
6.0 SUMMARY AND CONCLUSIONS

This study has considered the capacity of the Angus landscape to absorb windfarm development as well as considering the cumulative impacts that would potentially arise from all of the operating, consented and proposed windfarms in Angus and adjacent local authority areas. In doing so it has addressed a number of concepts and issues that affect the perceived significance and acceptability of cumulative changes caused by multiple windfarms in the landscape.

6.1 Landscape Character and Capacity

The landscape of Angus is divided into three main types:

- 1) A coastal strip along the Firth of Tay and North Sea coast, including Montrose Basin
- 2) An extensive area of lowland farmland and hills north and west of the coast and Dundee
- 3) An extensive area of highland summits, plateaux and glens to the north, separated from the lowlands by the Highland Boundary Fault.

An assessment of the landscape character and capacity for windfarm development has determined that the highland and coastal areas have a high landscape value and sensitivity and low capacity for windfarm development. The lowland area of Angus has the greatest capacity for windfarm development. Nevertheless capacity is limited by the medium scale and pattern of the landscape and the presence of high numbers of sensitive visual receptors within the settled, predominantly agricultural landscape.

The assessment of the operating, consented and proposed windfarms has considered landscape capacity and the distribution of windfarms, leading to a characterisation of the landscape in terms of defined windfarm development levels. This has been used to build up a picture of how windfarm development currently affects and could in future affect the landscape.

6.2 Cumulative Effects of Operating and Consented Windfarms

The only consented windfarm within Angus is at Ark Hill. This will have significant landscape impacts on a part of the Sidlaw Hills and visual impacts on receptors in the hills and across Strathmore to Kirriemuir. The two Dundee Michelin turbines are close to the southern boundary of Angus and the eight Tullo turbines are some 10km north of the eastern boundary. These will have limited effects on the Angus landscape or on visual receptors within Angus and little in the way of cumulative impact. The 16 turbines of Drumderg lie 3km to the west in the highland area of Perth & Kinross. Whilst having a significant impact on the western edge of the *Highland Summits and Plateaux* area of Angus they have relatively little effect on the lowland area. It is

concluded that the highland and coastal types are predominantly *Landscapes with Views of Windfarms* with some areas currently unaffected. The lowland area varies predominantly between a *Landscape with Views of Windfarms* to a *Landscape with Occasional Windfarms* in the Sidlaw Hills but has significant areas with no windfarm effects.

6.3 Cumulative Effects of Proposed Windfarms

The potential for cumulative impacts is significantly increased when considering all of the windfarms at planning application stage in addition to those that are in operation or consented.

The 11 turbines at Montreathmont would have the greatest landscape and visual impact of all the proposed windfarms. They would also contribute to significant cumulative landscape change in combination with the three turbines at Mountboy, 5km to the east.

At 5km separation the proposed three-turbine windfarms at East Skichen and Dusty Drum are close enough to appear cumulatively as significant objects from higher static viewpoints to the north and when travelling on roads in the area between Dundee, Forfar, Arbroath and Friockheim.

The overlap of the Mountboy and Montreathmont ZTVs with those of East Skichen and Dusty Drum is relatively limited as higher ground between the groupings tends to reduce overlap of visibility, in addition to there being separation of some 15km between the two pairs of windfarms. The main cumulative impacts would be sequential visual impacts on road users travelling between Dundee, Brechin and Montrose.

Of other windfarms the presence of Ark Hill some 15km to the west of East Skichen is unlikely to contribute significantly to the cumulative impacts of the four windfarms to the east. Its contribution to cumulative impacts would be that of an occasional background element in views and in extending the experience of views of windfarms to those travelling through the Angus lowlands. The two wind turbines in Dundee are closer to East Skichen and Dusty Drum but are clearly associated with the urban landscape of Dundee and therefore have limited effect on the rural landscape of Angus or indeed on visual receptors.

Other proposed windfarms in a lowland location are to the northeast, in Aberdeenshire. Being relatively small and at least 15km distant from Angus, these would mainly appear as background objects from static viewpoints within Angus. However travellers on the A90 in Aberdeenshire would experience significant cumulative visual impacts.

The windfarms located in the highland landscape types are clearly separated from the lowland windfarms: physically by the wide valley of Strathmore and perceptually by being located on the hills that form the backdrop to lowland Angus. Significant landscape impacts by these on the lowlands are therefore unlikely. Only one of the

proposed windfarms, Mile Hill, is close enough to have potentially significant visual impacts on receptors in lowland Angus and potential cumulative impacts when considered together with Ark Hill, 20km to the south.

The effect of windfarm size on perception of impacts is an important consideration. The number of smaller windfarm applications in Angus is unusual compared with most areas of Scotland, where windfarms that are operating, consented or proposed have turbine numbers ranging from the low teens to well over 100. Larger windfarms are seen to dominate significant areas of landscape and to appear cluttered in views. Small windfarms do not physically dominate large areas and appear as more discrete elements in distant views. Nevertheless the size and appearance of the turbines in closer views still has significant and usually adverse impacts on landscape and visual receptors.

Were all the windfarms in lowland Angus and surrounding areas to be built there would be large areas of the landscape in which wind turbines would be significant features, including some areas in which cumulative impacts would be significant. Nevertheless, there would be clear areas of separation between groupings.

Similarly the experience of visual receptors in static locations would be to see groupings of windfarms from higher viewpoints but mainly single windfarms from lower areas. Travelling receptors in most of Angus would experience occasional views of windfarms at close proximity and fairly frequent views of one or more windfarms in the background or middle ground. There would remain significant areas from which no windfarm is visible.

This would amount to lowland Angus becoming a *Landscape with Occasional Windfarms* due to the limited size of most of the proposed windfarms. However areas of *Dipslope Farmland* and *Lowland Forest and Farmland* between Forfar, Brechin, Montrose and Dundee are likely to become a *Landscape with Windfarms*.

Cumulative effects on the highland landscape would be more limited. The southwestern corner within Angus would become a *Landscape with Windfarms* due to the combined effects of Drumderg and Mile Hill. However, most of the highland area would be a *Landscape with Views of Windfarms*, with most of the visible windfarms clearly in the lowlands and some areas would be remote enough to be practically unaffected by windfarms.

Increased parts of the coastal areas would become a *Landscape with Views of Windfarms* with the Montrose basin most affected.

6.4 Potential for Mitigation

The assessment considers a number of ways by which effects on the landscape could be realistically mitigated. This includes reducing turbine size, reducing turbine numbers and reducing the number of windfarms. It is concluded that

- 1) Reduction in turbine size has a limited effect on primary and cumulative impacts but may be useful in addressing specific effects
- 2) Reduction in turbine number has limited effect for a large number but small groups of turbines have a disproportionately lower impact due to lack of lateral extent and reduced 'clutter'
- 3) Reduction in numbers of windfarms or concentration into fewer, larger groupings would significantly reduce the extent of cumulative impacts and would eliminate some significant site-specific impacts.

The spread of small windfarms throughout the area rather than concentration of turbines into a more limited number of locations inevitably contributes to the impression of a landscape with windfarms. This is by increasing the area of landscape in which wind turbines are a feature and increasing the opportunity to see wind turbines successively from a static viewpoint or sequentially as a traveller. Concentration into fewer locations would decrease this occurrence.

6.5 Conclusion

It is considered that the current proposed level of development in Angus would not result in a significant or unacceptable level of change in the landscape over Angus as a whole, or over the lowland area as a whole. However there is likely to be significant cumulative change in the lowland area to the east and south of the A90, where windfarms could become a key defining element in the landscape.

The development of windfarms predominantly in the lowland area would be in accordance with local plan policy. However, if this is considered to be an unacceptable level of development it would be possible to significantly reduce the extent of cumulative impacts by not developing all of the windfarms. In doing so first consideration should be given to the windfarms identified as having the most significant impacts for the least benefits.

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APPENDIX 1: UPDATED LOCAL PLAN POLICIES RELATING TO WINDFARMS AND LANDSCAPE

Finalised Angus Local Plan Review Policies as Modified

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 ER33 : 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 ER34 : Wind Energy Development

Wind energy developments must meet the requirements of Policy ER33 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.




APPENDIX 2: ZONE OF THEORETICAL VISIBILITY EXTRACTS FROM ENVIRONMENTAL STATEMENTS

The following extracts are the basic blade tip ZTVs for Mountboy, Montreathmont, Dusty Drum, East Skichen and Mile Hill, taken from the landscape and visual assessments. Further more detailed ZTVs and cumulative ZTVs in the assessments were also studied.

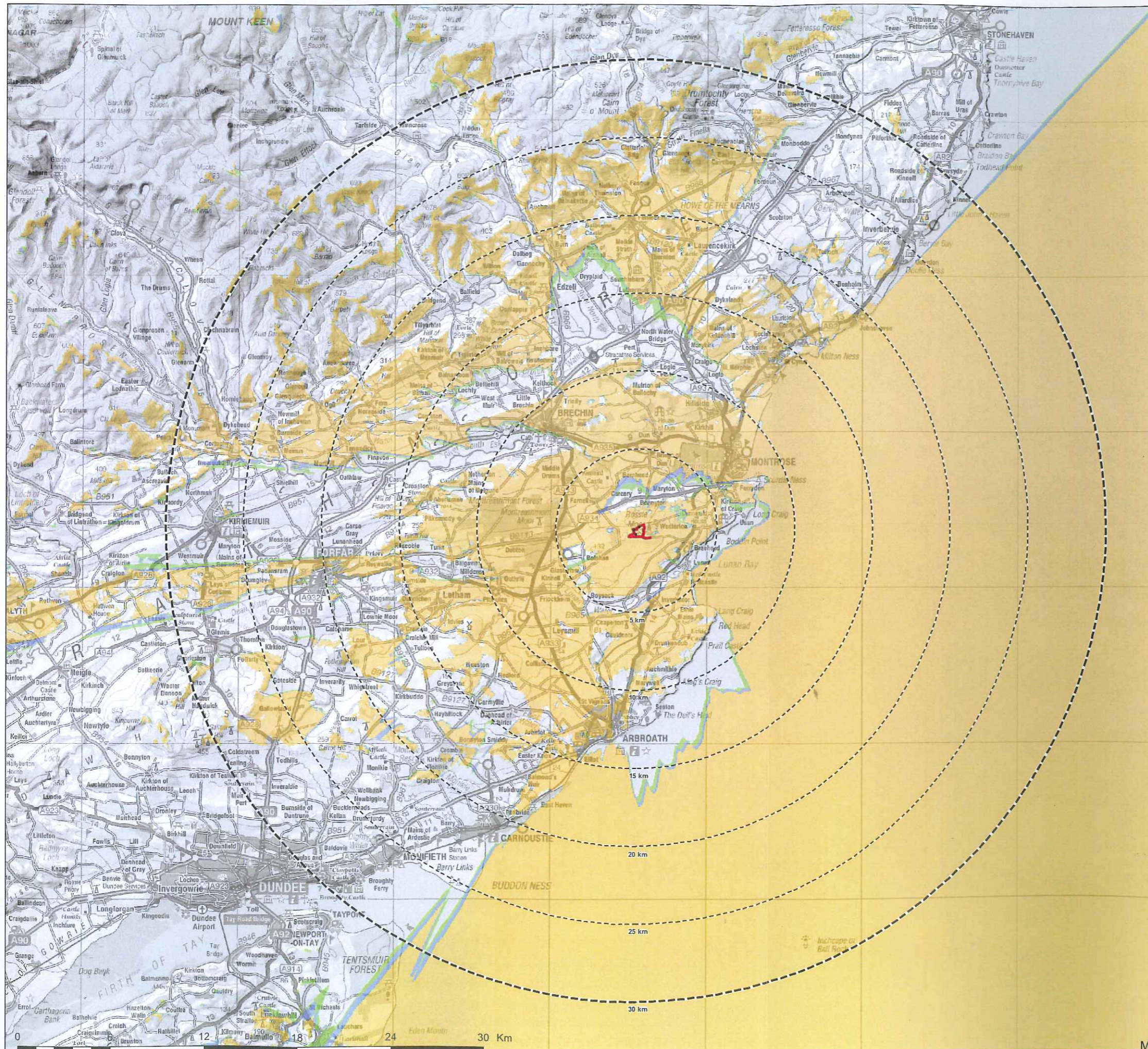
► Zone of Theoretical Visibility (ZTV) to tip height, showing the potential number of turbines visible

-  Mountboy Wind Farm
-  30K LVIA Study Area Boundary

Potential number of turbines visible:

-  1 turbine visible
-  2 turbines visible
-  3 turbines visible

The ZTV is calculated to turbine tip height



Map Scale 1:250,000

Figure 4.1

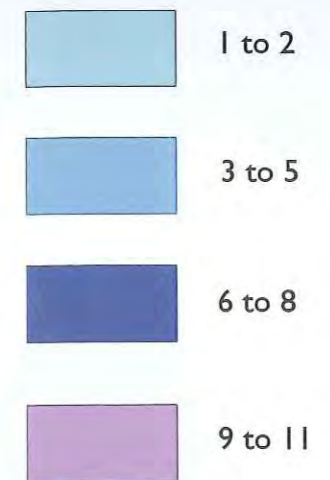


Figure 11

Montreatmont Moor Wind Farm

30km Zone of Theoretical Visibility to Turbine Blade Tip

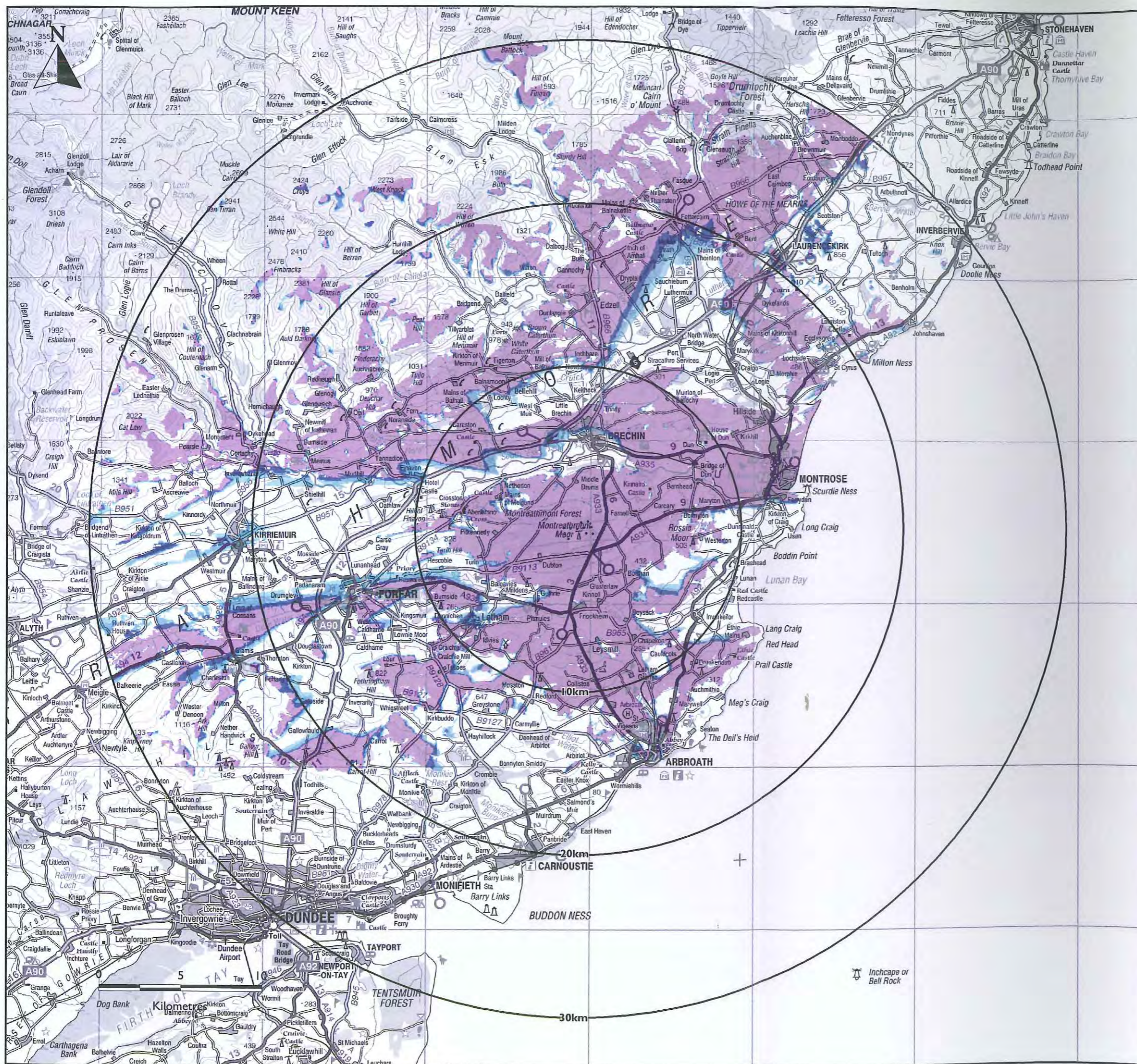
Turbine Visibility



Scale = Not to Scale

Note: ZTV generated to 126m Turbine Tip Height





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Dusty Drum Wind Cluster

FIGURE 3
Zone of Theoretical Visibility to Blade Tip Height to 30km

KEY

-  Dusty Drum Wind Cluster
-  Radii from Dusty Drum Wind Cluster
-  Viewpoints with Photomontages (1-8)
-  Viewpoints without Photomontages (9-14)

Dusty Drum Wind Cluster Theoretical Visibility

-  1 turbine may be visible
-  2 turbines may be visible
-  3 turbines may be visible

Turbine Data:

The ZTV has been calculated on the following turbine dimensions and to LDUS001.wfl

