APPENDIX 2

DEVELOPMENT MANAGEMENT REVIEW COMMITTEE

APPLICATION FOR REVIEW

FIELD 180M NORTH WEST OF KALULU HOUSE EAST MUIRHILL, FORFAR

APPLICATION NO 14/00459/FULL

APPLICANT'S SUBMISSION

ITEM 1 Notice of Review

ITEM 2 Location Plan

ITEM 3 Site Location

ITEM 4 Location Plan with Access & Cable Route

ITEM 5 Block Plan

ITEM 6 Accoustic File

ITEM 7 Ecology

ITEM 8 Elevation

ITEM 9 Montage

ITEM 10 Wirelines viewpoints

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ITEM 15 Noise Report

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ITEM 20 Land Ownership

ITEM 21 Environmental Health Comments

ITEM 22 Dundee Airport Comments

ITEM 23 Countryside Officer Comments

ITEM 24 CAA Comments

ITEM 25 BT Comments

ITEM 26 Atkins response

ITEM 27 Archaeology Response

ITEM 28 Decision Notice

County Buildings Market Street Forfar DD8 3LG

Tel: 01307 461460

Fax: 01307 461 895

Email: plnprocessing@angus.gov.uk

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

Thank you for completing this application form:

ONLINE REFERENCE 000105094-001

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

Applicant or Agent Details

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

Agent Details

Please enter Agent details

Company/Organisation:	AE Associates
Ref. Number:	
First Name: *	Adele
Last Name: *	Ellis
Telephone Number: *	07910741328
Extension Number:	
Mobile Number:	
Fax Number:	
Email Address: *	ae.associates@btinternet.com

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

Building Name:	Cameron House
Building Number:	
Address 1 (Street): *	26 Cupar Road
Address 2:	Auchtermuchty
Town/City: *	Fife
Country: *	UK
Postcode: *	KY14 7DD

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

☐ Individual ☑ Organisation/Corporate entity

Applicant Details

Please enter Applicant details

Title:	
Other Title:	
First Name:	
Last Name:	
Company/Organisation: *	R & A Renewables
Telephone Number:	
Extension Number:	
Mobile Number:	
Fax Number:	
Email Address:	

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

Building Name:	Glenburn House
Building Number:	1
Address 1 (Street): *	Baird Crescent
Address 2:	
Town/City: *	Hamilton
Country: *	Scotland
Postcode: *	ML3 9FD

Site Address Details

Planning Authority: Angus Council

Full postal address of the site (including postcode where available):

Address 1:	KALULU HOUSE	Address 5:	
Address 2:	EAST MURTHILL	Town/City/Settlement:	FORFAR
Address 3:		Post Code:	DD8 3SF
Address 4:			

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

Northing	757847	Easting	346471

Description of the Proposal

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

Erection of Wind Turbine of 31 Metres To Hub Height And 44.75 Metres To Blade Tip | Field 180M North West Of Kalulu House East Murthill Forfar

Type of Application

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

☑ Application for planning permission (including householder application but excluding application to work minerals).

☐ Application for planning permission in principle.

☐ Further application.

☐ Application for approval of matters specified in conditions.

What does your review relate to? *

☑ Refusal Notice.

☐ Grant of permission with Conditions imposed.

☐ No decision reached within the prescribed period (two months after validation date or any agreed extension) – deemed refusal.

Statement of reasons for seeking review

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

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

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

Review due to disagreement of reason for refusal. Primarily due to cumulative landscape & visual impact in conjunction with one other singular turbine situated over 1km from the proposal. This other turbine would have been considered with the knowledge of this proposal pending submission and resubmission and cumulative impact for consented turbine was deemed acceptable.

Have you raised any matters which were not before the appointed officer at the time the determination on your application was made? * ☐ Yes ☑ No

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

Location plan, site location, site plan, block plan, accousrtic file, ecology, elevation, montage, wirelines, viewpoints, cumulative montages, cumulative base plan, supporting statement, noise report, further noise and flicker analysis, review statement.

Application Details

Please provide details of the application and decision.

What is the application reference number? * 13/01067/FULL

What date was the application submitted to the planning authority? * 18/11/13

What date was the decision issued by the planning authority? * 23/10/14

Review Procedure

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

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

☑ Yes ☐ No

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

Can the site be clearly seen from a road or public land? * ☑ Yes ☐ No

Is it possible for the site to be accessed safely and without barriers to entry? * ☑ Yes ☐ No

Checklist - Application for Notice of Review

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

Have you provided the name and address of the applicant? * ☑ Yes ☐ No

Have you provided the date and reference number of the application which is the subject of this review? * ☑ Yes ☐ No

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

☑ Yes ☐ No ☐ N/A

Have you provided a statement setting out your reasons for requiring a review and by what procedure (or combination of procedures) you wish the review to be conducted? * ☑ Yes ☐ No

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

Please attach a copy of all documents, material and evidence which you intend to rely on (e.g. plans and drawings) which are now the subject of this review * ☑ Yes ☐ No

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

Declare - Notice of Review

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

Declaration Name:	Adele Ellis
Declaration Date:	19/11/2014
Submission Date:	19/11/2014

Mapping sourced from Ordnance Survey®

N

Location Map

346179 E 346200 E 346300 E 346400 E 346500 E 346579 E

758082 N 758000 N 757900 N 757800 N 757700 N 757681 N

REFUSED

Issues

Kalulu House

Pond

Sinks

Pond

Kamba Cottage

The Rowans

Nantusi Cottage

Drain

Track

INSTALLATION OF A SINGLE WIND TURBINE

31m HUB HEIGHT

27.5m BLADE DIAMETER

LAND AT KALULA HOUSE

DEVELOPMENT AREA INCLUSIVE OF ACCESS TRACK AND BLADE DIAMETER EXTENDING TO APPROX 0.2ha

HARDSTANDING

FOUNDATION FOOTPRINT

TURBINE POSITION: 346287, 758007

0 40 80

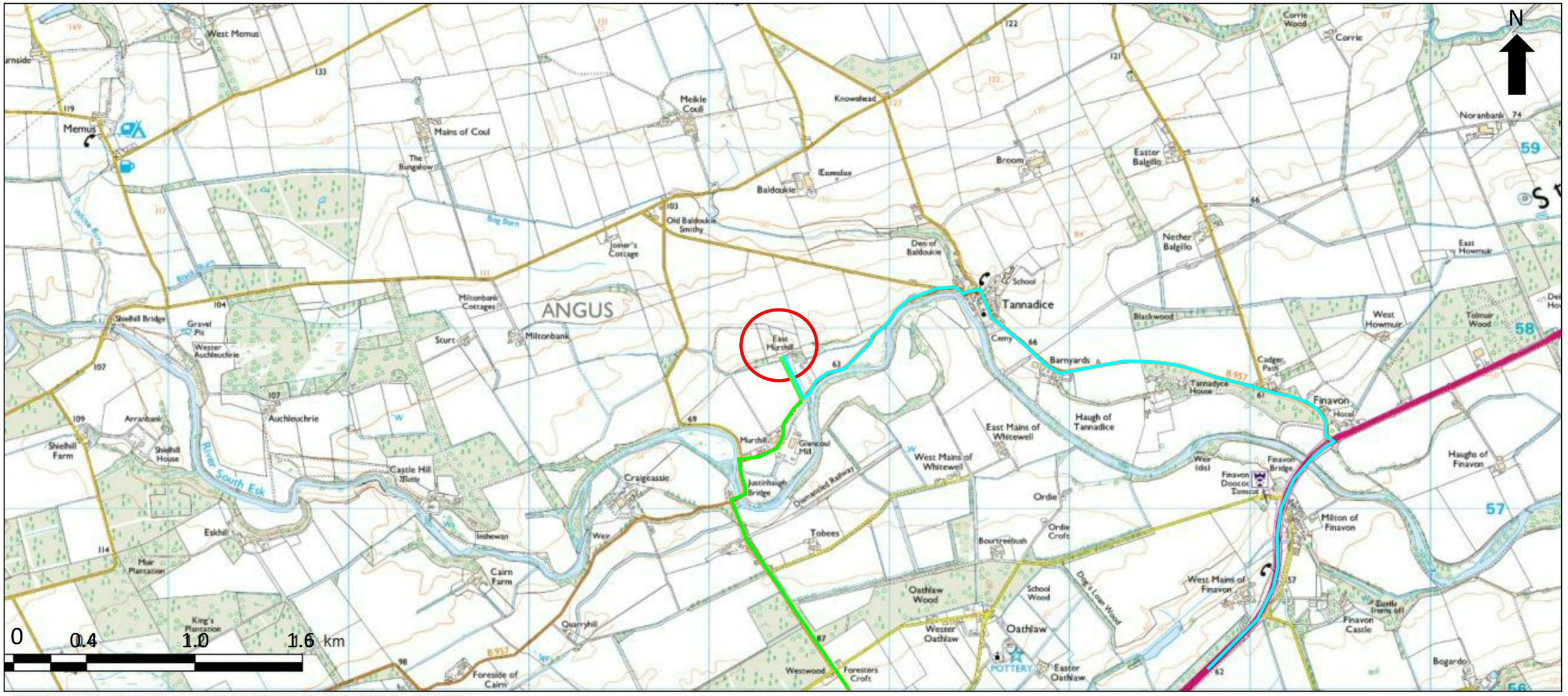
Scale 1:2500

Supplied By: **AE Associates**

Serial number: 001085885

Plot Centre Coordinates: 346379, 757881

KALULA HOUSE, EAST MURTHILL, TANNADICE, FORFAR, DD8 3SF - SITE LOCATION PLAN



SCALE 1:25000 @ A3

REFUSED

SITE LOCATION

INSTALLATION OF 1 X 200kW WIND TURBINE
1/ 346287, 758007

HUB HEIGHT 31m
BLADE DIAMETER 27.5m

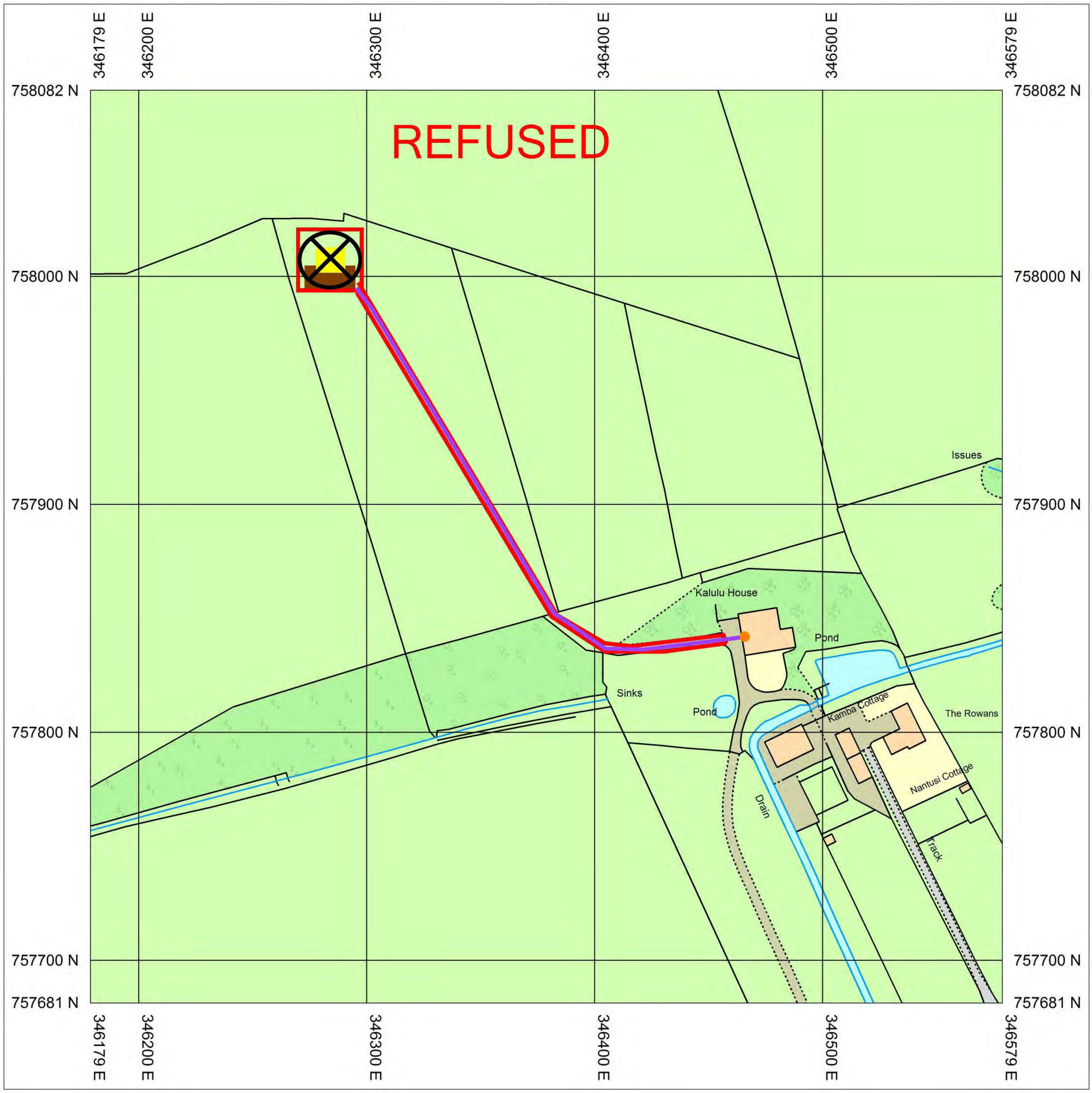
ROUTE 1 - POTENTIAL ACCESS FOR TRANSPORTATION

ROUTE 2 - POTENTIAL ACCESS FOR TRANSPORTATION

ae associates

Mapping sourced from Ordnance Survey®

Location Map



INSTALLATION OF A SINGLE WIND TURBINE

31m HUB HEIGHT
27.5m BLADE DIAMETER

LAND AT KALULA HOUSE

0 40 80

Scale 1:2500

Supplied By: **AE Associates**

Serial number: 001085885

Plot Centre Coordinates: 346379, 757881

DEVELOPMENT AREA INCLUSIVE OF ACCESS TRACK AND BLADE DIAMETER EXTENDING TO APPROX 0.2ha

HARDSTANDING

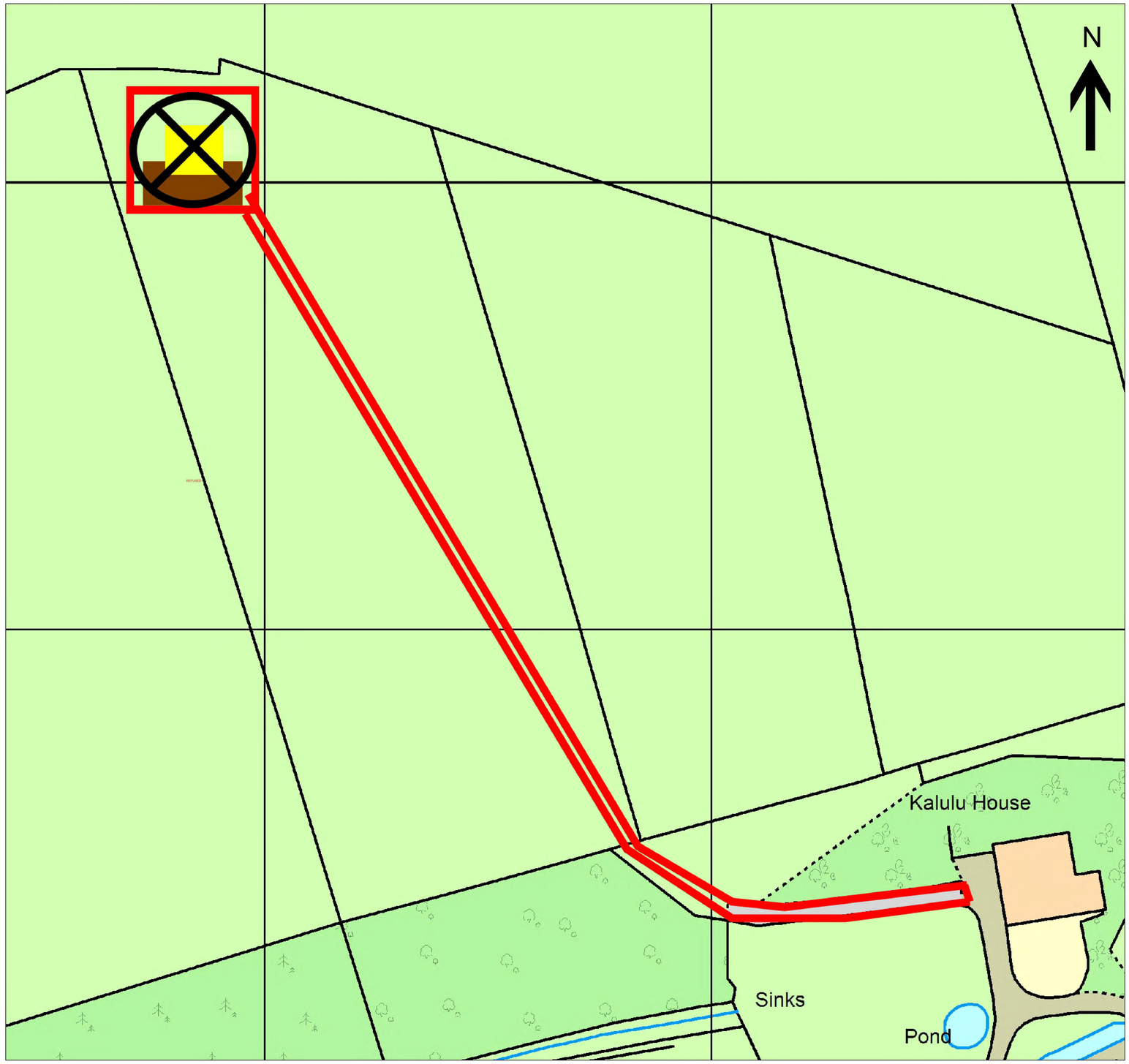
FOUNDATION FOOTPRINT

TURBINE POSITION: 346287, 758007

CABLE RUN

CONNECTION POINT

BLOCK PLAN



LAND AT KALULA HOUSE

INSTALLATION OF A SINGLE WIND TURBINE

31m HUB HEIGHT
27.5m BLADE DIAMETER

DEVELOPMENT AREA INCLUSIVE OF ACCESS TRACK AND BLADE DIAMETER EXTENDING TO APPROX 0.2ha

HARDSTANDING

FOUNDATION FOOTPRINT

TURBINE POSITION: 346287, 758007

SCALE 1:500 @ A1

0 100m

ae associates

沈阳工业大学自控技术研究所
A&C INSTITUTE OF SHENYANG UNIVERSITY OF TECHNOLOGY

SUT 200KW Wind Turbine Acoustic Profile

SUT 200KW Turbine Detail:

Class II A

Rotor diameter：27.6m

Tower height：30m

Rotor：Horizontal, Active pitch

SUT 200KW acoustic data summary:

IEC 61400-11:2003

Wind Speed (m/s)	6	7	8	9	10
Apparent Sound power level $L_{WA,K}$ (dB）	90.60	91.83	93.42	95.33	96.39

Distance to the Turbine R_1 m	50	100	150	200	250	300	350	400	450
Sound Power Level (dB) (8m/s)	51.21	44.94	41.17	38.42	36.23	34.40	32.81	31.40	30.2

Key sound data	Back ground noise (dB)	Distance turbine match background noise M	Distance turbine can't be heard M	35dB distance M	Turbine Acoustic power (dB)
6m/s wind speed	43. 1	100	240	230	**90.6**
10m/s wind speed	47	130	320	315	**96.39**

The frequency content has been assessed using the methodology prescribed by the IEC 61400-11 standard and was found not be tonal and so no tonal penalty has been applied to the result. The turbine sound does not have irritating tones, and is not considered tonal per IEC 61400-11.

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- The turbine apparent sound power level ($L_{WA,k}$) has been calculated using the formula below specified in BS EN 61400-11:2003 (equation 9)

$$L_{WA,k} = L_{Aeq,c,k} - 6 + 10 \times \log\left[\frac{4\pi R_1^{\,2}}{S_0}\right]$$

Where:

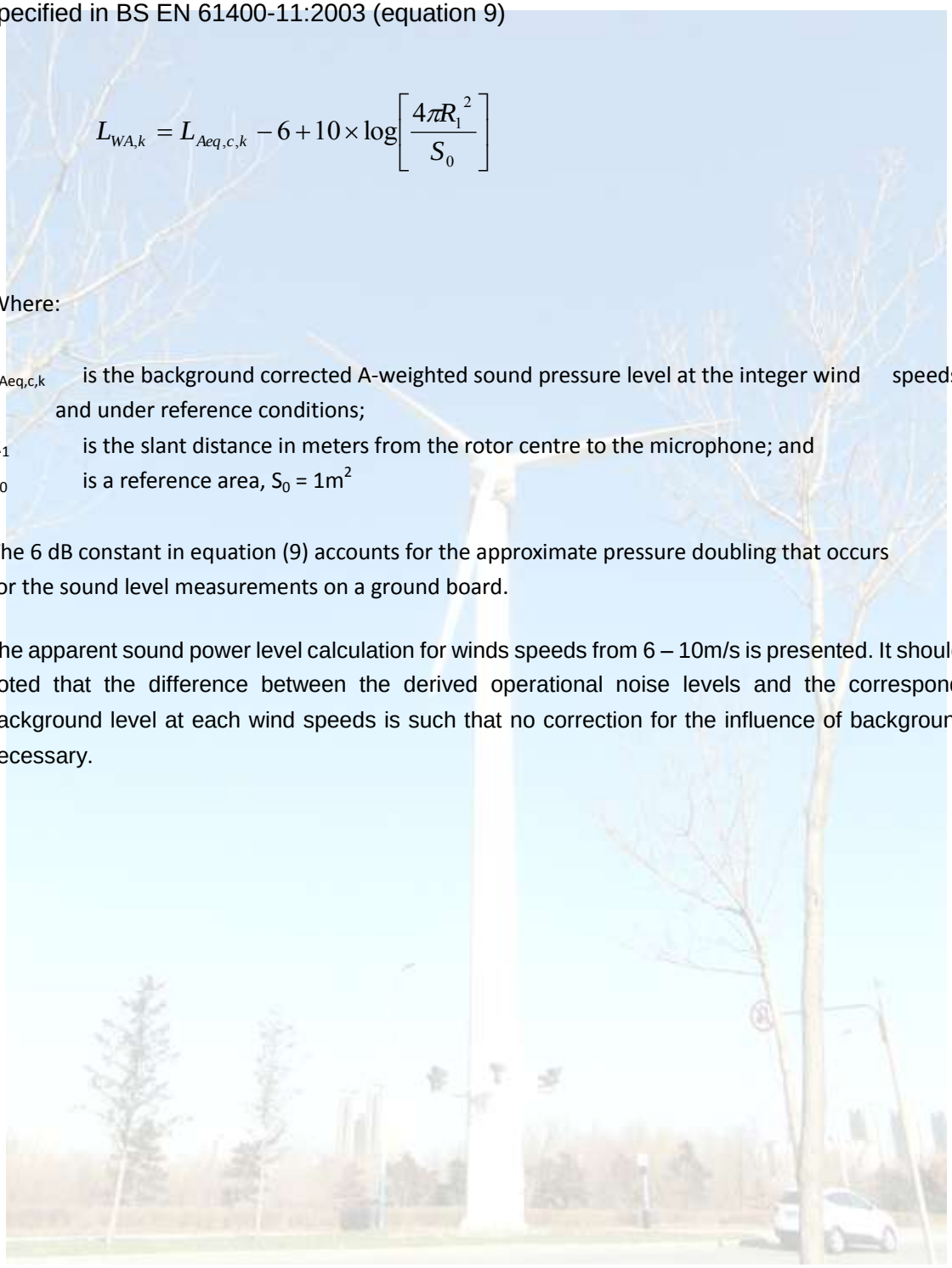
$L_{Aeq,c,k}$ is the background corrected A-weighted sound pressure level at the integer wind speeds and under reference conditions;

R_1 is the slant distance in meters from the rotor centre to the microphone; and

S_0 is a reference area, $S_0 = 1m^2$

The 6 dB constant in equation (9) accounts for the approximate pressure doubling that occurs for the sound level measurements on a ground board.

- The apparent sound power level calculation for winds speeds from 6 – 10m/s is presented. It should be noted that the difference between the derived operational noise levels and the corresponding background level at each wind speeds is such that no correction for the influence of background is necessary.



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ITEM 7

peakecology LIMITED
ECOLOGICAL CONSULTANTS

Proposed Wind Turbines at Kalulu House, East Murthill, near Forfar, Angus

Extended Phase 1 Habitat Survey

Issue record

Issue	Date	Prepared by	Checked by	Approved by
1	15/04/2013	Faye Midmore	Malcolm Ginns	Jonathan Brickland

Peak Ecology Limited
Arden House
Deepdale Business Park
Bakewell
Derbyshire
DE45 1GT
01629 812511

www.peakecology.co.uk

EXECUTIVE SUMMARY

Overview

This report has been prepared by Peak Ecology Ltd on behalf of Adele Ellis Associates. It provides details of an Extended Phase 1 Habitat Survey undertaken on land at Kalulu House in East Murthill near Forfar, Angus (central grid reference: NO 463 579) in relation to the construction of two 100kW wind turbines.

An Extended Phase 1 Habitat Survey was undertaken on 5th April 2013: the broad habitat types were identified, mapped and assessed for their ecological importance and the potential of the site was assessed to support protected species. This information was then used to identify any additional work that may be required.

Designated sites

There were no statutory designated or non-statutory designated sites within the survey area. The River South Esk Special Area of Conservation is located 300m from the site boundary although this will not be impacted by the proposals. Additional statutory and non-statutory sites were identified between 2km and 5km of the site boundary.

Habitats

The turbines will be located within two adjacent improved grassland fields with access tracks being constructed through these fields and into a small area of adjacent poor semi-improved grassland. These habitats were considered to be of low ecological value and the impacts of the work considered to be low. Nearby habitats of higher ecological value including woodland and waterbodies will remain unaffected.

Protected and notable species

Lapwing and skylark were noted during the survey of the fields. Nearby woodland habitats provided good potential for nesting birds, as well as foraging and commuting bats. Other species identified during the field survey and desk study that may be found in surrounding areas include badger, reptiles and red squirrel.

Implications and recommendations

Habitats: Storage of materials and machinery should not take place within 5m of woodland or waterbodies.

Breeding birds: To minimise any potential impact or disturbance to protected breeding birds, any vegetation clearance should be undertaken outside the bird breeding season, i.e. from late-August and be completed by late February. The site should be checked for ground-nesting birds prior to construction.

Bats: No impacts are anticipated to bats as the turbines are located at least 100m from suitable roosting, foraging and commuting habitats.

Badger: Any trenches should include a ramp to allow any trapped animals (including badger and other animals) to escape and any pipes over 200mm in diameter will need to be capped off at night.

Reptiles: Access track construction in rough/ semi-improved grassland should ideally take place outside the reptile hibernation period.

Contents

Figures and Tables

1 INTRODUCTION

This report has been prepared by Peak Ecology Ltd on behalf Adele Ellis Associates. It provides details of an Extended Phase 1 Habitat Survey undertaken on land at Kalulu House in East Murthill (central grid reference: NO 463 579). The survey site lies to the north of Forfar, close to the B957 in Angus. A site location plan has been included in **Appendix A**.

It is understood that proposals are currently being prepared for the installation of two wind turbines at this site. The 100kW turbines will measure up to 37m to the hub with a rotor diameter of 21m and will be located approximately 75m apart in adjacent fields. Prior to a planning application information on whether there are any potential ecological issues on the site is required. An Extended Phase 1 Habitat Survey was therefore recommended.

The objectives of this Extended Phase 1 Habitat Survey were to:

- Identify, classify and map all site boundaries and habitats present;
- Identify statutory or non-statutory designated sites within or near to the site;
- Collate and consider existing records of protected and/or priority species (species of principal importance) in or around the site;
- Identify and map any invasive plant species which might be present on the site;
- Assess the potential for protected and/or priority species (species of principal importance) to be present within the site and consider the implication of their presence;
- Provide recommendations for further survey and assessment if/as required.

2 METHODOLOGY

2.1 Desk study

The desk study comprised a review of existing published information and unpublished information held by government agencies, NGOs and other specialist groups, as appropriate. It included a review of UK and local Biodiversity Action Plans (BAP), together with other available publications and reports (such as county bird reports and faunal atlases), and online databases such as SNH SiteLink and the NBN (National Biodiversity Network) Gateway.

Locally, the Scottish Wildlife Trust (SWT) and Scottish Natural Heritage (SNH) supplied information relating to designated sites within 2km of the site. Additional records of protected and priority species within 3km of the site were obtained from the NBN Gateway.

A designated sites map and the species records are included in **Appendix B.**

2.2 Field survey

The site was surveyed on 5th April 2013 using the standard Phase 1 Habitat assessment methodology (Joint Nature Conservancy Council, 2003) extended to highlight the potential presence of protected and priority species. This involved a walk over of the survey area to identify, classify and map the survey area's boundaries and the habitat types present, marking all such features on to a base map. In addition, target notes (TNs) were used to record any features or habitats of interest. The Extended Phase 1 Habitat Survey map is shown in **Figure 1.** The accompanying target notes and photographs are included in **Appendix C** and the lists of plants species recorded within the survey area are included in **Appendix D.** Plant names follow Stace (Stace, 2010).

During the survey, observations or field signs of any notable species (including European and UK protected species, UK and local BAP species and invasive species) were noted. Particular attention has been given to species relevant to the survey area including bats, birds, badger *Meles meles,* red squirrel *Sciurus vulgaris*, amphibians (in particular great crested newt *Triturus cristatus*), widespread reptiles, such as slow worm *Anguis fragilis*, grass snake *Natrix natrix* and common lizard *Zootoca vivipara* and water vole *Arvicola amphibius*.

2.3 Pond assessment for great crested newts

An assessment of any accessible water bodies' potential to support a breeding population of great crested newts was made according to the criteria of the Habitat Suitability Index (HSI) (Oldham *et al.* 2000). This calculation takes account of a number of factors to produce a final score between 0 and 1, which can be translated into a suitability rating. The factors included within the HSI are geographic location, pond area, the likelihood of the pond drying out, water quality, shoreline shade, the presence of water fowl and fish, macrophyte cover, the suitable terrestrial habitat surrounding the pond and the number of ponds within the vicinity.

2.4 Survey constraints

It should be noted that the absence of certain protected or rare species does not preclude their presence on a site. There is always a risk of protected or rare species being over-looked, either owing to the timing of the survey or the scarcity of the species at the site.

The survey undertaken was an Extended Phase 1 Habitat Survey therefore species lists recorded were not extensive; although sufficient information was gathered to determine the character of the habitat types present and species lists were compiled for each of the habitat types present.

Furthermore, biological records (as obtained during a desk study) are based on the information that is available at the time for the site. Therefore, a lack of species records does not imply that the species is necessarily absent from any given area.

3 RESULTS

3.1 Desk study

3.1.1 Designated sites

There was one statutory site and no non-statutory designated sites within 2km of the survey area. Additional designated sites were located within 5km as shown in **Table 1** below.

Table 1: Designated Sites within 5km of the survey site

Site Designation	Site Name	Distance from survey site (approximate)	Details
Special Area of Conservation (SAC)	South Esk River	250m south-east	River designated for presence of freshwater pearl mussel *Margaritifera margaritifera* and Atlantic salmon *Salmo salar*.
Wildlife Site	Auchleuchrie	2.1km west	Semi-natural deciduous woodland dominated by downy birch *Betula pubescens*, semi-improved acid grassland and marshy grassland.
Wildlife Site	Eskhill	3.4km south-west	Mature semi-natural woodland dominated by downy birch with some wet-heath understory.
Site of Special Scientific Interest (SSSI)	Forest Muir	4.4km south-west	One of the few remaining areas of lowland heathland in Angus. Contains a mosaic of habitats such as wet heath, spring fens, acidic grassland, scrub and woodland and supports a rich flora.
Site of Special Scientific Interest (SSSI)	Den of Ogil	4.5km north-west	Contains species-rich plant communities including fens associated with upwelling springs and wet willow/alder carr scrub woodland.

3.1.2 Species records

The information presented in **Table 2** has been compiled from information obtained from NBN Gateway and only includes species that might occur on the site, given the habitats present. Bird record data is presented as all records within the same 10km grid square (NO 45). Data sets and organisations from which NBN Gateway gathers and presents the information have been listed in **Appendix B**.

Table 2: Summary of notable species records for within 3km of the site

Grid Reference	Location	Approximate distance from site (km)	Date	Species Present
Birds				
NO45	Within same 10km square	N/A	1980 – 2011	Skylark *Alauda arvensis*, bean goose *Anser fabalis*, tree pipit *Anthus trivialis*, common swift *Apus apus*, short-eared owl *Asio flammeus*, common pochard *Aythya ferina*, dunlin *Calidris alpina*, common redpoll *Carduelis cabaret*, common linnet *Carduelis cannabina*, siskin *Carduelis spinus*, black-headed gull *Chroicocephalus ridibundus*, whooper swan *Cygnus Cygnus*, corn bunting *Emberiza calandra*, yellowhammer *Emberiza citronella*, reed bunting *Emberiza schoeniclus*, merlin *Falco columbarius*, peregrine falcon *Falco peregrines*, common kestrel *Falco tinnunculus*, brambling *Fringilla montifringilla*, herring gull *Larus argentatus*, common grasshopper warbler *Locustella naevia*, yellow wagtail *Motacilla flava,* spotted flycatcher *Muscicapa striata*, curlew *Numenius arguata*, house sparrow *Passer domesticus*, tree sparrow *Passer montanus*, grey partridge *Pedrix pedrix,* golden plover *Pluvialis apricaria*, bullfinch *Pyrrhula pyrrhula*, Eurasian woodcock Scolopax *rusticola*, redwing *Turdus iliacus*, song thrush *Turdus philomelos*, barn owl *Tyto alba*, lapwing *Vanellus vanellus*.
Mammals				
NO 45 58	Tannadice	1.3km west	1980	Brown hare *Lepus europaeus*
NO 450 570	No site name available	1.5km south-west	2006	Red squirrel *Sciurus vulgaris*
NO 48 57	No information provided by SNH	Within 2km	1970 – 2007	Pipistrelle bat *Pipistrellus sp.*
NO 43 58	East of Shielhill Bridge	2.8km north-west	1980	Badger *Meles meles*
NO 493 574	River South Esk at Finavon Bridge	3km – but river runs within 300m of site.	1991	Otter *Lutra lutra*

3.2 Habitat survey

The turbines will be installed approximately 75m apart towards the northern end of two adjacent fields. It is understood that an access track will be constructed between the two turbines and a track will also run southwards from the eastern turbine to link up with an existing access track from Kalulu House. The survey focused on the areas in which construction is proposed although surrounding habitats were also assessed for their potential to support protected/notable species.

A total of nine main habitat types have been identified within the survey area and surrounding area. The photographs of the Phase 1 Habitat Survey are provided in **Appendix C**. The Extended Phase 1 Habitat Survey map is shown on **Figure 1**.

3.2.1 Improved grassland

The two fields in which the turbines are proposed to be located comprised species-poor, managed grassland. The fields sloped upwards from the southern boundary, with an elevated position being reached approximately two-thirds of the way across the fields, before dropping down to a lower elevation at the northern boundary. The fields had a short sward of less than 10cm and had evidence of grazing from sheep and horses. Common grasses and herbs included creeping buttercup *Ranunculus repens*, common mouse-ear *Cerastium fontanum*, fescue sp. *Festuca sp*., meadow grass *Poa sp*., creeping soft-grass *Holcus mollis* and cleavers *Galium aparine*. Common nettle *Urtica dioica*, and dock *Rumex sp*. were locally frequent.

3.2.2 Boundaries

The eastern field was bounded on all sides by post and wire fencing. The western field had a dry stone wall/dyke running along the length of the western boundary, with a small section of degraded wall at the western end of the northern boundary. The western field was otherwise bounded by post and wire fencing.

3.2.3 Scattered trees

A single hawthorn *Crataegus monogyna* tree was location on the northern boundary of the western field. It was a mature specimen with a multi-stemmed trunk.

3.2.4 Poor semi-improved grassland

To the south of the eastern field was a strip of rough grassland with a track running close to the northern and south-western boundaries. It comprised tall grasses such as Yorkshire fog *Holcus lanatus* and cock's foot *Dactylis glomerata*, tall ruderal plants such as nettle, dock sp., and hogweed *Heracleum sphondylium*, and occasional patches of scrub including elder *Sambucus nigra* and bramble *Rubus fruticosus agg*.

Piles of brash and rubble were located within the grassland close to the track at the eastern end (TN1 & 2). A water outlet was located on the south-western edge of the grassland (TN 3) with water running out of a pipe and down the edge of the adjacent woodland.

3.2.5 Surrounding habitats

3.2.5.1 Arable

Arable fields were located directly adjacent to the survey area to the north and west. The fields were very large and extended to the field boundaries without margins. At the time of the survey they were either recently ploughed or with stubble remaining from the previous harvest. In the wider landscape, arable fields were also found to the east and south of the survey site.

3.2.6 Plantation broadleaved woodland

There were two areas of plantation broadleaved woodland within close proximity to the survey site, as described below.

Young plantation woodland (west) – this formed the southern boundary of the western survey field and extended down a bank for approximately 45m to a burn. It consisted of a mixture of species between 3 and 6m in height, planted in same-species blocks. Woody species included hazel *Corylus avellana,* birch *Betula* sp., oak *Quercus robur*, poplar *Populus sp*., hawthorn, pine *Pinus sp.* and elder. Ground flora was limited but included nettle, speedwell *Veronica sp.* and spear thistle *Cirsium vulgare*. The area was enclosed with post and wire fencing, and a dry stone wall on the western boundary. There was evidence of a high level of rabbit activity, with numerous burrows and droppings.

Plantation woodland (east) – Plantation broadleaved woodland was located to the north and west of Kalulu House. It was located on steep banks and featured a range of trees of different ages. There were numerous active rabbit burrows throughout the woodland. The woodland was dominated by ash *Fraxinus excelsior*, elder and alder *Alnus glutinosa* with a ground flora that comprised snowdrops *Galanthus nivalis*, daffodils *Narcissus spp*, nettle, wood avens *Geum urbanum* and creeping buttercup.

3.2.7 Plantation coniferous woodland

To the west of the young plantation broadleaved woodland was a block of mature coniferous woodland of plantation origin.

3.2.8 Amenity grassland/formal gardens

To the south and south-west of Kalulu House were managed amenity lawns and ornamental borders and tree planting.

3.2.9 Pond

A large circular pond was located within the formal garden area of Kalulu House. The pond was a lined, ornamental pond, approximately 60m^2 in size with stones laid around the banks. It was located within amenity grassland and contained little aquatic vegetation.

A second, larger pond was located to the south-east of Kalulu House and was connected to a burn. It had shallow earth banks and was surrounded by woodland and lawns.

