

**TOWN AND COUNTRY PLANNING ACT 1990 – SECTION 78  
APPEAL BY RES UK AND IRELAND LIMITED - ERECTION OF 17 WIND  
TURBINES, WIND MONITORING MAST, ACCESS TRACKS, CRANE  
HARDSTANDINGS, WATER CROSSING, CONTROL BUILDING, SUBSTATION  
COMPOUND, CAR PARK, OFFSITE ROAD IMPROVEMENTS, TEMPORARY  
COMPOUNDS, BORROW PITS, MASTS & WELFARE FACILITIES AT LAND AT  
GARREG LWYD HILL, BETWEEN FELINDRE & LLANBADARN FYNYDD,  
LLANDRINDOD WELLS, POWYS - APPEAL NO: 2209593 (APPEAL A)**

**Glossary**

In these conditions, unless the context otherwise requires:

**“commencement”**, in relation to the authorised development, means the date on which the authorised development begins by the carrying out of a material operation as defined in section 56 of the Town and Country Planning Act 1990 and “commence” and “commenced” shall be construed accordingly;

**“Construction Period”** means the period from work commencing on the Development until the date 18 months after the site compounds have been reinstated in accordance with the conditions of this permission;

**"dB"** refers to the Decibel noise measurement unit;

**"dB(A)"** refers to a Decibel noise measurement unit, with the inclusion of the A-weighting filter in the measurements as referred to in ETSU-R-97;

**“development”** means the works that are permitted to take place as a result of this permission. This includes;

- (a) 17 wind turbines on concrete foundations incorporating hardstandings for cranes and including transformers.
- (b) A series of cables buried beneath the surface of the ground and connecting the wind turbines to the substation.
- (c) A series of access tracks between the wind turbines
- (d) A construction, maintenance and emergency site access road
- (e) An onsite electricity substation
- (f) An anemometry mast.
- (g) Borrow pits for the extraction of stone to be used in the construction of the development.

**"emergency”** means circumstances in which there is reasonable cause for apprehending imminent injury to persons, serious damage to property or danger of serious pollution to the environment;

**“ETSU-R-97”** means the ETSU Report number ETSU-R-97 ‘The Assessment and Rating of Noise from Wind Farms’ published in September 1996;

**“first export”** means the date the authorised development first exports electricity to the Grid on a commercial basis;

**“LA90”** means the decibel (dB) level exceeded for 90% of each sample period;

**“Local Planning Authority”** means Powys County Council;

**“NRW”** means Natural Resource Wales, a Welsh Government sponsored body and statutory consultee on environmental protection; regulation; and maintenance of natural resources

**“Public Holiday”** means a day that is, or is to be observed as a public holiday;

**“site”** means land within the development boundary;

**“wind turbines”** means the wind turbines forming part of the development and  
“wind turbine” shall be construed accordingly

### Conditions

1. Subject to the conditions attached to this permission, the development shall be carried out in accordance with the following approved plans and documents:

#### 2008 ES

- Figure 4.2.7 Car Parking Details
- Figure 4.6 Crane Hardstanding General Arrangement
- Figure 4.7 Wind Turbine Foundation
- Figure 4.8 Temporary & Permanent Anemometer Masts
- Figure 4.10 Substation Buildings and Compound Elevations
- Figure 4.11 Temporary Construction Compound
- Figure 4.10 Typical Site Drainage Plan
- Figure 4.13 Borrow Pit Section & Layout Plan

#### 2013 Wind Farm SEI

- Appendix SEI 4: Garreg Lwyd Habitat Management Plan
- Proposed BOAT Diversion Drawing number 01589D2250-01

#### 2014 Wind Farm SEI

- Figure 4.1 Turbine Layout and Site Boundary
- Figure 4.2 Site Infrastructure
- Appendix 8.6a Site Entrance Drawings. Drawing number 01589D2430-04 Sheets 1 to 5 (of 5): Site Entrances
- Appendix 8.6b Site Entrance Drawings. Sheet number 60304149-SKE-C-0001: Forward Visibility Check

2. The development hereby permitted shall be begun before the expiration of five years from the date of this permission.

3. No abnormal indivisible loads (ALLs) shall be delivered to site before the highway upgrade works the subject of the planning permission granted by the Welsh Ministers by letter dated xx April 2015 and reference qA1197418 have been completed in accordance with the terms of that permission.