Blade tip height (m): 110
Hub height (m): 70

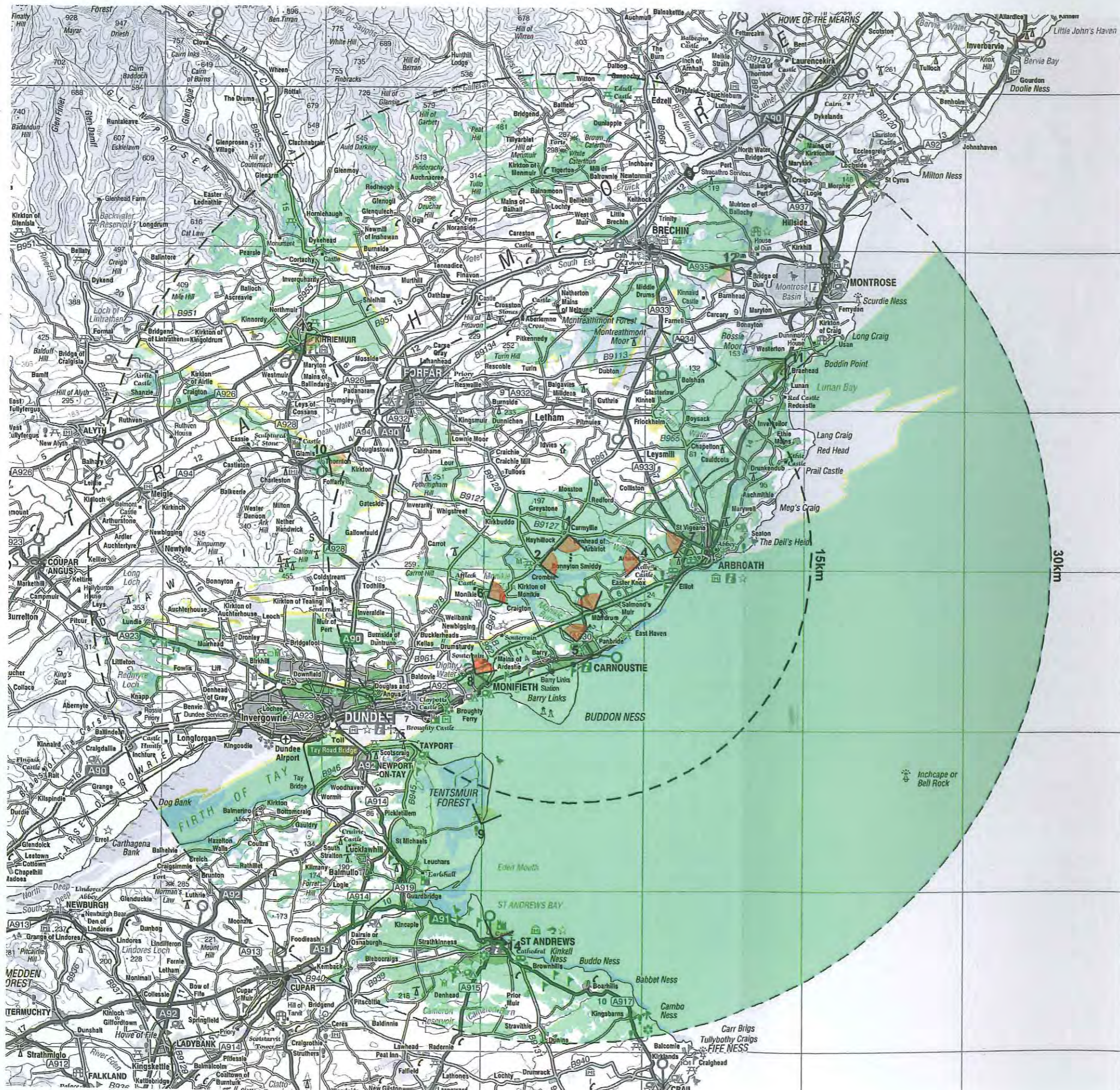
Notes:

The calculations of this map are based on the "bare earth" model of the landform and does not allow for any effects of screening from obstacles such as buildings and vegetation. The landform data was taken from Ordnance Survey Land-Form Panorama 1:50,000 scale digital terrain model - gridded height data at 50m intervals. The visibility maps are calculated for a viewer's eye height level of 2m above ground level to upper blade tip using a calculation grid size of 50m and include curvature of the earth and atmospheric refraction.



Date	By	Paper	Scale	Rev
Dec 2007	SH	A3	1:250,000	-

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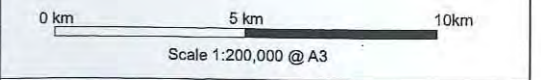
Key

- Site Location
- 20km radius indicator
- 10km radius indicator
- One turbine visible
- Two turbines visible
- Three turbines visible
- Viewpoints illustrated as photomontages
- Viewpoints illustrated as wireframes

Turbine Parameters:

The ZVI is based on the following turbine dimensions:

Hub Height: 60m
 Rotor Diameter: 70m
 Blade Tip: 95m














npower Renewables
 East Skichen Wind Farm

Figure 4.4
 ZVI to Blade Tip with Viewpoint Locations

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KEY:

-  Mile Hill Turbines
-  10 km Mile Hill Radius *
-  20 km Mile Hill Radius
-  30 km Mile Hill Radius
-  35 km Radius Study Area Boundary
-  1 Turbine Visible
-  2 Turbines Visible
-  3 Turbines Visible
-  4 Turbines Visible
-  5 - 6 Turbines Visible
-  Representative Viewpoints

Viewpoint	Viewpoint Name
1	B954 - Craiglea Hill
2	Balintore Castle
3	Cat Law (Summit) (671m)
4	Minor road near Ascreavie (Designed Landscape)
5	Loch of Kinnordy Nature Reserve
6	Kirkton of Kingoldrum (B951)
7	Minor Road to west of site near Braes of Coull
8	Loch of Lintharum Reservoir
9	Minor Road near Cortacy Castle (Designed Landscape)
10	Hill of Kirriemuir (Camera Obscura)
11	A94 near Castleton Hotel
12	A928 near Glamis Castle
13	Forfar (Viewpoint at Hillside)
14	Junction of B9127 and A94
15	A928 Lumley Den
16	Kinpurney Hill (345m)
17	Meikle / Belmont castle
18	A94 Coupar Angus
19	A926 Alyth
20	Brechin (Tower)
21	Mayar (928m) munro within NSA and National Park
22	Glas Maol (1068m) munro within NSA and National Park
23	A932 near Pescobie Loch
24	A90 southbound near Bogindollo
25	Hill of Alyth / Catearan trail

* Within the 10 km radius boundary the ZTV has been generated using higher resolution 10 m OS Profile DTM data. Outside the 10 km radius boundary the ZTV has been generated using 50 m resolution OS Panorama DTM data.



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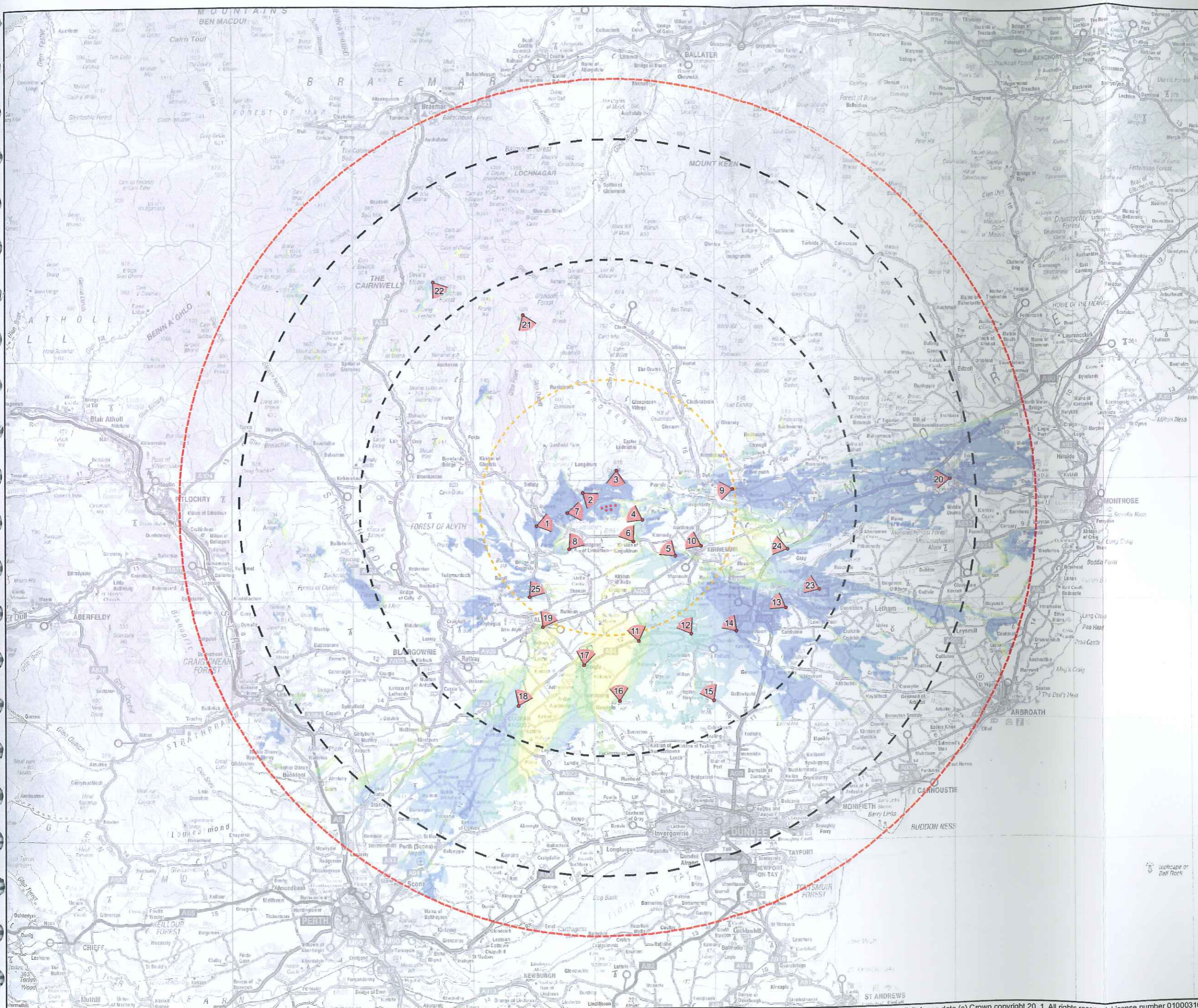


PROJECT:
**Mile Hill Windfarm
Environmental Statement**

DRAWING TITLE:
Blade Tip ZTV

GENERATED BY: MB	DRAWN BY: MB	CHECKED BY: SM	AUTHORISED BY: JW
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Figure 6.8 DATE:
03.08



Angus Local Plan Review (2009)

**Implementation Guide for Renewable Energy
Proposals**

**Policies ER34 Renewable Energy Developments
&
ER35 Wind Energy Development**

**Angus Council
June 2012**

PREFACE

There is increasing interest through both informal enquiries and planning applications for the establishment of renewable energy projects in Angus. While the majority are in connection with a range of wind turbine projects, proposals for a number of hydro schemes have also come forward.

The Angus Local Plan Review, formally adopted in February 2009, establishes the Council's land use planning policies in relation to dealing with renewable energy proposals. This Implementation Guide therefore clarifies and expands on Local Plan Review Policies ER34 Renewable Energy Development and ER35 Wind Energy Development and those factors that will be taken into account in considering and advising on proposals for renewable energy projects in Angus. It also directs developers and other interested parties to other relevant documents, policies, regulations and guidance.

The Implementation Guide has been developed through consultation with a wide range of stake holders.

A Strategic Environmental Assessment of the Implementation Guide has also been undertaken and the Environmental Report is published alongside the Implementation Guide and submitted to the Scottish Gateway.

*Angus Council
June 2012*

Glossary

Watt (W)	a unit of power defined as one joule per second measures the rate of energy conversion
Kilowatt (kW)	equal to one thousand (10^3) watts. One kilowatt of power is approximately equal to 1.34 horsepower. The average annual electrical energy consumption of the average UK household is approx 4,700 kilowatt-hours
Megawatt (MW)	equal to one million (10^6) watts. A large residential or commercial building may consume several megawatts in electric power and heat. Nuclear power plants have net summer capacities between about 500 and 1300 MW
Gigawatt (GW)	equal to one billion (10^9) watts or 1 gigawatt = 1000 megawatts. This unit is sometimes used for large power plants or power grids
Wind croft	development of group of 3 small (less than 15m) wind turbines
Wind cluster	development of group of three or four turbines 15-50m
Wind farm	development of three or more turbines over 50m
Run of river	A hydro electric scheme that abstracts water depending on the flow available within the watercourse at any given time. No storage reservoir.
ZTV	Zone of Theoretical Visibility – a mapped visualisation of the areas over which a development can theoretically be seen.
VIA	Visual Impact Assessment - part of the LVIA process, which considers potential changes that arise to available views in a landscape from a development proposal, the resultant effects on visual amenity and people's responses to the changes
LVIA	Landscape and Visual Impact Assessment - a standard process for examining the landscape and visual effects of a development.
SAS	Scottish Government on-line planning Specific Advice Sheet
Sensitive Properties	Residential properties including care homes; educational buildings, hospitals, cemeteries; some visitor facilities and accommodation; and proposed development areas
EIA	Environmental Impact Assessment - the process by which the identification, prediction and evaluation of the key environmental effects of a development are undertaken, and by which the information gathered is used to reduce likely negative effects during the design of the project and then to inform the decision-making process.
ALPR	Angus Local Plan Review 2009
DASP	Dundee and Angus Structure Plan 2002
HSE	Health and Safety Executive

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Map 1 ALPR Boundary

Map 2 International Designations

Map 3 National Designations

Map 4 Local Designations

Map 5 Other Considerations

*The print maps are illustrative of detailed information that can be accessed via the web-based version of the Implementation Guide, They are intended to indicate the location and range of International, National and Local designation within the ALPR area.

1. Purpose and Scope of this Implementation Guide

1.1 Context

Tackling climate change is, potentially, one of the biggest challenges we face. In 1992 the United Nations Framework Convention on Climate Change (<http://unfccc.int/2860.php>) was adopted as the basis of a global response to the problem. Signatory governments have since agreed to reduce emissions which contribute to climate change and global warming. To help achieve this, the Scottish Government set initial targets to generate 80% of Scotland's electricity (8GW) from renewable sources by 2020, with an interim target 31% by 2011 (5GW). In May 2011 the Scottish Government announced that the 2011 interim target had been exceeded and raised the renewable energy target for 2020 to 100% and 16GW of installed capacity. The planning system will contribute to achieving these targets by ensuring that projects are well located and designed.

The Angus Local Plan Review establishes the development plan policies to be taken into account when assessing proposals for renewable energy projects – policies ER34 Renewable Energy Development and ER35 Wind Energy Development.

In support of the development plan position the Implementation Guide provides:-

- more detailed information and clarification of the main factors that will be taken into account in considering and determining renewable energy proposals in Angus;
- an application checklist (Section 3.3);
- specific guidance for landscape and visual assessment issues in relation to wind turbines (Section 4); and
- specific guidance for guidance on noise assessment in relation to wind turbines (Section 5).

Commentary on technical constraints such as landform, access to the transmission network, accessibility, etc is included as these may have implications for effective development. The Implementation Guide also directs developers and other interested parties to relevant documents, policies and regulations.

Angus Council has reservations about mapping specific areas of search and constraint for wind energy proposals. The identified constraints will naturally restrict development opportunity, but need not prevent it. Applying cumulative impact as a significant constraint is problematic - as each planning application approved alters the potential cumulative impact. Also, there is not a direct correlation between the number of wind energy proposals and the degree of impact. It is appropriate to consider each proposal within the development context of each application rather than apply a theoretical limit. (The Council expressed concerns during the consultation on SPP 6 Renewable Energy Development in 2006, relating to the 20MW threshold in the Location Framework given that the area, turbine size and siting are the cause of impact, not output. Committee Report 1196/06 can be viewed at www.angus.gov.uk/ccmeetings/reports-committee2006/infrastructure/1196.pdf)

1.2 Supporting Documents

This Implementation Guide has been prepared under the provisions of the Town and Country Planning (Scotland) Act 1997 and is subject to the following supporting assessments:-

- **Strategic Environmental Assessment**
This Implementation Guide qualifies for the requirements of a Strategic Environmental Assessment (SEA) under the Environmental Assessment (Scotland) Act 2005. An Environmental Report (ER) has been prepared which illustrates the SEA process and all potentially significant environmental effects associated with the Implementation Guide.
- **Habitats Regulation Assessment**
Consideration has been given to the requirements of the EC Habitats Directive (92/43EEC) as applied in Scotland through the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended). The Angus Local Plan Review 2009 and the policies that are the subject of this Implementation Guide (ER 34 and ER35) have been subject to an Appropriate Assessment.

There is no requirement to apply the Regulations to the Implementation Guide. The existing local plan policies aim to protect all sites designated for their natural heritage value from adverse impacts. In addition, any subsequent proposals for renewable energy development will be subject to specific environmental regulation.

- **Equalities Impact Assessment screening determined full Equality Impact Assessment in not required.**

2. Renewable Energy Overview

Planning permission will be required for most renewable energy developments from either the local planning authority or the Scottish Government. Some small scale renewable energy proposals on both domestic and non domestic buildings are allowed under Permitted Development Rights as defined in Planning Circular 2/2010 <http://www.scotland.gov.uk/Publications/2010/03/05114236/0> and as amended in 2010 http://www.oqps.gov.uk/legislation/ssi/ssi2010/ssi_20100027_en_1 and Circular 2/2011 <http://www.scotland.gov.uk/Publications/2011/03/17092643/0>

There are a wide range of renewable energy technologies which may be considered, and in many cases the scale of the proposal correlates with the scale of potential planning matters that may arise. It should be noted that some developments will also require to be considered under other legislation including, noise, emissions, pollution control which are not part of the planning process and may therefore require additional consents or licences.