3.2.10 Running water

A burn was located along the southern edge of the coniferous plantation and young broadleaved woodland. It was <1m wide with shallow grassy banks and a moderate flow from west to east. The burn extended into the gardens of Kalulu House for approximately 20m before entering a culvert.

3.2.11 Summary of habitats with biodiversity value

A summary of the habitats with biodiversity value is presented in **Table 3**.

Table 3: Summary of valuable habitats in the site and surrounding area

Habitats	Biodiversity Value	Comments
Boundaries	Stone dykes/ dry stone walls are listed on the Local BAP	Both intact and derelict dykes are included in this BAP due to their value for a range of species such as plants, invertebrates and reptiles. The dykes will remain unaffected by the proposed works.
Ponds	Ponds are UK and Local BAP Priority Habitats	In order to be considered under the UK priority habitat a pond must comply with one of a number of criteria, which include things such as supporting a protected/notable species or a high water quality. However, it is our understanding that the ponds will not be impacted by the proposed works.
Burn	Rivers and Streams are UK BAP Priority Habitats; Rivers and Burns are listed on the Local BAP	The nearby burn is not expected to be directly affected by the proposed development. However the burn is located approximately 20m from the proposed access track and eventually enters the River South Esk SAC so should be adequately protected from indirect impacts.

3.3 Protected and notable species

3.3.1 Breeding birds

During the walkover of the improved grassland fields, a group of nine lapwing *Vanellus vanellus* and a number of woodpigeon *Columba palumbus* were observed taking off from the field and flying towards the arable fields to the north. Pheasant *Phasianus colchicus* and red-legged partridge *Alectoris rufa* were observed in the surrounding fields and skylark *Alauda arvensis* could also be heard throughout the survey.

Additionally in the woodlands to the south of the fields, great tit *Parus major*, blue tit *Cyanistes caeruleus*, wren *Troglodytes troglodytes*, blackbird *Turdus merula*, robin *Erithacus rubecula* and woodpigeon were recorded.

The woodlands to the south of the site provided suitable nesting and foraging habitat for breeding birds and numerous old nests could be seen. The fields and surrounding landscape also provided some potential for ground nesting birds.

3.3.2 Bats

There were no trees, buildings or other man-made structures (such as adits, ice houses or bridges) within the survey area that will be directly affected by the proposed works.

The improved grassland fields lacked field boundaries, such as hedgerows, suitable for use by commuting and foraging bats, although plantation woodland along the southern boundary of the western field provided good habitat for bats. The woodland was well connected to other good foraging habitats such as ponds and watercourses in the surrounding area. There were also mature trees (TN 4) and buildings nearby likely to provide features potentially suitable for roosting bats, and it was considered highly likely that bats would be present in the area.

3.3.3 Badger

No evidence of badger was found during the survey. Wooded banks provided good opportunities for sett building and their presence in the wider area cannot be ruled out.

3.3.4 Red squirrel

Woodland found close to the site, including mature coniferous woodland and broadleaved woodland containing hazel, provided opportunities for red squirrel. However these woodland blocks were relatively small and isolated from other areas of woodland in the wider landscape, somewhat limiting the potential for red squirrel.

Regardless, the woodlands are not expected to be affected by the proposal, and as such red squirrel are not considered further within this report.

3.3.5 Amphibians

The ponds were assessed using the Habitat Suitability Index (HSI) (Oldham *et. al.* 2000), as shown in **Table 4** below.

Table 4: Suitability of ponds as GCN breeding habitat using HSI

	Pond 1		**Pond 2**	
	Results	**Scores**	**Results**	**Scores**
Location	B	0.50	B	0.50
Pond area	60m²	0.12	400m^2	0.80
Pond drying	Never	0.90	Never	0.90
Water quality	Poor	0.33	Moderate	0.67
Shoreline shade	0%	1.00	50%	1.00
Fowl	Absent	1.00	Minor	0.67
Fish	Possible	0.67	Minor	0.33
Pound count	3	0.65	3	0.65
Terrestrial habitat	Poor	0.33	Good	1.00
Macrophytes	5%	0.35	5%	0.35
HSI		0.50		0.64
Pond suitability		**Poor**		**Average**

The scores given by the HSI suggest that the ponds are sub-optimal for great crested newts. Furthermore, the areas which will be directly impacted by the proposed works, would be unlikely to support great crested newts. Great crested newts are not considered further within this report.

3.3.6 Reptiles

No reptiles were seen during the survey.

The improved grassland fields were considered unlikely to support reptile species, due to a lack of suitable cover and regular disturbance, although the dry-stone walls may provide shelter opportunities. The unmanaged rough grassland to the south provided greater opportunities for reptile species such as common lizard.

3.3.7 Water vole

No evidence of water vole *Arvicola amphibius* was seen during the survey.

Although the watercourse did provide some potential for water vole, given the soft earth banks, the stream will remain unaffected by the proposals and as such, water voles are not considered further within this report.

3.3.8 Other species

There was a high level of activity of rabbit *Oryctolagus cuniculus* across the site, including in the improved grassland fields and woodland. Mole *Talpa europaea* hills were also present in the improved grassland fields. There was also evidence of recent bird kill with feathers found in the entrances to some of the rabbit burrows. This could have been caused by fox *Vulpes vulpes*, stoat *Mustela erminea* or mink *Mustela vison*. Out of these three species it is most probably stoat, and it is therefore likely that stoats are resident within this warren.

Evidence of deer was found within the young plantation broadleaved woodland south of the survey site.

3.3.9 Summary of protected and notable species

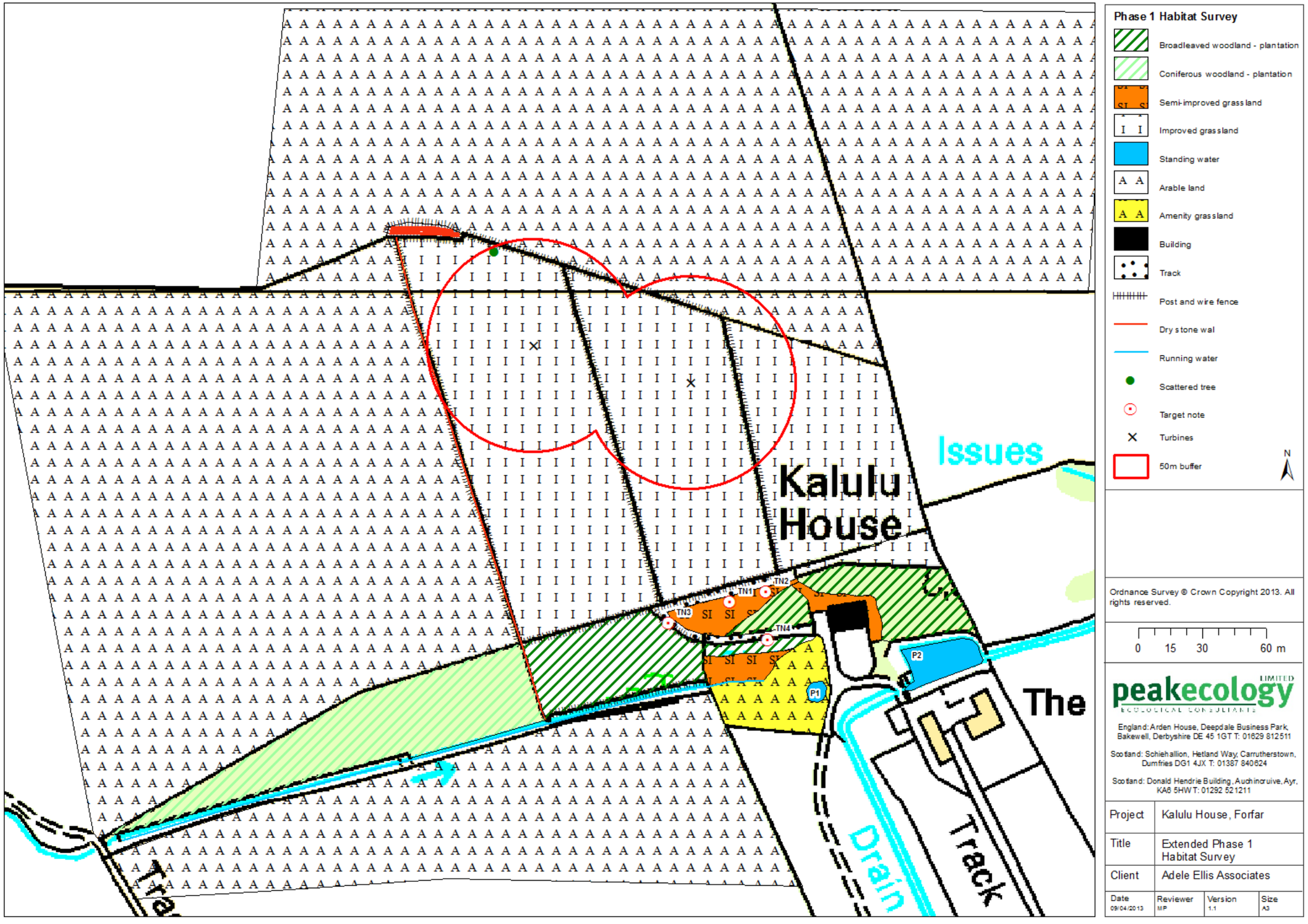
A summary of the protected and notable species located within the site and surrounding area is presented in **Table 5**.

Table 5: Summary of protected and notable species in the field survey and desk study areas

Protected and notable species	Protection	Location
Breeding birds	All breeding birds are protected under the W&CA 1981 (as amended).	Breeding birds are likely to be present within the woodland close to the survey site. Ground nesting birds may use agricultural fields including UK BAP Priority Species such as lapwing.
Bats	Protected under the Conservation (Natural Habitats & c.)	The turbines will be situated in habitat of low quality for bats. However nearby habitats such as

Protected and notable species	Protection	Location
	Regulations 1994 (as amended) and European legislation. UKBAP and LBAP priority species.	woodland edge is likely to be well used by bats for foraging and commuting.
Badger	Protected under the Badgers Act 1992.	No evidence found but historical records suggest they have been present in the area.
Red squirrel	Protected against killing and damage, destruction, obstruction or disturbance to drey under W&CA 1981.	Potential for red squirrel to use nearby woodland although their presence is considered unlikely. Furthermore, no habitat which may be important for red squirrel will be affected.
Reptiles	Common reptiles are protected against killing or injuring via the W&CA 1981.	Some potential for common reptiles to use dry-stone walls and rough grassland.
Amphibians	Great crested newts are protected under the Conservation (Natural Habitats & c.) Regulations 1994 (as amended) and European legislation. Great crested newts are UK BAP and LBAP priority species. Toads are UK BAP priority species	There are two ponds close to the site, although they are sub-optimal breeding areas for great crested newts. Habitats affected by the proposal are highly unlikely to be used by amphibians.
Water Vole	Water vole are protected under the W&CA 1981 (as amended)	Potential for water vole to use nearby burn, although this habitat will not be affected by the proposal.

Figure 1: Extended Phase 1 Habitat Survey Results Map



4 DISCUSSION AND RECOMMENDATIONS

4.1 Designated Sites

Although there is a Special Area of Conservation within 300m of the proposed turbines, the interest features of this designated site, namely Atlantic salmon and freshwater pearl mussel, will not be directly affected by the proposed works and no negative impacts are considered likely.

4.2 Habitats

The habitat that will be directly impacted by the proposed turbine installation is improved grassland fields. This habitat is considered to be of low ecological value with plant species present being common and typical of the habitat type. Furthermore, only a small section of this habitat will be lost and ecological impacts are therefore considered to be low. The construction of the access tracks will result in additional loss of improved grassland habitat and a small area of poor semi-improved grassland. These areas are not considered to be of high ecological or conservation value and the impacts of losing small areas of these habitats are considered to be small.

The surrounding habitats that are considered to be of higher ecological value, including the woodland and waterbodies, will remain unaffected by the proposals. However, in order to ensure there are no indirect impacts to these habitats, any storage of materials or machinery should be on hardstanding off site or within the improved grassland fields. A 5m buffer zone should be maintained along the woodland edge, where no construction activities or storage of materials should take place.

The nearby burn is located approximately 20m south of start of the proposed new access road and as such it should be protected from indirect impacts of the development such as pollution e.g. fuel spillages or loose debris. The water course is a UK and Local (Tayside) BAP Priority and also feeds into the River South Esk SAC.

4.3 Protected and notable species

4.3.1 Birds

All breeding birds are protected under the EC Birds Directive and the Wildlife & Countryside Act 1981. To minimise any potential impact or disturbance to protected breeding birds, if any vegetation clearance is required to facilitate the construction of the turbine, this should be undertaken outside the bird breeding season, i.e. from September and be completed by late February. If breeding birds were found within an area of potential disturbance, including ground-nesting birds in areas where access tracks or turbines are proposed to be located, then an ecologist should be consulted and it is likely that work will have to stop in that area until breeding has finished and chicks have fledged.

In addition to breeding bird concerns, wind turbines can impact bird populations in four possible ways; damage (e.g. collision), displacement, habitat loss and barrier effects. Birds identified during the site visit included lapwing and skylark, both of which are included on the red list of Birds of Conservation Concern (RSPB, 2009a) due to their unfavourable conservation status. The desk

study also identified a number of UK BAP Priority Species and Birds of Conservation Concern within the surrounding area.

The RSPB have produced a report to aid the location of onshore wind farms in Scotland to minimise the impacts to sensitive bird species (Bright et al., 2006). The areas highlighted as sensitive to birds include important migration routes, and important feeding, breeding and roosting sites for birds of conservation concern such as those listed on Annex I of the EU Birds Directive and/or species with known or suspected susceptibility to the effects of wind turbines. The report highlights eighteen widespread species potentially at risk from onshore wind farms including bean goose, peregrine falcon, golden plover and dunlin which have been identified during the desk study as being within 10km of the site. These birds are protected through various legislation such as Schedule 1 of the Wildlife & Countryside Act or are recognised as their population being 'at risk' through non – statutory lists such as Red and Amber Birds of Conservation Concern. However, it is considered that single turbines, located away from sensitive bird areas, result in a minimal risk (RSPB, 2008). Although some of these birds may pass over the area during migration, it is considered that due to the small size of the two turbines and the space of approximately 75m between them there is unlikely to be a detrimental effect on bird populations in the area. Furthermore, the site is not known to lie within an area highlighted as a sensitive bird area using the RSPB Bird Sensitivity Map (Bright et al., 2006). The closest Special Protection Area (SPA), Loch of Kinnordy, which is designated for its numbers of internationally important wintering geese and breeding migratory species, occurs 10.4km away. It is considered unlikely that the survey site lies on a route between important bird sites and therefore, the proposed turbines are not considered to pose a significant threat to sensitive bird species.

The fields within which the turbines are proposed to be located were improved grassland surrounded predominantly by arable fields. Farmland birds recorded in the area such as skylark, yellowhammer and lapwing are listed on the Red List of Birds of Conservation Concern, due to their unfavourable conservation status in the UK and Europe. Research suggests that farmland birds are at lower risk of wind turbine mortality than other groups such as raptors and sea birds (Devereux *et al*. 2008). This work shows no change in the distribution of farmland birds with the construction of wind turbines. Additionally, studies on the displacement of species close to wind turbines have shown that lapwing were not significantly affected by wind turbines and access tracks, and skylark suffer only marginal impacts (RSPB, 2009b). Therefore, it is considered that the location of these wind turbines within improved grassland fields and agricultural setting is unlikely to present a major risk to farmland bird species in the area.

Woodland and scrub favouring birds recorded during the field survey and desk study are unlikely to be impacted by the wind turbine because of their habitat preferences and flight behaviour. These birds, which may cross the site, are likely to fly at a low level and therefore remain unaffected by the turbine blades.

Given the information summarised above, it is considered that the locations of the two wind turbines will result in minimal impacts on birds and as such, no further bird survey work is recommended.

4.3.2 Bats

Bat species and their roosts are fully protected under the Conservation (Natural Habitats & c.) Regulations 1994. Bats are also UK and Local BAP species.

Potential impacts on bats when turbines are located in areas close to roosts or commuting routes as described by Bat Conservation Trust (Hundt, 2012) include:

- Direct collision with blades;
- Barotrauma (mortality due to lung damage by sudden change in air pressure);
- Fragmentation of habitat (due to turbines creating barriers to commuting routes).

The Bat Conservation Trust Good Practice Guidelines (Hundt, 2012) outline the factors to be considered when assessing the potential for a proposed wind turbine site to require further bat survey. These factors include:

- Extent and quality of habitat on and around the site including woodland, linear features, waterways and waterbodies;
- Proximity of the site to a site designated for bats (SSSI or SAC);
- Buildings or other potential roosting structures.

Considering the proposed locations of the two wind turbines, the impacts on local bat populations is considered to be minimal. The turbines are located in the centre of shortly grazed/mown fields which provided little in the way of foraging habitat. Furthermore the field boundaries to the east, west and north of the proposed turbines did not provide good foraging opportunities or links with other good quality habitat in the surrounding area. Therefore it was considered highly unlikely that bats would be flying around these field edges or through the centre of the fields.

Woodland along the southern boundary of the western field provided a good foraging and commuting route, and it was well connected with additional good foraging habitats such as water bodies and woodland in the surrounding area. However, the woodland was over 100m from either turbine and therefore potential impacts to bats were considered to be negligible.

4.3.3 Badger

Badgers *Meles meles* and their setts are protected under the Protection of Badgers Act 1992.

No evidence of badger was found on site or within the surrounding woodlands. As a precautionary measure, any trenches dug should be left with a ramp or sloping end to allow any trapped mammals to escape, and any pipes over 200mm in diameter should be capped off at night. These measures will also ensure any other animals passing through the site at night are adequately protected from becoming trapped.

4.3.4 Reptiles

Slow-worm, viviparous/common lizard, adder and grass snake are protected under Schedule 5 and Section 9 (1 and 5) of the WCA 1981 (as amended) against deliberate or reckless killing and injuring and sale.

There were no records of reptiles within 2km of the site and the habitats were generally considered to be unsuitable for reptiles due to the short-sward grassland providing little in the way of shelter or

foraging opportunities. The rough grassland in which part of the access track will be constructed may provide some opportunities for sheltering reptiles, and as a precaution, it is recommended that construction of the access road in this area is undertaken during the summer months when reptiles are more mobile and able to avoid machinery. Ideally the area should be mown prior to construction to make the area less valuable to reptiles. The footprint of the proposed development is small and unlikely to cause detrimental impacts to populations of reptiles, should they be present.

4.3.5 Other species

Consideration was given to all other protected species during the survey. However, given the nature of the habitats on the site and the lack of existing records for these species, it is considered extremely unlikely that they will be present on the site. Therefore, no further surveys or additional mitigation is recommended.

5 CONCLUSIONS

Table 6 provides an overview of the potential mitigation measures, recommendations and/or further survey work that may be required with regard to the proposals associated with the development.

Table 6: Overview – Potential mitigation measures, recommendations and/or further survey work

Feature	Comments/Recommendations	Further work required
Habitats		
General	Storage of materials and machinery should avoid areas within 5m of woodland or waterbodies.	N/A
Notable species		
Breeding birds	Any vegetation clearance should be undertaken outside the bird breeding season, i.e. from late-August and be completed by late February. Otherwise, clearance should be undertaken under the supervision of an ecologist.	N/A
Bats	Turbines are located a sufficient distance from woodland to have minimal impacts on local bat populations.	N/A
Badger	Trenches should include a ramp to allow any trapped animals to escape and any pipes over 200mm in diameter will need to be capped off at night.	N/A
Reptiles	Access track construction in rough/ semi-improved grassland should ideally take place outside the reptile hibernation period, i.e. between March and October.	N/A

6 REFERENCES

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7 APPENDICES

Appendix A – Site location

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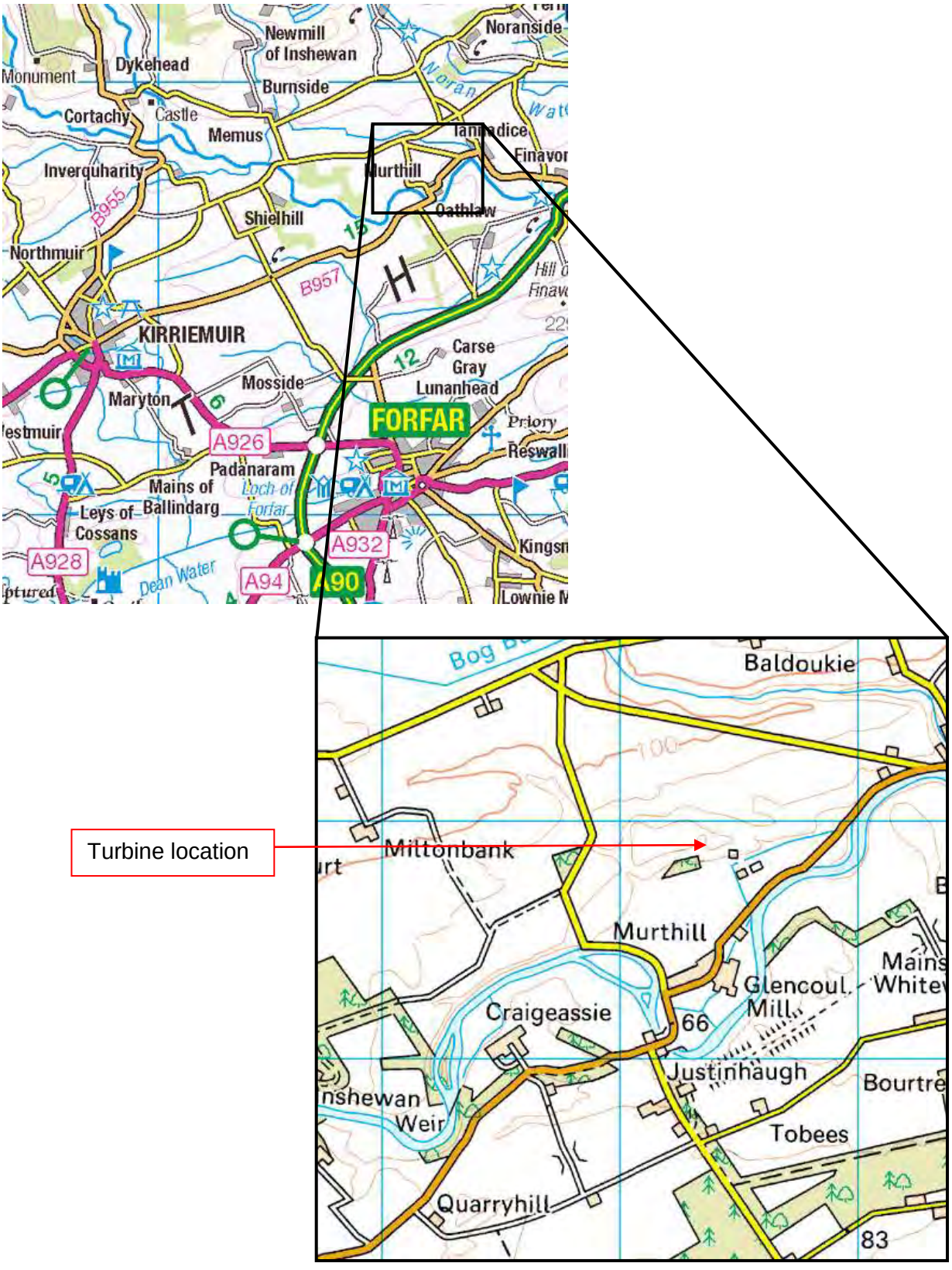
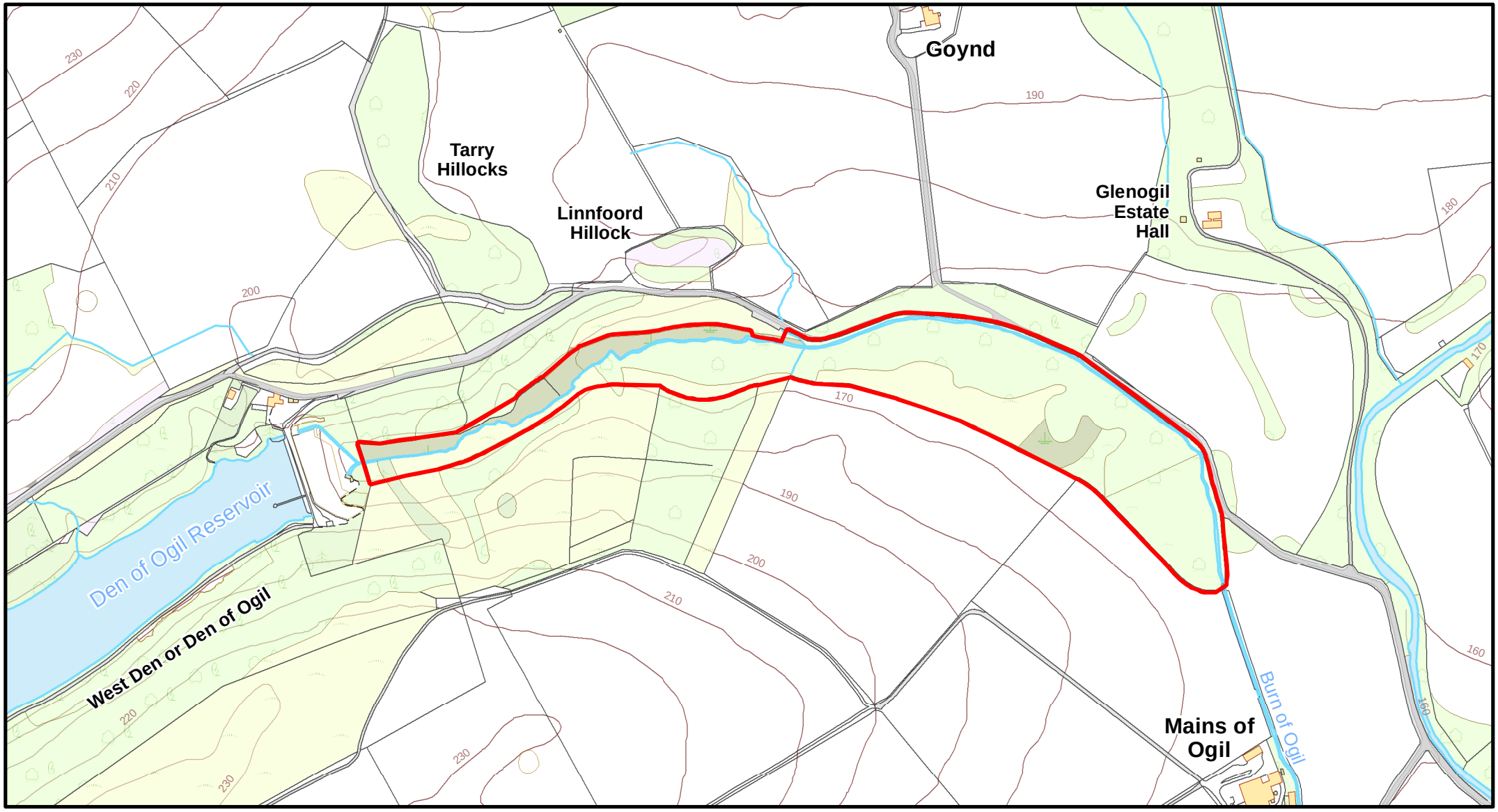


Appendix B – Desk Study Data

Statutory designated site maps and designations within 5km of site – obtained from Scottish Natural Heritage SiteLink.



Den of Ogil

Site of Special Scientific Interest

Site Code: 504

Site boundary follows the inside edge of the boundary line shown

This is an updated representation of the notified site boundary. Any apparent small differences are due to changes to the OS backdrop.

N

Scale 1:5,000

CITATION

DEN OF OGIL
SITE OF SPECIAL SCIENTIFIC INTEREST
Angus

Site Code: 504

NATIONAL GRID REFERENCE: NO 444260

O.S. 1:50,000 SHEET NO: Landranger Series 44
1:25,000 SHEET NO: Explorer Series 389

AREA : 5.86 ha

NOTIFIED NATURAL FEATURES:

Biological: Woodlands: Scrub
Fens: Valley fen

DESCRIPTION:

Den of Ogil lies some 10km north-east of Kirriemuir in the valley of the Burn of Ogil, a tributary of the Noran Water in the foothills of the Grampian Mountains. The site occupies the eastern part of the Den (downstream of Glenogil Reservoir) where it widens to join Glen Ogil. The site is important because of its species-rich plant communities, particularly the fens associated with upwelling springs which drain into the Burn of Ogil, and also for its wet willow (*Salix* sp.) and alder (*Alnus glutinosa*) carr scrub woodland.

Different plant communities form a complex mosaic over much of the site. Tall fen vegetation commonly occurs in the wettest areas, dominated by bottle sedge *Carex rostrata*, in association with other plants such as water horse-tail *Equisetum fluviatile*, marsh cinquefoil *Potentilla palustris*, marsh marigold *Caltha palustris*, ragged robin *Lychnis flos-cuculi*, common valerian *Valeriana officinalis* and wild angelica *Angelica sylvestris*. Slightly drier areas support stands of meadowsweet *Filipendula ulmaria*, occasionally with branched bur-reed *Sparganium erectum*. Areas flushed by spring water generally have a shorter, species-rich sward, again with bottle sedge but also a wide range of other sedges including brown sedge *Carex disticha*, long-stalked yellow sedge *Carex lepidocarpa*, tawny sedge *Carex hostiana* and the nationally scarce lesser tussock sedge *Carex diandra*.

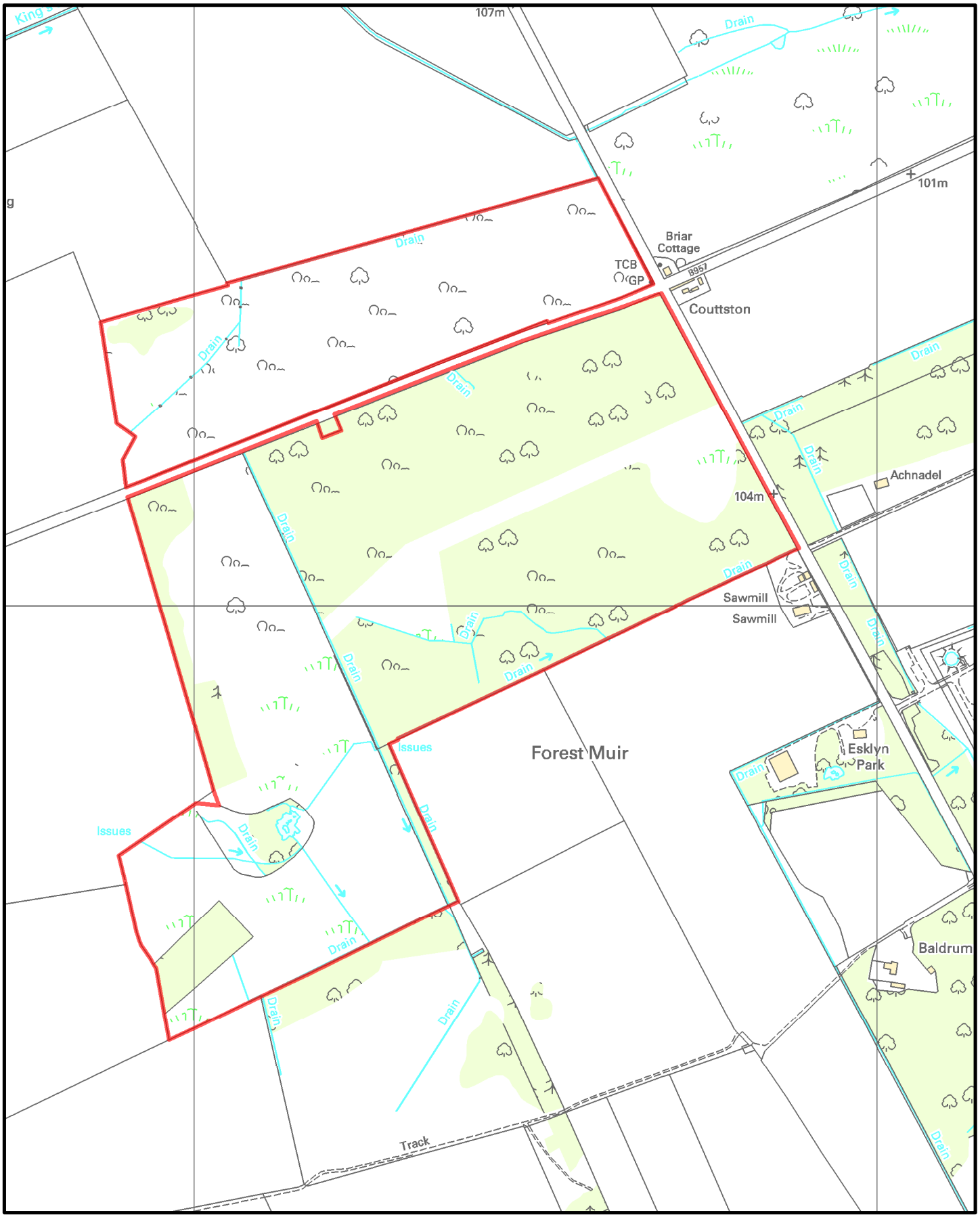
A large proportion of the site is covered with alder and willow carr, much of which was originally planted in an attempt to dry out the area. These areas are still very wet and largely support a wetland ground flora as described above. Some characteristic woodland plants do occur, such as wood anemone *Anemone nemorosa* and woodrush *Luzula sylvatica*, but of particular note is the occurrence of the nationally rare coral-root orchid *Corallorhiza trifida*.

NOTIFICATION HISTORY

Notified under the Wildlife and Countryside Act 1981 on 12 August 1987.
Reviewed under the Nature Conservation (Scotland) Act 2004: 7 March 2008 .

REMARKS:

Measured area of site corrected (from 5.5 hectares).



Forest Muir

Site of Special Scientific Interest

Site Code: 648

Site boundary

This is an updated representation of the notified site boundary. Any apparent small differences are due to changes to the OS backdrop.

N

Scale1:7,500

CITATION

FOREST MUIR
SITE OF SPECIAL SCIENTIFIC INTEREST

Angus

Site code: 648

NATIONAL GRID REFERENCE: NO 423550, NO 422554

OS 1:50,000 SHEET NO: Landranger Series 54
1:25,000 SHEET NO: Explorer Series 389, 381

AREA: 68.56 hectares

NOTIFIED NATURAL FEATURES

Biological : Lowland heathland : Lowland wet heath
Fens : Spring fens

DESCRIPTION

Forest Muir is located approximately 5 km north west of Forfar and 4 km east of Kirriemuir on the undulating central belt of Strathmore. The site is one of the few remaining intact areas of lowland heathland left in Angus. The mosaic of habitats, especially wet heath and spring fens (including flushed grassland) along with acidic grassland, scrub and woodland, supports a particularly rich flora, including several uncommon plants.

Species-rich fen communities occur over a large part of the site where there is flushing from ground water. Typically these contain a wide range of sedges (e.g. dioecious sedge *Carex dioica*, tawny sedge *C. hostiana*, star sedge *C. echinata* and long-stalked yellow sedge *C. lepidocarpa)* in association with other plants such as few-flowered spike-rush *Eleocharis quinqueflora*, bristle club-rush *Isolepis setacea*, devil's-bit scabious *Succisa pratensis* and quaking grass *Briza media*. Lesser butterfly orchid *Platanthera bifolia*, fragrant orchid *Gymnadenia conopsea* and northern marsh orchid *Dactylorhiza purpurella* also occur.

The fen communities grade into both wet heath and drier grassland, forming a mosaic of wet and dry areas in certain places. Heather *Calluna vulgaris* dominates the areas of heath, in association with cross-leaved heath *Erica tetralix*, mat grass *Nardus stricta* bog moss *Sphagnum compactum* and common sedge *Carex nigra*. Bog asphodel *Narthecium ossifragrum* and creeping willow *Salix repens* also occur. The drier areas of grassland are characterised by sweet vernal grass *Anthoxanthum odoratum*, common bent *Agrostis capillaris*, glaucous sedge *C flacca*, carnation sedge *C. panicea* and also creeping willow.

Birch and willow scrub occurs over much of the site, often in association with the wet heath and mire communities. Common twayblade *Listera ovata* and the rare coral-root orchid *Corallorhiza trifida* occur within such areas.

NOTIFICATION HISTORY

First notified under the National Parks and Access to the Countryside Act 1949: 1979

Re-notified under the Wildlife and Countryside Act 1981: 11 May 1988

Notification reviewed under the Nature Conservation (Scotland) Act: 2004:
18 February 2011

REMARKS

Measured area of site corrected (from 68.2 ha).

