

Perth and Kinross Council
Development Management Committee – 18 November 2015
Report of Handling by Development Quality Manager

Modification of permission 12/01423/FLL (formation of wind farm with associated access track and ancillary works) change of turbines at Tullymurdoch Wind Farm by Alyth

Ref. No: 15/01561/FLL
Ward No: N3 - Blairgowrie and Glens

Summary

This report assesses changes to the wind turbine dimensions associated with the approved Tullymurdoch Wind Farm. It should be noted that the earlier planning appeal to the Scottish Ministers associated with this windfarm found that there were some conflicts with TAYplan policy 6 and LDP policy ER1 but overall the proposed scheme was in compliance with the development plan.

The changes in turbine dimensions incorporated in this application are not considered significant to result in a conflict with the overriding thrust of the Strategic Development Plan TAYplan or the Perth and Kinross Local Development Plan 2014. Accordingly the application is recommended for approval.

BACKGROUND AND DESCRIPTION

- 1 Since the time of the submission of the planning application for the Tullymurdoch windfarm in July 2012, technology advances in wind turbine development have resulted in more efficient turbines with relatively little change in turbine dimensions. The applicant proposes to utilise an up to date, energy efficient turbine on the Tullymurdoch site to ensure the maximum benefit in terms of energy production within the parameters of the maximum tip height requirements of the approved Environmental Statement (ES) at 120 metres.
- 2 The turbine proposed within this modification to the planning permission, reduces the overall tip height to 114.75 metres although the rotor diameter increases from 80 to 92m, equating to a 6m increase in blade length.
- 3 The earlier approved ES covered the full range of potential environmental effects associated with the Tullymurdoch windfarm. In support of this application the applicant has submitted supplementary environmental information to bolster the original ES for the change of turbine dimensions. It assesses only those topic areas where the effects may be altered by the modification to the turbine dimensions, namely:-

- Landscape and Visual
- Ornithology
- Ecology
- Noise
- Cultural Heritage
- Hydrology, Flood Risk, Water Quality, Water Resources, Hydrogeology and Geology
- Access Transport and Traffic
- Land Use Socio Economics, Recreation and Tourism
- Existing Infrastructure, Aviation, Air Quality and Climate, Public Access and Safety as well as Shadow Flicker.

4 It should be noted that it is not appropriate to re-visit the concept of a wind farm in this location through this application. The assessment can only consider whether the change in turbine dimensions are acceptable.

NATIONAL POLICY AND GUIDANCE

5 The Scottish Government expresses its planning policies through The National Planning Framework, the Scottish Planning Policy (SPP), Planning Advice Notes (PAN), Creating Places, Designing Streets, National Roads Development Guide and a series of Circulars.

DEVELOPMENT PLAN

6 The Development Plan for the area comprises the TAYplan Strategic Development Plan 2012-2032 and the Perth and Kinross Local Development Plan 2014.

TAYplan Strategic Development Plan 2012 – 2032 - Approved June 2012

7 The overall vision of the Tay Plan states *“By 2032 the TAYplan region will be sustainable, more attractive, competitive and vibrant without creating an unacceptable burden on our planet. The quality of life will make it a place of first choice, where more people choose to live, work and visit and where businesses choose to invest and create jobs.”*

8 The principal policies are, in summary:

Policy 3: Managing TAYplan’s Assets

9 Seeks to respect the regional distinctiveness and scenic value of the TAYplan area and presumes against development which would adversely affect environmental assets.

Policy 6: Energy and Waste/Resource Management Infrastructure

- 10 Relates to delivering a low/zero carbon future for the city region to contribute to meeting Scottish Government energy targets and indicates that, in determining proposals for energy development, consideration should be given to the effect on off-site properties, the sensitivity of landscapes and cumulative impacts.

PERTH AND KINROSS LOCAL DEVELOPMENT PLAN 2014

- 11 The Local Development Plan was adopted by Perth and Kinross Council on 3 February 2014. It is the most recent statement of Council policy and is augmented by Supplementary Guidance.
- 12 The principal policies are, in summary:

Policy TA1B - Transport Standards and Accessibility Requirements

- 13 Development proposals that involve significant travel generation should be well served by all modes of transport (in particular walking, cycling and public transport), provide safe access and appropriate car parking. Supplementary Guidance will set out when a travel plan and transport assessment is required.

Policy CF2 - Public Access

- 14 Developments will not be allowed if they have an adverse impact on any core path, disused railway line, asserted right of way or other well used route, unless impacts are addressed and suitable alternative provision is made.

Policy HE1A - Scheduled Monuments

- 15 There is a presumption against development which would have an adverse effect on the integrity of a Scheduled Monument and its setting, unless there are exceptional circumstances.

Policy HE1B - Non Designated Archaeology

- 16 Areas or sites of known archaeological interest and their settings will be protected and there will be a strong presumption in favour of preservation in situ. If not possible provision will be required for survey, excavation, recording and analysis.

Policy HE2 - Listed Buildings

- 17 There is a presumption in favour of the retention and sympathetic restoration, correct maintenance and sensitive management of listed buildings to enable them to remain in active use. The layout, design, materials, scale, siting and use of any development which will affect a listed building or its setting should be appropriate to the building's character, appearance and setting.

Policy NE1A - International Nature Conservation Sites

- 18 Development which could have a significant effect on a site designated or proposed as a Special Area of Conservation, Special Protection Area or Ramsar site will only be permitted where an Appropriate Assessment shows that the integrity of the site will not be adversely affected, there are no alternative solutions and there are imperative reasons of overriding public interest.

Policy NE1B - National Designations

- 19 Development which would affect a National Park, National Scenic Area, Site of Special Scientific Interest or National Nature Reserve will only be permitted where the integrity of the area or the qualities for which it has been designated are not adversely affected or any adverse impacts are clearly outweighed by benefits of national importance.

Policy NE1C - Local Designations

- 20 Development which would affect an area designated as being of local nature conservation or geological interest will only be permitted where the integrity of the area or the qualities for which it has been designated are not adversely affected or any adverse impacts are clearly outweighed by benefits of local importance.

Policy NE3 - Biodiversity

- 21 All wildlife and wildlife habitats, whether formally designated or not should be protected and enhanced in accordance with the criteria set out. Planning permission will not be granted for development likely to have an adverse effect on protected species.

Policy ER1A - Renewable and Low Carbon Energy Generation

- 22 Proposals for the utilisation, distribution and development of renewable and low carbon sources of energy will be supported where they are in accordance with the 8 criteria set out. Proposals made for such schemes by a community may be supported, provided it has been demonstrated that there will not be significant environmental effects and the only community significantly affected by the proposal is the community proposing and developing it.

Policy ER6 - Managing Future Landscape Change to Conserve and Enhance the Diversity and Quality of the Areas Landscapes

- 23 Development proposals will be supported where they do not conflict with the aim of maintaining and enhancing the landscape qualities of Perth and Kinross and they meet the tests set out in the 7 criteria.

Policy EP2 - New Development and Flooding

- 24 There is a general presumption against proposals for built development or land raising on a functional flood plain and in areas where there is a significant probability of flooding from any source, or where the proposal would increase the probability of flooding elsewhere. Built development should avoid areas at significant risk from landslip, coastal erosion and storm surges. Development should comply with the criteria set out in the policy.

Policy EP5 - Nuisance from Artificial Light and Light Pollution

- 25 Consent will not be granted for proposals where the lighting would result in obtrusive and / or intrusive effects.

Policy EP8 - Noise Pollution

- 26 There is a presumption against the siting of proposals which will generate high levels of noise in the locality of noise sensitive uses, and the location of noise sensitive uses near to sources of noise generation.

OTHER POLICIES

- 27 Perth & Kinross Wind Energy Policy & Guidelines (WEPG) 2005.
- 28 Tayside Landscape Character Assessment (TLCA).
- 29 The David Tyldesley and Associates – Landscape Study – Wind Farm Development in the Ochil Hills and part of Southern Highland Perthshire (2004).
- 30 The David Tyldesley and Associates – Landscape Study to Inform Planning for Wind Energy (2010).
- 31 Perth and Kinross Local Landscape Areas.
- 32 Scottish Natural Heritage – Siting and Designing Windfarms in the Landscape (2014).

SITE HISTORY

- 33 12/01423/FLL Formation of wind farm with associated access track and ancillary works refused by Development Management Committee 15 March 2013 but approved on appeal in 2014.
- 34 15/00012/PAN Installation of an underground electricity cable 23 June 2015.
- 35 15/01063/FLL Engineering operations to provide road widening 22 July 2015 Application Permitted.
- 36 15/01080/SCRN Installation of underground electricity cable 17 July 2015.

37 15/01562/FLM Installation of underground cables and temporary ancillary infrastructure, pending consideration.