4. The permission hereby granted shall endure for a period of 25 years from the date of the erection of the first turbine on site. Written confirmation of the date of the erection of the first turbine shall be sent to local planning authority within one month of that event.

### **Site Recording**

5. No development shall commence until all areas that will be disturbed by the development have been photographically recorded and these photos, alongside a plan detailing the precise location and bearing of these photos have been submitted to and approved by the local planning authority in writing.

### **Site Decommissioning and Restoration**

6. Prior to the commencement of development a full ecological survey shall be undertaken and submitted to and approved in writing by the local planning authority. This survey shall be repeated, submitted to and approved in writing by the local planning authority at least 24 months prior to the decommissioning of the scheme.

7. Not less than 12 months before the decommissioning of the scheme a Site Decommissioning and Restoration Scheme shall be submitted to and approved in writing by the local planning authority. The approved Scheme shall be implemented within 12 months from the date of the last export from the development. The Scheme shall include, but not limited to:

- (a) Details of the removal of all the wind turbines and the surface elements of the development plus one metre of the turbine bases below ground level;
- (b) Details of means of removal, including how this will avoid effects on protected species and habitats;
- (c) Phasing of the removal of tracks, structures, buildings and other associated infrastructure;
- (d) Earth moving & soil replacement;
- (e) Restoration of the landscape;
- (f) Reinstatement of public rights of way, paths and footpaths; and
- (g) Monitoring and remedial actions.

8. On completion of the restoration work, which shall be confirmed in writing by the local planning authority, any remaining fixed equipment, machinery and buildings erected or brought on to the site for the purpose of implementing the Site Decommissioning and Restoration Scheme shall be removed from the site within 2 months of the date of that completion.

9. Before any development commences details shall be provided to the local planning authority, and approved in writing by the local planning authority, indicating the location of all development (including tracks, hardstandings, access areas, turbines, infrastructure routes, borrow pits) hereby approved as well as the changes to rights of way and byways open to all traffic across the site. The development shall be implemented in accordance with the details approved by the local planning authority.

10. The turbines hereby approved shall have a hub height of no greater than 80 metres and a height to blade tip of no greater than 126.5 metres.

11. In relation to the generating capacity of the development:

- (a) before any turbine hereby permitted is erected its generating capacity shall be agreed, in writing, with the local planning authority; and
- (b) the combined generating capacity of the turbines hereby approved shall at no time exceed 49MW.

12. Before any development commences details of the turbines, including make, model, design (including turbine finish and colour), size, the anemometer mast and associated apparatus has been submitted to and approved in writing by the local planning authority. The turbines, anemometer mast and associated apparatus shall be constructed in accordance with the approved detail.

13. All turbine blades shall rotate in the same direction.

14. Before the first export of electricity, which date shall be notified to the local planning authority within 1 week of it occurring, all electricity cables connecting the turbines and the substation, and other services within the site boundary, shall be installed underground in accordance with a scheme to be agreed, in writing, with the local planning authority.

15. No development shall commence until details relating to the external treatment, design, materials, and orientation and screening of the on-site substation have been submitted to and approved in writing by the local planning authority. The substation shall be constructed in accordance with the approved details.

16. No development shall commence until details of any permanent outdoor lighting provision have been submitted to and approved in writing by the local planning authority. Any outdoor lighting shall be provided in accordance with the approved details.

17. No construction work shall take place outside the hours of 07:30 and 19:30 Monday to Friday inclusive, 07:30 and 13:00 on Saturdays with no construction work at all on Sundays and Public Holidays.

18. Subject to the conditions attached to this permission, all activities associated with the construction of the development shall be carried out in accordance with British Standard BS5228:2009: Code of Practice for noise and vibration control on construction and open sites – Part 1: Noise and Part 2: Vibration.

