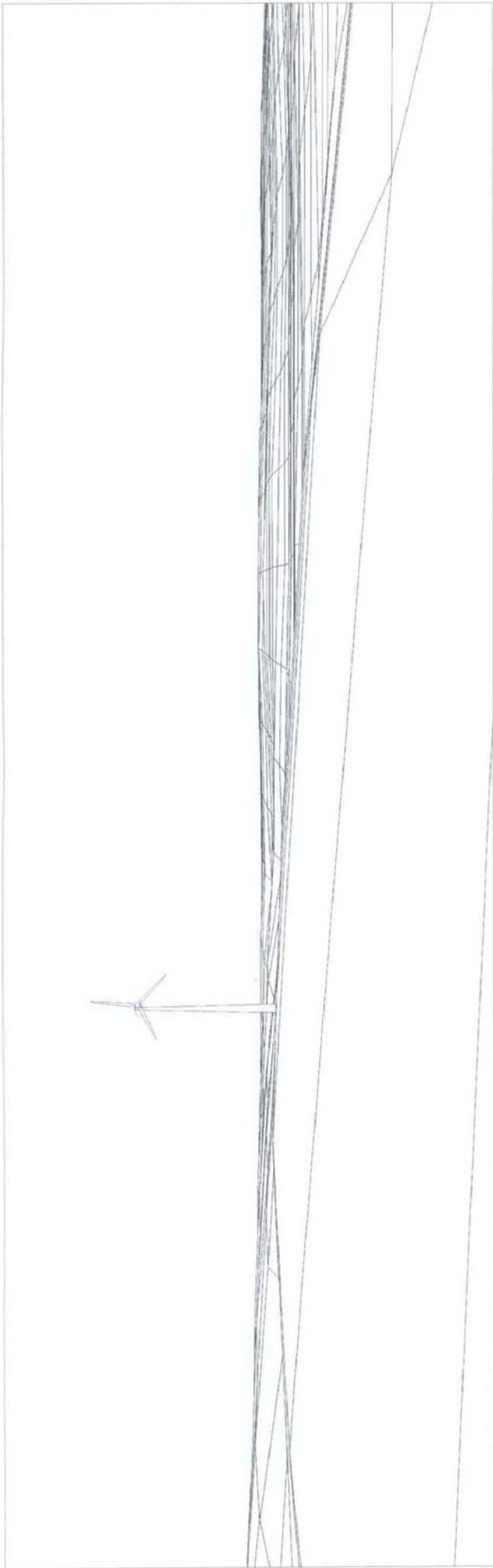
Drawn By: CB Checked by: MJ

Notes:

1. ZTV generated using Ordnance Survey's landform panorama data set which does not take into account the screening effects of buildings or vegetation. However, within 10km of proposed turbine, woodlands have been digitised and excluded at 10m height, settlements have been digitised and excluded at 5m height.
2. Earth curvature has been allowed for.
3. Observer eye height 2m above ground has been used.

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Viewpoint 1 - Wireframe view from Roundlaw Cottage



Viewpoint 1 - Current photograph from Roundlaw Cottage

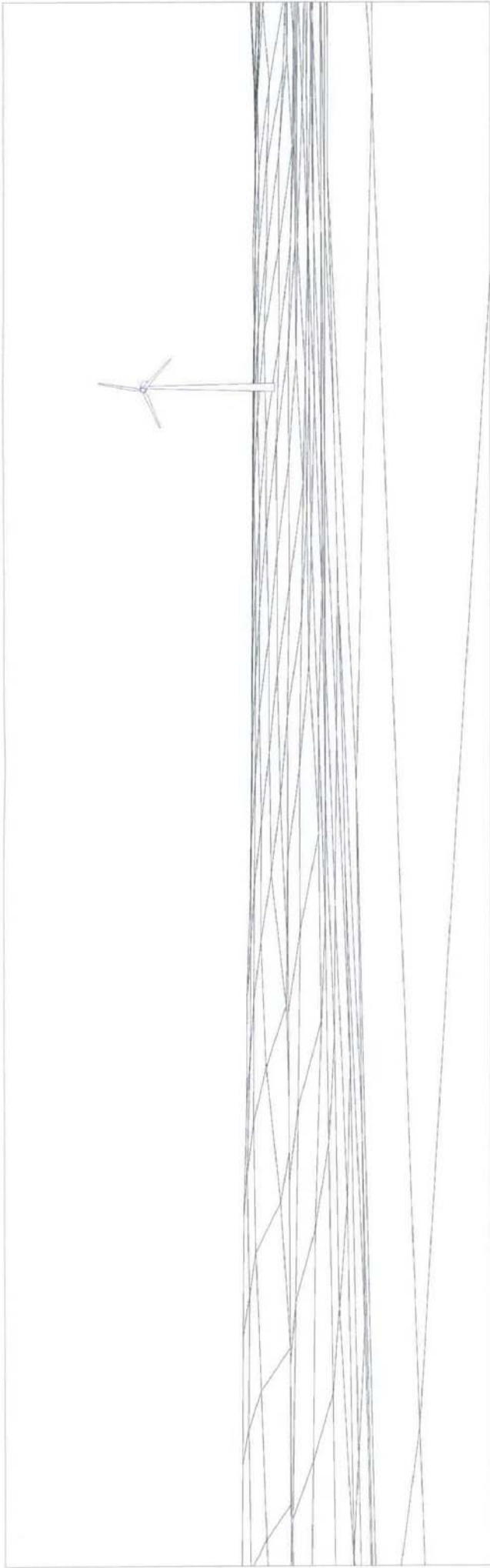
		VIEWPOINT 1: ROUNDLAW COTTAGE		Trinity Gask: LVIA Figure 5	
Realise Renewables East Lodge, Kindrogan Perthshire PH10 7PF		GR: E296516, N719366 Elevation: 85m AOD View Direction: 85° Distance: 788m		Camera: Canon EOS 5D Mark II Focal Length: 50mm Lens Height: 1.6m	
		Tip Height: 67m Hub Height: 50m Field of View: 39.6° Viewing Distance: 500mm (A3)		Viewpoint 1: Roundlaw Cottage	
				Drawn by: GB Checked by: MJ	
				Date: 16/10/2012 Revision: 1	





Viewpoint 1 - Photomontage view from Roundlaw Cottage

		Realise Renewables East Lodge, Kindrogan Perthshire PH10 7PF	
VIEWPOINT 1: ROUNDLAW COTTAGE GR: E296516, N719366 Elevation: 85m AOD View Direction: 85° Distance: 788m		Camera: Canon EOS 5D Mark II Focal Length: 50mm Lens Height: 1.6m Tip Height: 67m Hub Height: 50m Field of View: 39.6° Viewing Distance: 500mm (A3)	
		Trinity Gask: LVIA Figure 5 Viewpoint 1: Roundlaw Cottage Drawn by: CB Checked by: MJ Date: 15/10/2012 Revision: 1	



Viewpoint 2 - Wireframe view from Roman Signal Station



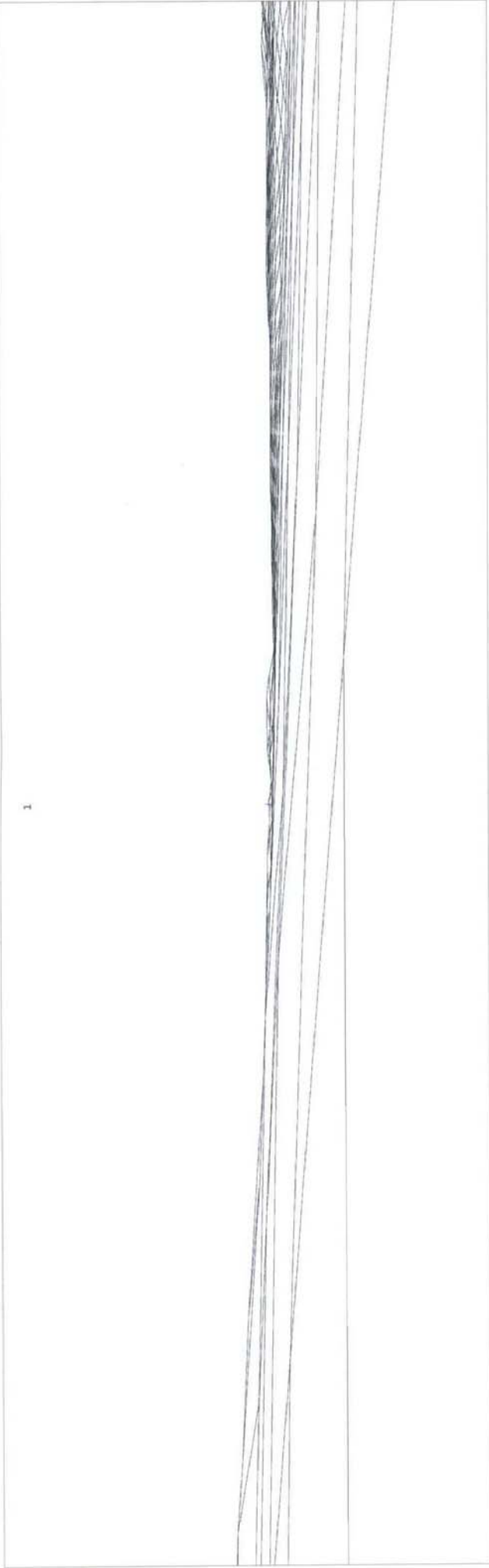
Viewpoint 2 - Current photograph from Roman Signal Station

 <p>Realise Renewables East Lodge, Kindrogan Perthshire PH10 7PF</p>	<p>VIEWPOINT 2: ROMAN SIGNAL STATION</p> <p>GR: E296735, N718894 Elevation: 92m AOD View Direction: 31.5° Distance: 832m</p> <p>Tip Height: 67m Hub Height: 50m Field of View: 39.6° Viewing Distance: 500mm (A3)</p> <p>Camera: Canon EOS 5D Mark II Focal Length: 50mm Lens Height: 1.6m</p>	 <p>Trinity Gask: LVIA Figure 6</p> <p>Viewpoint 2: Roman Signal Station</p> <p>Drawn by: CB Checked by: MJ</p> <p>Date: 15/10/2012 Revision: 1</p>
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Viewpoint 2 - Photomontage view from Roman Signal Station

		Trinity Gask: LVIA Figure 6
		Viewpoint 2: Roman Signal Station
Realise Renewables East Lodge, Kindrogan Perthshire PH10 7PF		Camera: Canon EOS 5D Mark II Focal Length: 50mm Lens Height: 1.6m
VIEWPOINT 2: ROMAN SIGNAL STATION GR: E296735, N718894 Elevation: 92m AOD View Direction: 31.5° Distance: 832m		Tip Height: 67m Hub Height: 50m Field of View: 39.6° Viewing Distance: 500mm (A3)
		Drawn by: CB Checked by: MJ Date: 15/10/2012 Revision: 1

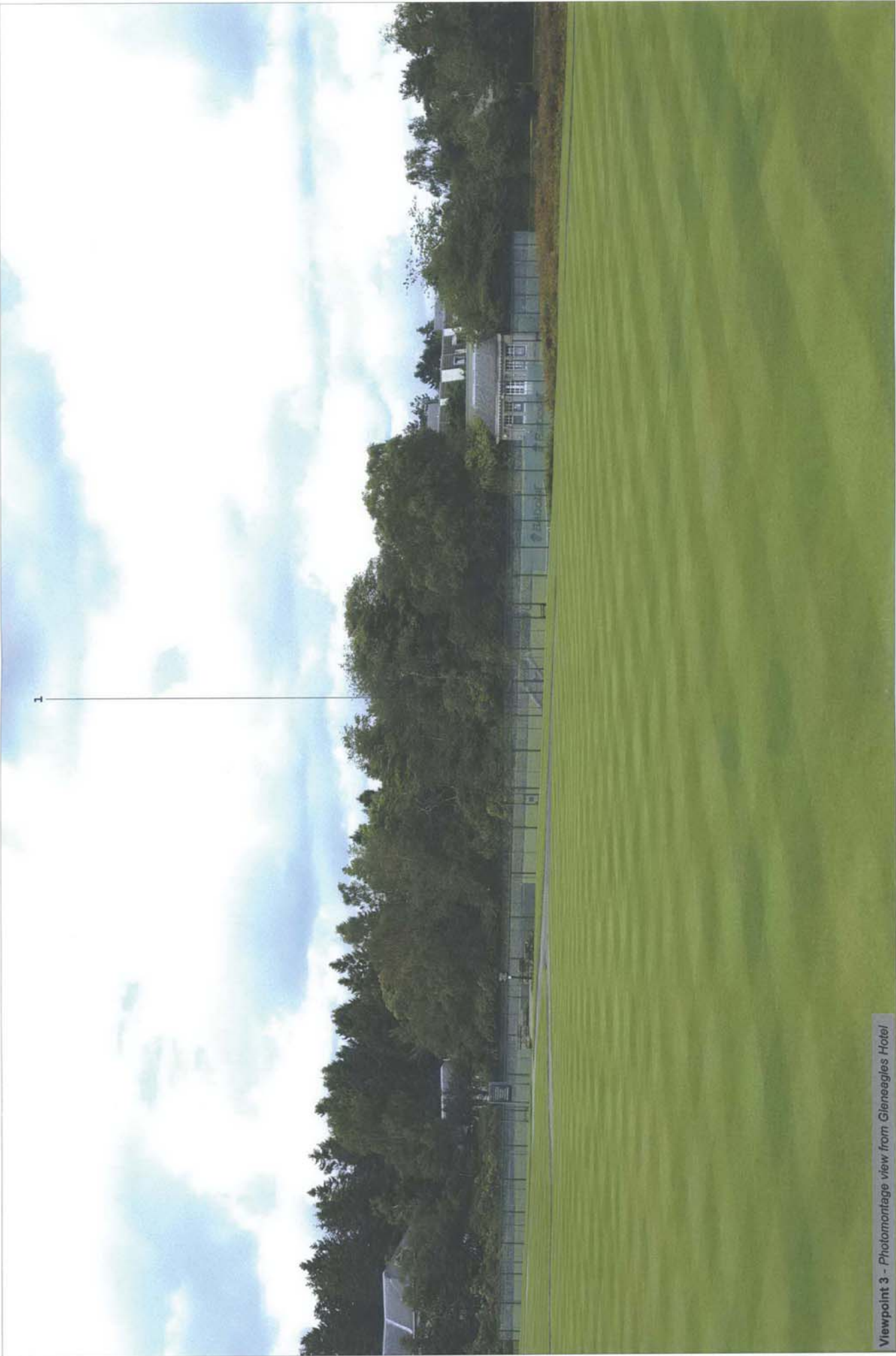


Viewpoint 3 - Wireframe view from Gleneagles Hotel




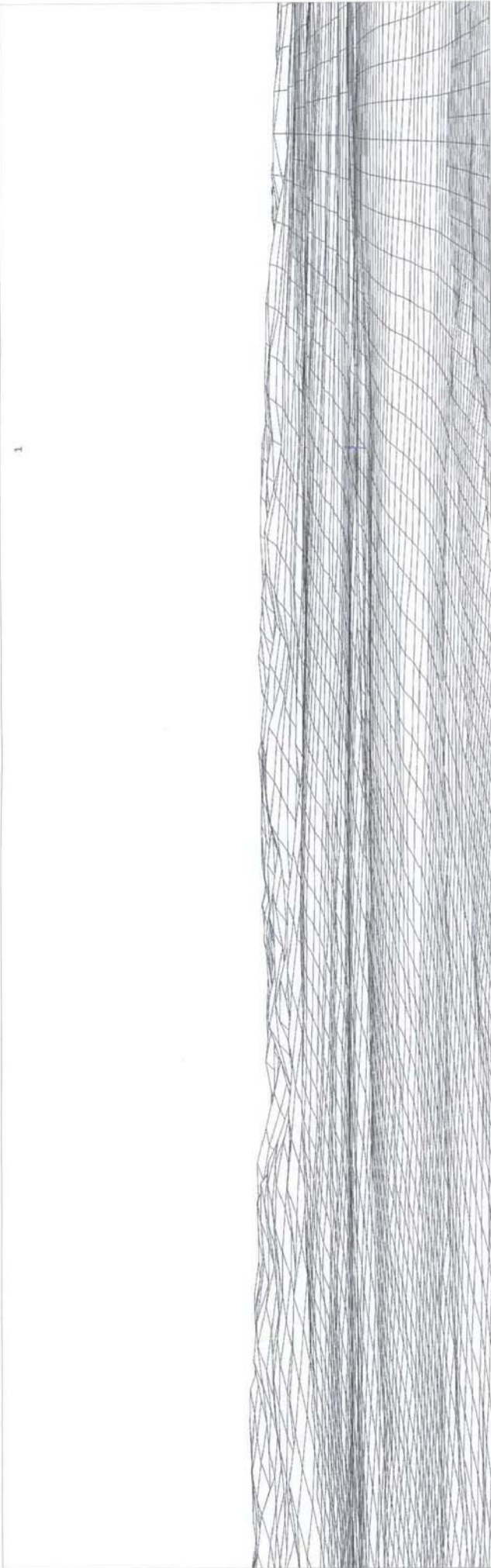
Viewpoint 3 - Current photograph from Gleneagles Hotel

		<p>Realise Renewables East Lodge, Kindrogan Perthshire PH10 7PF</p>		<p>VIEWPOINT 3: GLENEAGLES HOTEL</p>		<p>GR: E291666, N711307 Elevation: 154m AOD View Direction: 35° Distance: 9949m</p>		<p>Tip Height: 67m Hub Height: 50m Field of View: 39.6° Viewing Distance: 500mm (A3)</p>		<p>Camera: Canon EOS 5D Mark II Focal Length: 50mm Lens Height: 1.6m</p>				<p>Trinity Gask: LVIA Figure 7</p>		<p>Viewpoint 3: Gleneagles Hotel</p>		<p>Drawn by: CB Checked by: MJ Date: 15/10/2012 Revision: 1</p>	
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Viewpoint 3 - Photomontage view from Gleneagles Hotel

 <p>Realise Renewables East Lodge, Kindrogan Perthshire PH10 7PF</p>	<p>VIEWPOINT 3: GLENEAGLES HOTEL</p> <p>GR: E291666, N711307 Elevation: 154m AOD View Direction: 35° Distance: 9949m</p> <p>Tip Height: 67m Hub Height: 50m Field of View: 39.6° Viewing Distance: 500mm (A3)</p> <p>Camera: Canon EOS 5D Mark II Focal Length: 50mm Lens Height: 1.6m</p>	 <p>Trinity Gask: LVIA Figure 7</p> <p>Viewpoint 3: Gleneagles Hotel</p> <p>Drawn by: CB Checked by: MJ Date: 15/10/2012 Revision: 1</p>
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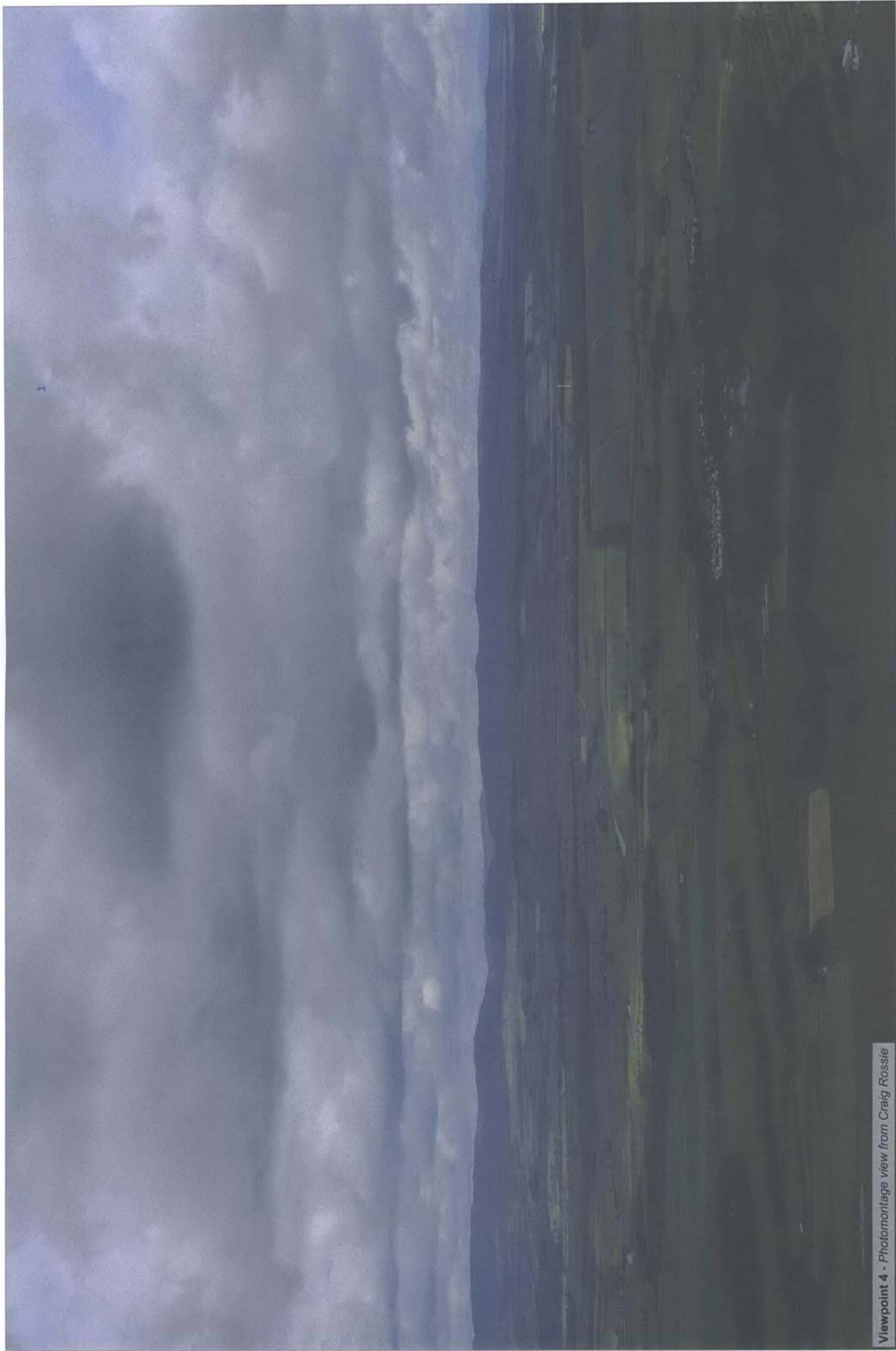


Viewpoint 4 - Wireframe view from Craig Rossie



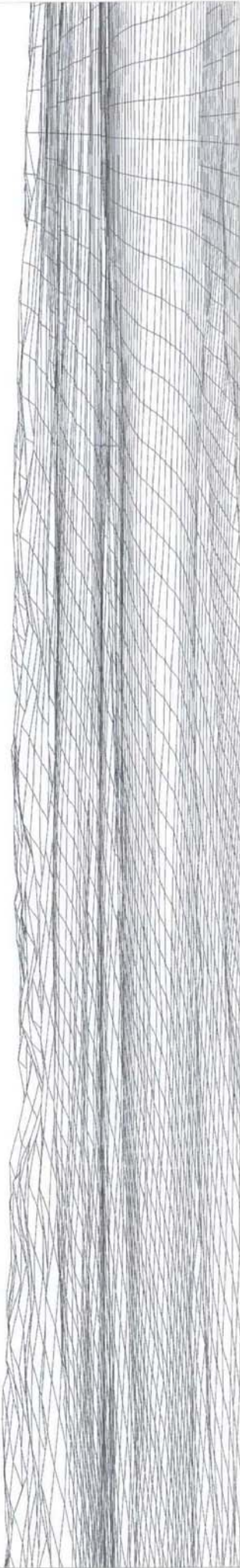
Viewpoint 4 - Existing photograph from Craig Rossie

 <p>Realise Renewables East Lodge, Kindrogan Perthshire PH10 7PF</p>	<p>VIEWPOINT 4: CRAIG ROSSIE</p> <p>GR: E298325, N712101 Elevation: 395m AOD View Direction: 343° Distance: 7484m</p>	<p>Tip Height: 67m Hub Height: 40m Field of View: 39.6° Viewing Distance: 500mm</p>	<p>Camera: Canon EOS 5D Mark II Focal Length: 50mm Lens Height: 1.6m</p>		<p>Trinity Gask: LVIA Figure 8</p>	
					<p>Viewpoint 4: Craig Rossie</p> <p>Drawn by: CB Checked by: MJ</p> <p>Date: 15/10/2012 Revision: 1</p>	



Viewpoint 4 - Photomontage view from Craig Rossie

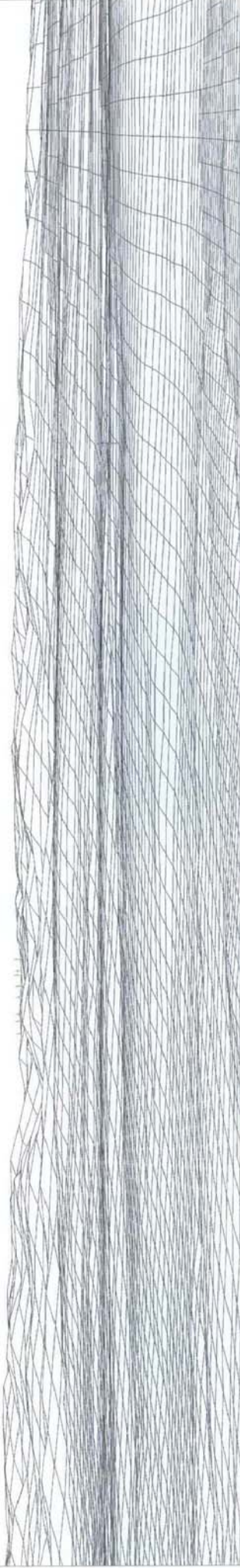
 <p>Realise Renewables East Lodge, Kindrogan Perthshire PH10 7PF</p>	<table> <tr> <td>VIEWPOINT 4: CRAIG ROSSIE</td><td> <p>GR: E298325, N712101 Elevation: 395m AOD View Direction: 343° Distance: 7484m</p> <p>Tip Height: 67m Hub Height: 40m Field of View: 39.6° Viewing Distance: 500m</p> <p>Camera: Canon EOS 5D Mark II Focal Length: 50mm Lens Height: 1.6m</p> </td></tr> <tr> <td> </td><td> <p>Trinity Gask: LVIA Figure 8</p> <p>Viewpoint 4: Craig Rossie</p> <p>Drawn by: CB Checked by: MJ</p> <p>Date: 15/10/2012 Revision: 1</p> </td></tr> </table>	VIEWPOINT 4: CRAIG ROSSIE	<p>GR: E298325, N712101 Elevation: 395m AOD View Direction: 343° Distance: 7484m</p> <p>Tip Height: 67m Hub Height: 40m Field of View: 39.6° Viewing Distance: 500m</p> <p>Camera: Canon EOS 5D Mark II Focal Length: 50mm Lens Height: 1.6m</p>		<p>Trinity Gask: LVIA Figure 8</p> <p>Viewpoint 4: Craig Rossie</p> <p>Drawn by: CB Checked by: MJ</p> <p>Date: 15/10/2012 Revision: 1</p>
VIEWPOINT 4: CRAIG ROSSIE	<p>GR: E298325, N712101 Elevation: 395m AOD View Direction: 343° Distance: 7484m</p> <p>Tip Height: 67m Hub Height: 40m Field of View: 39.6° Viewing Distance: 500m</p> <p>Camera: Canon EOS 5D Mark II Focal Length: 50mm Lens Height: 1.6m</p>				
	<p>Trinity Gask: LVIA Figure 8</p> <p>Viewpoint 4: Craig Rossie</p> <p>Drawn by: CB Checked by: MJ</p> <p>Date: 15/10/2012 Revision: 1</p>				