CONSULTATIONS

External

38 **The Scottish Government**

39 **Historic Scotland**:- No objection.

40 **Transport Scotland** - No objection subject to conditions.

41 **Scottish Environment Protection Agency (SEPA)** - No objection

42 **Scottish Natural Heritage (SNH)** - No objection. Provide updated comments on pre-construction surveys.

43 **Ministry Of Defence (windfarms) (MOD)** - No objection subject to conditions.

44 **Civil Aviation Authority Renewable Energy Project Officer (CAA)** - No objection subject to conditions.

45 **National Air Traffic Services (NATS)** - No objection.

46 **Royal Society for Protection of Birds (RSPB)** - No response.

47 **Scottish Water (SW)** - No response.

48 **Angus Council** - No response.

49 **Cairngorm National Park (CNP)** - No response.

50 **Alyth Community Council** - No response.

51 **Blairgowrie and Rattray Community Council** - No response.

52 **Mount Blair Community Council** - No response.

53 **Kirriemuir Lanward West Community Council** - Object to the application and raise concern with noise pollution associated with the proposed turbine.

Internal

54 **Bio-diversity Officer** - No objection.

55 **Strategy and Policy** - No objection.

56 **Community Greenspace Landscape**- No response received within timescale.

- 57 **Environmental Health** - Conditional control recommended.
- 58 **Perth and Kinross Area Archaeologist** - No objection.
- 59 **Transport Planning** - No objection to the proposed modification provided the conditions attached to the original consent are applied to any further consent.
- 60 **Community Greenspace - Access Officers** - No response received within timescale.

REPRESENTATIONS

- 61 A total of eleven letters of representation were received during the advertisement period for the application.
- 62 The representations have raised the following relevant issues: -
- Concern that the proposal could result in an increased noise impact.
 - Increased landscape and visual impact from larger rotor diameter, excessive height.
 - Concerns that there could be an impact on protected species.
 - Inappropriate land use, loss of open space, over intensive development.
 - Contrary to the development plan.
 - Road safety concerns.
 - Flood risk concerns.
 - Concerns regarding notification of the application to neighbouring residents.
- 63 The concerns regarding notification of the application are noted. However I can confirm that the correct notification procedures have been undertaken in accordance with legislative requirements. All the relevant planning issues which have been raised are covered in the Appraisal section of this report.

ADDITIONAL STATEMENTS

64

Environment Statement	Submitted
Screening Opinion	Not Required
Environmental Impact Assessment	Yes
Appropriate Assessment	Not required
Design Statement / Design and Access Statement	Not required
Reports on Impact or Potential Impact	Submitted

APPRAISAL

Policy

- 65 Sections 25 and 37(2) of the Town & Country Planning (Scotland) Act 1997 (as amended) requires the determination of the proposal to be made in accordance with the provisions of the Development Plan, unless material considerations indicate otherwise. The determining issues here are whether the proposals comply with Development Plan policy or if there are other material considerations, which justify a departure from policy.

Principle

- 66 As already highlighted it is not appropriate to re-visit the concept of a wind farm in this location through this application. The assessment has to focus on whether the change in turbine dimensions are acceptable.

Landscape and Visual

- 67 There are no changes to the locations of the turbine bases thus the assessment is concerned with the perceived changes to turbine geometry and whether this may lead to inappropriate proportions of turbine, column and rotor, and the potential for disparity with other wind farms in the vicinity.
- 68 In order to ascertain the likely difference caused by these changes, a comparative Zone of Theoretical Visibility drawing (ZTV) has been prepared by the applicant along with a series of comparative photomontages and wireline images for a selection of representative viewpoints.
- 69 The comparative ZTV shows that there would be no notable discernible alteration to the viewshed or number of turbines visible within the study area.
- 70 The comparative visualisations cover a range of key viewpoints assessed in the original ES. The assessment in the Supplementary Environmental Information confirms that no adverse effects on visual amenity, over and above those anticipated in relation to the consented development, would arise from the proposed variation to the turbine geometry. Additionally it notes that the revisions to the consented scheme would not adversely affect the proportional balance of column to rotor of turbines or result in inconsistencies with the Drumderg development.
- 71 The applicant's assessment also takes account of schemes currently awaiting construction or determination. In the Environmental Statement (ES) it notes that revisions to the consented geometry at Tullymurdoch are considered to pose no adverse effect on the visual amenity of the area. It also considers that there would be no material change to the findings of the ES in respect of residual effects on landscape character or designations.

- 72 The Planning Authority has consulted SNH on the application. They have referred to their siting and designing wind farms in the landscape guidance. This notes that where there are multiple wind farms in close proximity the development should be designed with a *similarity of design and wind farm image... that limits visual confusion, and reinforces the appropriateness of each development for its location*. To achieve this, the choice of turbine at Tullymurdoch should be compatible with those at the existing and consented wind farms, including aspects of scale, form, colour, and rotation speed.
- 73 SNH note that the proposal to increase the rotor size of the Tullymurdoch turbines by 10 metres is a material change to the design and would mean the rotor size would now noticeably differ from that of the existing Drumderg wind farm. Should the Tullymurdoch and Drumderg be seen as a single overlapping development this could create a more complex and confusing image, however they are of the view that Tullymurdoch and Drumderg are sufficiently separate that this effect typically would not occur. They note that the reduction in overall blade tip height (from 120 metres to 115 metres) would also improve Tullymurdoch's visual relationship with Drumderg.
- 74 With regards to the consented Welton of Creuchies scheme SNH note that this is sufficiently separate from Tullymurdoch that the proposed change in turbine dimensions would have no material effect on the visual relationship.
- 75 SNH highlight that Tullymurdoch and the proposed Saddle Hill wind farm would frequently be seen together as one overlapping wind farm. In the scenario where Saddle Hill was consented, the proposed changes to the turbine dimensions at Tullymurdoch would closely match those proposed at Saddle Hill and would offer a small improvement to their visual relationship.
- 76 Overall, SNH conclude that the proposed changes to the turbine dimensions at Tullymurdoch would not result in any additional landscape and visual impacts but recommend that the turbines have no advertising or branding and that they are the same colouring as Drumderg. I agree with SNH's assessment and do not consider that the scheme conflicts with the landscape and visual criteria contained with TAYplan policy 3 and 6 or Perth and Kinross Local Development Plan 2014 Policy ER1A or ER6.

Ornithology

- 77 The change in turbine model/turbine specifications (particularly hub height, rotor diameter, and tip height) may result in a slight change in the predicted collision risk, due to the increased rotor swept area, and the movement of the rotors to a slightly lower height than originally predicted.

- 78 The applicant confirms that at the initial stage of flight activity surveys commencing in September 2009, the following flight height recording bands were used: 0-25 m (a1), 25-125 m (a2) and >125 m (a3). For the purposes of data analysis for the earlier application, those birds recorded at height band a2 were considered to be at potential rotor swept height (RSH), although including a lower buffer between 25-40 m, and an upper buffer between 120-125 m, therefore providing a precautionary approach. Birds recorded in height band a3 were above RSH and birds recorded in height band a1 were considered to be below RSH for the purposes of collision risk modelling.
- 79 By changing the turbine model the rotor swept area will increase in area, but reduce in height so that it covers part of height bands a1 and a2. The turbine will cover the area between 22.5 m and 25 m of a1 (2.75 m) and the area between 25 m and 114.75 m of a2 (89.75 m).
- 80 The applicant considers that when the original modelling is applied to the scenario of a new turbine it is still considered precautionary and it is not necessary to carry out further collision risk modelling. I note that SNH has no objection which is shared by the Council's bio-diversity officer. In light of this the change in dimensions are not considered to adversely affect ornithology.

Ecology

- 81 The Supplementary Environmental Information (SEI) to the approved ES only focuses on those ecological changes that may occur as a result of the proposed amended turbine dimensions, since the footprint of the development site remains unchanged.
- 82 The potential effect that the larger swept path could have on ecology is bats. In this case the proposed modification would not have a significant effect upon bats as the site lacks suitable habitat for foraging and commuting bat with low bat activity recorded within the approved turbine footprint.
- 83 Letters of representation have highlighted that there are wild cat and breeding birds within the vicinity of the site. SNH have highlighted that they are aware of recent records of protected species and they recommend species protection plans (SPP) are submitted prior to commencement of works and thereafter implemented during construction. I consider that incorporating condition 17 L of the original consent will ensure compliance with Tayplan Policy 3 and Perth and Kinross Local Development Plan 2014 Policy NE3.

Noise

- 84 Noise received a considerable amount of discussion during the Public Local Inquiry Session associated with the Tullymurdoch appeal. This resulted in conditional control being applied by the Reporter.
- 85 An updated Noise Assessment has been prepared and submitted to Perth and Kinross Council, based on the Servion MM92 to enable an assessment against the conditional controls applied to the earlier application.