Conservation Objectives for
River South Esk Special Area of Conservation

To avoid deterioration of the habitats of the qualifying species (listed below) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features; and

To ensure for the qualifying species that the following are maintained in the long term:

- **Population of the species, including range of genetic types for salmon, as a viable component of the site**
- **Distribution of the species within site**
- **Distribution and extent of habitats supporting the species**
- **Structure, function and supporting processes of habitats supporting the species**
- **No significant disturbance of the species**
- **Distribution and viability of freshwater pearl mussel host species**
- **Structure, function and supporting processes of habitats supporting freshwater pearl mussel host species**

Qualifying Species:

- Atlantic salmon
- Freshwater pearl mussel

The site overlaps with Montrose Basin Special Protection Area

RIVER SOUTH ESK SPECIAL AREA OF CONSERVATION (SAC)

Designation date: 17 March 2005

Administrative area: Angus

Qualifying Interests for which the site is designated:

SCIENTIFIC NAME	COMMON NAME
Margaritifera margaritifera	Freshwater pearl mussel
Salmo salar	Atlantic salmon

Non-statutory sites with 5km – obtained from site Scottish Wildlife Trust

Data search explanatory document:

Key explanation and description of wildlife sites data base:

The Wildlife Sites database (WS as was, now LNCS) holds data on all aspects of the site, as collated during the Scottish Wildlife Action Programme (SWAP Project). It identifies site status according to the following values:

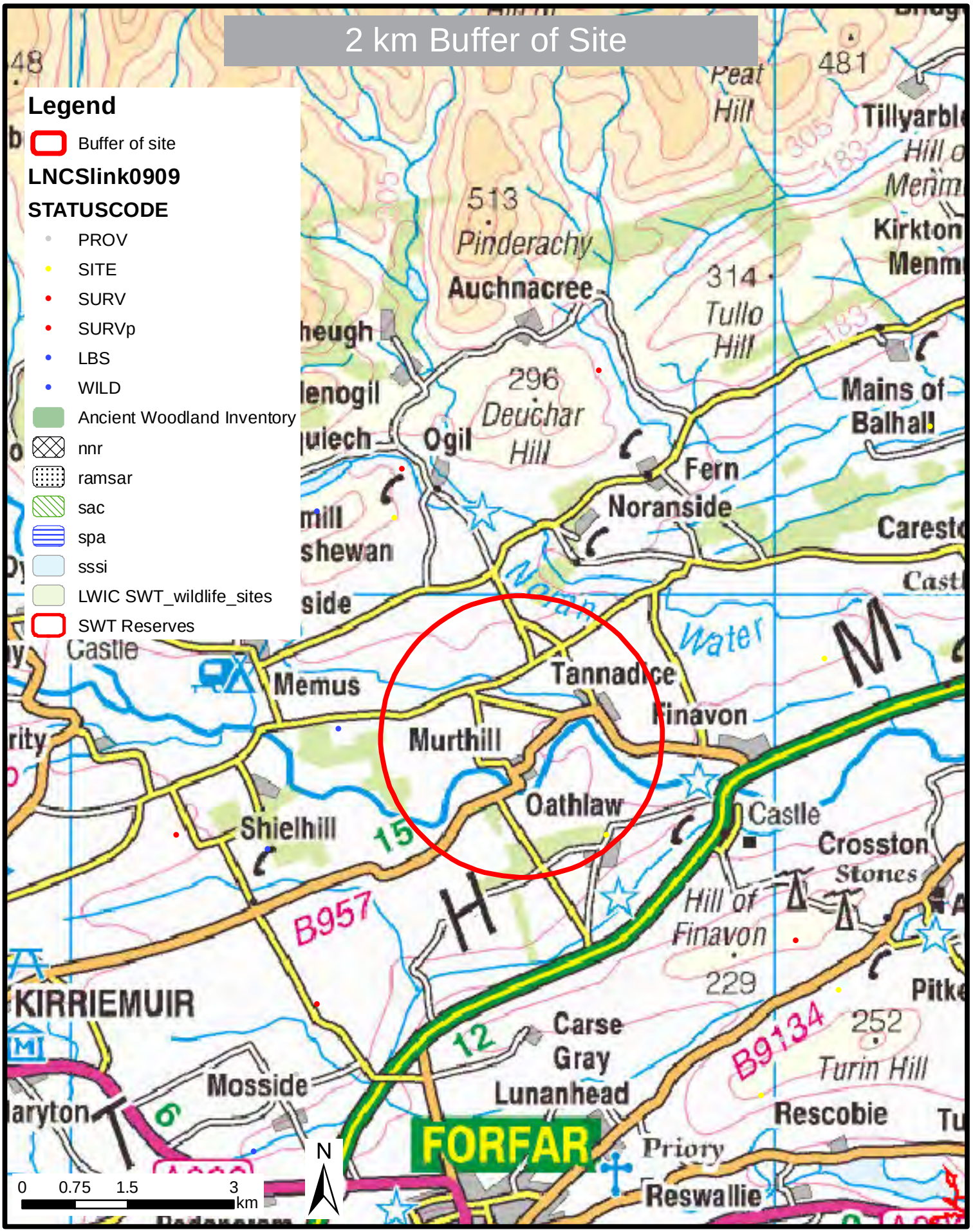
- PROV – Provisional: the site was identified as a potential haven for wildlife by the project, but no further steps were taken. **To be aware only.**
- SURV & SURVp– Surveyed: the site was surveyed after being identified as a potential haven for wildlife. A full survey report should be available including maps and a species list.
- WILD & LBS – Passed Wildlife Site: the site was identified, surveyed and went through a strict assessment procedure. It gained enough points to be passed as a full Wildlife Site. A full survey report should be available including maps and a species list, along with the assessment notes and score.

None of these sites were identified in the 2km buffer around the grid reference NO 463 579. However, two sites were identified just outside the buffer and these details are given below:

NAME: Eskhill
AREA: 59.2
Description: Eskhill is approximately 60 hectares in area and comprises of Downy Birch dominated mature semi-natural woodland with some wet heath understory, semi-improved acid grassland, coniferous plantation and gorse scrub
SITECODE: NO428564
STATUSCODE: WILD

NAME: Auchleuchrie
AREA: 17.1
Description: Auchleuchrie is just over 17 hectares in area and comprises of semi-natural deciduous woodland (dominated by Downy Birch (Betula pubescens)), semi-improved acid grassland and marshy grassland.
SITECODE NO438581
STATUSCODE WILD

No designated sites were found within a 2 or 4 km buffer of the site.



Maggie Keegan
Conservation Officer
Scottish Wildlife Trust
Cramond House
3 Kirk Cramond
Edinburgh EH4 6HZ

Scottish Wildlife Trust

Protected & notable species dataset information – obtained from NBN Gateway

Species records were gathered using a 3km buffer of the site. The data used for this site, was collated by NBN Gateway from the following datasets and providers:

Dataset	Provider
Reptiles and Amphibians Dataset	Biological Records Centre
Scotland Otter Survey Database	Joint Nature Conservation Committee
-	Mammal records from: Atlas of Mammals (1993) and Biological Records Centre
The Scottish Squirrel Database	Scottish Wildlife Trust
Bat Records for Scotland 1970 – 2007	Scottish Natural Heritage
BTO First Atlas of Wintering Birds in Britain and Ireland: 1981/82 – 1983/84	BTO
BTO Second Atlas of Breeding Birds in Britain and Ireland: 1988 – 1991.	BTO
Bird Conservation Targeting Project (BCTP) in the UK, 2006 – 2011	RSPB
Bird Conservation Targeting Project (BCTP) in the UK, archived data (2001 – 2010)	RSPB
RSPB Big Garden Birdwatch winter sightings in the UK in 2008	RSPB
RSPB Big Garden Birdwatch winter sightings in the UK in 2009	RSPB
Swift Inventory of Low-Level Screaming Parties in the UK, 2009 - 2011	RSPB
Swift Inventory of Nest Sites in the UK, 2009 -2011	RSPB

Appendix C –Target Notes and Photographs

Target Note	Description	Photograph
TN 1	Brash/rubble piles within poor semi-improved grassland	
TN 2	Brash pile within poor semi-improved grassland	
TN 3	Water outlet on edge of poor semi-improved grassland	

Target Note	Description	Photograph
TN 4	Mature trees within woodland – some with moderate bat roost potential	

Western field from south-eastern corner

Eastern field from north-western corner

View south-east across improved grassland fields

Multi-stemmed hawthorn along northern boundary

Poor semi-improved grassland

Existing access from Kalulu House

Plantation coniferous woodland

Young plantation woodland forming southern boundary of western field

Plantation woodland to west of Kalulu House

Surrounding arable land

Evidence of rabbit

Evidence of mole

Burn south of site

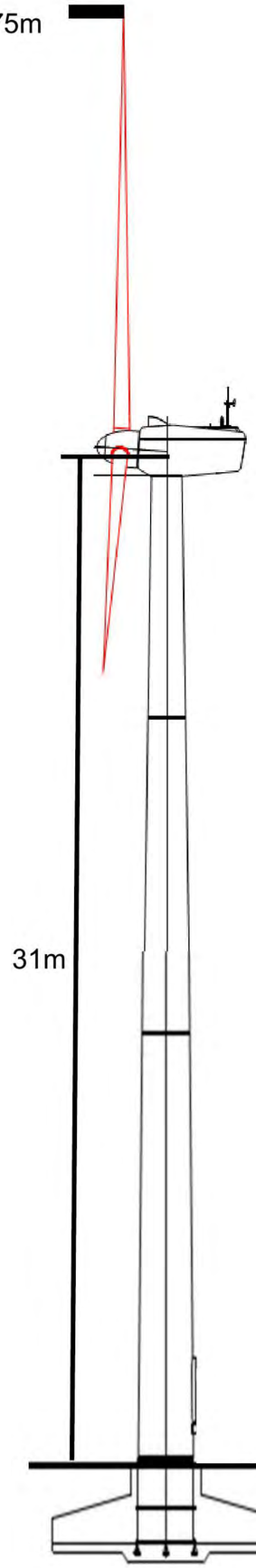
Pond 1

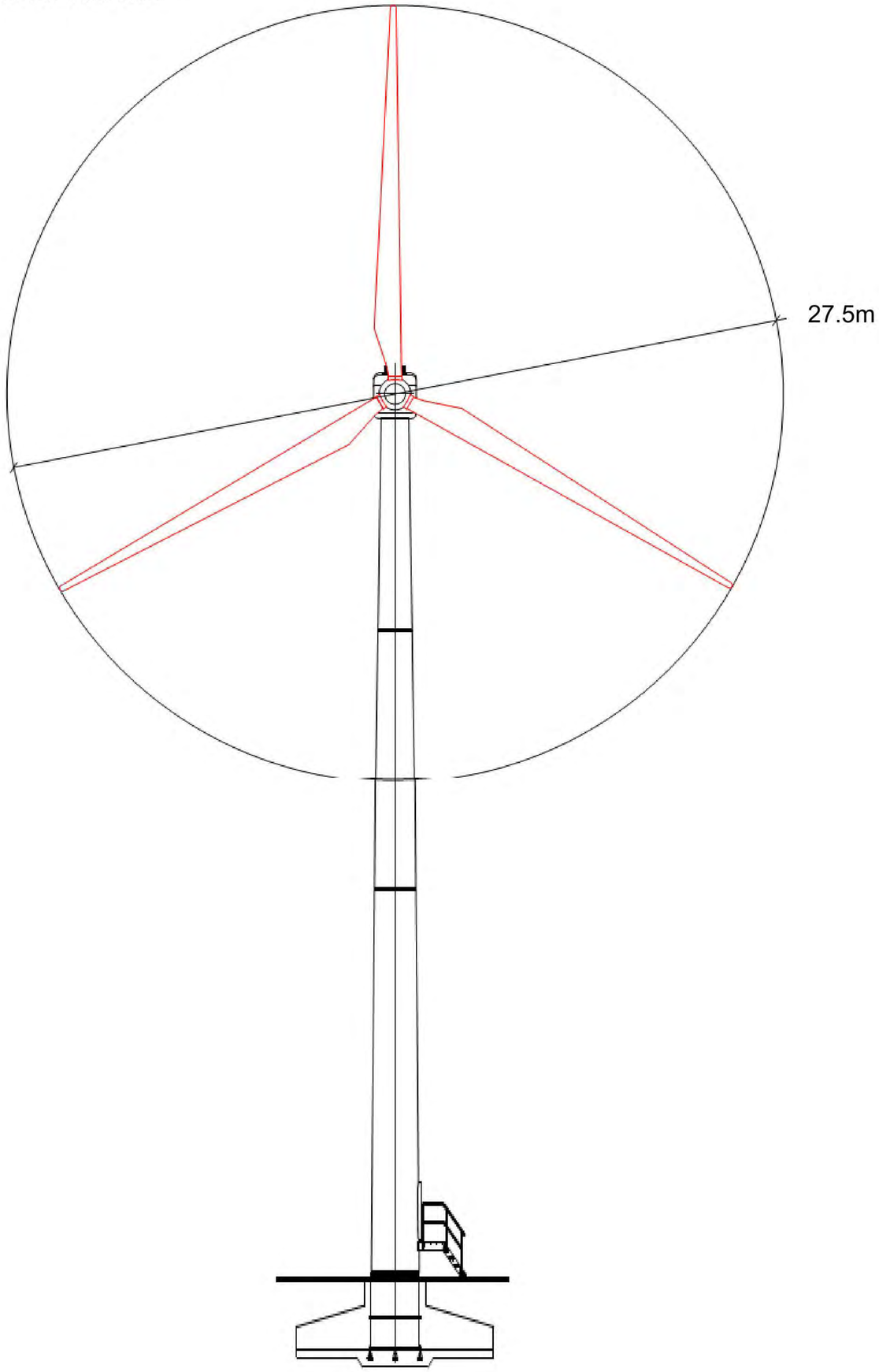
Pond 2

Appendix D – Plant species recorded during the site visit (lists non exhaustive)

Scientific name	Common name
Alnus glutinosa	Alder
Betula sp.	Birch
Cerastium fontanum	Common Mouse-ear
Cirsium vulgare	Spear Thistle
Corylus avellana	Hazel
Crataegus monogyna	Hawthorn
Cynosurus cristatus	Crested Dog's-tail
Cytisus scoparius	Broom
Dactylis glomerata	Cock's-foot
Festuca sp.	Fescue sp.
Fraxinus excelsior	Ash
Galanthus nivalis	Snowdrop
Galium aparine	Cleavers
Geum urbanum	Wood Avens
Hedera helix	Ivy
Heracleum sphondylium	Hogweed
Holcus lanatus	Yorkshire-fog
Holcus mollis	Creeping Soft-grass
Narcissus spp	Daffodil sp
Poa sp	Meadow grass sp
Populus sp.	Poplar
Quercus sp.	Oak
Ranunculus repens	Creeping Buttercup
Rubus fruticosus agg.	Bramble
Rumex sp.	Dock sp.
Sambucus nigra	Elder
Urtica dioica	Common Nettle
Veronica sp.	Speedwell sp

TO BE RAL 9010 - PURE WHITE





REFUSED

ELEVATIONS - KALUL AHOUSE - 1 X 200KW WIND TURBINE

SCALE 1:200 @ A3

Project:		Valid	Manufact.	Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Distance [m]
Kalula House								
	1 New	Yes	SUT	-200	200	27.5	31.0	456

Recommended observation distance: 46 cm

Photo exposed: 06/02/2014 16:00:50
Lens: 75 mm Film: 36x24 mm Pixels: 4912x3264
Eye point: British TM-OSGB36/Airy (GB/IE) East: 346,568 North: 757,648
Wind direction: 228° Direction of photo: 328°
Camera: A
Photo desc.: A A

Created by:
Gaia Wind Ltd
100 Highcraighall Road Port Dundas
GB-GLASGOW G4 9UD G4 9UD
+44 1337 827571
Adele Ellis / whichturbine@btinternet.com

Project:		Valid	Manufact.	Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Distance [m]
Kalula House								
	1 New	Yes	SUT	-200	200	27.5	31.0	478

Recommended observation distance: 46 cm

Photo exposed: 06/02/2014 16:03:16
Lens: 75 mm Film: 36x24 mm Pixels: 4912x3264
Eye point: British TM-OSGB36/Airy (GB/IE) East: 346,529 North: 757,595
Wind direction: 228° Direction of photo: 333°
Software: WindPRO version 2.9.269 Nov 2013
Photo desc.: B B

Created by:
Gaia Wind Ltd
100 Highcraighall Road Port Dundas
GB-GLASGOW G4 9UD G4 9UD
+44 1337 827571
Adele Ellis / whichturbine@btinternet.com

Project:
Kalula House

	Valid	Manufact.	Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Distance [m]
1 New	Yes	SUT	-200	200	27.5	31.0	807

Recommended observation distance: 46 cm
Photo exposed: 06/02/2014 16:10:07
Lens: 75 mm Film: 36x24 mm Pixels: 4912x3264
Eye point: British TM-OSGB36/Airy (GB/IE) East: 347,054 North: 758,257
Wind direction: 228° Direction of photo: 257°
Software: WindPRO version 2.9.269 Nov 2013
Photo desc.: C C

Created by:
Gaia Wind Ltd
100 Highcraighall Road Port Dundas
GB-GLASGOW G4 9UD G4 9UD
+44 1337 827571
Adele Ellis / whichturbine@btinternet.com

Project:		Valid	Manufact.	Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Distance [m]
Kalula House								
	1 New	Yes	SUT	-200	200	27.5	31.0	2,376

Recommended observation distance: 46 cm

Photo exposed: 06/02/2014 16:17:31
Lens: 75 mm Film: 36x24 mm Pixels: 4912x3264
Eye point: British TM-OSGB36/Airy (GB/IE) East: 345,012 North: 760,012
Wind direction: 228° Direction of photo: 147°
Software: WindPRO version 2.9.269 Nov 2013
Photo desc.: D D

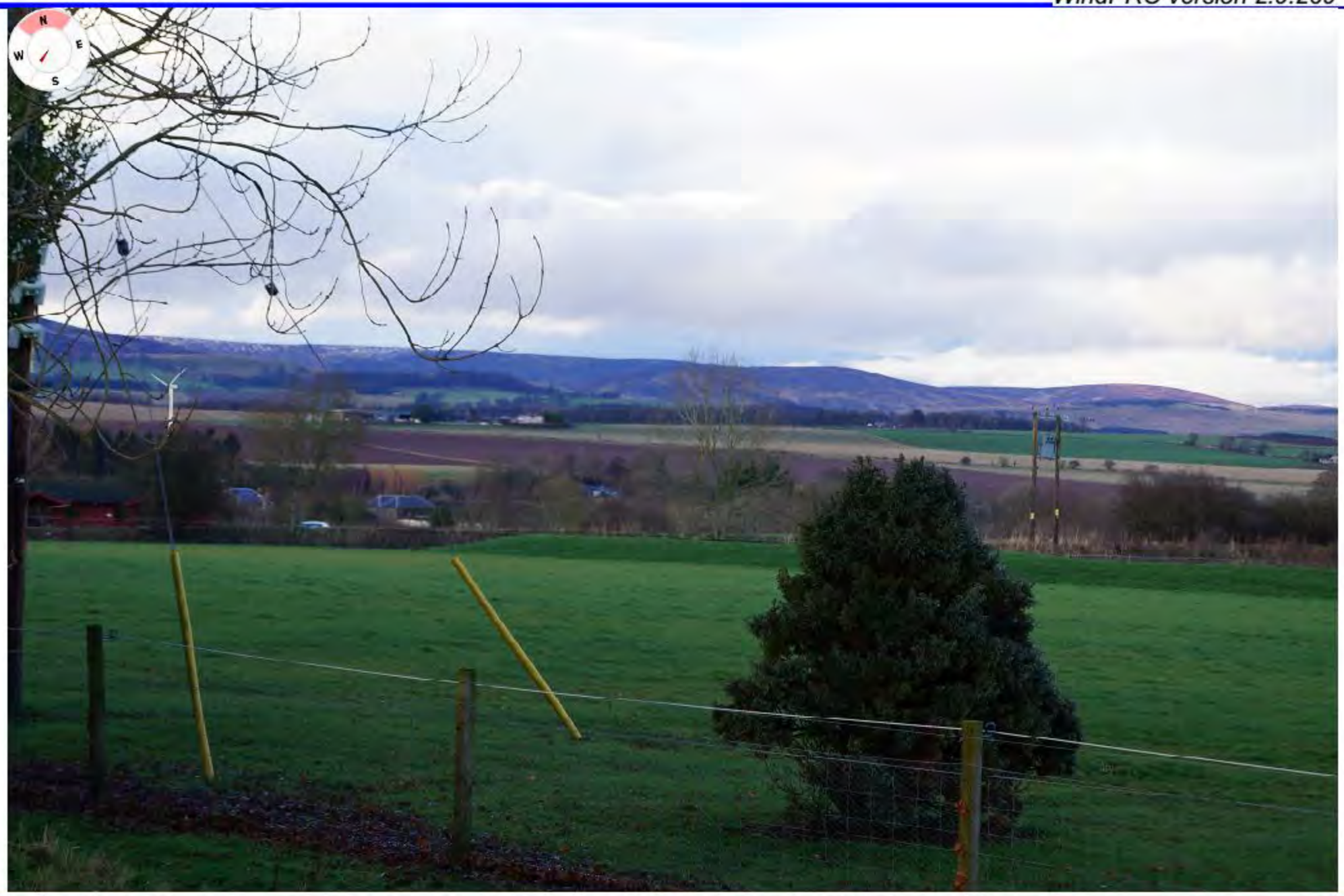
Created by:
Gaia Wind Ltd
100 Highcraighall Road Port Dundas
GB-GLASGOW G4 9UD G4 9UD
+44 1337 827571
Adele Ellis / whichturbine@btinternet.com

Project:
Kalula House

	Valid	Manufact.	Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Distance [m]
1 New	Yes	SUT	-200	200	27.5	31.0	607

Recommended observation distance: 46 cm
Photo exposed: 06/02/2014 16:28:29
Lens: 75 mm Film: 36x24 mm Pixels: 4912x3264
Eye point: British TM-OSGB36/Airy (GB/IE) East: 345,756 North: 757,712
Wind direction: 228° Direction of photo: 58°
Software: WindPRO version 2.9.269 Nov 2013
Photo desc.: E E

Created by:
Gaia Wind Ltd
100 Highcraighall Road Port Dundas
GB-GLASGOW G4 9UD G4 9UD
+44 1337 827571
Adele Ellis / whichturbine@btinternet.com



Project:		Valid	Manufact.	Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Distance [m]
Kalula House								
	1 New	Yes	SUT	-200	200	27.5	31.0	1,280

Recommended observation distance: 46 cm

Photo exposed: 06/02/2014 16:36:23
Lens: 75 mm Film: 36x24 mm Pixels: 4912x3264
Eye point: British TM-OSGB36/Airy (GB/IE) East: 346,279 North: 756,727
Wind direction: 228° Direction of photo: 10°
Camera: F
Photo desc.: F F

Created by:
Gaia Wind Ltd
100 Highcraighall Road Port Dundas
GB-GLASGOW G4 9UD G4 9UD
+44 1337 827571
Adele Ellis / whichturbine@btinternet.com

ITEM 10

Project:
Kalula House, East Murthill, Tannadice, Forfar, DD8 3SF

Description:
Installation of 2 x 100kw small scale Northern Power wind turbines

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17/11/2013 15:45 / 1

Licensed user:

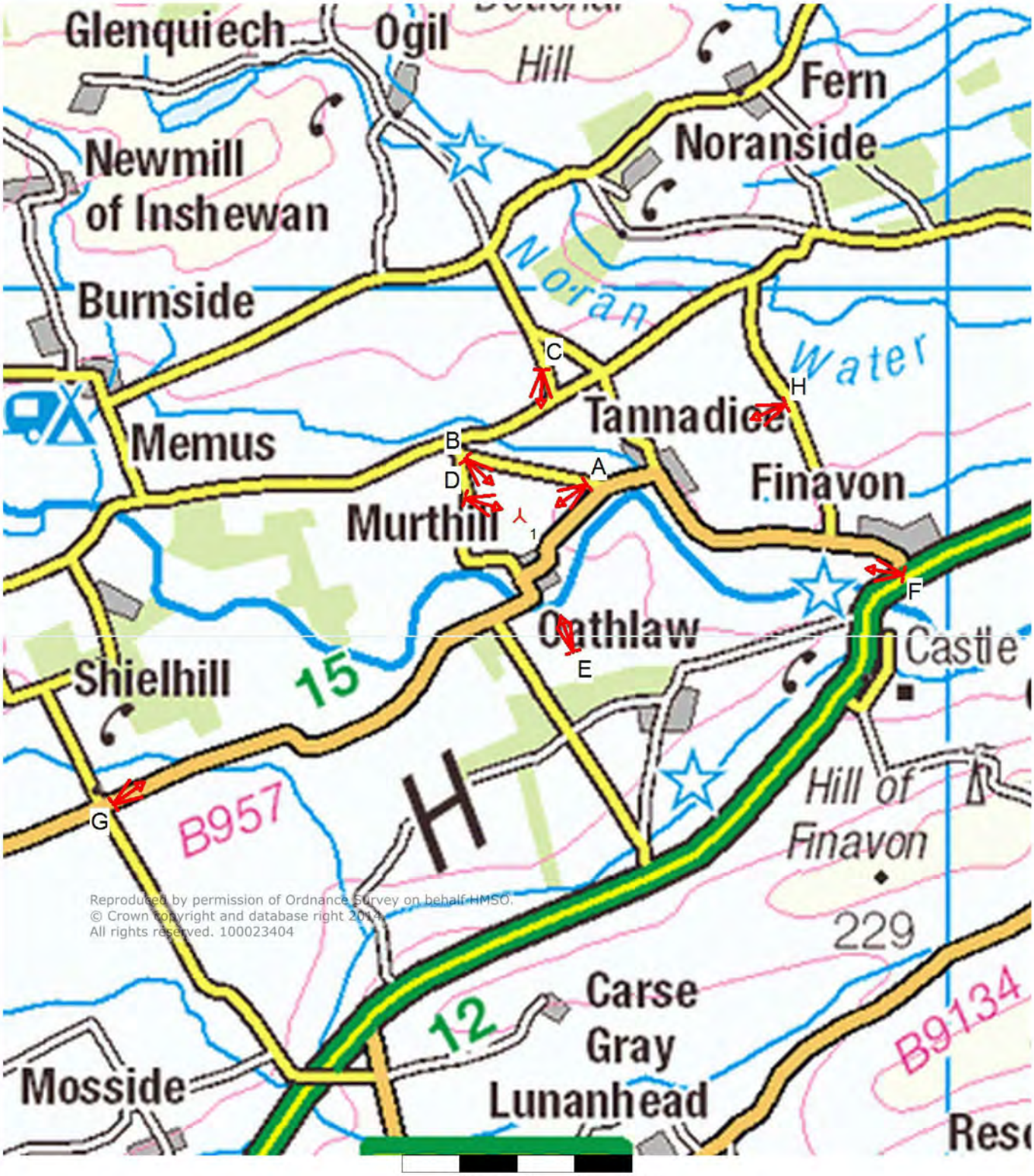
REFUSED

+44 1337 827571
Adele Ellis / whichturbine@btinternet.com

Calculated:
17/11/2013 15:43/2.9.250

VISUAL - Map

Calculation: KALULA WIRES SINGLE



Map: Kalula , Print scale 1:50,000, Map center BN (AIRY) (Normal) East: 346,187 North: 757,392

New WTG Camera

Project:
Kalula House

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13/02/2014 17:11 / 1

Licensed user:

+44 1337 827571
Adele Ellis / whichturbine@btinternet.com

Calculated:
12/02/2014 14:30/2.9.269

VISUAL - Map

Calculation: KALULA HOUSE MONTAGE 2

Map: Bitmap map: NO.tif , Print scale 1:20,000, Map center British TM-OSGB36/Airy (GB/IE) East: 346,033 North: 758,369

New WTG Camera

Project:
Kalula House, East Murthill, Tannadice, Forfar, DD8 3SF

Description:
Installation of 2 x 100kw small scale Northern Power wind turbines

Printed/Page
17/11/2013 15:26 / 1

Licensed user:

REFUSED

+44 1337 827571
Adele Ellis / whichturbine@btinternet.com

Calculated:
17/11/2013 15:23/2.9.250

VISUAL - Map

Calculation: KALULA PHOTOMONTAGE SINGLE

0 250 500 750 1000m

Map: Kalula , Print scale 1:20,000, Map center BN (AIRY) (Normal) East: 346,337 North: 758,056

New WTG Camera

DuthieNG

From: AkroydL
Sent: 13 May 2014 17:20
To: DuthieNG
Cc: ThomsonSD
Subject: 13/01067/FULL - Erection of Wind Turbine, West of Kalulu House, East Murthill, Forfar

Neil,

13/01067/FULL
Erection of Wind Turbine
West of Kalulu House, East Murthill, Forfar

I refer to the above application and can advise that I have visited the site and seen the submitted information.

I understand that the Kalulu House is owned and occupied by the applicant and that both Kamba Cottage and Nantusi Cottage are owned by the applicant and occupied as holiday accommodation only.

The submitted information therefore indicates that the proposed turbine does not exceed the recognised noise limits for this type of development.

I would therefore not object to this proposal subject to the following conditions:

1. The rating level of noise immissions from the wind turbine (including the application of any tonal penalty) when determined in accordance with the attached Guidance Notes (to this condition), shall not exceed at any property lawfully existing at the date of this planning permission:

   a) L_{A90} 35dB (A) at wind speeds up to 10 m/s at 10m height at any other location.

   Where the occupiers of a property have a financial interest in the development, the absolute lower limit of the above noise levels may be increased to 45dB (A)

   The developer shall, prior to the commencement of the development, satisfy the planning authority that the following properties have a financial interest in the development;

   1) Kalulu House, East Murthill, Forfar
   2) Kamba Cottage, East Murthill, Forfar
   3) Nantusi Cottage, East Murthill, Forfar

   Should the occupiers of these properties, at any time, no longer have a financial interest in the development then the noise levels shall revert to those referred to in condition 1(a) above.

   For the avoidance of doubt "Financial Interest" is defined as either:-

   (i) owning, or having a share in ownership, of the land on which the turbine is to be sited;
   (ii) leasing the land on which the turbine is sited; which lease shall be for a period exceeding 20 years; or

(iii) being a share holder or owner of the applicant (or their successors as operators of the wind turbine)

2. Prior to the commencement of development the make and model of the turbine selected for use in the development shall be submitted for the written approval of the Planning Authority. In the event that any turbine other than the candidate turbine is selected for use the developers submission shall be accompanied by any supporting information considered necessary by the Planning Authority. Once approved all turbines shall be operated and maintained in accordance with the approved specification.

3. The wind turbine operator shall continuously log power production, wind speed and wind direction, all in accordance with Guidance Note 1(d). This data shall be retained for a period of not less than 24 months. The wind turbine operator shall provide this information in the format set out in Guidance Note 1(e) to the Local Planning Authority on its request, within 14 days of receipt in writing of such a request.

4. No electricity shall be exported until the wind turbine operator has submitted to the Local Planning Authority for written approval a list of proposed independent consultants who may undertake noise compliance measurements in accordance with this permission. Amendments to the list of approved consultants shall be made only with the prior written approval of the Local Planning Authority.

5. Within 21 days from receipt of a written request from the Local Planning Authority following a complaint to it from an occupant of a dwelling alleging noise disturbance at that dwelling, the wind turbine operator shall, at its expense, employ a consultant approved by the Local Planning Authority to assess the level of noise immissions from the wind turbine at the complainant's property in accordance with the procedures described in the attached Guidance Notes. The written request from the Local Planning Authority shall set out at least the date, time and location that the complaint relates to and any identified atmospheric conditions, including wind direction, and include a statement as to whether, in the opinion of the Local Planning Authority, the noise giving rise to the complaint contains or is likely to contain a tonal component.

6. The assessment of the rating level of noise immissions shall be undertaken in accordance with an assessment protocol that shall previously have been submitted to and approved in writing by the Local Planning Authority. The protocol shall include the proposed measurement location identified in accordance with the Guidance Notes where measurements for compliance checking purposes shall be undertaken, whether noise giving rise to the complaint contains or is likely to contain a tonal component, and also the range of meteorological and operational conditions (which shall include the range of wind speeds, wind directions, power generation and times of day) to determine the assessment of rating level of noise immissions. The proposed range of conditions shall be those which prevailed during times when the complainant alleges there was disturbance due to noise, having regard to the written request by the Local Planning Authority to investigate a complaint, and such others as the independent consultant considers likely to result in a breach of the noise limits.

7. The wind turbine operator shall provide to the Local Planning Authority the independent consultant's assessment of the rating level of noise immissions undertaken in accordance with the Guidance Notes within 2 months of the date of the written request of the Local Planning Authority for compliance measurements to be undertaken, unless the time limit is extended in writing by the Local Planning Authority. The assessment shall include all data collected for the purposes of undertaking the compliance measurements, such data to be provided in the format set out in Guidance Note 1(e) of the Guidance Notes. The instrumentation used to undertake the measurements shall be calibrated in accordance with Guidance Note 1(a) and certificates of calibration shall be submitted

to the Local Planning Authority with the independent consultant's assessment of the rating level of noise immissions.

8. Where a further assessment of the rating level of noise immissions from the wind turbine is required pursuant to Guidance Note 4(c), the wind turbine operator shall submit a copy of the further assessment within 21 days of submission of the independent consultant's assessment pursuant to condition 8 above unless the time limit has been extended in writing by the Local Planning Authority.

9. Prior to the commencement of development a mitigation scheme to address any impacts caused by shadow flicker shall be submitted for the written approval of the Planning Authority. Once approved the operation of the wind farm shall take place in accordance with the scheme unless the Planning Authority gives written consent to any variation. For the avoidance of doubt the mitigation scheme shall apply to all sensitive receptors including all residential properties and office buildings within 10 rotor diameters of a turbine.

10. That in the event of a pollution incident or interruption to supply, caused by the wind farm development, affecting or likely to affect any private water supply, the wind turbine operator shall provide an immediate temporary supply to those affected until permanent mitigation can be effected to the satisfaction of the Planning Authority. Any replacement supply shall be of a quality to meet the private water supplies (Scotland) Regulations 1992 or any other appropriate Regulation in force at the time. In any case a permanent replacement supply or mitigation measures shall be provided no later than one month after the supply is first affected.

Guidance Notes for Noise Conditions

These notes are to be read with and form part of the noise condition. They further explain the condition and specify the methods to be employed in the assessment of complaints about noise immissions from the wind farm. The rating level at each integer wind speed is the arithmetic sum of the wind farm noise level as determined from the best-fit curve described in Guidance Note 2 of these Guidance Notes and any tonal penalty applied in accordance with Guidance Note 3. Reference to ETSU-R-97 refers to the publication entitled "The Assessment and Rating of Noise from Wind Farms" (1997) published by the Energy Technology Support Unit (ETSU) for the Department of Trade and Industry (DTI).

Guidance Note 1

(a) Values of the LA90,10 minute noise statistic should be measured at the complainant's property, using a sound level meter of EN 60651/BS EN 60804 Type 1, or BS EN 61672 Class 1 quality (or the equivalent UK adopted standard in force at the time of the measurements) set to measure using the fast time weighted response as specified in BS EN 60651/BS EN 60804 or BS EN 61672-1 (or the equivalent UK adopted standard in force at the time of the measurements). This should be calibrated in accordance with the procedure specified in BS 4142: 1997 (or the equivalent UK adopted standard in force at the time of the measurements). Measurements shall be undertaken in such a manner to enable a tonal penalty to be applied in accordance with Guidance Note 3.

(b) The microphone should be mounted at 1.2 – 1.5 metres above ground level, fitted with a two-layer windshield or suitable equivalent approved in writing by the Local Planning Authority, and placed outside the complainant's dwelling. Measurements should be made in "free field" conditions. To achieve this, the microphone should be placed at least 3.5 metres away from the building facade or any reflecting surface except the ground at the approved measurement location. In the event that the consent of the complainant for access to his or her property to undertake compliance measurements is withheld, the wind farm operator shall submit for the written approval of the Local Planning Authority details of the proposed alternative representative

measurement location prior to the commencement of measurements and the measurements shall be undertaken at the approved alternative representative measurement location.

(c) The LA90,10 minute measurements should be synchronised with measurements of the 10-minute arithmetic mean wind and operational data logged in accordance with Guidance Note 1(d), including the power generation data from the turbine control systems of the wind farm.

(d) To enable compliance with the conditions to be evaluated, the wind farm operator shall continuously log arithmetic mean wind speed in metres per second and wind direction in degrees from north at hub height for each turbine and arithmetic mean power generated by each turbine, all in successive 10-minute periods. Unless an alternative procedure is previously agreed in writing with the Planning Authority, this hub height wind speed, averaged across all operating wind turbines, shall be used as the basis for the analysis. All 10 minute arithmetic average mean wind speed data measured at hub height shall be 'standardised' to a reference height of 10 metres as described in ETSU-R-97 at page 120 using a reference roughness length of 0.05 metres . It is this standardised 10 metre height wind speed data, which is correlated with the noise measurements determined as valid in accordance with Guidance Note 2, such correlation to be undertaken in the manner described in Guidance Note 2. All 10-minute periods shall commence on the hour and in 10- minute increments thereafter.

(e) Data provided to the Local Planning Authority in accordance with the noise condition shall be provided in comma separated values in electronic format.

(f) A data logging rain gauge shall be installed in the course of the assessment of the levels of noise immissions. The gauge shall record over successive 10-minute periods synchronised with the periods of data recorded in accordance with Note 1(d).

Guidance Note 2

(a) The noise measurements shall be made so as to provide not less than 20 valid data points as defined in Guidance Note 2 (b)

(b) Valid data points are those measured in the conditions specified in the agreed written assessment protocol, but excluding any periods of rainfall measured in the vicinity of the sound level meter. Rainfall shall be assessed by use of a rain gauge that shall log the occurrence of rainfall in each 10 minute period concurrent with the measurement periods set out in Guidance Note 1. In specifying such conditions the Local Planning Authority shall have regard to those conditions which prevailed during times when the complainant alleges there was disturbance due to noise or which are considered likely to result in a breach of the limits.

(c) For those data points considered valid in accordance with Guidance Note 2(b), values of the LA90,10 minute noise measurements and corresponding values of the 10- minute wind speed, as derived from the standardised ten metre height wind speed averaged across all operating wind turbines using the procedure specified in Guidance Note 1(d), shall be plotted on an XY chart with noise level on the Y-axis and the standardised mean wind speed on the X-axis. A least squares, "best fit" curve of an order deemed appropriate by the independent consultant (but which may not be higher than a fourth order) should be fitted to the data points and define the wind farm noise level at each integer speed.

Guidance Note 3

(a) Where, in accordance with the approved assessment protocol, noise immissions at the location or locations where compliance measurements are being undertaken contain or are likely to contain a tonal component, a tonal penalty is to be calculated and applied using the following rating procedure.

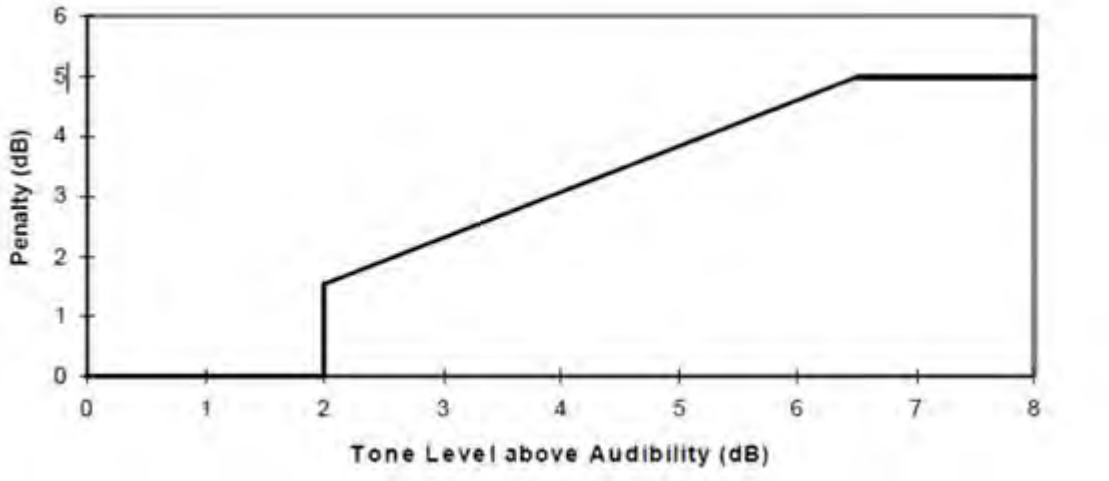
(b) For each 10 minute interval for which LA90,10 minute data have been determined as valid in accordance with Guidance Note 2 a tonal assessment shall be performed on noise immissions during 2 minutes of each 10 minute period. The 2 minute periods should be spaced at 10 minute intervals provided that uninterrupted uncorrupted data are available ("the standard procedure"). Where uncorrupted data are not available, the first available uninterrupted clean 2 minute period out of the affected overall 10 minute period shall be selected. Any such deviations from the standard procedure, as described in Section 2.1 on pages 104-109 of ETSU-R-97, shall be reported.

(c) For each of the 2 minute samples the tone level above or below audibility shall be calculated by comparison with the audibility criterion given in Section 2.1 on pages 104-109 of ETSU-R-97.