Viewpoint 4 - Wireframe view from Craig Rossie

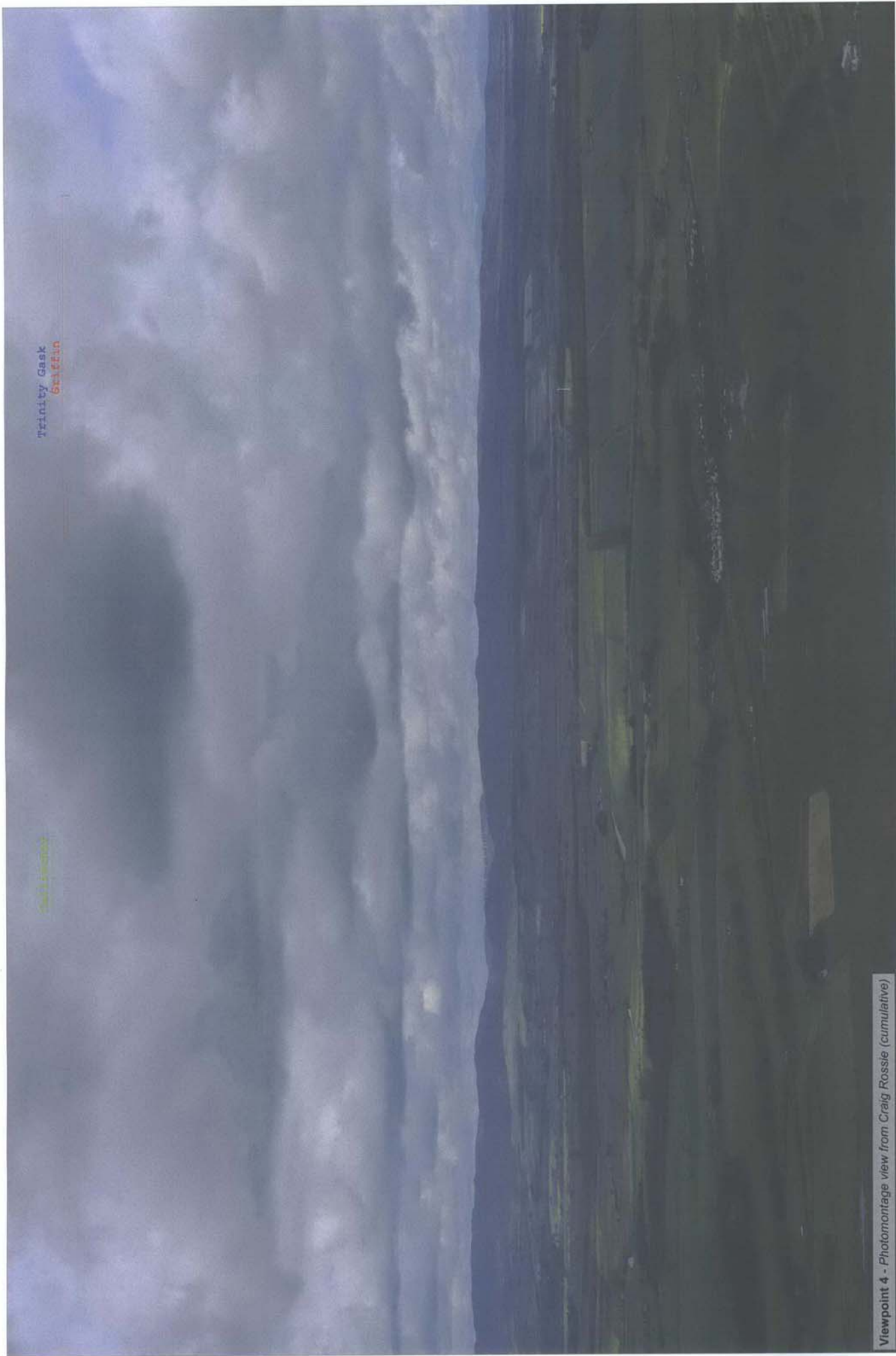
Calliachar

Trinity Gask
Griffin



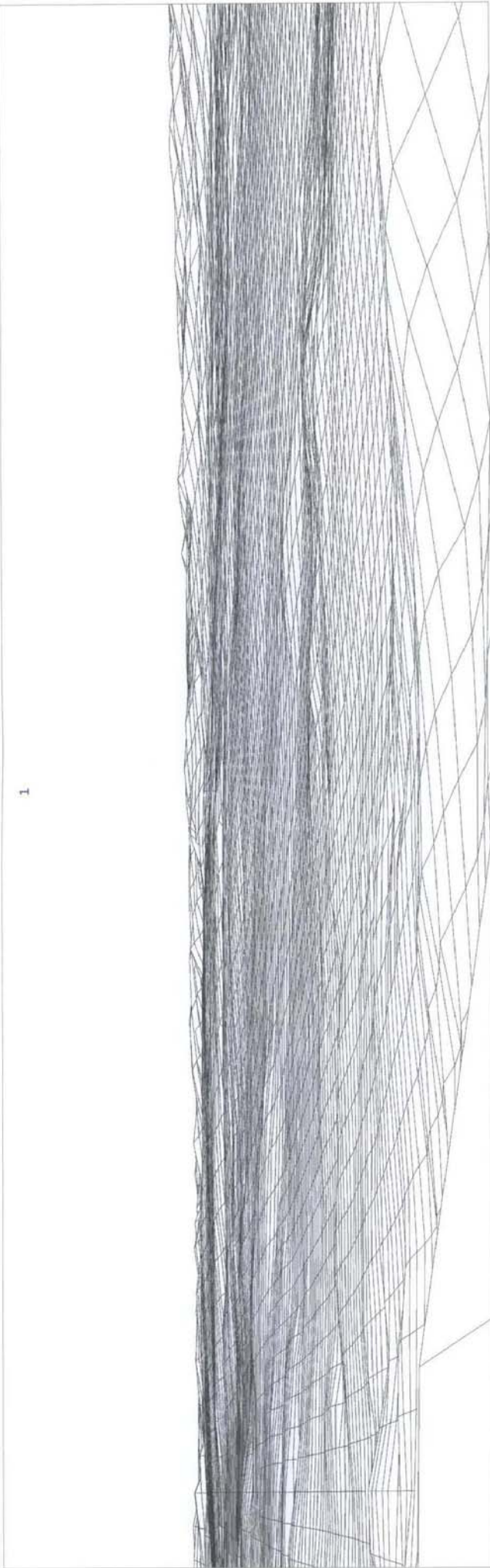
Viewpoint 4 - Wireframe view from Craig Rossie (cumulative)

 <p>Realise Renewables East Lodge, Kindrogan Perthshire PH10 7PF</p>	<p>VIEWPOINT 4: CRAIG ROSSIE</p> <p>GR: E298325, N712101 Elevation: 395m AOD View Direction: 343° Viewing Distance: 500mm (A3)</p> <p>(CUMULATIVE)</p> <p>Distance to (nearest turbine) - Trinity Gask: 7484m Griffin: 30480m Calliachar: 30850m</p> <p>Camera: Canon EOS 5D Mark II Focal Length: 50mm Lens Height: 1.6m Field of View: 39.6°</p>	 <p>Trinity Gask: LVIA Figure 8</p> <p>Viewpoint 4: Craig Rossie</p> <p>Drawn by: CB Checked by: MJ</p> <p>Date: 15/10/2012 Revision: 1</p>
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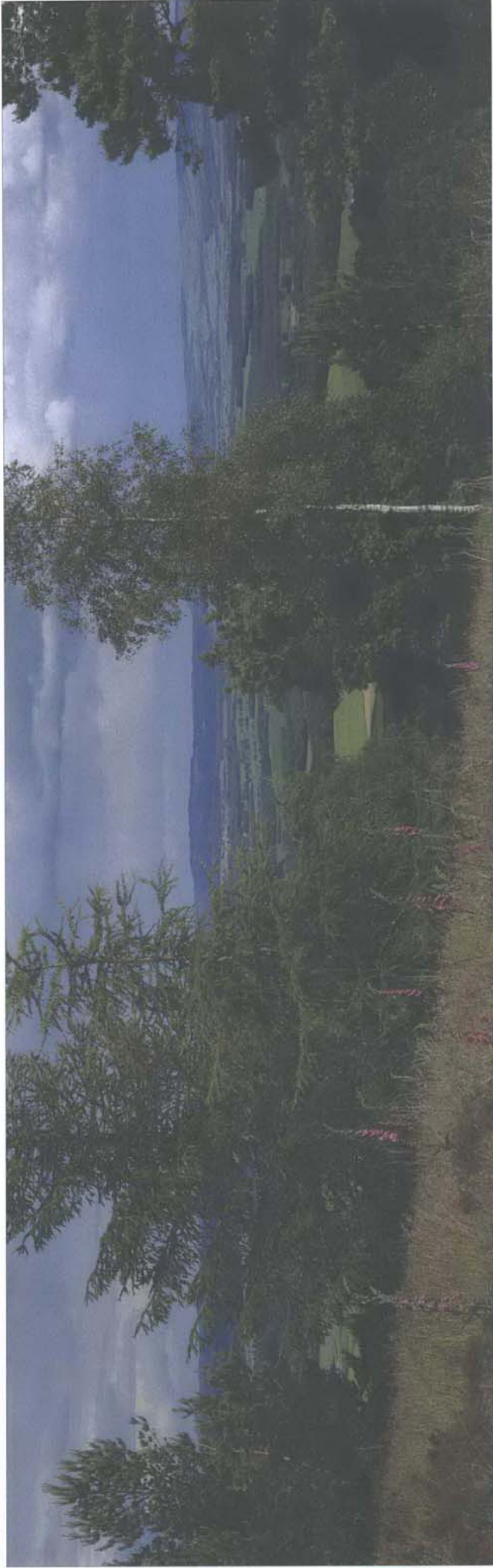


Viewpoint 4 - Photomontage view from Craig Rossie (cumulative)

<p>Realise Renewables East Lodge, Kindrogan Perthshire PH10 7PF</p> <p>Realise Renewables <i>Realise your renewable energy potential</i></p>	<p>VIEWPOINT 4: CRAIG ROSSIE</p> <p>GR: E298325, N712101 Elevation: 395m AOD View Direction: 343° Viewing Distance: 500mm (A3)</p>	<p>VIEWPOINT 4: CRAIG ROSSIE</p> <p>Distance to (nearest turbine) - Trinity Gask: 7484m Griffin: 30480m Calliachar: 30850m</p>	<p>VIEWPOINT 4: CRAIG ROSSIE</p> <p>Camera: Canon EOS 5D Mark II Focal Length: 50mm Lens Height: 1.6m Field of View: 39.6°</p>		<p>Trinity Gask: LVIA Figure 8</p> <p>Viewpoint 4: Craig Rossie</p> <p>Drawn by: CB Checked by: MJ</p> <p>Date: 15/10/2012 Revision: 1</p>
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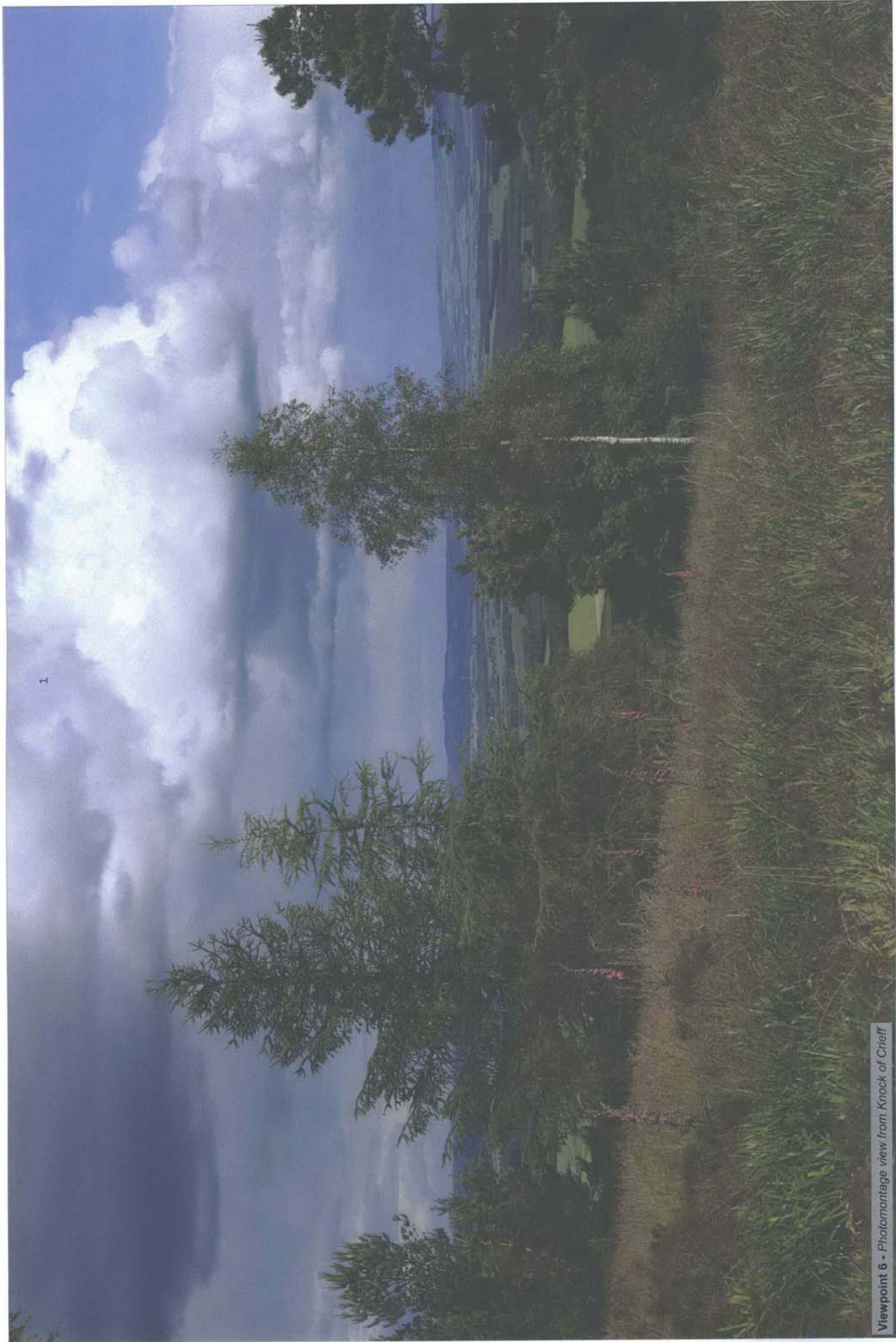


Viewpoint 6 - Wireframe view from Knock of Crieff



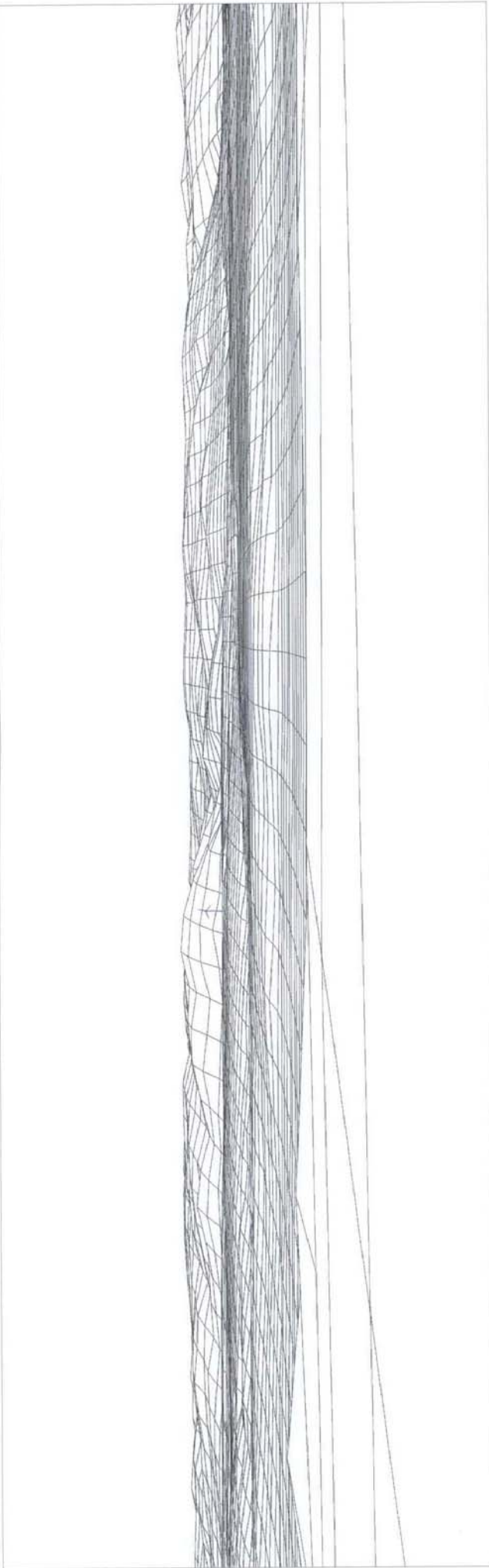
Viewpoint 6 - Photograph from Knock of Crieff

 <p>Realise Renewables East Lodge, Kindrogan Perthshire PH10 7PF</p>	<p>VIEWPOINT 6: KNOCK OF CRIEFF</p> <p>GR: E286781, N722901 Elevation: 241m AOD View Direction: 108° Distance: 11041m</p> <p>Tip Height: 67m Hub Height: 50m Field of View: 39.6° Viewing Distance: 500mm (A3)</p> <p>Camera: Canon EOS 5D Mark II Focal Length: 50mm Lens Height: 1.6m</p>	 <p>Trinity Gask: LVIA Figure 10</p> <p>Viewpoint 6: Knock of Crieff</p> <p>Drawn by: CB Checked by: MJ</p> <p>Date: 15/10/2012 Revision: 1</p>
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Viewpoint 6 - Photomontage view from Knock of Crieff

<p>Realise Renewables East Lodge, Kindrogan Perthshire PH10 7PF</p> 	<p>VIEWPOINT 6: KNOCK OF CRIEFF</p> <p>GR: E286781, N722901 Elevation: 241m AOD View Direction: 108° Distance: 11041m</p> <p>Tip Height: 67m Hub Height: 50m Field of View: 39.6° Viewing Distance: 500mm (A3)</p> <p>Camera: Canon EOS 5D Mark II Focal Length: 50mm Lens Height: 1.6m</p>	 <p>Trinity Gask: LVIA Figure 10</p> <p>Viewpoint 6: Knock of Crieff</p> <p>Drawn by: CB Checked by: MJ</p> <p>Date: 15/10/2012 Revision: 1</p>
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Viewpoint 7 - Wireframe view from A85





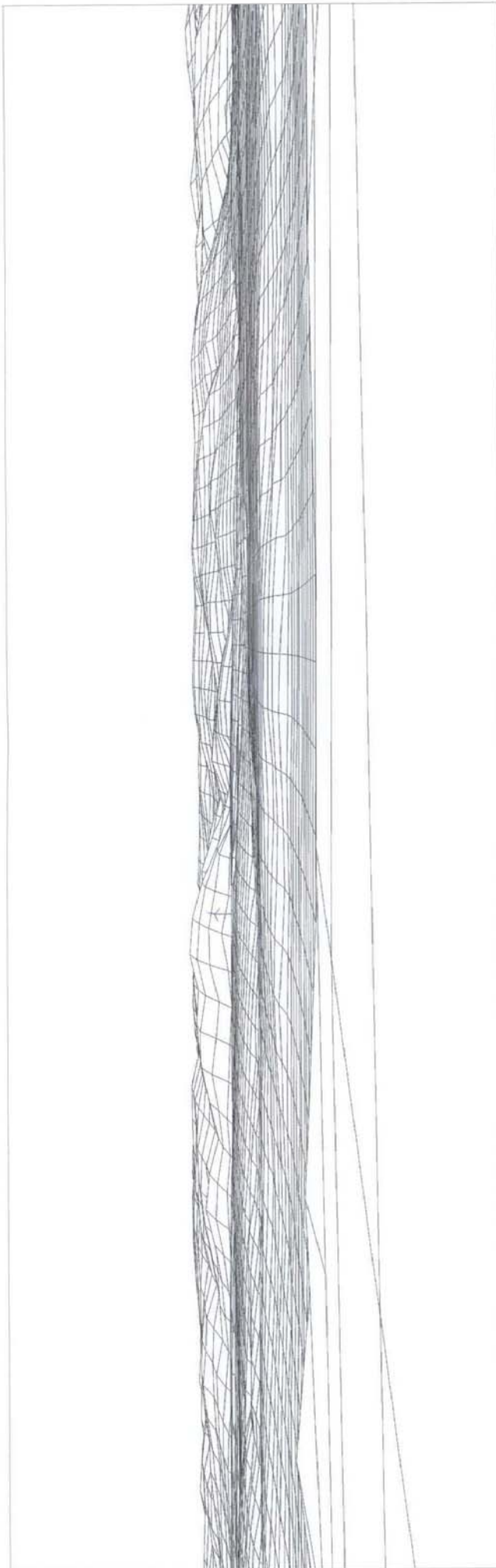
Viewpoint 7 - Current photograph from A85

 <p>Realise Renewables East Lodge, Kindrogan Perthshire PH10 7PF</p>	<p>VIEWPOINT 7: A85</p> <p>GR: 296686, 724244 Elevation: 74m AOD View Direction: 176° Distance: 4768m</p>	<p>Camera: Canon EOS 5D Mark II Focal Length: 50mm Lens Height: 1.6m</p>		<p>Trinity Gask: LVIA Figure 11</p> <p>Viewpoint 7: A85</p> <p>Drawn by: CB Checked by: MJ</p> <p>Date: 15/10/2012 Revision: 1</p>
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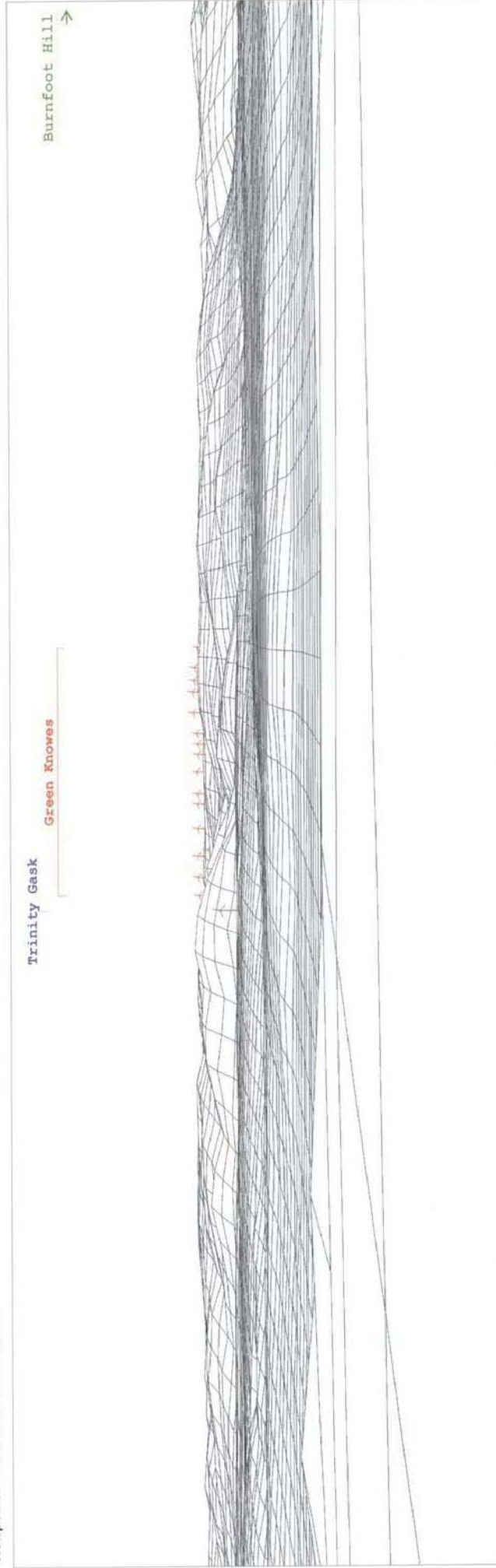


Viewpoint 7 - Photomontage view from A85



 <p>Realise Renewables East Lodge, Kindrogan Perthshire PH10 7PF</p>	<p>VIEWPOINT 7: A85</p> <p>GR: 296686, 724244 Elevation: 74m AOD View Direction: 176° Distance: 4768m</p>	 <p>Camera: Canon EOS 5D Mark II Focal Length: 50mm Lens Height: 1.6m</p>	<p>Trinity Gask: LVIA Figure 11</p> <p>Viewpoint 7: A85</p> <p>Drawn by: CB Checked by: MJ</p> <p>Date: 15/10/2012 Revision: 1</p>
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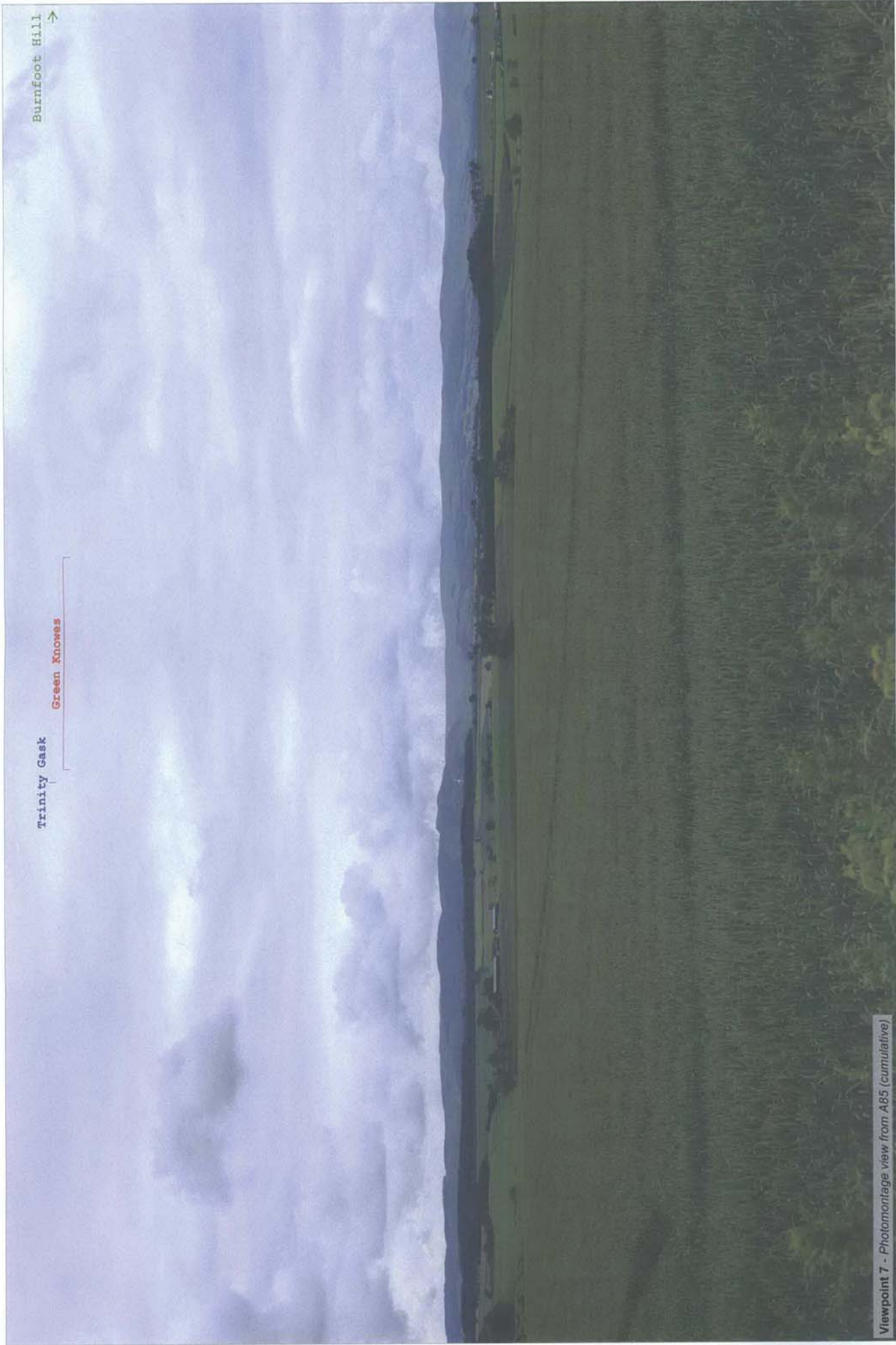


Viewpoint 7 - Wireframe view from A85



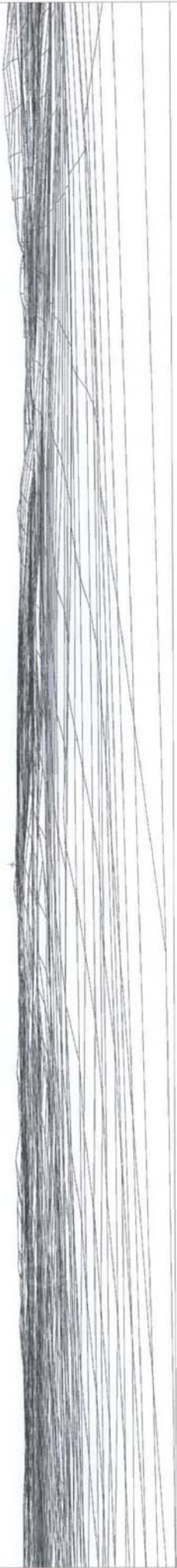
Viewpoint 7 - Wireframe view from A85 (cumulative)

 <p>Realise Renewables East Lodge, Kindrogan Perthshire PH10 7PF</p>	<p>VIEWPOINT 7: A85</p> <p>GR: 296686, 724244 Elevation: 74m AOD View Direction: 176° Viewing Distance: 500mm (A3)</p>	<p>(CUMULATIVE)</p> <p>Distance to (nearest turbine) - Trinity Gask: 4768m Green Knowes: 11490m Burnfoot Hill: 17384m</p>	<p>Camera: Canon EOS 5D Mark II Focal Length: 50mm Lens Height: 1.6m Field of View: 39.6°</p>		<p>Trinity Gask: LVIA Figure 11</p> <p>Viewpoint 7: A85</p> <p>Drawn by: CB Checked by: MJ</p> <p>Date: 15/10/2012 Revision: 1</p>
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Viewpoint 7 - Photomontage view from A85 (cumulative)

 <p>Realise Renewables East Lodge, Kindrogan Perthshire PH10 7PF</p>	<p>VIEWPOINT 7: A85 GR: 296686, 724244 Elevation: 74m AOD View Direction: 176° Viewing Distance: 500mm (A3)</p>	<p>(CUMULATIVE) Distance to (nearest turbine) - Trinity Gask: 4768m Green Knowes: 11490m Burnfoot Hill: 17384m</p>		<p>Trinity Gask: LVIA Figure 11</p> <p>Viewpoint 7: A85</p> <p>Drawn by: CB Checked by: MJ</p> <p>Date: 15/10/2012 Revision: 1</p>
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Viewpoint 8 - Wireframe view from A822