- 86 The applicant's consultant confirms that 'with appropriate mitigation in the form of the application of reduced noise operational modes to certain turbines under certain wind conditions, a turbine of the proposed revised dimensions could be operated within the noise limits set through planning conditions attached to the current consent for the Development'.
- 87 The updated noise assessment has been reviewed by the Council's acoustic consultant who confirms that the proposed turbine under this application has about the same sound power level but a bit higher at 6m/s. This means that mitigation required for this proposal will be much the same as that proposed in the earlier application approved at appeal by the Reporter. The noise limits set by the Reporter via conditional control will therefore be maintained.
- 88 The noise consultant notes that the other change is the ratio of hub height to rotor diameter is 0.74 instead of 1.0. It also means that the turbines are close together relative to the rotor diameter. Both of these factors, together with some degree of forestry nearby, suggest that there may be an increased chance of amplitude modulation (AM). The suggestion of an AM condition was discussed at the Public Local Inquiry and rejected by the Reporter on the fact that the guidance did not support such a condition. The Guidance still remains the same at this point in time therefore an AM condition is not proposed for this application.
- 89 Taking these matters into account applying the same noise conditions that were imposed at appeal would achieve compliance with policy EP8.

Cultural Heritage

- 90 No significant direct effects were predicted for known archaeological sites under the earlier application and there will be no additional direct effect as a result of the change in turbine model. The effect on the setting of cultural heritage assets will be negligible. Accordingly there is no conflict with policy HE1A, HE1B or HE2.

Hydrology, Flood Risk, Water Quality, Water Resources, Hydrogeology and Geology

- 91 The Wind Farm footprint remains the same as that presented within the earlier application. Applying conditional control will safeguard the water environment.

Access Transport and Traffic

- 92 Chapter 11 of the approved ES assessed the effects of the Tullymurdoch Wind Farm on Access, Traffic and Transport. The modification to the proposed candidate turbine does not affect the results of Chapter 11 of the approved ES. It should be noted that upgrades to the road network have already been approved under application 15/01063/FLL. Applying the same control as the earlier application can secure appropriate mitigation.

Land Use Socio Economics, Recreation and Tourism

- 93 The change in the turbine dimensions are not considered to alter the findings associated with the earlier application that was approved on appeal. I note that construction of the development has potential to provide opportunities for local contractors to become involved in the construction phase of the development.

Existing Infrastructure, Aviation, Air Quality and Climate, Public Access and Safety as well as Shadow Flicker.

- 94 It is consider that re-applying conditional control associated with the earlier application will safeguard impact on existing infrastructure, air quality and climate, public access/safety and shadowflicker.

LEGAL AGREEMENTS

- 95 Not Required

DIRECTION BY SCOTTISH MINISTERS

- 96 Under the Town and Country Planning (Development Management Procedure) (Scotland) Regulations 2008, regulations 30 – 32 there have been no directions by the Scottish Government in respect of an Environmental Impact Assessment screening opinion, call in or notification relating to this application.

CONCLUSION AND REASONS FOR RECOMMENDATION

- 97 In conclusion, the application must be determined in accordance with the adopted Development Plan unless material considerations indicate otherwise. In this respect, the proposal is not considered to result in a significant conflict with the overriding thrust of the Strategic Development Plan TAYplan and the Perth and Kinross Local Development Plan 2014. Accordingly the application is recommended for approval.

RECOMMENDATION

A Approve the application subject to the following conditions:

- 1 Permission for operation of the development is limited to a period of twenty-five years from the commissioning of the development. Decommissioning shall be completed no later than whichever is the earlier of the following dates:

- a) two years from the end of the twenty-five year period mentioned in this condition; or
- b) two years from the date on which the development ceases to supply electricity on a commercial basis to the National Grid.

Reason: to clarify the extent of the permission for the avoidance of doubt and to ensure the satisfactory restoration of the site in the interests of amenity.

- 2 Within one month of the commissioning of the development written confirmation of the date of the commissioning shall be submitted to the planning authority and within one month of the final commissioning of the development written confirmation of the date of the final commissioning of the development shall be submitted to the planning authority.

Reason: to clarify the extent of the permission for the avoidance of doubt and these details relate to the timing of various requirements in other planning conditions forming part of this permission.

Note i) the 'commissioning of the development' means the date on which the first wind turbine generator forming part of the development first supplies electricity on a commercial basis.

Note ii) the 'final commissioning of the development' means the date on which the last wind turbine generator forming part of the development first supplies electricity on a commercial basis.

- 3 The turbines and associated crane pads shall be erected in the positions indicated in drawing number 15/01561/2, save for the ability to vary the indicated position of any turbine and associated crane pads by up to 25 metres, with any variation in Above Ordnance Datum from the approved position of the turbine being limited to + or –5 metres, under the supervision of the Ecological Clerk of Works appointed under condition 18 below. Variation in the position of any turbines and associated crane pads between 25 metres and 50 metres shall only be permitted with the prior written approval of the planning authority. For the avoidance of doubt, this condition does not allow for any movement of the position of the turbines greater than 50 metres.

Reason: to allow limited flexibility in siting turbines and associated crane pad in the interests of nature conservation/ecology and to minimise landscape impacts.

- 4 Before the commencement of the development, the colours and finish of the wind turbine generators and the above-ground elements, including the anemometry mast, shall be submitted to and approved in writing by the planning authority. All wind turbine generators shall be of a three bladed design and shall rotate in the same direction. Each turbine shall be supplied by the same manufacturer, have the same design of tower and nacelle, and be of the same colour and finish. The use of logos on turbine blades, towers or nacelles is prohibited, unless otherwise agreed in writing by the planning authority.

Reason: in the interests of visual amenity and so that the planning authority have an accurate record of what is to be constructed on the site.

Ministry of Defence requirements

- 5.a) Prior to the commencement of the development the developer shall notify the Ministry of Defence of the following details:
- i. The date of the commencement of the development and the date by which the developer expects all the turbines to have been erected;
 - ii. The latitude and longitude of each turbine; and
 - iii. The maximum height of construction equipment.
- b) On completion of the construction phase of the development, the developer shall notify the Ministry of Defence of the following details:
- i. The final latitude and longitude of each turbine; and
 - ii. Details of the installed aviation lighting (see condition 7 below).
- c) The development shall be implemented in accordance with the approved details unless otherwise agreed in writing with the planning authority and the Ministry of Defence.
- d) When the notifications required as per a) and b) above are sent to the Ministry of Defence copies shall be sent at the same time to the planning authority.

Reason: in the interests of aviation safety.

- 6.a) Prior to the commencement of the development the developer shall submit details of aviation lighting for the turbines to the planning authority for approval, in consultation with the Ministry of Defence.
- b) The submitted details shall be either 25 candella omni-directional red lighting or infrared lighting with an optimised flash pattern of 60 flashes per minute of 200ms to 500ms duration and shall be fitted to the turbines at the highest practicable point, unless otherwise agreed in writing by the planning authority, in consultation with the Ministry of Defence.
- c) The approved lighting shall be maintained to ensure it remains operational on the turbines for the lifetime of the development, unless otherwise agreed in writing with the planning authority, in consultation with the Ministry of Defence

Reason: in the interests of aviation safety.

- 7.a) Prior to the commissioning of the development a television and radio reception mitigation plan shall be submitted to and approved by the planning authority. The plan shall include the results of a baseline television and radio reception survey recording the current standard of television and radio reception in the area and shall assess the impairment (if any) of such television and radio reception that is likely to arise from construction or operation of the turbines.
- b) On being notified of a claim that the development is causing television picture loss or other interference with television or radio reception at a house, office, shop or other building existing at the date of the grant of the planning permission the wind farm operator shall immediately commission an investigation by and report from an independent qualified engineer. Within one month of being notified of a claim in terms of this part of this condition the wind farm operator shall submit to the planning authority a copy of the ensuing engineer's report.
- c) Should any impairment of the television or radio reception be attributable to and caused solely by the wind farm the wind farm operator shall, within two months of being notified of a claim in terms of part (b) of this condition, remedy such impairment so that the standard of reception at the house, office, shop or other building existing at the date of the grant of the planning permission is restored to the standard identified in the baseline television and radio reception survey.
- d) This condition applies only to claims made within 12 months of the commissioning of the development.

Reason: to protect residential amenity.

- 8 No development shall take place until a scheme detailing the protocol for the assessment of any complaints of shadow flicker resulting from the development on residential properties existing at the date of the grant of planning permission, including remedial measures, has been submitted to and approved in writing by the planning authority. Operation of the turbines shall take place in accordance with the approved protocol.

Reason: to protect residential amenity.