2.1 Hydro

The primary source of hydroelectric power in Angus is anticipated to be run of river schemes where water is abstracted from a water course, diverted through pipes to a turbine and returned to the water course. The main elements for the panning system include:-

- Water abstraction – usually by a low, ground or underwater intake weir;
- Pipeline route;
- Turbine house and ancillary structures;
- Water return – usually in the form of a tailrace;
- Access routes; and
- Effect on the water course and its ecology.

Where dams are constructed these are likely to be small scale and planning matters will include:-

- Location and scale of the dam itself;
- Turbine house and other associated structures;
- Outflow/spillway; and
- Hydrogeology.

In all cases the transmission of power, construction works/compound and access routes, and environmental impact should be considered by the applicant.

Landscaping and planting proposals may reduce landscape and/or visual impact and improve biodiversity.

2.2 Bio-energy

Bio-energy or biomass ranges from small scale domestic boilers up to major commercial generators. The main issues will relate to commercial electricity generation, but proposals for domestic bio-energy facilities will still require to demonstrate there are no unacceptable adverse effects, particularly emissions. For commercial generators, not only are there the effects of the plant itself to consider, but the Scottish Government has indicated that fuel source over the life of the plant will be a valid planning consideration to ensure sustainable bio-energy can be sourced. While woody biomass is the major source, there are projects based on straw, distillery waste etc. These later sources are likely to be utilised in smaller facilities, often based around an existing business and reducing their energy costs. The primary planning issues relating to large biomass plants will include:-

- Scale, design and location;
- Emissions;
- Fuel Source;
- Access; and
- Storage facilities.

2.3 Landfill Gas

There will be limited opportunity for this method of generation in Angus, given limited landfill sites and the current waste to heat plant in operation at Lochhead Landfill site. The main planning issues will relate to:-

- Suitability of the location in terms of design and compatibility with surrounding land uses etc. Obviously the choice of location will be restricted by where landfill sites are located;
- Emissions; and
- Design.

2.4 Solar/photovoltaics

There has been no large scale commercial proposal in Angus to date. The primary interest is for roof mounted or free standing arrays associated with existing or proposed properties. In many cases small scale proposals are permitted development, but localised planning concerns can arise and include:-

- Visual impact and surrounding amenity;
- Visual impact where the property is a Listed Building or within a Conservation Area and compatibility with these designations;

2.5 Anaerobic Digestion

This generation method is likely to be of interest to the agriculture and food processing sectors in Angus, where biodegradable waste and farm slurry can be used to generate methane to produce heat and/or electricity. It is a constant and manageable process with a product that can produce energy for onsite or offsite use.

The primary planning considerations relate to:-

- Siting and location;
- Fuel source and the implications of importing material to the proposed site;
- Landscape and visual impact; and
- Proposed management and mitigation measures.

There are three types of digester which relate to the temperature of the process:

1. Psychrophilic (15-25⁰C) – stable and easy to manage but slow.
2. Mesophylic (35-40⁰C) – process takes 15 to 20 days, but process robust, simple and relatively cheap.
3. Thermophylic (50-60⁰C) – 12 to 15 days with higher conversion but more complex and costly.

Mesophylic or thermophylic digesters provide higher yields, and can require less space. The process and plant are flexible enough to meet the needs of farm units, through food processing to municipal organic waste disposal.

Proposals may also require to meet regulations relating to emissions, odour and noise.

2.6 Onshore Wind

Development proposals range from small single turbines to major windfarms subject to S36 of the Electricity Act, which are the responsibility of the Energy Consents and Deployment Unit of the Scottish Government. This is 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;
- Impact on residential amenity, soils and water bodies; and
- Access

2.7 Offshore Wind

Applications for offshore wind farms are submitted to and processed by Marine Scotland. Angus Council has the opportunity to feed into this process through consultation at all stages and to date input has been made on the proposals at Inchcape, Seagreen Phase 1, 2 and 3, and Neart na Gaoithe. The Council is also actively involved in the development for the landfall and transmission of the energy from Seagreen and Inchcape in Angus.

3. Guidance for Applicants

3.1 The land use planning context

The context for renewable development proposals is summarised below.

Table 1: Land Use Planning Context

<p>The National Planning Framework 2 (NPF2)</p> <ul style="list-style-type: none">• aims to 'realise the potential of Scotland's renewable energy resources and facilitate the generation of power and heat from clean, low carbon sources, including ... producing heat and power from renewable sources ...'• requires 'landscape and visual impacts ... to be important considerations in decision-making on developments'• identifies major infrastructure projects needed to deliver the national strategy, including the electricity grid through Angus. http://www.scotland.gov.uk/Resource/Doc/278232/0083591.pdf;
<p>Scottish Planning Policy (SPP 2010) - planning is about:-</p> <ul style="list-style-type: none">• where development should happen;• where it should not; and• how it interacts with its surroundings. <p>This involves promoting and facilitating development while protecting and enhancing the natural and built environment in which we live, work and spend our leisure time. http://www.scotland.gov.uk/Resource/Doc/300760/0093908.pdf</p>
<p>Planning Advice Notes (PANs) provide information and advice on technical planning matters including:-</p> <ul style="list-style-type: none">• web based Renewables Advice http://www.scotland.gov.uk/Topics/Built-Environment/planning/National-Planning-Policy/themes/renewables• PAN 45 Annex 1 Planning for Micro Renewables (2006) http://www.scotland.gov.uk/Publications/2006/10/03093936/0
<p>Dundee and Angus Structure Plan:- makes positive provision for renewable energy generating developments where they are compatible with other environmental and community interests.</p>
<p>Angus Local Plan Review aims to promote:-</p> <ul style="list-style-type: none">• renewable energy development and• low or zero carbon emissions in new development. www.angus.gov.uk/localplan/
<p>The Implementation Guide aims to:-</p> <ul style="list-style-type: none">• clarify and expand policies ER34 : Renewable Energy Development and ER35 : Wind Energy Development: and• support the Council's climate change commitment
<p>Under the Electricity (Scotland) Act 1989, Scottish Ministers determine applications for large scale renewable energy (Section 36) and overhead power lines and associated infrastructure (Section 37). Further information on Section 36 and Section 37 consents</p>

procedures can be found at www.scotland.gov.uk/Topics/Business-Industry/Energy/Infrastructure/Energy-Consents/

The established thresholds are as follows:-

Scottish Ministers	Local Authorities
onshore windfarms > 50MW	onshore windfarms < 50MW
	offshore wind farms < 1MW
Wave, tidal and hydroelectric schemes >50MW	Wave, tidal and hydroelectric schemes <50MW
overhead power lines and associated infrastructure	
large oil and gas pipelines	

3.2 Development Plan Context

The statutory development plan provides the basis for assessing development proposals and determining applications including those for renewable energy development. In Angus it comprises:-

- Dundee and Angus Structure Plan 2002 (DASP) - establishes strategic policy, and reflects national planning policy at the time. It makes positive provision for renewable energy generating developments where they are compatible with other environmental and community interests. Environmental Resources Policy 10: Renewable Energy also requires local plans to establish detailed criteria based policy, locational guidance and where appropriate areas of search for individual sources of renewable energy. www.angus.gov.uk/structureplan/
- Angus Local Plan Review 2009 (ALPR) - establishes the detailed policy basis for development management in Angus, including renewable energy development. That part of Angus within the Cairngorms National Park is excluded. www.angus.gov.uk/localplan/
- Cairngorms National Park Local Plan (2010) - applies to the Upper Angus Glens (see Figure 1) and is not covered by this Implementation Guide. <http://www.cairngorms.co.uk/park-authority/planning/>

The Planning etc. (Scotland) Act 2006 introduces Strategic Development Plans (SDPs) for the four City Regions of Aberdeen, Dundee, Edinburgh and Glasgow and Local Development Plans (LDPs) to replace current structure and local plans. The Strategic Development Plan Authority for the Dundee City Region is a partnership of Angus, Dundee City, Fife and Perth & Kinross Councils. When approved, TAYplan (the Strategic Development Plan) will replace the current approved Structure Plans of the four local authorities. Progress on TAYplan can be viewed at www.tayplan-sdpa.gov.uk

The Development Plan is supportive of renewable energy in principle, and the ALPR establishes criteria against which renewable energy proposals will be assessed. Policy ER34 addresses potential adverse impacts that could arise. Development proposals for wind energy are also considered within the context of ER35 and related text. The full wording of the policies is set out in Appendix 2. These policies provide the basis for the more detailed guidance contained within this Implementation Guide. The ALPR contains a range of other policies against which any development proposal is considered, and where relevant the Implementation Guide will refer to these in the context of renewable energy projects.

Although community owned renewable energy generation is supported in principle where proposals are compatible with development plan policy, it must be made clear that negotiating or securing local community benefit is wholly separate from the planning application process. Angus Council's position is set out in Para 3.86, page 97 of the adopted Angus Local Plan Review. It is however recognised that where renewable energy schemes accord with the development plan there may be opportunity to secure contributions from developers for local community initiatives. However any such negotiations between the community and developers and any local contributions secured are totally separate from the land use planning and planning gain processes and will not be considered as part of any planning application. Such local community benefit initiatives will therefore not fall within the obligations required under Section 75 Planning Agreements and will require to be managed by other means.

Proposals for renewable energy development in that part of Angus within the Cairngorms National Park, will be determined by the Cairngorms National Park Authority (CNPA) within the context of the policies of the Cairngorms National Park Plan. Renewable Energy proposals within Angus that may affect the National Park, or its setting, will be referred to the CNPA for comment, and their views taken into account by Angus Council in the determination of any planning application.

3.3 Applications Checklist

In accordance with the Land Use Planning Context outline above, Table 2: Applications Checklist summarises the supporting information that may be required to accompany a planning application for renewable energy development. This is an aid for applicants, and for detailed information should be read in conjunction with the rest of this Implementation Guide, the Development Plan and other relevant legislation, policy and advice.

Table 2: Applications Checklist

The checklist is designed to identify the supporting information required to determine a planning application for renewable energy development. The information should be proportionate to the proposal, and the checklist indicates the requirements for different technologies and scales of development. It is intended as an aid to applicants, and whilst it aims to be comprehensive there may be site specific considerations or changes to legislation or guidance from the Scottish Government and statutory agencies. Applications will be considered in the context of current guidance.

	Wind Energy Development (Height to blade tip unless otherwise stated)				Other Renewable Energy Development
	Turbine height up to 15m	Turbine height 15 - 50m	Turbine height greater than 50m OR groups of 6 or more turbines in excess of 25m height	Projects > 50MW (Section 36 applications)	
Landscape and Visual Representation	Technical information from the turbine supplier often adequate. Photomontage may be requested to illustrate relationship. Eight figure grid reference for each proposed turbine	Basic level of VIA should include :- <ul style="list-style-type: none"> • ZTV map covering an area up to 20km (radius) from the turbine; • wireline drawings and/or photomontages from a limited number of key viewpoints; • viewpoints to be agreed with Angus Council, and SNH where appropriate; • design statement may be required in the case of multiple turbines; and • eight figure grid reference for each proposed turbine 	Full Landscape and Visual Impact (LVIA) should address the sensitivity, magnitude and significance of landscape and visual impact and include: <ul style="list-style-type: none"> • ZTV map covering an area up to 35km (radius) from the turbine; • wireline drawings and/or photomontages from key viewpoints; • assessment of landscape sensitivity, magnitude of change and residual impacts. • viewpoints to be agreed with Angus Council, and SNH where appropriate; • design statement identifying design objectives and process; and • eight figure grid reference for each proposed turbine. 	VIA or LVIA may be required for larger structures depending on scale, type and location of the proposal.	

	Wind Energy Development (Height to blade tip unless otherwise stated)				Other Renewable Energy Development
	Turbine height up to 15m	Turbine height 15 - 50m	Turbine height greater than 50m OR groups of 6 or more turbines in excess of 25m height	Projects > 50MW (Section 36 applications)	
		<u>Where proposals are within the ALPR area but may affect the Cairngorms National Park or its setting, applicants are advised to consult the Cairngorms National Park Authority. Applications.</u>			
Cumulative Assessment	<p>A significant constraint to potential wind energy development. The proposals eligible for inclusion in a Cumulative Assessment is dynamic. An appropriate date for baseline data should be agreed with the authority and relevant proposals identified and agreed with Angus Council prior to commencement.</p> <p>Cumulative assessments will normally be required where turbines are >50m to blade tip. The assessment will require to take account of agreed existing/proposed developments over 50m. They may also require to consider agreed existing/proposed smaller turbines where they visually interact with the proposal.</p> <p>Cumulative assessments have not normally been required where turbines are 25-50m to blade tip, but as more turbines under 50m are constructed, a cumulative assessment may be required if turbine density within the area of a ZTV map is deemed to have a potentially unacceptable cumulative impact.</p>				Depending on scale, type and location of the proposal there may be a requirement to assess its impact in conjunction with other existing or proposed development.
		<p>A cumulative ZTV (CZTV) should be produced on a clear and legible 1:50k Ordnance Survey Base plan. The CZTV would typically have a radius of up to 60km, in accordance with SNH guidance. The CZTV should:-</p> <ol style="list-style-type: none"> 1. include all consents and operational turbines over 50m to blade tip; 2. include extant planning consents and submitted applications which pre-date the submission and which are assessed by the Council to have a realistic expectation of a decision within 12 months; 3. include turbines under 50m (applications at an advanced stage, consents or operational) depending on their scale and location in relation to the application site i.e. visual interaction. This will only apply in specific circumstances; 			

	Wind Energy Development (Height to blade tip unless otherwise stated)				Other Renewable Energy Development
	Turbine height up to 15m	Turbine height 15 - 50m	Turbine height greater than 50m OR groups of 6 or more turbines in excess of 25m height	Projects > 50MW (Section 36 applications)	
		<ol style="list-style-type: none"> 4. include consented and proposed offshore proposals; 5. other relevant proposals in the public domain; 6. viewpoints for cumulative assessment, selected to provide representative views of all intervisible turbines, not from viewpoints selected to assess the application site. For example, a viewpoint may provide views in succession as defined by SNH (SNH Cumulative Effect of Windfarms (revised 2005)); and 7. Cumulative assessments to address effects in combination; in succession; in sequence and perceived in accordance with SNH Cumulative Effect of Windfarms (revised 2005) http://www.snh.gov.uk/docs/A305440.pdf <p>Following the production of a CZTV, proposed viewpoints should be added and submitted to Angus Council for approval prior to carrying out the assessment. Angus Council does not use file share software. All submissions should be provided in a format which permits high resolution images to be provided. The use of CDs is advised.</p>			
Environmental Impact Assessment (EIA)	An EIA will not generally be required.	<p>Environmental Impact Assessment (EIA) may be required under the terms of The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2011:-</p> <ul style="list-style-type: none"> • a Screening Opinion should be sought for turbines over 15m; more than 2 turbines; or located in a 'sensitive area' to determine whether the development requires EIA under the terms of Schedule 2 of the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2011. taking account of the selection criteria in Schedule 3 of the Regulations as laid reproduced in ANNEX A of Planning Circular The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2011 http://www.scotland.gov.uk/Publications/2011/06/01084419/10 • scoping for the Environmental Report should be prepared in accordance with ANNEX B of Planning Circular The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2011 	EIA may be required under the terms of The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2011		

	Wind Energy Development (Height to blade tip unless otherwise stated)				Other Renewable Energy Development
	Turbine height up to 15m	Turbine height 15 - 50m	Turbine height greater than 50m OR groups of 6 or more turbines in excess of 25m height	Projects > 50MW (Section 36 applications)	
		<ul style="list-style-type: none"> an EIA will require to demonstrate potential impacts, including length and significance of effect and mitigation measures for all components of an application where EIA is not be required, environmental information may still be required to consider agreed impacts. <p>* Sensitive Areas are defined in the Regulations as :- Sites of Special Scientific Interest; Land subject to Nature Conservation Orders; International Conservation Sites; National Scenic Areas; World Heritage Sites; Scheduled Monuments; and National Parks.</p>			
		Formal screening requests and determination will be publically available. Screening Determinations are valid for 12 months.			
Natural Heritage Designation	Applicants can use SNHi to check protected areas .	Applicants are advised to refer to SNH Small Scale Wind Energy Guidance and to use SNHi to check protected areas within a 20km radius of the proposal. http://www.snh.gov.uk/publications-data-and-research/snhi-information-service/			
	<p>International and National Designation – Supporting information must demonstrate that proposals (including all associated works) will not affect such sites to an unacceptable degree. Where proposals may have a significant effect on European Sites (SAC or SPA), they should be screened in accordance with the Habitats Regulations Directive. A Habitats Regulation Appraisal may be required. Where mitigation measures are proposed these must be shown to be:-</p> <ul style="list-style-type: none"> achievable; agreed with SNH and any organisation responsible for managing the designated site or with responsibility for the maintenance of 				

	<p>the site and the integrity of the reason for its designation; and</p> <ul style="list-style-type: none">• subject to planning conditions or a Section 75 agreement as appropriate.
	<p>Other Natural Heritage designations should be accorded appropriate protection and/or mitigation</p> <p>http://www.taysidebiodiversity.co.uk/</p>