(d) The tone level above audibility shall be plotted against wind speed for each of the 2 minute samples. Samples for which the tones were below the audibility criterion or no tone was identified, a value of zero audibility shall be used.

(e) A least squares "best fit" linear regression line shall then be performed to establish the average tone level above audibility for each integer wind speed derived from the value of the "best fit" line at each integer wind speed. If there is no apparent trend with wind speed then a simple arithmetic mean shall be used. This process shall be repeated for each integer wind speed for which there is an assessment of overall levels in Guidance Note 2.

(f) The tonal penalty is derived from the margin above audibility of the tone according to the figure below.



Guidance Note 4

(a) If a tonal penalty is to be applied in accordance with Guidance Note 3 the rating level of the turbine noise at each wind speed is the arithmetic sum of the measured noise level as determined from the best fit curve described in Guidance Note 2 and the penalty for tonal noise as derived in accordance with Guidance Note 3 at each integer wind speed within the range specified by the agreed written assessment protocol.

(b) If no tonal penalty is to be applied then the rating level of the turbine noise at each wind speed is equal to the measured noise level as determined from the best fit curve described in Guidance Note 2.

(c) In the event that the rating level is above the limit(s) set out in the Tables attached to the noise conditions or the noise limits for a complainant's dwelling, the independent consultant shall undertake a further assessment of the rating level to correct for background noise so that the rating level relates to wind turbine noise immission only.

(d) The wind farm operator shall ensure that all the wind turbines in the development are turned off for such period as the independent consultant requires to undertake the further assessment. The further assessment shall be undertaken in accordance with the following steps:

(e). Repeating the steps in Guidance Note 2, with the wind farm switched off, and determining the background noise (L3) at each integer wind speed within the range requested by the Local Planning Authority in its written request and the approved protocol.

(f) The wind farm noise (L1) at this speed shall then be calculated as follows where L2 is the measured level with turbines running but without the addition of any tonal penalty:

$$L_1 = 10 \log\left[10^{L_2/10} - 10^{L_3/10}\right]$$

(g) The rating level shall be re-calculated by adding arithmetically the tonal penalty (if any is applied in accordance with Note 3) to the derived wind farm noise L1 at that integer wind speed.

(h) If the rating level after adjustment for background noise contribution and adjustment for tonal penalty (if required in accordance with note 3 above) at any integer wind speed lies at or below the values set out in the Tables attached to the conditions or at or below the noise limits approved by the Local Planning Authority for a complainant's dwelling then no further action is necessary. If the rating level at any integer wind speed exceeds the values set out in the Tables attached to the conditions or the noise limits approved by the Local Planning Authority for a complainant's dwelling then the development fails to comply with the conditions.

Louise Akroyd | Environmental Health Officer | Angus Council | Communities | Regulatory Protective & Prevention Services | County Buildings, Market Street, Forfar, DD8 3WE, Tel: (01307) 473382

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SCALE 1:225,000 @ A3

TURBINES

PLANNING

SCREENING/SCOPING

PASSED

LAND AT KALULA HOUSE, EAST MURTHILL, FORFAR DD8 3SF

CUMULATIVE BASE PLAN

REFUSED

ae associates

ITEM 14

SUPPORTING STATEMENT

PROPOSAL TO INSTALL A SINGLE WIND TURBINE AND ASSOCIATED INFRASTRUCUTRE

ON LAND NORTH-WEST OF KALULU HOUSE, EAST MURTHILL, FORFAR, DD8 3SF

TURBINE GRID CO-ORDINATES:
1) 346288, 758008

On Behalf of
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1 INTRODUCTION

1.1 Background

This Statement has been prepared to support the planning application submitted to Angus Council for the erection of a single wind turbine on land north-west of Kalulu House, East Murthill, Forfar, DD8 3SF, as well as associated infrastructure. The candidate turbine for this project is a Generation SUT 200kw. This turbine has the following specifications and measurements:

- 44.75m height to blade tip;
- 31m hub height;
- 27.5m rotor diameter
- 3-bladed design; and
- 200kW generating capacity.

In line with standard planning conditions, 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.

1.2 The Application Site

The proposed turbine footprint is to be centred on NGR co-ordinates: 346288, 758008.

It is proposed for the wind turbine to be located within an area of agricultural land situated circa 240m to the north-west of Kalulu House. The chosen site lies in the region of 482m from the B957 and approximately 390m from an unclassified public road to the north and 425m from a further unclassified public road to the west. Tannadice lies in approximately 1.17km to the east with Finavon and the A90 lying in the region of 3.25km to the south east.

The site's immediate surroundings are rural but not remote, owing to the number of settlements within 5km, with small spasmodic clusters of residential properties and farms throughout the area. There is also a substantial road network in the area, further reducing the area's remote character.
The footprint of the turbine bases will be small in comparison to the field acreage and current use of the land can continue within the area without disruption to the current practice.

At this location, there is scope to accommodate an appropriately sited wind development of this scale without compromising the character of the surrounding landscape. This proposal is a scaled down version of previous applications whereby there were two turbines to be sited within the landscape of similar or higher heights. In order to alleviate the perceived visual and landscape impact we have reassessed the site to locate a single structure.

The proposed site does not fall within a site designated for natural heritage, scientific, historic or archaeological interest.

1.3 Site Identification

An investigation into the possibility of erecting a wind energy development on land near Kalulu House was initiated at the beginning of 2013. The feasibility work carried out paid cognisance to particular technical, environmental and aesthetic issues.

In technical terms, a number of factors were initially considered which included:

- Topography – the steepness of the land determines which parts of the site are most suitable for erecting a turbine;
- Existing infrastructure – local roads, Rights of Way, overhead or underground services, etc., that pass in close proximity to the Application Site, or through it, would require to be protected or safeguarded during construction and in the unlikely event of a structural failure during operation;

- Access – the means of accessing the Application Site via the local road network can influence the size of turbine which can be accommodated;
- Grid connection capacity and location – the means of carrying the power off-site and the electrical power that can be accommodated by the grid network in the area; and
- Proximity to housing – to safeguard the amenity of nearby properties from potentially intrusive effects of the turbine, both visually and noise related.

In environmental terms, the capacity of the Application Site may be further affected by areas of sensitivity, which may limit or even preclude development. Issues considered at the Application Site included:

- Ecology and ornithology – valuable habitats and protected species of plants, animals and birds that may be present on the site, including the flight path of birds and bats;
- Cultural heritage – archaeological features that may be present on the site; and
- Other features – field/property boundaries, drainage ditches/watercourses.

In landscape and visual terms, the capacity of the Application Site relates to its ability to accommodate such structures as wind turbines without creating unacceptable effects on the physical fabric of the site itself, on the character of the surrounding landscape and on views from surrounding areas. A number of landscape and visual design objectives were set out to guide the design process, as follows:

- Turbine positions within the site should respond to prevailing wind resource;
- Turbine positions within the site should relate to landform features, contours and boundaries in order to provide a landscape basis for a wind energy development;
- The Development should respond to the scale of the landform and be appropriate for the overall landscape scale;
- The Development should respond to the local landscape context so that when it is seen, it forms a positive image, with a clear rationale for the turbines' positions, particularly from key local receptors;
- The turbines should be sited as far from local residential properties as practicable, whilst avoiding topographical constraints and seeking to minimise environmental effects on the wider landscape; and
- The overall visual intrusiveness of the Development should be minimised.

Consideration was given to having the turbines further to the north, with the foundations directly adjacent to the field boundary. This scenario, as well as increasing cabling and access track costs, would involve greater visual impact and height within the landscape, owing to the turbines standing on a higher elevation of land.

Consideration was also given to having the turbines further to the south in the field in question which, although would have lower associated construction costs, would reduce the quality of wind resource available to the project thus reducing the efficiency of the turbines, would introduce turbulence due to proximity to buildings, and could potentially impact on residential amenity of the nearest residences.

The precise turbine positioning and ancillary infrastructure configuration was finalised after considering the merits of above (now rejected) locations.

However subsequent assessments have been undertaken due to potential noise and landscape impact of two structures. It has therefore been assessed that the proposed site, further to the north west of the field, away from woodland which may house habitats for birds and bats as per the submitted ecology report, with a further separation distance from residential properties and being a single structure rather than two structures has been determined as a more viable option in planning terms.

1.4 The Proposed Development

This feasibility work resulted in a screening request being submitted to Angus Council in January 2013 for two wind turbines to be erected on Land at Kalula House. The Screening Opinion received from the Council stated that EIA would not be required for such a proposal at this location.

The Application consists of a single wind turbine and associated infrastructure, including the turbine foundations, to generate electricity for use at Kalulu House, a residence and B&B business. Any excess electricity that the machines will generate will be sold to the national grid. Descriptions of each component of the Development are found below.

1.5 Wind Turbine

The Applicant has identified a candidate turbine, the Generation SUT 200kW, as that relevant to the project.

The blades are manufactured from glass fibre reinforced plastic and the hub from steel. The nacelle houses the generator. The finish and colour of the turbine is as per stated on the elevation plan.

The 200kW wind turbine is estimated to generate in the region of 530,000 KWh of CO_2-free energy per annum.This figure is provided by applying the mean wind speed data for the site of 6.5m/s.

1.6 Turbine Foundations

The form of the wind turbine foundations will depend on site geology, turbine location, and the turbine manufacturer's ground-stiffness foundation criteria. Preliminary site survey work will be undertaken prior to construction to determine the condition of the ground and which type of turbine foundations will be suitable on site. The foundation will take the form of reinforced concrete which will include a steel support plinth to suit the base profile of the tower section. Foundations will be typically 10 m x 10 m.

1.7 Crane Hardstanding

A small area of hardstanding immediately adjacent to the turbine footprints will be required to provide a stable base on which to lay down the turbine components ready for assembly and erection (see accompanying Location Map), and to site the crane necessary to lift the tower sections, the nacelle and rotor components into place.

1.8 Access

Access to the site by HGVs during the construction phase e.g. delivery of the turbine, as well as for routine maintenance will be via the B957 directly into the access road leading to Kalula House. Existing roads and tracks will be upgraded and utilised where required with a final section of track being constructed leading to the development site as per the submitted plans.

Once operational, minimal access to the site will be required for routine maintenance and the proposal will therefore have a minimal impact on traffic levels in the area.

1.9 Development Timeline – Construction, Operation and Decommissioning

Construction

The candidate turbine is designed to have an operational life of 25 years. It can, dependent on weather conditions, take up to two months to build. The construction process will consist of the following principal activities:

- Site survey and preparation;
- Upgrading of existing access tracks where required;
- Install any temporary storage facilities;
- Excavate turbine foundations and construct the turbine and transformer bases;

- Excavate cable trench and lay the power and instrumentation cables;
- Install the grid connection;
- Wind turbine component deliveries and turbine erection;
- Testing and commissioning the wind turbines; and
- Site restoration.

Some of the site preparation work would be included in a site enabling works contract and would be implemented before the main contractor is given access to the site. Most of these operations would be carried out concurrently, although predominantly in the order identified, in order to minimise the overall length of the construction programme. Any site restoration would be programmed and carried out to allow restoration of disturbed areas as early as possible and in a progressive manner.

Operation

Wind turbine operations would be overseen by suitably qualified local contractors who would visit the site regularly to carry out maintenance. The following turbine maintenance would be carried out along with any other maintenance required by the manufacturer's specifications:

- Initial service;
- Routine maintenance and servicing;
- Blade inspections.

Routine servicing would take place once a year with a main service at twelve monthly intervals. Servicing would include the performance of tasks such as maintaining bolts to the required torque, inspection of blade pitch and braking mechanism, greasing of bearings, inspections of welds and structural integrity of the tower and maintaining all hydraulic and electrical systems. In the event of any unexpected events on site, such as tripping of safety features, replacement of sensors or failure of a component, appropriate maintenance works would be carried out by the local engineers.

Decommissioning

The Development has been designed to have an operational life of 25 years. At the end of this period the Development will either be decommissioned, or an application submitted to extend its life.

Decommissioning will take account of environmental legislation and technology available at the time of decommissioning. Notice will be given to the local authority in advance of commencement of the decommissioning works, with all necessary licenses or permits being acquired. Decommissioning will be timed to minimise its environmental impact.

The operator will develop a decommissioning plan, and the works will be undertaken in accordance with a statement of operations, covering safety and environmental issues during decommissioning. When dismantling and removing the turbine, the bases would be removed to a depth of approximately 1m below ground level and all the cable cut and left in the ground. Typically decommissioning will involve the removal of the upstand plinth and the top surface of the foundation base. The area will then be reinstated with a final layer of topsoil over the foundation. This approach is considered to be less environmentally damaging than seeking to remove all foundations, cable and roads entirely.

Removal of the switchgear, control and metering kiosk will involve the removal of the equipment followed by the demolition and removal of the prefabricated enclosure and reinstatement of the area.

2. PLANNING POLICY FRAMEWORK

The current Development Plan in operation within Angus Council comprises the approved **TAYplan** 2012 and the **Angus Local Plan Review** (adopted 2009).

The **Angus Council Implementation Guide for Renewable Energy Proposals** (2012) provides detailed guidance on all relevant aspects of wind energy proposals of all scales within the Council boundaries.

This section of the Statement reviews the key development plan policies and guidance which are relevant either to the Application Site or to the Development specifically. This section will establish the land use implications of the Development by considering its compliance with the Development Plan and identifying other material considerations to be taken into consideration during the determination process.

Please refer to *Section 9: Further Material Considerations and Planning Policy* for considerations in addition to the Development Plans which can be taken into account in the determination of this proposal.

2.1 Renewable Energy

The following extract from of the TAYplan sets out the key considerations for renewable energy proposals within the operational area of the Plan.

POLICY 6: Energy and Waste/Resource Management Infrastructure

C. 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 off-site properties;

• Sensitivity of landscapes (informed by landscape character assessments and other work), the water environment, biodiversity, geo-diversity, habitats, tourism, recreational access and listed/scheduled buildings and structures;

• Impacts of associated new grid connections and distribution or access infrastructure;

• Cumulative impacts of the scale and massing of multiple developments, including existing infrastructure;

• Impacts upon neighbouring planning authorities (both within and outwith TAYplan); and,

• Consistency with the National Planning Framework and its Action Programme.

In response to the above, the following is true of the proposal:

- The development comprises a small land take requirement consisting of 10 x 10m foundations, hardstanding area (per turbine), cable runs which will be backfilled and circa 200m of rough access track.
- The rationale behind this renewable energy development is central to the aims of the Scottish Government's Zero Waste Plan.
- The local wind resource is substantial, thus ensuring the viability of the project; grid infrastructure at the proposed site has been assessed to be appropriate for the connection of the proposed wind turbine.
- Anticipated effects of construction and operation on air quality, emissions, noise, surface and ground water pollution, drainage, waste and nuisance impacts on off-site properties have been assessed, the results of which are presented in sections 5, 6.1 - 6.7 and 7.1 – 7.5 of this Statement.
- Anticipated effects of the proposal on the following interests have been assessed within this Statement as follows, and all aspects of the proposal have been seen to comply with the requirements of Policy 6:
    - Landscape sensitivity – see section 8: Landscape & Visual Impact
    - The water environment – see section 5: Hydrology/Flood Risk

- Biodiversity, geodiversity, habitats – see section 3: Natural Heritage Assessment
- Tourism, recreational access – see section 6.8: Tourism
- Listed/scheduled buildings – see section 4: Cultural Heritage Assessment.

Policy ER34: Renewable Energy Developments and **Policy ER35: Wind Energy Development** of the Local Plan Review inform of the key issues against which wind energy proposals in Angus are to be assessed.

POLICY ER34: Renewable Energy Developments

Proposals for all forms of renewable energy development will be supported in principle and will be assessed against the following criteria:

(a) the siting and appearance of apparatus have been chosen to minimise the impact on amenity, while respecting operational efficiency;

(b) there will be no unacceptable adverse landscape and visual impacts having regard to landscape character, setting within the immediate and wider landscape, and sensitive viewpoints;

(c) the development will have no unacceptable detrimental effect on any sites designated for natural heritage, scientific, historic or archaeological reasons;

(d) no unacceptable environmental effects of transmission lines, within and beyond the site; and

(e) access for construction and maintenance traffic can be achieved without compromising road safety or causing unacceptable permanent and significant change to the environment and landscape.

In response to the above, the following is true of the proposal:

- The formulation of the proposal is such that a balance has been achieved between respecting the surroundings and character of the area whilst ensuring viability and efficiency in the operation of the project.
- Section 8: Landscape and Visual Impact the potential landscape and visual impact of the proposal, and accompanying visual information (as applicable) demonstrate the magnitude of this impact.
- The proposed site gives rise to no unacceptable detrimental effects concerning sites of natural or scientific interest (see section 3: Natural Heritage Assessment) or sites of historic or archaeological interest (see section 4: Cultural Heritage Assessment).
- Transmission lines are not part of this proposal (cabling is underground).
- Construction and maintenance vehicular access will not compromise road safety, and the rough access circa 200m in extent will represent a minor change to the land at Kalulu House.

POLICY ER35: Wind Energy Development

Wind energy developments must meet the requirements of Policy ER34 and also demonstrate:
(a) the reasons for site selection;
(b) that no wind turbines will cause unacceptable interference to birds, especially those that have statutory protection and are susceptible to disturbance, displacement or collision;
(c) there is no unacceptable detrimental effect on residential amenity, existing land uses or road safety by reason of shadow flicker, noise or reflected light;
(d) that no wind turbines will interfere with authorised aircraft activity;
(e) that no electromagnetic disturbance is likely to be caused by the proposal to any existing transmitting receiving system, or (where such disturbances may be caused) that measures will be taken to minimise or remedy any such interference;
(f) that the proposal must be capable of co-existing with other existing or permitted wind energy developments in terms of cumulative impact particularly on visual amenity and landscape, including impacts from development in neighbouring local authority areas;
(g) a realistic means of achieving the removal of any apparatus when redundant and the restoration of the site are proposed.

In response to the above, the following is true of the proposal:

- The reasons for site selection, both in terms of the aspects assessed and alternative sites considered are presented in section 1.3: Site Identification.
- The proposed wind installation, owing to its location, is not considered likely to impact on birds (see section 3: Natural Heritage Assessment).
- The potential effects of shadow flicker/reflected light and noise have been assessed in sections 6.1 – 6.6), where they have been adjudged result in no unacceptable outcomes.
- It is not anticipated that the proposal will interfere with authorised aircraft activity.
- No electromagnetic disturbance is known to be associated within the wind turbine.
- The cumulative impact of the proposal has been taken into account when assessing the feasibility of having a wind turbine installation at Kalulu House. This assessment is presented in section 6.9: Cumulative Considerations.
- Details of procedures for the removal of the wind turbines are presented in section 1.9: Decommissioning.

In addition to the Development Plan, Angus Council's Renewable Energy Implementation Guide identifies the four key considerations for onshore wind energy in the council area as the following:

- Landscape and visual impact;
- Potential adverse effects on designated natural and built heritage sites, protected species;
- Impact on residential amenity, soils and water bodies; and
- Access

All of these aspects of the proposal have been fully assessed from the initial feasibility stage of the project, and none of the foregoing are considered to pose a concern to the proposal being granted approval.

2.2 Landscape

POLICY ER5: Conservation of Landscape Character

Development proposals should take account of the guidance provided by the Tayside Landscape Character Assessment and where appropriate will be considered against the following criteria:

(a) sites selected should be capable of absorbing the proposed development to ensure that it fits into the landscape;

(b) where required, landscape mitigation measures should be in character with, or enhance, the existing landscape setting;

(c) new buildings/structures should respect the pattern, scale, siting, form, design, colour and density of existing development;

(d) priority should be given to locating new development in towns, villages or building groups in preference to isolated development.

In response to Policy ER5 of the Local Plan Review presented above, the following is true of the proposal:

The medium-scale landscape within which the proposed site is located, comprising low hills and undulating farmland, is a suitable receiving landscape for a wind turbine to be erected.

It is not considered that landscape mitigation measures are required in relation to this scale proposal.

The linear and parallel micro-siting and pattern of the turbine in relation to the nearest field boundary respects this existing development; the small scale of the existing settlement comprising Kalulu House, Nantusi Cottage, Kamba Cottage and The Rowans will not be dwarfed by the proposal, which could result if larger machines were installed at the proposed location; the nature of the proposal will not detract from the form, design or density of the existing development by its erection within a neighbouring field.

In order to preserve the existing framework and lessen any perceived impact the turbine type and height have been amended to reduce the height and potential noise impact to residential properties.

Part (b) does not apply to a proposal of this nature.

Section 8: Landscape and Visual Impact of this Statement gives further detail concerning how the proposal will relate to the landscape character of the area.

POLICY S1: Development Boundaries

(b) Development proposals on sites out with development boundaries (i.e. in the countryside) will generally be supported where they are of a scale and nature appropriate to the location and where they are in accordance with the relevant policies of the Local Plan.

In addition to the wind turbine being an appropriate size for erection in the broad valley lowland of the Murthill area, the proposal adheres to the above extract from Local Plan Review Policy S1 by clearly requiring a location in the vicinity of the applicant's property to generate electricity for use at the property.

2.3 Agricultural Land

POLICY ER30: Agricultural Land

Proposals for development that would result in the permanent loss of prime quality agricultural land and/or have a detrimental effect on the viability of farming units will only normally be permitted where the land is allocated by this Local Plan or considered essential for implementation of the Local Plan strategy.

In line with Policy ER30 of the Local Plan Review, the proposal requires only a very small quantity of land take, enabling current farming operations to continue up to the edge of the 10 x 10m turbine foundations. At the end of the development's life, the turbine will be dismantled and removed, allowing the surface of the foundations to re-vegetate.

Therefore, it is considered that the proposal adheres to Policy ER30.

2.4 Natural Heritage Policy

The key Development Plan policies concerning natural heritage interests in relation to development proposals in Angus are presented below:

POLICY ER1 : Natura 2000 and Ramsar Sites

Development likely to have a significant effect on a designated, candidate or proposed Natura 2000 site (Special Protection Areas and Special Areas of Conservation), or Ramsar site and not connected with or necessary to the conservation management of the site must undergo an appropriate assessment as required by Regulation 48 of the Conservation (Natural Habitats etc.) Regulations 1994. Development will only be permitted exceptionally and where the assessment indicates that:
(a) it will not adversely affect the integrity of the site; or
(b) there are no alternative solutions; and
(c) there are imperative reasons of overriding public interest, including those of a social or economic nature. Where proposals affect a priority habitat and/or priority species
as defined by the Habitats Directive (92/43/EEC), the only overriding public interest must relate to human health, public safety or beneficial consequences of primary importance to the environment. Other allowable exceptions are subject to the views of the European Commission.

The proposal is located approximately 320m north of the River South Esk Special Area of Conservation (SAC). At this distance, and as a proposal of this nature, the wind turbine is not anticipated to have an effect on this site or on its designated interests.

Policy ER2: National Nature Reserves and Sites of Special Scientific Interest

Developments affecting National Nature Reserves and Sites of Special Scientific Interest will only be permitted exceptionally where it can be adequately demonstrated that either:

(a) the proposed development will not compromise, destroy or adversely affect the conservation objectives and/or particular interest for which the site was notified; or

(b) there is an overriding and proven public interest where social or economic considerations outweigh the need to safeguard the ecological, geological or geomorphological interest of the site and the need for the development cannot be met in other less damaging locations or by reasonable alternative means.

Policy ER3: Regional and Local Designations

Development which would adversely affect sites containing habitats, species, and/or geological or geomorphological features of local or regional importance, whether designated or otherwise, will only be permitted where:

(a) ecological appraisals have demonstrated to the satisfaction of the Council that the overall integrity of the site and the features of natural heritage value will not be compromised; or

(b) the economic and social benefits arising from the proposal significantly outweigh the natural heritage value of the site.

Policy ER4: Wider Natural Heritage and Biodiversity

The Council will not normally grant planning permission for development that would have a significant adverse impact on species or habitats protected under British or European Law, identified as a priority in UK or Local Biodiversity Action Plans or on other valuable habitats or species. Development proposals that affect such species or habitats will be required to include evidence that an assessment of nature conservation interest has been taken into account. Where development is permitted, the retention and enhancement of natural heritage and biodiversity will be secured through appropriate planning conditions or the use of Section 75 Agreements as necessary.

Section 3: Natural Heritage Assessment provides an assessment of the proposed wind development in the context of its potential impact upon the natural heritage and scientific designations and interests identified by Local Plan Review Policies ER1, ER2, ER3 and ER4 above.

Habitats Directive

The Conservation (Natural Habitats & c.) Regulations 1994 formally transpose the requirements of the EC Habitats Directive into national law and provide for the designation of Special Areas of Conservation (SAC). The aim of the Habitats Directive is to contribute to biodiversity through conserving natural habitats and wild fauna and flora of European Importance.

These policies fulfil the requirement of the Conservation (Natural Habitats &c) Regulations to protect features of the landscape which are of major importance for wild fauna and flora but which are not necessarily designated nature conservation sites. Where important features are lost, a scheme for their replacement or other measures of mitigation may sometimes render a development acceptable and the Council will seek to explore such possibilities. Proposals for the creation or enhancement of habitats should use the UK and GM Biodiversity Action Plans to inform their development.

The problems experienced by some groups of flora and fauna in colonising new areas can be reduced and the diversity of species increased by preserving wildlife corridors, reducing obstructions to the movement of flora and fauna and by preventing isolated 'islands' of wildlife from developing. Therefore, although it is important to protect sites of wildlife importance, it is equally important to protect and enhance the routes along which wildlife can travel and to create new links into the network.

In October 1994 the Habitats Regulations and PPG9 Nature Conservation were issued. Both support the necessity to identify wildlife corridors/networks. The Habitat Regulations identified that planning and development policies should encourage "the management of features of the landscape which are of major importance for wild flora and fauna". It highlighted the importance of linear features and their adjacent habitats, in particular where they support species listed in Annex iv (a) of the Regulations. PPG 9 supports these

Regulations and states that "Statutory and non-statutory sites together with countryside features which provide

wildlife corridors, links or stepping stones from one habitat to another all help to form a network necessary to ensure the maintenance of the current range and diversity of our flora, fauna, geological and landform features and the survival of important species".

The Conservation (Natural Habitats & c.) Regulations 1994, the Wildlife and Countryside Act 1981 (and subsequent amendments) and the Protection of Badgers Act 1992 provide legal protection for a number of species.

The presence of protected species is a material consideration when a development proposal, if carried out, would be likely to result in harm to the species or its habitat. Where a site has the potential to support a protected species a survey should be submitted as part of the planning application. If a protected species is present on a development site a comprehensive mitigation package will need to be submitted to the Council in order to assess the impact on the species.

Having taken the above into account we can conclude that whilst the premises in which the turbines are to be located is bounded on three sides by open, green land, no part of the proposed development inclusive of cable runs and foundations is considered likely to impact upon the wildlife or habitats of the area as set out in the above-mentioned policies. In addition, no wildlife corridors, natural habitats, hedgerows etc. exist within the proposed site that could be lost or harmed during the construction, operation or decommissioning phases of the proposed wind turbine development. In order to ensure that there is no evidence of such habitats and species a Habitat Survey, carried out by a suitably qualified ecologist has been undertaken and is submitted in support of this application.

2.5 Cultural Heritage Policy

POLICY ER16: Development Affecting the Setting of a Listed Building

Development proposals will only be permitted where they do not adversely affect the setting of a listed building. New development should avoid building in front of important elevations, felling mature trees and breaching boundary walls.

The proposed location for the wind turbines is not within proximity to a listed building.

POLICY ER18: Archaeological Sites of National Importance

Priority will be given to preserving Scheduled Ancient Monuments in situ. Developments affecting Scheduled Ancient Monuments and other nationally significant archaeological sites and historic landscapes and their settings will only be permitted where it can be adequately demonstrated that either:

a) the proposed development will not result in damage to the scheduled monument or site of national archaeological interest or the integrity of its setting; or

b) there is overriding and proven public interest to be gained from the proposed development that outweighs the national significance attached to the preservation of the monument or archaeological importance of the site. In the case of Scheduled Ancient Monuments, the development must be in the national interest in order to outweigh the national importance attached to their preservation; and

c) the need for the development cannot reasonably be met in other less archaeologically damaging locations or by reasonable alternative means; and

d) the proposal has been sited and designed to minimise damage to the archaeological remains.

Where development is considered acceptable and preservation of the site in its original location is not possible, the excavation and recording of the site will be required in advance of development, at the developer's expense.

The proposal will not affect any Scheduled Ancient Monuments or other nationally significant archaeological sites and historic landscapes or their settings.

POLICY ER19: Archaeological Sites of Local Importance

Where development proposals affect unscheduled sites of known or suspected archaeological interest, Angus Council will require the prospective developer to arrange for an archaeological evaluation to determine the importance of the site, its sensitivity to development and the most appropriate means for preserving or recording any archaeological information. The evaluation will be taken into account when determining whether planning permission should be granted with or without conditions or refused.

Where development is generally acceptable and preservation of archaeological features in situ is not feasible Angus Council will require through appropriate conditions attached to planning consents or through a Section 75 Agreement, that provision is made at the developer's expense for the excavation and recording of threatened features prior to development commencing.

The proposed site is not located within an area known for archaeological importance. Accordingly, the probability of archaeological remains to be discovered during the project's construction phase is considered to be low.

POLICY ER20: Historic Gardens and Designed Landscapes

Sites included in the "Inventory of Gardens and Designed Landscapes in Scotland", and any others that may be identified during the plan period, will be protected from development that adversely affects their character, amenity value and historic importance. Development proposals will only be permitted where it can be demonstrated that:

(a) the proposal will not significantly damage the essential characteristics of the garden and designed landscape or its setting; or

(b) there is a proven public interest, in allowing the development, which cannot be met in other less damaging locations or by reasonable alternative means.

Protection will also be given to non-inventory historic gardens, surviving features of designed landscapes, and parks of regional or local importance, including their setting.

The proposal will not impact on any aspect of historic gardens or designed landscapes, as described above.

The potential impact of the proposed wind turbines on all relevant cultural heritage features and sites, whether known or unknown, as defined by Local Plan Review Policies ER16, ER18, ER19 and ER20, is fully assessed in Section 4: Cultural Heritage Assessment.

2.6 Quality of Development

An extract from Policy 2 of the TAYplan is presented below:

POLICY 2: Shaping Better Quality Places

E. Ensure that high resource efficiency is incorporated within development through the orientation and design of buildings, the choice of materials and the use of low and zero carbon energy generating technologies to reduce carbon emissions and energy consumption to meet the Scottish Government's standards.

F. Ensure that the arrangement, layout, design, density and mix of development and its connections are the result of understanding, incorporating and enhancing present natural and historic assets*, the multiple roles of infrastructure and networks and local design context, and meet the requirements of Scottish Government's Designing Places and Designing Streets and provide additional green infrastructure where necessary.

Parts E and F of Policy 2 encourage the establishing of renewable technology, to reduce carbon emissions.

POLICY S6: Development Principles

Proposals for development should where appropriate have regard to the relevant principles set out in Schedule 1 which includes reference to amenity considerations; roads and parking; landscaping, open space and biodiversity; drainage and flood risk, and supporting information.

In adherence to Policy S6 of the Local Plan Review, the proposal has considered local residents' amenity, the impact of the proposal on open space, the landscape and on biodiversity. There is no requirement for parking facilities or alterations to roads except for the laying of a rough access track across the field within which the proposed site is located, and there are no concerns regarding drainage or flood risk.

3. NATURAL HERITAGE ASSESSMENT

3.1 Ecological Data Consultation

In assessing the environmental sensitivity of the area, existing ecological information, including information on statutory (e.g. Sites of Special Scientific Importance (SSSI), Special Protection Areas (SPA), Special Areas of Conservation (SAC)) and non-statutory (e.g. Sites of Importance for Nature Conservation (SINC)) designated sites and records of legally-protected and notable species (e.g. Biodiversity Action Plan (BAP) priority species), was sought within an area extending up to 10km radius from the proposed site location. The following were primarily consulted:

- National Biodiversity Network;
- Tayside Local Biodiversity Action Plan; and
- SNH SiteLink

The proposed site is not located within any area defined as "sensitive" by the EIA Regulations. Such areas are:

- Special Area of Conservation (SAC);
- Special Protection Area (SPA);
- Ramsar Site
- Site of Special Scientific Interest (SSSI);
- Land subject to nature conservation orders;
- National parks; or
- National scenic areas.

The nearest such area is The River South Esk located in the region of 405m south of the proposed development. The site is designated for the presence of Atlantic salmon and freshwater pearl mussel. Given these designated features are fish and invertebrates, a wind energy development by its nature will have no impact on the interests of such a site. The proposal will therefore have no impact on the integrity on the SAC and no part of the development will intrude within or near the boundaries of the River South Esk.

3.2 Statutory Designated Sites

Other statutory designated sites located within approximately 5km of the proposed site:

- Forest Muir SSSI (site code 648): designated for low wetland heath and spring fen. Located circa 4.3km south-west of proposed site
- Den of Ogil SSSI (site code 504): designated for scrub and valley fen. Located circa 4.2km north-west of proposed site.

3.3 Locally Designated Sites

There appear to be no locally designated sites within 5km of the proposed site.

3.4 Habitats and Species

A desktop appraisal of the development site has been undertaken and we can confirm that there is no recorded sighting of badger within the area and that the development area is considered to be sub-optimal for

badger use. There were no signs detected during the site survey to indicate that badgers used the development site.

There are no buildings, trees or any other features that could be considered attractive to bats within approximately 50m of the turbine, ensuring the turbine position is in line SNH Good Practice siting guidance. It is consequently considered that the risk of bats being present within the proximity of the turbine location is very low.

It is noted that there are recorded sightings of Red Squirrel, predominately within the area of Inshewan, but no sighting recorded at or close to the vicinity of the proposed development.

There are no recorded sightings of otter within the area.

The last recorded sighting of stoat was in 1976 and 2001 at Justinhaugh.

No protected faunal species are evident at the site and the static water bodies with the vicinity are likely to be sub-optimal for use by breeding great crested newt.

Taking into consideration the location of the survey area, which is situated outside the known distribution of great crested newt in Scotland, the likelihood of the species being present is considered very low. The arable field margins may be suitable for reptiles, however given the nature of the proposal and the small footprint of the proposed development, the risk of causing harm or injury to reptiles is considered to be negligible.

From the consultation of ecological data, there appears to be no rare species of farmland birds within the vicinity the proposal. With the nearest potential habitats being located out with the boundary of the proposed development, it is considered that the proposal does not have potential to disturb bird habitats.

A Phase 1 Habitat Survey has been undertaken in order to ensure that whilst there are no recorded sightings of the above that there are no protected species, as yet unrecorded, within the vicinity.

3.5 Natural Heritage Conclusions

In summary therefore, significant adverse effects on biodiversity as a result of the proposed development are considered to be unlikely. The proposed site is located out with any designated sites, whether local, national or international, with the interests of the nearest such site, the River South Esk SAC, being fish and invertebrates and therefore having no interaction with a wind energy development. No potential habitats are within the development site boundary as indicated on the accompanying Location Map.

Due to the location of the Development Site, none of the negative circumstances as set out within the aforementioned Development Plan nature conservation policies are considered likely to result from the proposed development on land near Kalulu House. The careful siting of the turbine, together with a cable run designed not to impact on wildlife corridors or protected areas, allows the development to comply with the relevant policy requirements.

4 CULTURAL HERITAGE ASSESSMENT

4.1 Methodology

To ensure that the Development meets the requirements of the Development Plan, the proposal and its potential effect upon the baseline cultural heritage resource of the area has been assessed against the policies of the Development Plan.

Baseline data, including designated cultural heritage features within the vicinity of the proposed site, has been assembled. In addition, undesignated features in close proximity to the Development Site were searched for to gain an insight into the potential for further unknown archaeological features to be situated within the Development Area.

The following section assesses the Development's effect upon the baseline historic data to identify potential direct and indirect impacts and to ensure planning policy requirements have been met.

4.2 Baseline Information

Scheduled Ancient Monuments (SAMs)

After consulting RCAHMS, there are 15 SAMs within a 5km radius of the proposed site:

- Meikle Coull, burial mound 1200m NW of (index no. 4734): located circa 2.4km north-west of proposed site.
- Meikle Coull, souterrain 100m SW of (index no. 6332): located circa 1.3km north-west of proposed site.
- Meikle Coull, souterrains 250m WSW of (index no. 6331): located circa 1.3km north-west of proposed site.
- Milton of Ogil ring ditch 250m WSW of (index no. 6356): located circa 3.2km north-north-west of proposed site.
- Noranside, enclosures 300m SE and 200m SSE of sewage works (index no. 6406): located circa 3km north-north-east of proposed site.
- Wellford, enclosure 350m W of (index no. 6390): located circa 2.6km north-east of proposed site.
- Baldoukie, souterrains 250m NE of (index no 6315): located circa 840m north-east of proposed site.
- Law of Baldoukie, barrow 140m E of Baldoukie Farm (index no. 6314): located circa 980m north-east of proposed site.
- Barnyards, enclosure 100m NW of (index no 6355): located circa 1.3km east of proposed site.
- East Mains of Whitewell, souterrains 400m NNW of (index no. 6371): located circa 1km east of proposed site.
- East Mains of Whitewell, barrow and pits 200m NNW of (index no. 6372): located circa 1km south-east of proposed site.
- Battledykes, Roman Camp (index no. 2308): located circa 2km south of proposed site.
- Battledykes, cairn 475m SSE of (index no. 7234): located circa 2.9km south-south-west of proposed site.
- Shielhill, pit alignments 200m NE of Shielhill Farm (index no. 6349): located circa 3.7km west-south-west of proposed site.
- Shielhill, pit alignments N of Shielhill Farm (index no. 6348): located circa 4km west of proposed site.

Listed Buildings

After consulting RCAHMS, 9 listed buildings are located 1-2km from the proposed site:

- Justinhaugh Bridge (HBNUM 18018) category B: located circa 930m south-south-west of proposed site
- Inshewan House (HBNUM 18027) category B: located circa 2km south-west of proposed site
- Inshewan Farmsteading (HBNUM 18028) category B: located circa 2.1km south-west of proposed site
- Burnside Cottage, Tannadice (HBNUM 18026) category B: located circa 1.1km east-north-east of proposed site
- Kirkton Bridge over Bogburn, Tannadice (HBNUM 18025) category C(S): located circa 990m north-east of proposed site
- Kirkton Cottages opposite Old School, Tannadice (HBNUM 18024) category C(S): located circa 1.1km east-north-east of proposed site
- 3 'Kennedy Well' stand pumps, Tannadice (HBNUM 49887) category C(S): located circa 1.1km east-north-east of proposed site
- Tannadice Parish Kirk (HBNUM 18022) category C: Located circa 1.1km east of proposed site.
- Parish Kirk Manse, Tannadice (HBNUM 18023) category C(S): Located circa 1.1km east of proposed site.

The proposed site is not located in a conservation area. Tannadice Conservation Area is the nearest such area, at a distance of over 1km from the proposed site.