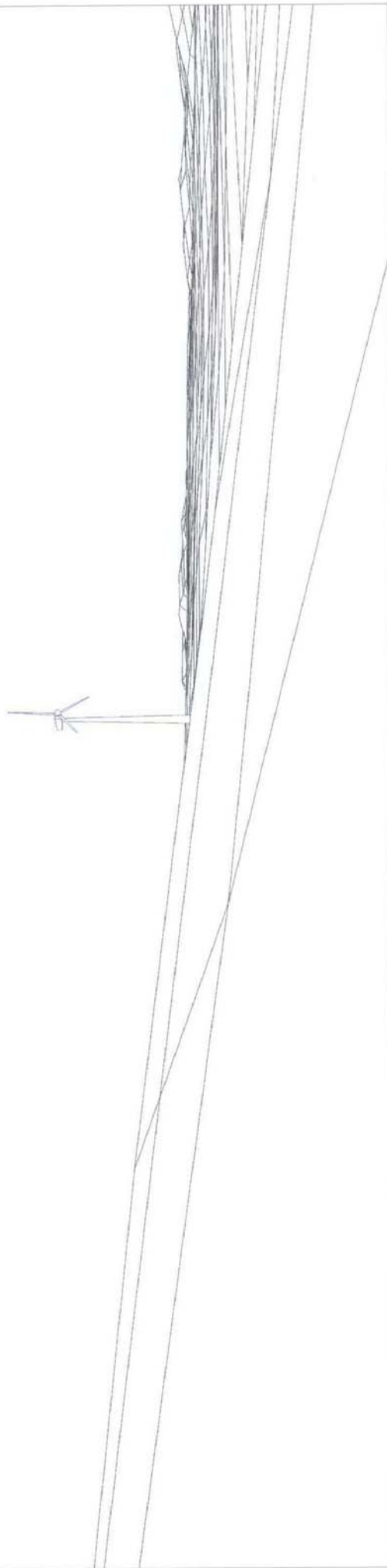
Viewpoint 8 - Current photograph from A822

 Realise Renewables East Lodge, Kindrogan Perthshire PH10 7PF	<p>VIEWPOINT 8: A822</p> <p>GR: 287254, 716618 Elevation: 82m AOD View Direction: 76° Distance: 10445m</p>	<p>Tip Height: 67m Hub Height: 50m Field of View: 39.6° Viewing Distance: 500mm (A3)</p> <p>Camera: Canon EOS 5D Mark II Focal Length: 50mm Lens Height: 1.6m</p>		Trinity Gask: LVIA Figure 12	
				Viewpoint 8: A822	
				Drawn by: CB Checked by: MJ Date: 15/10/2012 Revision: 1	



Viewpoint 8 - Photomontage from A822

 <p>Realise Renewables East Lodge, Kindrogan Perthshire PH10 7PF</p>	<p>VIEWPOINT 8: A822</p> <p>GR: 287254, 716618 Elevation: 82m AOD View Direction: 76° Distance: 10445m</p> <p>Tip Height: 67m Hub Height: 50m Field of View: 39.6° Viewing Distance: 500mm (A3)</p> <p>Camera: Canon EOS 5D Mark II Focal Length: 50mm Lens Height: 1.6m</p>	 <p>Trinity Gask: LVIA Figure 12</p> <p>Viewpoint 8: A822</p> <p>Drawn by: CB Checked by: MJ</p> <p>Date: 15/10/2012 Revision: 1</p>
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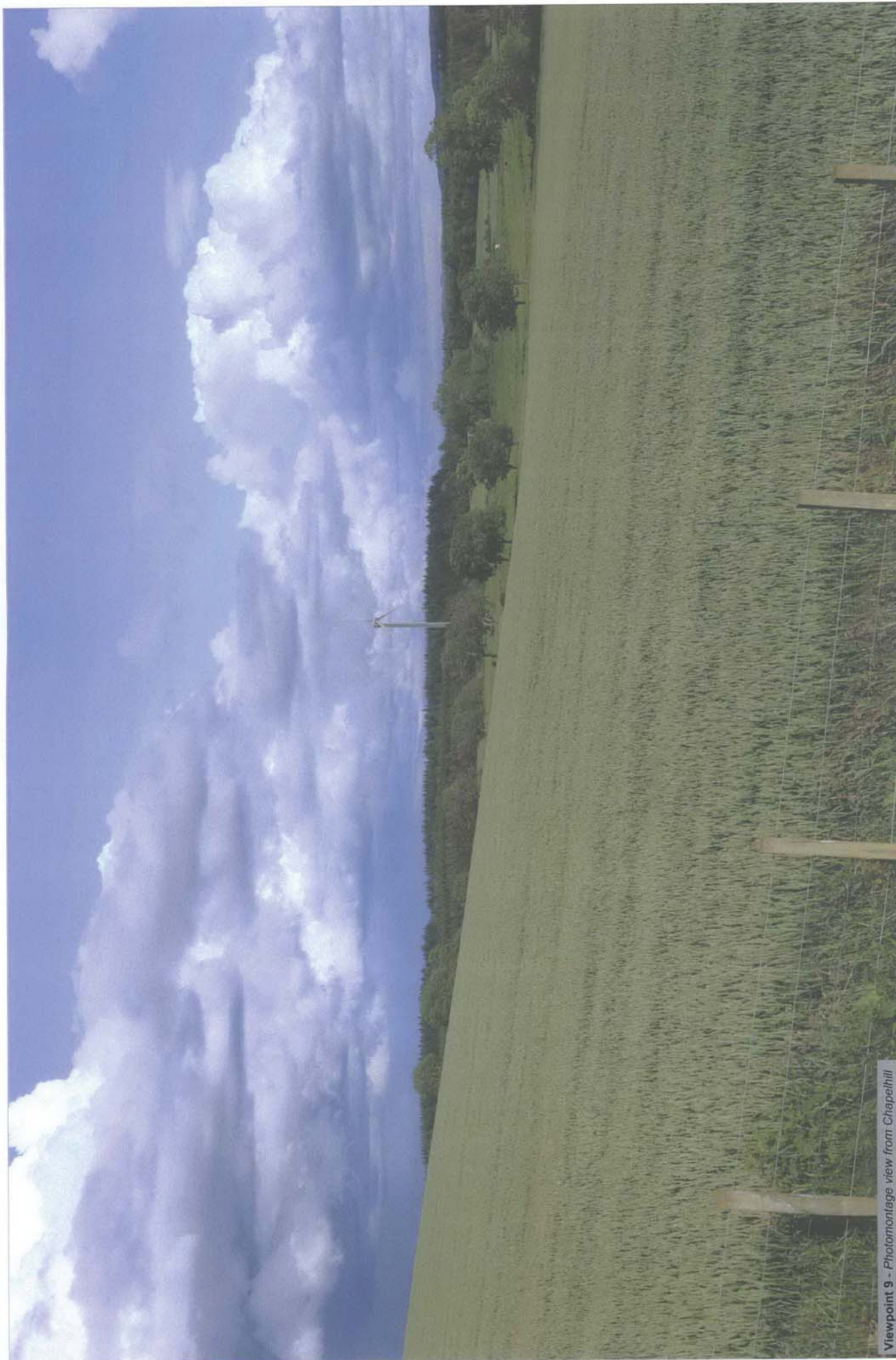


Viewpoint 9 - Wireframe view from Chapelhill



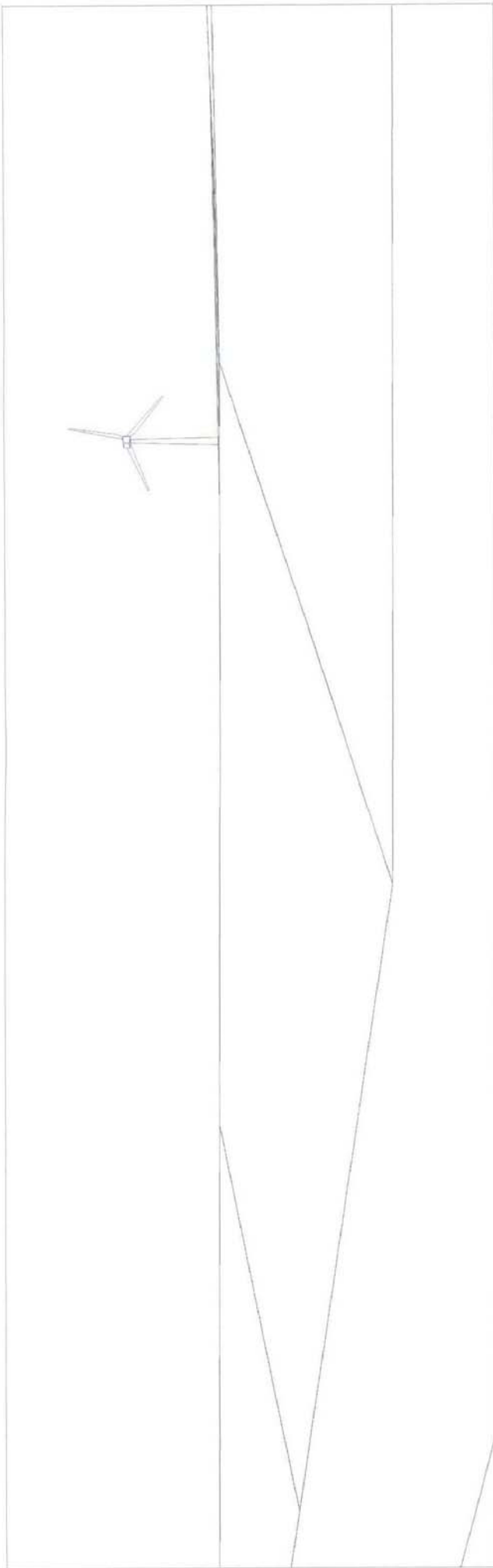
Viewpoint 9 - Current photograph from Chapelhill

 <p>Realise Renewables East Lodge, Kindrogan Perthshire PH10 7PF</p>	<p>VIEWPOINT 9: CHAPELHILL GR: 296593, 719711 Elevation: 90m AOD View Direction: 104° Distance: 724m</p> <p>Tip Height: 67m Hub Height: 50m Field of View: 39.6° Viewing Distance: 500mm (A3)</p> <p>Camera: Canon EOS 5D Mark II Focal Length: 50mm Lens Height: 1.6m</p>		<p>Trinity Gask: LVIA Figure 13</p> <p>Viewpoint 9: Chapelhill</p> <p>Drawn by: CB Checked by: MJ</p> <p>Date: 15/10/2012 Revision: 1</p>
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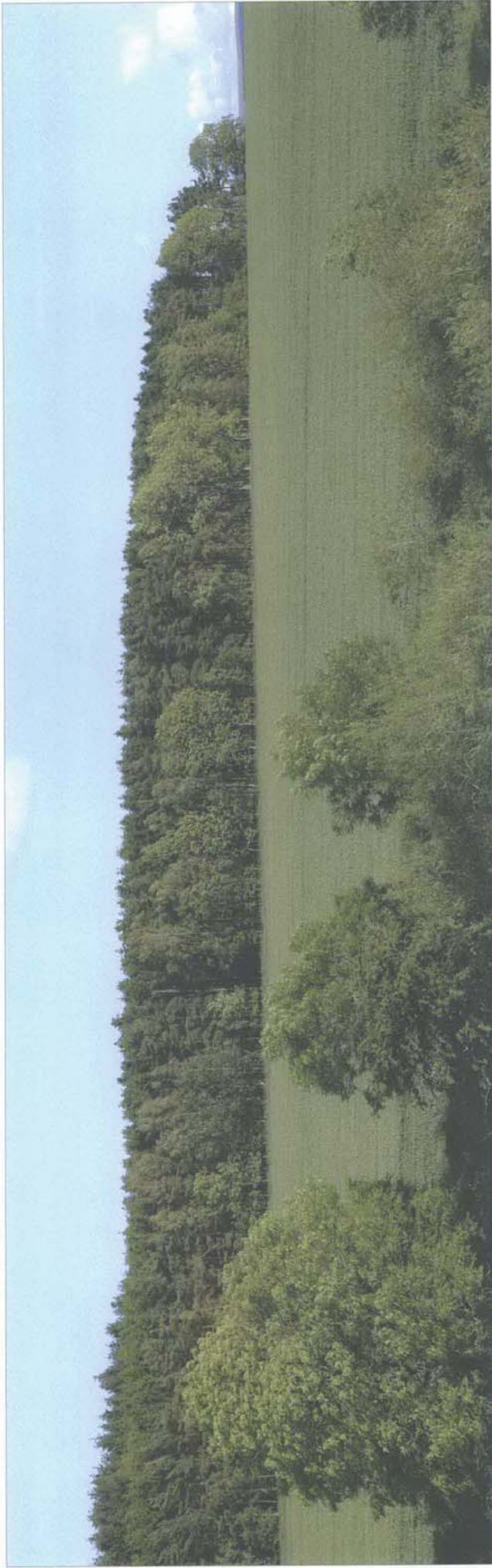


Viewpoint 9 - Photomontage view from Chapelhill

		<p>Realise Renewables East Lodge, Kindrogan Perthshire PH10 7PF</p>		<p>VIEWPOINT 9: CHAPELHILL</p> <p>GR: 296593, 719711 Elevation: 90m AOD View Direction: 104° Distance: 724m</p>		<p>Tip Height: 67m Hub Height: 50m Field of View: 39.6° Viewing Distance: 500mm (A3)</p>		<p>Camera: Canon EOS 5D Mark II Focal Length: 50mm Lens Height: 1.6m</p>				<p>Trinity Gask: LVIA Figure 13</p>		<p>Viewpoint 9: Chapelhill</p>		<p>Drawn by: CB Checked by: MJ</p>		<p>Date: 15/10/2012 Revision: 1</p>	
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Viewpoint 10 - Wireframe view from Drumgowan




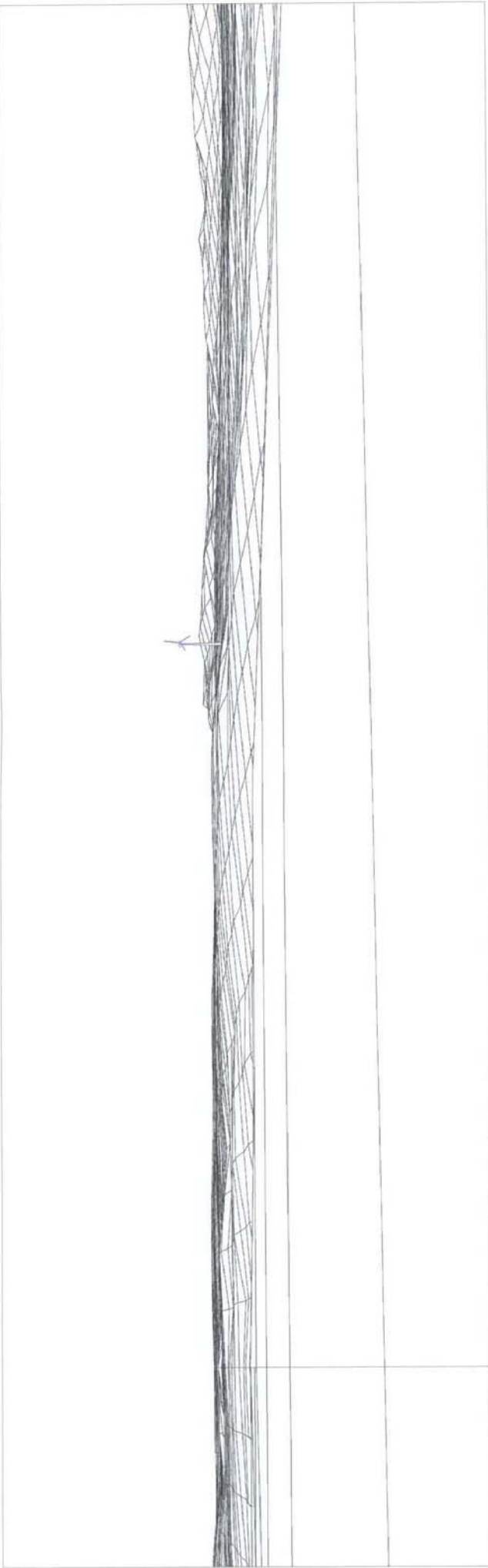
Viewpoint 10 - Current photograph from Drumgowan

	Realise Renewables East Lodge, Kindrogan Perthshire PH10 7PF	VIEWPOINT 10: DRUMGOWAN			Trinity Gask: LVIA Figure 14
		GR: 297063, 720108 Elevation: 92m AOD View Direction: 150° Distance: 635m			Viewpoint 10: Drumgowan
		Tip Height: 67m Hub Height: 50m Field of View: 39.6° Viewing Distance: 500mm (A3)		Camera: Canon EOS 5D Mark II Focal Length: 50mm Lens Height: 1.6m	Drawn by: CB Checked by: MJ



Viewpoint 10 - Photomontage from Drumgowan

 <p>Realise Renewables East Lodge, Kindrogan Perthshire PH10 7PF</p>	VIEWPOINT 10: DRUMGOWAN				<p>Trinity Gask: LVIA Figure 14</p>
	GR: 297063, 720108 Elevation: 92m AOD View Direction: 150° Distance: 635m				
	Tip Height: 67m Hub Height: 50m Field of View: 39.6° Viewing Distance: 500mm (A3)				
	Camera: Canon EOS 5D Mark II Focal Length: 50mm Lens Height: 1.6m				
Viewpoint 10: Drumgowan					<p>Drawn by: CB Checked by: MJ</p> <p>Date: 15/10/2012 Revision: 1</p>

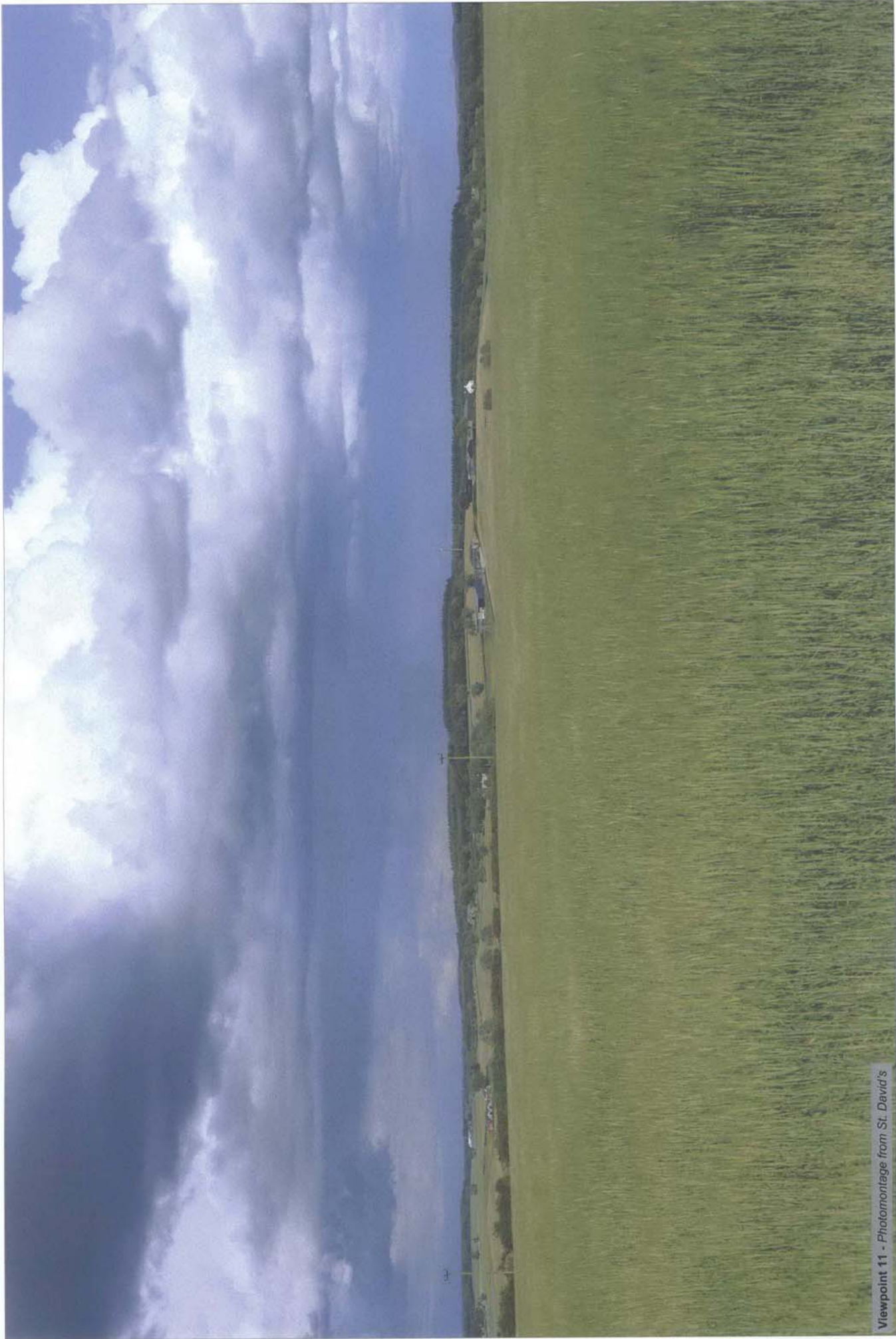


Viewpoint 11 - Wireframe view from St. David's



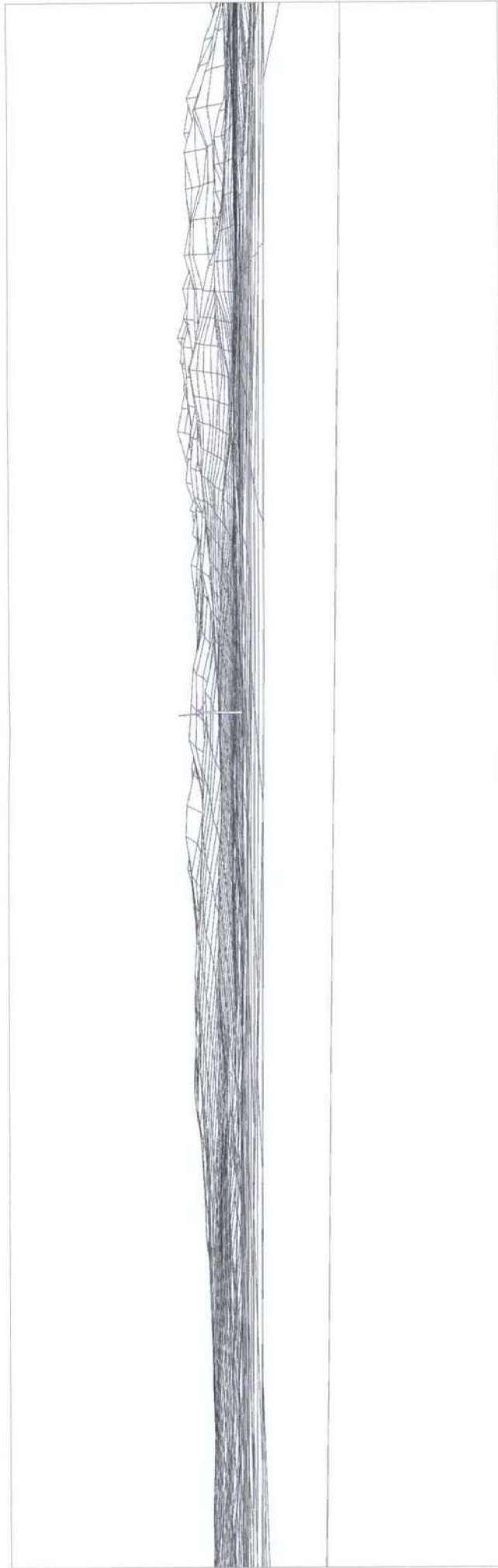
Viewpoint 11 - Current photograph from St. David's

 <p>Realise Renewables East Lodge, Kindrogan Perthshire PH10 7PF</p>	<table> <tr> <td>VIEWPOINT 11: ST. DAVID'S</td><td> <p>GR: 295118, 720250 Elevation: 92m AOD View Direction: 105° Distance: 2293m</p> </td></tr> <tr> <td> <p>Tip Height: 67m Hub Height: 50m Field of View: 39.6° Viewing Distance: 500mm (A3)</p> </td><td> <p>Camera: Canon EOS 5D Mark II Focal Length: 50mm Lens Height: 1.6m</p> </td></tr> </table>	VIEWPOINT 11: ST. DAVID'S	<p>GR: 295118, 720250 Elevation: 92m AOD View Direction: 105° Distance: 2293m</p>	<p>Tip Height: 67m Hub Height: 50m Field of View: 39.6° Viewing Distance: 500mm (A3)</p>	<p>Camera: Canon EOS 5D Mark II Focal Length: 50mm Lens Height: 1.6m</p>
VIEWPOINT 11: ST. DAVID'S	<p>GR: 295118, 720250 Elevation: 92m AOD View Direction: 105° Distance: 2293m</p>				
<p>Tip Height: 67m Hub Height: 50m Field of View: 39.6° Viewing Distance: 500mm (A3)</p>	<p>Camera: Canon EOS 5D Mark II Focal Length: 50mm Lens Height: 1.6m</p>				
	<p>Trinity Gask: LVIA Figure 15</p> <p>Viewpoint 11: St. David's</p> <p>Drawn by: CB Checked by: MJ</p> <p>Date: 15/10/2012 Revision: 1</p>				



Viewpoint 11 - Photomontage from St. David's

 <p>Realise Renewables East Lodge, Kindrogan Perthshire PH10 7PF</p>	<p>VIEWPOINT 11: ST. DAVID'S</p> <p>GR: 295118, 720250 Elevation: 92m AOD View Direction: 105° Distance: 2293m</p> <p>Tip Height: 67m Hub Height: 50m Field of View: 39.6° Viewing Distance: 500mm (A3)</p> <p>Camera: Canon EOS 5D Mark II Focal Length: 50mm Lens Height: 1.6m</p>		<p>Trinity Gask: LVIA Figure 15</p> <p>Viewpoint 11: St. David's</p> <p>Drawn by: CB Checked by: MJ</p> <p>Date: 15/10/2012 Revision: 1</p>
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Viewpoint 12 - Wireframe view from Clathy





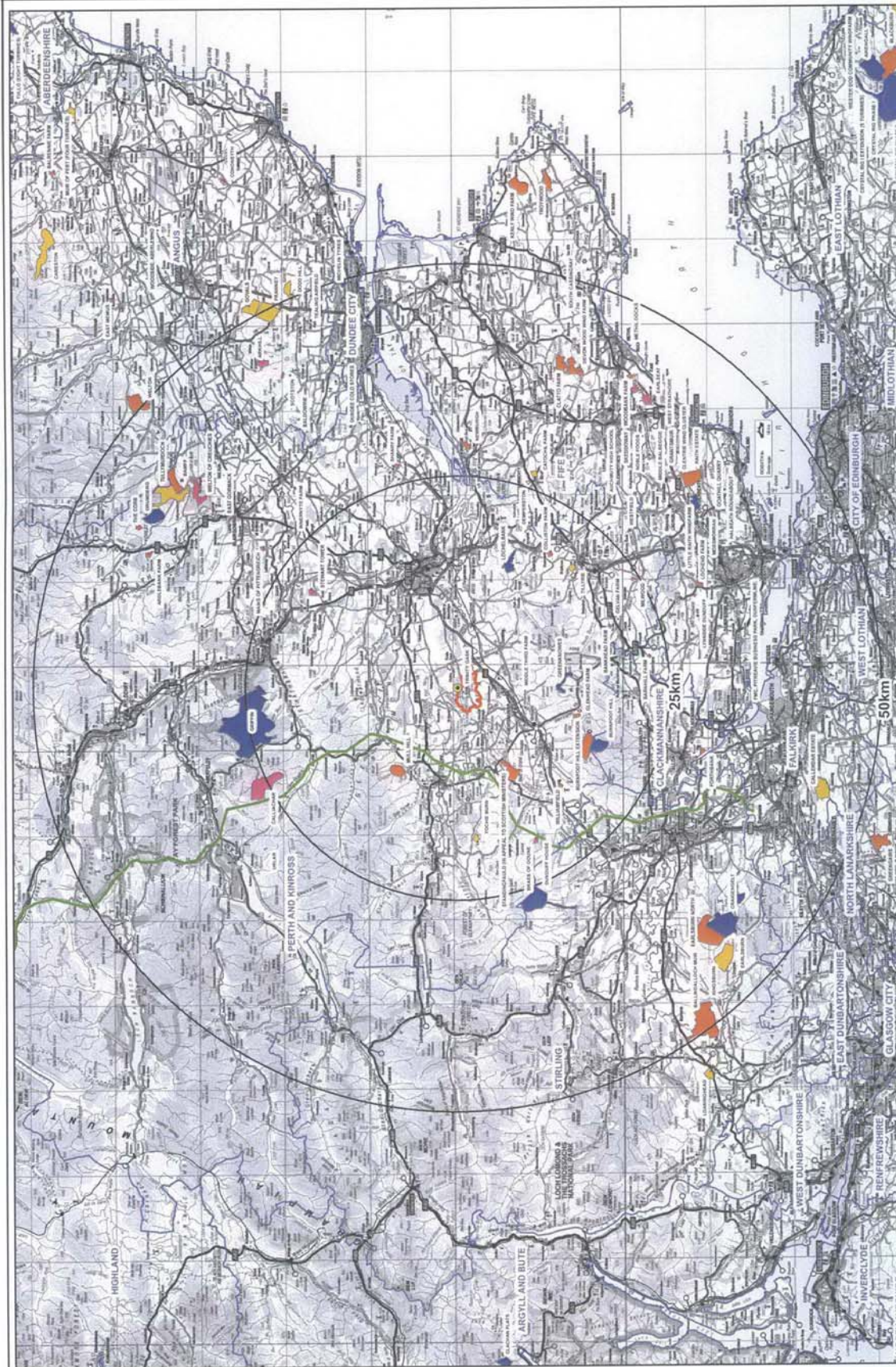
Viewpoint 12 - Current photograph from Clathy