### **Construction and Environment Management Plan**

19. No development, including site clearance, scrub and vegetation removal and tree felling works, shall commence until a detailed, site specific Construction Environment Management Plan (CEMP) is submitted to and approved in writing by the local planning authority. The CEMP shall cover the periods of site clearance, construction and the restoration of all work areas and shall include detailed method statements, contractor arrangements, reporting and liaison mechanisms between the contractor, Ecological Clerk of Works (ECoW), the local planning authority and NRW, monitoring and contingency proposals for implementation, including:

- (a) A track construction plan including the excavation and make up of internal access roads and hard standing areas, including measures to address silt-laden run-off from any workings, temporary and permanent access roads, soil storage and other engineering operations;
- (b) Working statement (including design and construction) to cover all channel and bank works including all channel crossings;
- (c) A detailed timetable for tree felling, vegetation and site clearance, construction and habitat management up to the decommissioning of the turbines and site restoration. The timetable should include potential contingencies for birds and protected species;
- (d) Measures to be taken during vegetation and site clearance, tree felling and the construction and restoration periods to protect wildlife and habitats including legally protected species, and the River Wye SAC;
- (e) The hours of working for all construction activities;
- (f) Arrangements for the parking of vehicles of site operatives and visitors;
- (g) Arrangements for the loading, unloading and storage of plant and materials used during the construction of the development;
- (h) An Environmental Management and Pollution Prevention Plan (to include a water quality monitoring plan, surface water management plan and a drainage management plan) which comprises arrangements to protect groundwater, surface water and the River Wye SAC during site clearance, construction and the restoration phases of development including wet weather contingency measures and an Incident Response Plan in the event of a pollution incident and measures for the storage of materials including soil and its disposal;

- (i) Construction arrangements for turbine foundations, access roads and other infrastructure, including concrete batching and dewatering arrangements to treat potentially sediment laden water;
- (j) Arrangements for fuel storage and fuelling, the storage and handling of oils and lubricants, and the handling of cement materials to prevent any entry to watercourses and contingency plans in the event of spillage;
- (k) Cable laying on the site including the detailed design of the trenches;
- (l) Access, signing and re-routing arrangements for recreational users during construction activities;
- (m) Construction method statements for the construction works compound and all infrastructure, including their eventual removal and satisfactory reinstatement of the land;
- (n) Details and method statements for hedgerows, stone walls and banks that are to be removed and relocated;
- (o) Reinstatement of any disturbed ground post construction, including re-vegetation of access track and hardstanding areas, in order to reduce their visual and ecological impact, together with measures to monitor its success;
- (p) Emergency site procedures in the event of disturbance or fatality of any otter or badgers;
- (q) Arrangements to prevent the spread of non-native invasive species;
- (r) Approach to excavated materials;
  - (i) Details of approach to borrow pits including: Proposed location, opening, working and reinstatement of on-site borrow pits; and
  - (ii) No excavation of the borrow pit shall take place below the depth of the water table;
  - (iii) Details of backfill material for the borrow pits.
- (s) Nothing other than uncontaminated excavated natural materials shall be tipped on the site;
- (t) Measures to control dust and mud arising from the site including damping down, the provision of wheel washing facilities and the sheeting of HGV's taking spoil or construction materials to and from the site;

- (u) Measures to clean and maintain the site entrance and the adjacent public highway;
- (v) Temporary site illumination including proposed lighting levels together with the specification of any lighting. The development shall be implemented in accordance with the approved CEMP unless otherwise agreed in writing with the local planning authority.

20. Before any wind turbine is removed or replaced a revised Construction Environment Management Plan dealing solely with that removal or replacement shall be submitted to and approved in writing by the Local Planning Authority, and implemented as approved.

### **Ecology**

21. No development shall commence until an on-site detailed Habitat Management Plan (HMP), setting out detailed nature conservation management objectives including the management of priority habitats and species, and a timetable for its implementation, has been submitted to and approved in writing by the local planning authority. The HMP shall include (but not be limited to) details of the habitat management measures contained in the Environmental Statement dated 2008, (where relevant) and the HMP dated February 2013 submitted with the 2013 Supplementary Environmental Information (SEI). The HMP shall be implemented as approved.