	Wind Energy Development (Height to blade tip unless otherwise stated)				Other Renewable Energy Development
	Turbine height up to 15m	Turbine height 15- 50m	Turbine height greater than 50m OR groups of 6 or more turbines in excess of 25m height	Projects > 50MW (Section 36 applications)	
Historic Environment	Supporting information should identify historic and archaeological sites affected by the proposal, proportionate with the scale and number of turbines; the effect of the proposal and all associated works on the integrity of a site, its setting; requirements for archaeological survey and recording; and any proposed mitigation measures.				
	Guidance on assessing impacts on historic views has recently been published by English Heritage and may be used to inform the Council's assessment of wind energy developments. http://www.english-heritage.org.uk/content/publications/docs/seeing-history-in-view.pdf				
Noise Assessment	Where a noise assessment is required the methodology and cumulative considerations must be agreed with Angus Council Environmental and Consumer Protection. Failure to agree the methodology or to provide sufficient information may result in the application being recommended for refusal on the basis of lack of information. (See Section 5)				
Peat and soils	Where proposals affect peat soils, applicants should demonstrate carbon savings are calculated in accordance with Scottish Government advice and that SEPA and SNH have been consulted. http://www.scotland.gov.uk/Resource/Doc/229725/0062213.pdf A peat depth survey will be required where appropriate.				
	Development should minimise disruption to soils in accordance with the Scottish Soils Framework http://www.scotland.gov.uk/Resource/Doc/273170/0081576.pdf				
Water Environment	Development proposals should not lead to the deterioration in the condition of any water body, in accordance with the Tay Area Management Plan.				
		Where proposals are within the source catchment area of any private water supply potential impact must be considered and, if necessary, mitigation measures implemented			

	Supporting information should include a drainage assessment as appropriate.
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	Wind Energy Development (Height to blade tip unless otherwise stated)				Other Renewable Energy Development
	Turbine height up to 15m	Turbine height 15 - 50m	Turbine height greater than 50m OR groups of 6 or more turbines in excess of 25m height	Projects > 50MW (Section 36 applications)	
	Identify pollution risk and mitigate through the provision of buffer zones to protect wetland and private water supplies as appropriate				
Air Quality					Proposals for bio-energy and anaerobic digestion may require an air quality impact assessment
Residential Amenity	Assessment to include properties agreed with Angus Council subject to:- <ul style="list-style-type: none">• scale of turbine and blade size;• existence of buffers including woodland, buildings, landform; and• location and aspect of primary rooms and garden ground,		Assessment to include properties within a 2km radius of the proposed turbine(s) subject to:-		Amenity to be addressed within the context of Policy S6 and Schedule 1 as appropriate. Other amenity controls will be enforced through the relevant agencies including SEPA and HSE
	Turbines should generally be a minimum of 10 times rotor diameter from sensitive properties* to avoid the potential effects of shadow flicker. * Sensitive properties include:- residential properties including care homes; educational buildings, hospitals, cemeteries; some visitor facilities and accommodation; and proposed development areas				

	Wind Energy Development (Height to blade tip unless otherwise stated)				Other Renewable Energy Development
	Turbine height up to 15m	Turbine height 15 - 50m	Turbine height greater than 50m OR groups of 6 or more turbines in excess of 25m height	Projects > 50MW (Section 36 applications)	
Access and Traffic Management	Access likely to be feasible within existing road network Angus Council Roads Division will be consulted.		Access to be agreed with Angus Council Roads Division.	Access arrangements and traffic management plan and suitable route for large vehicles to be agreed with Angus Council Roads Division. Any required road improvements to be implemented prior to commencement of construction.	Access to be agreed with Angus Council Roads Division, including management plan and suitable route for large vehicles where necessary.
	Any new tracks to be included in the planning application, supporting information and decommissioning /reinstatement agreement.				
	Transport Scotland advise that a wind turbine should be located no closer than 1.5 x the Wind Turbine height to the nearside Trunk Road kerb line. For the avoidance of doubt the nearside kerb line is either the kerb of the live carriageway or the nearside heel kerb of the Trunk Road footway if present. Angus Council will apply this principle to all turbine proposals adjacent to a public road, for reasons of road safety.				
Other	Supporting information should include reasons for site selection and evidence of viability				
	<u>Where proposals are within the Cairngorms National Park Area, they will be referred to, and may be called in for determination by, the Cairngorms National Park Authority.</u>				
	Where proposals are located on the coast, applications should demonstrate they have been assessed within the context of the developer/undeveloped coast as defined in the SPP and Angus Local Plan Review and Shoreline Management Plan for Angus. Advice on the sustainable use of the Tay Estuary and adjacent coastal waters can be found in the Management Plan published by the Tay Estuary Forum (http://www.dundee.ac.uk/crsem/TEF/PDFS/Management%20Plan%20Final.pdf)				

3.4 Additional Guidance for ALPR Policies ER34 and ER35

Sections 3.4 and 3.5 expand on each of the two main policies and the specific criteria and sets out in more detail those matters that will be taken into account in considering and assessing development proposals. Interconnection with other policies and background information sources is also highlighted.

Policy ER34: Renewable Energy Developments

This policy sets the criteria against which all renewable energy proposals will be assessed, and where wind turbines are proposed should be read in conjunction with policy ER35. Other development plan policies will be applied where appropriate.

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:-*

In all instances 'renewable energy developments' encompass all works associated with the proposal including formation and extension of, or improvement to, access tracks, areas of hard standing/external storage areas, borrow pits, landscaping and bunding, foundations, sub-stations, equipment cabins and any other related or ancillary works and structures . The following policy guidance applies to all renewable energy proposals as appropriate:-

Criterion (a)

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

The choice of apparatus and its siting can significantly affect the appearance/impact of a renewable energy installation. 'Apparatus' includes generating equipment and ancillary structures such as transformer houses, transmission infrastructure, and storage facilities.

Wind and water powered renewable energy schemes, tend to be located within the rural landscape and their design should reflect this. Well sited and designed developments can, at best, enhance their setting or at least minimise potential impacts. Poorly sited or designed development can do the opposite – and may have an adverse impact on amenity for decades to come. Appropriate landscaping and planting can help a building or other appropriately scaled structure to blend into the landscape.

Where development proposals will impact on residential or recreational amenity, the choice of equipment may be of particular importance. Wind turbines for example should be chosen to reflect the scale of the landscape, light and visibility conditions and should respect residential amenity including noise and shadow flicker. Hydro-electric dams should be designed to respect the scale, colours and contours of the surrounding landscape.

It is accepted that wind energy technology is advancing rapidly and that there is a wide range of turbines available to the market. Initial discussions between the Council and developers should however seek to establish some basic characteristics such as proposed number and size of turbines, height (hub and blade tip), blade

number, colour and style although it is recognised that this may be amended as the project feasibility is developed. Similarly where a full planning application is submitted this must include details of all aspects of the proposal. Where a specific proposal has been approved by the Council any alteration to that project must be agreed in writing with the Council prior to implementation.

Other Relevant ALPR policies

Policy S3: Design Quality

Policy S6: Development Principles and Schedule 1: Development Principles

Policy ER10: Light Pollution

Policy ER11: Noise Pollution

Additional information

Tayside Landscape Character Assessment

<http://www.snh.org.uk/pubs/detail.asp?id=310>

Criterion (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;

Landscape and visual impact varies with the location, scale and type of renewable energy scheme proposed. For example wind turbines tend to be in exposed locations, and visible over a long distance; while hydroelectric schemes may be contained within a river valley; and solar panels fitted to an existing property roof tend to have a localised impact. As the extent and degree of landscape and visual impact increases so to does the need to assess potential cumulative issues and mitigation measures. The supporting information and accompanying visual/graphic information should be commensurate with the scale and location of the proposal.

It is likely the small hydro proposals will continue to come forward, and where they can be accommodated without detriment to the local environment and water courses, will be supported. Larger schemes can generate greater impact on water courses, fish, and the surrounding area as the diversion of water is much greater and more evidence of impact and mitigation will be required in order to determine any planning application. . Where river dams and associated buildings are proposed landscaping, contouring and planting can help structures blend into their setting, whilst also promoting biodiversity and habitat creation/enhancement. A range of advice is available for applicants considering hydro schemes including landscape and visual impacts. Consideration of associated infrastructure (pump house, tailrace, access, transmission, pipe routes etc) should be included in supporting information.

All forms of renewable energy development should be considered within their landscape context where applicable, Policy S6: Development Principles and Schedule 1 : Development Principles will form the basis for the assessment of small scale proposals, which have a local impact only. Scottish Natural Heritage has developed a series of Advice Notes on assessing the landscape impact of a range of renewable energy developments on the landscape, and their advice will be sought by the Council as appropriate.

Landscape and Visual Impact of Wind Turbines

Wind turbines are likely to have the greatest landscape and visual impact over the greatest distance and this aspect is addressed in Section 4 Landscape and Visual Assessment of Wind Energy Proposals.

Other Relevant ALPR policies

ER5: Conservation of Landscape Character
ER12: Development Affecting Conservation Areas
ER16: Development Affecting the Setting of a Listed Building
ER18: Archaeological Sites of National Importance
ER19: Archaeological Sites of Local Importance
ER20: Historic Gardens and Designed Landscapes
ER29: Coastal Development

Additional information

Scottish Natural Heritage (SNH) provides a comprehensive range of advice regarding landscape and visual impact on the natural heritage while Historic Scotland, Architecture and Design Scotland (ADS) and the local planning authority can advise on the built environment. Design statements can help applicants preparing development proposals to consider and articulate the processes undertaken in reaching final layout, siting and design and help inform the decision making process.

SNH Policy Statement 02/02 Strategic Locational Guidance for Onshore Windfarms in respect of Natural Heritage (updated 2009).

www.snh.gov.uk/docs/A247182.pdf

Associated Maps –

www.snh.gov.uk/docs/C208971.pdf

www.snh.gov.uk/docs/C208972.pdf

www.snh.gov.uk/docs/C208973.pdf

www.snh.gov.uk/docs/C208974.pdf

www.snh.gov.uk/docs/C208975.pdf

SNH Visual Representation of Windfarms (2006)

www.snh.gov.uk/docs/A305436.pdf

SNH Visual Assessment of Windfarms Best Practice (2002)

www.snh.gov.uk/docs/A305437.pdf

SNH Siting and designing Windfarms in the Landscape (2009)

www.snh.gov.uk/docs/A317537.pdf

Renewable energy technologies and the potential impacts on landscape and nature

<http://www.snh.gov.uk/planning-and-development/renewable-energy/>

Guidance on Hydro electric Schemes and the Natural Heritage

<http://www.snh.gov.uk/docs/C278964.pdf>

Aiding the Hydro-scheme development process - web-links to useful information sources

<http://www.snh.gov.uk/docs/C252875.pdf>

Tayside Landscape Character Assessment

www.snh.org.uk/pubs/detail.asp?id=310

Angus Windfarms – Landscape Capacity and Cumulative Impacts Study (2008)

www.angus.gov.uk/devcontrol/LandscapeCapacityandCumulativeImpactAssessmentFinal.pdf

Historic Scotland - Scottish Historic Environment Policy (SHEP)

www.historic-scotland.gov.uk/index/heritage/policy/shep.htm

Criterion (c)

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

There are a number of sites throughout Angus designated for their built, cultural, biodiversity, and natural heritage qualities. These range in scale from individual listed properties up to extensive areas such as Montrose Basin or that part of Angus designated as part of the Cairngorms National Park. Their value is established, and they are safeguarded for present and future generations, through legislation. The integrity of such designations may be affected by activity beyond site boundaries and even into other authorities. Much will depend on the details of an individual proposal – scale, location and type. In assessing development proposals, priority will be given to the maintenance of the quality of the built and natural heritage. Where appropriate, mitigation measures should be investigated and their efficacy demonstrated to ensure compatibility with protected sites.

Natural heritage and scientific designations are subject to a range of legislation, policy, and guidance. Development proposals must be able to demonstrate that there will be no unacceptable direct or indirect adverse effects on the integrity of designated sites or the reason for their protection. There is a hierarchy of designated sites, habitats and species ranging from international to local significance with levels of protection proportionate to status. Where remediation measures can successfully redress potential adverse impact, these must be agreed with the relevant advisory agency and subject to a planning condition or legal agreement.

There are no international designations within the ALPR area, but there are a number of European sites (SPAs and SCAs) including The River Tay, River South Esk and Firth of Tay SACs and SPAs at Montrose Basin, Kinnordy and Lintrathen Lochs and the Firth of Tay.

There are no local nature conservation sites designated within Angus to guide developers, but where locally important habitat or beauty spots are affected, these should be afforded appropriate protection. Local factors will be assessed as part of the consideration of development proposals and where identified through EIA screening and scoping studies should be addressed by supporting information.

Where a proposal affects a designated site an Environmental Impact Assessment may be required, depending on the scale of the proposal and anticipated impact. Proposals which come within the provisions of the Electricity Act 1989 will require to meet the terms of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000.

www.scotland.gov.uk/Topics/Business-Industry/Energy/Infrastructure/Energy-Consents/Guidance/EIA-Guidance

Sites and areas designated for historic and archaeological reasons are also subject to a range of policy, guidance and legislation. No World Heritage Sites have been identified within Angus, and Historic Scotland is responsible for the protection of sites of national and international status. Angus Council is responsible for determining applications for Listed Building Consent (LBC) and the identification of Conservation Areas and their subsequent protection. Protection of the built heritage extends beyond the actual property and curtilage to encompass its character and setting. This includes Historic Gardens and Designed Landscapes; all listed buildings; and scheduled ancient monuments. Historic Scotland and the Council's

Archaeological Service are consulted as appropriate. Where local archaeological sites and areas are known, or suspected, the Council will seek advice on the assessing and recording of any features.

Appropriate Level of Assessment

Proposals of more than two turbines or a hub height more than 15m tall, or and hydroelectric scheme with a capacity of over 0.5MW, fall within Schedule 2 of the Environmental Impact Assessment (Scotland) Regulations 2011. Such applications and those within or affecting:

- Sites of Special Scientific Interest
- Land subject to Nature Conservation Orders
- International Conservation Sites
- National Scenic Areas
- World Heritage Sites
- Scheduled Monuments and their settings
- National Parks.

may require a screening opinion from the planning authority to determine whether a formal EIA of the proposed development is required.

Where appropriate, proposals will be judged in conjunction with the consultation agencies as to whether a formal EIA is required. While only a small proportion of development proposals are likely to require EIA, an EIA is *not* discretionary if significant effects on the environment are likely and should be prepared in accordance with the relevant legislation and guidance listed below.

Where a development is of a scale or in a location where a formal EIA is deemed not necessary, the applicant must submit a planning statement on impact, including any proposed mitigation measures. In the case of wind turbines, the statement should address the constraints identified in the SAS for Onshore Wind Turbines. The level of detail should also reflect the scale and location of the proposal.

Guidance can be obtained from SNH, in their publication Hydroelectric Schemes and the Natural Heritage <http://www.snh.gov.uk/docs/C278964.pdf>

Other Relevant ALPR policies

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 and Legislation

Scottish Government

Planning Circular 3 The Town and Country Planning (Environmental Impact Assessment)(Scotland) Regulations (2011)

<http://www.scotland.gov.uk/Publications/2011/06/01084419/10>

PAN 58 Environmental Impact Assessment (1998)

<http://www.scotland.gov.uk/Publications/1999/10/pan58-root/pan58>

EIA Screening Checklist - <http://www.scotland.gov.uk/Resource/Doc/212607/0117167.pdf>

PAN 2/2011 Planning and Archaeology

<http://www.scotland.gov.uk/Publications/2011/081041322003/0>

Scottish Government – web based Renewables Specific Advice Sheets

<http://www.scotland.gov.uk/Topics/Built-Environment/planning/National-Planning-Policy/themes/renewables>

The Electricity Works (Environmental Impact Assessment) (Scotland) Amendment Regulations 2008 (Revised 2009)

<http://www.scotland.gov.uk/Topics/Business-Industry/Energy/Infrastructure/Energy-Consents/Guidance/EIA-Amendment-Regs-2008>

Town and Country Planning (Scotland) Act 1997 (As Amended)
Environmental Impact Assessment (Scotland) Regulations 2011

EU Birds Directive and Annex1
EU Habitats Directive and Annexes 1 and 2
[Habitats/protectedareas/NATURA](http://www.scotland.gov.uk/Topics/Business-Industry/Energy/Infrastructure/Energy-Consents/Guidance/EIA-Amendment-Regs-2008)

Additional information

IEEM

Guidelines for Ecological Impact Assessment in the United Kingdom
<http://www.ieem.net/ecia/impact-assess.html>

SNH

Handbook of Environmental Assessment (2009 Draft)

<http://www.snh.gov.uk/docs/B460796.pdf>

SNH Renewable Energy Information page

<http://www.snh.gov.uk/planning-and-development/renewable-energy/>

Wild Land

<http://www.snh.gov.uk/protecting-scotlands-nature/looking-after-landscapes/landscape-policy-and-guidance/wild-land/>

Guidance on Assessing Connectivity with Special Protection Areas (SPAs)

<http://www.snh.gov.uk/docs/A675474.pdf>

Soils and Natural Heritage

<http://www.snh.gov.uk/docs/A327906.pdf>

SNH, Perth and Kinross Council, SEPA and Angus Council
River Tay Special Area of Conservation (SAC) – Advice to Developers

<http://www.snh.org.uk/pdfs/publications/designatedareas/River%20Tay%20SAC.pdf>

SNH, SEPA and Angus Council

River South Esk Special Area of Conservation (SAC) – Advice to Developers

<http://www.snh.org.uk/pdfs/publications/designatedareas/River%20South%20Esk%20SAC.pdf>

Historic Scotland

Scottish Historic Environment Policy

<http://www.historic-scotland.gov.uk/index/heritage/policy/shep.htm>

Environmental Assessment

<http://www.historic-scotland.gov.uk/index/heritage/policy/environmental-assessment.htm>

Gardens and Designed Landscapes

<http://www.historic-scotland.gov.uk/index/heritage/gardens.htm>

Scottish Government

Historic Environment

<http://www.scotland.gov.uk/Topics/Built-Environment/planning/National-Planning-Policy/themes/historic>

Natural Environment

<http://www.scotland.gov.uk/Topics/Built-Environment/planning/National-Planning-Policy/themes/natural-heritage>

Angus Council

State of the Environment Report

www.angus.gov.uk/sustainability/pdfs/StateofEnvironment2011.pdf

Criterion (d)

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

Ancillary works required to transmit electricity from the site should form part of any renewable energy development proposal to ensure their inclusion in any EIA. Where deemed necessary by the planning authority, consideration will be given to undergrounding of cables and pipe work.