- 9 No development shall take place within the development site as outlined in red on the approved plan(s) until the developer has secured the implementation of a programme of archaeological work in accordance with a written scheme of archaeological investigation which has been submitted by the applicant, agreed by Perth & Kinross Heritage Trust, and approved by the planning authority. Thereafter, the developer shall ensure that the programme of archaeological works is fully implemented and that all recording and recovery of archaeological resources within the development site is undertaken to the reasonable satisfaction of the planning authority in agreement with Perth & Kinross Heritage Trust.

Reason: to safeguard any archaeological interest of the site.

- 10.a) No part of the development hereby authorised shall be commenced until a decommissioning, restoration and aftercare scheme (the scheme) for the site has been submitted by the developer and approved by the planning authority.
- b) The scheme must include the following, at least in principle:
- i. Provision for removal of all above-ground elements of the development, including wind turbines, foundation and crane pads, to 1 metre below ground level, and all buildings and ancillary development, apart from the access tracks;
 - ii. Particulars of subsoil, topsoil and peat replacement and re-seeding, as appropriate, with details of depths of replaced materials and finished ground levels to return the site to as near as reasonably possible to its original condition;
 - iii. Such other measures as are necessary to return the site as nearly as reasonably possible to its original condition, including any necessary aftercare to ensure the restoration works are established;
 - iv. A programme showing the dates each part of the scheme is intended to be implemented; and
 - v. Details of all seed mixes proposed to be used for re-instatement of surface vegetation. The seed mixes shall be sourced locally.
- c) If restoration does not commence within 10 years of the agreement of this scheme then the planning authority may request the preparation of a revised scheme for approval by the planning authority prior to restoration commencing.
- d) Two years before the site is due to be restored, the full details of the scheme, which shall accord with the principles earlier approved unless otherwise agreed, shall be submitted for the approval of the planning authority in consultation with such other parties as the planning authority deems appropriate.
- e) Thereafter the site shall be restored in accordance with the approved scheme.
- f) Within one month of completion of the approved scheme the planning authority shall be notified in writing that decommissioning and restoration are complete.

Reason: in the interests of visual amenity and nature conservation and in case restoration has to be carried out prior to the expiry of the 25 year consent period.

- 11.a) The development shall not begin until the following details have been submitted to and approved by the planning authority and documentary evidence has been provided that the bond or other financial instrument is in place:
- i: details of a bond or other financial instrument which will ensure that funds sufficient to meet the cost of implementing the decommissioning and restoration scheme that is to be approved in terms of condition 2 are available to the developer or the council as planning authority at all times prior to completion of decommissioning and site restoration; and
 - ii: confirmation by an independent chartered surveyor (whose appointment

for this task has been approved by the planning authority) that the amount of the bond or financial instrument is sufficient to meet the cost of all decommissioning and site restoration.

- b) The approved bond or financial instrument shall be maintained throughout the duration of this permission. At the end of fifteen years from the commencement of the development and each five years thereafter from the commencement of the development an independent review of the approved bond or financial instrument shall be carried out and submitted to the planning authority. The planning authority may direct that the approved bond or financial instrument be amended in accordance with conclusions of the independent review, if this is necessary to ensure that funds remain sufficient for decommissioning and site restoration.

Reason: to ensure that at all times there are sufficient funds available to ensure decommissioning and site restoration.

12.a) In the event of the wind farm not exporting electricity on a commercial basis to the public electricity grid network for a continuous period of twelve months from 50% or more of the turbines installed and commissioned at that time, the planning authority may direct that the wind farm operator submit to it within a period of three months for its approval an interim decommissioning and restoration scheme for the for non-supplying part of the development. The scheme shall include a programme for its implementation.

- b) Before giving any direction in terms of this condition the planning authority shall consult the wind farm operator and shall have due regard to the circumstances surrounding the failure to supply electricity.
- c) The interim decommissioning and restoration scheme approved in terms of this condition shall be carried out in accordance with its programme for implementation.
- d) This condition shall take effect following the final commissioning of the development (see Note ii attached to condition 3 above).

Reason: to ensure the turbines are removed from the site at the end of their operational life to protect the character of the countryside, the visual amenity of the area and nature conservation interests.

13 All temporary contractors' site compounds shall be removed and the land reinstated to its former profile and condition no later than 3 months following the final commissioning of the development or by the end of the first available seeding/planting season after the final commissioning of the development, whichever is the later.

Reason: in the interests of visual amenity

- 14 No electricity or control cable shall be installed above ground within the site. Cables shall be laid underground alongside the approved tracks unless otherwise agreed in writing by the planning authority.

Reason: to minimise visual impacts and disruption to habitats.

- 15.a) Prior to the commencement of the development, precise details of the location, extent, depth, means of working, means of draining and method and timing of restoration of any proposed borrow pits and associated areas for rock crushing shall be submitted to, and approved in writing by, the planning authority.
- b) Any borrow pit approved under this condition shall be exploited to serve the development only.
- c) Unless otherwise approved by the planning authority, rock crushing activities shall be confined to the approved borrow pits and immediately adjacent areas.

Reason: in the interest of proper site management and visual and residential amenity.

- 16 Prior to the commencement of development a Construction and Environmental Management Plan will be submitted to and be approved in writing by the planning authority, in consultation with SEPA and SNH, at least one month prior to the commencement of development. The Construction and Environmental Management Plan will identify from the environmental statement appropriate mitigation strategies and consolidate these, clearly outlining what shall be implemented, when and by whom. It will incorporate:

- a construction method statement;
- a site waste management plan;
- a pollution prevention plan;
- ecology protection measures, if any; and
- a water management plan

And include:

- a) track construction details;
- b) a peat and soil stripping management plan including the mineral and slope stability of the site and outlining the storage and proposed use and replacement of peat, topsoil and subsoil. The scheme shall have regard to the drainage implications of soil movement and storage;
- c) details of the height and location of all stockpiles of road stone;
- d) oil spill contingencies and foul drainage arrangements;
- e) details of all concrete batching and handling facilities;
- f) a dust and mud management plan which incorporates wheel washing facilities shall be provided at the exits from the site, with all soiled vehicles leaving the site being required to use these facilities before using public roads;
- g) details of any water abstraction;

- h) a detailed survey which identifies any spring, borehole or other private water supply potentially affected by the development. The private water action plan must include details regarding all water monitoring and reporting, pollution incident reporting and mitigation measures to address a temporary or permanent material change in either the quality or quantity of an existing private water supply;
- i) a surface and groundwater management plan which must include specific details regarding the monitoring of any watercourses, springs or boreholes affected by the development prior to and during the construction phase, details of drainage from all access tracks, construction areas, laydown areas, turbine pads, crane pads and borrow pits at all stages of their formation and use including means of protecting groundwater, diverting surface water runoff and allowing for recharging of peat areas, details of pollution prevention and control measures and foul drainage arrangements, details of any necessary mitigation measures and maintenance of the quantity and quality of water supplied from any spring or borehole which serves residential property or farm in the area around the development site;
- j) details of bird surveys to be carried out before the commencement of development;
- k) the procedures for access for wind farm staff for turbine, track and other infrastructure maintenance and operational requirements, during the bird breeding season and in proximity to potential nesting sites for breeding birds. The operational protocol must also address interpretation and visitor management to encourage responsible public access during the bird breeding season. The approved protocol must be implemented in full to the satisfaction of the as planning authority;
- l) measures for the protection of or beneficial to European and other protected species, formation of any required protected species protection plans and implementation measures for any such plans;
- m) restoration of habitat and the provision of foraging areas;
- n) construction of artificial otter holts and methods of construction to prevent harm to otters;
- o) monitoring of habitats and a programme for implementation; and
- p) landscaping details in relation to borrow pits, road verges, turbine bases and temporary site compounds.

All work shall be carried out in accordance with the approved Construction Environmental Management Plan and all mitigation measures proposed within the environmental statement shall be undertaken within the approved timescales, unless as otherwise agreed in writing with the planning authority.

Reason: In the interest of protecting environmental quality and of bio-diversity.

- 17.a) Unless otherwise agreed in writing by the Local Planning Authority, within a minimum of two months prior to the commencement of the development, an independent and suitably qualified ecologist shall be appointed as the Ecological Clerk of Works (ECoW) for the site, by the wind farm operator and at the operator's expense. This appointment shall be subject to the prior written approval of the planning authority.