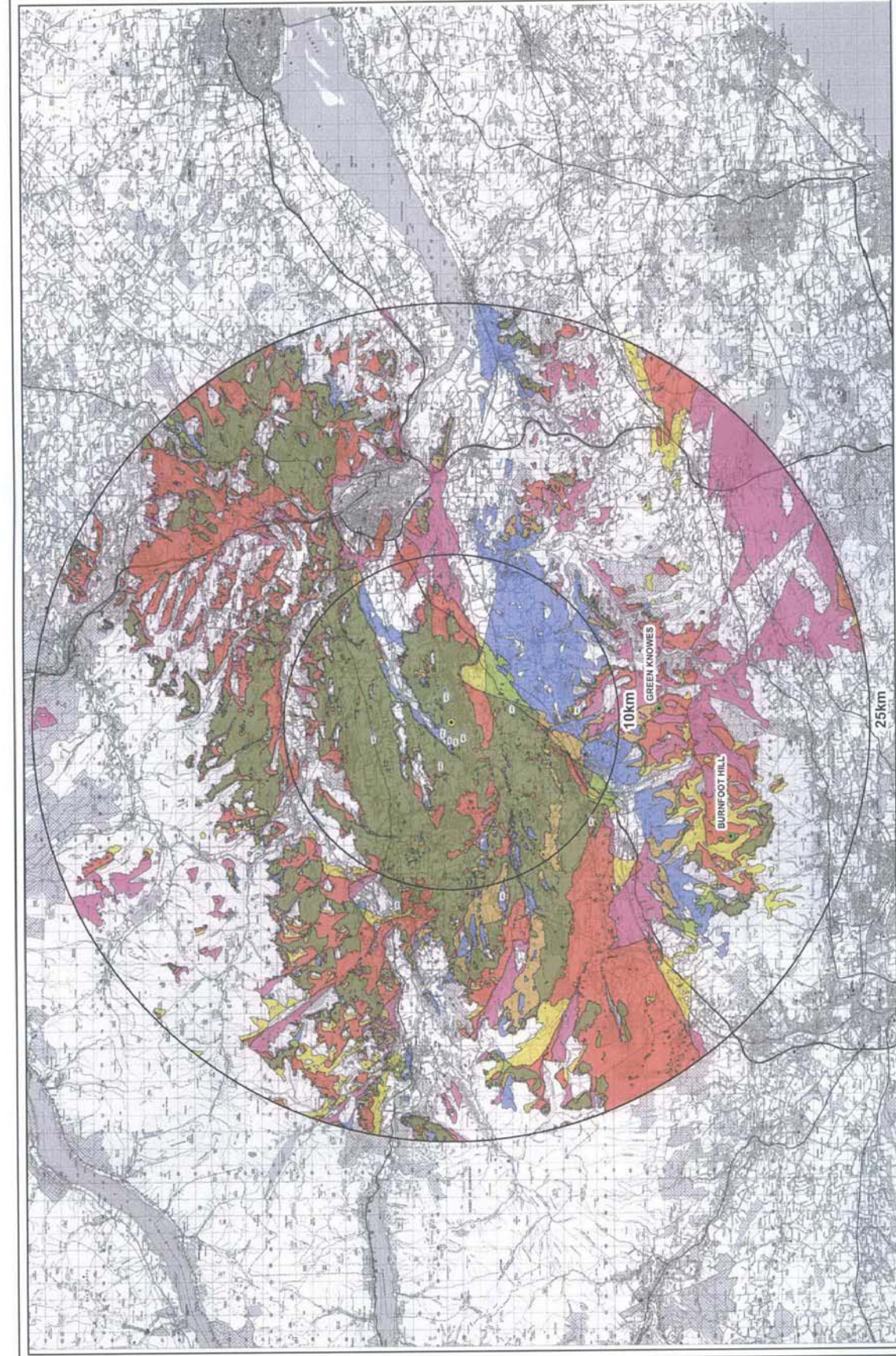
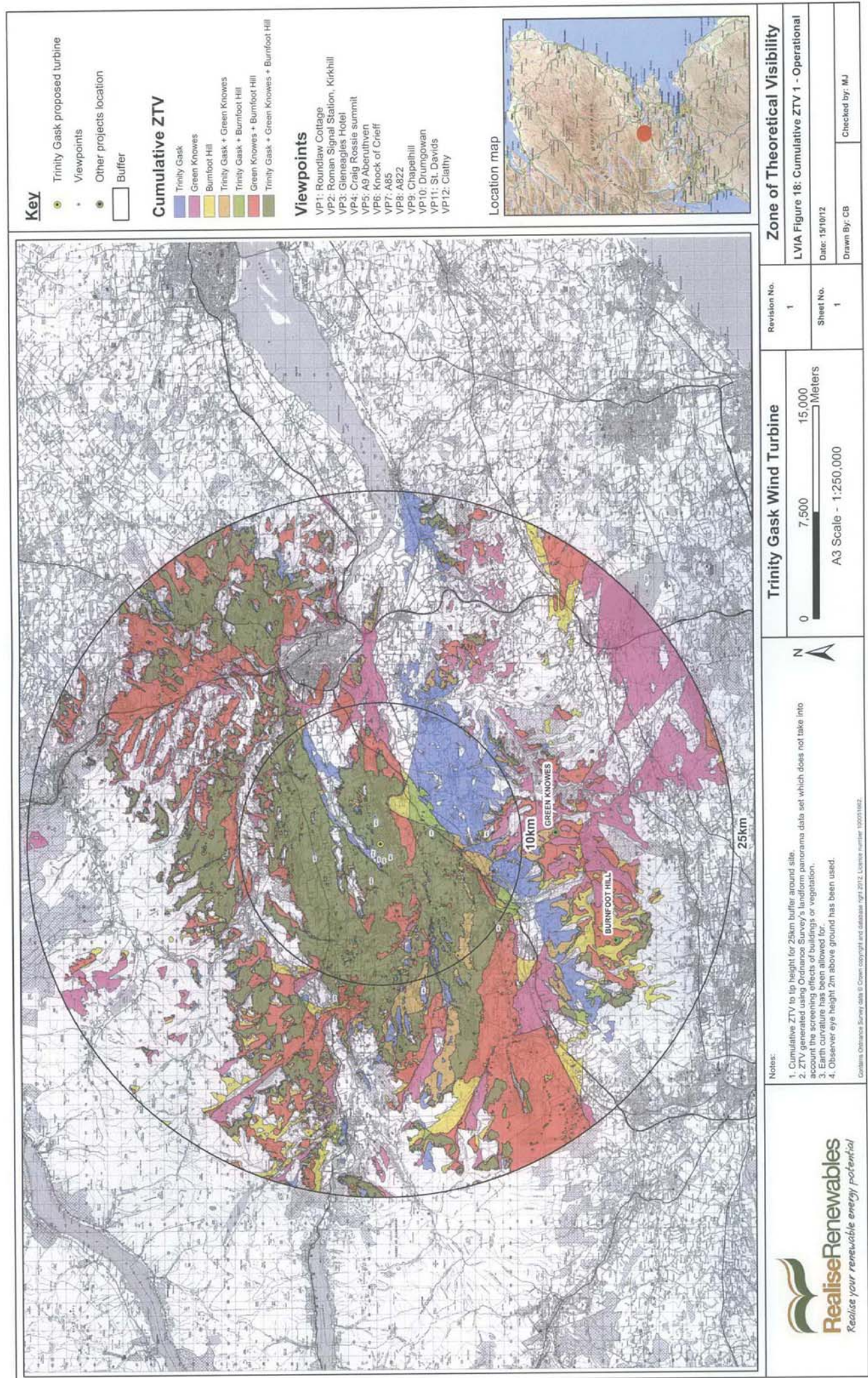
 <p>Realise Renewables East Lodge, Kindrogan Perthshire PH10 7PF</p>	<p>VIEWPOINT 12: CLATHY</p> <p>GR: 299230, 719893 Elevation: 120m AOD View Direction: 257° Distance: 1976m</p>	<p>Tip Height: 67m Hub Height: 50m Field of View: 39.6° Viewing Distance: 500mm (A3)</p> <p>Camera: Canon EOS 5D Mark II Focal Length: 50mm Lens Height: 1.6m</p>		<p>Trinity Gask: LVIA Figure 16</p> <p>Viewpoint 12: Clathy</p> <p>Drawn by: CB Checked by: MJ</p> <p>Date: 15/10/2012 Revision: 1</p>
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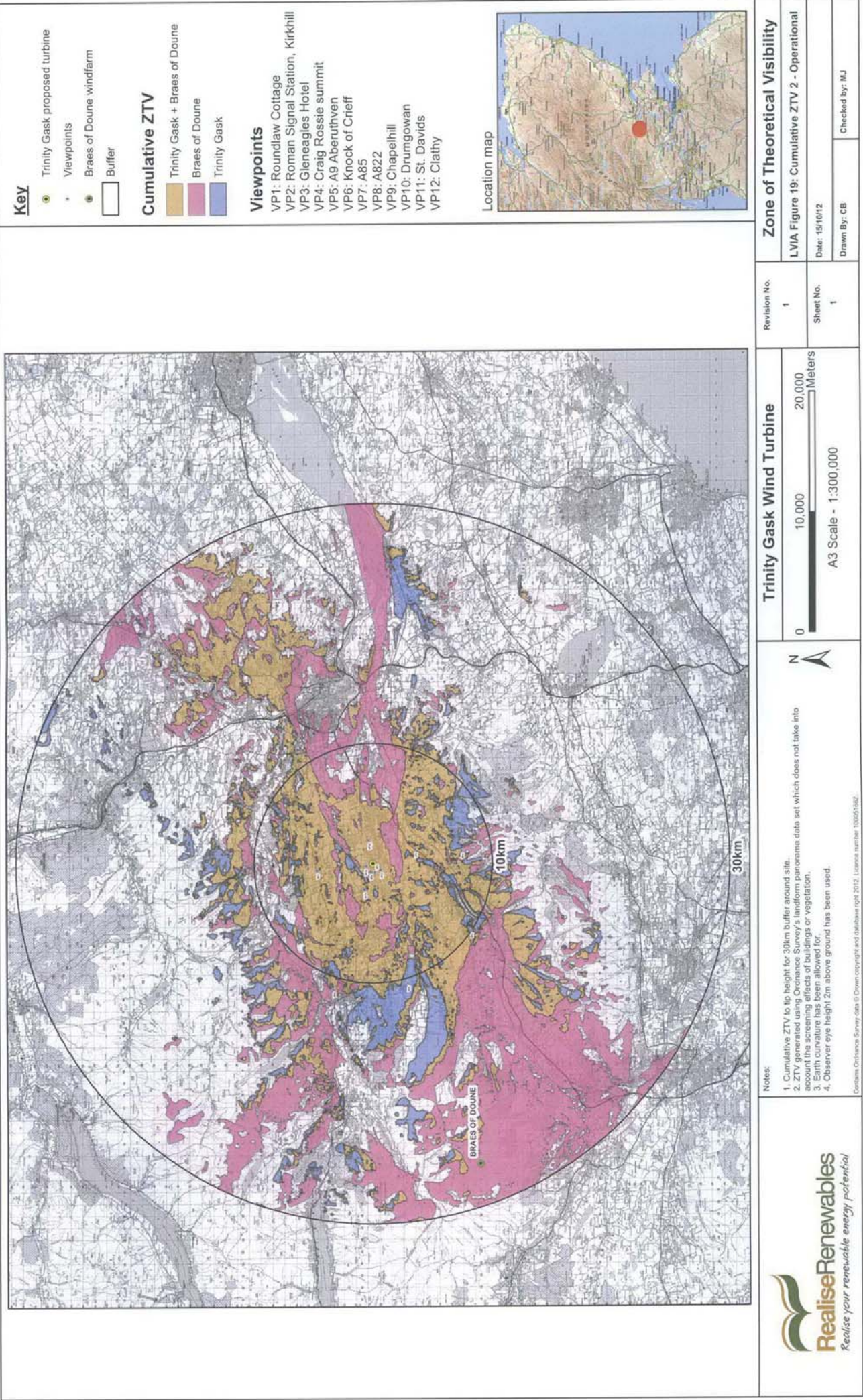
Viewpoint 12 - Photomontage from Clathy

 <p>Realise Renewables East Lodge, Kindrogan Perthshire PH10 7PF</p>	<p>VIEWPOINT 12: CLATHY</p> <p>GR: 299230, 719893 Elevation: 120m AOD View Direction: 257° Distance: 1976m</p> <p>Tip Height: 67m Hub Height: 50m Field of View: 39.6° Viewing Distance: 500mm (A3)</p> <p>Camera: Canon EOS 5D Mark II Focal Length: 50mm Lens Height: 1.6m</p>	 <p>Trinity Gask: LVIA Figure 16</p> <p>Viewpoint 12: Clathy</p> <p>Drawn by: CB Checked by: MJ Date: 15/10/2012 Revision: 1</p>
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	Trinity Gask Wind Turbine		Zone of Theoretical Visibility
	Revision No. 1	LVIA Figure 18: Cumulative ZTV 1 - Operational	
	Sheet No. 1	Date: 15/10/12 Drawn By: CB Checked by: MJ	



Key

- Trinity Gask proposed turbine
- Viewpoints
- Braes of Doune windfarm
- Buffer

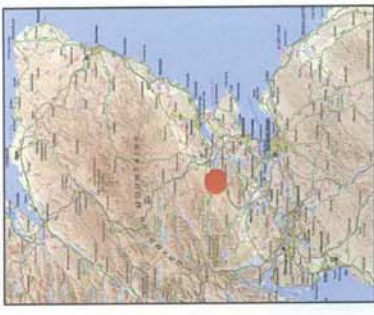
Cumulative ZTV

- Trinity Gask + Braes of Doune
- Braes of Doune
- Trinity Gask

Viewpoints

- VP1: Roundlaw Cottage
- VP2: Roman Signal Station, Kirkhill
- VP3: Gleneagles Hotel
- VP4: Craig Rossie summit
- VP5: A9 Abernethven
- VP6: Knock of Crieff
- VP7: A85
- VP8: A822
- VP9: Chapelhill
- VP10: Drumgowlan
- VP11: St. Davids
- VP12: Clathry

Location map





Realise your renewable energy potential

Notes:

- Cumulative ZTV to tip height for 30km buffer around site.
- ZTV generated using Ordnance Survey's landform panorama data set which does not take into account the screening effects of buildings or vegetation.
- Earth curvature has been allowed for.
- Observer eye height 2m above ground has been used.

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Trinity Gask Wind Turbine

0 10,000 20,000 Meters

A3 Scale - 1:300,000

Revision No. 1

Sheet No. 1

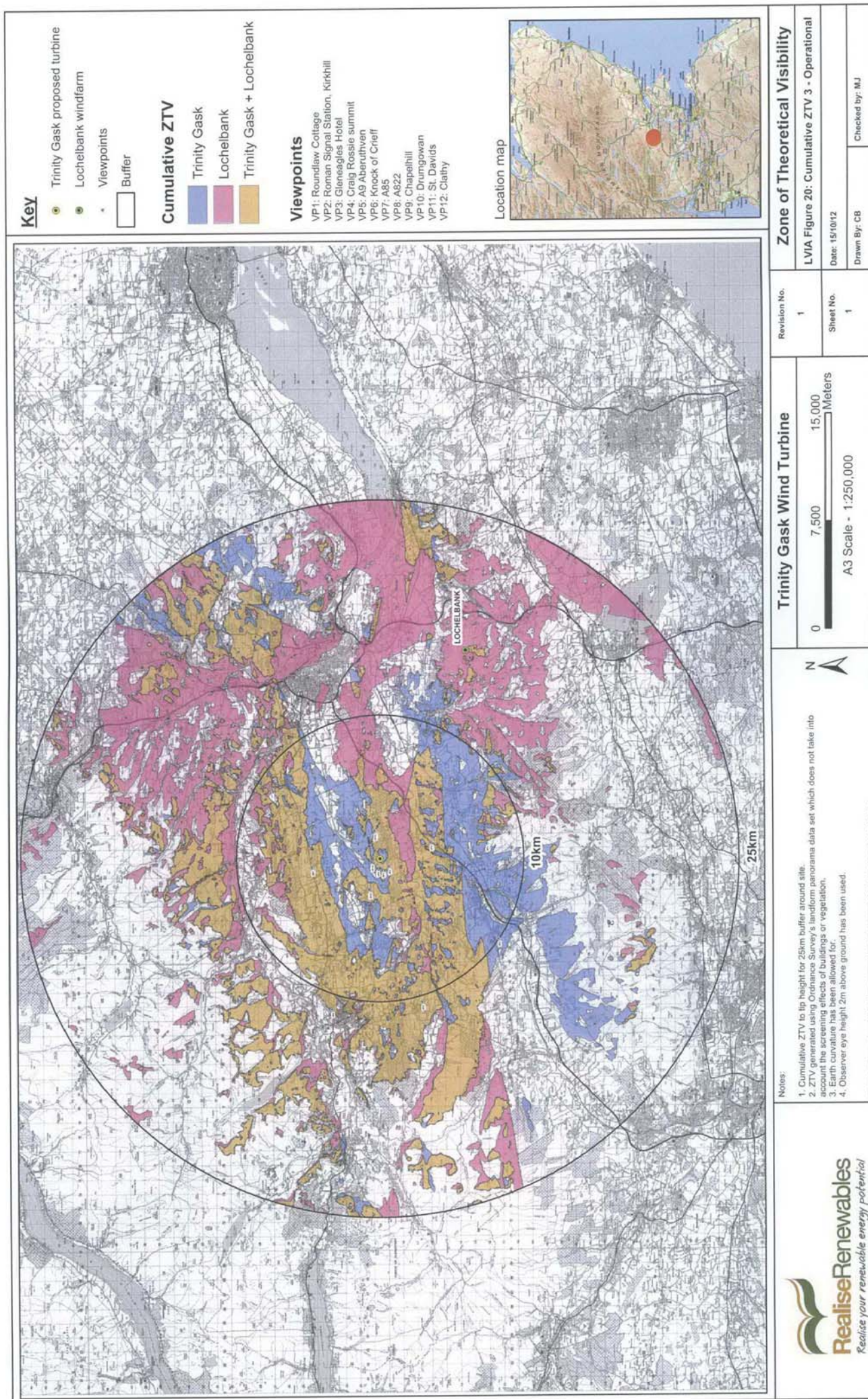
Zone of Theoretical Visibility

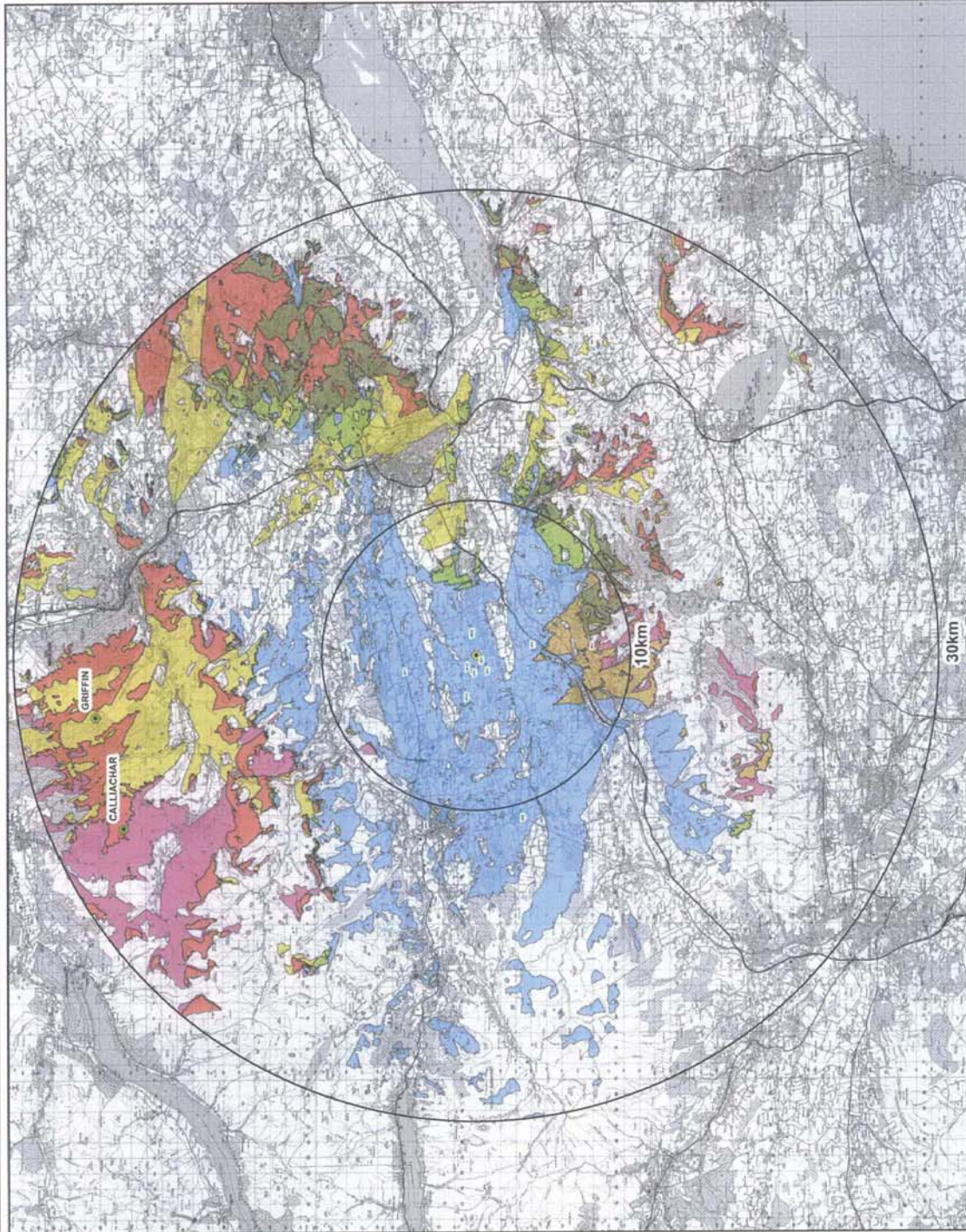
LVIA Figure 19: Cumulative ZTV 2 - Operational

Date: 15/10/12

Drawn By: CB

Checked by: MJ





Key

- Trinity Gask proposed turbine
- Consented projects location
- Viewpoints
- Buffer

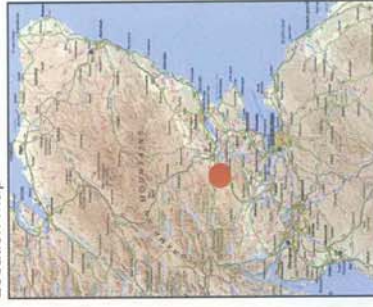
Cumulative ZTV

- Trinity Gask
- Calliachar
- Griffin
- Trinity Gask + Calliachar
- Trinity Gask + Griffin
- Calliachar + Griffin
- Trinity Gask + Calliachar + Griffin

Viewpoints

- VP1: Roundlaw Cottage
- VP2: Roman Signal Station, Kirkhill
- VP3: Glensaglos Hotel
- VP4: Craig Rossie summit
- VP5: A9 Abernethy
- VP6: Knock of Creff
- VP7: A85
- VP8: A822
- VP9: Chapelhill
- VP10: Drumgowan
- VP11: St. Davids
- VP12: Clathy

Location map

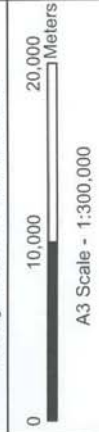


Notes:

1. Cumulative ZTV to tip height for 30km buffer around site.
2. ZTV generated using Ordnance Survey's landform panorama data set which does not take into account the screening effects of buildings or vegetation.
3. Earth curvature has been allowed for.
4. Observer eye height 2m above ground has been used.

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Trinity Gask Wind Turbine



Revision No.

1

Sheet No.

1

Zone of Theoretical Visibility

LVIA Figure 21: Cumulative ZTV 4 - Consented

Date: 15/10/12

Drawn By: CB

Checked by: MJ

Trinity Gask Wind Turbine

November 2012

A3 Figures: Volume 2 of 2

Appendix 2: Ecology

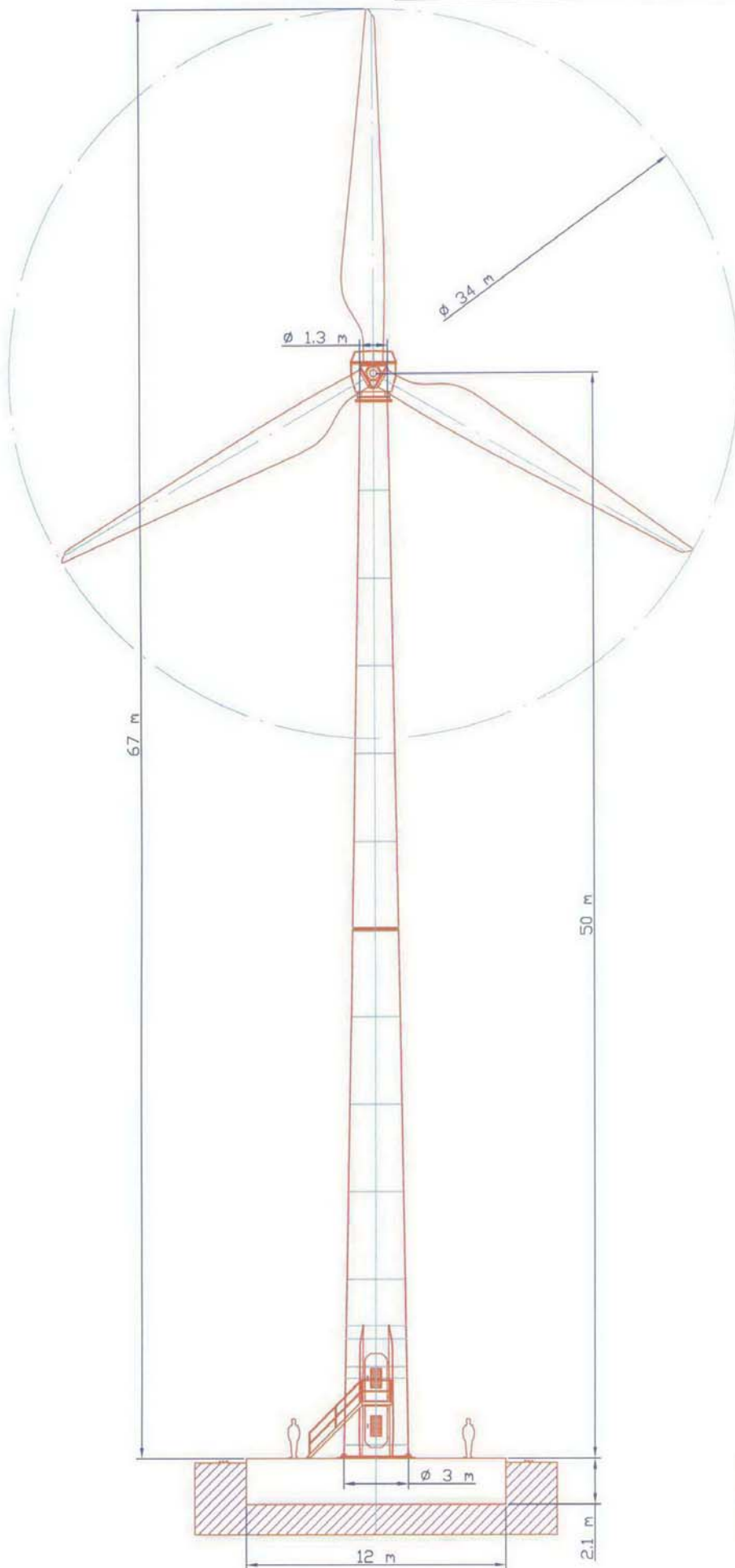
Ecology Figure 2 Turbine Drawing
Ecology Figure 3 Phase 1 Habitat Map
Ecology Figure 4 Mammal Records Map
Ecology Figure 5 Bat Activity May
Ecology Figure 6 Bat Activity July
Ecology Figure 7 Bat Activity August
Ecology Figure 8 Ecological Designations

Appendix 3: Ornithology

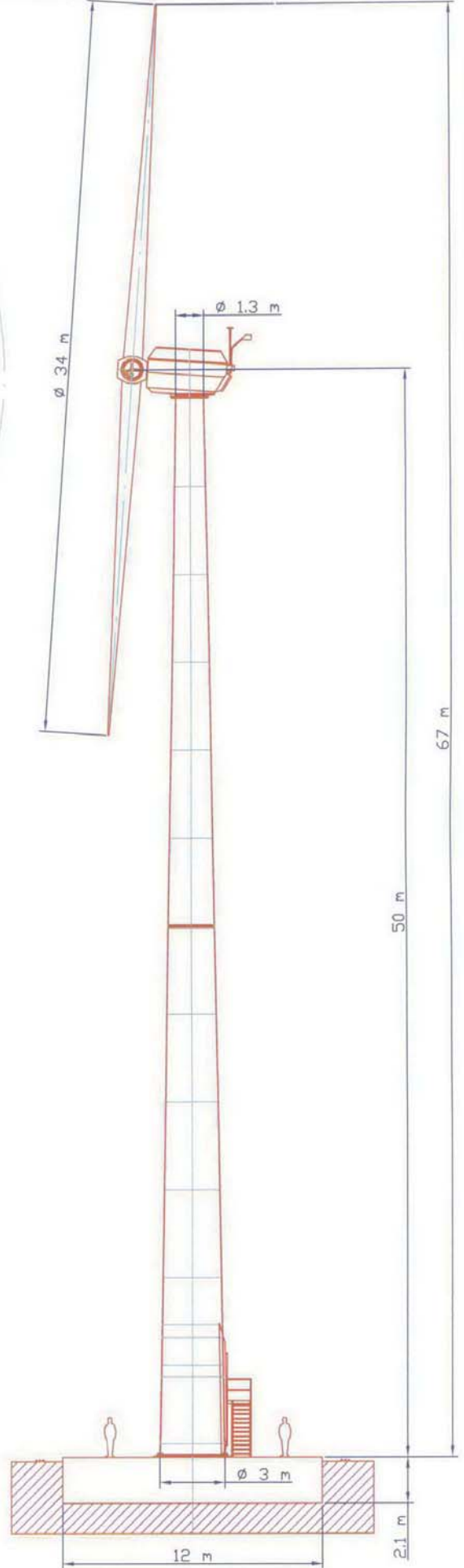
Figure 4 (Ornithology) Breeding Bird Survey - Red List

TURBOWINDS T400-34
 Hub height: 50 m Tip height: 67 m
 IEC wind class: 2
 Rotor speed: 22 / 33 rpm

Scale 1:200@ A3



Front view



Side view

Trinity Gask Wind Turbine

Jamie
Roberts

Phase 1 Survey Results

Key

- Survey boundary
- Target note
- Point features
- x Scrub - scattered
- Broadleaved Parkland/scattered trees
- Line features
- Running water
- Intact hedge - species-poor
- Hedge with trees - species-poor
- Fence
- Habitat areas
- Broadleaved woodland - semi-natural
- Coniferous woodland - plantation
- Mixed woodland - semi-natural
- Mixed woodland - plantation
- Scrub - dense/continuous
- Coniferous woodland - recently felled
- Neutral grassland - semi-improved
- Improved grassland
- Other tall herb and fern - ruderal
- Standing water
- Cultivated/disturbed land - arable
- Cultivated/disturbed land - amenity
- Track

atmos
CONSULTING



Scale @ A3:
1:5,500



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Ordnance survey licence number 100048146.