Most overhead power lines will be determined by Scottish Government under S37 of the Electricity (Scotland) Act 1989.

Criterion (e)

access for construction and maintenance traffic can be achieved without compromising road safety or causing unacceptable permanent change to the environment and landscape,

Renewable energy projects, by their very nature, may promote sites which have limited or no existing vehicular access. The construction, repair, maintenance and decommissioning will normally require access by heavy and/or long vehicles over the life of the project. In some cases, there may be a continuation of the life of a scheme with consequent renewal, replacement or upgrading in the longer term.

Any project proposal must therefore prepare and submit a route assessment and traffic management plan, which demonstrates:-

- how access is to be achieved;
- selected routes have been assessed and are capable of accommodating traffic generated;
- traffic management over the construction phase; and
- longer term access requirements.

If road improvements are required, these must be approved by Angus Council Roads division, part of Infrastructure Services. Site access should allow all vehicles visiting the site to have space to manoeuvre to ensure safe access and egress.

The formation of new, or upgrading of existing, tracks over open countryside/uplands should be designed to avoid generating run off/surface water flooding and be reinstated on completion of construction, where they will not be regularly in use.

Provision must be made for the re-instatement of any existing and proposed tracks when the site is decommissioned.

Other Relevant ALPR policies

Policy S2: Accessible Development

Policy S3: Design Quality

Policy S4: Environmental Protection

Policy S6: Development Principles and Schedule 1: Development Principles

Additional information

SNH – Constructed Tracks in the Scottish Uplands (2005)

<http://www.snh.gov.uk/docs/A308736.pdf>

SNH and Forestry Commission Scotland – Floating Roads on Peat

<http://www.roadex.org/uploads/publications/Seminars/Scotland/FCE:SNH%20Floating%20Roads%20on%20Peat%20report.pdf>

Scottish Renewables, SNH, SEPA and Forestry Commission Scotland – Good Practice During Windfarm Construction

<http://www.snh.org.uk/pdfs/strategy/renewables/Good%20practice%20during%20windfarm%20construction.pdf>

Angus Council

The Roads Division is part of the Infrastructure Services Department, Angus Council, County Buildings, Market Street, Forfar, Angus, DD8 3LG

Contact: ROADS@angus.gov.uk

Criterion (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.

Ground and surface water – including coastal waters, water courses, standing water, peat soils, wetlands and ground water – is an important environmental and commercial asset in Angus. Their identification and quality classification has been established through the Water Framework Directive and the Tay Area Management Plan sets the framework for development that affects them. Applicants will require to demonstrate that development proposals should maintain or enhance ground and surface waters features, not cause deterioration. Groundwater wetlands should be incorporated in Phase 1 Habitat surveys and where appropriate include a buffer zone of 100m between features and roads, tracks and trenches, increasing to 250m for borrow pits and foundations.

Water Supply

The protection of drinking water, both public and private supplies, will be a priority. Where a development proposal is deemed to affect a potable supply the applicant will require to demonstrate there are no unacceptable adverse effects, or how these can be mitigated if feasible. This may include the requirement for a buffer zone of 100m between features and roads, tracks and trenches, increasing to 250m for borrow pits and foundations. Any works within these distances should demonstrate (e.g. through a hydrogeological assessment) that impacts on abstractions are acceptable.

Flooding

The SPP www.scotland.gov.uk/Resource/Doc/300760/0093908.pdf establishes a risk framework which provides a basis for planning decisions where there is a potential flood risk. Development proposals located within, or affecting known flood risk areas, will be considered within the context of this framework and referred to SEPA where necessary. Angus Council Roads are the Flood Prevention Authority and advise on flood prevention and flood risk standards for new roads, car parks and footpaths.

SEPA have produced an Indicative River and Coastal Flood Map which can be viewed at www.sepa.org.uk/flooding/flood_map/view_the_map.aspx

Water Quality

The water environment is a potential constraint to renewable energy development, particularly in relation to construction works. Applicants should demonstrate that

- no unacceptable damage to the water environment will result from their development;
- all pollution risks and mitigation measures during construction, operation and decommissioning have been identified;
- developments are designed to avoid engineering activities (such as culverts) in the water environment; and
- project management is in place to mitigate potential adverse impacts during the construction phase.

Peat Soils

Where peat soils are affected by potential renewable energy development applicants should consider:-

- Ground water contamination;
- Damage to peatland habitat, especially on or adjacent to designated sites. Early consultation with SNH and SEPA is advised where a proposed development is likely to affect peatland or mire systems;
- In relation to wind energy proposals Scottish Government advice on calculating carbon savings should be used when preparing applications. Information on this is available at <http://www.scotland.gov.uk/Topics/Business-Industry/Energy/Energy-sources/19185/17852-1/CSavings> ;
- Measures to minimise soil disturbance during construction, operation and decommissioning to maximise carbon balance savings; and
- Potential for slippage;
- Need for a peat depth survey to demonstrate that the layout and design of the proposal avoids areas of deep peat and minimises disturbance to other areas of peat.; and
- Procedures for any extraction and disposal of peat during construction.

Applicants should consult SNH and SEPA at an early stage where proposed development is likely to affect peatland or mire systems

Other Relevant ALPR policies

Policy ER27: Flood Risk – Consultation

Policy ER28: Flood Risk Assessment

Policy ER25: Water Resource Protection

Policy and Legislation

Scottish Government

Water Framework Directive in Scotland (WFD)

www.scotland.gov.uk/Topics/Environment/Water/15561/WFD

Flood Risk Management (Scotland) Act 2009

www.scotland.gov.uk/Topics/Environment/Water/Flooding/FRMAct

A Policy Statement on Hydropower and Water Environment Protection

www.scotland.gov.uk/Topics/Business-Industry/Energy/Energy-sources/19185/17851-1/HydroPolicy

Additional information

Scottish Environment Protection Agency

The Tay Area Management Plan 2009 - 2015

www.sepa.org.uk/water/river_basin_planning/area_advisory_groups/idoc.ashx?docid=442c3ee6-588d-468f-bbd5-97cbc7de9e38&version=-1

Guidance for hydropower development

www.sepa.org.uk/water/hydropower.aspx

Planning Advice

<http://www.sepa.org.uk/planning/energy.aspx>

Controlled Activities Regulations (CAR); Guidance for Applicants on Supporting Information requirements for Hydropower Applications

<http://www.sepa.org.uk/water/idoc.ashx?docid=358677fe-61f7-4fc9-baab-79cb93671387&version=-1>

Engineering Activities in the Water Environment

http://www.sepa.org.uk/planning/engineering-water_environments.aspx

Scottish Government

Wind Farms and Carbon Savings on Peatlands

<http://www.scotland.gov.uk/Topics/Business-Industry/Energy/Energy-sources/19185/17852-1/CSavings>

Angus Council

Environment and Consumer Protection and Roads Division are part of the Infrastructure Services Department, Angus Council, County Buildings, Market Street, Forfar, Angus, DD8 3LG

Contact:

ROADS@angus.gov.uk

ENVHEALTH@angus.gov.uk

Policy ER 35 Wind Energy Development

Onshore wind turbines are the main subject of renewable energy proposals in Angus. The scale, location and impacts of wind energy developments raise a number of specific issues for consideration and Policy ER35 establishes criteria to aid the assessment of such planning applications.

The ALPR addresses additional issues raised by wind energy development. It identifies three geographic areas –Highland (1); Lowland and Hills (2); and Coast (3) - based on the landscape classification that was developed in the Tayside Landscape Character Assessment (1999) www.snh.org.uk/pdfs/publications/review/122.pdf and SNH Policy Statement 02/02 www.snh.gov.uk/docs/A247182.pdf. The broad geographic areas are shown in Figure 1 (see page 39). The ALPR recognises that the open and exposed nature of the Coast and Highland areas are sensitive to potential landscape and visual impact from turbines. The Lowland and Hills area is recognised as of generally lower sensitivity to turbines in terms of visual, landscape and natural heritage interests. However, there may be areas within the Lowland and Hills Area where large turbines would have an unacceptable impact, or where properly sited and designed wind energy development can be accommodated in areas of higher natural heritage, landscape and visual sensitivity.

Policy ER 35: Wind Energy Development: *Wind energy developments must meet the requirements of Policy ER34 and also demonstrate:-*
(policy criteria a) - g) are set out and discussed below)

Criterion (a)
the reasons for site selection;

Applicants should present their rationale for site selection. Applicants should demonstrate that proposals are in locations where the technology can operate efficiently. Where a consent lapses, that proposal will be deleted from the Council's database of active proposals. Any re-application will be subject to full cumulative assessment in relation to visual, landscape and environmental impact as appropriate.

Applicants should demonstrate that site selection considered all technical, environmental, amenity, visual and landscape impact and mitigation where feasible.

Other Land Uses

Applicants should demonstrate that their selected site is compatible with other existing land uses and economic activities including:-

- tourism - proximity to visitor attractions such as historic properties, visitor centres, hotels, viewpoints and 'beauty spots';
- leisure and recreation (particularly outdoors) – foot and cycle paths, facilities (particularly outdoors) such as golf courses, activity centres;
- forestry – impact of felling for access and turbine clearance;
- quiet or remote places valued for their tranquillity;
- ancient woodland; and
- tourist routes and viewpoints.

Applicants should also demonstrate where site selection can enhance an area, and provide added value. This could include improving access, parking provision, visitor facilities on site such as interpretative facilities and amenities.

Residential Amenity

Applicants must be able to demonstrate that the site was selected to avoid unacceptable impact on the amenity of occupied residential property. The SPP advises a 2km separation distance between areas of search for windfarms over 20MW and the edge of towns and villages, and confirms the development up to this distance is likely to be a prominent feature in open landscapes. When considering potential visual impact of wind energy proposals on residential amenity, Angus Council will use 2km as a guide. Within 2km of residential properties information required will depend on the scale and location of the individual proposal.'

Applicants should be able to demonstrate that factors such as scale, location and topography will allow the development without unacceptable detrimental effect. Views from principal rooms looking towards a proposed turbine, and extent and location of garden ground will be factors in considering potential impact on residential amenity.

Additional Information

SNH

Historic and Ancient Woodlands

www.snh.gov.uk/land-and-sea/managing-the-land/forestry-and-woodlands/history/

Criterion (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;

This criterion applies to areas designated under the European Habitats and the European Birds Directives for their significance to birds (Natura 2000 sites), and to the flight paths of protected species; and those protected under the Convention on Wetlands of International Importance (Ramsar sites). As well as these internationally designated sites, there are a number of nationally important sites such as Sites of Special Scientific Interest (SSSIs) and RSPB significant bird habitats (which are adjacent to and support designated sites at Kinnordy Loch and Montrose Basin). The protection afforded to these sites extends beyond their boundaries to allow for foraging, roosting and flight paths.

There is a growing body of experience on the management and design of wind farms to reduce or prevent unacceptable impact on birds which may help in the design and layout of a proposed wind farm. SNH will advise on bird surveys and guidance on assessing the impacts of wind farms on birds is available on their website at www.snh.gov.uk/planning-and-development/renewable-energy/onshore-wind/

Other Relevant ALPR policies

Policy ER1: Natura 2000 and Ramsar Sites (4)

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 and legislation

EU Habitats Directive and Annexes 1 and 2

EU Birds Directive and Annex1

Habitats/protectedareas/NATURA

Additional information

The RSPB and SNH have produced a Bird Sensitivity Map. Details can be found at:
www.rspb.org.uk/news/details.aspx?id=tcn:9-179628

Criterion (c)

there is no unacceptable detrimental effect on residential amenity, existing land use or road safety by reason of shadow flicker, noise or reflected light;

Shadow Flicker and Reflected Light

Shadow flicker is where the moving shadow flicker appears through a narrow window opening. The occurrence of flicker can be predicted by calculation, and is therefore identifiable and can be addressed. Scottish Government on-line guidance for Onshore Wind Turbines advises that in most cases the problem can be resolved through separation between wind turbines and nearby dwellings (as general rule 10 rotor diameter).

Turbines can also cause flashes of reflected light, which can be visible for some distance. It is possible to ameliorate the flashing but not to eliminate it. Careful choice of blade colour and surface finish can help reduce the effect.

Noise

There are two sources of noise from wind turbines - the mechanical noise from the turbines and the aerodynamic noise from the blades. Mechanical noise can be reduced through engineering design. Good acoustical design and siting of turbines is essential to ensure there is no significant increase in ambient noise levels as they affect the environment and any nearby sensitive property/receptors. Where appropriate planning conditions will be imposed to control any impact to within reasonable levels. The evaluation of noise will be addressed on a site specific basis, given the range of factors to be considered and further detailed guidance is provided in Section 5 : Noise Assessment for Wind Energy Proposals

Other Relevant ALPR policies

Policy ER11: Noise Pollution

Policy and Legislation

Scottish Government – 1/2011 Planning and Noise

<http://www.scotland.gov.uk/Publications/2011/02/28153945/0>

Scottish Government - web based Renewables Specific Advice Sheets

<http://www.scotland.gov.uk/Topics/Built-Environment/planning/National-Planning-Policy/themes/renewables>

Additional Information

Working Group on Noise and Turbines, Final Report 1996 – ETSU-R-97

www.semantise.com/~lewiswindfarms/FOV1-00021BAE/FOV1-00021BD2/1996:00:00%20ETSU-R-97%20-%20Exec%20Summary.pdf?FCItemID=S000C081A

The Influence of Colour on the Aesthetics of Wind Turbine Generators' – ETSU W/14/00533/00/00

Angus Council Environmental and Consumer Protection is part of the Infrastructure Services Department, Angus Council, County Buildings, Market Street, Forfar, ANGUS DD8 3LG

Contact: ENVHEALTH@angus.gov.uk

Further information turbine noise level prediction can also be found in Section 5 : Noise Assessment for Wind Energy Proposals

Criterion (d)
that no wind turbines will interfere with authorised aircraft activity;

Military Aircraft

There are MOD bases, RAF Leuchars in Fife and RM Condor at Arbroath, with flight paths for landing and take-off which affect Angus. Parts of the area are also subject to low fly zones. Barry Buddon Camp is an army training facility, with live firing capacity.

The approach zones for the Air Traffic Control Radar at RAF Leuchars affect areas across south Angus.. The MOD has commented on/objected to a number of wind energy proposals in South Angus on the grounds of interference with radar resulting in false signals being recorded by air traffic controllers, which can threaten aircraft safety. The safety of military personnel and aircraft will be taken into account by Angus Council in considering planning applications.

Where radar interference is identified as a potential constraint and effective mitigation measures have been agreed with the MOD, these must be submitted in writing to Angus Council. Only where a scheme is demonstrated to be deliverable or can be secured through application of a condition, will planning permission be granted

Contact details and further information can be found at:

www.mod.uk/DefenceInternet/MicroSite/DE/WhatWeDo/Operations/ModSafeguarding.htm

Civilian Aircraft

There are two civilian facilities which affect Angus - Dundee Airport and the Gliding Club at Roundyhill, between Glamis and Kirriemuir.

No unofficial safeguarding maps are known to have been lodged with the Council e.g. for local emergency service Air Support Units or a former unlicensed airfield in the vicinity of Montrose.

Applicants must consult NERL Safeguarding, the Civil Aviation Authority (CAA) and the local authority before submitting a planning application. The applicant should provide an analysis of possible impact, and appropriate measures to alleviate any identified adverse effects on broadcast communications and signals. These consultees may advise on aircraft safety, including lighting. Where this is the case their advice will be acted upon by Angus Council.

There is an international civil aviation requirement for all structures of 91.4 metres or more to be charted on aeronautical charts. This is achieved by notifying Defence Geographic Centre prior to the construction/erection of wind turbines and/or anemometer/meteorological masts.

Any structure of 150 metres or more must be lit in accordance with the Air Navigation Order and should be appropriately marked. Smaller structures may also be required to be lit by aviation stakeholders particularly if they fall under Section 47 of the Aviation Act

Contacts:

Civil Aviation Authority	NERL Safeguarding
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CAA House 45-59 Kingsway London WC2B 6TE	NATS-CTC Mailbox 23 4000Parkway Solent Business Park Whitely Hampshire PO15 7FL
Dundee Airport Riverside Dundee DD2 1UH	

Policy and Legislation

Scottish Government

Circular 2/2003 Safeguarding of Aerodromes, Technical sites and Military Explosives Storage Areas.

<http://www.scotland.gov.uk/Resource/Doc/47021/0026439.pdf>

Additional Information

Civil Aviation Authority

Guidance on CAA Planning Consultation Requirements

http://www.caa.co.uk/docs/33/DAP_GuidanceOnCAAPanningConsultationRequirements.pdf

CAP 764

CAA Policy and Guidelines on Wind Turbines

<http://www.caa.co.uk/docs/33/Cap764.pdf>

Criterion (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;

Wind turbines have the potential to interfere with electronic communication media, which includes television and radio (which may cause interference, loss of sound or picture and 'ghosting'), and micro wave links (which may be affected by reflection, diffraction or blocking). Operators suggest a minimum distance of 100m between the alignment of the microwave and any turbine to prevent interference. These interference effects can be reduced through changes to turbine siting and discussion with operators will confirm an appropriate distance.

Applicants must consult Ofcom (Office of Communication - which acts as the central point of contact for any television and radio broadcasting, telecommunication and wireless communication issues); the emergency services; utility companies; and the local authority before submitting a planning application.