- b) The ECoW shall oversee, on behalf of the planning authority, in consultation with SNH, the implementation of all ecology related planning conditions throughout the construction of the wind farm. The ECoW shall undertake a watching brief throughout the construction of all roads, cable tracks compounds, turbine bases and hard standings.
- c) The scope of works for the ECoW shall include the following:
 - i. Monitoring compliance with the mitigation works related to the development.
 - ii. Advising the developer on adequate protection of nature conservation interest on the site, including altering construction practices if existing practices are having an adverse impact on the natural heritage of the site.
 - iii. Advising on the acceptability of micro-siting any turbines and development infrastructure tracks.
- d) If any protected species are found on site, the ECoW will ensure that work is suspended at that location and that a protected species protection plan is implemented. The ECoW shall inform the planning authority of the precise details of the suspension, reasons and measures to mitigate.

Reason: In the interest of protecting environmental quality and of bio-diversity.

- 18.a) Prior to the commencing of any blasting on site, precise details of the methods to minimise air overpressure and ground vibration as a result of blasting operations shall be submitted to the planning authority. No blasting shall be carried out within the site until such time as the details have been approved in writing by the planning authority. The approved details shall be implemented in full, to the satisfaction of the planning authority.
- b) The frequency of blasting shall be limited to a maximum of two blasting periods per week. No blasting shall be carried out on the site outwith the blasting periods of 10:00 am to noon and 2:00 pm to 4:00 pm on Mondays to Fridays and 10:00 am to noon on Saturdays. There shall be no blasting or drilling operations on Sundays, Bank Holidays or national holidays (the dates of which shall be agreed with the planning authority before the start of development on site). The aforementioned shall not apply in cases of emergency if it is considered necessary to carry out blasting operations in the interests of safety. The planning authority shall be notified in writing immediately of any such event.

Reason: to protect residential amenity and the amenity of this area generally.

- 19 Any lighting rigs associated with the development shall be sufficiently screened and aligned so as to ensure that there is no direct illumination of neighbouring land and that light spillage beyond the boundaries of the site is minimised.

Reason: to protect the residential amenity of the occupiers of neighbouring properties and the amenity of this area generally.

- 20 Prior to the commencement of construction the developer shall agree with Perth & Kinross Council the following details:
- a) the access routes to be used by construction traffic. These routes shall be improved by means of passing places/strip widening and junction improvements at locations to be agreed with the council prior to the commencement of works on site and thereafter where deemed necessary over the duration of the contract.
 - b) a traffic management scheme for abnormal loads in accordance with the Roads Traffic Act 1982, the Road Vehicles (Authorisations of Special Types) (General) Order 2003 and the Council's procedure for Abnormal Loads Routing.

All works shall be carried out to the standard and specification required by the council and the traffic management scheme shall be implemented as approved during the construction period.

Reason: in the interests of road safety and to ensure free traffic flow.

- 21 Prior to the commencement of construction the applicant shall enter into a maintenance agreement in respect of the agreed haul routes. The required maintenance shall be carried out in accordance with the agreement at the end of the construction period.

Reason: in the interests of road safety and to ensure free traffic flow.

- 22 Prior to the commencement of development, the applicant shall submit for the written approval of the planning authority a construction traffic management scheme which shall include the following details:

- a) restriction of construction traffic to approved routes and the measures to be put in place to avoid other routes being used;
- b) timing of construction traffic to minimise impact on local communities particularly at school start and finishing times, on days when refuse collection is undertaken, on Sundays and during local events;
- c) a code of conduct for HGV drivers to allow for queuing traffic to pass;
- d) arrangements for liaison with the council regarding winter maintenance;
- e) emergency arrangements detailing communication and contingency arrangements in the event of vehicle breakdown;
- f) arrangements for the cleaning of wheels and chassis of vehicles to prevent material from construction sites associated with the development being deposited on the road;
- g) arrangements for cleaning of roads affected by material deposited from construction sites associated with the development;
- h) arrangements for signage at site accesses and crossovers and on roads to be used by construction traffic in order to provide safe access for pedestrians, cyclists and equestrians;
- i) details of information signs to inform other road users of construction traffic;
- j) arrangements to ensure that access for emergency service vehicles is not impeded;

- k) co-ordination with other major commercial users known to use roads affected by construction traffic;
- l) traffic arrangements in the immediate vicinity of temporary construction compounds;
- m) the provision and installation of traffic counters at the applicant's expense at locations to be agreed prior to the commencement of construction;
- n) monitoring, reporting and implementation arrangements; and
- o) arrangements for dealing with non-compliance.

The approved construction traffic management scheme must be implemented in full during the course of the construction phase of the development and also the removal and restoration periods. At the reasonable request of the planning authority, the developer shall amend the approved construction traffic management scheme to ensure its continued effectiveness.

Reason: in the interests of road safety.

- 23 The clearance of snow from access tracks within the site shall be by mechanical means only. For the avoidance of doubt, the use of salt or any other chemical is strictly prohibited.

Reason: in order to ensure the environmental interests of the site are not compromised.

- 24 The access tracks shall be constructed in the positions indicated in drawing number 09016-PL-03 Rev A – Site Layout, save for the ability to vary the indicated position by up to 10 metres of the approved track under the supervision of the ECOW appointed under condition 18 above. Variation of between 10 metres and 50 metres in the position of any track shall only be permitted with the prior written approval of the planning authority.

Reason: to allow limited flexibility in siting access tracks in the interests of nature conservation/ecology and to minimise landscape impacts.

- 25 Construction works within the site which is audible from the boundary of any noise sensitive dwelling shall only take place between 7:00 am and 7:00 pm on Mondays to Fridays inclusive, and between 7:00 am and 1:00 pm on Saturdays. There shall be no such activity at any time on Sundays or on local or national public holidays (the dates of which shall be agreed with the planning authority before the start of development on site). Outwith the hours specified, development within the site shall be limited to turbine erection, maintenance, emergency works, dust suppression and the testing of plant and equipment; and construction work that is not audible from the boundary of any noise sensitive dwelling. Receipt by track of any materials or equipment to the site for the construction of the development shall not take place outwith the hours specified, unless otherwise approved by the planning authority having been given a minimum of two working days notice of the occurrence of the proposed event.

Reason: To protect the residential amenity of the occupiers of neighbouring properties and the amenity of this area generally.

- 26 The rating level of noise emissions from the combined effects of the wind turbines hereby permitted (including the application of any tonal penalty), when determined in accordance with the attached Guidance Notes, shall not exceed the values for the relevant integer wind speed set out for those properties identified in the Tables 1 & 2 attached to these conditions.

At Craighead only, the rating level of noise immissions from the combined effects of the wind turbines hereby permitted, operating in conjunction with the consented and operational turbines of the Drumderg Wind Farm (including the application of any tonal penalty), when determined in accordance with the attached Guidance Notes shall not exceed the values for the relevant integer wind speed set out in Tables 3 and 4 attached to these conditions.

Following complaint, in the event that the level of noise emissions (including the application of any tonal penalty) exceeds the values in Tables 3 and 4, the operator of Tullymurdoch Wind Farm shall undertake appropriate mitigation to reduce turbine noise emissions such that the limits in Tables 3 and 4 are met, or such that noise from the turbines hereby permitted (including the application of any tonal penalty) meets the levels set out in Tables 5 and 6.

Prior to the first export date, the wind farm operator shall submit to the planning authority for written approval a list of proposed independent consultants who may undertake compliance measurements in accordance with this condition. Amendments to the list of approved consultants shall be made only with the prior written approval of the planning authority.

- (A) Within 21 days from receipt of a written request of the planning authority, following a complaint to it alleging noise disturbance at a dwelling, the wind farm operator shall, at its expense, employ an independent consultant approved by the planning authority to assess the level of noise emissions from the wind farm at the complainant's property in accordance with the procedures described in the attached Guidance Notes. The written request from the planning authority shall set out at least the date, time and location that the complaint relates to. Within 14 days of receipt of the written request of the planning authority made under this paragraph (A), the wind farm operator shall provide the information relevant to the complaint logged in accordance with paragraph (G) to the planning authority in the format set out in Guidance Note 1(E).

- (B) Where there is more than one property at a location specified in Tables 1 and 2 attached to this condition, the noise limits set for that location shall apply to all dwellings at that location. Where a dwelling to which a complaint is related is not identified by name or location in the Tables attached to these conditions, the wind farm operator shall submit to the planning authority for written approval proposed noise limits selected from those listed in the Tables to be adopted at the complainant's dwelling for compliance checking purposes. The proposed noise limits are to be those limits selected from the Tables specified for a listed location which the independent consultant considers as being likely to experience the most similar background noise environment to that experienced at the complainant's dwelling. The submission of the proposed noise limits to the planning authority shall include a written justification of the choice of the representative background noise environment provided by the independent consultant. The rating level of noise emissions resulting from the combined effects of the wind turbines when determined in accordance with the attached Guidance Notes shall not exceed the noise limits approved in writing by the planning authority for the complainant's dwelling.
- (C) Prior to the commencement of any measurements by the independent consultant to be undertaken in accordance with these conditions, the wind farm operator shall submit to the planning authority for written approval the proposed measurement location identified in accordance with the Guidance Notes where measurements for compliance checking purposes shall be undertaken. Measurements to assess compliance with the noise limits set out in the Tables attached to these conditions or approved by the planning authority pursuant to paragraph (B) of this condition shall be undertaken at the measurement location approved in writing by the planning authority.
- (D) Prior to the commencement of the independent consultant's assessment of the rating level of noise emissions pursuant to paragraph (E) of this condition, the wind farm operator shall submit to the Planning Authority for written approval a proposed assessment protocol setting out the following:
- i. the range of meteorological and operational conditions (the range of wind speeds, wind directions, power generation and times of day) to determine the assessment of rating level of noise emissions.
 - ii. a reasoned assessment as to whether the noise giving rise to the complaint contains or is likely to contain a tonal component.