12/10/2011

Drawn By: SH

Checked By: MD Approved by: JB

10500_HB_0098



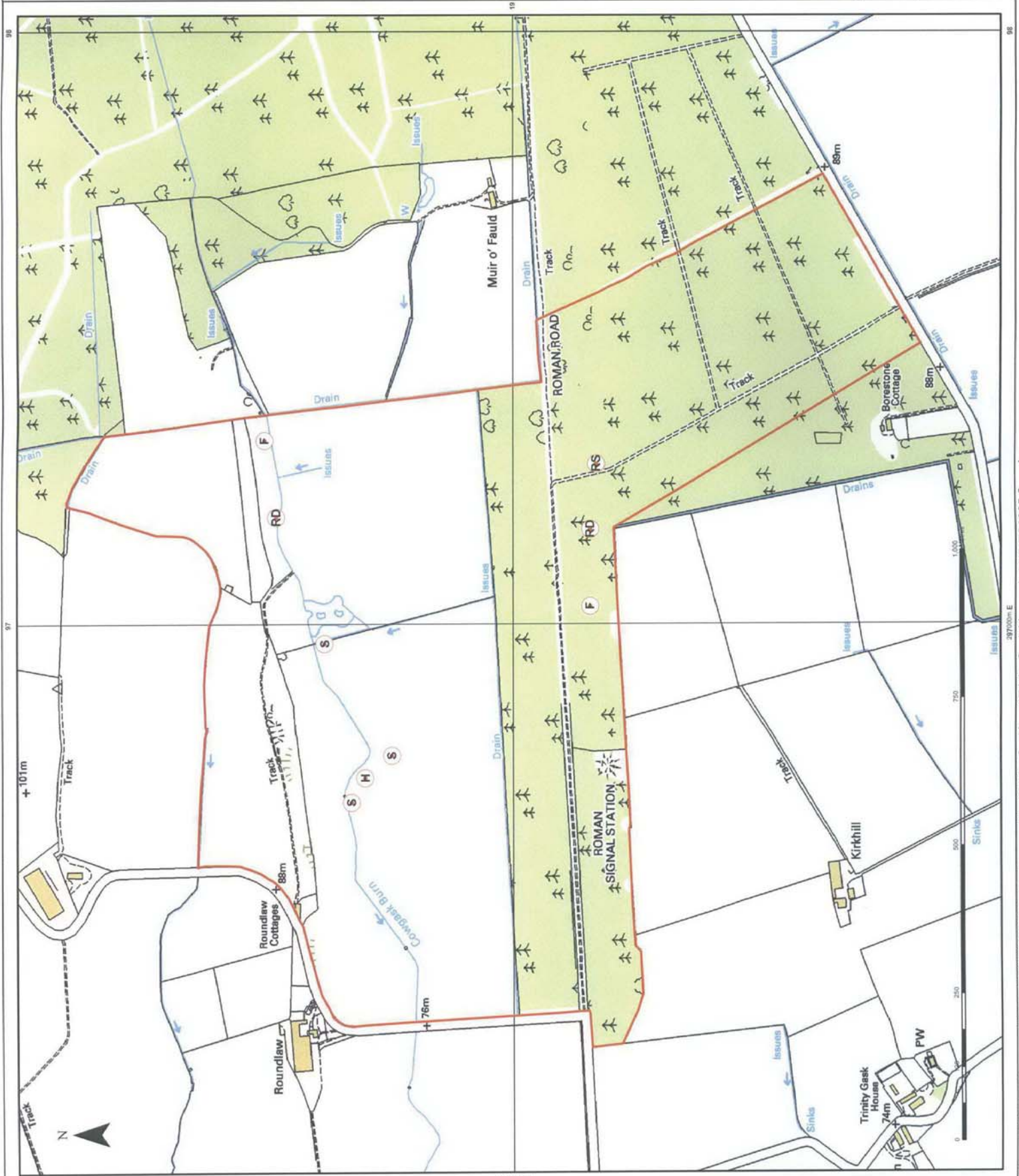


Naiad Environmental Consultancy

Legend

- Survey Boundary
- Mammal records:
 - H - Potential otter holt
 - S - Otter spraint
 - RS - Red squirrel signs
- Other mammals:
 - F - Fox
 - RD - Roe deer

Title: Trinity Gask Turbine Scheme
Client: Mammal Records
Scale: Realise Renewables
Date: 14/10/2011
Drawn by: LHB
Checked by: ARD
Drng No: TG0005-2
Status: Final





Nalad Environmental Consultancy

Survey date: 26 May 2011

Start time 21:00

End time 00:00

Legend

- Survey Boundary
- Transect start point
- Transect finish point
- Transect 1 for legend
- Common Pipistrelle - Commuting bat
- Common Pipistrelle - Feeding bat
- Soprano Pipistrelle - Feeding bat
- Pipistrelle species - Commuting bat
- Pipistrelle species - Feeding bat
- Daubenton's bat - Feeding
- Location of static bat detector

Title: Trinity Gask Turbine Scheme
Bat Activity (26 May 2011)

Client: Realise Renewables

Scale: 1:6,000

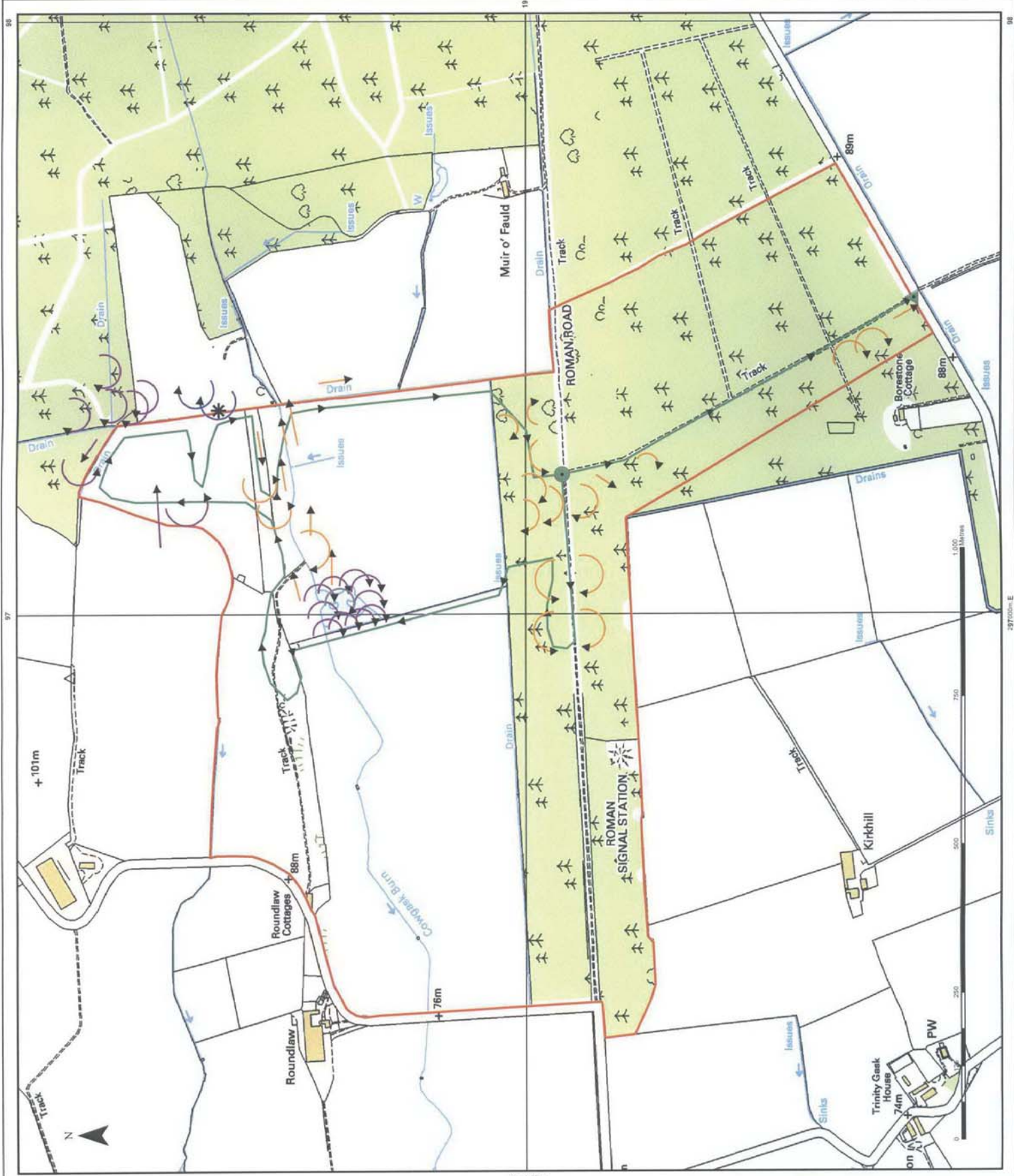
Date: 12/10/2011

Drawn by: LHB

Checked by: ARD

Drg No: TG0002-4

Status: Final



Start time	22:00
End time	00:00

Legend

- Survey Boundary
Transect start and finish point
Transect route
Common Pipistrelle - Commuting bat
Common Pipistrelle - Feeding bat
Soprano Pipistrelle - Commuting bat
Soprano Pipistrelle - Feeding bat
Location of static bat detector

Title: Trinity Gask Turbine Scheme
Bat Activity (06 July 2011)

Client: Realise Renewables

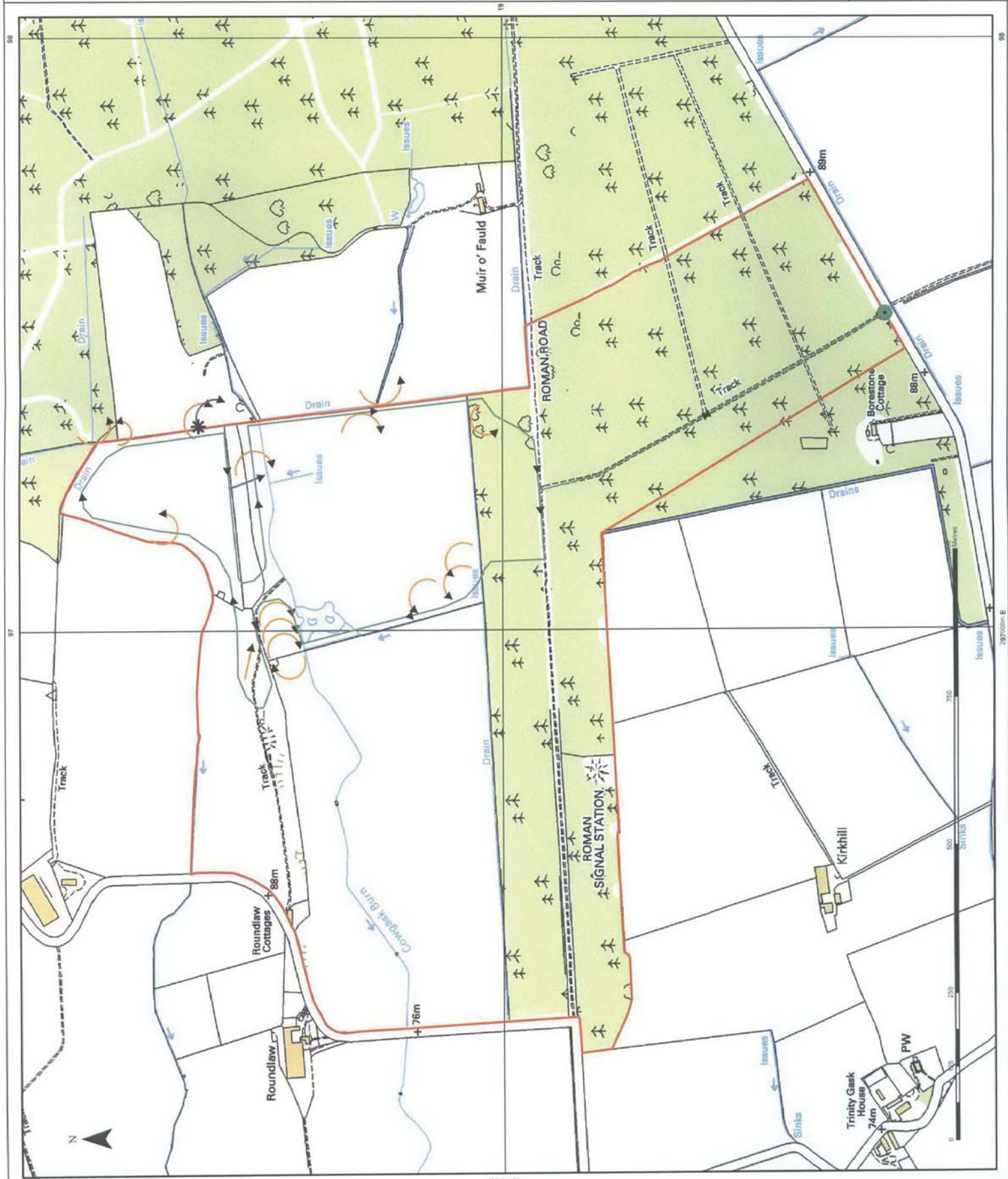
Scale: 1:6,000

Date: 12/10/2011

Drawn by: LHB
Checked by: ARD

Drg No:	TG0003-4	Status:	Final
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Nialad Environmental Consultancy

Survey date: 25 August 2011

Transect 1 start time 21:00

Transect 1 end time 23:30

Transect 2 start time 21:00

Transect 2 end time 23:00

Legend



Survey Boundary

Transect 1 start and finish point

Transect 2 start point

Transect 2 finish point

Transect 1 route

Transect 2 route

Common Pipistrelle - Commuting bat

Common Pipistrelle - Feeding bat

Soprano Pipistrelle - Commuting bat

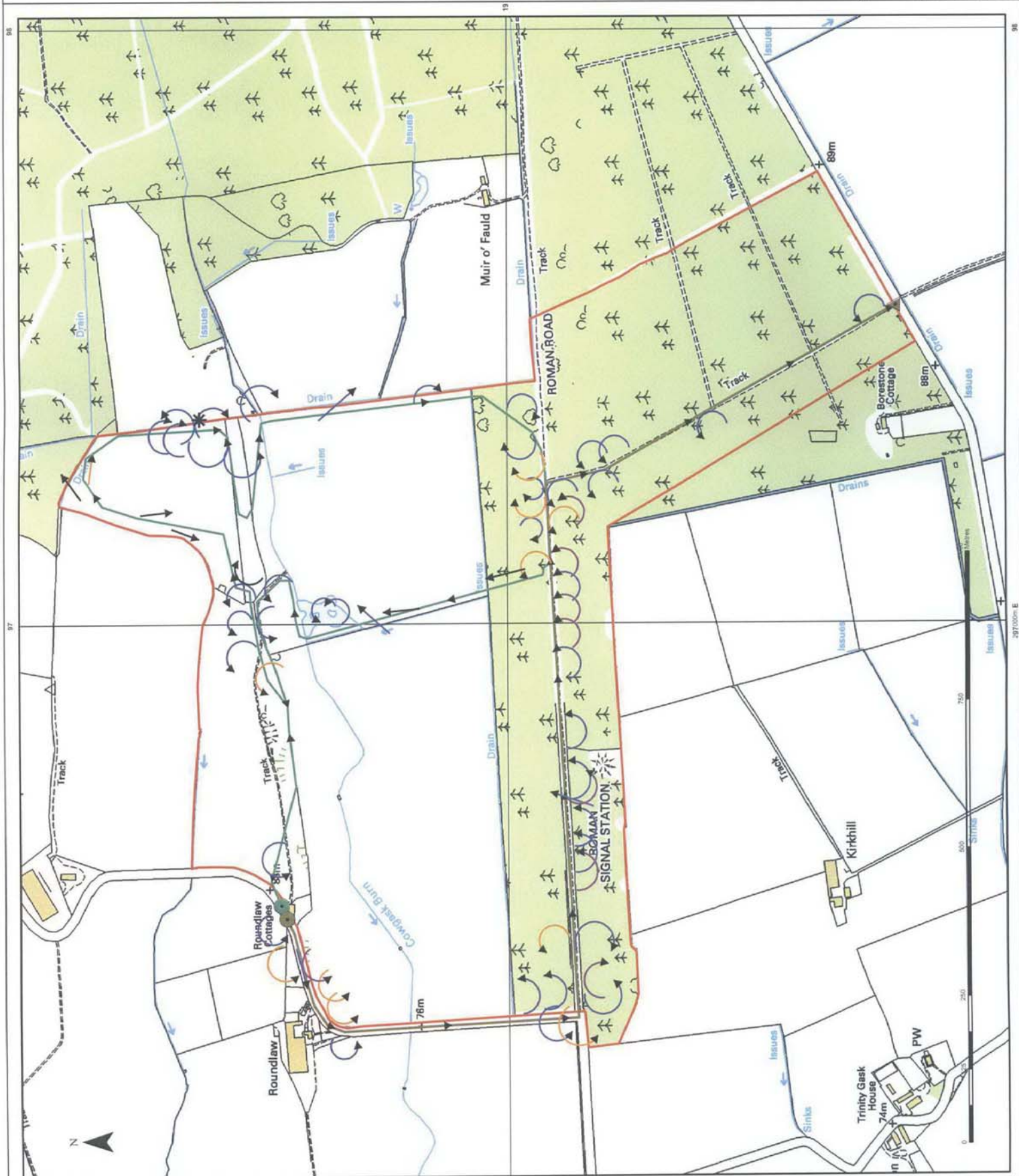
Soprano Pipistrelle - Feeding bat

Pipistrelle species - Feeding bat

Other bat species - Commuting

Other bat species - Feeding

Location of static bat detector



Title: Trinity Gask Turbine Scheme
Bat Activity (25 August 2011)

Client: Realise Renewables

Scale: 1:6,000

Date: 12/10/2011

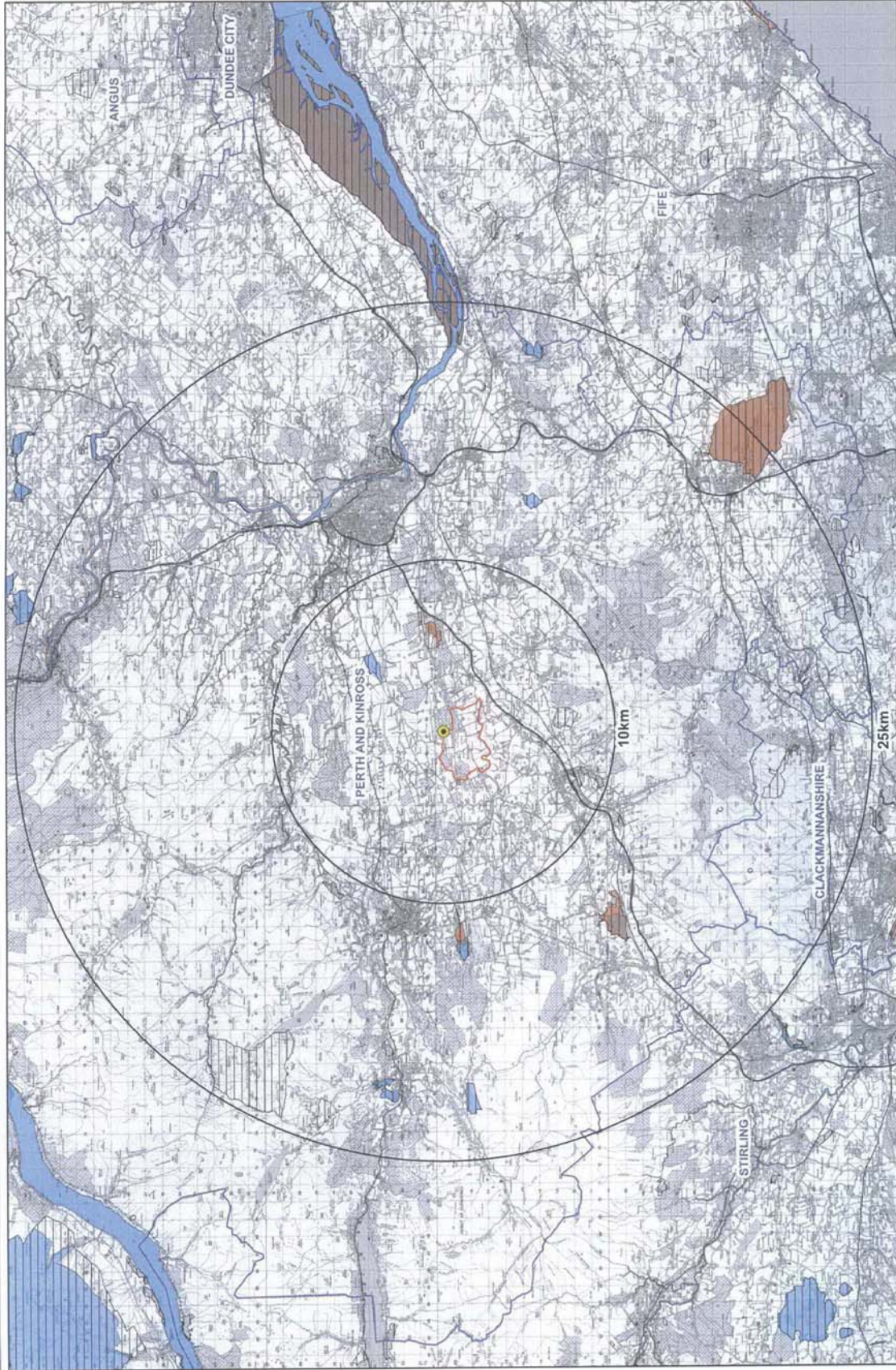
Drawn by: LHB

Checked by: ARD

Drg No: TG0004-4

Status: Final

Approved by: [Signature]
Authorised by: [Signature]
Copyright: All rights reserved. All contents are confidential.



Key

- Proposed turbine location
- Site boundary
- Buffer
- Council boundary
- Site of special scientific interest
- Special protection area
- Special area of conservation

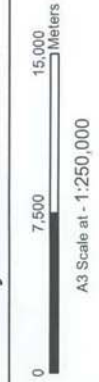
Location map



Notes:
1. Map data sourced from Scottish Natural Heritage datasets.

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Trinity Gask Wind Turbine



Revision No.

1

Ecology Figure 8

Date: 16/10/12

Sheet No.

1

Drawn By: CB

Checked by: MJ

Ecological Designations



Niall Environmental Consultancy

Legend



BTO standard species recording codes:

GN Goldeneye

HS House sparrow

LI Linnet

S. Skylark

SF Spotted flycatcher

ST Song thrush

TP Tree pipit

Y. Yellowhammer

Title: Trinity Gask Turbine Scheme
Breeding Bird Survey (Red List)
Client: Realise Renewables
Scale: 1:6,000

Date: 04/10/2011

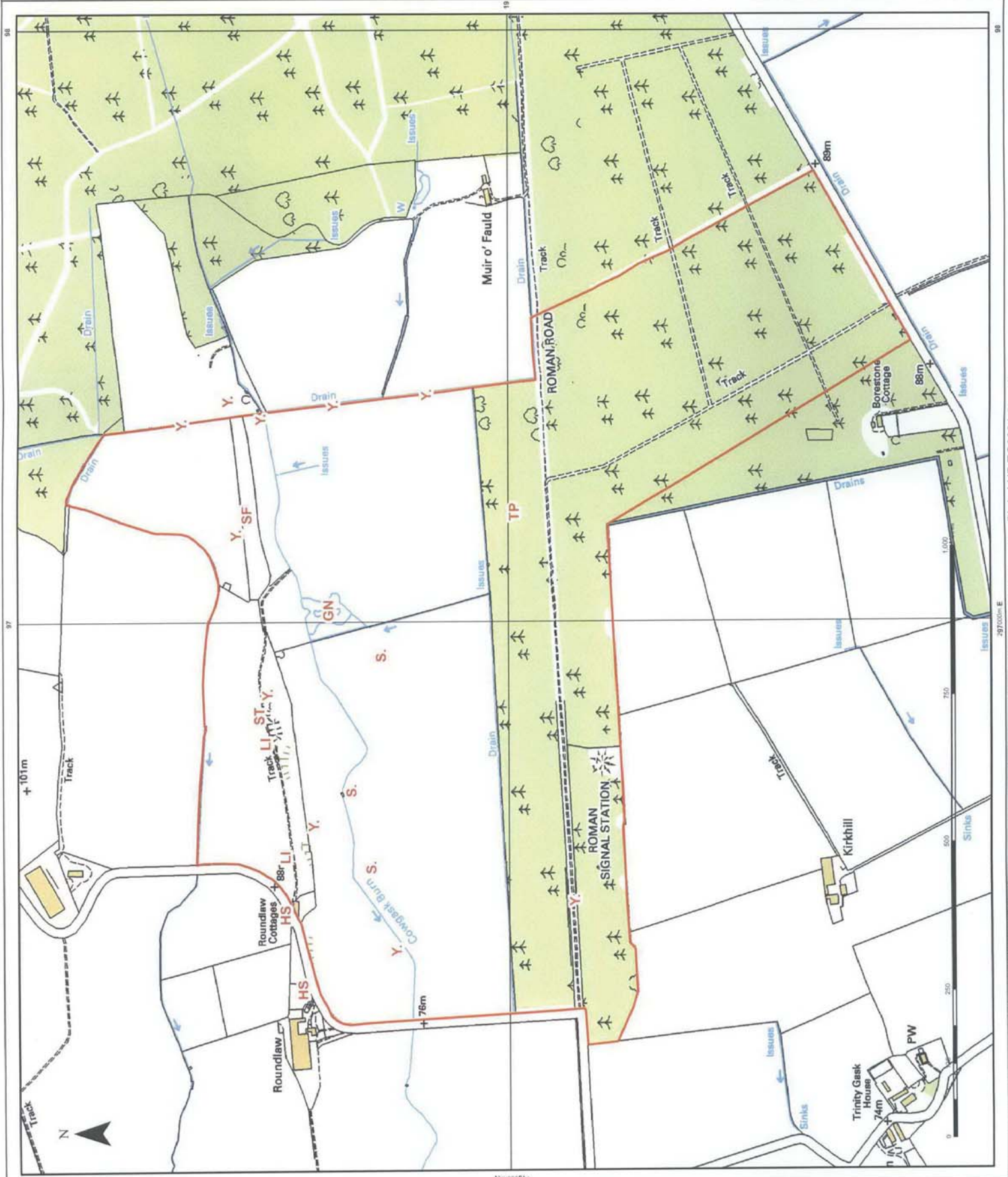
Drawn by: LHB

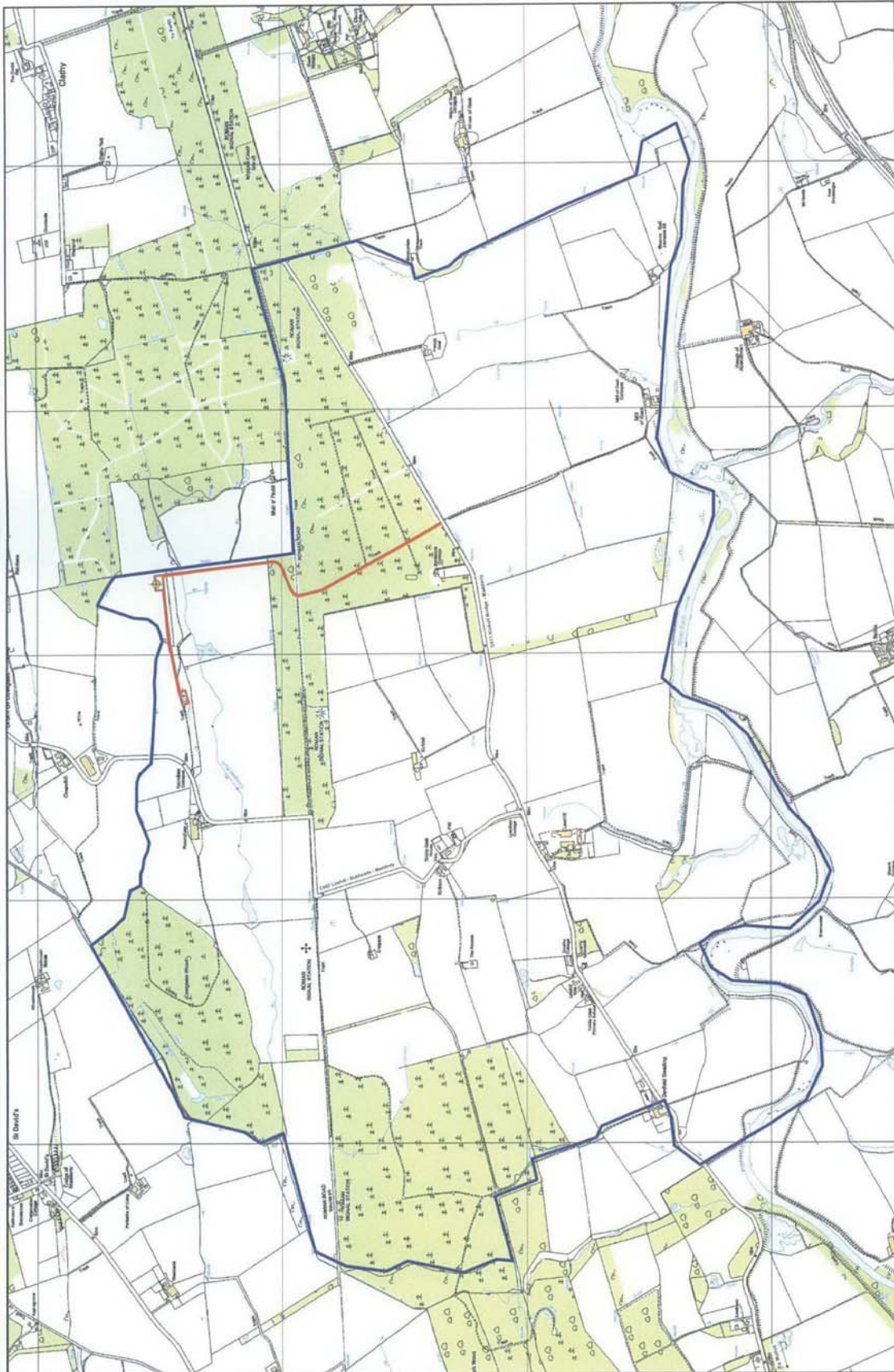
Checked by: ARD

Drig No: TG0001-2

Status: Final

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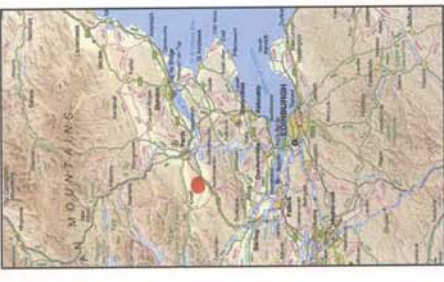