Cortachy Castle gardens lie approximately 6.75km north-west of the proposed site. This distance, in addition to the dense tree planting that encloses views from the castle grounds, implies the proposed wind energy development will have a low impact on the area surrounding the castle.

4.3 Assessment of Direct Impacts

This section considers the potential for the Development to cause direct effects in the form of damage or destruction during construction upon features of cultural heritage interest, whether known sites or unknown buried archaeology. These effects would be most likely to occur during construction and decommissioning, and would be permanent and irreversible.

The Development is considered to meet the requirements of the cultural heritage policies as detailed above, in the following ways:

- The Development Area contains no Scheduled Monuments, Listed Buildings or other national or regionally important sites. Therefore no direct impacts are anticipated for features of this nature.
- The site is not within an area of archaeological interest, therefore it is not anticipated that ground disturbing works associated with the erection of the turbines will encounter archaeological remains.

4.4 Assessment of Indirect Impacts

This section considers the potential for indirect (visual) impacts to occur upon the settings of features of cultural heritage interest. The setting of a Scheduled Monument or Listed Building can be loosely interpreted as features, spaces and views that are historically and functionally related, and which can be considered to be vital to their intrinsic interest. Setting can be tangible, such as a defined boundary, or intangible, such as atmosphere or ambience. The main concern for visual effects on a cultural heritage setting is the potential for the Development to fragment the historic landscape, separate connectivity between historic sites and impinge on views to and from sites with important landscape settings, although the slimline and therefore visually permeable nature of the Development may retain the setting of a special interest. 'Wind Energy and the Historic Environment'[1] lists visual dominance, scale, intervisibility, vistas and sight-lines as well as noise, movement and light as potential effects upon features of cultural heritage interest that might be derived from wind farm projects. Indirect effects can occur during construction, operation and decommissioning.

The proposed development is considered to meet the requirements of the above policies in the ways indicated below:

- The Development has a limited footprint and is restricted in height (the candidate turbine can be installed on taller towers than the 31m tower decided upon for this proposal) and further to a previous application which was withdrawn we have taken into consideration concerns regarding visual impact and chosen a turbine of a lower hub height and reduced the number of turbines therefore limiting the installation's visibility within the landscape to an appropriate scale for receptors within the area.
- Of the SAMs listed above, the separation distance of the nearest monument in the region of 840m (souterrains at Baldoukie) ensure for no indirect impact from the proposed development in general. Specifically, of the SAMs in question, only the burial mound at Meikle Coull commands a prominent location on raised ground, and would be likely to experience a visual impact of the wind development (the nature of the other monuments such as pits, enclosures and underground structures do not have as part of their character rural vistas). The burial mound however is 2.4km distant from the proposed development site, therefore any impact to the cairn is considered to be negligible. Equally, no listed building will experience a negative impact on their setting from the erection of the wind turbine at the premises on land at Kalulu House, as the nearest, Justinhaugh Bridge, is almost 1km distant from the proposed turbine, and none of the 9 listed buildings within 1-2km of the proposed site are category A-listed.

4.5 Compliance with the Development Plan

[1] http://www.english-heritage.org.uk/publications/wind-energy-and-the-historic-environment/

The Development has been assessed against all requirements of the relevant policies within the Development Plan in relation to Cultural Heritage. No cultural/historic buildings/monuments are located sufficiently near to the proposed site for concern to be expressed regarding impacts to their settings. It is considered that the scale of the Development will result in minimal impact upon the cultural heritage resource of the area. No archaeological record exists where direct impacts may occur, and it is considered that there is a low potential for unknown subsurface archaeology to be located at the Development site. It is considered that this meets policies covering direct impacts upon archaeology and cultural heritage features.

The assessment identified no significant effects upon the settings of the surrounding cultural heritage features, therefore meeting policies safeguarding the settings of designated features.

It is therefore considered that the Development meets all the requirements of the relevant policies within the Development Plan pertaining to Cultural Heritage.

5 HYDROLOGY/ FLOOD RISK

The SEPA River & Coast Flood Map indicates that the Application Site is not in an area considered at risk of flooding.

The construction process represents the stage of development whereby impacts on hydrology or hydrogeology are most likely to arise. During this phase, best practice measures in conjunction with standard construction methodology will be used at all times in order to minimise any negative effect on the hydrological environment.

Due to the relatively small scale of the proposal in terms of the requirement for earthworks and excavations being limited to the preparation of the ground for the foundation blocks as well as the digging of the cabling track, the likelihood of any significant impact on the watercourses or groundwater is considered to be negligible.

Impermeable ground covering of the project is limited to the small area for the turbine foundations. There is no requirement for sustainable urban drainage systems due to the small footprint of the Development.

There are no significant hydrological effects predicted as a result of the Development.

6 COMMUNITIES/RESIDENTIAL AMENITY

The following sections of the document outline the nature of potential pollution sources associated with the proposed wind turbine.

6.1 Construction Noise

At the time of writing, the detailed methods of construction to be employed are not known, as these will only be finalised once a contractor is appointed. For this reason, predictions of noise levels have not been carried out.

6.2 Operational Noise

ETSU-R-97[2] is considered to be the industry standard document for setting appropriate noise emission levels to be applied through planning conditions. ETSU-R-97 includes a simplified noise criterion appropriate for single-turbine developments, whereby limiting turbine noise at the nearest properties to no greater than 35 dB, $L_{A90,10min}$ at wind speeds of up to 10 ms^{-1} is considered to afford sufficient protection of amenity (a higher noise limit of 45 dB(A) may be applied to properties where the occupier has a financial involvement).

POLICY ER11: NOISE POLLUTION

[2] Department for Trade and Industry (1996) ETSU-R-97 The Assessment and Rating of Noise from Wind Farms'.

Development which adversely affects health, the natural or built environment or general amenity as a result of an unacceptable increase in noise levels will not be permitted unless there is an overriding need which cannot be accommodated elsewhere. Proposals for development generating unacceptable noise levels will not generally be permitted adjacent to existing or proposed noise sensitive land uses.

The above extract from the Local Plan Review states that proposals resulting in unacceptable noise levels will normally not be permitted. The nearest dwelling, Kalulu House has ownership of the land on which the turbine is to be installed and has a financial interest in the development. The turbine will provide a source of energy to Kalula House and also benefit the B & B and holiday cottage Business run from Kamba Cottage and Nantusi Cottage. This will alleviate the burden of electrical cost thus reducing the fuel costs of the properties. The land owners will also receive remuneration as compensation for the development to be situated on their land. The next nearest residential dwelling is The Rowans, the remaining property within this small cluster closest to the development. This property is not in ownership of the land owner who's properties will be fed electricity and will receive financial remuneration. The owners of The Rowans have however come to an agreement with the applicants in that they will receive a beneficial package that will allow for the financial reduction in electricity bills by the installation of renewable energy appliances to their property. This will financially aid the owners of The Rowans by eliminating and/or reducing their electricity bills.

Based on the manufacturers noise data, supplied in supporting information, the turbines will satisfy the 35dBL noise level at 315m separation from a residential property. No residential dwelling in the vicinity of the proposed site that does not have an interest in the development will experience unacceptable noise levels resulting from the proposal, in accordance with the above guidelines and policy.

6.3 Decommissioning Noise

In a similar way to construction, noise during decommissioning will be managed to ensure compliance with best practice, legislation and guidelines current at the time.

6.4 Light Pollution

No light pollution is anticipated to be generated as a result of the Development.

6.5 Shadow Flicker

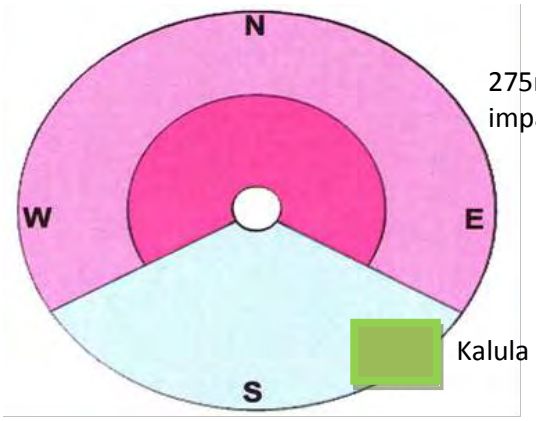
Shadow flicker can affect nearby properties early in the morning or late in evening. It is caused by the rotating blades interrupting the light from sun when the turbine is between the property and the sun. This occurs early in the morning to the west of the turbine and late in the evening to the east of turbine. The effect is likely to be worse on sunny days in winter than in summer, as in summer the sun is much higher for longer and therefore the shadow is more local to the actual turbine.

It is generally accepted that some degree of shadow flicker is acceptable, but that limits should be imposed to restrict the number of hours per year for which any one property is affected. There are no specific rules on this, but a 30 hour per year maximum has been suggested as reasonable in Germany and this seems to be generally accepted.

Expected shadow flicker is difficult to predict, however general rules and guidance can be applied. Planning policy states that shadow flicker should not pose concern where sensitive receptors are located at a distance equivalent to ten times the rotor diameter of the turbine in question. In this case, this equates to a distance of 275m.

In this case the separation distances between the turbine and the nearest residential property is Kalula House itself. Kalula House is not situated in a position thought to be affected by flicker and the intervening tree screening should ensure that no unacceptable level is experienced. All other propertied are in excess of 275m from the proposed development. As intimated about whilst Kalula House is located less than 10 rotor diameters away the positioning of the property, the lower elevation and the intervening tree screening all ensure that there should be no detrimental impact

due to flicker from the proposed turbine development. A diagram illustrating the potential flicker impact and position of the property is shown below.



6.6 Communities

The nearest community to The Development is considered to be the hamlet of Murthill, over 0.5km south of the proposed site. Given the physical separation the proposed site and Murthill, it is considered that unacceptable adverse effects from the erection of the wind turbines will not be experienced by the community.

It is suggested that the local schools within the area would be welcomed by the owners of Kalula House and the developers to embark on an educational programme about the proposed wind turbine development. The children would be welcome to visit the turbines and learn about CO2 emissions, the part wind turbines play in reducing emissions, how wind work and how we can all work together towards meeting the UK targets.

6.7 Tourism

A MORI poll was commissioned by Scottish Renewables Forum and the British Wind Energy Association (BWEA, now Renewable UK) in 2002 to determine public attitudes towards wind farms in Argyll, which at the time, had the highest concentration of wind farm developments in Scotland and the UK. The survey, which was based on detailed interviews with approximately 300 visitors, found that over 90% of visitors would return to Scotland for a holiday regardless of a wind farm in the area. Only 8% of the tourists who had seen a wind farm during their visit returned with a negative impression[3]. Eight out of ten said that they would go to a wind farm visitor or information centre during their stay. This research indicates that the presence of wind turbines within a landscape does not significantly detract from the tourist experience of an area.

The proposal does not appear to be in the vicinity of any part of the Angus Core Paths Plan.

Kalulu House and other dwellings in Murthill itself are owned by the applicant and serve as tourist accommodation. The proposal is designed to support a small local business by generating electricity for on-site use, as well as by complementing the environmentally friendly nature of the house itself.

6.8 Cumulative Considerations

Pending and approved wind energy proposals in the surrounding area are presented below:

- Approved: 09/00953/FULL – 13.25m wind turbine at Kwik-Fit, Queenswell Rd, Forfar, DD8 3JA
- Approved: 08/00233/FUL – 6m to hub wind turbine at Peggy Scotts, Finavon, DD8 3QD
- Approved: 06/01309/FUL – 15m to hub wind turbine at Land at Netherbow, DD8 3TN

The Development is considered to be of such a small scale, and to have a sufficient separation distance from the other wind energy developments presented above of which there is only a small

[3] MORI Scotland (2002) Tourist Attitudes Towards Wind Farms.

number, for there to be low potential for any unacceptable adverse cumulative effect with any existing or consented turbines within the wider area.

7. AIR QUALITY AND CLIMATE

7.1 Introduction

This section considers the positive and negative contributions that the Development may make towards air quality, dust and greenhouse gas emissions as a result of the construction, operation and decommissioning and whole life history cycle of the Development.

7.2 Construction

The movement of vehicles and plant on site would create exhaust emissions. In addition, construction activities have the potential to create a dust nuisance in dry, windy conditions. As a consequence of the relatively small scale nature of the development in combination with the high degree of dispersion of airborne pollutants that would occur prior to reaching sensitive receptors (nearby dwellings) emissions originating from onsite plant are considered to be negligible.

The movement of soils and rubble during construction and site preparation activities may result in the generation of airborne soil dust. This kind of dust generated in such a manner is typically coarse and remains airborne for short periods only. Overall, the occurrence and significance of dust generated by earth moving operations is extremely difficult to estimate, and depends upon meteorological and ground conditions at the time and locations of the earth works.

7.3 Operation

The purpose of the development is to generate electricity from a renewable source of energy, therefore offsetting the need for power generation from combustion of fossil fuels. Consequently, the electricity that would be produced by the Development results in a save in emissions of carbon dioxide (CO_2) with associated environmental benefit.

During its operational lifespan the wind turbines have the potential to displace electricity generated from fossil fuels and consequently prevent CO_2 from being released. The actual amount of CO_2 released through electricity generation in the UK relates directly to the generating plant in use at any given time. This mix changes on a daily basis and will change in the future as UK generating plant is replaced and fuel costs change, and as a consequence it is not possible to predict exactly how much CO_2 release the wind turbine will prevent over its lifetime.

The operation of the Development has the potential, based on the same assumptions, to also displace other gases related to coal-fire electricity generation including those associated with acid rain such as sulphur dioxide (SO_2) and oxides of nitrogen.

7.4 Decommissioning

Effects from this phase of the Development will be similar to those generated during the construction phase.

7.5 CO_2 Emissions Lifecycle of the Wind Turbine

A low level of CO_2 emissions will be released over the life of a wind turbine through its construction, maintenance and decommissioning phases, e.g. from steel and cement production and transport. However, such emissions are involved in building any conventional electricity plant. Conventional fossil fuelled electricity plants have the additional CO_2 emissions from procurement and burning of fossil fuel energy sources during operation which renders their impact very significantly higher than the negligible impact from the two month construction period of a 25 year wind turbine project.

The Parliamentary Office of Science and Technology (October 2006) compared the life cycle CO_2 emissions of different electricity generation systems in the UK[4]. It was found that coal burning power systems have the largest carbon footprint of all the electricity generation systems analysed having up to 1000g of CO_2 equivalent per kilowatt hour (kWh) of generation (1000g CO_2eq/kWh). The carbon footprint of fossil fuelled power plants is dominated by emissions during their operation.

In contrast it finds that electricity from wind energy has one of the lowest carbon footprints, with nearly all the emissions arising during the manufacturing and construction phases, such as the production of steel and concrete, which account for 98% of the total life cycle CO_2 emissions. The carbon footprint for onshore wind energy is given as only 4.64g CO_2eq/kWh.

Even when taking account of the full life cycle emissions of CO_2, a wind turbine therefore emits far less CO_2 per unit of energy from construction, maintenance and operation than conventional fossil fuelled electricity plants such as coal, oil and gas.

The Development will have a positive benefit of emission savings. Even when taking account of the full life cycle emissions of CO_2, a wind turbine will emit far less CO_2 per unit of energy from construction, maintenance and operation than conventional fossil fuelled electricity plants such as coal, oil and gas.

8. LANDSCAPE & VISUAL IMPACT

The Tayside Landscape Character Assessment (1999) defines the proposed site as being within the landscape character type, "broad valley lowland" which features fertile strath, low hills and dipslope farmland. This area's landscape is less sensitive than the higher mountainous areas and the lower, coastal land. It is considered that the medium scale of the "broad valley lowland" landform is capable of accommodating a medium scale 200kW wind turbine, with height to hub of 31m and height to blade tip of 44.75m.

Having taken into consideration the potential visual impact, as shown within the submitted ZTV, photomontages from detailed viewpoints and wireline drawings from locations of importance (where applicable), we are of the opinion that whilst there will undoubtedly be an element of impact due to the inherent nature of the proposal, this will not be at an unacceptable level.

The proposed turbines are situated in a location where they can be viewed in conjunction (as close as technically possible) with Kalulu House and its associated buildings, reducing visual impact compared to if the installation was to be located within an isolated location, distant from built development. The presence of natural screening from trees whether along roadways or as dense shelterbelts within farmland further reduces the visual impact by lessening the actual impact rather than that as indicated as a worst-case scenario by the accompanying ZTV. The turbine is to be sited parallel to the field's northern boundary. This ensures that the turbine will have a good 'fit' with the immediate surroundings, allowing when viewed, for the positioning to 'make sense'.

The Generation SUT 200kW wind turbine is slim in structure, thus limiting its visual impact to its height and the moving blades. This is as opposed to the structure occupying any large area of space within views.

It is therefore considered that the visual impact resulting from the erection of the single wind turbine at the proposed location will not result in an unacceptable visual or landscape impact to the surrounding area. In order to alleviate a degree of visual impact this application follows on from a previous withdrawn applications with an amendment to the proposed turbines, including the height to tip and number.

[4] Parliamentary Office of Science and Technology (2006) *Carbon Footprint of Electricity Generation*, Postnote: No 268.

9. FURTHER CONSIDERATIONS & PLANNING POLICY

This section sets out further material considerations in the form of national planning policy and guidance that are considered to be material in the consideration and determination of this planning application.

9.1 UK Policy

The United Kingdom is committed to reducing greenhouse gas emissions by 12.5% from 1990 levels by 2008-2012 as part of the Framework Convention on Climate Change (the Kyoto Protocol)[5].

The UK Government is committed to addressing the causes and consequences of climate change. The Climate Change Act 2008[6] sets a legally binding commitment to cut the UK's carbon emissions by 80% by 2050 and requires that limits be set on the total amount of emissions in successive five year periods (carbon budgets) against a 1990 baseline. This makes the UK the first country in the world to set such a long-term and significant carbon reduction target into law.

The "Renewable Energy Strategy 2009" (part of the Government's Overall UK Low Carbon Transition Plan) outlines the UK's requirement to increase the use of renewable electricity, heat and transport. It sets out a path to achieving the UK's legally binding target to ensure 15% of energy comes from renewable sources by 2020. It predicts that, in order to meet the targets, renewables should provide 30% of electricity by 2020, two-thirds of which is expected to come from onshore and offshore wind[7].

This target has now been increased to 100% through the 2020 Routemap, see below.

9.2 The UK Renewable Energy Strategy (July 2009)

This document guides the UK towards realising the target of 15% of energy from renewable sources by 2020. This document acknowledges that a greater amount of renewable energy developments are required to meet the aforementioned target. In order to meet the overall 15% target, 30% of electricity should be generated from renewable sources.

9.3 Renewables Statement of Need (July 2006)

In July 2006, the UK Energy Review was published by the Department of Trade and Industry. Annex D contains "The Renewables Statement of Need". This document states that:

"New renewable projects may not always appear to convey any particular local benefit, but they provide crucial national benefits. Individual renewable projects are part of a growing proportion of low-carbon generation that provides benefits shared by all communities both through reduced emissions and more diverse supplies of energy, which helps the reliability of our supplies. This factor is a material consideration to which all participants in the planning system should give significant weight when considering renewable proposals. These wider benefits are not always immediately visible to the specific locality in which the project is sited. However, the benefits to society and the wider economy as a whole are significant and this must be reflected in the weight given to these considerations by decision makers in reaching their decisions."

9.4 National Planning Framework (2004) / National Planning Framework 2 (2009)

These documents set out national spatial planning objectives and identify priorities for investment and sustainable development in Scotland for the next 25 years. Paragraph 25 of NPF 2 states that:

"The European Union has responded by committing to deriving 20% of the energy it uses from renewable sources by 2020. The Scottish Government supports this objective and has in place its own, higher target for electricity generated from renewable sources".

[5] Department of Environment Food and Rural Affairs (DEFRA) (2008) *Climate Change Mechanism: The Kyoto Protocol* [online]. Available at http://www.defra.gov.uk/environment/climatechange/internat/un-kyoto.htm [Accessed on 04/05/2009]
[6] *Climate Change Act 2008*. London: HMSO
[7] HM Government (2009) *The UK Renewable Energy Strategy 2009*, Surrey: OPSI.

9.5 Assessment of Material Considerations

As detailed above, the Development has been assessed against the above policies. These all demonstrate an overwhelming support for the principle of renewable energy developments in general, and for the development of wind energy projects such as this. Therefore it is considered that this Development is clearly supported by the relevant material considerations.

9.6 Aviation

Following discussions throughout 2001 by the DTI-led 'Working Group for Wind Energy, Defence and Civil Aviation Interests', a consultation proforma has been agreed between the BWEA and key Aviation issue consultees such as the MoD, NATS and CAA. Details on the issues and background concerning aviation and wind turbines can be found on the BWEA website at www.bwea.com/aviation/index.html.

Because of their height, wind farms can have an effect on the aviation domain. Additionally, rotating wind turbine blades may have an impact on certain aviation operations, particularly those involving radar. The aviation community has procedures in place designed to assess the potential effect of developments such as wind farms on its activities, and, where necessary, to identify mitigating measures.

An analysis of the surrounding area would seem to indicate that there is no MoD or civil aviation facilities in the immediate vicinity and therefore it is not anticipated that this proposal would be of concern to these bodies.

9.7 Safeguard Areas

POLICY S5: SAFEGUARD AREAS

Planning permission for development within the consultation zones of notifiable installations, pipelines or hazards will only be granted where the proposal accords with the strategy and policies of this Local Plan and there is no objection by the Health & Safety Executive, Civil Aviation Authority or other relevant statutory agency.

The proposal appears to be located close to the pipeline safeguarding corridor for a gas pipeline and therefore British Gas and Gas Transmission. These consultees have the opportunity to respond to the proposal if they have concerns regarding its potential impact on their interests, in line with Policy S5 of the Local Plan Review as above.

10. CONCLUSIONS

After considering relevant policy and guidelines, information has been compiled to demonstrate that the Development adheres to such requirements. As this document highlights, the potential effects that are anticipated to occur as a result of this proposal are considered to be low in impact and therefore acceptable. Additionally, there are several material considerations which support the Development and provide significant justification for the Development being permitted.

The intention of the proposal is to generate electricity for use by a local tourist business. Care has been taken, in particular in respect of the design, scale and siting of the Development, in order to avoid unacceptable environmental effects, and in particular to ensure the maintenance and protection of the rural character of the area, whilst enabling the Development to make a contribution to renewable electricity generation. To this end we have reduced the proposed turbine height to tip and assessed another turbine manufacturer which has lower noise emissions in order to preserve the residential amenity of the area as well as reducing the number of turbines to a single structure.

It is considered that the wider benefits of the Development outweigh its largely localised and temporary effects. The Development will generate up to 530,000 KWh of electricity per turbine, and in

doing so will contribute to regional and national renewable energy targets, specifically those which aim to reduce greenhouse gas emissions and slow the effects of climate change.

ITEM 15

W I N D
CONSULTANCY

Report 5230_R1

Kalula House

Noise
Assessment report

For WhichTurbine.com
February 2014

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PE10 0RQ

Disclaimer

In receiving this report, the Client accepts that Paul Hannah trading as The Wind Consultancy Service can in no way be held responsible for the application or use of the results and findings reported herein either now or in the future. The Client is, and remains, responsible for the use of such information and any consequences thereof.

The results presented in this report, whilst following standard industry practice, cannot be claimed to be "bankable" as no bank engineers' approval has been sought by Paul Hannah trading as The Wind Consultancy Service.

Version History

5230_R1	04/02/2014	Original issue

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Noise Assessment Report – Kalula House

1. Introduction

1.1. Client Scope

The Wind Consultancy Service (TWCS) understands that whichturbine.com is developing a site in Angus which requires an assessment for operational noise.

1.2. Details of the site

This report relates to the proposed development on land 1.2km west of the village of Tannadice in Angus. The site is known as Kalula House. No site visit has been made in support of this report.

2. Data supplied

2.1. Client's requirements for turbine numbers and sizes

In the case of Kalula House, a single turbine location has been suggested. The turbine has the following physical characteristics:

- Turbine location: 346287, 758007
- Hub - 31.0m
- Rotor diameter - 27.5m

A turbine fitting this envelope is used for the assessment of noise.

It should be noted that noise will also be created as a result of both the construction and decommissioning phases of this development, but this noise will be short-lived and similar to other construction industry noise sources. Such noise emissions are not dealt with in this report.

It should be noted that the use in the assessment of a particular turbine type does not imply acceptance by the turbine supplier that either the site or layout are suitable for such a turbine nor does it imply that every turbine type will meet all environmental constraints on the site. Confirmation should be sought from suppliers that warranties will be provided for their machines if used on this site.

3. Noise assessment at Kalula House

3.1. Noise

Wind turbines are noise sources. The principle sources are the machinery in the nacelle at the top of the tower (gearbox, generator, cooling fans, pitch gear, yaw gear and yaw brakes), and the aerodynamic sound of the blades passing through the air[1].

The proposed turbine location was selected to be as far as reasonably practicable from domestic dwellings yet close to a grid connection, clear of power lines and microwave links and have an adequate wind resource.

The noise characteristics of the proposed turbine are as follows:

Standardised windspeed at 10m above ground (m/s)	L_{WA} (dB) Mode 0
6	92.6
7	93.8
8	95.4
9	97.3
10	98.4

These data are drawn from documents published by the manufacturer of the turbine[2]. An additional 2dB has been added to the stated values to account for measurement uncertainty (and is included in the figures shown above).

ETSU-R-97 states that a "tonal penalty" may be added to the sound power level in cases where the turbine emits specific tones in its noise characteristics. The proposed turbine has no such tones and hence no tonal penalty is applicable.

[1] Rogers, A.L., Manwell, J.F, Wright, S.W. "Wind Turbine Acoustic Noise", RERL, University of Massachusetts, 2006. (http://www.minutemanwind.com/pdf/Understanding Wind Turbine Acoustic Noise.pdf) [Accessed 10/01/2014]

2 Document SUT200KWACOUSTICV2.2.PDF, published 02/06/2013

3.2. Policy Considerations

Scottish Planning Policy (2010)[3] does not explicitly state methods or levels of acceptability, it simply directs developers to take account of noise in the design and assessment of projects. This policy replaced SPP6 (2007)[4] which also lacked detail. Angus Council's Implementation Guide for Renewable Energy Proposals (2009)[5] provides more practical details.

In particular, it notes:

> *Subject to the points below the criteria specified in ETSU-R-97; the assessment and rating of noise from wind farms should be used as appropriate noise assessment criteria.*
>
> *...*
>
> *Where it is suggested that any property benefits financially from the scheme and the higher absolute lower limit of 45 dB(A) maybe applied to that property, full details of the financial benefit and how the occupiers of the relevant property will receive that benefit for the life of the development should be clearly stated. A valid financial benefit is considered to be one which relates directly to the power or income generated by the turbine. One-off lump sum payments are unlikely to be considered acceptable because occupiers could change during the life of the development.*
>
> *...*
>
> *It is generally considered that the ETSU-R-97 simplified method criteria is not suitable for small wind turbines i.e. those with a rotor diameter of less than 16m. For developments involving small turbines a noise limit of 40*

[3] The Scottish Government. [Online] Available from: http://www.scotland.gov.uk/Publications/2010/02/03132605/8 [Accessed 04/02/2014]
[4] The Scottish Government. [Online] Available from: http://www.scotland.gov.uk/Resource/Doc/171491/0047957.pdf [Accessed 04/02/2014]
[5] Angus Council. [Online] Available from: http://www.angus.gov.uk/renewableenergy/Finalised_Implementation_Guide_Renewable_Energy.pdf [Accessed 04/02/2014]

> *dB $L_{Aeq(10mins)}$ assessed using the BWEA method referred to below is considered appropriate.*
>
> *...*
>
> *Wind turbine noise predictions should follow the methodology used in ISO 9613 and take into account the detailed guidance published in The Institute of Acoustics bulletin Vol. 34, no. 2 2009.*
>
> *...*
>
> *Turbine noise data must be referenced to test reports.*

For the Kalula House project, the ETSU-R-97 methods will be followed. Proof of financial involvement for the named properties Kalula House, Kamba Cottage, Nantusi Cottage and The Rowans will be provided. All are considered to be financially involved. The turbine under consideration has a rotor diameter of more than 16m, so the simplified method from ETSU-R-97 will apply. The ISO 9613-2 model will be used, however the IoA document referred to has been superseded and the current document is therefore used (see §3.3.1.1 below for more details). Extracts of the test report for the turbine assessed are shown in Appendix C.

3.3. Assessment of Noise

3.3.1. Methodology

The assessment has been desk-based. The magnitude of predicted noise and its variation with windspeed have been calculated using the DECIBEL module of EMD's WindPRO software[6]. The software, which is typical of those in use in the wind energy industry, creates a mathematical model of the proposed project, its location, the surrounding terrain and the locations of noise-sensitive properties. The following factors are taken into account in the calculation:

- Turbine locations
- Turbine source noise (data supplied by turbine suppliers).
- Topography.

[6] EMD International A/S. [Online] Available from: http://www.emd.dk/windpro [Accessed 10/01/2014]

- Locations of houses/buildings.

3.3.1.1. IoA recommendations

A 2013 paper published by the Institute of Acoustics[7] provided recommendations for the calculation of noise from wind turbine projects in the UK. The paper recommended:

- the use of the ISO 9613-2 propagation model
- documentary support for the wind turbine source noise data used in the calculation (manufacturer-supplied data)
- atmospheric conditions of 10°C and 70% relative humidity
- ground porosity factor, G, of 0 where wind turbine data was of test or measured quality, and 0.5 where the data were warranted by the manufacturer or where test data is supplemented by measurement uncertainty
- No barrier effects

The DECIBEL module in WindPRO has been used with these settings in the calculation of the results presented in this report. As the results are based on measured test data with measurement uncertainty included, the ground porosity is set to 0.5. The ISO 9613-2 model has been found to be a robust method for the assessment of turbine-generated noise[8].

3.3.1.2. Quantification of the effects

The noise levels have been quantified as follows:

- A contour plot of noise at a specific windspeed (typically 8-12m/s measured at 10m above ground)

[7] http://www.ioa.org.uk/pdf/ioa-gpg-on-wtna-issue-01-05-2013.pdf [Accessed 23/01/2014].
[8] Bullmore, A, *et al*, (2009), "*Wind Farm Noise Predictions and Comparisons with Measurements,*" paper presented at the Third International Meeting on Wind Turbine Noise, 17-19 June 2009, Aalborg.

3.3.2. Assessment of results

The assessment concludes that the development will not exceed the stated limits, namely 45dB at 10m/s, required to allow the use of the simplified condition assuming financial involvement in the project. Background noise monitoring, in conjunction with windspeed data collection, is not therefore required. The detailed results shown in Appendix B show all properties lie outside the regions where noise is predicted to be above 45dB.

3.3.3. Summary

The predicted noise levels are such that background noise measurements will not be required as a simplified noise condition can be applied.

3.4. Mitigation

The results of the assessment indicate mitigation will not be required.

3.5. Residual effects

The modelled effects show that the maximum potential for turbine-produced noise is within the limits stated in both ETSU-R-97 and Angus' own policy document for properties around the proposed turbine locations with a financial involvement in the project and there is no need for the measurement of background noise.

4. Conclusions

The potential for operational turbine-produced noise occurring around the proposed wind turbine site named Kalula House has been assessed on behalf of the developer.

The results have been based on a desk-top study using industry-standard tools.

Results have been assessed using:

- the ISO 9613-2 propagation model
- manufacturer-supplied source noise data including measurement uncertainty
- atmospheric conditions of 10°C and 70% RH
- ground porosity of 0.5 (semi-porous ground)
- no barrier effects

On this basis, neighbouring properties will not experience noise levels above the limits set out in ETSU-R-97 and Angus' own policy and there is therefore no requirement to measure background noise.

This assessment considers that significant effects are not likely to take place. Mitigation will not be required.

Appendix A. Noise assessment – assumptions for calculation

Project:
WhichTurbine_KalulaHouse

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04/02/2014 12:19 / 1

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+44 1778 571786
Paul Hannah / mail@windconsult.co.uk

Calculated:
04/02/2014 11:15/2.9.269

DECIBEL - Assumptions for noise calculation

Calculation:SUT 200kW

Noise calculation model:
ISO 9613-2 United Kingdom
Wind speed:
4.0 m/s - 12.0 m/s, step 1.0 m/s
Ground attenuation:
General, Ground factor: 0.5
Meteorological coefficient, C0:
0.0 dB
Type of demand in calculation:
3: WTG noise is compared to ambient noise plus margin (UK, AT etc.)
Noise values in calculation:
All noise values are 90% exeedance values (L90)
Pure tones:
Pure and Impulse tone penalty are added to WTG source noise
Height above ground level, when no value in NSA object:
4.0 m Don't allow override of model height with height from NSA object
Deviation from "official" noise demands. Negative is more restrictive, positive is less restrictive.:
0.0 dB(A)
Octave data required
Air absorption

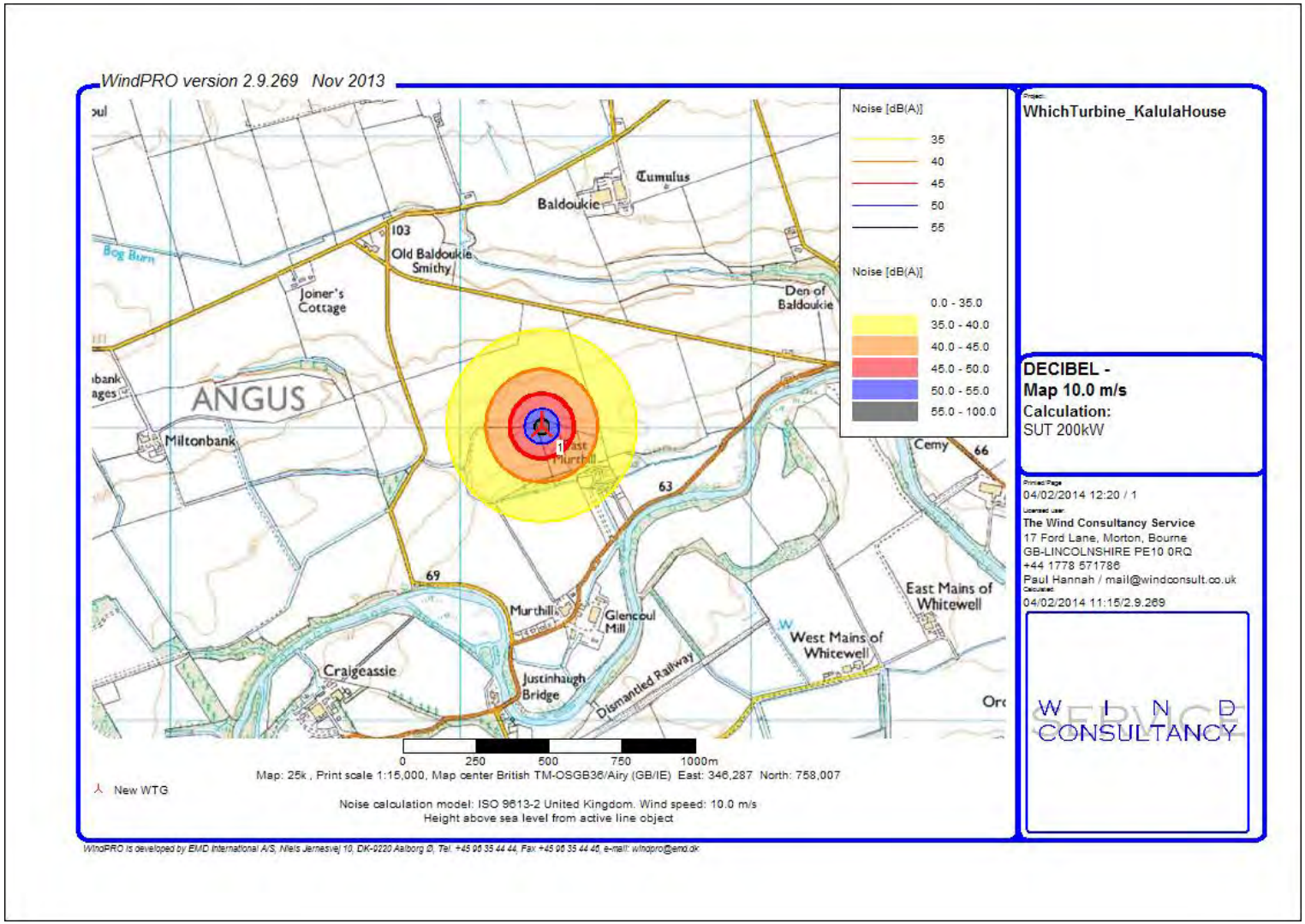
63	125	250	500	1,000	2,000	4,000	8,000
[db/km]	[db/km]	[db/km]	[db/km]	[db/km]	[db/km]	[db/km]	[db/km]
0.1	0.4	1.0	1.9	3.7	9.7	32.8	117.0

WTG: SUT 200kW 200 27.5 !O!
Noise: Measured

Source	Source/Date	Creator	Edited
A&C INSTITUTE OF SHENYANG UNIVERSITY OF TECHNOLOGY	06/02/2013	USER	04/02/2014 11:05
SUT200KWACOUSTICV2.2			
2dB uncertainty added			

Status	Hub height [m]	Wind speed [m/s]	LwA,ref [dB(A)]	Pure tones		Octave data 63 [dB]	125 [dB]	250 [dB]	500 [dB]	1000 [dB]	2000 [dB]	4000 [dB]	8000 [dB]
ExtraPolated	31.0	4.0	90.2	No	Generic data	71.8	78.8	82.2	84.8	84.6	81.7	76.9	67.4
Interpolated	31.0	5.0	91.4	No	Generic data	73.0	80.0	83.4	86.0	85.8	82.9	78.1	68.6
From Windcat		6.0	92.6	No	Generic data	74.2	81.2	84.6	87.2	87.0	84.1	79.3	69.8
From Windcat		7.0	93.8	No	Generic data	75.4	82.4	85.8	88.4	88.2	85.3	80.5	71.0
From Windcat		8.0	95.4	No	Generic data	77.0	84.0	87.4	90.0	89.8	86.9	82.1	72.6
From Windcat		9.0	97.3	No	Generic data	78.9	85.9	89.3	91.9	91.7	88.8	84.0	74.5
From Windcat		10.0	98.3	No	Generic data	79.9	86.9	90.3	92.9	92.7	89.8	85.0	75.5
ExtraPolated	31.0	11.0	98.6	No	Generic data	80.2	87.2	90.6	93.2	93.0	90.1	85.3	75.8
ExtraPolated	31.0	12.0	99.8	No	Generic data	81.4	88.4	91.8	94.4	94.2	91.3	86.5	77.0

Appendix B. Noise assessment – noise map around the development



Appendix C. SUT 200kW noise report (extract)

沈阳工业大学自控技术研究所
A&C INSTITUTE OF SHENYANG UNIVERSITY OF TECHNOLOGY

SUT 200KW Wind Turbine Acoustic Profile

SUT 200KW Turbine Detail:
Class II A
Rotor diameter: 27.6m
Tower height: 30m
Rotor: Horizontal, Active pitch

SUT 200KW acoustic data summary:

IEC 61400-11:2003

Wind Speed (m/s)	6	7	8	9	10
Apparent Sound power level $L_{WA,k}$ (dB)	90.60	91.83	93.42	95.33	96.39

Distance to the Turbine R_1 m	50	100	150	200	250	300	350	400	450
Sound Power Level (dB) (8m/s)	51.21	44.94	41.17	38.42	36.23	34.40	32.81	31.40	30.2

Key sound data	Back ground noise (dB)	Distance turbine match background noise M	Distance turbine can't be heard M	35dB distance M	Turbine Acoustic power (dB)
6m/s wind speed	43.1	100	240	230	90.6
10m/s wind speed	47	130	320	315	96.39

The frequency content has been assessed using the methodology prescribed by the IEC 61400-11 standard and was found not be tonal and so no tonal penalty has been applied to the result. The turbine sound does not have irritating tones, and is not considered tonal per IEC 61400-11.