The proposed range of conditions shall be those which prevailed during times when the complainant alleges there was disturbance due to noise, having regard to the information provided in the written request of the planning authority under paragraph (A), and such others as the independent consultant considers necessary to fully assess the noise at the complainant's property. The assessment of the rating level of noise emissions shall be undertaken in accordance with the assessment protocol approved in writing by the planning authority and the attached Guidance Notes.

- (E) The wind farm operator shall provide to the planning authority the independent consultant's assessment of the rating level of noise emissions undertaken in accordance with the Guidance Notes within 2 months of the date of the written request of the planning authority made under paragraph (A) of this condition unless the time limit is extended in writing by the planning authority. The assessment shall include all data collected for the purposes of undertaking the compliance measurements, such data to be provided in the format set out in Guidance Note 1(e) of the Guidance Notes. The instrumentation used to undertake the measurements shall be calibrated in accordance with Guidance Note 1(a) and certificates of calibration shall be submitted to the planning authority with the independent consultant's assessment of the rating level of noise missions.
- (F) Where a further assessment of the rating level of noise emissions from the wind farm is required pursuant to Guidance Note 4(c) of the attached Guidance Notes, the wind farm operator shall submit a copy of the further assessment within 21 days of submission of the independent consultant's assessment pursuant to paragraph (E) above unless the time limit for the submission of the further assessment has been extended in writing by the planning authority.
- (G) The wind farm operator shall continuously log wind speed, wind direction at the permanent meteorological mast erected in accordance with this consent and shall continuously log power production and nacelle wind speed, nacelle wind direction and nacelle orientation at each wind turbine all in accordance with Guidance Note 1(d) of the attached Guidance Notes. The data from each wind turbine and the permanent meteorological mast shall be retained for a period of not less than 24 months. The wind farm operator shall provide this information in the format set out in Guidance Note 1(e) of the attached Guidance Notes to the Planning Authority on its request within 14 days of receipt in writing of such a request.

Note i: For the purposes of this condition, a "dwelling" is a building within Use Class 9 of the Use Classes Order which lawfully exists or had planning permission at the date of this consent.

Reason: to protect the amenity of local residents.

Table 1 - Between 07:00 and 23:00 - Noise level dB LA₉₀, 10-minute

Location (easting, northing grid co-ordinates)	Standardised wind speed at 10 metres height (m/s) within the site averaged over 10-minute periods											
	1	2	3	4	5	6	7	8	9	10	11	12
	LA ₉₀ Decibel Levels											
Nether Drumhead Cottage (321864, 755021)	38	38	38	38	38	38	38	40	43	46	48	50
Nether Drumhead Farm (321688, 755012)	38	38	38	38	38	38	38	40	43	46	48	50
Over Drumhead (321812, 755302)	38	38	38	38	38	38	38	40	43	46	48	50
Tullymurdoch (319857, 752520)	45	45	45	45	45	45	45	45	45	45	45	45
Derryhill (321727, 754168)	38	38	38	38	38	38	38	41	46	50	54	58
Cottertown (322761, 754401)	38	38	38	38	38	38	38	39	42	46	48	50

Table 2 - Between 23:00 and 07:00 - Noise level dB LA₉₀, 10-minute

Location (easting, northing grid co-ordinates)	Standardised wind speed at 10 metres height (m/s) within the site averaged over 10-minute periods											
	1	2	3	4	5	6	7	8	9	10	11	12
	LA₉₀ Decibel Levels											
Nether Drumhead Cottage (321864, 755021)	43	43	43	43	43	43	43	43	43	44	46	49
Nether Drumhead Farm (321688, 755012)	43	43	43	43	43	43	43	43	43	44	46	49
Over Drumhead (321812, 755302)	43	43	43	43	43	43	43	43	43	44	46	49
Tullymurdoch (319857, 752520)	45	45	45	45	45	45	45	45	45	45	45	45
Derryhill (321727, 754168)	42	42	42	42	42	42	42	42	44	49	53	57
Cottertown (322761, 754401)	42	42	42	42	42	42	42	42	42	43	46	49

Note iv (to Tables 1 and 2): the limits set in condition 27 for the property known as Derryhill shall only apply for the purposes of this condition in the event that the property is lawfully occupied as a dwelling and at all other times there shall be no noise limits applying to this property, which shall not be regarded as a noise sensitive property.

Table 3 - Between 07:00 and 23:00 - Noise level dB LA₉₀, 10-minute

Location (easting, northing grid co- ordinates)	Standardised wind speed at 10 metres height (m/s) within the site averaged over 10-minute periods												
	1	2	3	4	5	6	7	8	9	10	11	12	
	LA₉₀ Decibel Levels												
Craighead (319660, 754070)	40	40	40	40	40	40	40	40	43	43	43	43	43

Table 4 - Between 23:00 and 07:00 - Noise level dB LA₉₀, 10-minute

Location (easting, northing grid co- ordinates)	Standardised wind speed at 10 metres height (m/s) within the site averaged over 10-minute periods												
	1	2	3	4	5	6	7	8	9	10	11	12	
	LA₉₀ Decibel Levels												
Craighead (319660, 754070)	43	43	43	43	43	43	43	43	43	43	43	43	43

Table 5 - Between 07:00 and 23:00 - Noise level dB LA₉₀, 10-minute

Location (easting, northing grid co- ordinates)	Standardised wind speed at 10 metres height (m/s) within the site averaged over 10-minute periods												
	1	2	3	4	5	6	7	8	9	10	11	12	
	LA₉₀ Decibel Levels												
Craighead (319660, 754070)	30	30	30	30	30	30	30	30	33	33	33	33	33

Table 6- Between 23:00 and 07:00 - Noise level dB LA_{90, 10-minute}

Location (easting, northing grid co- ordinates	Standardised wind speed at 10 metres height (m/s) within the site averaged over 10-minute periods											
	1	2	3	4	5	6	7	8	9	10	11	12
	LA₉₀ Decibel Levels											
Craighead (319660, 754070)	33	33	33	33	33	33	33	33	33	33	33	33

Guidance Notes for Noise Condition 27

These notes are to be read with and form part of the noise condition. They further explain the condition and specify the methods to be employed in the assessment of complaints about noise emissions from the wind farm. The rating level at each integer wind speed is the arithmetic sum of the wind farm noise level as determined from the best-fit curve described in Note 2 of these Guidance Notes and any tonal penalty applied in accordance with Note 3 with any necessary correction for residual background noise levels in accordance with Note 4. Reference to ETSU-R-97 refers to the publication entitled “The Assessment and Rating of Noise from Wind Farms” (1997) published by the Energy Technology Support unit (ETSU) for the Department of Trade and Industry (DTI).

Note 1

- (a) Values of the LA_{90,10-minute} noise statistic should be measured at the complainant’s property (or an approved alternative representative location as detailed in Note 1(b)), using a sound level meter of EN 60651/BS EN 60804 Type 1, or BS EN 61672 Class 1 quality (or the equivalent UK adopted standard in force at the time of the measurements) set to measure using the fast time weighted response as specified in BS EN 60651/BS EN 60804 or BS EN 61672-1 (or the equivalent UK adopted standard in force at the time of the measurements). This should be calibrated before and after each set of measurements, using a calibrator meeting IEC 60945:2003 “Electroacoustics – sound calibrators” Class 1 with PTB Type Approval (or the equivalent UK adopted standard in force at the time of the measurements) and the results shall be recorded. Measurements shall be undertaken in such a manner to enable a tonal penalty to be applied in accordance with Guidance Note 3.