Key

- Proposed turbine location
- Total application area
- Site boundary

Proposed turbine location
297290, 719514

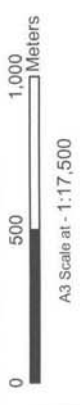
Location map



Notes:
1. Proposed site location



Trinity Gask Wind Turbine



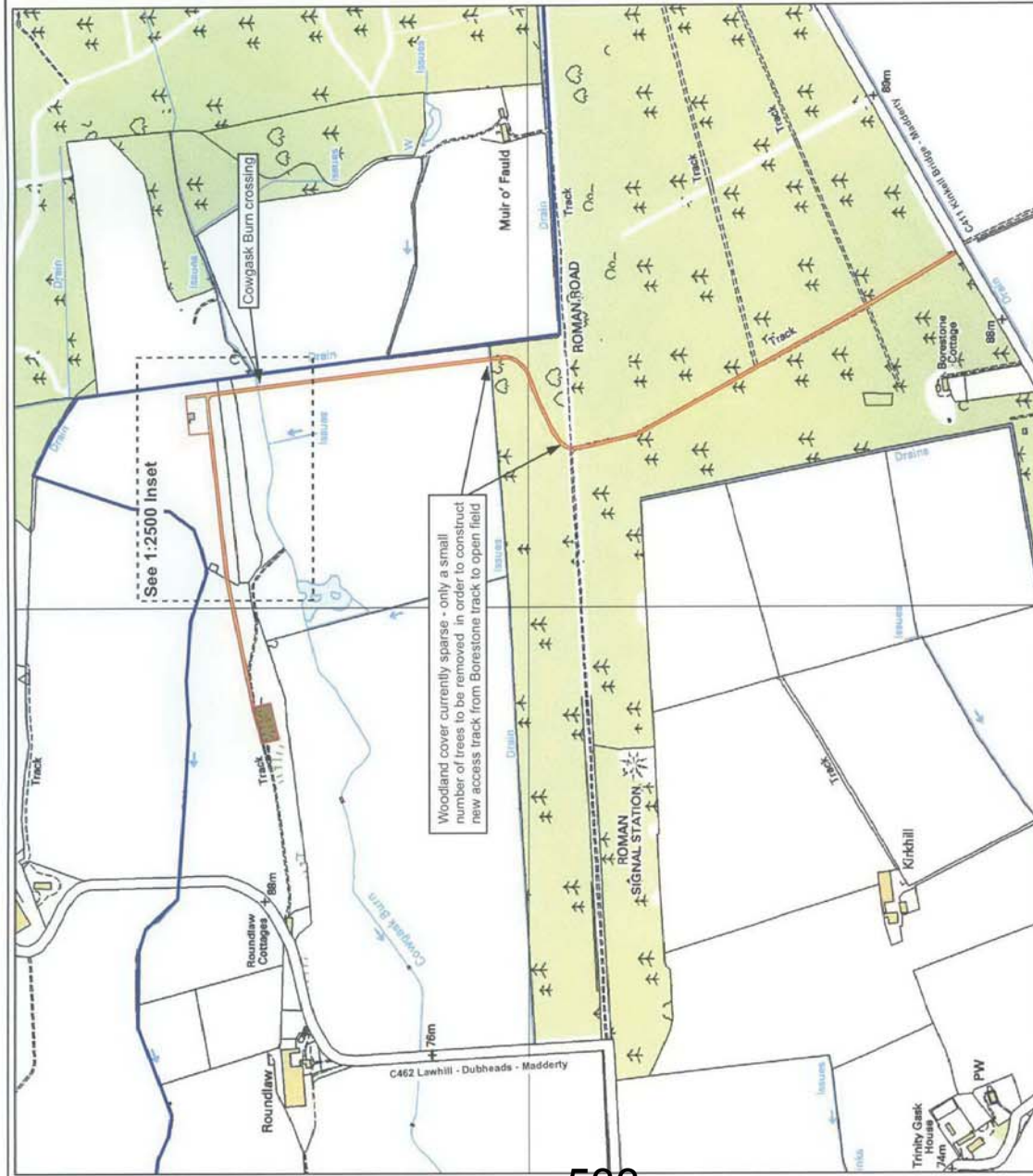
Revision No.
1

Sheet No.
1

Site Location

Figure 1

Date: 16/10/12
Drawn By: CB
Checked by: MJ



Key

- Total Application Area
- Site boundary
- Turbine location
- Track buffer (4m wide)
- Crane hardstanding & laydown area
- Foundations
- Control building
- Borrow pit

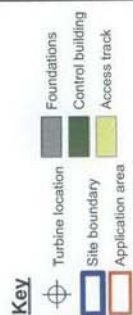
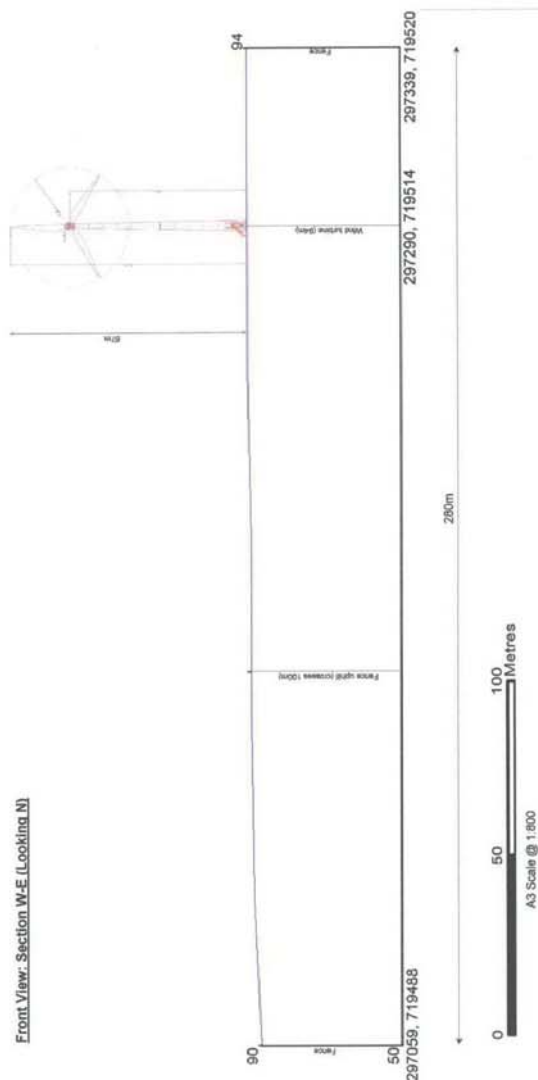


PERTH AND KINROSS COUNCIL

DRAWING REF: 1202067/13



Front View: Section W-E (Looking N)



Realise Renewables
Realise your renewable energy potential

Notes:

1. 1:1000 block plan of proposed turbine layout.
2. Side and front view cross sections of proposed turbine location.

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Trinity Gask Wind Turbine



A3 scale at - 1:1,000

Cross Sections/Block Plan

Revision No.

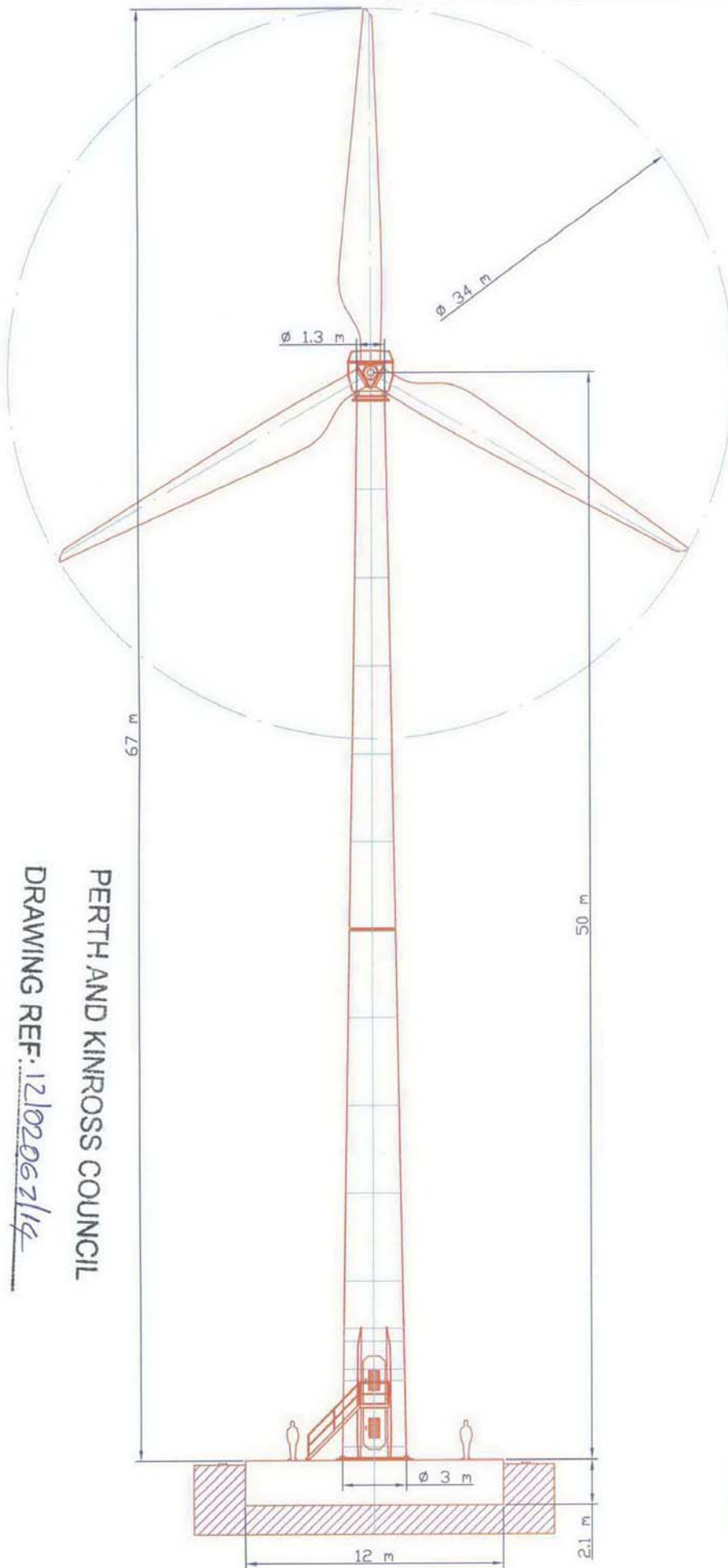
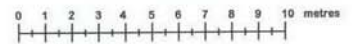
Figure 2a - 1:1000 plan

Date: 16/10/12

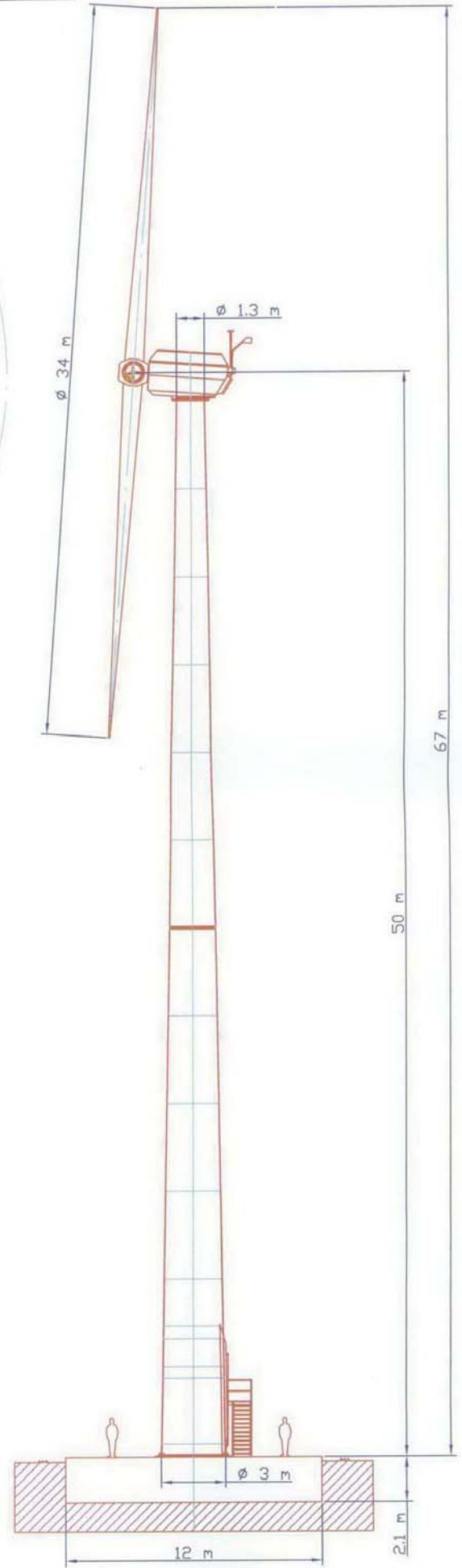
Drawn By: CB

TURBOWINDS T400-34
 Hub height: 50 m Tip height: 67 m
 IEC wind class: 2
 Rotor speed: 22 / 33 rpm

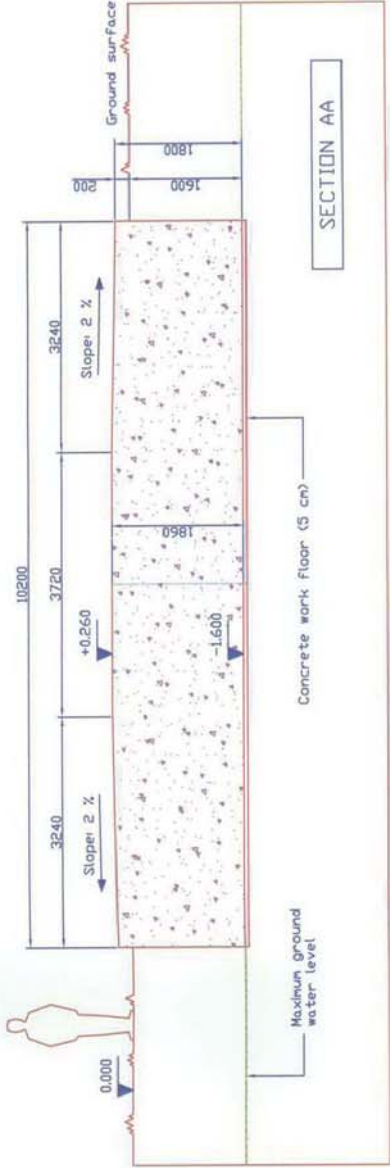
Scale 1:200@ A3



Front view



Side view



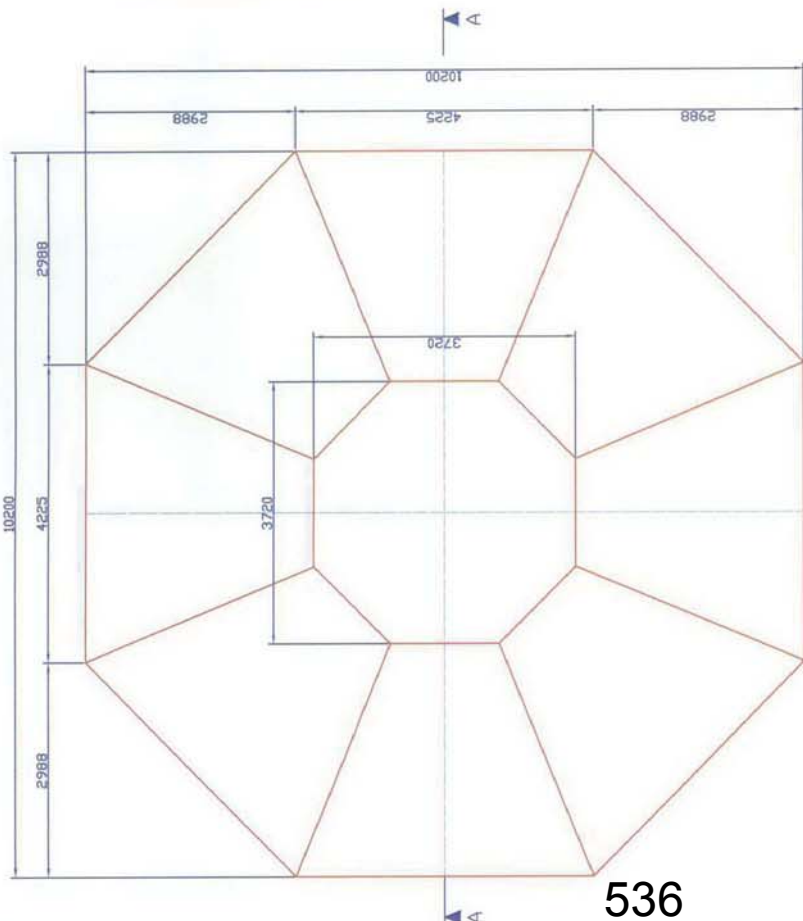
Foundation concrete:	
Total volume:	155 m3
Minimum compressive strength: 35 Mpa To be demonstrated by means of compression tests on representative concrete samples.	

Positioning of anchor bolts according to drawing nr: F01/10-1-002.
Positioning of cable conduits and grounding according to drawing nr: F01/10-1-008.

Assumed soil characteristics: (according to soil test report)	
Allowable bearing pressure:	3 kg/cm2
Maximum ground water level:	L -1.600 m

PERTH AND KINROSS COUNCIL
DRAWING REF: 12/02067/15

Concept drawing



Foundation design characteristics:	
Turbine type:	TURBOWINDS T400-34 DS
Hub height:	50 m
Wind class:	2
Maximum annual average windspeed at hub height:	8.5 m/s
Maximum 50 year gust (5 sec peak):	59.5 m/s
Design overturning moment including load safety factor:	13200 kNm

Construction reinforcement:	
A light reinforcement mesh has to be provided against the vertical outer surfaces of the foundation block, to prevent shrink cracks in the concrete. This construction reinforcement is not shown on the drawings but is an integral part of the scope of work of the contractor.	

TURBOWINDS		Turbine:	T400-34 DS
Part:	Foundation	Hub height:	50 m
Drawing nr:	F01/10-1-001	Wind class:	2
Drawing scale:	1/80	Drawn:	GD
Remarks:	xxx	Approval mark:	VC
		Approval mark:	VC
		Revision:	AA
		Date:	22/11/2012
		Paper size:	A3





Breeding Bird Survey
(and overwintering birds)
of
Trinity Gask Wind Turbine Site
For
Realise Renewables
August 2011
(revised November 2012)

NOTE

The full copy of this report will be made available to the members of the Local Review Body. However, due to the nature of the report it has not been published.

Adrian R Davis

NAIAD Environmental Consultancy
4 Murthly Terrace
Birnam
Dunkeld
Perthshire
PH8 0BG
Tel 01350 727201
Email: naiadecology@hotmail.com



Bat Survey
of
Trinity Gask Wind Turbine Site
for
Realise Renewables
October 2011
(revised November 2012)

NOTE

The full copy of this report will be made available to the members of the Local Review Body. However, due to the nature of the report it has not been published.

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TCP/11/16(251)

Planning Application 12/02067/FLL – Erection of a wind turbine and associated infrastructure on land 800 metres north east of Roundlaw Farm Cottage, Trinity Gask

WRITTEN SUBMISSIONS

- Written Submission from the Agent, dated 9 August 2013
- Written Submission from the Appointed Officer, received 23 August 2013
- Agent's response to Written Submission from the Appointed Officer, dated 6 September 2013
- Letters of representation from Interested Parties in response to the further Written Submissions are available to view via www.pkc.gov.uk/article/6057/Case-TCP1116251 (A hard copy is also available in the Councillor's Lounge)

Audrey Brown, Committee Support Assistant
Perth & Kinross Local Review Body
2 High Street
Perth
PH1 5PH

Friday 09 August 2013

Dear Audrey,

Re: Notice of Review – Trinity Gask Planning Application 12/02067/FLL
LRB Reference: TCP/11/16/(251)

In response to your letter of 11 July, please find attached the applicants response to points (iii) (a-c). This comprises:

- ⑩ Statement;
- ⑩ Appendix 1 – extracts from Gask Wood Forestry Plan;
- ⑩ Appendix 2 – Walk-through Photo survey of Gask Wood (31 July 2013);
- ⑩ Appendix 3 – Aerial view Photo survey of Gask Wood (07 August 2013).

Thank you also for your letter of the 06 August agreeing an extension of time to the 16 August to enable the Long Term Forestry Plan for Gask Wood to be sourced. I can confirm that I was eventually able to view the document at the Forestry Commission Scotland's local office in Perth this week. As a consequence I have been able to include in this submission, extracts from that document together with commentary. Accordingly I can confirm that the applicant will not need the extension of time which has been agreed and it is not the intention to submit any further documents in relation to this issue.

I understand that you will now be forwarding a copy of the Environment Service submission on landscape and the applicant will have an opportunity to comment . I look forward to receipt.

Yours sincerely,

Mark Jennison, Director

Trinity Gask Wind Turbine Submission of Further Information

Following the LRB meeting on the 2 July 2013, this document sets out the applicant's response to the Convenors requests for further information, namely:

(iii) (a) to quantify the projected economic benefit of the proposal to the estate and the local economy in more specific detail;

(b) to identify which areas of forestry are in the control of the applicant; and

(c) to identify where Forestry Management Plans are currently in place and, if so, to identify what relevance they have in relation to the phasing, felling and restocking over the prospective duration of the proposal and to explain to what extent this might affect the information previously supplied by the applicant concerning the landscape and visual impact (LVIA)?

INTRODUCTION

The applicant's response is supplemented by 3 Appendices.

Appendix 1 includes 3 extracts from the Gask Estate Long Term Forestry Plan covering the 10 year period October 2012 2022. Three plans are included – Felling Map; Thinning Map & Restructuring Map

Appendix 2 includes a recent on-foot photographic survey through the Gask wood immediately to the east of the application site. This area could be inaccessible to the site inspection group at the time of its visit as selective felling operations are in progress. The photographic record indicates the physical effects of a selective felling approach in terms of the resultant condition and appearance of the wood.

Appendix 3 includes an aerial photograph of the wood undertaken on the evening of the 7 August 2013. This illustrates the extent of tree removal to date.

These photographic surveys support the conclusions reached in the applicants LVIA, namely that Gask woodland is an important landscape feature and its value in mitigating the visual effects of the proposed turbine would not be compromised by the FCS's approved Long Term Forest Plan. The topography the Gask Wood and other local woodlands provide an effective visual buffer to residential properties to the east and assist in mitigating wider visual impacts.

(iii)(a)

Local Economic Benefits

There are a number of economic benefits that could follow from a planning approval, namely:

- (i) the immediate and direct benefits to local contractors arising from the delivery of a sizeable infrastructure project;
- (ii) a new revenue stream which could offset Farm and Estate operational costs;
- (iii) broader benefits to the business through development plans which could be *enabled* by the new revenue stream and asset; and
- (iv) an increase in visitor spend.

All would benefit the local economy with the direct infrastructure works providing an immediate short-term boost.

The following can be noted:

(1) Project Costs: It is not usual for an applicant to quantify development costs and returns as part of a planning application submission it being generally recognised that such information will always be commercially sensitive. However to assist the LRB it can be recorded that this is close to a seven figure development project with additional on-going servicing costs (twice yearly maintenance/servicing visits). Major elements of those development costs would be in site preparation, construction & installation; grid upgrade and servicing – all giving rise to work opportunities for local companies.

As a committed local Business man and a proactive member of the local community, the applicant has made a conscious choice to engage, wherever possible, local services in the delivery of this project. To this end locally based contractors would be tendered for site preparation, haulage, construction, and assembly; and materials would be sourced locally (aggregates, concrete; steels; etc); with turbine commissioning and post-erection servicing undertaken using a Perth based company.

(2) Revenue Stream: The role of the turbine would be to provide an additional and sustainable income for the next 25 years. The farm and Estate is a high energy user. With a rural enterprise primarily based on farming the business has been pressured to absorb recent high energy increases (petrol, oil, gas, electricity). Simply responding to those costs through an increase in the market price of farm products can undermine commercial competitiveness.

The Governments Feed-in Tariff scheme provides a commercial opportunity to ‘cushion’ the farm enterprise against those rising energy related costs. In this way the proposals would assist commercial viability and safeguard the trading position of business which make an important contribution to the local economy.

The supplementary revenue stream generated by the turbine would help preserve profit margins and allow a competitive position in the farm operations to be maintained. In turn this would safeguard the many local jobs that have become dependent on its businesses (permanent, seasonal and contractor employment including agricultural workers; mechanics, foresters, ground workers; electricians, plumbers, painters etc). It would also allow greater financial freedom to develop and expand other planned business activities.

(3) Holiday Cottages:

A key part of the applicant's planned business strategy is that a future income stream from the turbine could provide an 'asset' against which further commercial borrowings could be secured. In this way other planned but phased developments on the Estate could be *enabled*.

The success of a recently established short term holiday let on the Estate has encouraged the applicant to, over time, expand this part of the business by adding a further four new units at two sites on the Estate. In addition, the potential for renovation and conversion of two other properties for Holiday Let accommodation has also been identified (The Old School Room conversion (Ref 12/01696/LBC & Borestone Cottage Renovation Ref 12/01248/LBC), both of which require substantial financial input from the Estate.

Development Costs based on the new builds and conversion together with water and electricity supply/upgrade have been have been estimated (2010) to amount to more than £1,200,000. This would represent a further major capital investment for the Estate.

Perth and Kinross Council as Planning Authority has already approved the main four development projects and they are explained below:

Craigens Sites (2 of) Planning ref: 10/00827/FLL: 2 new properties which would be constructed as part new build whilst integrating existing stone structure and buildings within. Low emission construction practices incorporating very simple solar gain and low energy heat systems would be adopted utilising a high degree of thermal insulation and solar integration into the design.

Borestone Sites (2 of) Planning ref: 10/00828/FLL: 2 new properties are proposed constructed entirely from wood, pin and doveled. Where possible harvested Estate timbers would be used. Sustainable build practices would be adopted incorporating a suspended floor construction (thereby reducing the footprint from using concrete flooring foundations). Again these properties are designed to feature a high degree of insulation and solar heating into the construction.