22. No development shall commence, including vegetation clearance and tree felling, until details of a suitably qualified ECoW to be employed on the development has been submitted to, and approved in writing by the Local Planning Authority. The EcoW shall be responsible for:

- (a) Monitoring compliance with and reporting on the success or failure of the approved mitigation works and in the event of failures advising on remedial mitigation measures;
- (b) Advising the developer on the implementation of the approved mitigation proposals and the protection of important nature conservation interests on the site;
- (c) Directing and consulting on the micro-siting and placement of turbines, roads and other infrastructure;
- (d) Monitoring and reporting on the compliance with the Construction Environmental Management Plan (CEMP) and protected species protection plan
- (e) Attending liaison meetings with and reporting compliance with conditions and plans and mitigation measures to PCC and NRW and other parties as necessary

The approved ECoW shall be appointed at least one month prior to the commencement of any tree felling/site and vegetation clearance works or development and remain in the position throughout the construction period.

23. No development, or vegetation clearance and tree felling, shall commence until a Protected Species Protection Plan (PSPP) has been, submitted to and approved in writing by the local planning authority. The Plan shall be implemented as agreed and include but not be limited to details of:

- (a) the specification for pre-commencement surveys to be undertaken for bats, great crested newts, otters, dormouse, water vole, and badgers, to include survey methodology, schedule and timing, the development of casualty risk models for bats, and if present suitable mitigation measures to ensure their protection throughout the pre-construction, construction and operational phases of the development;
  - (b) detailed survey of watercourses and wetland areas for the presence of otter breeding and resting sites within a radius of 500m around each turbine and 500m either side of access tracks and areas subject to construction disturbance;
  - (c) detailed survey of areas up to 500m from water bodies for Great Crested Newts;
  - (d) a survey check for badger setts or badger foraging activity up to within 50m around construction areas and 100m of drilling, piling or blasting activity;
  - (e) the preparation of a hedgerow/habitat plan to include details of removal, translocation, and aftercare of all hedgerows and habitat to be affected by works within the site and the access road
- (f) the measures to be undertaken to confirm compliance of all protected species mitigation, compensation and enhancement measures.

24. No development shall commence until an Ecological Monitoring Plan (EMP) is submitted to and approved in writing by the local planning authority. The EMP shall be implemented as agreed, and include the monitoring arrangements for the Habitat Management Plan (HMP) and Protected Species Protection Plan. Monitoring shall be undertaken of the HMP, bats and great crested newts at periods of at least 1, 2, 3, 5, 10 and 15 years after first export. The raw data, collated and interpreted results of all monitoring will be made available to the local planning authority and NRW within six months of being completed in each of the respective years. Monitoring protocols shall be agreed in writing by the local planning authority. The monitoring results will be taken into account when reviewing the HMP and if necessary the actions set out in the HMP will be amended after agreement with the local planning authority and NRW.



25. Development activities shall be carried out in full compliance with the mitigation measures identified in Section 8.7 of the 2008 Environmental Statement and Habitats Regulations Assessment (2010) (where applicable) in order to limit any impacts on the River Wye SAC.

### **Water Contamination & Private Drinking Water Supplies**

26. No development shall commence until the results of an assessment of the quality of water in watercourses within the site, groundwater beneath the site, the methodology for which shall be agreed in writing by the local planning authority, has been submitted to and approved in writing by the local planning authority.

27. No development shall commence until the details of a scheme for the monitoring of water quality in watercourses within the site, groundwater beneath the site every 3 months throughout the construction period, and annually until the wind farm is fully decommissioned and the site restored, has been submitted to and approved in writing by the local planning authority. The scheme shall identify the minimum acceptable water quality, particularly in relation to drinking water, and include suitable mitigation measures to be taken should the quality of water deteriorate below that standard.

### **Shadow Flicker**

28. Prior to the erection of any wind turbine a scheme shall be submitted to and approved in writing by the local planning authority setting out a protocol for the assessment of shadow flicker in the event of any complaint alleging shadow flicker effects to the local planning authority from the owner or occupier of any dwelling within 10 diameter blade lengths of a turbine. The written scheme shall include remedial measures to alleviate any effects of shadow flicker attributable to the development. Operation of the turbines shall take place in accordance with the approved scheme.