沈阳经济技术开发区中央四街 20-1
NO.20-1,4th Street, Economic and Technological Development Zone, Shenyang, China
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- The turbine apparent sound power level ($L_{WA,k}$) has been calculated using the formula below specified in BS EN 61400-11:2003 (equation 9)

$$L_{WA,k} = L_{Aeq,c,k} - 6 + 10 \times \log\left[\frac{4\pi R_1^2}{S_0}\right]$$

Where:

$L_{Aeq,c,k}$ is the background corrected A-weighted sound pressure level at the integer wind speeds and under reference conditions;
R_1 is the slant distance in meters from the rotor centre to the microphone; and
S_0 is a reference area, $S_0 = 1m^2$

The 6 dB constant in equation (9) accounts for the approximate pressure doubling that occurs for the sound level measurements on a ground board.

- The apparent sound power level calculation for winds speeds from 6 – 10m/s is presented. It should be noted that the difference between the derived operational noise levels and the corresponding background level at each wind speeds is such that no correction for the influence of background is necessary.

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ITEM 16

W I N D
CONSULTANCY

Report 5230_R1A

Kalula House

Noise
Assessment report

For WhichTurbine.com
April 2014

The Wind Consultancy Service
17 Ford Lane
Morton
Bourne
PE10 0RQ

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Version History

5230_R1	13/02/2014	Original issue
5230_R1a	09/04/2014	Revised mapping and individual property noise predictions added as per request from Angus EHO.

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Noise Assessment Report – Kalula House

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In the case of Kalula House, a single turbine location has been suggested. The turbine has the following physical characteristics:

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- Rotor diameter - 27.5m

A turbine fitting this envelope is used for the assessment of noise.

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Wind turbines are noise sources. The principle sources are the machinery in the nacelle at the top of the tower (gearbox, generator, cooling fans, pitch gear, yaw gear and yaw brakes), and the aerodynamic sound of the blades passing through the air[1].

The proposed turbine location was selected to be as far as reasonably practicable from domestic dwellings yet close to a grid connection, clear of power lines and microwave links and have an adequate wind resource.

The noise characteristics of the proposed turbine are as follows:

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2 Document SUT200KWACOUSTICV2.2.PDF, published 02/06/2013

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In particular, it notes:

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[5] Angus Council. [Online] Available from: http://www.angus.gov.uk/renewableenergy/Finalised_Implementation_Guide_Renewable_Energy.pdf [Accessed 04/02/2014]

> *dB $L_{Aeq(10mins)}$ assessed using the BWEA method referred to below is considered appropriate.*
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>
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>
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>
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3.3. Assessment of Noise

3.3.1. Methodology

The assessment has been desk-based. The magnitude of predicted noise and its variation with windspeed have been calculated using the DECIBEL module of EMD's WindPRO software[6]. The software, which is typical of those in use in the wind energy industry, creates a mathematical model of the proposed project, its location, the surrounding terrain and the locations of noise-sensitive properties. The following factors are taken into account in the calculation:

- Turbine locations
- Turbine source noise (data supplied by turbine suppliers).
- Topography.

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- Locations of houses/buildings.

3.3.1.1. IoA recommendations

A 2013 paper published by the Institute of Acoustics[7] provided recommendations for the calculation of noise from wind turbine projects in the UK. The paper recommended:

- the use of the ISO 9613-2 propagation model
- documentary support for the wind turbine source noise data used in the calculation (manufacturer-supplied data)
- atmospheric conditions of 10°C and 70% relative humidity
- ground porosity factor, G, of 0 where wind turbine data was of test or measured quality, and 0.5 where the data were warranted by the manufacturer or where test data is supplemented by measurement uncertainty
- No barrier effects

The DECIBEL module in WindPRO has been used with these settings in the calculation of the results presented in this report. As the results are based on measured test data with measurement uncertainty included, the ground porosity is set to 0.5. The ISO 9613-2 model has been found to be a robust method for the assessment of turbine-generated noise[8].

3.3.1.2. Quantification of the effects

The noise levels have been quantified as follows:

- A contour plot of noise at a specific windspeed (typically 8-12m/s measured at 10m above ground)

[7] http://www.ioa.org.uk/pdf/ioa-gpg-on-wtna-issue-01-05-2013.pdf [Accessed 23/01/2014].
[8] Bullmore, A, *et al*, (2009), "*Wind Farm Noise Predictions and Comparisons with Measurements*," paper presented at the Third International Meeting on Wind Turbine Noise, 17-19 June 2009, Aalborg.

3.3.2. Assessment of results

The assessment concludes that the development will not exceed the stated limits, namely 45dB at 10m/s, required to allow the use of the simplified condition assuming financial involvement in the project. Background noise monitoring, in conjunction with windspeed data collection, is not therefore required. The detailed results shown in Appendix B show all properties lie outside the regions where noise is predicted to be above 45dB.

3.3.3. Summary

The predicted noise levels are such that background noise measurements will not be required as a simplified noise condition can be applied.

3.4. Mitigation

The results of the assessment indicate mitigation will not be required.

3.5. Residual effects

The modelled effects show that the maximum potential for turbine-produced noise is within the limits stated in both ETSU-R-97 and Angus' own policy document for properties around the proposed turbine locations with a financial involvement in the project and there is no need for the measurement of background noise.

4. Conclusions

The potential for operational turbine-produced noise occurring around the proposed wind turbine site named Kalula House has been assessed on behalf of the developer.

The results have been based on a desk-top study using industry-standard tools.

Results have been assessed using:

- the ISO 9613-2 propagation model
- manufacturer-supplied source noise data including measurement uncertainty
- atmospheric conditions of 10°C and 70% RH
- ground porosity of 0.5 (semi-porous ground)
- no barrier effects

On this basis, neighbouring properties will not experience noise levels above the limits set out in ETSU-R-97 and Angus' own policy and there is therefore no requirement to measure background noise.

This assessment considers that significant effects are not likely to take place. Mitigation will not be required.

Appendix A. Noise assessment – assumptions for calculation

Project:
WhichTurbine_KalulaHouse

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04/02/2014 12:19 / 1

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Paul Hannah / mail@windconsult.co.uk

Calculated:
04/02/2014 11:15/2.9.269

DECIBEL - Assumptions for noise calculation

Calculation: SUT 200kW

Noise calculation model:
ISO 9613-2 United Kingdom
Wind speed:
4.0 m/s - 12.0 m/s, step 1.0 m/s
Ground attenuation:
General, Ground factor: 0.5
Meteorological coefficient, C0:
0.0 dB
Type of demand in calculation:
3: WTG noise is compared to ambient noise plus margin (UK, AT etc.)
Noise values in calculation:
All noise values are 90% exeedance values (L90)
Pure tones:
Pure and Impulse tone penalty are added to WTG source noise
Height above ground level, when no value in NSA object:
4.0 m Don't allow override of model height with height from NSA object
Deviation from "official" noise demands. Negative is more restrictive, positive is less restrictive.:
0.0 dB(A)
Octave data required
Air absorption

63	125	250	500	1,000	2,000	4,000	8,000
[db/km]	[db/km]	[db/km]	[db/km]	[db/km]	[db/km]	[db/km]	[db/km]
0.1	0.4	1.0	1.9	3.7	9.7	32.8	117.0

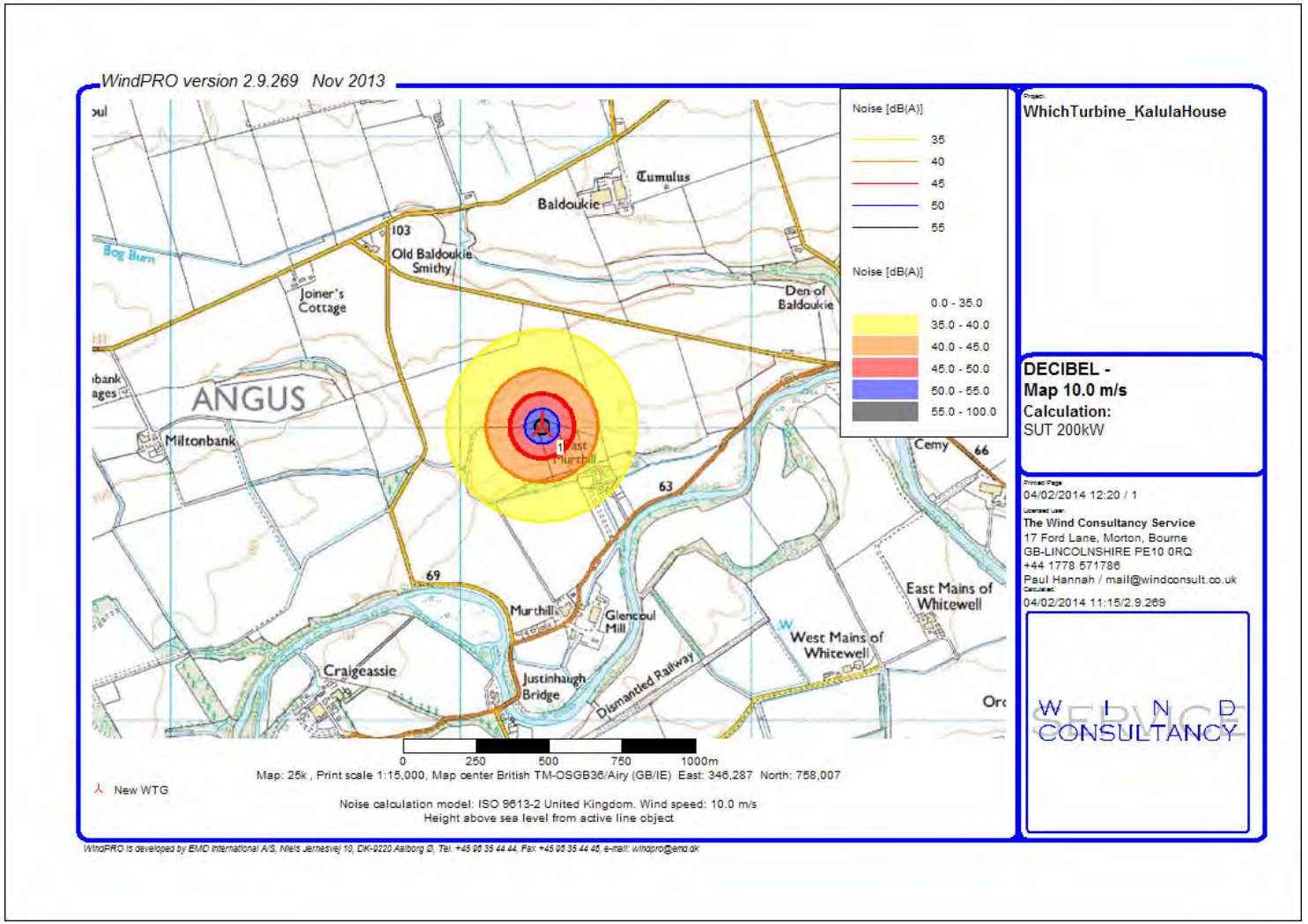
WTG: SUT 200kW 200 27.5 !O!
Noise: Measured

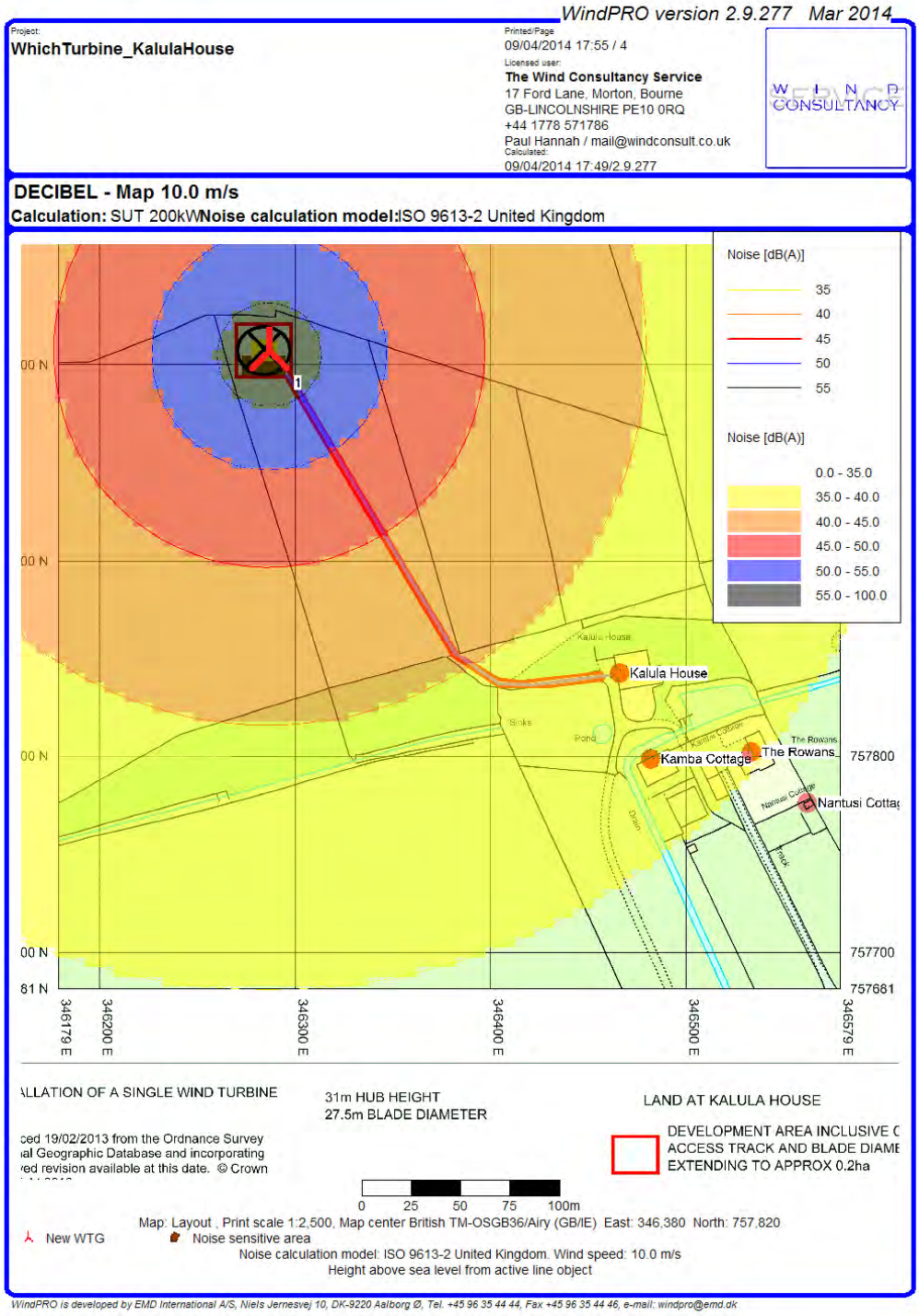
Source	Source/Date	Creator	Edited
A&C INSTITUTE OF SHENYANG UNIVERSITY OF TECHNOLOGY	06/02/2013	USER	04/02/2014 11:05

SUT200KWACOUSTICV2.2
2dB uncertainty added

Status	Hub height [m]	Wind speed [m/s]	LwA,ref [dB(A)]	Pure tones		Octave data 63 [dB]	125 [dB]	250 [dB]	500 [dB]	1000 [dB]	2000 [dB]	4000 [dB]	8000 [dB]
ExtraPolated	31.0	4.0	90.2	No	Generic data	71.8	78.8	82.2	84.8	84.6	81.7	76.9	67.4
Interpolated	31.0	5.0	91.4	No	Generic data	73.0	80.0	83.4	86.0	85.8	82.9	78.1	68.6
From Windcat		6.0	92.6	No	Generic data	74.2	81.2	84.6	87.2	87.0	84.1	79.3	69.8
From Windcat		7.0	93.8	No	Generic data	75.4	82.4	85.8	88.4	88.2	85.3	80.5	71.0
From Windcat		8.0	95.4	No	Generic data	77.0	84.0	87.4	90.0	89.8	86.9	82.1	72.6
From Windcat		9.0	97.3	No	Generic data	78.9	85.9	89.3	91.9	91.7	88.8	84.0	74.5
From Windcat		10.0	98.3	No	Generic data	79.9	86.9	90.3	92.9	92.7	89.8	85.0	75.5
ExtraPolated	31.0	11.0	98.6	No	Generic data	80.2	87.2	90.6	93.2	93.0	90.1	85.3	75.8
ExtraPolated	31.0	12.0	99.8	No	Generic data	81.4	88.4	91.8	94.4	94.2	91.3	86.5	77.0

Appendix B. Noise assessment – noise results around the development




WindPRO version 2.9.277 Mar 2014
Project:
WhichTurbine_KalulaHouse
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09/04/2014 17:55 / 4
Licensed user:
The Wind Consultancy Service
17 Ford Lane, Morton, Bourne
GB-LINCOLNSHIRE PE10 0RQ
+44 1778 571786
Paul Hannah / mail@windconsult.co.uk
Calculated:
09/04/2014 17:49/2.9.277
DECIBEL - Map 10.0 m/s
Calculation: SUT 200kWNoise calculation model:ISO 9613-2 United Kingdom
Noise [dB(A)]
35
40
45
50
55
Noise [dB(A)]
0.0 - 35.0
35.0 - 40.0
40.0 - 45.0
45.0 - 50.0
50.0 - 55.0
55.0 - 100.0
Kalula House
Kamba Cottage
The Rowans
Nantusi Cottage
757800
757700
757681
346179 E
346200 E
346300 E
346400 E
346500 E
346579 E
ALLATION OF A SINGLE WIND TURBINE
31m HUB HEIGHT
27.5m BLADE DIAMETER
LAND AT KALULA HOUSE
DEVELOPMENT AREA INCLUSIVE C
ACCESS TRACK AND BLADE DIAME
EXTENDING TO APPROX 0.2ha
ced 19/02/2013 from the Ordnance Survey
ial Geographic Database and incorporating
ved revision available at this date. © Crown
0 25 50 75 100m
Map: Layout , Print scale 1:2,500, Map center British TM-OSGB36/Airy (GB/IE) East: 346,380 North: 757,820
New WTG
Noise sensitive area
Noise calculation model: ISO 9613-2 United Kingdom. Wind speed: 10.0 m/s
Height above sea level from active line object
WindPRO is developed by EMD International A/S, Niels Jernesvej 10, DK-9220 Aalborg Ø, Tel. +45 96 35 44 44, Fax +45 96 35 44 46, e-mail: windpro@emd.dk

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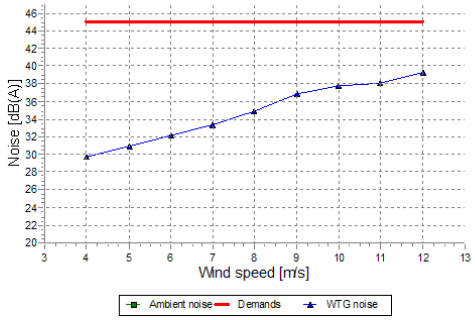
Calculated:
09/04/2014 17:49/2.9.277

DECIBEL - Detailed results

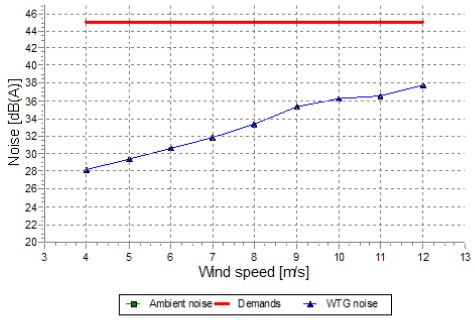
Calculation: SUT 200kW **Noise calculation model:** ISO 9613-2 United Kingdom

Kalula House (A)



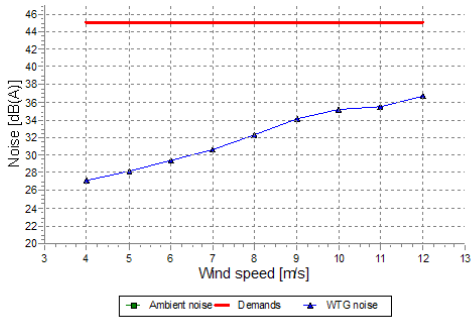
Wind speed	Demands Margin	Demands	Sound Level WTG noise	Demands fulfilled ?
[m/s]	[dB(A)]	[dB(A)]	[dB(A)]	
4.0	0.0	45.0	29.7	Yes
5.0	0.0	45.0	30.9	Yes
6.0	0.0	45.0	32.1	Yes
7.0	0.0	45.0	33.3	Yes
8.0	0.0	45.0	34.9	Yes
9.0	0.0	45.0	36.8	Yes
10.0	0.0	45.0	37.8	Yes
11.0	0.0	45.0	38.1	Yes
12.0	0.0	45.0	39.3	Yes

Kamba Cottage (B)



Wind speed	Demands Margin	Demands	Sound Level WTG noise	Demands fulfilled ?
[m/s]	[dB(A)]	[dB(A)]	[dB(A)]	
4.0	0.0	45.0	28.2	Yes
5.0	0.0	45.0	29.4	Yes
6.0	0.0	45.0	30.6	Yes
7.0	0.0	45.0	31.8	Yes
8.0	0.0	45.0	33.4	Yes
9.0	0.0	45.0	35.3	Yes
10.0	0.0	45.0	36.3	Yes
11.0	0.0	45.0	36.6	Yes
12.0	0.0	45.0	37.8	Yes

The Rowans (C)



Wind speed	Demands Margin	Demands	Sound Level WTG noise	Demands fulfilled ?
[m/s]	[dB(A)]	[dB(A)]	[dB(A)]	
4.0	0.0	45.0	27.1	Yes
5.0	0.0	45.0	28.3	Yes
6.0	0.0	45.0	29.5	Yes
7.0	0.0	45.0	30.7	Yes
8.0	0.0	45.0	32.3	Yes
9.0	0.0	45.0	34.2	Yes
10.0	0.0	45.0	35.2	Yes
11.0	0.0	45.0	35.5	Yes
12.0	0.0	45.0	36.7	Yes

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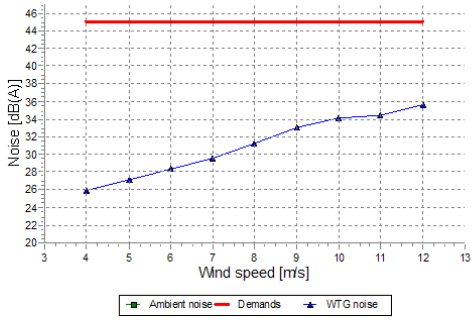
+44 1778 571786
Paul Hannah / mail@windconsult.co.uk

Calculated:
09/04/2014 17:49/2.9.277

DECIBEL - Detailed results

Calculation: SUT 200kW **Noise calculation model:** ISO 9613-2 United Kingdom

Nantusi Cottage (D)



Wind speed	Demands Margin	Demands	Sound Level WTG noise	Demands fulfilled ?
[m/s]	[dB(A)]	[dB(A)]	[dB(A)]	
4.0	0.0	45.0	26.0	Yes
5.0	0.0	45.0	27.2	Yes
6.0	0.0	45.0	28.4	Yes
7.0	0.0	45.0	29.6	Yes
8.0	0.0	45.0	31.2	Yes
9.0	0.0	45.0	33.1	Yes
10.0	0.0	45.0	34.1	Yes
11.0	0.0	45.0	34.4	Yes
12.0	0.0	45.0	35.6	Yes

Appendix C. SUT 200kW noise report (extract)

沈阳工业大学自控技术研究所
A&C INSTITUTE OF SHENYANG UNIVERSITY OF TECHNOLOGY

SUT 200KW Wind Turbine Acoustic Profile

SUT 200KW Turbine Detail:
Class II A
Rotor diameter: 27.6m
Tower height: 30m
Rotor: Horizontal, Active pitch

SUT 200KW acoustic data summary:

IEC 61400-11:2003

Wind Speed (m/s)	6	7	8	9	10
Apparent Sound power level $L_{WA,k}$ (dB)	90.60	91.83	93.42	95.33	96.39

Distance to the Turbine R_1 m	50	100	150	200	250	300	350	400	450
Sound Power Level (dB) (8m/s)	51.21	44.94	41.17	38.42	36.23	34.40	32.81	31.40	30.2

Key sound data	Back ground noise (dB)	Distance turbine match background noise M	Distance turbine can't be heard M	35dB distance M	Turbine Acoustic power (dB)
6m/s wind speed	43.1	100	240	230	90.6
10m/s wind speed	47	130	320	315	96.39

The frequency content has been assessed using the methodology prescribed by the IEC 61400-11 standard and was found not be tonal and so no tonal penalty has been applied to the result. The turbine sound does not have irritating tones, and is not considered tonal per IEC 61400-11.

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- The turbine apparent sound power level (L_{WAk}) has been calculated using the formula below specified in BS EN 61400-11:2003 (equation 9)

$$L_{WAk} = L_{Aeq,c,k} - 6 + 10 \times \log\left[\frac{4\pi R_1^2}{S_0}\right]$$

Where:

$L_{Aeq,c,k}$ is the background corrected A-weighted sound pressure level at the integer wind speeds and under reference conditions;

R_1 is the slant distance in meters from the rotor centre to the microphone; and

S_0 is a reference area, $S_0 = 1m^2$

The 6 dB constant in equation (9) accounts for the approximate pressure doubling that occurs for the sound level measurements on a ground board.

- The apparent sound power level calculation for winds speeds from 6 – 10m/s is presented. It should be noted that the difference between the derived operational noise levels and the corresponding background level at each wind speeds is such that no correction for the influence of background is necessary.

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ITEM 17

LOCAL REVIEW STATEMENT
(REF. 13/01067/FULL)

ERECTION OF WIND TURBINE OF 31 METRES TO HUB HEIGHT AND 44.75 METRES TO BLADE TIP

ON LAND 180m NORTH-WEST OF KALULU HOUSE, EAST MURTHILL, FORFAR, DD8 3SF

TURBINE GRID CO-ORDINATES: 346288, 758008

CONTENTS

1 BACKGROUND

The proposal to install a single wind turbine with a height to hub of 31m and a height to tip of 44.75m within a field located 180m to the north-west of Kalulu House, East Murthill, Forfar, was received by Angus Council on 18th November 2013 and refused permission on 29th October 2014. The reason cited for refusal is that the proposal is deemed to contravene policies S1: Development Boundaries; S6: Development Principles (Schedule 1); ER5: Conservation of Landscape Character; ER34: Renewable Energy Developments; and ER35: Wind Energy Developments of the Angus Local Plan Review (2009) with reference to the height of the wind turbine having an "***unacceptable cumulative landscape and visual impact when viewed with other existing wind turbines***."

Prior to the submission of the above planning application, an EIA screening request and two full planning applications were lodged with Angus Council – these two full planning applications having been subsequently withdrawn. The EIA screening request (ref. 13/00132/EIASCR) was sent to the Council in February 2013 for the installation of a single wind turbine at the proposed site and was deemed not to constitute and EIA development. In April 2013, a proposal at the site for two wind turbines with a height to hub of 36.8m and height to blade tip of 48.5m was received and validated by the Council. This planning application (ref. 13/00365/FULL) was withdrawn two months later owing to the planning officer intimating that the potential impacts of the proposal would be too great for approval to be granted. In order to reduce these impacts, a revised planning application was lodged (ref. 13/00701/FULL) comprising two wind turbines standing at 34.4m to hub and 44.8m to blade tip, which was validated in August 2013. This was withdrawn in November 2013.

No objections to the current proposal were received from any organisation contacted as part of the consultation process.

18 public objections were received (plus a single neutral comment) in respect of the current application, which can be summarised into six material planning considerations, one of these being cumulative landscape impact.

2 REDUCTION IN DEVELOPMENT SCALE

The proposed wind energy installation has been considerably reduced from the initial proposal (ref. 13/00365/FULL) which was lodged with the Council in April 2013 and comprised two wind turbines each standing at 36.8m height to hub and 48.5m to blade tip.

In order to accommodate the views of the planning authority, consultee and members of the public who have supplied comments, the scale of the development, as well as the size of the proposed turbine, has been reduced. The proposal is now revised from two, to a single, Generation SUT 200kW wind turbine. Furthermore, compared to the first planning application lodged for a wind energy development at the site, the proposed wind turbine now represents an almost 16% reduction in height from ground level to hub, and a reduction in almost 8% from ground to blade tip.

The fact that the proposals submitted to the Council for a wind energy development at Kalulu House have been revised for a second time and is the third full planning application to have

been lodged, demonstrates that steps have taken to try to alleviate the impact of the proposal.

3 CUMULATIVE LANDSCAPE IMPACT

The reason for refusal of the proposed wind turbine centres on the assertion that the cumulative landscape and visual impact resulting from the proposal will be unacceptable and as such, the granting of planning approval would contravene the Development Plan.

Following SNH Guidelines, a comprehensive suite of visual information was produced using specialist wind energy landscape architecture software in order to demonstrate the potential visual impact of the proposal. This comprised the following:

- desktop assessment of the characteristics of the receiving landscape
- Zone of Theoretical Visibility map centred on the proposed site
- A series of five photomontage images with accompanying Viewpoints Map
- A series of eight wireframe images with accompanying Viewpoints Map
- Cumulative Base Plan

In order to assess the cumulative landscape impact of any proposed wind energy development, pending wind energy proposals within the planning system are assessed as if they are operational, in order to give a full assessment of potential cumulative impact. The nearest wind turbine project to the proposed development is the 39m to hub and 49.5m high to blade tip operational wind turbine at Broom Farm (ref. 13/00171/FULL). This planning application was lodged with Angus Council in February 2013, and was approved on 10th January 2014, during which time the present Kalulu House planning application had been validated (30th December 2013) and was pending consideration.

Given that permission for a wind turbine was granted approval by Angus Council whilst the present Kalulu House proposal had been validated and was pending consideration, this implicitly reveals that the cumulative landscape impact of the Broom Farm and Kalulu House wind turbine proposals in conjunction with one another was deemed by Angus Council to be acceptable. This is because in assessing the cumulative impact of the Broom Farm turbine, the Kalulu House proposal will have been taken into account. It is therefore our assertion that Angus Council has already previously demonstrated that the cumulative landscape impact of the Kalulu House wind turbine along with that at Broom Farm is not unacceptable and, as such, fulfils the requirements of the Angus Local Plan Review and the other documents of the Development Plan in respect of cumulative landscape impact.

The Strategic Landscape Capacity Assessment for Wind Energy in Angus (March 2014) describes the proposal site as lying within the TAY10 Broad Valley Lowland Landscape Character Type (LCT) (Strathmore), and classifies the proposed Generation SUT 200kW turbine as medium scale. Based on the guidelines set out within this document for a development, a case for refusal for the proposed turbine is not necessarily made. The Broad Valley Lowland Landscape is described as being medium scale, with the capacity to accommodate medium scale wind turbines, and greater capacity for doing so than many other LCTs. It is recommended that turbines installed are positioned adjacent to field boundaries in order to best sit within their immediate surroundings – the Kalulu House

turbine is to be sited at the corner of the installation field. Additionally, the document does not categorise the Broad Valley Lowland LCT as an "area where cumulative impact limits further development". Rather, page 86 states that there is capacity to accommodate more frequent medium turbines across much of the Broad Valley Lowlands. Importantly, page 87 does not identify the Broad Valley Lowlands as an area where cumulative impact limits capacity for further development.

The Development Plan documents relevant to the proposed wind turbine consist of the TAYplan Strategic Development Plan (approved June 2012) and the Angus Local Plan Review (ALPR) (adopted 2009). Reference is made to ALPR policies S1, S6, ER5, ER34 and ER35 in the reason for refusal.

The countryside location of the proposed wind turbine is not one that is remote and separate from built development. The turbine will stand less than 200m from the residence known as Kalulu House and the further dwellings and buildings that form a cluster of development lie to the immediate south of the House. Additionally, the proposed wind turbine is temporary in nature; the entire structure including ancillary equipment will be removed from site at the end of its operational life, therefore any impact to the landscape will cease after a maximum period of 25 years.

The total height of the proposed Kalulu House wind turbine is 4.75m shorter than the operational turbine at Broom Farm, and lies on ground with an elevation of 80m AOD compared to the turbine at Broom Farm which lies at an elevation of 124m AOD. Therefore, the proposed wind turbine is the smaller of the two turbines on which the question of cumulative landscape impact primarily focuses. These facts also depict that the Kalulu House wind turbine will be the smaller and less visually dominant of the two turbines.

It is our contention that the proposed wind turbine for installation at Kalulu House will not result in an unacceptable cumulative landscape and visual impact when viewed with other existing wind turbines, and as such, the proposal meets the requirements of the Development Plan.

4 SUMMARY

Our premise for reviewing the proposed wind turbine for installation at Kalulu House centres on the fact that in approving the wind turbine at Broom Farm, Angus Council has implicitly ruled that the cumulative landscape impact of the Kalulu House wind turbine development is acceptable. As such, the proposal complies with ALPR policies S1, S6, ER5, ER34 and ER35.

It has been the desire of the applicant to establish a productive yet relatively small scale wind energy development at the proposed site for approximately two years – during this time the various planning applications for such a proposal have been under consideration by Angus Council. In order to accommodate the views and assessments of the planning authority as well as those of the statutory consultees and members of the public, through a process of discussion and liaison, the proposal has been twice altered with the aim of reaching an outcome suitable to the applicant and all other parties.

Angus Council holds a presumption in favour of renewable energy development. The proposal will result in an environmental benefit of local, fuel-free electricity, estimated at 530,000kWh per annum. Added to this, the turbine will support the ongoing viability of Kalulu House's tourism business and working smallholding, whilst contributing towards renewable energy targets.

ITEM 18

Angus Council

Application Number:	13/01067/FULL
Description of Development:	Erection of Wind Turbine of 31 Metres To Hub Height And 44.75 Metres To Blade Tip
Site Address:	Field 180M North West Of Kalulu House East Murthill Forfar
Grid Ref:	346288 : 758008
Applicant Name:	R & A Renewables

Report of Handling

Site Description

The application site is located approximately 180m to the north west of Kalulu House, East Murthill, Forfar. The application site is located between the Memus to Tannadice road to the north and the B957 Kirriemuir to Tannadice road to the south, with the road from Justinhaugh to Baldoukie to the west. This is an open site with little nearby vegetation and is within agricultural land which slopes gently from north down to south.

Proposal

The application proposes the erection of a wind turbine with a hub height of 31 metres and an overall height of 44.75 metres, a rotor diameter of 27.5 metres and a generation capacity of 200kw. The intended turbine will be a Generation SUT 200kw in a pure white colour. A small crane hardstanding will be formed at the base of the turbine with a small transformer at the base, and existing road to Kalulu House will be extended to the turbine site.

Whilst the proposed turbine falls within Schedule 2 of the Environmental Impact Assessment (Scotland) Regulations 2011, it is not considered likely to have significant environmental effects by virtue of its nature, size and location. EIA is therefore not required.

It should be noted that there were two planning applications submitted in 2013, each for two wind turbines, and both were withdrawn (ref. 13/00365/FULL and 13/00701/FULL apply). These applications were both withdrawn following concerns raised by the Environmental Health Service over inadequate information on noise and shadow flicker issues.

This application for planning permission has not been subject of variation.

Publicity

The application was subject to normal neighbour notification procedures.

The application was advertised in the Dundee Courier on 10 January 2014 for the following reasons:

- Schedule 3 Development

The nature of the proposal did not require a site notice to be posted.

Planning History

13/00132/EIASCR for Screening Opinion for a Wind Turbine Development was determined as "EIA NOT Required" on 13 March 2013.
13/00365/FULL for Installation of Two Wind Turbines with Height to Hub of 36.8m and Height to Blade Tip of 48.5m and Associated Temporary Infrastructure was determined as "Application Withdrawn" on 27 June 2013.
13/00701/FULL for Erection Of Two Wind Turbines Of 34.4m To Hub Height And 44.8m To Blade Tip And Ancillary Development (Re-application) was determined as "Application Withdrawn" on 20 November 2013.

Applicant's Case

Supporting Information:

Supporting documentation has been provided to assist in the determination of the application. The documentation is broken down into the following sections:

1. Introduction (including proposals)
2. Planning Policy Framework
3. Natural Heritage Assessment
4. Cultural Heritage Assessment
5. Communities/Residential Amenity
6. Air Quality
7. Landscape and Visual Impact (the assessment includes a desktop study of the existing landscape; Zone of Theoretical Visibility (ZTV) drawing to assess potential viewpoints to gain a better understanding of the potential impact on the landscape by the proposed development. Photomontages and wireframes have been produced to indicate the potential impact of the development from identified viewpoints. Impacts of the proposed development have been assessed in terms of their magnitude, sensitivity and significance on the landscape character, designations, nearby ancient monuments and historic sites and local communities)
8. Further Considerations and Planning Policy
9. Conclusions.

Consultations

Transport Scotland - This consultee has raised no objections to the proposals, on the understanding that the route of turbine delivery and any temporary traffic measures required are first agreed with them.

Community Council - There was no response from this consultee at the time of report preparation.

Angus Council - Roads - This consultee has raised no objections to the proposals.

Scottish Water - There was no response from this consultee at the time of report preparation.

NERL Safeguarding - This consultee has raised no objections to the proposals.

Joint Radio Co Ltd - This consultee has raised no objections to the proposals.

RSPB Scotland - There was no response from this consultee at the time of report preparation.

Dundee Airport Ltd - This consultee has raised no objections to the proposals.

Ministry Of Defence - This consultee has raised no objections to the proposals.

Scottish & Southern Energy - There was no response from this consultee at the time of report preparation.

Spectrum - This consultee has raised no objections, but has advised that Atkins Ltd and JRC are also consulted.

British Telecom - This consultee has raised no objections to the proposals.

Tayside Police Legal Services - There was no response from this consultee at the time of report preparation.

Airwave Solutions Limited - There was no response from this consultee at the time of report preparation.

Civil Aviation Authority - This consultee has raised no objections to the proposals.

Atkins - This consultee has raised no objections to the proposals.

Mll Telecom Ltd - There was no response from this consultee at the time of report preparation.

Historic Scotland - Archaeology - This consultee has raised no objections to the proposals.

Aberdeenshire Council Archaeology Service - This consultee has no objections, on the understanding that an Archaeological Watching Brief is carried out during any groundbreaking and development work.