The following environmental benefits associated with those projects can be noted:

- A unique feature and major advertising point for the letting units is that the housing would be *carbon neutral* in use. This would be achieved through using natural non-toxic materials and by minimising emissions during construction;
- The applicant is committed to this proposal being an *exemplar* of sustainable building practices and to this end arrangements have been put in place with the University of Glasgow MacKintosh Environmental Architecture Research Unit who have expressed an interest in establishing a research and development study module for students using the Borestone build as a case study of sustainable building and performance.
- Accommodation would be designed to deliver *Visit Scotland* 5 Star Grade accreditation. Research in 2010 suggested that this would be the only 5 star carbon neutral holiday accommodation in Scotland and a first for Perthshire. Visit Scotland has indicated its support for the proposals.

It should be noted that the applicant could have offered the planning approved plots for sale to the market thereby securing a short-term cash injection for the Farm and Estate. However this is something that he has consciously sought to avoid where possible so that the integrity of the Estate can be maintained and a viable and sustained revenue stream could be assured for the long term benefit of Farm and Estate.

(4) Wider Economic Benefits:

The economic benefits to the local economy of this holiday let project were professionally assessed in 2010 by Scottish Agricultural College (SAC) Consultants. The following positive benefits were recorded:

Occupancy:

Visit Scotland is supportive of the provision of new high quality self-catering accommodation as a means of delivering national ambitions to grow tourism revenue.

Annual occupancy rates for self-catering accommodation in Perthshire exceed the Scottish natural average of 52% (at 2008).

The current holiday let on the Estate has achieved an occupancy rate of 75% since its introduction 5 years ago. The applicant's expectation is for a similarly high rate for the 5 star accommodations proposed.

Local Spend:

Trinity Gask is committed to using, wherever possible, local produce and materials. Leaflets advertising local attractions and produce would be placed in each of the cottages (as they are currently) and it is anticipated that the websites would have

links to a comprehensive guide of things to do in Perthshire. In this way the retention of visitor-spend locally would be encouraged.

The SAC Report identified the financial significance to the local economy from daily visitor spend, arising from this project, at a 75% occupancy rate, would be in the order of £593,567 per annum.

Employment

A number of new permanent staff would be required to manage the proposed accommodation. In addition this project would give rise to other employment opportunities and work through construction, servicing and maintenance of the new units.

The Turbine proposal, as a vehicle for delivering future change, can therefore be seen as an integral part of a forward looking business plan for the Trinity Gask Farm and Estate.

(iii)(b)

Areas in applicant's control:

The Plan below details woodland to the south and east of the application site that is owned/controlled by the applicant. This is highlighted with a green edge. The Gask Wood adjacent (not owned by the applicant) is highlighted in orange.

Fig: 1.



A long term Forest Plan for woodland within the applicants control has yet to be undertaken. This woodland to the south, south east and south west of the turbine site essentially encompass slow growing Scots Pine and Birch which are someway from maturity.

It can be noted that these significant blocks to the south of the site offer screening mitigation to views from the South and East. These established woodland blocks can be seen in **Fig 1** of the applicant's photographic survey at Appendix 2.

(iii)(c)

Forestry Management Plans

Forestry Commission Scotland (FCS) web records have been consulted to establish which woodland block is the subject of agreement with FCS through Management Plans. In addition a visit to the Forestry Commission District Office in Perth has been undertaken to view documentation unavailable on the web.

Gask Wood Long Term Forest Plan

At Appendix 1 are extracts from the Gask Estate Long Term Forest Plan. These cover the area outside of the applicants control on the adjacent Gask Estate where recent felling operations have been undertaken and have been referred to in the GRATAG Representations. The document is not available for web viewing but a hard copy is available to see, by appointment, at the Forestry Commission Offices in Perth (Plan No 4324622).

This plan (approved in 2012) covers a 10 year period and illustrates approved proposals for phased felling/thinning. Phase 1 covers the first five years of the plan (2012 – 2017) and Phase 2 covers the second 5 year period (2017 - 2022). Proposals for Phases 3 – 7 are indicative only and have not been approved for felling by FCS.

It can be noted (Map 5a) that pockets of phase 1 clear felling are limited to a narrow strip and pockets to the central and southern parts of the wood. The central part of the woodland is un-coloured and marked as *beyond Phase 7*. The document records the species mix in this area as being predominantly Scots Pine planted in 1955.

Map 6a indicates that thinning will take place across most of the woodland area during Phase 1. The document indicates that *Thinning* would typically comprise removal of 15 – 20% of tree cover.

Map 7a identifies that replanting within that area would comprise *Sitka Spruce*. The document identifies that re-planting would generally occur within Year 1 or 2 of felling.

What can be taken from this approved Long Term Forest Plan is that the identity of Gask Wood as a significant and extensive landscape feature would not be diminished. Furthermore with continual replanting throughout the period of the Plan a density of tree cover would be maintained.

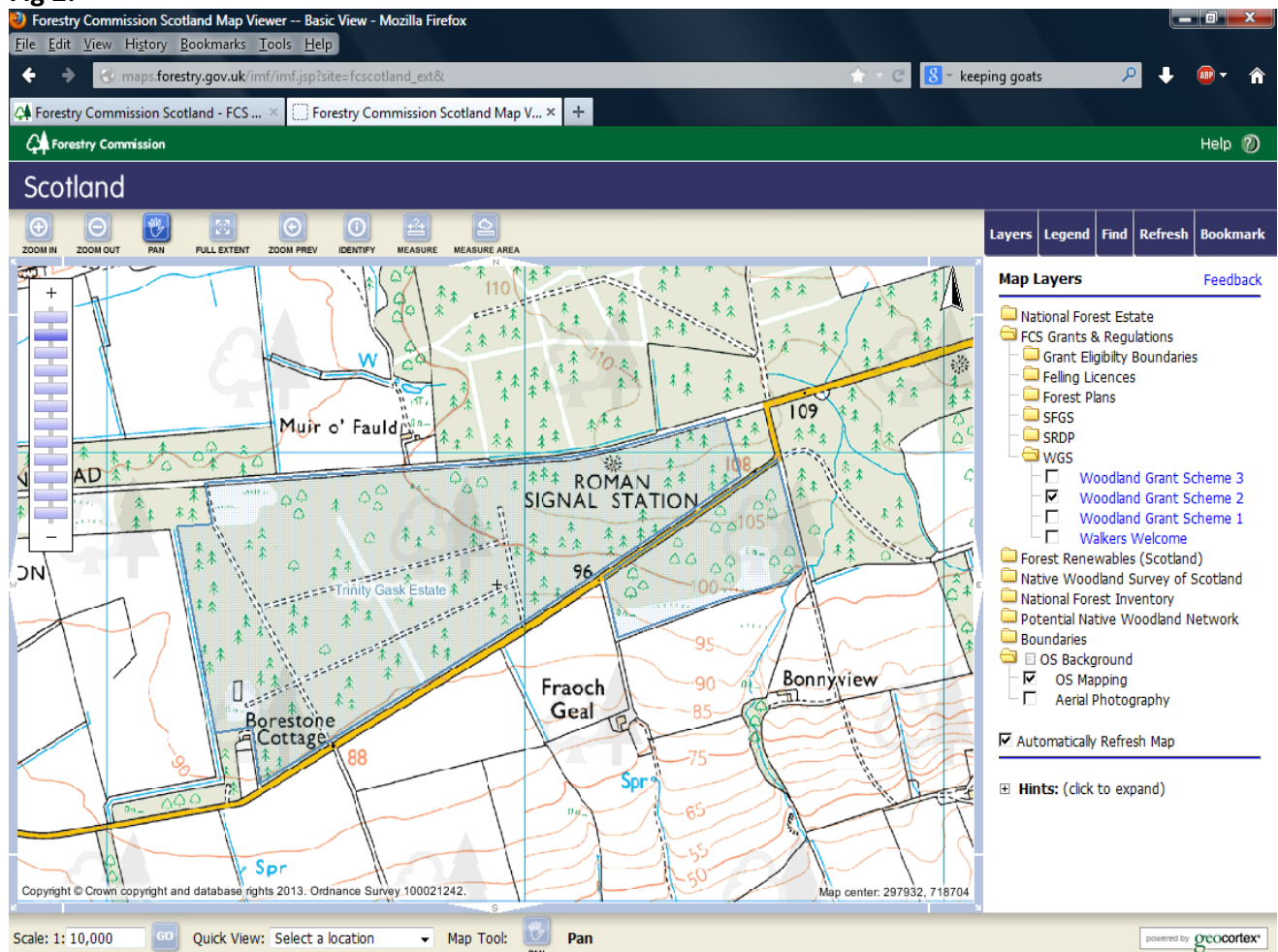
The appearance and condition of the wood following recent selective felling operations can be seen in the photographic survey at Appendix 2. This can also be cross-referenced with the recent aerial survey included at Appendix 3.

Other Tree Management Controls

Reproduced below are map records depicting land blocks around the application site which have been the subject of Woodland Grant Schemes WGS (1,2&3) where tree management including selective felling with replanting has been approved. To qualify for grant the applicant must meet the standards of environmental protection and practice set out in the Forestry Commission's guidelines.

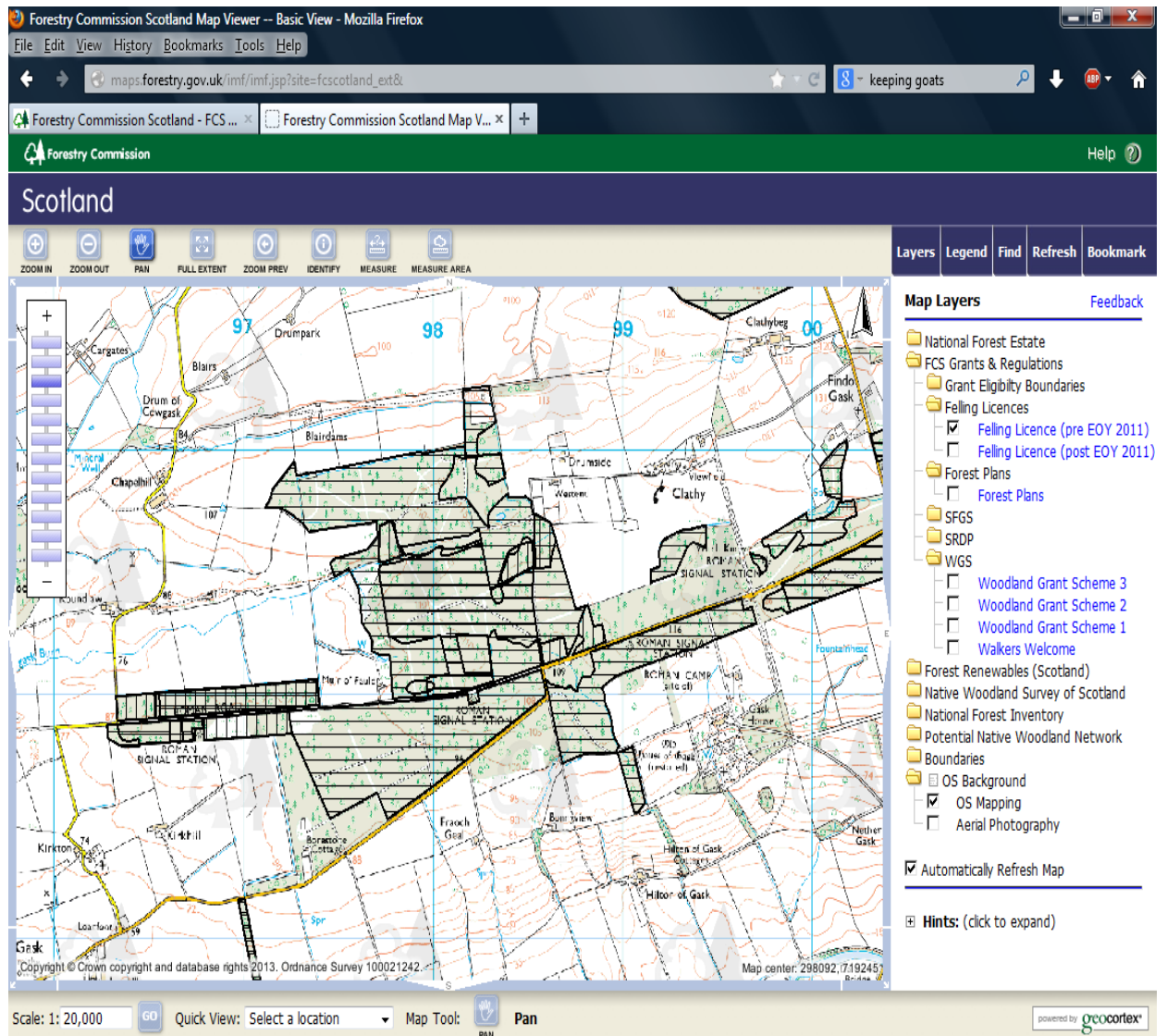
It can be noted that the applicants own land to the south of the site is the subject of such an agreement (WGS2)(Fig 2 below). WGS2 operated between June 1991 and September 1994. It has since been replaced by WGS3.





Fig 2:



Conditional Felling Licenses have also been issued by FCS for woodland blocks around the application site and these can be observed from the map record at Fig 3 below.

Fig 3: Felling Licenses



Felling Licence (pre EOY 2011)	
	Clear Fell (Conditional)
	Clear Fell (Unconditional)
	Sel Fell/Thin (Conditional)
	Sel Fell/Thin (Unconditional)

It can be noted from the key that this woodland is not the subject of a clear felling agreement but instead conditional selective felling and thinning only. Conditions will relate to rate of tree removal over the period, tree retention and re-stocking. This is consistent with information set out in the Gask Wood Long Term Forest Plan. The appearance and condition of the wood following recent selective felling operations can be seen in the photographic survey at Appendix 2.

From the Gask Wood Long Term Forest Plan extracts (Appendix 1), the web records above, and the photographic surveys (Appendices 2 & 3), the LRB can be reassured that a significant block of woodland will remain to points south, north and east of the application site throughout the life of the turbine providing visual mitigation. This is one of the positive landscape aspects that have influenced the applicant's choice of site.

Implications for LVIA

Chapter 6 of the applicants initial Planning & Environmental Report reviews Landscape and Visual Impacts. Section 6.4 on page 40 makes specific reference to Gask Wood. This is the block where recent felling has taken place and where GRATAG contend that views of the turbine from Clathy will be opened up.

It may be noted that, in its assessment conclusions, the applicants LVIA takes full account of the phased and selective felling in this area together with the replanting operations that have been agreed with FCS (see Felling License Map at Fig 4 above and Map 7a at Appendix 1). Furthermore the assessment refers to the wide ranging Scots Pine and deciduous species distributed throughout the plantation and its margins, and the varying maturity of those woodland blocks, conditions which mean that a significant woodland presence is likely to remain throughout the lifetime of the proposed turbine (see Maps 5a & 6a at Appendix 1). In its findings the LVIA takes full account of those conditions, together with the replanting and regeneration of native woodland recently undertaken by the applicant on his own land to the south and east of the application site. The LVIA concludes that a *contained setting within local woodland* would result. The

very recent photographic survey of the area of woodland between the application site and Clathy (Appendix 2), and the details of the Long Term Forest Plan reinforce this point.

The applicant has undertaken the photographic surveys at Appendices 2 & 3 to assist the LRB as felling operations continue and may prevent access to the LRB at the time of Site Inspection.

The photographs usefully indicate the selective approach to felling being adopted; the mixed age and species within the woodland; the retention of immature tree groups within and around the wood; and the extent of retained more slow growing immature Scots Pine which effectively inhibit views through the woodland and which form a positive and noteworthy feature in the landscape.

Those factors, together with the extent of the woodland and the re-stocking obligations placed on the landowner by FCS, the applicant would suggest do support the LVIA conclusions.

The position of the turbine being within a *contained setting within local woodland* has not been changed by the recently approved Forest Plan. It is therefore reasonable to conclude that the forestry surrounding the turbine site, whether under the ownership of the applicant or not, can be regarded as an established landscape feature which can be relied upon to provide an element of permanent screening/assimilation for the lifetime of the development.

Conclusion

An important principle to the applicant is a commitment to environmental stewardship together with the responsible management of resources and this has been reflected in the iterative design approach he has adopted. Through a sensitive and careful approach to both design and siting a proposal has evolved which has respect for 'place'.

The visual impacts of the turbine would be mitigated through its association with established woodland. Although some felling is in place, significant blocks of un-cropped trees will remain during the 'lifetime' of the proposed turbine and be supplemented by new tree planting. Furthermore an acceptable relationship to the surrounding area and nearby residential properties would result. These are factors which have directly influenced site choice.

The Turbine proposal can be seen as an integrated part of the business plan for the future of the Trinity Gask Farm and Estate.

An opportunity to deliver the turbine project exists now and only because of the availability of commercial funding. The financial market, (notwithstanding the

recession), is presently receptive to investment in the wind energy sector. The Government's Feed-in Tariff initiative has provided a quantifiable return which has made such schemes commercially attractive to lenders/investors.

The applicant regards the wind turbine proposal as an *enabling mechanism* that can deliver increased competitiveness to the farm and estate business whilst sustaining long-term commercial viability. In turn this would provide further new employment and support a significant number of local trades and professions that rely on the success of the Estate to evolve and prosper (contractors, trades, agronomists, forestry businesses, suppliers etc).

The turbine could also *enable* other approved business plans to be realised.

The holiday cottages project (6 properties phased in development) also has the ability to provide the Estate business with a regular and important supplementary income over the long term whilst at the same time wider local economic benefits could be delivered. Planning permission has been secured, market research has demonstrated a demand for accommodation of this nature and standard, Visit Scotland support the proposal, the project is of interest to University of Glasgow MacKintosh Environmental Architecture Research Unit and visitor spend would realise a significant financial boost to the local economy.

Income return from the turbine proposal could assist with development costs and/or constitute a potential *lever* to secure other borrowings, thereby enabling delivery in the shorter term. Without such 'assistance' delivery of those benefits on the back of current Farm and Estate operations would be unlikely in the current economic climate.

In these challenging economic times the proposal represents a significant capital cost for the applicants businesses and one not without its own commercial risk. It can be seen however that the proposal can provide an additional and critically important supplementary income stream. That supplementary income stream is available now through the Feed-in Tariff (FiT) scheme.

It is respectfully contended that in this case the economic importance of this proposal to both the local economy and the viability and sustainability of two successful local businesses run by the applicant has been demonstrated and should be accorded *significant* weight.

APPENDIX 1

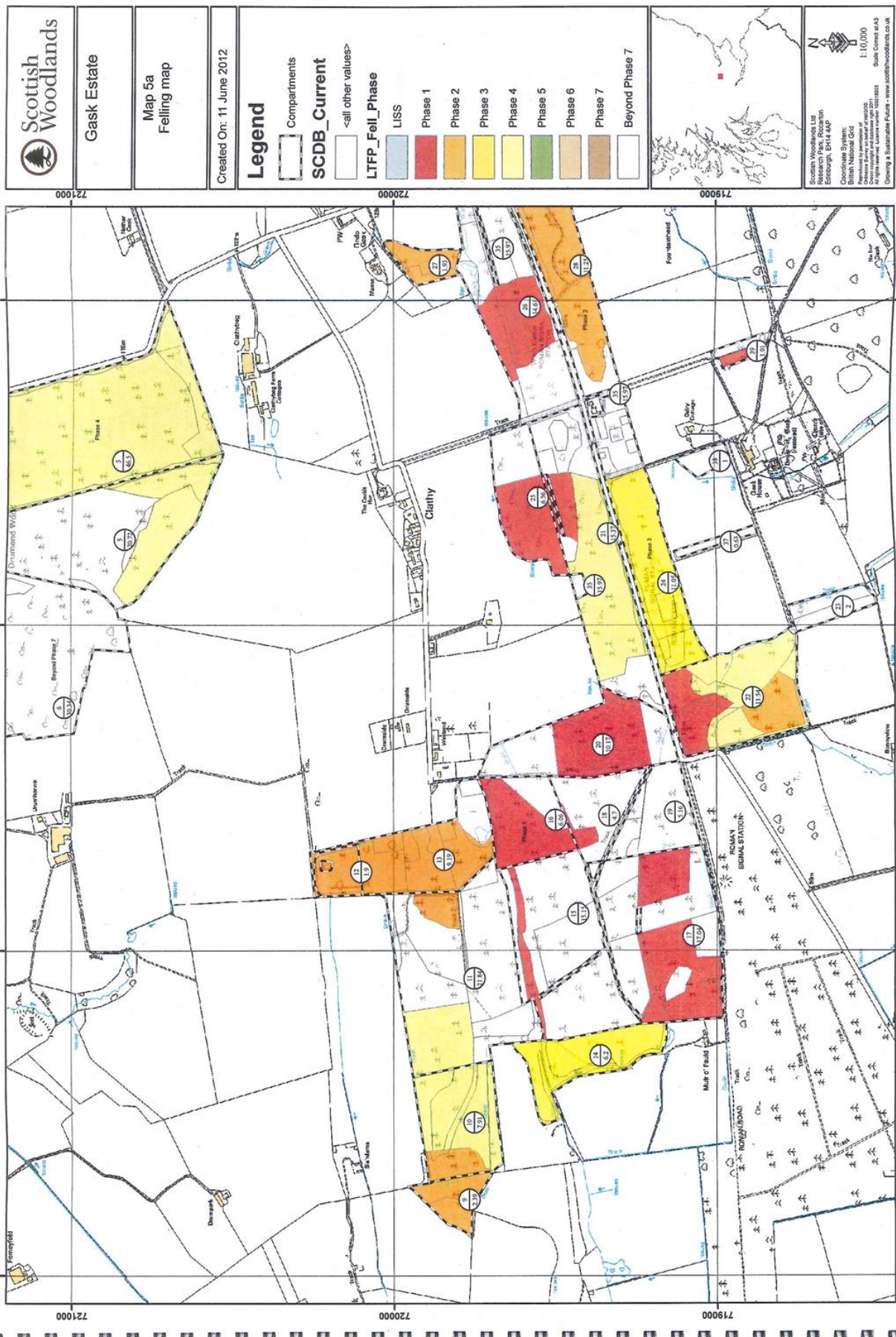
Gask Wood Long Term Forest Plan 2012

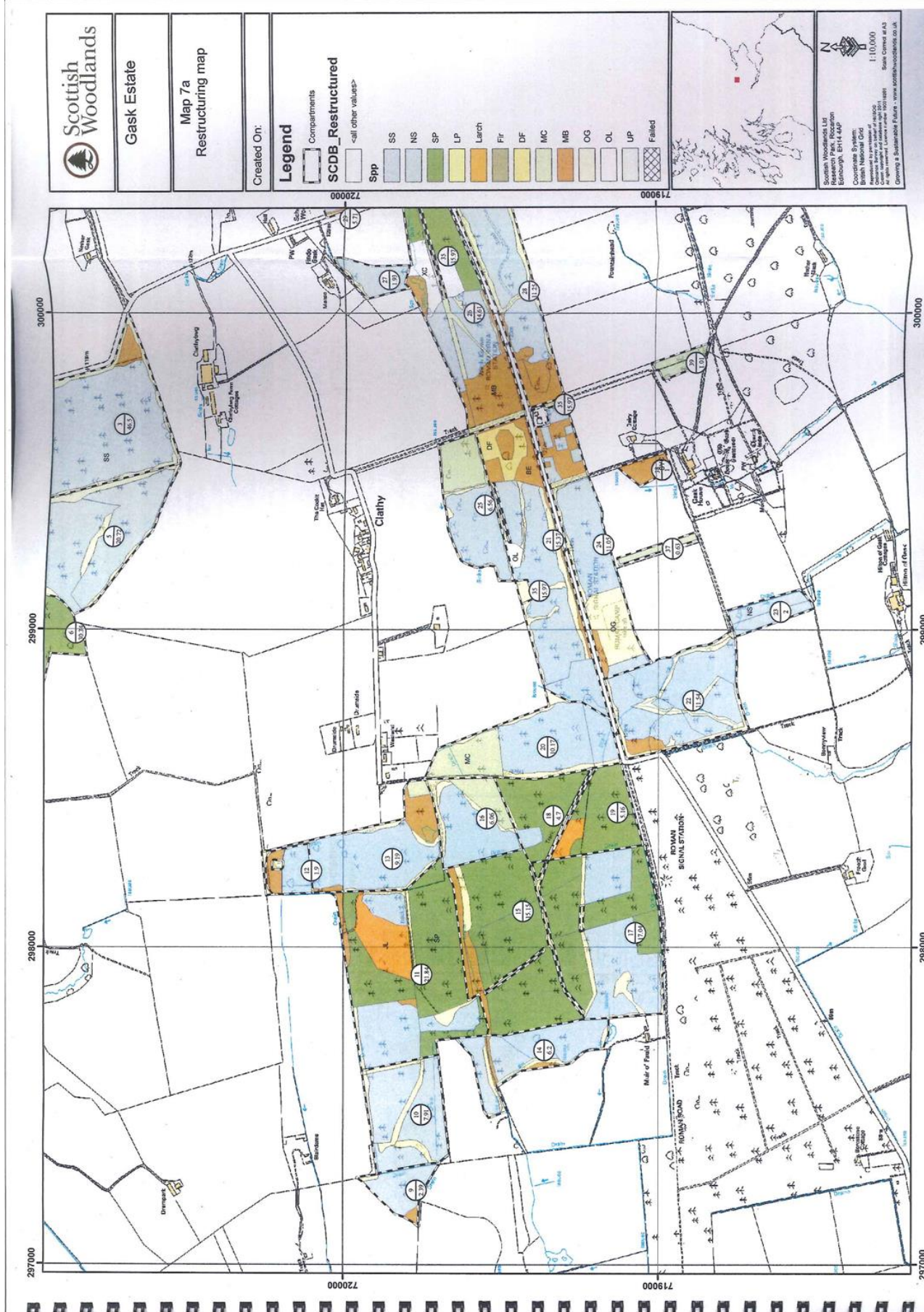
As the approved Gask Wood Long Term Forest Plan 2012 document is not readily available for public viewing key selective extracts have been copied to form this Appendix. These comprise:

Map 5a – detailing authorised areas of felling within phases 1 & 2

Map 6a – detailing areas of thinning

Map 7a – detailing areas and nature of replanting





Appendix 2

Photographic Survey of Woodland 31 July 2013

In his original environmental planning Report accompanying his planning application the applicant included the illustration below. This relates to the woodland area between the application site and Clathy. It is reproduced here to cross-reference with a recent photo survey of the woodland which follows.

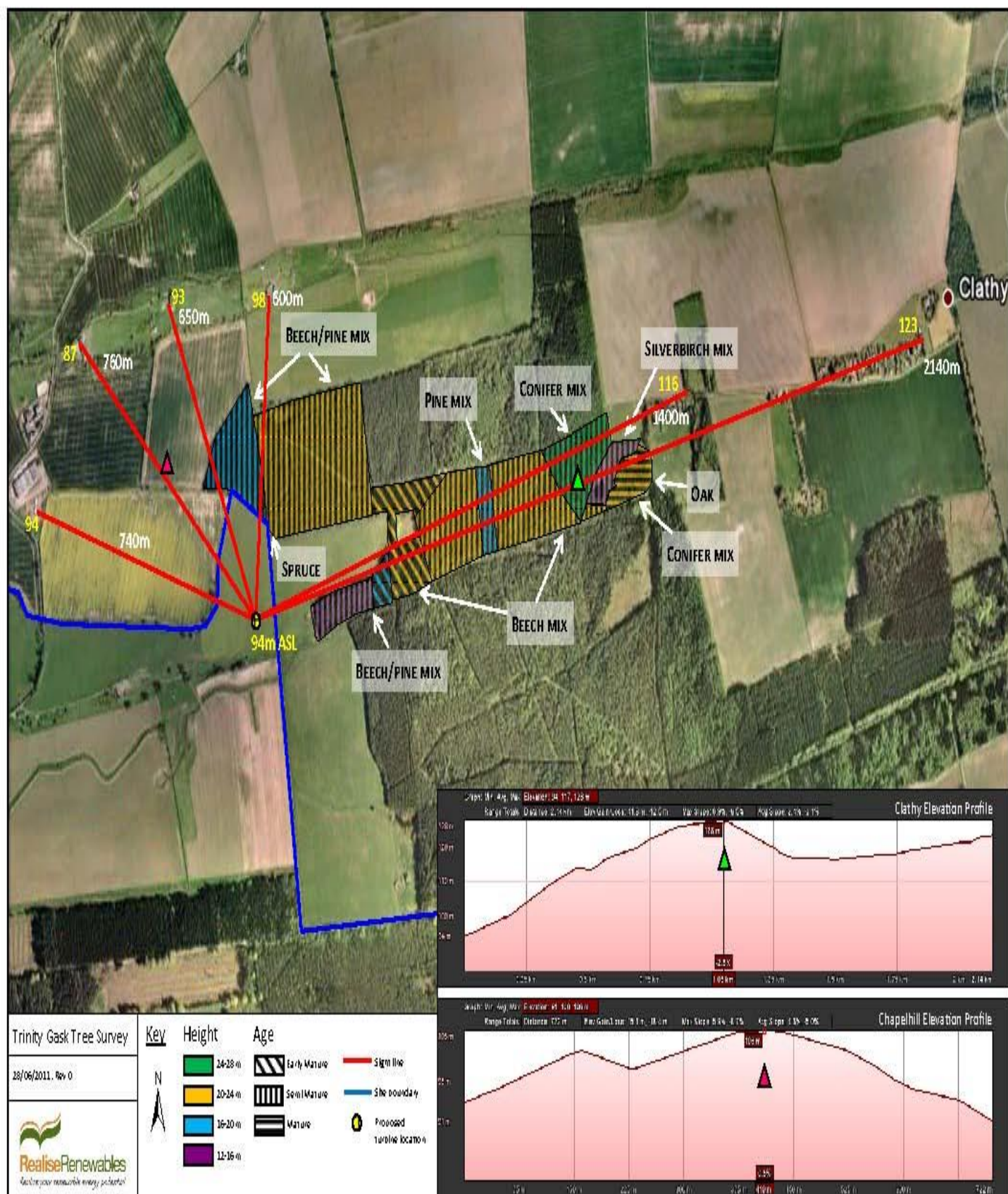
The illustration was initially included to indicate the species mix within the woodland and the undulating nature of the terrain between the site and Clathy (see cross-sections). These are factors which influenced initial site selection and which the applicant took full account of when undertaking his LVIA. It has been explained in this Report that knowledge of proposed selective felling operations within this woodland did also inform the conclusions of that LVIA.