The applicant should provide details of possible adverse effects, and proposed measures to mitigate adverse effects on broadcast communications and signals.

Applicants should contact:

Ofcom Riverside House 2a Southwark Bridge Road London	Wind Farm Team The Joint Radio Company Limited, Dean Bradley House 52 Horseferry Road
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<p>SE1 9HA</p> <p>Further information is available at www.ofcom.org.uk/</p>	<p>London SW1P 2AF</p> <p>Telephone: +44 20 7706 5197</p> <p>Further information on The Joint Radio Company Limited is available at www.jrc.co.uk</p>
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Criterion (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;

Although a number of consents have been granted in Angus for wind turbines of around 90m to blade tip, only one has yet been constructed. There are a number of large scale turbines close to the boundary of Angus; in Perth and Kinross (Drumderg 16 x 107m), Dundee (Michelin 2 x 120.5m) and Aberdeenshire (Tullo 8 x 100m). These developments are clearly visible from parts of Angus, but no cross local authority boundary landscape/capacity assessment has been undertaken as those commissioned are normally for and by individual local authorities or refer to a specific proposal. Major landscape features such as the highland boundary fault however can extend across several council areas.

The SAS for Onshore Wind Turbines identifies potential cumulative impact as a significant constraint for wind farms, but as noted previously, there is no cross boundary context. The potential impact changes as each development is constructed and the actual scale and potential impact of a windfarm or large turbine will vary depending on the site, layout and turbines selected. Cumulative effects of wind energy developments are a matter of great significance in determining any application. Assessment of landscape and visual impact is contentious and every effort should be made to provide accurate visual representations and to ensure potential cumulative impact on the natural and built environment is fully addressed.

The assessment of cumulative impact will reflect the operational, consented and planning applications for turbines, as well as the specific site characteristics. As this will be different for each application and over the passage of time, it is increasingly difficult to map areas of constraint imposed by cumulative impact. Each proposal should demonstrate how its particular characteristics relate to other proposals at the assessment stage. Regard should be given to the extensive advice available on assessing and representing potential cumulative visual and landscape impact.

Ecology, Ornithology and Hydrology

There is also potential for the combined effect of wind energy development to increase impact on sensitive habitats and/or protected species to an unacceptable level. Where existing development already affects a protected or vulnerable habitat, applicants must demonstrate subsequent proposals through the combined effect of development, will not cause impacts to be intensified to an unacceptable level. This will be particularly important where sites are designated as of international or national importance, but damage to all vulnerable habitats and species should be avoided. (Natura 2000 sites may require a Habitats Regulation Assessment (HRA) by Angus Council as competent authority)

Cumulative Impact

Cumulative ecological impact should be addressed through a formal EIA or an environmental statement, the terms of which should be agreed with the local authority, and other agencies as appropriate. Where the responsibility lies with the local authority to determine acceptable level of impact or viability of mitigation measures, advice will be sought from relevant agencies.

Where mitigation measures are proposed and agreed, these will be subject to the application of conditions or legal agreement as appropriate. Post operational monitoring of impact on habitat and species may be required and will be subject to the application of conditions or legal agreement as appropriate.

Cumulative landscape and visual assessments should establish search area identifying:-

- any constructed or consented windfarm;
- any undetermined windfarm application;
- any windfarm proposal which has been subject to an EIA scoping request to the relevant authority; and
- any other windfarm proposal that the Planning Authority, and/or SNH, considers relevant for study and which is within the public domain (eg as a result of a public announcement or community meeting).

Installed, consented and proposed offshore windfarms should also be presented on the base plan to enable a decision on whether to include these in the assessment.

The cumulative landscape and visual effect will be those which are additional to an agreed baseline of wind energy developments reflecting the scale of the development under consideration. The search area considered will relate to the height of the proposed turbine and the visual interaction with other turbines within an agreed distance

For larger turbines the study area should extend to a minimum of 35km from the outer margin of the application site. The size of the study area should also be influenced by the locations and ZTVs of other windfarms likely to interact with the new proposal; and by transport routes to be assessed for sequential effects. The study area may not be circular in shape but could be larger in some directions than others. Sequential impacts may need to be assessed for a distance of more than 60km from the proposed windfarm.

For smaller proposals appropriate distances will be agreed with the developer in accordance with SNH guidance

Policy and Legislation

Scottish Government - web based Renewables Specific Advice Sheets

<http://www.scotland.gov.uk/Topics/Built-Environment/planning/National-Planning-Policy/themes/renewables>

SNH

Assessing the Cumulative Impacts of Onshore Wind Energy Developments

<http://www.snh.gov.uk/docs/A675503.pdf>

Visual Representation of Windfarms Good Practice Guidance

<http://www.snh.gov.uk/docs/A305436.pdf>

Criterion (g)

a realistic means of achieving the removal of any apparatus when redundant and the restoration of the site are proposed.

The anticipated lifespan of a wind farm/turbine is currently around 25 years. Once established the operational capacity and equipment is likely to be reviewed. Extension of existing consents will be assessed in accordance with legislation and guidance pertaining at that time, and continued use of an existing location may be an appropriate option. Where time of operation is extended, the decommissioning statement and re-instatement plan will also be reviewed, updated to contemporary standards, and extended.

The applicant will be required by planning conditions or legal agreement to ensure acceptable re-instatement standards. A decommissioning statement and reinstatement plan should be submitted detailing removal of all apparatus and associated works; restoration of the site and any after care arrangements; and timescale. It is likely a financial bond will be required by Angus Council to ensure restoration is implemented should the applicant/operator cease to trade. The decommissioning statement should be updated prior to the cessation of energy generation.

Where a site has been inactive for six months, the planning authority will require the instigation of the decommissioning process within the six months of the site being confirmed inactive.

4. Landscape and Visual Assessment of Wind Energy Proposals

The potential landscape and visual impact of wind turbines, both individually and cumulatively is a major factor in the assessment of any planning application.

The Tayside Landscape Character Assessment (TLCA) was prepared by Land Use Consultants in 1999, as part of a series of assessments for Scotland prepared on behalf of SNH and the local authorities. It develops a landscape classification which identifies and describes a range of character areas. It also provides guidance on accommodating development and land use change. Whilst some of this guidance has been superseded, the definition of the landscape character areas and their vulnerability to some types of development remains valid, and should be used in conjunction with the evolving SNH guidance.

The landscape character areas form the basis of The Wind Energy Geographic Areas in the ALPR as follows (Figure 1, page 39):-

- Area 1 Highland - primarily the Angus Glens along and to the north of the Highland Boundary Fault;
- Area 2 Lowland and Hills - mainly rolling farmland and low hills;
- Area 3 Coast - a mix of sand, cliffs and, around Montrose, lowland basin.

The ALPR identifies areas 1 Highland and 3 Coast as having a greater potential sensitivity to the landscape and visual impact of large turbines. This principle is developed in the Landscape Capacity and Cumulative Impacts Study undertaken by Ironside Farrar on behalf of the Council in 2008. This study primarily considered landscape capacity and cumulative impact in Angus at a strategic level in order to assist in the determination of two planning applications for wind turbines and based on the TLCA character area it identifies Landscape Capacity for Windfarms and current windfarm character type.

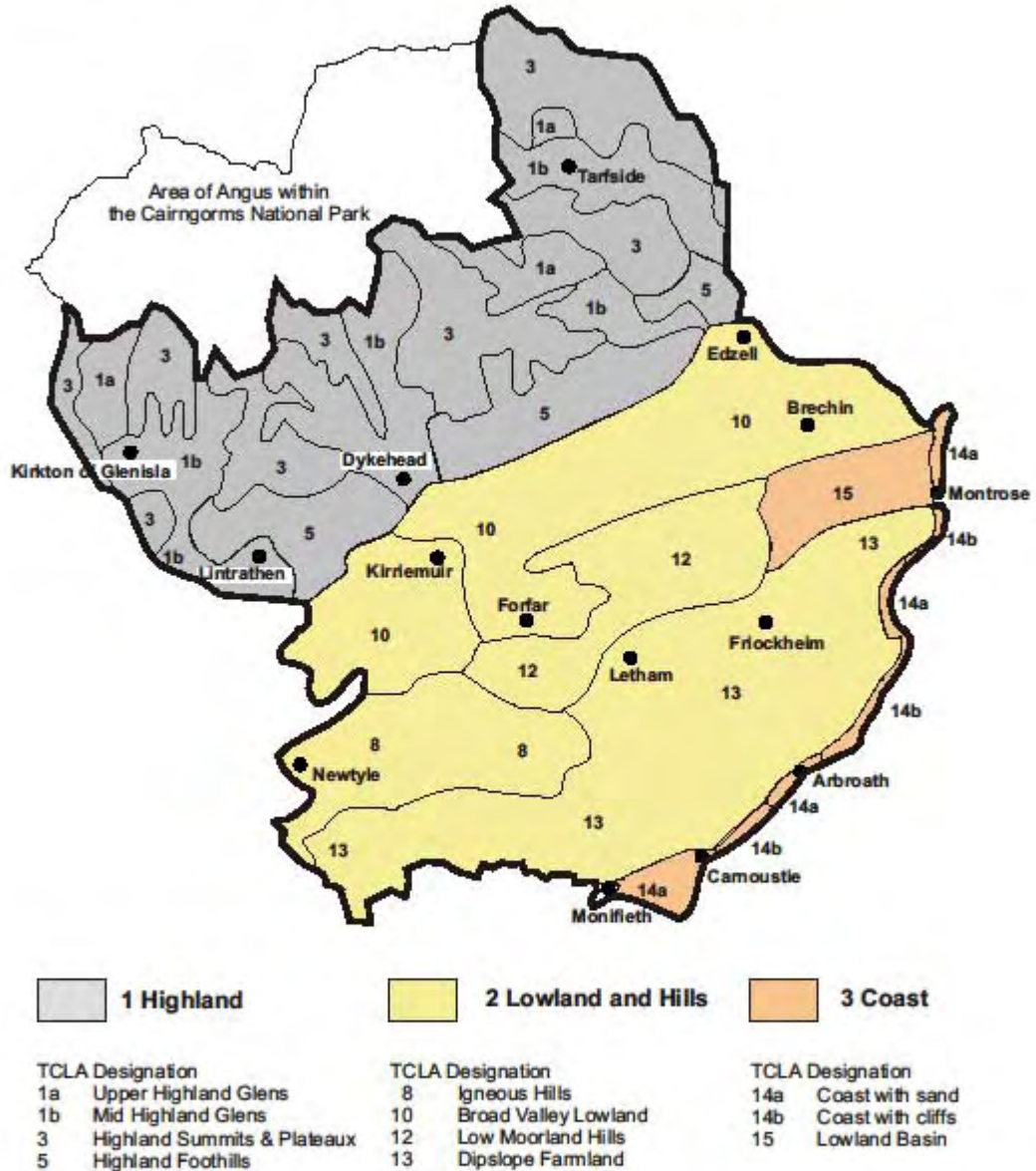
www.angus.gov.uk/devcontrol/LandscapeCapacityandCumulativeImpactAssessmentFinal.pdf

Area 3 Coast also has specific locational factors such as coastal flooding potentially exacerbated in future by rising sea levels, the protection of the undeveloped coast, shoreline management and the interrelationship with off-shore proposals. Development proposals on the coast will be required to address these issues as appropriate in any applications and supporting information.

The ALPR and TLCA form the basis for the strategic assessment of landscape capacity and potential visual and landscape impact. Applicants will require to establish the parameters for their individual site assessment with the Council taking cognisance of the detailed landscape and visual implications and suitable representations. Where proposals are for turbines between 15 and 50m are proposed a basic VIA should be submitted and for turbines over 50m a full LVIA should be undertaken as detailed in Table 2.

Scottish Natural Heritage has developed a series of Advice Notes on the impacts of windfarms on the landscape, and their advice will be sought by the Council as appropriate.

Figure 1 - Wind Energy Development Geographic areas



Map extract from Angus Local Plan Review (adopted Feb 2009)
 © CROWN COPYRIGHT, ANGUS COUNCIL 100023404, 2011.

The 'Landscape Capacity and Cumulative Impacts Study' is a strategic level study providing a context for the consideration of the cumulative effects of existing and potential future windfarm developments. It develops a classification of landscape types in terms of the degree of wind turbine development (Table 3) which is applied in Table 4: Levels of Acceptable Landscape Character Change.

Table 3: Landscape Classification

Landscape	Type	Landscape Character Visual Experience
Landscape with no Windfarms	A landscape type or area in which no windfarms or wind turbines are present and none are clearly visible from neighbouring areas	There would be no discernable effects on visual receptors.
Landscape with Views of Windfarms	A landscape type or area within which, or immediately adjacent, there are no windfarms or wind turbines physically located, but from which windfarms are clearly visible in a separate landscape character area. Character may vary considerably according to proximity and scale of neighbouring windfarm(s).	The experience of a visual receptor would be noticeably affected, but windfarms are a background feature clearly not associated with the landscape in which the receptor is located. Visual effects may vary considerably according to proximity and scale of neighbouring windfarm(s)
Landscape with Occasional Windfarms	A landscape type or area in which windfarms or wind turbines are located or are very close to and visible. However they are not of such a size, number, extent or contrast in character that they become one of the defining characteristics of the landscape's character.	Visual receptors would experience occasional close-quarters views of a windfarm or turbines and more frequent background views of windfarms or turbines. Some turbines may or may not be perceived as being located in the landscape character area. No overall perception of windfarms being a defining feature of the landscape.
Landscape with Windfarms	A landscape type or area in which a windfarm, windfarms or wind turbines are located and visible to such an extent that they become a defining characteristic of the Landscape Character. However, they are clearly separated and not the single most dominant characteristic of the landscape	Visual receptors would experience frequent views of windfarms or wind turbines as foreground, mid-ground or background features, affecting their perception of the landscape character. However there would be sufficient separation between windfarms and turbines and sufficient areas from which wind turbines are not visible such that they would not be seen as dominating the landscape over all other landscape features.
Windfarm Lands	A landscape type or area in which windfarms or wind turbines are extensive, frequent and nearly always visible. They become the dominant, defining characteristic of the landscape. Nevertheless there is a clearly defined separation between developed areas.	Visual receptors would experience views of windfarms as foreground, mid-ground and background features, to the extent that they are seen to dominate landscape character. Few areas would be free of views of wind turbines
Windfarm	Landscape fully developed as a windfarm with no clear separation between groups of turbines. Few if any areas where turbines not visible.	Visual receptors would always be close to and nearly always in full view of wind turbines.

Table 4: Levels of Acceptable Landscape Character Change also incorporates the SNH classification of landscape and visual cumulative effects :-

- a) *'in combination - where two or more features are seen together at the same time from the same place, in the same (arc of) view where their visual effects are combined;*

- b) *in succession - where two or more features are present in views from the same place (viewpoint) but cannot be seen at the same time, together because they are not in the same arc of view - the observer has to turn to see new sectors of view whereupon the other features unfold in succession;*
- c) *in sequence - where two or more features are not present in views from the same place (viewpoint) and cannot, therefore, ever be seen at the same time, even if the observer moved round the arc of view, the observer has to move to another viewpoint to see the second or more of them, so they will then appear in sequence. The frequency of occurrence in the sequence may be highly variable, ranging from frequently sequential when the features keep appearing regularly and with short time lapses between (clearly speed of travel influences this as well as distance between the viewpoints) down to occasionally sequential where there may be long time lapses between appearances, because the observer is moving very slowly and / or there are large distances between the viewpoints (even if not between the features);*
- d) *perceived - where two or more features are present but one or more is never seen by the observer, for example, because they are screened, or the observer is unable or unwilling to attend a viewpoint from where they would be seen. However, the observer is aware that others are there because, for example, they may have read or heard about them or seen signs to them; this is an apprehended or perceived effect but can be strongly felt; it could also, nevertheless, be mistaken because the observer's information or interpretation of it is wrong.' (David Tyldesley for SNH at PLI – Proposed Windfarm, An Suidhe, Inveraray, Argyll. November 2002).*

New large scale proposals close to established wind farm or turbine development in landscape and/or visual terms should consider their relationship with existing turbine type, scale, colour and layout from all directions from which the wind farms or turbines are viewed in combination.

As the number of sites generating energy from wind increase, so does potential for conflict between different scales of development, and between proposed and existing development. Where proposals are submitted, the relative height and style of turbine (e.g. tower construction, number of blades, blade length) should increasingly reflect those already consented to promoted a harmonious development pattern.

The Levels of Acceptable Landscape Character Change established in Table 4 provides guidance on the Councils assessment of the potential impact of wind energy development in Angus.

Additional Information

SNH Cumulative Effect of Windfarms (revised 2005)

<http://www.snh.gov.uk/docs/A305440.pdf>

Table 4: Levels of Acceptable Landscape Character Change

Within **Development Boundaries** (as defined in the ALPR) it is not possible to define maximum turbine heights. Proposals for turbine development in towns and villages will be considered in the context of the ALPR policies and take account of the following considerations:

- Scale and location
- Landscape setting
- Residential amenity including noise, shadow flicker, visual impact etc
- Historic environment including townscape
- Compatibility with adjacent uses
- Proximity to sensitive receptors such as educational buildings, open space and leisure facilities, hospitals, residential care homes, cemeteries, visitor facilities and accommodation and proposed development areas
- Access
- Design
- Security of equipment/facility
- Ancillary works

Outwith development boundaries, in countryside locations it is considered that there is scope for turbines to be accommodated within the following defined landscape types. The guide heights are extrapolated from sources including the Tayside Landscape Character Assessment, the Landscape Capacity and Cumulative Impacts Study, Reporters findings from planning appeals, responses from statutory consultees and reflect the particular scale and landscape of Angus.