Scottish Natural Heritage - There was no response from this consultee at the time of report preparation.

Angus Council Environmental Health - This consultee has no objections to the proposals, subject to a number of conditions of the planning permission in order to safeguard existing residential amenity.

Representations

19 letters of representation were received with 18 objecting to the application and one providing general comment.

The main points of concern were as follows:

. Adverse affects on existing residential amenity
. Adverse affects on visual amenity
. Adverse affects on nearby conservation area
. Adverse cumulative visual effects with existing wind turbines
. Adverse affects on the tourist industry
. A disruption to TV signals

The above matters are discussed in the assessment of the proposal below

. Adverse health consequences - the Scottish Government's Specific Advice Sheet on Onshore Wind indicates that a recent report prepared for the Department of Energy and Climate Change concluded that there is no evidence of health effects arising from infrasound or low frequency noise generated by wind turbines. I do not consider that the proposal should give rise to any other significant health issues provided it is capable of complying with relevant conditions in relation to matters such as noise levels and shadow flicker.

. Devaluation of property value - this is not a valid planning objection.

Development Plan Policies

Angus Local Plan Review 2009

Policy S1 : Development Boundaries
Policy S3 : Design Quality
Policy S6 : Development Principles (Schedule 1)
Policy ER1 : Natura 2000 and Ramsar Sites
Policy ER2 : National Nature Reserves and Sites of Special Scientific Interest
Policy ER3 : Regional and Local Designations
Policy ER4 : Wider Natural Heritage and Biodiversity
Policy ER5 : Conservation of Landscape Character
Policy ER11 : Noise Pollution
Policy ER12 : Development Affecting Conservation Areas
Policy ER16 : Development Affecting the Setting of a Listed Building
Policy ER18 : Archaeological Sites of National Importance
Policy ER19 : Archaeological Sites of Local Importance
Policy ER30 : Agricultural Land
Policy ER34 : Renewable Energy Developments
Policy ER35 : Wind Energy Developments

TAYplan Strategic Development plan

Policy 3D : Natural and Historic Assets
Policy 6C : Consider Criteria as Minimum

The full text of the relevant development plan policies can be viewed at Appendix 1 to this report.

Assessment

Sections 25 and 37(2) of the Town and Country Planning (Scotland) Act 1997 require that planning decisions be made in accordance with the development plan unless material considerations indicate otherwise.

In addition to the development plan a number of matters are also relevant to the consideration of the application and these include: -

- National Planning Framework for Scotland 3 (NPF3);
- Scottish Planning Policy (SPP);
- Scottish Government 'Specific Advice Sheet' on Onshore Wind Turbines;
- Tayside Landscape Character Assessment;
- Angus Council Implementation Guide for Renewable Energy Proposals (2012);
- Strategic Landscape Capacity Assessment for Wind Energy in Angus (Ironside Farrar - March 2014);
- Angus Wind farms Landscape Capacity and Cumulative Impacts Study (Ironside Farrar, 2008);
- Siting and Designing Wind Farms in the Landscape (SNH, Version 2 May 2014)
- Siting and Design of Small Scale Wind Turbines of Between 15 and 50 metres in height (SNH, March 2012);
- 'Assessing The Cumulative Impact of Onshore Wind Energy Developments' (SNH, March 2012)
- Planning Advice Note 1/2011: Planning and Noise.

NPF3 states that the Government is committed to a Low Carbon Scotland and through the priorities identified in the spatial strategy set a clear direction to tackling climate change through national planning policy. Renewable energy technologies, including onshore wind, are identified as key aspects to realising this aim whilst recognising that a planned approach to development is required to find the correct balance between safeguarding assets which are irreplaceable while facilitating change in a sustainable way.

The Scottish Planning Policy (SPP, June 2014) represents a statement of government policy on land use

planning. In relation to onshore wind, the SPP states that 'Planning authorities should set out in the development plan a spatial framework identifying areas that are likely to be most appropriate for onshore wind farms. The spatial framework is complemented by a more detailed and exacting development management process where the merits of an individual proposal will be carefully considered against the full range of environmental, community and cumulative impacts. Proposals for onshore wind should continue to be determined while spatial frameworks are and local policies are being prepared and updated'. Proposals for energy infrastructure developments should always take account of spatial frameworks for wind farms and heat maps where these are relevant. Considerations will vary relative to the scale of the proposal and area characteristics but are likely to include:

- net economic impact, including local and community socio-economic benefits such as employment, associated business and supply chain opportunities;
- the scale of contribution to renewable energy generation targets;
- effect on greenhouse gas emissions;
- cumulative impacts - planning authorities should be clear about likely cumulative impacts arising from all of the considerations below, recognising that in some areas the cumulative impact of existing and consented energy development may limit the capacity for further development;
- impacts on communities and individual dwellings, including visual impact, residential amenity, noise and shadow flicker;
- landscape and visual impacts, including effects on wild land;
- effects on the natural heritage, including birds;
- impacts on carbon rich soils, using the carbon calculator;
- public access, including impact on long distance walking and cycling routes and scenic routes identified in the NPF;
- impacts on the historic environment, including scheduled monuments, listed buildings and their settings;
- impacts on tourism and recreation;
- impacts on aviation and defence interests and seismological recording;
- impacts on telecommunications and broadcasting installations, particularly ensuring that transmission links are not compromised;
- impacts on road traffic;
- impacts on adjacent trunk roads;
- effects on hydrology, the water environment and flood risk;
- the need for conditions relating to the decommissioning of developments, including ancillary infrastructure, and site restoration;
- opportunities for energy storage; and
- the need for a robust planning obligation to ensure that operators achieve site restoration.

The Scottish Government's Planning Advice Notes relating to renewable energy have been replaced by Specific Advice Sheets (SAS). The 'Onshore Wind Turbines SAS' identifies typical planning considerations in determining planning applications for onshore wind turbines. The considerations identified in the SAS are similar to those identified by policies ER34 and ER35 of the ALPR and the SPP as detailed above.

Angus Council has produced an Implementation Guide for Renewable Energy Proposals. It provides guidance for development proposals ranging from small single turbines to major windfarms. It indicates that wind developments are the primary area of renewable energy proposals in Angus and the planning considerations are strongly influenced by the scale and location of the proposal including landscape and visual impact, potential adverse effects on designated natural and built heritage sites, protected species, residential amenity, soils, water bodies and access.

Scottish Natural Heritage in conjunction with Angus and Aberdeenshire Councils commissioned Ironside Farrar to review current landscape sensitivity and capacity guidance in relation to wind energy development. The Strategic Landscape Capacity Assessment for Wind Energy in Angus (November 2013) provides updated information on landscape capacity for wind energy development and the potential cumulative impact of proposals in the context of operational and consented developments.

Proposals for wind turbine developments and associated infrastructure are primarily assessed against policies ER34 and ER35 of the ALPR although other policies within the plan are also relevant. The policy position provides a presumption in favour of renewable energy developments recognising the contribution wind energy can make in generating renewable energy in Scotland. These policies also require consideration of impacts on ecology including birds; cultural heritage including listed buildings, scheduled monuments, designed landscapes and archaeology; aviation; amenity in the context of shadow flicker, noise and reflected light; landscape and visual impact including cumulative impacts; future site restoration; transmitting or receiving systems; any associated works including transmissions lines, road and traffic access/safety and the environmental impact of this. These policy tests overlap matters contained in other policies and therefore these matters are discussed on a topic by topic basis.

Environmental and Economic Benefits

Policy 6 of TAYplan indicates that one of its aims for the city region is to deliver a low/zero carbon future and contribute to meeting Scottish Government energy and waste targets. The local plan indicates that Angus Council supports the principle of developing sources of renewable energy in appropriate locations. The SPP sets out a "commitment to increase the amount of electricity generated from renewable sources" and includes a target for the equivalent of 100% of Scotland's electricity demand to be generated from renewable sources by 2020 along with a target of 30% of overall energy demand from renewable sources by 2020. Paragraph 154 of the SPP indicates that planning authorities should help to reduce emissions and energy use in new buildings and from new infrastructure by enabling development at appropriate locations that contributes to electricity and heat from renewable sources.

The supporting information indicates the development of a wind turbine would generate electricity at Kalulu House, a residence and Bed and Breakfast business. Any excess electricity would be sold to the national grid. It is indicated that this turbine would generate in the region of 530,000 KWh of CO2-free energy per annum. This figure is provided by applying the mean wind speed data for the site of 6.5m/s. In this respect I accept that the proposed turbine could make a contribution towards renewable energy generation and as such the proposals attract in principle support from the development plan. I have had regard to that contribution in undertaking my assessment of the proposal. To assess the acceptability of the proposals in terms of the more detailed technical issues, the policy tests must be explored.

Landscape Impact

Policy 6 of TAYplan indicates that in determining proposals for energy development consideration should be given to landscape sensitivity. Local Plan Policy ER5 (Conservation of Landscape Character) requires development proposals to take account of the guidance provided by the Tayside Landscape Character Assessment (TLCA), prepared for Scottish Natural Heritage (SNH) in 1999, and indicates that, where appropriate, sites selected should be capable of absorbing the proposed development to ensure that it fits into the landscape. Policy ER34 of the Local Plan indicates that proposals for renewable energy development will be assessed on the basis of no unacceptable adverse landscape and visual impacts having regard to landscape character, setting within the immediate and wider landscape, and sensitive viewpoints.

The application site lies within an area identified in the Tayside Landscape Character Assessment as TAY1 Broad Valley Lowland Landscape Character Type (Strathmore). This LCT is characterised by as being of medium scale, with open simple regular large arable fields with a network of shelterbelts. Landform is generally simple, gently sloping or flat valley form but with areas of more complex fluvio-glacial landform. It is characterised by having open views. The landscape scale is typically medium, but smaller along the corridor of the River South Esk. The turbine would be located on the gently rolling ground which rises to the north of the flat terrace associated with the River South Esk.

The Council's Implementation Guide for Renewable Energy in Angus provides interpretation of the level of turbine development that a landscape character type is capable of absorbing. The IG indicates that the Broad Valley Lowland LCT has capacity to accept turbines up to 80m in height. That does not mean that

all sites will be capable of accommodating a turbine of that height and similarly it does not mean that turbines above that height will not be acceptable anywhere within the area. It provides some guidance which then requires site specific assessment.

The Strategic Landscape Capacity Assessment for Wind Energy in Angus (March 2014) classifies the area within which the turbine is proposed as Broad Valley Lowland Landscape Character Type and Lower South and North Esk Valleys. This area is narrower and less enclosed to the south by topography than the Strathmore Landscape Character Area. It is similarly dominated by arable farmland, but has two significant rivers, a greater level of tree cover and more topographic variation. This study indicates that in this landscape character area, there is low capacity for medium sized wind turbines (30-50m high). due to the possible cumulative effects of other nearby wind turbines. However, it is noted that the proposed turbine will be at 44.75m to blade tip and located at a ground level of 80m AOD and located on gently rolling ground which rises to the north of the flat terrace associated with the River South Esk. At this height, the proposed turbine would generally be in scale with the landscape.

Visual Impact

Policy S6 of the Angus Local Plan Review requires that proposals should not give rise to unacceptable visual impacts. Policy ER34 of the Local Plan also indicates that renewable energy development will be assessed on the basis of no unacceptable adverse landscape and visual impacts having regard to landscape character, setting within the immediate and wider landscape, and sensitive viewpoints. In assessing visual impact I consider that it is appropriate to have regard to recent appeal decisions within Angus where this issue has been considered in order to secure a degree of consistency in the decision making process.

Planning appeal decisions have generally accepted that residents should be treated as of high sensitivity in assessing the significance of visual impact. The magnitude of change (and, thus, the significance of the impact they will experience) will vary with the context of the house that they occupy: its distance from the proposed wind farm and orientation in relation to it; the presence of intervening screening from vegetation and other buildings; and the presence of other significant visual features. However it is not only the views from principal rooms that are of importance as residents also use the space around their house and the impact on occupiers and visitors approaching or leaving the properties must also be considered.

In terms of impacts on residential properties there are three houses at East Murthill (between 240m and 325m, 5 to 7 times turbine height). This is very close, but it may be that views from these houses would be screened by a combination of topography and trees. The proposed turbine would however dominate the short driveways to the houses and potentially some amenity areas associated with the houses. The perched turbine sits above the houses and increases its impact. The extent and nature of views would vary seasonally with the trees being deciduous. On the river terrace to the south are eight houses around Murthill (between 500m and 705m, 11 to 16 times turbine height). Many of these houses would have views of the proposed turbine perched on the edge of the higher ground to the north, which would increase its impacts. From the north, houses are typically located on the more open landscape on a slightly elevated position relative to the turbine location. The two houses at Baldoukie Smithy (817m, 18 times turbine height) do not have views from house or garden areas in the direction of the turbine. The houses at Baldoukie 789m (18 times turbine height),Broomhill and Den of Baldoukie (1059m, 24 times turbine height) and Red Barn (877m, would all have views from principal directions towards the turbine to approximately the south-west. The direction of view affected would increase the level of effect. It is considered that most of the above houses are likely to experience significant effects.

In terms of its general location, the turbine would be at a higher elevation than the wooded corridor of the River South Esk, from where there would frequently be localised screening of views of the turbine from trees and woodland. Its location above the wooded corridor would generally lead to the turbine being widely visible from northern Strathmore and also from the hills in Highland Foothills and the Low Moorland Hills LCTs. The medium sized turbine would generally fit with the rolling topography with the ground steadily rising beyond the site to the north and north-west. However, from the terrace associated with the River South Esk to the south-east, the turbine would appear "perched" above the terrace, increasing its

impact on receptors on the terrace where views are not obstructed by trees and woodland. In this respect, the visual impact of the proposed turbine is likely to be locally significant.

Residential properties are of high visual sensitivity and it is generally accepted that significant visual effects associated with wind turbine development should be regarded as adverse. Development plan policy requires proposals to demonstrate that the siting and appearance of the apparatus has been chosen to minimise the impact on amenity and that there will be no unacceptable adverse visual impacts. In this case the proposal will give rise to significant visual impacts on the occupants of residential properties to the north-east and south. However, given the landform and presence of some screening and as this is a single turbine of reasonably modest scale, I do not consider those impacts to be unacceptable.

Cumulative Landscape and Visual Impact

An assessment of cumulative landscape and visual effects is also required by local and national policy. SNH Guidance on 'Assessing The Cumulative Impact of Onshore Wind Energy Developments' (March 2012) indicates that cumulative landscape effects can include effects on the physical aspects of the landscape and effects on landscape character. Cumulative visual effects can be caused by combined visibility and/or sequential effects. Combined visibility may be in combination i.e. where several wind farms are in the observers arc of vision or in succession where the observer has to turn to see various wind farms. Sequential effects occur when the observer has to move to another viewpoint to see different developments.

The Council's Implementation Guide identifies the Broad Valley Lowlands Landscape Character Type as a "landscape with views of windfarms" and suggests that it has capacity to change to a "landscape with occasional windfarms". The Strategic Landscape Capacity Assessment for Wind Energy in Angus (March 2014) indicates that sufficient separation between turbine groupings should be allowed in this LCA to ensure that as a whole the area is not dominated and that clear intervisibility between turbine groupings is infrequent. This can be achieved through selecting appropriate turbine sizes and separation distances and through exploiting the extensive areas of tree planting and topographic variations to limit views and intervisibility. Where there are two or three closely located applications for single turbines of the same size, opportunities should be exploited for clustering as a group in preference to separation.

In this case, there are a number of other wind turbines currently operating in the nearby vicinity, to the north-east and north-west of the application site. A turbine with a height of 49.5m is operational at Broom Farm, approximately 1.99km to the north-east; two turbines with a height of 76.5m approximately 3.62km to the north-west at East Memus; and one 47.1m high turbine at Balhall approximately 7.89km to the north-east. The Strategic Landscape Capacity Assessment for Wind Energy in Angus (March 2014) states that in this LCA the minimum separation distance between medium sized turbines is between 3-6km. As already stated, the operational wind turbine at Broom Farm is only approximately 1.99km from the application site. This would be seen "in-combination" with the proposed turbine and sometimes "in-sequence". At around 2km apart they would not be close enough to form a coherent group, but would similarly not be sufficiently separated to avoid significant cumulative effects. The turbines at East Memus would commonly be seen "in-combination" with the proposed turbine when viewed from Strathmore generally between Forfar and Brechin. More locally, they would be most commonly viewed "in-succession". The proposed turbine would be a similar size to that at Broom Farm. The proposed turbine would be positioned in the landscape similar to that at Broom Farm and would be viewed as a repeating element in views. It would nevertheless be a significant cumulative visual effect. Regarding houses located on higher ground to the north, these would typically experience "insequence" cumulative visual effects with the single turbine at Broom Farm. Some would in addition experience "in sequence" cumulative effects with the turbines at East Memus. Given the relatively close proximity of the proposed turbine and that at Broom Farm, these effects are likely to be significant. However, the most significant visual effects are likely to be experienced by the houses located on the river terrace below and relatively close to the proposed turbine. Taking all these points into account, the close proximity of the proposed turbine to other existing turbines is likely to lead to a landscape typology of "landscape with wind turbines". This is above the level anticipated by the Council's Implementation Guide and the cumulative landscape and visual impacts associated with the development are considered significant and

unacceptable.

Amenity (Noise/Shadow Flicker/Reflected Light)

Criterion (a) of Policy ER34 requires the siting and appearance of renewable energy apparatus to be chosen to minimise its impact on amenity, while respecting operational efficiency. Policy ER35(c) indicates wind energy developments must have no unacceptable detrimental effect on residential amenity, existing land uses or road safety by reason of shadow flicker, noise or reflected light. Policy S6 Schedule 1 also refers to amenity impacts whilst Policy ER11 deals specifically with noise pollution.

The Environmental Health Service has raised no concerns regarding such impacts, on the understanding that any noise or shadow flicker from the turbine is suitably controlled by planning conditions, and the Roads Service have raised no objections. On this basis I do not consider that there are any unacceptable amenity impacts from noise, shadow flicker, light, surrounding land uses or road safety that cannot be satisfactorily addressed by conditions. Visual amenity issues are addressed in the discussion provided above.

Impact on Natural Heritage

The Angus Local Plan Review contains a number of policies that seek to protect important species and sites designated for their natural heritage interest and to ensure that proposals that may affect them are properly assessed. It also indicates that the Local Biodiversity Action Plans will constitute material considerations in determining development proposals. Policy ER35 specifically requires that proposals should demonstrate that there is no unacceptable interference to birds. SPP indicates, amongst other things that the importance of complying with international and national conservation obligations must be recognised e.g. the potential impact on bird populations at proposed sites near roosting and feeding areas and on migration pathways requires careful assessment. Planning guidance produced by Scottish Natural Heritage (SNH) indicates that experience suggests that many bird species and their habitats are unaffected by wind turbine developments and the impact of an appropriately designed and located wind farm on the local bird life should, in many cases, be minimal.

The site lies approximately 400m to the north-west of the River South Esk SAC. An assessment of impacts on protected species and ornithology has been undertaken and no unacceptable or significant risks have been identified. SNH and the RSPB have been consulted but have not made any comments on the application. I do not consider that the development would give rise to any unacceptable impacts on natural heritage interests.

Cultural Heritage

The development plan provides a number of policies that seek to safeguard cultural heritage. These include policies ER12, ER16, ER18 and ER19 of the Angus Local Plan Review. Policy ER34 requires proposals for renewable energy development to have no unacceptable detrimental effect on any sites designated for natural heritage, scientific, historic or archaeological reasons.

Tannadice Conservation Area is located just over 1km to the east of the proposed wind turbine site, there are 15 Scheduled Ancient Monuments located within a 5km radius, and there are 9 listed buildings within a 1-2 km radius of the site. Aberdeenshire Council's Archaeological Service has indicated that the application site is in close proximity of cropmarks of pits and ditches and linear cropmarks. In this respect, the Archaeological Service has indicated that a condition should be attached to any planning permission requiring an archaeological watching brief. Historic Scotland was consulted on the proposals and has raised no objections. Taking these points into account and following assessment of the proposals, I am satisfied that the proposal would not give rise to unacceptable impacts on cultural heritage interests.

Remaining Issues / Other Development Plan Considerations

The remaining policy tests cover the impact of transmission lines associated with energy generation developments; impacts on transmitting or receiving systems; impact of transporting equipment via road network and associated environmental impacts; impact on authorised aircraft activity; and arrangements for site restoration.

The submitted information indicates that power from the turbine will be transmitted along an underground cable which would have negligible impact in this area given the cultivated nature of the surrounding land. This could be addressed by planning condition.

With regards to impacts on TV and other broadcast reception it is recognised that wind turbine development can give rise to interference. However it is generally accepted that digital signals are more robust to such disruption than the previous analogue system. In this case technical consultees have not raised any concern and this matter could be addressed by planning condition.

In terms of access and road safety the applicant proposes to utilise an existing access track and vehicular access and extend this access track to the wind turbine site, and the Roads Service has considered the application and has no objections to the proposals.

In relation to impacts on aircraft activity the MOD, NATS, CAA and Dundee Airport have not objected to the application. On this basis I am satisfied that the proposal is unlikely to give rise to any significant impacts on authorised aircraft activity.

The applicant has indicated that the turbine would be located on site for a period of 25 years. A planning condition could be used to secure removal of the apparatus and restoration of the site.

Other Material Considerations

Scottish Government policy supports the provision of renewable energy development including wind farms. The SPP confirms that planning authorities should support the development of wind farms in locations where amongst other matters the technology can operate efficiently and environmental and cumulative impacts can be satisfactorily addressed. The SPP also indicates that areas identified for wind farms should be suitable for use in perpetuity. Consents may be time-limited but wind farms should nevertheless be sited and designed to ensure impacts are minimised and to protect an acceptable level of amenity for adjacent communities.

In this case I accept that the wind turbine would contribute to meeting government targets and in this regard attracts some support from national policy and from the development plan. However, as discussed above I consider that this proposal would result in significant adverse cumulative impacts. Whilst wind turbines are necessary to meet government energy targets and I accept that this is a location where the technology could operate, I do not consider that the environmental impacts have or can be satisfactorily addressed. Accordingly I do not consider that the proposal receives unqualified support from the SPP.

I recognise the benefit of producing electricity by renewable means, but I do not consider that there is anything in government policy that suggests this should be at the expense of landscape or visual amenity of the area. In the particular circumstances of this case, I do not consider that the environmental or economic benefit of the production of renewable energy outweighs the adverse cumulative landscape and visual impacts that would arise.

Conclusion

I have had regard to the environmental information provided in relation to the application and comments received from consultees. I have also taken account of all relevant representations made in respect of these proposals and to relevant appeal decisions that have given rise to similar issues. As discussed above, it is concluded that although the proposed wind turbine would comply with some relevant policies and criteria in the development plan, this must be balanced against the significant and adverse

cumulative impacts identified above. These impacts are considered to be unacceptable, and in this respect the proposal is considered to be contrary to the objectives of development plan policy. It is accepted that the development would contribute towards meeting Government energy targets, however, Government guidance confirms that schemes should only be supported where technology can operate efficiently and where environmental and cumulative impacts can be satisfactorily addressed. In this case it is accepted that whilst the technology would operate efficiently the environmental impacts identified herein would not be satisfactorily addressed. Accordingly the proposed development is contrary to development plan policy. There are no material considerations that justify approval of the application contrary to the provisions of the development plan.

No legal agreement is required.

Human Rights Implications

The decision to refuse this application has potential implications for the applicant in terms of his entitlement to peaceful enjoyment of his possessions (First Protocol, Article 1). For the reasons referred to elsewhere in this report justifying the decision in planning terms, it is considered that any actual or apprehended infringement of such Convention Rights, is justified. Any interference with the applicant's right to peaceful enjoyment of his possessions by refusal of the present application is in compliance with the Council's legal duties to determine this planning application under the Planning Acts and such refusal constitutes a justified and proportionate control of the use of property in accordance with the general interest and is necessary in the public interest with reference to the Development Plan and other material planning considerations as referred to in the report.

Equalities Implications

The issues contained in this report fall within an approved category that has been confirmed as exempt from an equalities perspective.

Decision

The application is Refused

Reason(s) for Decision:

1. That the application is contrary to policies S1, S6, ER5, ER34 and ER35 of the Angus Local Plan Review (2009) as the provision of a wind turbine of the height proposed would have an unacceptable cumulative landscape and visual impact when viewed with other existing wind turbines.

Notes:

Case Officer: Neil Duthie
Date: 22 October 2014

Appendix 1 - Development Plan Policies

<u>Angus Local Plan Review 2009</u>

Policy S1 : Development Boundaries
(a) Within development boundaries proposals for new development on sites not allocated on Proposals Maps will generally be supported where they are in accordance with the relevant policies of the Local Plan.

(b) Development proposals on sites outwith development boundaries (i.e. in the countryside) will generally be supported where they are of a scale and nature appropriate to the location and where they are in accordance with the relevant policies of the Local Plan.

(c) Development proposals on sites contiguous with a development boundary will only be acceptable where there is a proven public interest and social, economic or environmental considerations confirm there is an overriding need for the development which cannot be met within the development boundary.

Policy S3 : Design Quality
A high quality of design is encouraged in all development proposals. In considering proposals the following factors will be taken into account:-

* site location and how the development fits with the local landscape character and pattern of development;
* proposed site layout and the scale, massing, height, proportions and density of the development including consideration of the relationship with the existing character of the surrounding area and neighbouring buildings;
* use of materials, textures and colours that are sensitive to the surrounding area; and
* the incorporation of key views into and out of the development.

Innovative and experimental designs will be encouraged in appropriate locations.

Policy S6 : Development Principles (Schedule 1)
Proposals for development should where appropriate have regard to the relevant principles set out in Schedule 1 which includes reference to amenity considerations; roads and parking; landscaping, open space and biodiversity; drainage and flood risk, and supporting information.

Schedule 1 : Development Principles
Amenity
(a) The amenity of proposed and existing properties should not be affected by unreasonable restriction of sunlight, daylight or privacy; by smells or fumes; noise levels and vibration; emissions including smoke, soot, ash, dust, grit, or any other environmental pollution; or disturbance by vehicular or pedestrian traffic.
(b) Proposals should not result in unacceptable visual impact.
(c) Proposals close to working farms should not interfere with farming operations, and will be expected to accept the nature of the existing local environment. New houses should not be sited within 400m of an existing or proposed intensive livestock building. (Policy ER31).

Roads/Parking/Access
(d) Access arrangements, road layouts and parking should be in accordance with Angus Council's Roads Standards, and use innovative solutions where possible, including 'Home Zones'. Provision for cycle parking/storage for flatted development will also be required.
(e) Access to housing in rural areas should not go through a farm court.
(f) Where access is proposed by unmade/private track it will be required to be made-up to standards set out in Angus Council Advice Note 17 : Miscellaneous Planning Policies. If the track exceeds 200m in length, conditions may be imposed regarding widening or the provision of passing places where necessary.
(g) Development should not result in the loss of public access rights. (Policy SC36)

Landscaping / Open Space / Biodiversity
(h) Development proposals should have regard to the Landscape Character of the local area as set out in the Tayside Landscape Character Assessment (SNH 1998). (Policy ER5)
(i) Appropriate landscaping and boundary treatment should be an integral element in the design and layout of proposals and should include the retention and enhancement of existing physical features (e.g. hedgerows, walls, trees etc) and link to the existing green space network of the local area.
(j) Development should maintain or enhance habitats of importance set out in the Tayside Local Biodiversity Action Plan and should not involve loss of trees or other important landscape features or valuable habitats and species.
(k) The planting of native hedgerows and tree species is encouraged.
(l) Open space provision in developments and the maintenance of it should be in accordance with Policy

SC33.

Drainage and Flood Risk
(m) Development sites located within areas served by public sewerage systems should be connected to that system. (Policy ER22)
(n) Surface water will not be permitted to drain to the public sewer. An appropriate system of disposal will be necessary which meets the requirements of the Scottish Environment Protection Agency (SEPA) and Angus Council and should have regard to good practice advice set out in the Sustainable Urban Drainage Systems Design Manual for Scotland and Northern Ireland 2000.
(o) Proposals will be required to consider the potential flood risk at the location. (Policy ER28)
(p) Outwith areas served by public sewerage systems, where a septic tank, bio-disc or similar system is proposed to treat foul effluent and /or drainage is to a controlled water or soakaway, the consent of SEPA and Angus Council will be required. (Policy ER23).
(q) Proposals should incorporate appropriate waste recycling, segregation and collection facilities (Policy ER38)
(r) Development should minimise waste by design and during construction.

Supporting Information
(s) Where appropriate, planning applications should be accompanied by the necessary supporting information. Early discussion with Planning and Transport is advised to determine the level of supporting information which will be required and depending on the proposal this might include any of the following: Air Quality Assessment; Archaeological Assessment; Contaminated Land Assessment; Design Statement; Drainage Impact Assessment; Environmental Statement; Flood Risk Assessment; Landscape Assessment and/or Landscaping Scheme; Noise Impact Assessment; Retail Impact Assessment; Transport Assessment.

Policy ER1 : Natura 2000 and Ramsar Sites
Development likely to have a significant effect on a designated, candidate or proposed Natura 2000 site (Special Protection Areas and Special Areas of Conservation), or Ramsar site and not connected with or necessary to the conservation management of the site must undergo an appropriate assessment as required by Regulation 48 of the Conservation (Natural Habitats etc.) Regulations 1994. Development will only be permitted exceptionally and where the assessment indicates that:

(a) it will not adversely affect the integrity of the site; or
(b) there are no alternative solutions; and
(c) there are imperative reasons of overriding public interest, including those of a social or economic nature.

Where proposals affect a priority habitat and/or priority species as defined by the Habitats Directive (92/43/EEC), the only overriding public interest must relate to human health, public safety or beneficial consequences of primary importance to the environment. Other allowable exceptions are subject to the views of the European Commission.

Policy ER2 : National Nature Reserves and Sites of Special Scientific Interest
Developments affecting National Nature Reserves and Sites of Special Scientific Interest will only be permitted exceptionally where it can be adequately demonstrated that either:-

(a) the proposed development will not compromise, destroy or adversely affect the conservation objectives and/or particular interest for which the site was notified; or

(b) there is an overriding and proven public interest where social or economic considerations outweigh the need to safeguard the ecological, geological or geomorphological interest of the site and the need for the development cannot be met in other less damaging locations or by reasonable alternative means.

Policy ER3 : Regional and Local Designations
Development which would adversely affect sites containing habitats, species, and/or geological or

geomorphological features of local or regional importance, whether designated or otherwise, will only be permitted where:

(a) ecological appraisals have demonstrated to the satisfaction of the Council that the overall integrity of the site and the features of natural heritage value will not be compromised; or

(b) the economic and social benefits arising from the proposal significantly outweigh the natural heritage value of the site.

Policy ER4 : Wider Natural Heritage and Biodiversity
The Council will not normally grant planning permission for development that would have a significant adverse impact on species or habitats protected under British or European Law, identified as a priority in UK or Local Biodiversity Action Plans or on other valuable habitats or species.

Development proposals that affect such species or habitats will be required to include evidence that an assessment of nature conservation interest has been taken into account. Where development is permitted, the retention and enhancement of natural heritage and biodiversity will be secured through appropriate planning conditions or the use of Section 75 Agreements as necessary.

Policy ER5 : Conservation of Landscape Character
Development proposals should take account of the guidance provided by the Tayside Landscape Character Assessment and where appropriate will be considered against the following criteria:

(a) sites selected should be capable of absorbing the proposed development to ensure that it fits into the landscape;
(b) where required, landscape mitigation measures should be in character with, or enhance, the existing landscape setting;
(c) new buildings/structures should respect the pattern, scale, siting, form, design, colour and density of existing development;
(d) priority should be given to locating new development in towns, villages or building groups in preference to isolated development.

Policy ER11 : Noise Pollution
Development which adversely affects health, the natural or built environment or general amenity as a result of an unacceptable increase in noise levels will not be permitted unless there is an overriding need which cannot be accommodated elsewhere.

Proposals for development generating unacceptable noise levels will not generally be permitted adjacent to existing or proposed noise-sensitive land uses. Proposals for new noise-sensitive development which would be subject to unacceptable levels of noise from an existing noise source or from a proposed use will not be permitted.

Policy ER12 : Development Affecting Conservation Areas
Development proposals within conservation areas or affecting the setting of such areas will be supported where they:

(a) respect the character and appearance of the area in terms of:

* density, scale, proportion and massing;
* layout, grouping and setting;
* design, materials and finish;

(b) contribute positively to the setting of the area and maintain important views within, into or out of the area;

(c) retain particular features which contribute to the character and appearance of the area:

* open spaces;
* walls and other means of enclosure;
* ground surfaces;
* natural features such as trees and hedgerows;
* accord with the Character Statement for the area.

Policy ER16 : Development Affecting the Setting of a Listed Building
Development proposals will only be permitted where they do not adversely affect the setting of a listed building. New development should avoid building in front of important elevations, felling mature trees and breaching boundary walls.

Policy ER18 : Archaeological Sites of National Importance
Priority will be given to preserving Scheduled Ancient Monuments in situ. Developments affecting Scheduled Ancient Monuments and other nationally significant archaeological sites and historic landscapes and their settings will only be permitted where it can be adequately demonstrated that either:

(a) the proposed development will not result in damage to the scheduled monument or site of national archaeological interest or the integrity of its setting; or
(b) there is overriding and proven public interest to be gained from the proposed development that outweighs the national significance attached to the preservation of the monument or archaeological importance of the site. In the case of Scheduled Ancient Monuments, the development must be in the national interest in order to outweigh the national importance attached to their preservation; and
(c) the need for the development cannot reasonably be met in other less archaeologically damaging locations or by reasonable alternative means; and
(d) the proposal has been sited and designed to minimise damage to the archaeological remains.

Where development is considered acceptable and preservation of the site in its original location is not possible, the excavation and recording of the site will be required in advance of development, at the developer's expense

Policy ER19 : Archaeological Sites of Local Importance
Where development proposals affect unscheduled sites of known or suspected archaeological interest, Angus Council will require the prospective developer to arrange for an archaeological evaluation to determine the importance of the site, its sensitivity to development and the most appropriate means for preserving or recording any archaeological information. The evaluation will be taken into account when determining whether planning permission should be granted with or without conditions or refused.

Where development is generally acceptable and preservation of archaeological features in situ is not feasible Angus Council will require through appropriate conditions attached to planning consents or through a Section 75 Agreement, that provision is made at the developer's expense for the excavation and recording of threatened features prior to development commencing.

Policy ER30 : Agricultural Land
Proposals for development that would result in the permanent loss of prime quality agricultural land and/or have a detrimental effect on the viability of farming units will only normally be permitted where the land is allocated by this Local Plan or considered essential for implementation of the Local Plan strategy.

Policy ER34 : Renewable Energy Developments
Proposals for all forms of renewable energy developments will be supported in principle and will be assessed against the following criteria:

(a) the siting and appearance of apparatus have been chosen to minimise the impact on amenity, while respecting operational efficiency;
(b) there will be no unacceptable adverse landscape and visual impacts having regard to landscape character, setting within the immediate and wider landscape, and sensitive viewpoints;

(c) the development will have no unacceptable detrimental effect on any sites designated for natural heritage, scientific, historic or archaeological reasons;
(d) no unacceptable environmental effects of transmission lines, within and beyond the site; and
(e) access for construction and maintenance traffic can be achieved without compromising road safety or causing unacceptable permanent change to the environment and landscape, and
(f) that there will be no unacceptable impacts on the quantity or quality of groundwater or surface water resources during construction, operation and decommissioning of the energy plant.

Policy ER35 : Wind Energy Developments
Wind energy developments must meet the requirements of Policy ER34 and also demonstrate:

(a) the reasons for site selection;
(b) that no wind turbines will cause unacceptable interference to birds, especially those that have statutory protection and are susceptible to disturbance, displacement or collision;
(c) there is no unacceptable detrimental effect on residential amenity, existing land uses or road safety by reason of shadow flicker, noise or reflected light;
(d) that no wind turbines will interfere with authorised aircraft activity;
(e) that no electromagnetic disturbance is likely to be caused by the proposal to any existing transmitting or receiving system, or (where such disturbances may be caused) that measures will be taken to minimise or remedy any such interference;
(f) that the proposal must be capable of co-existing with other existing or permitted wind energy developments in terms of cumulative impact particularly on visual amenity and landscape, including impacts from development in neighbouring local authority areas;
(g) a realistic means of achieving the removal of any apparatus when redundant and the restoration of the site are proposed.

TAYplan Strategic Development Plan

Policy 3D : Natural and Historic Assets
Understanding and respecting the regional distinctiveness and scenic value of the TAYplan area through:-

- ensuring development likely to have a significant effect on a designated or proposed Natura 2000 sites (either alone or in combination with other sites or projects), will be subject to an appropriate assessment. Appropriate mitigation requires to be identified where necessary to ensure there will be no adverse effect on the integrity of Natura 2000 sites in accordance with Scottish Planning Policy;

- safeguarding habitats, sensitive green spaces, forestry, watercourses, wetlands, floodplains (in-line with the water framework directive), carbon sinks, species and wildlife corridors, geo-diversity, landscapes, parks, townscapes, archaeology, historic buildings and monuments and allow development where it does not adversely impact upon or preferably enhances these assets; and,

- identifying and safeguarding parts of the undeveloped coastline along the River Tay Estuary and in Angus and North Fife, that are unsuitable for development and set out policies for their management; identifying areas at risk from flooding and sea level rise and develop policies to manage retreat and realignment, as appropriate.

Policy 6C : Consider Criteria as Minimum
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.

ITEM 19

Defence Infrastructure Organisation

David Naylor-Gray
Safeguarding Officer
Ministry of Defence
Safeguarding – Wind Energy
Kingston Road
Sutton Coldfield
West Midlands B75 7RL
United Kingdom

Telephone [MOD]: +44 (0)121 311 3810
Facsimile [MOD]: +44 (0)121 311 2218
E-mail: DIOODC-IPSSG2a@mod.uk

Your Reference: 13/01067/FULL

Our Reference: DIO/SUT/43/10/1/18326

Neil Duthie
Planning Officer
Angus Council

24 October 2014

Dear Mr Duthie

Please quote in any correspondence: 18326

Site Name: North West of Kalulu House

Proposal: Erection of 1 Wind Turbine

Planning Application Number: 13/01067/FULL

Site Address: East Murthill, Forfar

Thank you for consulting the Ministry of Defence (MOD) on the above Planning Application in your communication dated 20 October 2014.

I am writing to tell you that the MOD has no objection to the proposal.

The application is for 1 turbine at 44.75 metres to blade tip. This has been assessed using the grid references below as submitted in the planning application or in the developers' or your pro-forma.

Turbine	100km Square letter	Easting	Northing
1	NO	46287	58007

The principal safeguarding concern of the MOD with respect to the development of wind turbines relates to their potential to create a physical obstruction to air traffic movements and cause interference to Air Traffic Control and Air Defence radar installations.