- (b) The sound level meter shall be located in a free field location outside the complainants dwelling, in accordance with recommendations in the Institute of Acoustics Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Farm Noise (IOA May 2013). In the event that the consent of the complainant for access to his or her property to undertake compliance measurements is withheld, the wind farm operator shall submit for the written approval of the planning authority details of the proposed alternative representative measurement location prior to the commencement of measurements and the measurements shall be undertaken at the approved alternative representative measurement location
- (c) The $LA_{90,10\text{-minute}}$ measurements should be synchronised with measurements of the 10- minute arithmetic mean wind speed and wind direction data and with operational data logged in accordance with Guidance Note 1(d) and rain data logged in accordance with Note 1(f).
- (d) To enable compliance with the conditions to be evaluated, the wind farm operator shall continuously log arithmetic mean wind speed in metres per second (m/s), arithmetic mean wind direction in metres from north and rainfall data in each successive 10-minutes period at the permanent meteorological mast erected in accordance with the planning permission on the site. The mean hub height wind speed shall be 'standardised' to a reference height of 10 metres as described in ETSU-R-97 at page 120 using a reference roughness length of 0.05 metres. It is this standardised 10 metre height wind speed data which is correlated with the noise measurements determined as valid in accordance with Note 2(b), such correlation to be undertaken in the manner described in Note 2(c). The wind farm operator shall continuously log arithmetic mean nacelle anemometer wind speed, arithmetic mean nacelle orientation, arithmetic mean wind direction as measured at the nacelle and arithmetic mean power generated during each successive 10-minutes period for each wind turbine on the wind farm. All 10-minute periods shall commence on the hour and in 10- minute increments thereafter synchronised with Greenwich Mean Time and adjusted to British Summer Time where necessary.
- (e) Data provided to the planning authority in accordance with paragraphs (E) (F) and (G) of the noise condition shall be provided in in electronic format as comma separated values, or in the case of aAudio recordings as 16bit WAV files.
- (f) A data logging rain gauge shall be installed within 3m of any sound level meter installed in the course of the independent consultant undertaking an assessment of the level of noise emissions. The gauge shall record over successive 10-minute periods synchronised with the periods of data recorded in accordance with Note 1(d).

Note 2

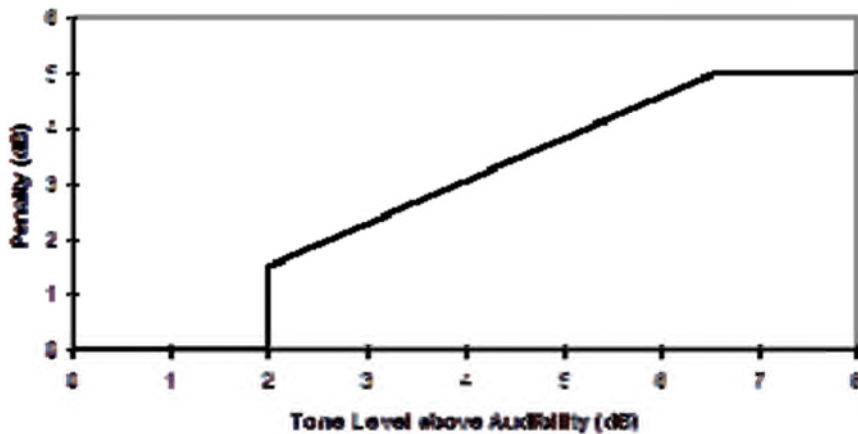
- (a) The noise measurements should be made so as to provide not less than 20 valid data points as defined in Note 2 paragraph (b).

- (b) Valid data points are those measured during the conditions set out in the assessment protocol approved by the planning authority under paragraph (D) of the noise condition but excluding any periods of rainfall measured in accordance with Note 1(f).

Values of the LA_{90,10-minute} noise measurements and corresponding values of the 10-minute standardised ten metre height wind speed for those data points considered valid in accordance with Note 2(b) shall be plotted on an XY chart with noise level on the Y-axis and wind speed on the X-axis. A least squares, “best fit” curve of an order deemed appropriate by the independent consultant (but which may not be higher than a fourth order) shall be fitted to the data points to define the wind farm noise level at each integer speed.

Note 3

- (a) Where, in accordance with the approved assessment protocol under paragraph (D) of the noise condition, noise emissions at the location or locations where compliance measurements are being undertaken contain or are likely to contain a tonal component, a tonal penalty shall be calculated and applied using the following rating procedure.
- (b) For each 10-minute interval for which LA_{90,10-minute} data have been determined as valid in accordance with Note 2, a tonal assessment shall be performed on noise immissions during 2-minutes of each 10-minute period. The 2-minute periods should be spaced at 10-minute intervals provided that uninterrupted uncorrupted data are available (“the standard procedure”). Where uncorrupted data are not available, the first available uninterrupted clean 2-minute period out of the affected overall 10-minute period shall be selected. Any such deviations from the standard procedure shall be reported.
- (c) For each of the 2-minute samples the tone level above audibility shall be calculated by comparison with the audibility criterion given in Section 2.1 on pages 104 -109 of ETSU-R- 97.
- (d) The tone level above audibility shall be plotted against wind speed for each of the 2-minute samples. Samples for which the tones were below the audibility criterion or no tone was identified, a value of zero audibility shall be substituted.
- (e) A least squares “best fit” linear regression shall then be performed to establish the average tone level above audibility for each integer wind speed derived from the value of the “best fit” line fitted to values. If there is no apparent trend with wind speed then a simple arithmetic mean shall be used. This process shall be repeated for each integer wind speed for which there is an assessment of overall levels in Note 2.
- (f) The tonal penalty is derived from the margin above audibility of the tone according to the figure below derived from the average tone level above audibility for each integer wind speed.



Note 4

- (a) If a tonal penalty is to be applied in accordance with Note 3 the rating level of the turbine noise at each wind speed is the arithmetic sum of the measured noise level as determined from the best fit curve described in Note 2 and the penalty for tonal noise as derived in accordance with Note 3 at each integer wind speed within the range set out in the approved assessment protocol under paragraph (D) of the noise condition.
- (b) If no tonal penalty is to be applied then the rating level of the turbine noise at each wind speed is equal to the measured noise level as determined from the best fit curve described in Note 2.
- (c) If the rating level at any integer wind speed lies at or below the values set out in the Tables attached to the conditions or at or below the noise limits approved by the planning authority for a complainant’s dwelling in accordance with paragraph (B) of the noise condition then no further action is necessary. In the event that the rating level is above the limit(s) set out in the Tables attached to the noise conditions or the noise limits for a complainant’s dwelling approved in accordance with paragraph (B) of the noise condition, the independent consultant shall undertake a further assessment of the rating level to correct for background noise so that the rating level relates to wind turbine noise emission only.
- (d) The wind farm operator shall ensure that all the wind turbines in the development are turned off for such period as the independent consultant requires to undertake the further assessment. The further assessment shall be undertaken in accordance with the following steps:
 - i. Repeating the steps in Note 2, with the wind farm switched off, and determining the background noise (L3) at each integer wind speed within the range set out in the approved noise assessment protocol under paragraph (D) of this condition.

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

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

- iii. The rating level shall be re-calculated by adding the tonal penalty (if any is applied in accordance with Note 3) to the derived wind farm noise L1 at that integer wind speed.
- iv. If the rating level after adjustment for background noise contribution and adjustment for tonal penalty (if required in accordance with note (iii) above) at any integer wind speed lies at or below the values set out in the Tables attached to the conditions or at or below the noise limits approved by the Planning Authority for a complainant's dwelling in accordance with paragraph (B) of the noise condition then no further action is necessary. If the rating level at any integer wind speed exceeds the values set out in the Tables attached to the conditions or the noise limits approved by the Planning Authority for a complainant's dwelling in accordance with paragraph (B) of the noise condition then the development fails to comply with the conditions.

B JUSTIFICATION

The proposal is considered to comply with the over-riding thrust of the Development Plan and there are no material reasons which justify departing from the development plan.

C PROCEDURAL NOTES

None

D INFORMATIVES

- 1 This planning permission will last only for three years from the date of this decision notice, unless the development has been started within that period. (See section 58(1) of the Town and Country Planning (Scotland) Act 1997 (as amended).
- 2 Under section 27A of the Town and Country Planning (Scotland) Act 1997 (as amended) the person undertaking the development is required to give the planning authority prior written notification of the date on which it is intended to commence the development. A failure to comply with this statutory requirement would constitute a breach of planning control under section 123(1) of that Act, which may result in enforcement action being taken.
- 3 As soon as practicable after the development is complete, the person who completes the development is obliged by section 27B of the Town and Country Planning (Scotland) Act 1997 (as amended) to give the planning authority written notice of that position.