29. No development shall take place until an agreement for a written scheme of historic environment mitigation has been secured and submitted to, and approved by, the local planning authority in writing. Thereafter, the programme of work will be fully carried out in accordance with the requirements and standards of the written scheme.

### **Aviation**

30. No wind turbine shall be erected before the following information has been provided to the Defence Geographic Centre of the Ministry of Defence:

- (a) the date construction starts and ends;
- (b) the maximum height of construction equipment;
- (c) the latitude and longitude of every turbine.

## Noise

31. No turbine shall be brought into operation before a scheme for the assessment and regulation of Excess Amplitude Modulation (EAM) has been submitted to and approved by the Local Planning Authority. That scheme shall be in general accordance with, if it exists, any guidance endorsed in National Planning Policy of Guidance at that time; or in the absence of endorsed guidance, guidance published by the Institute of Acoustics. The approval scheme shall be implemented for the life of the development.

32. The rating level of noise immissions from the combined effects of the wind turbines (including the application of any tonal penalty) when determined in accordance with the attached Guidance Notes (to this condition), shall not exceed the values for the relevant integer wind speed set out in, or derived from, the tables attached to these conditions at any dwelling and:

- (a) The wind farm operator shall continuously log power production, wind speed and wind direction, all in accordance with Guidance Note 1(d). This data shall be retained for a period of not less than 24 months. The wind farm operator shall provide this information in the format set out in Guidance Note 1(e) to the local planning authority on its request, within 14 days of receipt in writing of such a request;
- (b) No electricity shall be exported until the wind farm operator has submitted to the local 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 local planning authority;
- (c) Within 21 days from receipt of a written request from the local planning authority following a complaint to it from an occupant of a dwelling alleging noise disturbance at that dwelling, the wind farm operator shall, at its expense, employ a consultant approved by the local planning authority to assess the level of noise immissions 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 local planning authority shall set out at least the date, time and location that the complaint relates to and any identified atmospheric conditions, including wind direction, and include a statement as to whether, in the opinion of the local planning authority, the noise giving rise to the complaint contains or is likely to contain a tonal component;
- (d) The assessment of the rating level of noise immissions shall be undertaken in accordance with an assessment protocol that shall previously, have been submitted to and approved in writing by local planning authority. The protocol shall include the proposed measurement location identified in accordance with the Guidance

Notes where measurements for compliance checking purposes shall be undertaken, whether noise giving rise to the complaint contains or is likely to contain a tonal component, and also the range of meteorological and operational conditions (which shall include the range of wind speeds, wind directions, power generation and times of day) to determine the assessment of rating level of noise immissions. The proposed range of conditions shall be those which prevailed during times when the complainant alleges there was disturbance due to noise, having regard to the written request of the local planning authority under paragraph (c), and such others as the independent consultant considers likely to result in a breach of the noise limits;

- (e) Where a dwelling to which a complaint is related is not listed in the tables attached to these conditions, the wind farm operator shall submit to the local 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 rating level of noise immissions 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 local planning authority for the complainant's dwelling.
- (f) The wind farm operator shall provide to the local planning authority the independent consultant's assessment of the rating level of noise immissions undertaken in accordance with the Guidance Notes within 2 months of the date of the written request of the Local Planning Authority for compliance measurements to be made under paragraph (c), unless the time limit is extended in writing by the local planning authority. The assessment shall include all data collected for the purposes of undertaking the compliance measurements, such data to be provided in the format set out in Guidance Note 1(e) of the Guidance Notes. The instrumentation used to undertake the measurements shall be calibrated in accordance with Guidance Note 1(a) and certificates of calibration shall be submitted to the local planning authority with the independent consultant's assessment of the rating level of noise immissions;
- (g) Where a further assessment of the rating level of noise immissions from the wind farm is required pursuant to Guidance Note 4(c), 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 (d) above unless the time limit has been extended in writing by the local planning authority.