There may be scope for turbines of greater height, where this can be demonstrated by the applicant. This will be strongly influenced by the elevation of the turbine site, the scale of the landscape and proximity of scale features and buildings.

ALPR Zone	Landscape Type (LT) Landscape Units (LU)	Existing Windfarm Character	Acceptable Future Windfarm Character	Guidance (Height to blade tip unless otherwise stated)
1	1a. Upper Highland Glens <ul style="list-style-type: none"> • Glen Isla • Glen Lethnot • Milton and Upper Tarf Valley 	Landscape with no Windfarms & Landscape with Views of Windfarms	Landscape with Views of Windfarms	This LT is of medium scale; predominantly unsettled; with wild/slightly tamed level of naturalness and with narrow corridor views. Accordingly, it is considered to have no scope for turbines other than domestic scale turbines (less than 25m in height).

ALPR Zone	Landscape Type (LT) Landscape Units (LU)	Existing Windfarm Character	Acceptable Future Windfarm Character	Guidance (Height to blade tip unless otherwise stated)
	1b. Mid Highland Glens <ul style="list-style-type: none"> • Glen Esk • West Water Valley • Glen Clova • Glen Prosen • Glen Isla 	Landscape with no Windfarms & Landscape with Views of Windfarms	Landscape with Occasional Windfarms	Due to the small to medium scale of this LT and the corridor nature of views, it is considered to have scope for turbines circa 50m in height.
	3. Highland Summits & Plateaux <ul style="list-style-type: none"> • Caenlochan Forest/ Glen Doll Forest 	Landscape with Views of Windfarms	Landscape with Views of Windfarms	Considered to have no scope for wind turbines.
	5. Highland Foothills <ul style="list-style-type: none"> • Alyth Foothills • Kirriemuir Foothills • Menmuir Foothills • Edzell Foothills 	Landscape with Views of Windfarms	Landscape with Occasional Windfarms	The Highland Foothills provide a dramatic transition between highland and lowland. The contrast between the rolling topography of Strathmore (LT 10) and the foothills is important in defining the character of both LT 10 & 5. Whilst the Foothills appear big next to Strathmore, they are relatively low lying hills. In order to avoid the risk of turbines adversely affecting perceived scale, it is considered that there is scope for turbines less than circa 80m tall located on lower ground only, where they do not adversely affect the setting of landscape features and monuments such as Airlie Monument and the White & Brown Caterthuns.
2	8. Igneous Hills <ul style="list-style-type: none"> • Sidlaws 	Landscape with Views of Windfarms	Landscape with Occasional Windfarms	Considered to have scope for turbines circa 80m in height which do not disrupt the principle ridgelines or adversely affect the setting of important landscape features monuments such as Kinpurney Monument and Auchterhouse hillfort.

ALPR Zone	Landscape Type (LT) Landscape Units (LU)	Existing Windfarm Character	Acceptable Future Windfarm Character	Guidance (Height to blade tip unless otherwise stated)
	10. Broad Valley Lowland • Strathmore	Landscape with Views of Windfarms	Landscape with Occasional Windfarms	Considered to have scope for turbines circa 80m in height.
	12. Low Moorland Hills • Forfar Hills	Landscape with Views of Windfarms	Landscape with Occasional Windfarms	Considered to have scope for turbines circa 80m in height which do not disrupt the principle ridgelines or adversely affect the setting of important landscape features and monuments such as Balmashanner Monument; and Finavon and Turin hillforts.
	13. Dipslope Farmland • SE Angus Lowland	Landscape with Views of Windfarms	Landscape with Occasional Windfarms	Considered to have scope for turbines circa 80m in height.
3	14a. Coast with Sand • Barry Links • Elliot • Lunan Bay • Montrose	Landscape with Views of Windfarms	Landscape with Views of Windfarms	Due to the often open nature of the Angus coastline and in order to avoid the risk of turbines being visually prominent and therefore adversely affecting the character of the undeveloped coast, it is generally considered there is scope for domestic turbines of circa 25m in height.
	14b. Coast with Cliffs • Carnoustie • Auchmithie • Usan	Landscape with Views of Windfarms	Landscape with Views of Windfarms	
	15. Lowland Basins • Montrose Basin	Landscape with Views of Windfarms	Landscape with Views of Windfarms	

Figure 2: Scale Buildings in Angus

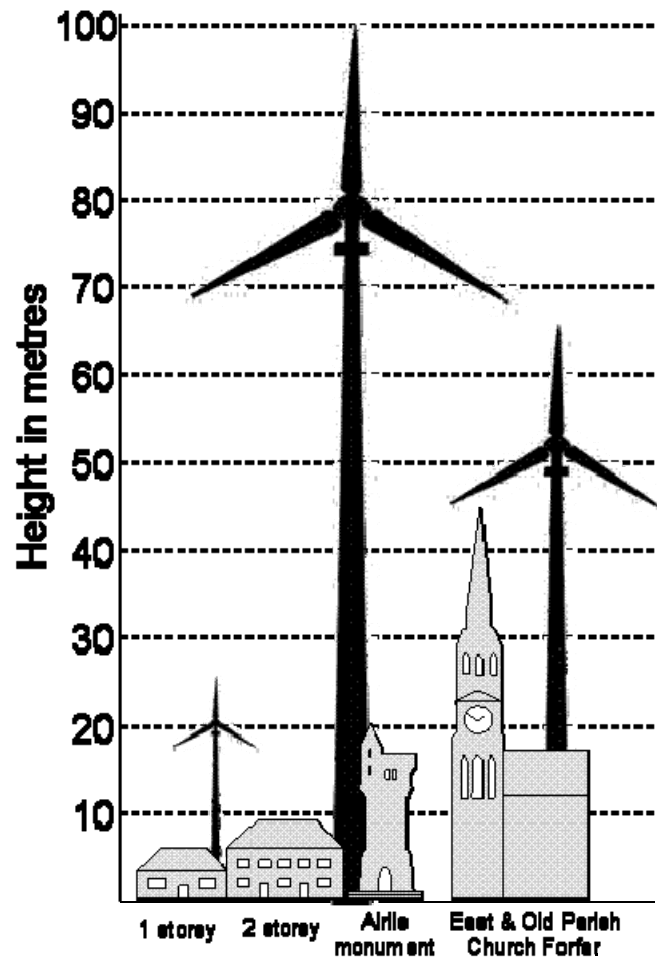
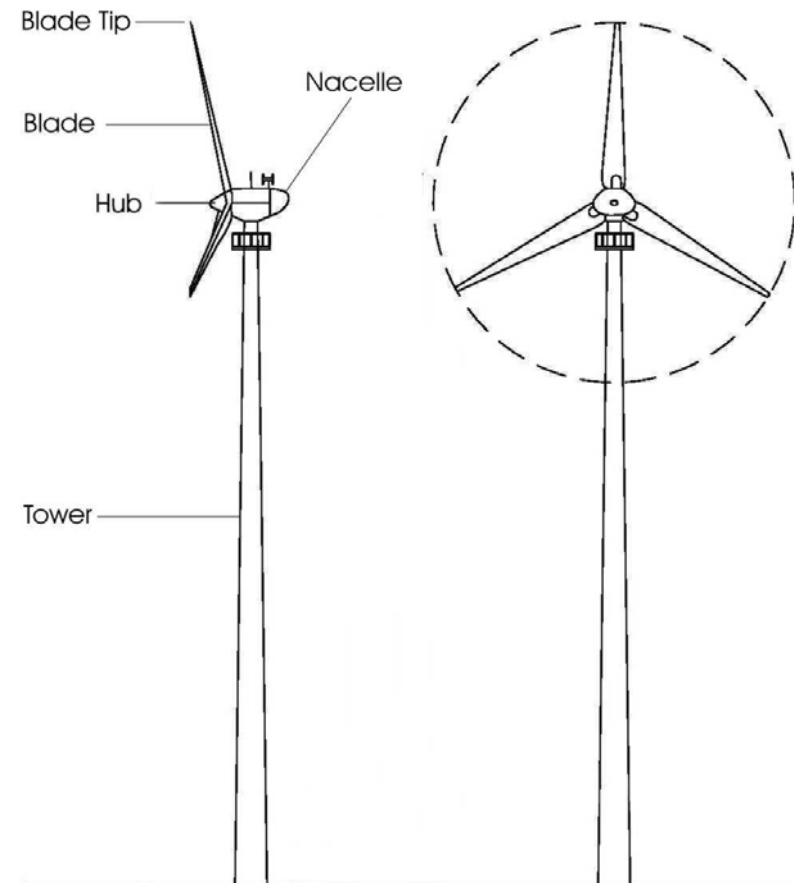


Figure 3: Wind Turbine Components



5. Noise Assessment for Wind Energy Proposals

Noise from wind turbines can be an important factor in the assessment of wind energy developments. Applicants are advised to contact the Environmental and Consumer protection Service at Angus Council at an early stage to establish an agreed methodology for noise assessment. Initial guidance is outlined below:-

Assessment Criteria

1. 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.
2. If absolute lower noise limits are to be used then the significance of these in relation to the existing background noise levels should be considered.
3. Amplitude modulation should be considered in terms of the current level of technical knowledge on the subject. Angus Council will consider the use of appropriate Planning Conditions to control AM on a case by case basis.
4. 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.
5. Where criteria are derived from background noise measurements the additional points below should be taken into account.
6. 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 dB LAEQ(10mins) assessed using the BWEA method referred to below is considered appropriate.

Background noise measurements

1. It is recommended that the type of noise meter, microphone and protection kit for each monitoring location is agreed. An appropriate windshield (usually double skinned) is required in order to prevent any wind over the microphone affecting readings.
2. It is recommended that the exact position of the monitoring equipment is agreed not just the general location and photographic evidence of the location is taken. Where monitoring data is to be used for more than one property this should be agreed before hand in order to ensure that sufficient locations are monitored to represent all of the neighbouring properties. It is recommended that a list of properties is drawn up and monitoring positions allocated to each for discussion.
3. Monitoring should be avoided next to running water or trees in leaf (unless the measurement location solely represents a single property and the noise environment is not likely to alter seasonally) or on the noisy side of a building (unless it faces the proposed turbine location)
4. It is recommended that the method for determining periods of heavy rainfall and the measurement period to be excluded due to heavy rain is agreed prior to the commencement of monitoring. Heavy rainfall should be taken to mean periods of more than 4mm per hour.
5. The period of monitoring should be sufficient to obtain a reasonable amount of data at each wind speed from 3-12m/s. Depending upon weather conditions this can take longer than 7 days so this should be considered a minimum only.

6. The method for Simultaneous wind speed measurement should be agreed before hand with Environmental & Consumer protection Service. Derived not measured 10m high wind speeds may need to be used to take account of site specific wind shear.

Turbine noise level prediction

1. 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.
2. For small wind turbines i.e. those with a rotor diameter of less than 16m the BWEA small wind turbine performance and safety standard, Feb 2008 guidance maybe used as an alternative methodology to predict the separation distance required to comply with the relevant noise criteria.
3. Turbine noise data must be referenced to test reports.
4. Where any type of noise calculator is used a detailed explanation of the formulae used and the data used should be given.
5. The noise level prediction should take into account the cumulative impact of other turbines.

Appendices

APPENDIX 1: Renewable Energy Development in Angus

Renewable Energy provides opportunities to develop locally based sources of power, with minimal impact on the local, national and global environment. It can aid progress towards sustainable development, reduce dependence on energy imports, broaden the energy supply base, and create jobs and investment. The growing number of development enquiries and proposals reflects increasing awareness of renewable energy capacity, financial incentives and technological advances all contributing to renewable energy generation across Angus. The current position is set out below.

Planning Applications and Consents (as at May 2012)

The following Tables will provide the base line for monitoring the Implementation Guide and future renewable energy development within Angus.

Table 1 - Status of Applications for Single Turbines (May 2012)

Year	<25m			25-50m			>50		
	App	Ref	Pen	App	Ref	Pen	App	Ref	Pen
2004	1	1	-	-	-	-	-	-	-
2005	2	-	-	-	-	-	-	-	-
2006	9	-	-	-	-	-	-	-	-
2007	8	-	-	-	-	-	-	-	-
2008	9	-	-	-	-	-	-	-	-
2009	10	1	-	-	-	-	2	-	-
2010	13	2	-	2	-	-	2	-	-
2011	6	1	-	7	1	8	3	3	4
2012	-	-	3	4	1	1	-	-	2
Total	58	5	3	13	2	9	7	3	6

App – planning application approved

Ref – planning application refused

Pen – decision pending

Table 2 - Status of Applications for Multiple Turbines (May 2012)

Year	No of turbines 2			No of turbines 3-6			No of turbines >6		
	App	Ref	Pen	App	Ref	Pen	App	Ref	Pen
2004	-	-	-	-	-	-	1	-	-
2005	-	-	-	-	-	-	-	-	-
2006	-	-	-	-	-	-	-	-	-
2007	-	-	-	-	3	-	-	1	-
2008	-	-	-	-	-	-	-	-	-
2009	-	-	-	-	4	-	-	-	-
2010	4	-	1	1	-	-	-	-	-
2011	12	1	2	-	-	1	-	-	2
2012	2	-	1	-	-	1	-	-	-
Total	18	1	8	1	7	2	1	1	2

App – planning application approved

Ref – planning application refused

Pen – decision pending

Table 3 – Operating and Consented Onshore Renewable Energy Development in Angus (May 2012)

Generation Method	Location	Capacity (MW*)	Status
Wind Turbines			
Wind farm/cluster - over 50m or 3 x 15m	Ark Hill (8 x 81m turbine)	10.4	Approved
	Scotston Hill, Auchterhouse (1 x 80m turbine)	0.8	Operational
	Former Tealing Airfield (1 x 93.5m turbine)	2.5	Approved
	Cononsyth, Arbroath (1 x 67m turbine)	0.33	Approved
	East Memus (1 x 86.6)	0.8	Approved
	Castleton of Eassie (3 x 25)	0.33	Approved
Total		15.16	
Landfill Gas			
	Lochhead Landfill Site	1.0	Operational
Total		1.0	
Hydro			
Run of River	Rottal Estate, Glen Clova	0.45	Operational
	Glenmarkie, Glen Isla	0.75	Operational
	Clova Farms, Glen Clova	0.18	Approved (CNPA)
	Glamis Sawmill	0.06	Operational
	WWTP, Tannadice, Forfar	0.78	Approved
Total		2.12	
Biomass- commercial			
Fuel Production Unit	Padnaram, By Forfar		Operational
All Operational and/or approved		18.28	

Table 4 – Other Renewable Energy Proposals in Angus (November 2011)

Generation Method	Location	Capacity (MW*)	Status
Wind Turbines			
Wind farm/cluster over 50m or 3 x 15m	Nathro Hill (S36)	50+	Scoping
	Carrach	7.2	Application
	Land at Nether Kelly (Corse)	17.5	Application
Total		74+	

Other Energy Related Projects

Transmission Network

SHETL has indicated that once the Beaulieu-Denny transmission line has been upgraded, the upgrade along the western side of Strathmore will proceed. This will utilise existing towers and renew cables and insulation to increase capacity from 275 to 400KV. Grid access licences are normally subject to this upgrade being implemented.

APPENDIX 2: Development Plan – Renewable Energy Policies

Dundee and Angus Structure Plan Environmental Resources Policy 1: Renewable Energy

Proposals for renewable energy development will be favourably considered where they deliver quantifiable environmental and economic benefits and any significant or cumulative adverse impacts on the natural and historic environment, landscape and local communities can be satisfactorily addressed.

Development proposals will be considered in the context of the wider environmental policies of the Structure Plan. Detailed criteria based policy, locational guidance and, where appropriate, areas of search for individual sources of renewable energy will be established by Local Plans. An Environmental Statement will be required for all large scale proposals or where development is likely to have significant effects on the environment.

Angus Local Plan Review 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.

Angus Local Plan Review 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 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.

APPENDIX 3: Other Relevant Development Plan Policies

Dundee and Angus Structure Plan (2002)*

The Structure Plan was approved by Scottish Ministers in October 2002. The document can be viewed and down loaded at <http://www.angus.gov.uk/structureplan/>

The main policies relevant to energy proposals are listed below:

Environmental Resources Policy 1: Natural Heritage Designations
Environmental Resources Policy 2: The Wider Natural Heritage
Environmental Resources Policy 3: Coastal Development and Protection
Environmental Resources Policy 4: Flooding and Development
Environmental Resources Policy 5: Historic Environment

Angus Local Plan Review (2009)*

The Angus Local Plan was adopted by Angus Council in February 2009. The document can be viewed and downloaded at www.angus.gov.uk/localplan

The main policies that may be relevant to energy proposals are listed below under the document headings:

General Policies

S1: Development Boundaries
S2: Accessible Development
S3: Design Quality
S4: Environmental Protection
S5: Safeguard Areas
S6: Development Principles and Schedule 1 : Development Principles

Building Sustainable Communities

SC19: Rural Employment

Environment and Resources

ER1: Natura 2000 and Ramsar Sites
ER2: National Nature Reserves and Sites of Special Scientific Interest
ER3: Regional and Local Designations
ER4: Wider Natural Heritage and Biodiversity
ER5: Conservation of Landscape Character
ER6: Trees, Woodlands and Hedgerows
ER7: Trees on Development Sites
ER10: Light Pollution
ER12: Development Affecting Conservation Areas
ER16: Development Affecting the Setting of a Listed Building
ER18: Archaeological Sites of National Importance
ER19: Archaeological Sites of Local Importance
ER20: Historic Gardens and Designed Landscapes
ER25: Water Resource Protection
ER27: Flood Risk – Consultation
ER28: Flood Risk Assessment
ER29: Coastal Development
ER30: Agricultural Land

*Hard copies of these documents can also be viewed at Angus Council libraries and ACCESS offices; and at Planning & Transport Reception County Buildings Forfar

APPENDIX 4: Print Version Maps

The print maps are illustrative of detailed information that can be accessed via the web-based version of the Implementation Guide, They are intended to indicate the location and range of International, National and Local designations and other considerations within the ALPR area.