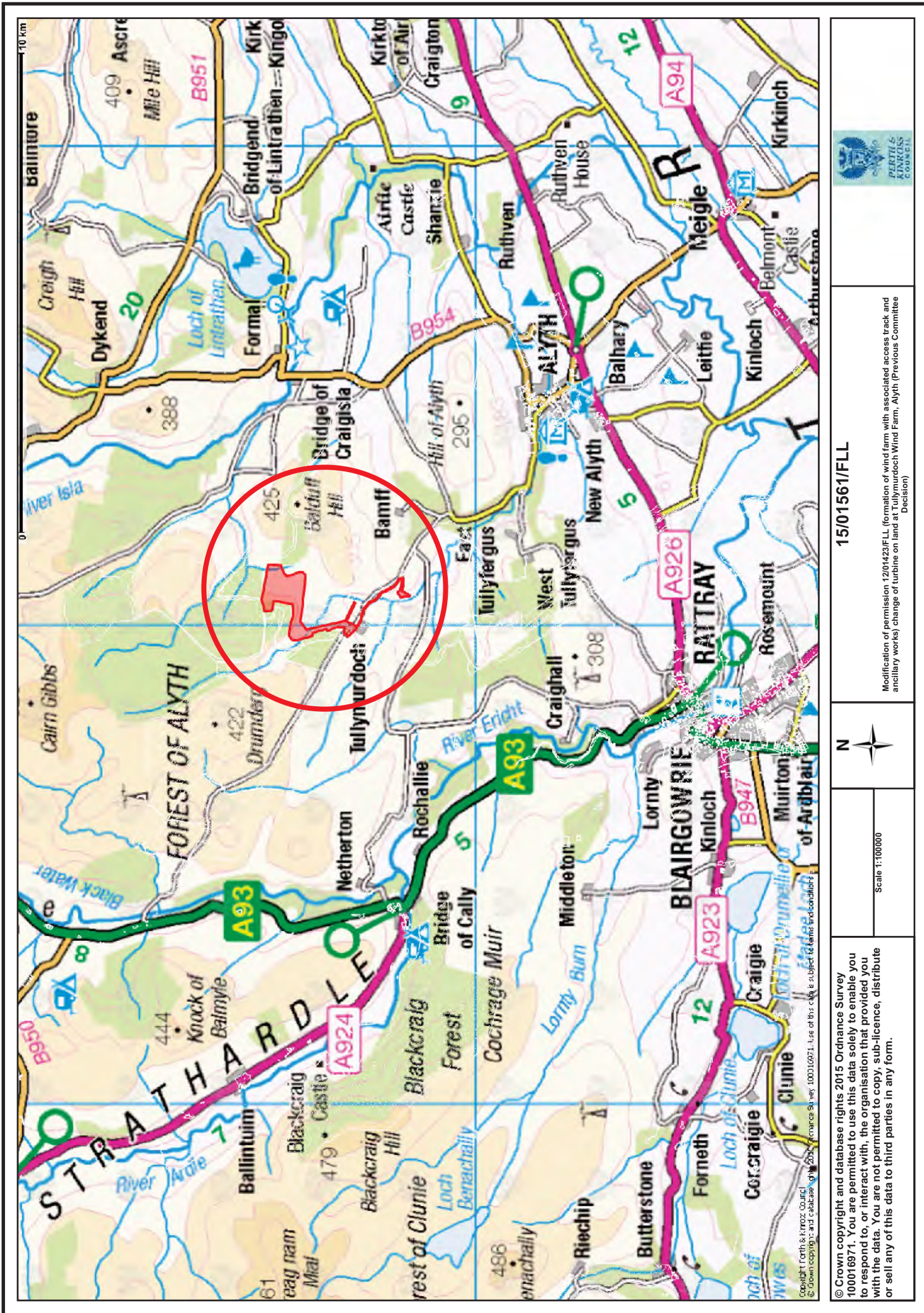
NICK BRIAN
DEVELOPMENT QUALITY MANAGER

Background Papers: 11
Contact Officer: John Russell – Ext 75346
Date: 30 October 2015

If you or someone you know would like a copy of this document in another language or format, (on occasion, only a summary of the document will be provided in translation), this can be arranged by contacting the Customer Service Centre on 01738 475000.

You can also send us a text message on 07824 498145.

All Council Services can offer a telephone translation facility.



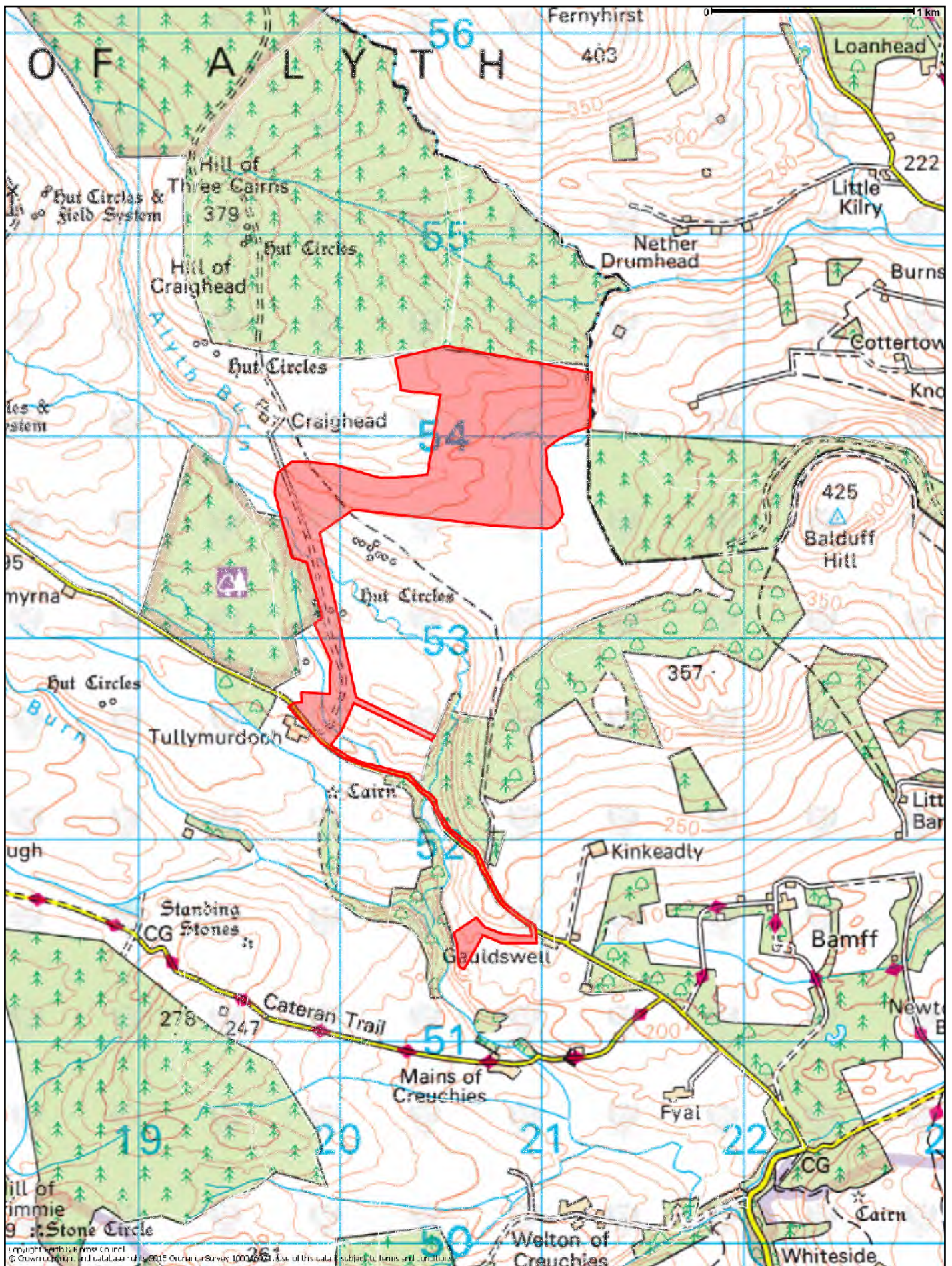
15/01561/FLL

Modification of permission 12/01423/FLL (formation of wind farm with associated access track and ancillary works) change of turbine on land at Tullyurdoch Wind Farm, Altham (Previous Committee Decision)



Scale 1:100000

© Crown copyright and database rights 2015 Ordnance Survey 100016971. You are permitted to use this data solely to enable you to respond to, or interact with, the organisation that provided you with the data. You are not permitted to copy, sub-licence, distribute or sell any of this data to third parties in any form.



© Crown copyright and database rights 2015 Ordnance Survey 100016971. You are permitted to use this data solely to enable you to respond to, or interact with, the organisation that provided you with the data. You are not permitted to copy, sub-licence, distribute or sell any of this data to third parties in any form.



Scale 1:25000

15/01561/FLL

Modification of permission 12/01423/FLL (formation of wind farm with associated access track and ancillary works)
change of turbine on land at Tullymurdoch Wind Farm, Alyth
(Previous Committee Decision)