Defence Infrastructure Organisation Safeguarding wishes to be consulted and notified of the progression of planning applications and submissions relating to this proposal to verify that it will not adversely affect defence interests.

If planning permission is granted we would like to be advised of the following prior to commencement of construction;

- the date construction starts and ends;
- the maximum height of construction equipment;

- the latitude and longitude of every turbine.

This information is vital as it will be plotted on flying charts to make sure that military aircraft avoid this area.

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

I hope this adequately explains our position on the matter. If you require further information or would like to discuss this matter further please do not hesitate to contact me.

Further information about the effects of wind turbines on MOD interests can be obtained from the following websites:

***MOD*:** https://www.gov.uk/mod-safeguarding

Yours sincerely

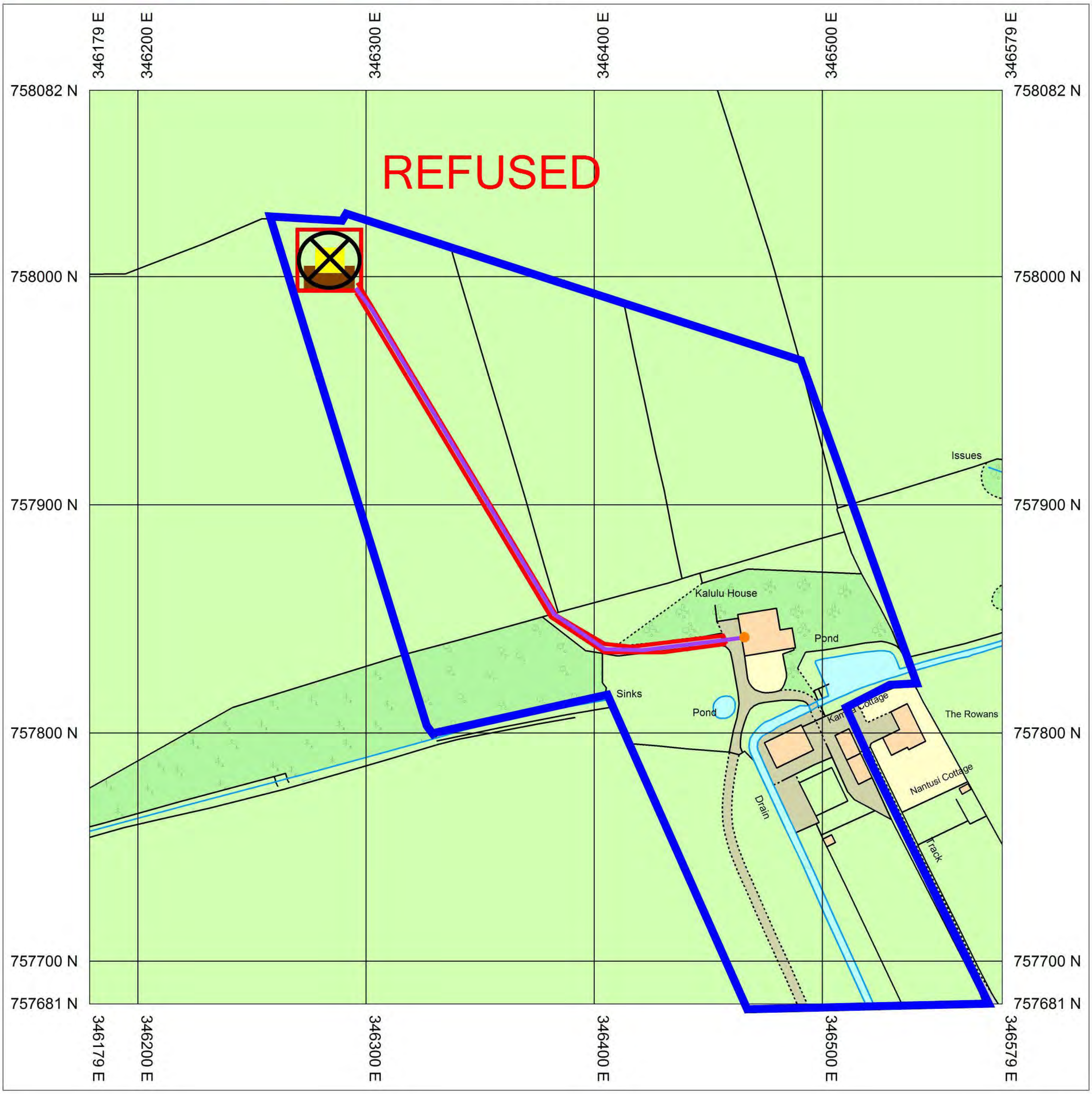
David Naylor-Gray
Safeguarding Officer – Wind Energy
Defence Infrastructure Organisation

SAFEGUARDING SOLUTIONS TO DEFENCE NEEDS

Mapping sourced from Ordnance Survey®

N

Location Map



INSTALLATION OF A SINGLE WIND TURBINE

31m HUB HEIGHT
27.5m BLADE DIAMETER

LAND AT KALULA HOUSE

LAND IN OWNERSHIP OF MR G & MRS D PHILPS

DEVELOPMENT AREA INCLUSIVE OF ACCESS TRACK AND BLADE DIAMETER EXTENDING TO APPROX 0.2ha

HARDSTANDING

FOUNDATION FOOTPRINT

TURBINE POSITION: 346287, 758007

CABLE RUN

CONNECTION POINT

0 40 80

Scale 1:2500

Supplied By: **AE Associates**

Serial number: 001085885

Plot Centre Coordinates: 346379, 757881

ITEM 21

DuthieNG

From: AkroydL
Sent: 14 May 2014 10:08
To: DuthieNG
Cc: ThomsonSD
Subject: 13/01067/FULL - Erection of Wind Turbine, West of Kalulu House, East Murthill, Forfar

Neil

As discussed please find below amended conditions

……

Neil,

13/01067/FULL
Erection of Wind Turbine
West of Kalulu House, East Murthill, Forfar

I refer to the above application and can advise that I have visited the site and seen the submitted information.

I understand that the Kalulu House is owned and occupied by the applicant and that both Kamba Cottage and Nantusi Cottage are owned by the applicant and occupied as holiday accommodation only.

The submitted information therefore indicates that the proposed turbine does not exceed the recognised noise limits for this type of development.

I would therefore not object to this proposal subject to the following conditions:

1. The rating level of noise immissions from the wind turbine (including the application of any tonal penalty) when determined in accordance with the attached Guidance Notes (to this condition), shall not exceed at any property lawfully existing at the date of this planning permission:

   a) L_{A90} 45dB (A) at wind speeds up to 10 m/s at 10m height at the following properties:

   Kamba Cottage, East Murthill, Forfar
   Nantusi Cottage, East Murthill, Forfar

   Should these properties stop being used only as holiday accommodation then the noise levels shall revert to those referred to in condition 1(b) below.

   b) L_{A90} 35dB (A) at wind speeds up to 10 m/s at 10m height at any other location.

   Where the occupiers of a property have a financial interest in the development, the absolute lower limit of the above noise levels may be increased to 45dB (A)

   The developer shall, prior to the commencement of the development, satisfy the planning authority that the following properties have a financial interest in the development;

1) Kalulu House, East Murthill, Forfar

Should the occupiers of these properties, at any time, no longer have a financial interest in the development then the noise levels shall revert to those referred to in condition 1(b) above.

For the avoidance of doubt "Financial Interest" is defined as either:-

(i) owning, or having a share in ownership, of the land on which the turbine is to be sited;
(ii) leasing the land on which the turbine is sited; which lease shall be for a period exceeding 20 years; or
(iii) being a share holder or owner of the applicant (or their successors as operators of the wind turbine)

2. Prior to the commencement of development the make and model of the turbine selected for use in the development shall be submitted for the written approval of the Planning Authority. In the event that any turbine other than the candidate turbine is selected for use the developers submission shall be accompanied by any supporting information considered necessary by the Planning Authority. Once approved all turbines shall be operated and maintained in accordance with the approved specification.

3. The wind turbine operator shall continuously log power production, wind speed and wind direction, all in accordance with Guidance Note 1(d). This data shall be retained for a period of not less than 24 months. The wind turbine operator shall provide this information in the format set out in Guidance Note 1(e) to the Local Planning Authority on its request, within 14 days of receipt in writing of such a request.

4. No electricity shall be exported until the wind turbine operator has submitted to the Local Planning Authority for written approval a list of proposed independent consultants who may undertake noise compliance measurements in accordance with this permission. Amendments to the list of approved consultants shall be made only with the prior written approval of the Local Planning Authority.

5. Within 21 days from receipt of a written request from the Local Planning Authority following a complaint to it from an occupant of a dwelling alleging noise disturbance at that dwelling, the wind turbine operator shall, at its expense, employ a consultant approved by the Local Planning Authority to assess the level of noise immissions from the wind turbine at the complainant's property in accordance with the procedures described in the attached Guidance Notes. The written request from the Local Planning Authority shall set out at least the date, time and location that the complaint relates to and any identified atmospheric conditions, including wind direction, and include a statement as to whether, in the opinion of the Local Planning Authority, the noise giving rise to the complaint contains or is likely to contain a tonal component.

6. The assessment of the rating level of noise immissions shall be undertaken in accordance with an assessment protocol that shall previously have been submitted to and approved in writing by the Local Planning Authority. The protocol shall include the proposed measurement location identified in accordance with the Guidance Notes where measurements for compliance checking purposes shall be undertaken, whether noise giving rise to the complaint contains or is likely to contain a tonal component, and also the range of meteorological and operational conditions (which shall include the range of wind speeds, wind directions, power generation and times of day) to determine the assessment of rating level of noise immissions. The proposed range of conditions shall be those which prevailed during times when the complainant alleges there was disturbance due to noise, having regard to the written request by the Local Planning Authority to investigate a complaint, and

such others as the independent consultant considers likely to result in a breach of the noise limits.

7. The wind turbine operator shall provide to the Local Planning Authority the independent consultant's assessment of the rating level of noise immissions undertaken in accordance with the Guidance Notes within 2 months of the date of the written request of the Local Planning Authority for compliance measurements to be undertaken, unless the time limit is extended in writing by the Local Planning Authority. The assessment shall include all data collected for the purposes of undertaking the compliance measurements, such data to be provided in the format set out in Guidance Note 1(e) of the Guidance Notes. The instrumentation used to undertake the measurements shall be calibrated in accordance with Guidance Note 1(a) and certificates of calibration shall be submitted to the Local Planning Authority with the independent consultant's assessment of the rating level of noise immissions.

8. Where a further assessment of the rating level of noise immissions from the wind turbine is required pursuant to Guidance Note 4(c), the wind turbine operator shall submit a copy of the further assessment within 21 days of submission of the independent consultant's assessment pursuant to condition 8 above unless the time limit has been extended in writing by the Local Planning Authority.

9. Prior to the commencement of development a mitigation scheme to address any impacts caused by shadow flicker shall be submitted for the written approval of the Planning Authority. Once approved the operation of the wind farm shall take place in accordance with the scheme unless the Planning Authority gives written consent to any variation. For the avoidance of doubt the mitigation scheme shall apply to all sensitive receptors including all residential properties and office buildings within 10 rotor diameters of a turbine.

10. That in the event of a pollution incident or interruption to supply, caused by the wind farm development, affecting or likely to affect any private water supply, the wind turbine operator shall provide an immediate temporary supply to those affected until permanent mitigation can be effected to the satisfaction of the Planning Authority. Any replacement supply shall be of a quality to meet the private water supplies (Scotland) Regulations 1992 or any other appropriate Regulation in force at the time. In any case a permanent replacement supply or mitigation measures shall be provided no later than one month after the supply is first affected.

Guidance Notes for Noise Conditions

These notes are to be read with and form part of the noise condition. They further explain the condition and specify the methods to be employed in the assessment of complaints about noise immissions from the wind farm. The rating level at each integer wind speed is the arithmetic sum of the wind farm noise level as determined from the best-fit curve described in Guidance Note 2 of these Guidance Notes and any tonal penalty applied in accordance with Guidance Note 3. Reference to ETSU-R-97 refers to the publication entitled "The Assessment and Rating of Noise from Wind Farms" (1997) published by the Energy Technology Support Unit (ETSU) for the Department of Trade and Industry (DTI).

Guidance Note 1

(a) Values of the LA90,10 minute noise statistic should be measured at the complainant's property, using a sound level meter of EN 60651/BS EN 60804 Type 1, or BS EN 61672 Class 1 quality (or the equivalent UK adopted standard in force at the time of the measurements) set to measure using the fast time weighted response as specified in BS EN 60651/BS EN 60804 or BS EN 61672-1 (or the equivalent UK adopted standard in force at the time of the measurements). This should be calibrated in accordance with the procedure specified in BS 4142: 1997 (or the equivalent UK

adopted standard in force at the time of the measurements). Measurements shall be undertaken in such a manner to enable a tonal penalty to be applied in accordance with Guidance Note 3.

(b) The microphone should be mounted at 1.2 – 1.5 metres above ground level, fitted with a two-layer windshield or suitable equivalent approved in writing by the Local Planning Authority, and placed outside the complainant's dwelling. Measurements should be made in "free field" conditions. To achieve this, the microphone should be placed at least 3.5 metres away from the building facade or any reflecting surface except the ground at the approved measurement location. In the event that the consent of the complainant for access to his or her property to undertake compliance measurements is withheld, the wind farm operator shall submit for the written approval of the Local Planning Authority details of the proposed alternative representative measurement location prior to the commencement of measurements and the measurements shall be undertaken at the approved alternative representative measurement location.

(c) The LA90,10 minute measurements should be synchronised with measurements of the 10-minute arithmetic mean wind and operational data logged in accordance with Guidance Note 1(d), including the power generation data from the turbine control systems of the wind farm.

(d) To enable compliance with the conditions to be evaluated, the wind farm operator shall continuously log arithmetic mean wind speed in metres per second and wind direction in degrees from north at hub height for each turbine and arithmetic mean power generated by each turbine, all in successive 10-minute periods. Unless an alternative procedure is previously agreed in writing with the Planning Authority, this hub height wind speed, averaged across all operating wind turbines, shall be used as the basis for the analysis. All 10 minute arithmetic average mean wind speed data measured at hub height shall be 'standardised' to a reference height of 10 metres as described in ETSU-R-97 at page 120 using a reference roughness length of 0.05 metres . It is this standardised 10 metre height wind speed data, which is correlated with the noise measurements determined as valid in accordance with Guidance Note 2, such correlation to be undertaken in the manner described in Guidance Note 2. All 10-minute periods shall commence on the hour and in 10- minute increments thereafter.

(e) Data provided to the Local Planning Authority in accordance with the noise condition shall be provided in comma separated values in electronic format.

(f) A data logging rain gauge shall be installed in the course of the assessment of the levels of noise immissions. The gauge shall record over successive 10-minute periods synchronised with the periods of data recorded in accordance with Note 1(d).

Guidance Note 2

(a) The noise measurements shall be made so as to provide not less than 20 valid data points as defined in Guidance Note 2 (b)

(b) Valid data points are those measured in the conditions specified in the agreed written assessment protocol, but excluding any periods of rainfall measured in the vicinity of the sound level meter. Rainfall shall be assessed by use of a rain gauge that shall log the occurrence of rainfall in each 10 minute period concurrent with the measurement periods set out in Guidance Note 1. In specifying such conditions the Local Planning Authority shall have regard to those conditions which prevailed during times when the complainant alleges there was disturbance due to noise or which are considered likely to result in a breach of the limits.

(c) For those data points considered valid in accordance with Guidance Note 2(b), values of the LA90,10 minute noise measurements and corresponding values of the 10- minute wind speed, as derived from the standardised ten metre height wind speed averaged across all operating wind turbines using the procedure specified in Guidance Note 1(d), shall be plotted on an XY chart with noise level on the Y-axis and the standardised mean wind speed on the X-axis. A least

squares, "best fit" curve of an order deemed appropriate by the independent consultant (but which may not be higher than a fourth order) should be fitted to the data points and define the wind farm noise level at each integer speed.

Guidance Note 3

(a) Where, in accordance with the approved assessment protocol, noise immissions at the location or locations where compliance measurements are being undertaken contain or are likely to contain a tonal component, a tonal penalty is to be calculated and applied using the following rating procedure.

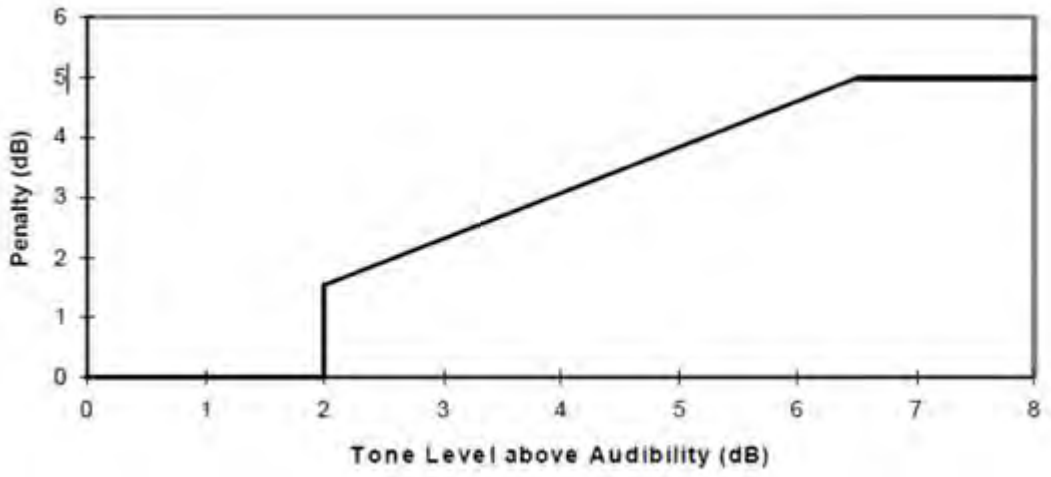
(b) For each 10 minute interval for which LA90,10 minute data have been determined as valid in accordance with Guidance Note 2 a tonal assessment shall be performed on noise immissions during 2 minutes of each 10 minute period. The 2 minute periods should be spaced at 10 minute intervals provided that uninterrupted uncorrupted data are available ("the standard procedure"). Where uncorrupted data are not available, the first available uninterrupted clean 2 minute period out of the affected overall 10 minute period shall be selected. Any such deviations from the standard procedure, as described in Section 2.1 on pages 104-109 of ETSU-R-97, shall be reported.

(c) For each of the 2 minute samples the tone level above or below audibility shall be calculated by comparison with the audibility criterion given in Section 2.1 on pages 104-109 of ETSU-R-97.

(d) The tone level above audibility shall be plotted against wind speed for each of the 2 minute samples. Samples for which the tones were below the audibility criterion or no tone was identified, a value of zero audibility shall be used.

(e) A least squares "best fit" linear regression line shall then be performed to establish the average tone level above audibility for each integer wind speed derived from the value of the "best fit" line at each integer wind speed. If there is no apparent trend with wind speed then a simple arithmetic mean shall be used. This process shall be repeated for each integer wind speed for which there is an assessment of overall levels in Guidance Note 2.

(f) The tonal penalty is derived from the margin above audibility of the tone according to the figure below.



Guidance Note 4

(a) If a tonal penalty is to be applied in accordance with Guidance Note 3 the rating level of the turbine noise at each wind speed is the arithmetic sum of the measured noise level as determined from the best fit curve described in Guidance Note 2 and the penalty for tonal noise as derived in

accordance with Guidance Note 3 at each integer wind speed within the range specified by the agreed written assessment protocol.

(b) If no tonal penalty is to be applied then the rating level of the turbine noise at each wind speed is equal to the measured noise level as determined from the best fit curve described in Guidance Note 2.

(c) In the event that the rating level is above the limit(s) set out in the Tables attached to the noise conditions or the noise limits for a complainant's dwelling, the independent consultant shall undertake a further assessment of the rating level to correct for background noise so that the rating level relates to wind turbine noise immission only.

(d) The wind farm operator shall ensure that all the wind turbines in the development are turned off for such period as the independent consultant requires to undertake the further assessment. The further assessment shall be undertaken in accordance with the following steps:

(e). Repeating the steps in Guidance Note 2, with the wind farm switched off, and determining the background noise (L3) at each integer wind speed within the range requested by the Local Planning Authority in its written request and the approved protocol.

(f) The wind farm noise (L1) at this speed shall then be calculated as follows where L2 is the measured level with turbines running but without the addition of any tonal penalty:

$$L_1 = 10 \log\left[10^{L_2/10} - 10^{L_3/10}\right]$$

(g) The rating level shall be re-calculated by adding arithmetically the tonal penalty (if any is applied in accordance with Note 3) to the derived wind farm noise L1 at that integer wind speed.

(h) If the rating level after adjustment for background noise contribution and adjustment for tonal penalty (if required in accordance with note 3 above) at any integer wind speed lies at or below the values set out in the Tables attached to the conditions or at or below the noise limits approved by the Local Planning Authority for a complainant's dwelling then no further action is necessary. If the rating level at any integer wind speed exceeds the values set out in the Tables attached to the conditions or the noise limits approved by the Local Planning Authority for a complainant's dwelling then the development fails to comply with the conditions.

If you have any queries please let me know

Regards

Louise Akroyd | Environmental Health Officer | Angus Council | Communities | Regulatory Protective & Prevention Services | County Buildings, Market Street, Forfar, DD8 3WE, Tel: (01307) 473382

From:	AkroydL
To:	DuthieNG
Cc:	ThomsonSD
Subject:	13/01067/FULL - Erection of Single Wind Turbine, Land 180m North West of Kalulu House, East Murthill
Date:	22 January 2014 10:57:47

Neil,

13/01067/FULL
Erection of Single Wind Turbine
Land 180m North West of Kalulu House, East Murthill

I refer to the above application for the erection of a single turbine and I can advise that I have reviewed the submitted information and I have the following comments to make:

Operational Noise – Section 6.2

- The report states that based on the manufacturers noise data supplied in the supporting information the turbine will satisfy the 35dB(A) L90 criteria at distances greater than 315m and that no residential dwelling in the vicinity of the proposed site, which does not have a financial interest in the development, will experience unacceptable noise levels.

  It is not clear which properties will be predicted to be above the 35 dB(A) L90 as no site specific noise prediction calculations have been undertaken. I would advise that it needs to be demonstrated by noise prediction calculations the resultant noise levels at each property. Even if properties can be demonstrated to be financially involved in the development they still need to be included in the noise prediction calculations to demonstrate that they can comply with the higher noise limit. I would therefore again request that noise prediction calculations be submitted together with details of the noise calculator or formulae used to demonstrate that calculations follow ISO 9613 standard and guidance issued in the IOA - A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise (May 2013). The calculations need to include any measurement uncertainty or tonal corrections identified by the manufacturer's noise report, something which is absent in the manufactures summary sheet submitted with the application. The report needs to include all properties predicted to be above the 35 dB(A) L90 ETSU-R-97 criteria, including all financially involved properties.

- The report states that the nearest dwelling to the proposed turbine is Kalulu House, which is a residence and B & B business. I understand that the property **owner** of Kalulu House also owns the land to which the turbine is to be installed and it has been assumed by the applicant/agent that they will meet the criteria for financial involvement.

  This department has explained in detail on two previous occasions that it needs to be demonstrated that the "**occupier"** of a property has a financial interest in the development for a higher fixed noise limit of 45 dB(A) L90 to be applied. I would again draw the applicants/agent attention to Angus Council definition of financial involvement which

states that Financial Interest" is defined as either:-

(a) owning, or having a share in ownership, of the land on which the turbine is to be sited;
(b) leasing the land on which the turbine is sited; which lease shall be for a period exceeding 20 years; or
(c) being a share holder or owner of the applicant (or their successors as operators of the wind turbine).

For example in the case for Kalulu House it would need to be demonstrated that the occupier ***(not the owner)*** of Kalulu House is also the owner of the land for where the turbine is to be located in order to justify a higher noise limit to apply, alternatively one of the above options would need to apply to the occupier of Kalulu House.

Shadow Flicker - Section 6.5

· The report states that any property within 275 metres of the turbine could be affected by shadow flicker and based on this only Kalulu House is likely to be affected by shadow flicker. I would therefore advise that a shadow flicker assessment would need to be undertaken to estimate the number of days per year that this property could be affected by shadow flicker.

I would therefore advise that unless additional information can be provided to address the above matters that this department would have no option but to object to this application as it has not been demonstrated that the amenity of nearby residential properties has been adequately safeguarded.

If you have any queries please let me know

Regards

Louise Akroyd, **Environmental Health Officer**, **Angus Council, Communities, Regulatory Protective & Prevention Services, County Buildings, Market Street, Forfar, Tel: 01307 473382**

ITEM 22

LeslieIA

From: Anne Phillips [APhillips@hial.co.uk]
Sent: 29 January 2014 11:46
To: PLNProcessing
Subject: Plan App 13/01067/FULL - Erect Single Wind Turbine NW of Kalulu House East Murthill Forfar

Your Ref: 13/01067/FULL

Dear Sir/Madam,

PROPOSAL: **Erect Single Wind Turbine (max height 45m to blade tip)**
LOCATION: **Field 180m NW of Kalulu House East Murthill Forfar**

With reference to the above proposed development, it is confirmed that our calculations show that, at the given position and height, this development would not infringe the safeguarding surfaces for **Dundee Airport.**

Therefore, Dundee Airport Limited would have no objections to the proposal.

Anne Phillips
Operations Manager
on behalf of Dundee Airport Limited
c/o Highlands and Islands Airports Limited
Head Office, Inverness Airport, Inverness IV2 7JB
☏ 01667 464244 (DIRECT DIAL)
✉ safeguarding@hial.co.uk 🌎 www.hial.co.uk

10 July 2014

13/01067/FULL: Field 180M North West Of Kalulu House, East Murthill, Forfar
Comments of Countryside Officer in Relation to Landscape & Visual Impacts

Landscape Effects
According to the Tayside Landscape Character Assessment the proposed turbine is located within TAY1 Broad Valley Lowland Landscape Character Type (Strathmore). This LCT is characterised by as being of medium scale, with open simple regular large arable fields with a network of shelterbelts. Landform is generally simple, gently sloping or flat valley form but with areas of more complex fluvio-glacial landform. It is characterised by having open views.

The Implementation Guide (IG) provides interpretation of the level of turbine development that a LCT is capable of absorbing. The IG indicates that the Broad Valley Lowland LCT has capacity to accept turbines up to 80m in height.

The landscape scale is typically medium, but smaller along the corridor of the River South Esk.

The turbine would be located on the gently rolling ground which rises to the north of the flat terrace associated with the River South Esk. The proposed turbine height of 44.75m would generally be in scale with the landscape.

Visual Effects
The location of the proposed turbine would be at a higher elevation than the wooded corridor of the River South Esk, from where there would frequently be localised screening of views of the turbine from trees and woodland. Its location above the wooded corridor would generally lead to the turbine being widely visible from northern Strathmore and also from the hills in Highland Foothills and the Low Moorland Hills LCTs.

The modest sizes turbine would generally fit with the rolling topography with the ground steadily rising beyond the site to the north and north-west. However, from the terrace associated with the River South Esk to the south-east, the turbine would appear “perched” above the terrace, increasing its impact on receptors on the terrace where views are not obstructed by trees and woodland.

The visual impact of the proposed turbine is likely to be locally significant.

<u>Houses</u>
The closest houses are the three houses at East Murthill (between 240m and 325m, 5 to 7 times turbine height). This is very close, but it may be that views from these houses would be screened by a combination of topography and trees. The proposed turbine would however dominate the short driveways to the houses and potentially some amenity areas associated with the houses. The perched turbine site above the houses increases its impact. The extent and nature of views would vary seasonally with the trees being deciduous.

On the river terrace to the south are eight houses around Murthill (between 500m and 705m, 11 to 16 times turbine height). Many of these houses would have views of the proposed turbine perched on the edge of the higher ground to the north, which would increase its impacts.

From the north, houses are typically located on the more open landscape on a slightly elevated position relative to the turbine location. The two houses at Baldoukie Smithy (817m, 18 times turbine height) do not have views from house or garden areas in the direction of the turbine. The houses at Baldoukie 789m (18 times turbine height),Broomhill and Den of Baldoukie (1059m, 24 times turbine height) and Red Barn (877m, would all have views from principal directions towards the turbine to approximately the south-west. The direction of view affected would increase the level of effect.

It is considered that most of the above houses are likely to experience significant effects.

Cumulative Landscape Effects
The closest turbines are:
Broom Farm (one 49.5m turbine, 1.99km to the north-east)
East Memus (two 86.5m turbines, 3.62km to north-west)
Balhall (one 47.1m turbine, 7.89km to north-east)

The wind turbine typology could currently "landscape with occasional turbines". Additional turbines at those distances are likely to locally move towards a typology which could be described as "landscape with wind turbines".

Cumulative Visual Effects
The turbine at Broom Farm would typically be seen "in-combination" with the proposed turbine and sometimes "in-sequence". At around 2km apart they would not be close enough to form a coherent group, but would similarly not be sufficiently separated to avoid significant cumulative effects.

The turbines at East Memus would commonly be seen "in-combination" with the proposed turbine when viewed from Strathmore generally between Forfar and Brechin. More locally, they would be most commonly viewed "in-succession".

The proposed turbine would be a similar size to that at Broom Farm. The proposed turbine would be positioned in the landscape similar to that at Broom Farm and would be viewed as a repeating element in views. It would nevertheless be a significant cumulative visual effect.

<u>Houses</u>
Houses located on higher ground to the north (listed above) would typically experience "in-sequence" cumulative visual effects with the single turbine at Broom Farm. Some would in addition experience "in sequence" cumulative effects with the turbines at East Memus. Given the relatively close proximity of the proposed turbine and that at Broom Farm, these effects are likely to be significant.

Conclusion
The close proximity of the proposed turbine to other existing turbines is likely to lead to a landscape typology of "landscape with wind turbines". This would be a significant cumulative landscape effect.

The most significant visual effects are likely to be experienced by the houses located on the river terrace below and relatively close to the proposed turbine. Houses on the higher and more open land to the north would be further from the turbine but may also experience cumulative visual effects with the turbine at Broom Farm in particular.

ITEM 24

LeslieIA

From: Windfarms [Windfarms.Windfarms@caa.co.uk]

Sent: 29 January 2014 10:05

To: MooreDJ

Cc: PLNProcessing

Subject: RE: E Consultation

Dear Sir/Madam

Request for Comment under the Town and Country Planning Act 1990 and the Town and Country Planning (Scotland) Act 1997

There is currently a high demand for CAA comment on wind turbine applications which exceeds the capacity of the available resource to respond to requests within the timescales required by Local Planning Authorities. The CAA has no responsibilities for safeguarding sites other than its own property, and a consultation by a Council is taken as a request for clarification of procedural matters. Councils are reminded of their obligations to consult in accordance with ODPM/DfT Circular 1/2003 or Scottish Government Circular 2/2003, and in particular to consult with NATS and the Ministry of Defence as well as any aerodromes listed in Annex 3 of the above documents, taking note of appropriate guidance and policy documentation. Should the Council be minded to grant consent to an application despite an objection from one of the bodies listed in the circular, then the requisite notifications should be made.

Whilst the CAA recommends all aerodrome operators/license holders develop associated safeguarding maps and lodge such maps with local planning authorities, the CAA additionally encourages councils/planning authorities to undertake relevant consultation with known local aerodromes regardless of status or the existence of any aerodrome/council safeguarding agreement, including local emergency service Air Support Units (e.g. Police Helicopter or Air Ambulance).

There is an international civil aviation requirement for all structures of 300 feet (91.4 metres)* or more to be charted on aeronautical charts. However, on behalf of other non-regulatory aviation stakeholders, in the interest of Aviation Safety, the CAA requests that any feature/structure 70 feet in height, or greater, above ground level is notified to the Defence Geographic Centre ICGDGC-ProdAISAFDb@mod.uk, including the location(s), height(s)* and lighting status of the feature/structure, the estimated and actual dates of construction and the maximum height of any construction equipment to be used, at least 6 weeks prior to the start of construction, to allow for the appropriate notification to the relevant aviation communities.

Any structure of 150 metres* or more must be lit in accordance with the Air Navigation Order and should be appropriately marked. Although if an aviation stakeholder (including the MOD) made a request for lighting it is highly likely that the CAA would support such a request, particularly if the request falls under Section 47 of the Aviation Act.

Cumulative effects of turbines may lead to unacceptable impacts in certain geographic areas.

The Ministry of Defence will advise on all matters affecting military aviation.

Should the Council still have a specific query about a particular aspect of this application the CAA will help in the clarification of aviation matters and regulatory requirements. Site operators remain responsible for providing expert testimony as to any impact on their operations and the lack of a statement of objection or support from the CAA should not be taken to mean that there are no aviation issues, or that a comment from an operator lacks weight.

Guidance relating to the impact of wind turbines upon aviation can be found at http://www.caa.co.uk/docs/33/Cap764.pdf. More generic comment relating to the CAA involvement in the planning process is described at http://www.caa.co.uk/docs/33/DAP_GuidanceOnCAAPlanningConsultationRequirements.pdf.

Yours Faithfully

Kelly Lightowler

K LIGHTOWLER
Squadron Leader (RAF)
Surveillance and Spectrum Management

Directorate of Airspace Policy
Civil Aviation Authority
45-59 Kingsway London WC2B 6TE
Tel: 020 7453 6534 Fax: 020 7453 6565
windfarms@caa.co.uk

*The effective height of a wind turbine is the maximum height to blade tip.

From: MooreDJ [mailto:MooreDJ@angus.gov.uk]
Sent: 10 January 2014 14:26
To: Windfarms
Subject: E Consultation

13/01067/FULL
Erection of Wind Turbine of 31 Metres To Hub Height And 44.75 Metres To Blade Tip
Field 180M North West Of Kalulu House
East Murthill
Forfar

David Moore Clerical Officer Planning And Transport County Buildings Market Street Forfar DD8 3LG
TEL 01307 473308 E Mail mooredj@angus.gov.uk

ITEM 25

10 January 2014
Your reference: 13/01067/FULL

Our ref.WID8690

Dear Sir/Madam,

RE: PROPOSED WIND TURBINE Field 180M North West Of Kalulu House East Murthill Forfar

Dear Sir/Madam

Thank you for your letter dated 10/01/2014.

We have studied this turbine proposal with respect to EMC and related problems to BT point-to-point microwave radio links.

The conclusion is that, the Project indicated should not cause interference to BT's current and presently planned radio networks.

Yours sincerely

Dale Aitkenhead
BT Network Radio Protection

ITEM 26

LeslieIA

From: Windfarms [windfarms@atkinsglobal.com]
Sent: 13 January 2014 08:05
To: PLNProcessing
Subject: WF 26148 - 13/01067/FULL - North West Of Kalulu House East Murthill Forfar - NO 46288 58008

Dear Sirs,

I am responding to an email of 10-Jan-14, regarding the above named proposed development.

The above application has now been examined in relation to UHF Radio Scanning Telemetry communications used by our Client in that region and we are happy to inform you that we have **NO OBJECTION** to your proposal.

Please note that this is not in relation to any Microwave Links operated by Scottish Water

Atkins Limited is responsible for providing Wind Farm/Turbine support services to the Telecommunications Association of the UK Water Industry (TAUWI).

Atkins Limited is responsible for providing Wind Farm/Turbine support services to the Telecommunications Association of the UK Water Industry. Web: www.tauwi.co.uk

Windfarm Support
ATKINS
The official engineering design services provider
for the London 2012 Olympic and Paralympic Games
Web: www.atkinsglobal.com/communications

ITEM 27

LeslieIA

From: Claire.Herbert@aberdeenshire.gov.uk
Sent: 06 January 2014 15:06
To: PLNProcessing
Cc: DuthieNG
Subject: Planning application 13/01067/FULL - archaeology comments

Plan App No: 13/01067/FULL
Planning Officer: Neil Duthie
Proposal: Erection of Wind Turbine of 31 Metres To Hub Height And 44.75 Metres To Blade Tip
Address: Field 180M North West Of Kalulu House East Murthill Forfar
Post Code:
Grid Reference: NO 4647 5784

Having considered the above application, which occupies an area in proximity to the archaeology sites NO45NE0030 (cropmarks of pits & ditches) and NO45NE0039 (linear cropmarks), I can advise that in this instance the following Condition should be applied over all groundbreaking works (including access tracks, cabling trenches, foundations etc) due to the potential for previously unrecorded archaeology to survive in this area:

"Watching-brief Condition (PAN 2/2011, SPP, SHEP)

The developer shall secure the implementation of an archaeological watching brief, to be carried out by an archaeological organisation acceptable to the Aberdeenshire Council Archaeology Service on behalf of the planning authority, during any groundbreaking and development work. The retained archaeological organisation shall be afforded access at all reasonable times and allowed to record and recover items of interest and finds. Terms of Reference for the watching brief will be supplied by the Aberdeenshire Council Archaeology Service.

The name of the archaeological organization retained by the developer shall be given to the planning authority and to the Aberdeenshire Council Archaeology Service in writing not less than 14 days before development commences.

Reason: to record items of archaeological interest."

Should you have any comments or queries regarding the above then please do not hesitate to contact me.

Kind regards,
Claire

Claire Herbert

Archaeologist
Archaeology Service
Infrastructure Services
Aberdeenshire Council
Woodhill House
Westburn Road
Aberdeen
AB16 5GB

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07825356913

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Archaeology Service for Aberdeenshire, Moray & Angus Councils

http://www.aberdeenshire.gov.uk/archaeology

http://www.aberdeenshire.gov.uk/smrpub

ANGUS COUNCIL

ITEM 28

TOWN AND COUNTRY PLANNING (SCOTLAND) ACT 1997
(AS AMENDED)
TOWN AND COUNTRY PLANNING (DEVELOPMENT MANAGEMENT PROCEDURE)
(SCOTLAND)
REGULATIONS 2013

PLANNING PERMISSION REFUSAL
REFERENCE 13/01067/FULL

To **R & A Renewables**
c/o AE Associates
Cameron House
26 Cupar Road
Auchtermuchty
Fife
KY14 7DD

With reference to your application dated 30 December 2013 for planning permission under the above mentioned Acts and Regulations for the following development, viz.:-

Erection of Wind Turbine of 31 Metres To Hub Height And 44.75 Metres To Blade Tip at **Field 180M North West Of Kalulu House East Murthill Forfar** for **R & A Renewables**

The Angus Council in exercise of their powers under the above mentioned Acts and Regulations hereby **Refuse Planning Permission (Delegated Decision)** for the said development in accordance with the particulars given in the application and plans docqueted as relative hereto in paper or identified as refused on the Public Access portal.

The reasons for the Council's decision are:-

1 That the application is contrary to policies S1, S6, ER5, ER34 and ER35 of the Angus Local Plan Review (2009) as the provision of a wind turbine of the height proposed would have an unacceptable cumulative landscape and visual impact when viewed with other existing wind turbines.

This application for planning permission has not been subject of variation.

Dated this **29 October 2014**

Iain Mitchell - Service Manager
Angus Council
Communities
Planning
County Buildings
Market Street
FORFAR
DD8 3LG