Map 1 ALPR Boundary

Map 2 International Designations

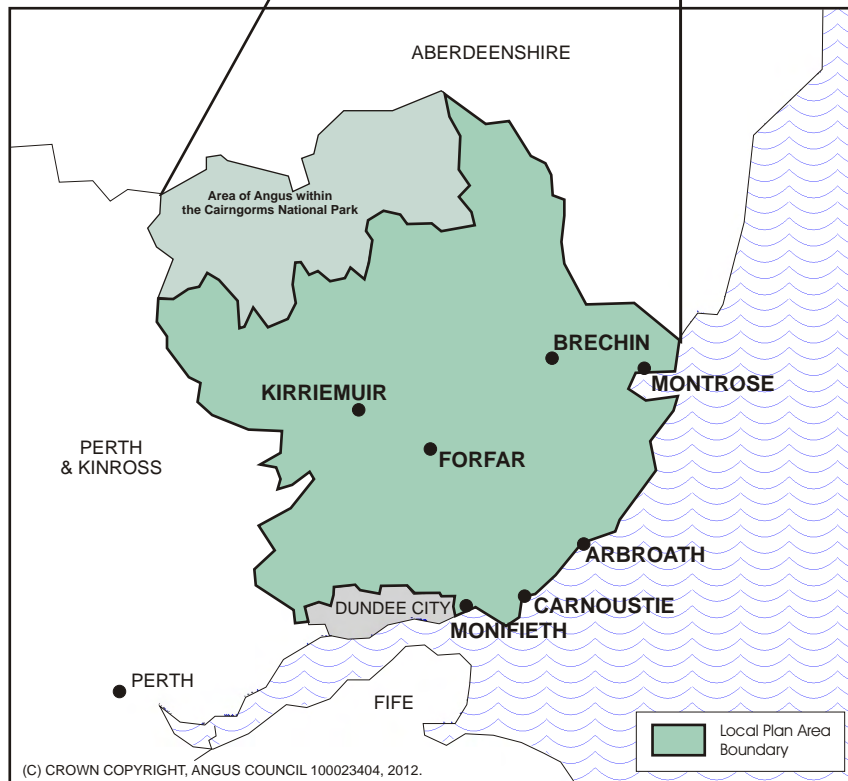
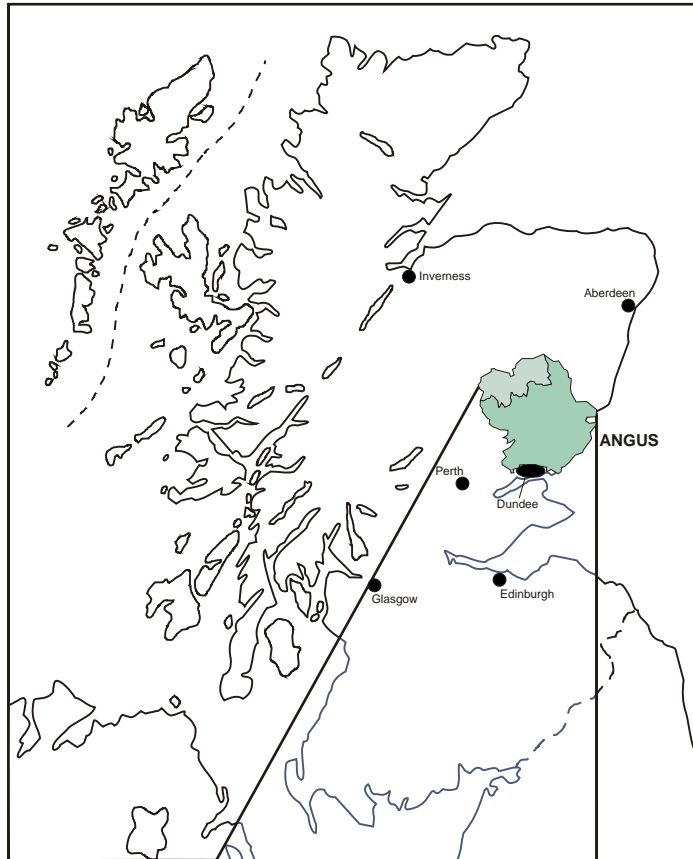
Map 3 National Designations

Map 4 Local Designations

Map 5 Other Considerations


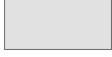


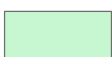
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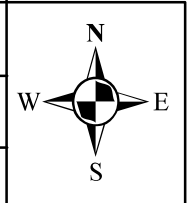
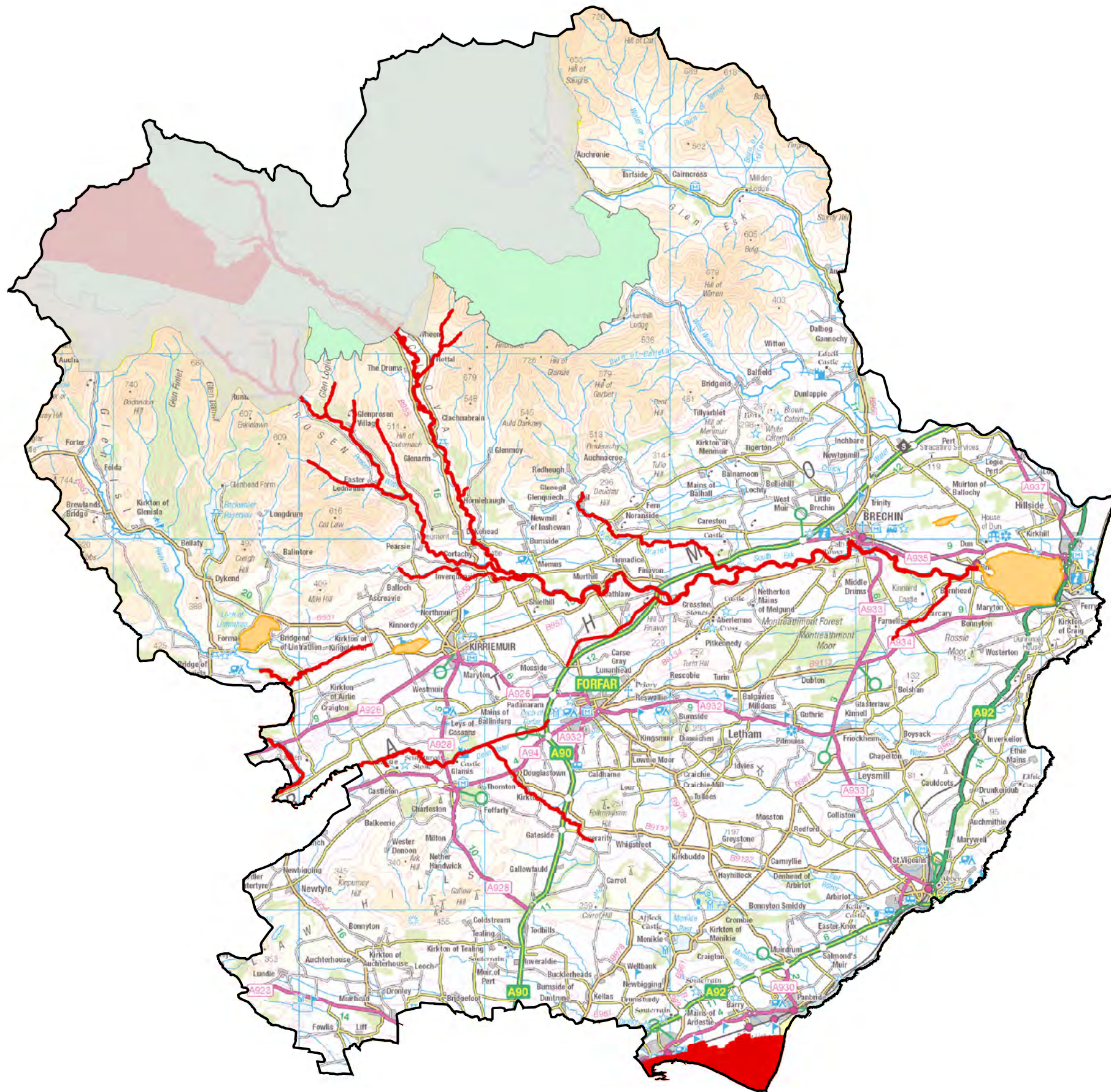
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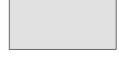










Note: The Angus Local Plan Review excludes that part of northern Angus which lies within the designated boundary of the Cairngorms National Park.

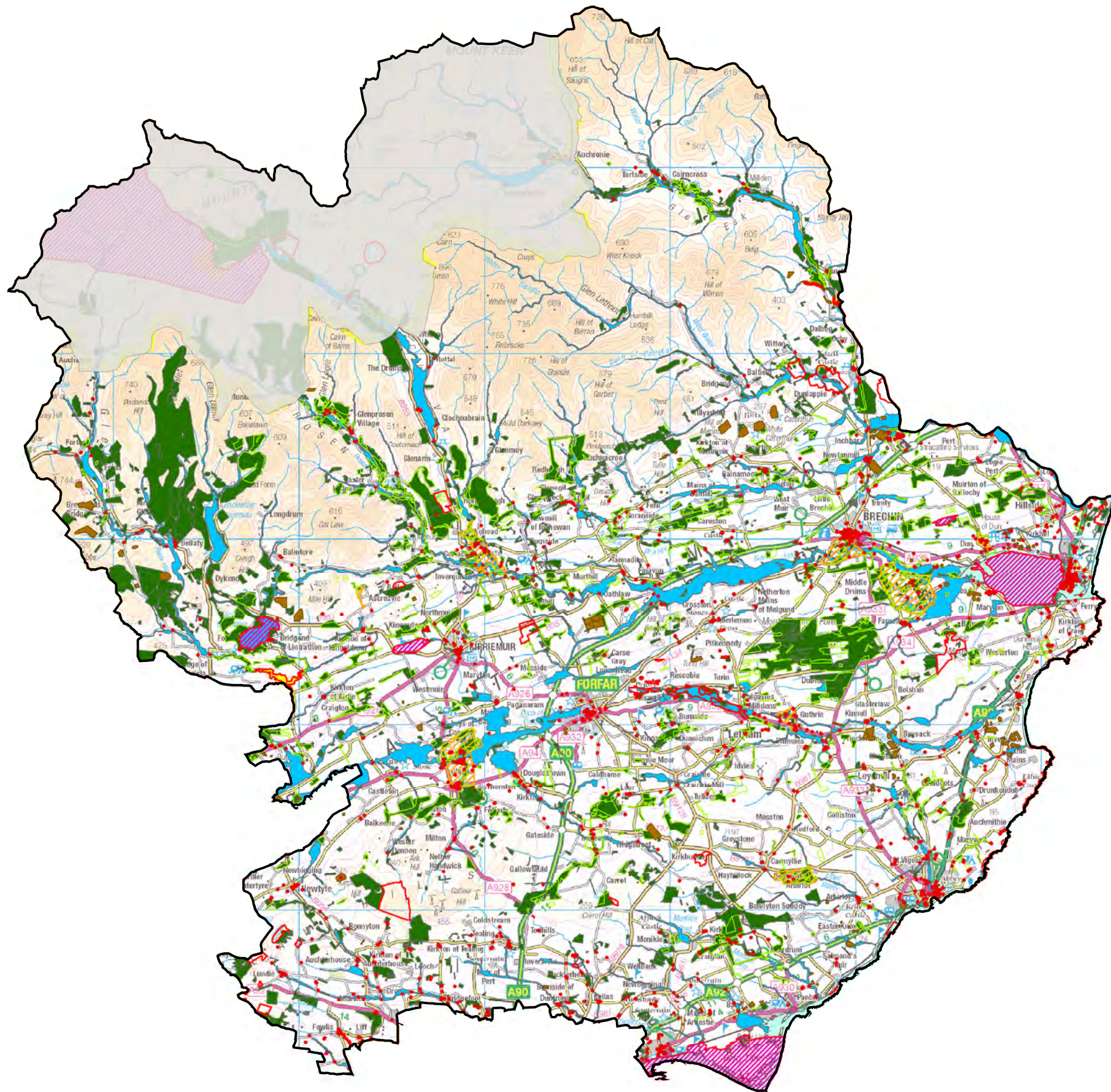
International Designations

-  Angus Council Boundary
-  Area of Angus within Cairngorms National Park
-  Special Areas of Conservation (SAC)
-  RAMSAR sites
-  Special Protection Areas (SPA)



National Designations

-  Angus Council Boundary
-  Area of Angus within Cairngorms National Park
-  RSPB Important Bird Areas
-  Historic Scotland Listed Buildings
-  Sites of Special Scientific Interest (SSSI)
-  Historic Scotland Scheduled Ancient Monuments
-  National Nature Reserves (NNR)
-  Scotland Ancient Woodland Inventory
-  Historic Gardens and Designated Landscapes (HGDL)
-  Woodland Map of Scotland
-  200yr SEPA map Coastal Flooding
-  200yr SEPA map Fluvial Flooding



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Map 3 - National Designations

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Local Designations

-  Angus Council Boundary
-  Area of Angus within Cairngorms National Park
-  Development Boundaries
-  Scottish Wildlife Trust Reserves
-  Archaeological Points
-  Country Parks
-  Archeological Areas
-  Angus Wildlife Sites (Points)
-  Angus Wildlife Sites (Areas)
-  Tree Preservation Orders (Point)
-  Tree Preservation Orders (Polygons)
-  Conservation Areas
-  Local Nature Reserves
-  Development Boundaries Plus 2km



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Map 4 - Local Designations

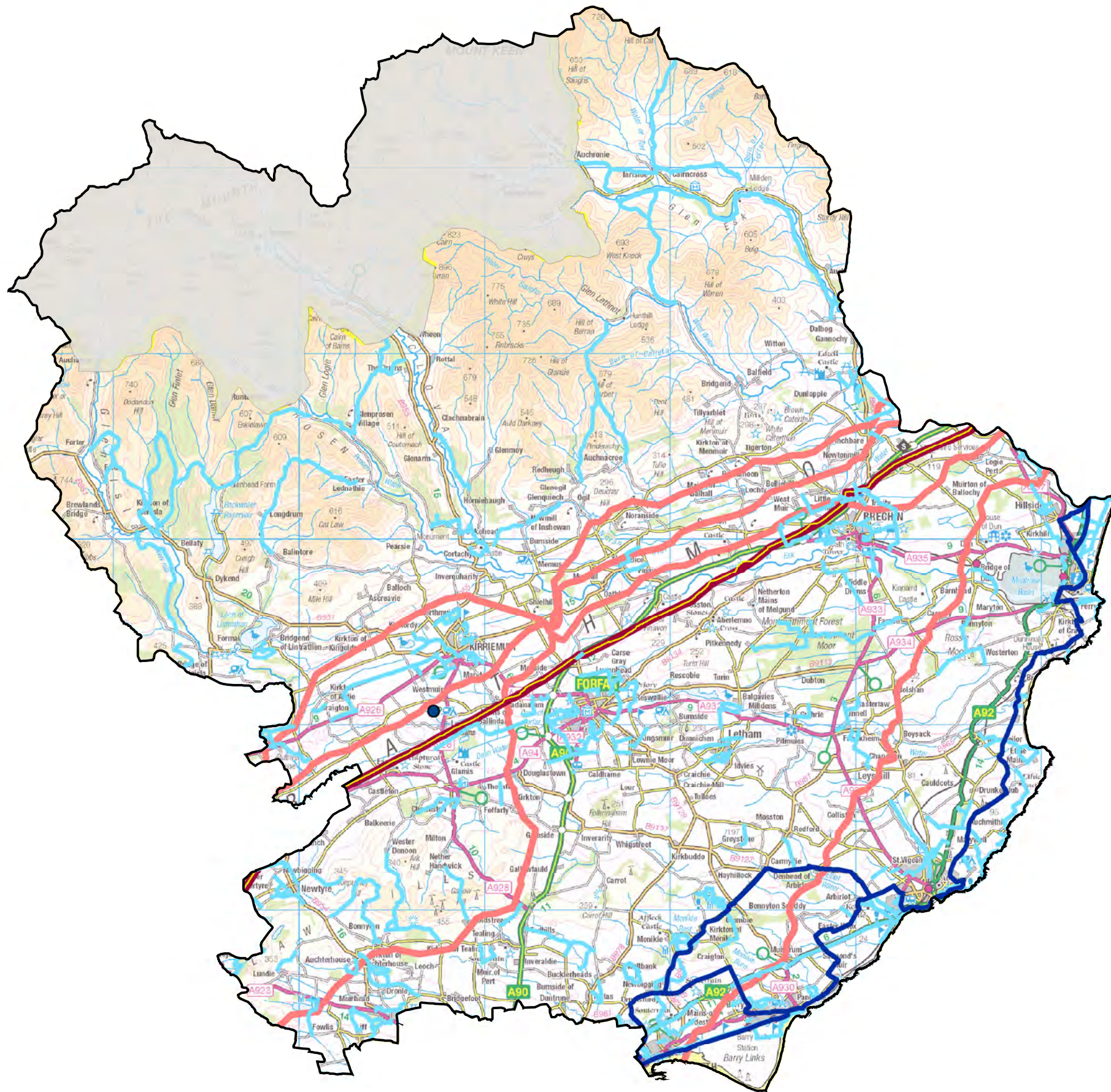
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Other Considerations

- Angus Council Boundary
- Area of Angus within Cairngorms National Park
- Private Airfields
- National Cycle Network
- Adopted Core Paths
- Shell Pipeline
- BP Pipeline
- National Grid High Pressure Gas Pipe