This new photographic survey has been presented for two reasons:

- To present an up-to-date representation of the condition of the woodland; &
- To illustrate that the applicant's conclusions relating to this part of the LVIA can be relied upon as an objective appraisal taking full account of changes to the woodland proposed during the lifetime of any planning permission.

The survey effectively illustrates the considerable 'pockets' of established trees which remain with the selective approach to felling which is being adopted within the wood. As the commentary highlights, many of the retained trees have yet to reach commercial maturity and are likely to remain in situ for the lifetime of the turbine (25years).

The LRB should note that as felling operations are in progress replacement planting has yet to be undertaken.



Photographic Survey

The following pictures will show the site for the wind turbine at Roundlaw, Trinity Gask then each of the following pictures will present a 'picture' of phased felling in Gask Woodlands, as one walks through the woodland, eastwards towards Clathy Village. The woodland itself is situated to the west of Clathy Village; to the North of houses at Trinity Gask & to the south of houses at Madderty. It can be noted how the topography of the land envelopes the (site of) the turbine.

Please Note

Most of the following pictures have been taken from tracks, or open rides within Gask Wood and have been taken entering the woodlands on a Southerly flank and then taking a general Westerly & then North Westerly direction through the of woodland, thereby showing the extent of all the retained areas in the woodlands & where they are situated within a perceived 'site line' from Clathy to the turbine site.



Fig 1

This picture (Fig 1) shows the aspect of the ground, whereupon the site of the turbine would be located at the bottom of this slope. The view in this picture is given as to the East, South and West of the site in the Panorama. One can note the enclosed nature of the site which can provide screening of the turbine from all but a few minor exceptions. Gask Wood is to the left 'of centre' of the picture (the East). All the woodland to the South (or centre of the picture), and right are owned by the applicant.



Fig 2

This picture helps to show a number of things. It shows a) the selective approach to felling agreed by FCS; b) trees in various degrees of maturity, from new plantings to older stock, c) the different species that are grown within this woodland, notably to the right of the picture the Scots Pines that have not been felled (due to lack of maturity); and d) the commercial timber in the foreground has been removed.



Fig 3

This picture gives a much better understanding of the 'phased felling' when felling occurs. In the foreground the commercial trees have recently been felled, leaving the 'less commercial Scots Pines to further develop. These pines are probably at half maturity and will in essence have to be grown on for decades further to reach an age and size to be viable to fell. This is long established and accepted practise. 30-40 years for a fast growing species; 80+ years perhaps for a slow growing species such as the Scots Pine. Throughout Gask Woodland there are many coppices of these Pines all of varying ages and maturity. The following pictures will show the extent of these trees.



Fig 4

These two panoramic pictures (above & below) show, from different angles, felling, retained tree lines, new plantings, different species & maturity. In essence a dynamic woodland environment that shows the nature of phased felling and re-planting over long time scales.



Fig 5

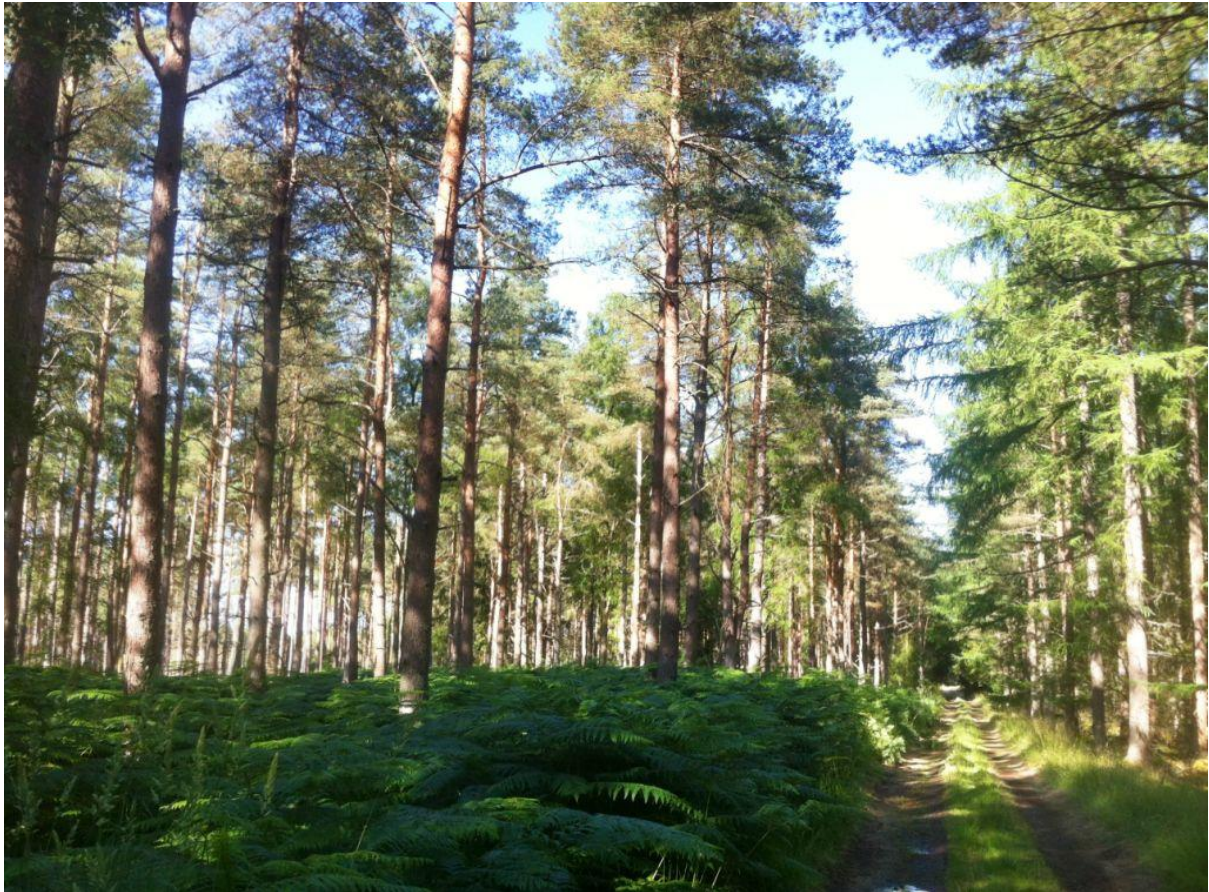


Fig 6

This picture shows a track that follows (East/West) a (perceived not actual) 'direct line of site' between Clathy Village and the intended site of the wind turbine at Roundlaw Farm. It shows very clearly how the track has immature Scots Pines growing on either side of the track breaking up any skyline in all directions. This is achieved throughout Gask Woodland and the track eventually runs off North West to create more long term screening options.



Fig 7

This picture seeks to show how even within a coppice where faster growing species have been growing in amongst Pines, that the contractors have effectively come in, removed (only) these trees and have left the immature Pines.

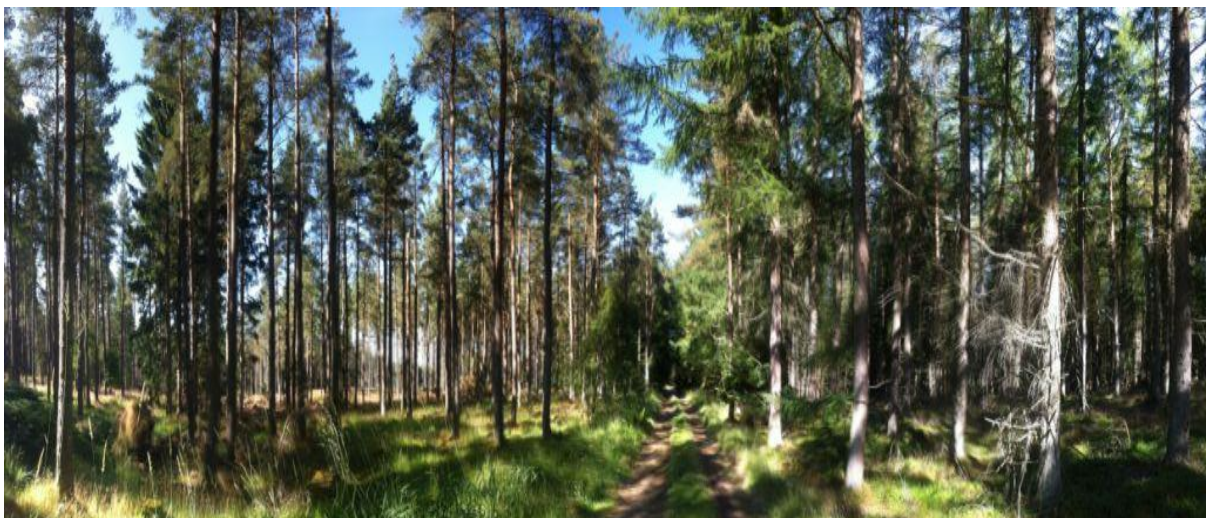


Fig 8

Another open vista showing the extent of the Scots Pines growing all along the tracks thorough out Gask Wood, and their extent within the woodland as a whole, and the number of separate coppices.



Fig 9

This gives another more open 'panoramic' view of selective felling in Gask Wood. There is no notion or aspect of wholesale 'clear felling'. This picture also seeks to show to the left of the picture how the ground also rises towards Clathy Village (to the East). This topographical screening happens right across & throughout the site of Gask Woodland.



Fig 10

An open site within Gask Woodland showing Scots Pines growing to the left and right of the picture (East and West), with this picture view looking South.



Fig 11

This view shows yet more Scots Pines (to South and North) fringing a track/woodland ride that meanders primarily in an East/West Direction then off through to a North Westerly direction. All these trees that are shown are immature Scots Pines, probably in the region of 40 years old – ie. half their mature age.



Fig 12

Further indication of selective felling within different species of tree stands in Gask Wood. Again the Scots Pines have been retained and selective felling of mature 'commercially ready' trees has occurred within these coppices of Pines.



Fig 13

This view shows the North Western most tip of Gask woodland looking out on to a couple of properties of Trinity Gask/Madderty that only have Westerly and Northerly vistas (due to the extensive woodland to their South) and would have no views (or ‘perceived’ views) of where the turbine will stand, to the South West of this location.



Fig 14

This is one final view looking North (from an elevated position) above the intended site of the turbine, showing that while there are some maturing commercial woodland blocks within Gask Woodland, these blocks are also intermixed with Pines and also ‘fringed’ by the slower growing, immature Scots Pines too.

Notes to Deciduous Trees

It should also be noted there are also a great number of deciduous trees within Gask Wood. They tend to fringe all the tracks throughout the woodland (but not exclusively), and are also found throughout the whole profile of the woodland in a random manor, akin to many large woodlands of this nature. For biodiversity reasons these trees invariably remain in situ in woodlands that have phased felling extraction licenses and often require either retention or special felling permissions to be extracted out-with normal felling practises.

APPENDIX 3

Aerial Survey of Gask wood 07 August 2013

This aerial survey of Gask Estate Woodland and adjoining Trinity Gask Estate Woodland was undertaken on the 7th August and is designed to assist the LRB in response to the queries relating to the Management Plans in place for those woodlands in the vicinity of the application site and to illustrate the extent of selective felling undertaken to date.



Picture 1

All Woodland shown to bottom, centre and 'top right' of the picture are areas owned and managed by Gask Estate. This is the woodland subject of the Long Term Forest Plan extracts of which are attached at Appendix 1.

All woodland shown to the left and 'top left' of the picture are owned and managed by Trinity Gask Estate.

The council road 'snakes' through these two woodland areas, through a 'z bend' arrangement in the road (centre of picture), effectively splitting the ownership of woodland between the two Estates. An area of 'historical' clear fell to the right of the road, at the bottom of the picture, can also be noted. This is shown as a Phase 1 felled area (ref area 22 on Felling Map 5a at Appendix 1).

To the centre right of the photograph, one can observe the latest small area of clear felled 'commercially mature' trees, contained within large un-felled area (ref area 20 on Felling Map 5a at Appendix 1). This also corresponds with Pictures 2,3,4 and 5 as given in the walk through photo survey at Appendix 2.

Note - The woodlands to the far right of this photograph are part of the enclave of privately owned trees associated with the housing in Clathy Village. Comment on this has already been noted in the initial LRB submission 19th June (section 5, woodland screening) detailing the 'screening value' of these privately owned coppices. This photograph demonstrates clearly, however, irrespective of what occurs in Gask Woodland, there will always be screening options from property situated within the Village itself.

Note - All lighter shades of tree, whether within 'Gask or Trinity Gask' Estate woodland, should be noted as being either Scots Pines or native Birch woodland or Fringe trees. These trees are always very slow growing with limited commercial use, and will effectively be managed according to their maturity and any 'pre-determined' felling conditions that prevail from the Forestry Commission.

Note - The grass field, to 'top and centre' of the picture, is the site of the turbine positioning, and one can note the undulating land in which this would be positioned. It should be noted once more that the ground rises 30 metres in height approximately from this field to Clathy village.



Picture 2

In this photograph one can note both the clear felling to one area as an Eastern 'flank' of the Gask Woodland site, (top of the picture - ref area 16 on Felling Map 5a at Appendix 1). Earlier replanting on land adjacent (light green) can be noted.

One should also very importantly note the extensive woodland area contained and managed within the house boundaries of 'West End' House and 'Farrochel' House, to the south of Clathy road. There are also extensive garden trees in two gardens to the North of the road (out of the picture to the right) for 'The Steading' & 'Drumside' Houses. This can be seen and noted more appropriately in the Picture below.

Picture 3

Below, one can see the same 'privately owned' woodlands (as noted in the picture 2 above), as taken from the council roadway in Clathy Village. This is vista as seen from the village, looking West. Gask woodland is beyond these private woodlands in the foreground. These non commercial 'amenity' woodlands therefore form part of the West enclave of properties all with very private gardens and coppices of trees. These are The Steading and Drumside House Woodland to the North of the road centre and to the south, West End and Farrochel House. Together, these properties make up an 'entire woodland area' of screening (please note again looking back at aerial photo 2 above) from WITHIN Clathy Village itself.



Picture 4

Herewith a photograph taken flying high above the intended site of the windturbine (out of the picture as part of grass field as shown at bottom right of photograph), looking to the North. In the foreground the fields slope heavily to the South; in the background (where the houses are situated)

the houses lie away from the North facing slope, orientating their vistas to North and Westerly views for visual amenity and integrity. They have very little 'aesthetic possibilities' for a southerly viewpoint, and so are not orientated in their build construction as such.

There is a natural ridge in the ground topography from North to south, taking an 'East/West' run line.

To the centre right of the picture one can note the woodland screen coppice in view. This is a Phase 1 thinning area with Phase 2 felling (ref 9 on Maps 5a & 6a at Appendix 1). It may be noted from those Maps that the woodland parcels beyond are the subject of an approval for thinning only.

Please Note – Deciduous Trees

What is not able to be seen from these aerial views are the 'extensive and mature' deciduous trees that fringe and grow along ALL the numerous rides 'criss-crossing' within all woodlands, whether they be from Gask Estate or Trinity Gask Estate.

These trees are 'traditionally' kept and 'harvested' when they fall down and not before. They have always been a part of coniferous forests 'of old' and continue to be a part of new planted areas today, so much so that a certain percentages of ANY new woodland plantings today have to have deciduous trees in the mix/make up of that planting.

**Erection of a wind turbine and associated infrastructure at Land 800
Metres North East Of Roundlaw Farm, Cottage, Trinity Gask
Application Reference: 12/02067/FLL – TCP/11/16(251)**

I refer to the above, and your request for additional information. Below is an extract from correspondence from Mr Doug Cook (Landscape Architect) which was received on the 29 January 2013 in the in relation to the planning application.

'If the blades tip height is the same as the previous application then I can't see the overall impact changing as its overall height will remain the same. If anything it is likely to look worse as the blades would be out of proportion to the tower and the hub more visible.

The Gask ridge is a very sensitive area in landscape terms due to its elevation and prominence in Strathearn and any turbines located on it would be very visible throughout the strath. There are likely to be significant cumulative effects created by bringing wind development into lowland of Strathearn. This could also have a strange visual affect when it is viewed in the foreground to the Ochil Hills wind developments especially Green knows.

Given the cumulative and landscape and visual concerns arising in the area for previous proposals e.g. New Milne and not to mention various other Ochil Hills proposals, Mull Hill and Parks of Keillour, the proposed turbine at Trinity Gask it is likely to be highly visible and give rise to significant landscape and visual effects in the area.

From a landscape point of view the current proposal is no better than the original proposal and possibly worse'

Andy Baxter
Planning Officer
Perth & Kinross Council
Planning & Regeneration
Pullar House
35 Kinoull Street
Perth
PH1 5GD

1.0 Introduction

- 1.1 This submission is the applicant's final response to the further landscape comments submitted by the Environment Service on Friday 23 August.
- 1.2 The applicant notes that a **Late Submission** was lodged by the Environment Service. A response was required no later than Friday 09th August 2013. This has resulted in a delay to the Review process and consequently a serious delay to the applicant's own Project Plan with potential financial consequences. The applicant is unclear why leeway has been provided to Council Officer's when a period of several weeks was given in the first instance for the submission of information to assist the Local Review Body?

2.0 Request for Information

- 2.1 In its letter of the 23 July to the Development Quality Manager the Clerk to the Local Review Body relayed the information that had been requested by the LRB at its meeting on the 2 July.
- 2.2 The LRB instructed that:
- (ii) further information be requested from the Environment Service to provide a *more extensive analysis of its assessment of the proposal and the information on landscape and visual impact submitted by the applicant.*
- This information was required to be submitted **no later than Friday 9 August 2013.**
- 2.3 The response of the Environment Service was submitted late.
- 2.4 In responding the Environment Service has, through four paragraphs, merely reiterated the Landscape Officer's comments at application stage.
- 2.5 The LRB is asked to note that the Environment Service has not provided a more extensive analysis of the proposal;
- 2.6 The LRB is asked to note that the Environment Service has not made comment on the applicant's information on landscape and visual impacts submitted at Planning and LRB stages.

3.0 Applicant's Response

3.1 The applicant welcomes the opportunity to submit further comments on the limited matters raised in the four paragraphs. The response to those short statements is presented here in the same order that they appear in the Environment Service response:

3.2 Paragraph 1:

3.3 In his comments the Landscape Officer is critical of the dimensions of the submitted turbine and asserts that the appearance would be poorly proportioned.

3.4 The LRB is asked to note that the change to hub (raised) and overall blade length (reduced) was suggested by the Planning Officer at a Pre-application meeting prior to the submission of this application. It is disappointing that this has not been acknowledged by the Environment Service. The applicant constructively embraced this suggestion for two reasons:

- (i) It was confirmed that the change would address the planning officer concerns; and
- (ii) The change would rest comfortably with prevailing SNH design guidance.

3.5 The LRB will be aware that SNH are the Government's advisers on landscape. The LRB is directed to the following Scottish Natural Heritage (SNH) document *Siting and Designing windfarms in the landscape – version 1 2009*

http://www.snh.org.uk/pdfs/strategy/renewables/Guidance_Siting_Designing_windfarms.pdf

3.6 This is a lengthy document but the applicant would request that the LRB gives specific attention to sections 3 and 4 (*wind turbine design and layout & windfarm siting and design*).

3.7 The LRB is asked to note the photographs of wind turbines in section 3 (3.4, 3.6 & 3.8) where a 'typical' industry proportion of a 1/3rd – 2/3rd (hub height to blade length) ratio can be recognised.

3.8 The applicant is firmly of the view that his proposal would not be poorly proportioned and its appearance would be consistent with best practice guidance (above) and indeed with many other turbines in situ across Perth and Kinross.

- 3.10 The SNH Guidance goes on to provide advice in relation to wind turbine design and siting. At paragraph 3.4 it is made clear that the landscape and visual impacts of a wind turbine vary not only with its size, but also with the make and model of the turbine proposed. Turbines of the same height may have varying visual appearances due to their different design and technical characteristics.
- 3.11 Paragraph 3.6 goes on to advise that Turbine properties, in addition to height, colour and individual design, may be important when choosing the most appropriate model for a particular site, and will include:
- the proportion of blade length to tower height;*
- 3.12 Furthermore paragraph 3.14 advises that:
- Choice of turbine size is an integral part of the design process of a windfarm in relation to key landscape and visual characteristics. Identification of the key landscape characteristics, their sensitivity and capacity to accommodate change will inform this....*
- 3.13 And paragraph 3.16 which advises that:
- As the experience of different landscapes varies greatly, it is not appropriate to provide strict guidelines on turbine sizes that should be used for particular landscapes. Site-specific assessment and design is essential for each development proposal.*
- 3.14 In relation to scale the following comments are made at paragraph 3.18
- In addition, although the visibility extent of turbines will obviously increase with their greater height, the relationship between visual impact and turbine size is not directly proportional. Principally, this is because a windfarm is viewed within a surrounding context, which varies; and also because the actual size of a windturbine is usually difficult to perceive.*
- 3.15 The applicant sought to reduce the assertiveness of the largest part of the turbine – the blade array. As may be noted from the SNH Guidelines above this can have a direct and positive relationship to the way in which *scale* is perceived in the landscape. This was, therefore, not an inappropriate approach to design for the Planning Officer and the Applicant to take and yet is peremptorily dismissed by the Landscape Officer as *likely to look worse*. In so doing the Landscape Officer provides no justification or explanation of why the best practice guidance of SNH should not be followed. His comments suggest only personal opinion and not a considered and objective appraisal of the proposal.

- 3.16 The photographs in Section 3 usefully illustrate the range of turbine models on the market and reinforce the applicant's view that his proposal can be recognised as an informed, thoughtful and appropriate design response to *place*, consistent with National Guidance.
- 3.17 Paragraph 2:
- 3.18 The Environment Service appears to be suggesting through this paragraph that wind development in Strathearn is undesirable and inappropriate?
- 3.19 The applicant has no knowledge of any approved PKC Planning Policy document which **prohibits** the siting of wind turbines within Strathearn? If such a Policy document exists it would have been helpful if the Environment Service could have produced this for the benefit of the LRB.
- 3.20 In his various submissions and his professionally prepared LVIA, the applicant has referred to the landscape guidance set out in the Tayside Landscape Character Assessment (an SNH and PKC commissioned production).
- 3.21 The TLCA is key *tool* for the appraisal of all new development proposals and is accorded weight by the Planning Policies of Perth & Kinross Council.
- 3.22 The SNH (No 122) Tayside Landscape Character Assessments clearly identifies that within the landscape character type which includes the application site (*Lowland Hills Landscape Character Type*) wind turbines and other tall structures have an historic association to this landscape and a presence today and could be accommodated where appropriately scaled. The TLCA includes the following guidance in relation to wind turbines in this area:
-It is acknowledged that development here could avoid the need to locate turbines in more sensitive upland areas, or in less sensitive, but more populated areas close to settlements. It would also mean that, from a distance, and from some directions, turbines would be viewed against a backdrop of higher ground.....*
- 3.23 Furthermore the LRB is asked to note that at section 4 of the SNH document *Siting and Designing windfarms in the landscape – version 1 2009* (see above for link), the use of the SNH Landscape Character Assessments are encouraged as a tool to inform windfarm siting and design and when undertaking any LVIA (see para 4.4).
- 3.24 The Landscape Officer goes on to suggest that there are likely to be *significant cumulative effects created by bringing wind development into*

lowland Strathearn. The level of *significance* is not quantified and it is not made clear what other developments associated with the applicants proposal would give rise to those *significant cumulative effects*? How is this assessment of *significance* arrived at? In contrast the applicants LVIA has set out a methodology for defining magnitude of effects and justified findings of *significance* -not merely offered a *personal* opinion. That methodology is based on standard industry guidance and Best Practice.

- 3.25 The applicant has commissioned a professional Landscape Consultant of National renown to assess the effects of his design on the Landscape and sensitive receptors through the submission of a comprehensive LVIA. The production of that LVIA has adopted recommended National Guidance (above) and this has been used constructively to inform the design process.
- 3.26 In contrast it would appear to the applicant that a subjective and unsubstantiated opinion is being relied upon by the Environment Service and the advice set out in key policy documents is being ignored?
- 3.27 The Environment Service also suggest, without offer of explanation, that the proposed turbine could also have a *strange visual effect*, viewed in the foreground of the Ochil Hills and Green Knowes commercial wind farm.
- 3.28 The LRB is asked to note the following:
 - (i) Green Knowes wind farm is more than 11km from the application site. The extent and open nature of the land between the application site and the Ochill Hills is such that a direct scale or size comparison between the Greenknowes and Trinity Gask turbines would not be possible;
 - (ii) As stated above, the TLCA specifically identifies that a positive point associated with the siting of turbines within the Strathearn area is that *from some directions, turbines would be viewed against a backdrop of higher ground*.
- 3.29 Paragraph 3:
- 3.30 The applicant is unclear why the Environment Service is continuing to mislead the LRB by inferring a direct parallel or close association between his proposal and the turbines on the Ochil Hills? The single turbine at Trinity Gask is of a completely different scale (ie significantly **smaller**) than those others referred to by the Landscape Officer as the table below shows:

Turbine Location	Turbine Height
Trinity Gask	67 metres
Ochils (Burnfoot)	102metres
Mull Hill (Refused consent)	104 metres
New Milne (EIA Screened only - no planning application)	120 metres
Parks of Keillour (Drummick) 3 x turbines (pre-app discussions only: no planning application yet submitted)	77 metres

- 3.31 The applicant has provided through his LVIA and subsequent submissions a full and reasoned explanation as to why this single *medium* scaled wind turbine could be successfully integrated into the landscape. The reduction in scale, when compared to those referred to by the Landscape Officer, is considered to appropriately reflect the transition from upland (Ochills & Highland Boundary Fault) to lowland landscape (Lowland Hills Landscape Character Type) – a key objective of the TLCA. Its siting in an undulating landform and immediately adjacent to established woodlands and with a backdrop of the Ochils are all important site specific factors which the applicant considers would greatly assist assimilation, and indeed are encouraged through the SNH Guidance above when considering siting.
- 3.32 One of the key design intentions of the applicant was to reduce scale and assertiveness and to make clear a distinction between the proposal at Trinity Gask and those larger commercial towers in the Ochils and elsewhere. The case set out here demonstrates that this carefully designed proposal on this particular site would successfully integrate this *medium* scaled turbine within this part of Strathearn.
- 3.33 Paragraph 4:
- 3.34 These comments are provided without explanation or justification? Furthermore they do not respond to the design changes which were agreed with the Planning Officer and which subsequently formed part of the revised planning application.

4.0 Conclusion

- 4.1 The Planning Officer in his Report of Handling set out reasons why he considered that the proposal would not have a significant impact on the landscape character of this part of Strathearn. In finalising his

recommendation for refusal he has then deferred to the views of the Council's Landscape Officer.

- 4.2 The SNH commissioned TLCA identifies the Strathearn area including the application site as a location which could accommodate suitably scaled wind energy development. The applicants own LVIA has set out reasons why the proposal is suitably scaled and located.
- 4.3 In contrast the Council's Landscape Officer has rigidly opposed the proposal. In adopting this position he has repeatedly failed to provide (i) an explanation of why the SNH Guidance is inappropriate and should be set aside; and (ii) a full or satisfactory reasoned justification for disagreeing with the conclusions of the applicants professionally prepared LVIA.
- 4.4 The Environment Service appear to have relied on brief 'off the cuff' comments at planning application and now Local Review stage to rebut the both the considered, professional views on landscape submitted by the applicant and the best practice Guidance of SNH. At no stage has a full landscape appraisal been undertaken by Officers or a critique presented of the conclusions set out in the applicants own LVIA.
- 4.5 Furthermore it has been repeatedly inferred by the Environment Service that larger commercial scaled turbines (operational, refused and at pre-app stage) around Strathearn provide evidence of the landscape harm that would follow if the turbine proposal at Trinity Gask were approved.
- 4.6 It is a well established tenet of Planning law that each case must of course be considered **on its own merits**. The applicant has fully explained the individual merits of his proposal and shown that his turbine is almost half the size of the turbines referred to by the Environment Service; is of a scale which more appropriately reflects its lowland landscape setting, and in terms of siting and design, is consistent with the best practice guidance published by SNH. These significant facts have been referred to by the applicant at each stage in the application and review process and yet the Environment Service has failed to rebut or explain why those matters are not material?
- 4.7 In these circumstances it is respectfully requested that the LRB set aside the Officer Recommendation of Refusal and grant planning permission.

Mark Jennison Director

Realise Renewables

06.09.2013