Annex B to Welsh Ministers' decision letter  
dated 14 May 2015 reference qA1197418

| Location          | Standardised 10 metre-height Wind Speed (as defined in accordance with the attached Guidance Notes to the noise condition) |      |      |      |      |      |      |      |      |      |      |      |
|-------------------|--|------|------|------|------|------|------|------|------|------|------|------|
|                   | 1  | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   |
| Lower Green       | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.7 | 40.2 | 42.9 | 45.7 | 48.5 | 48.5 | 48.5 |
| Lower House Farm  | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.8 | 39.9 | 42.3 | 44.8 | 47.3 | 47.3 | 47.3 |
| Lower House Holt  | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.8 | 39.9 | 42.3 | 44.8 | 47.3 | 47.3 | 47.3 |
| Maes-gwyn         | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.7 | 40.2 | 42.9 | 45.7 | 48.5 | 48.5 | 48.5 |
| New House         | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.8 | 39.9 | 42.3 | 44.8 | 47.3 | 47.3 | 47.3 |
| Pink House        | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.8 | 39.9 | 42.3 | 44.8 | 47.3 | 47.3 | 47.3 |
| Rhuvid            | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.8 | 39.9 | 42.3 | 44.8 | 47.3 | 47.3 | 47.3 |
| Scrubs Farm       | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.8 | 39.9 | 42.3 | 44.8 | 47.3 | 47.3 | 47.3 |
| Sign              | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.5 | 39.4 | 42.2 | 45.2 | 48.4 | 48.4 | 48.4 |
| Tansomalia        | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.8 | 39.9 | 42.3 | 44.8 | 47.3 | 47.3 | 47.3 |
| Tynybryniau       | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.7 | 40.2 | 42.9 | 45.7 | 48.5 | 48.5 | 48.5 |
| Upper Cae-glas    | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.7 | 40.2 | 42.9 | 45.7 | 48.5 | 48.5 | 48.5 |
| Upper Green       | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.7 | 40.2 | 42.9 | 45.7 | 48.5 | 48.5 | 48.5 |
| Upper Ty-Ilidiart | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.8 | 39.9 | 42.3 | 44.8 | 47.3 | 47.3 | 47.3 |
| Waen              | 35.0   | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 | 35.0 |
| Wood Cottage      | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.8 | 39.9 | 42.3 | 44.8 | 47.3 | 47.3 | 47.3 |

Table 2 – Noise limits expressed in dB  $L_{A90,10 \text{ minute}}$  to be applied to Noise from Garreg Lwyd at all times of Day or Night if the Wind Farm at Llanbadarn Fynydd is not Operational

| Location          | Standardised 10 metre-height Wind Speed (as defined in accordance with the attached Guidance Notes to the noise condition) |      |      |      |      |      |      |      |      |      |      |      |
|-------------------|--|------|------|------|------|------|------|------|------|------|------|------|
|                   | 1  | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   |
| Blaen-nant-du     | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.6 | 41.0 | 44.6 | 48.2 | 51.9 | 55.8 | 59.7 |
| Blaen-nant-du 2   | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.6 | 41.0 | 44.6 | 48.2 | 51.9 | 55.8 | 59.7 |
| Bryn-mawr Cottage | 37.5   | 37.5 | 37.5 | 37.5 | 37.6 | 40.5 | 43.6 | 46.7 | 49.6 | 52.3 | 54.4 | 54.4 |

Annex B to Welsh Ministers' decision letter  
dated 14 May 2015 reference qA1197418

| Location              | Standardised 10 metre-height Wind Speed (as defined in accordance with the attached Guidance Notes to the noise condition) |      |      |      |      |      |      |      |      |      |      |      |
|-----------------------|--|------|------|------|------|------|------|------|------|------|------|------|
|                       | 1  | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   |
| Bwlch-gwyn            | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.5 | 39.4 | 42.2 | 45.2 | 48.4 | 48.4 | 48.4 |
| Cork Cottage          | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.8 | 39.9 | 42.3 | 44.8 | 47.3 | 47.3 | 47.3 |
| Cwm yr Hob            | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.8 | 39.9 | 42.3 | 44.8 | 47.3 | 47.3 | 47.3 |
| Cwm-gwyn Hall         | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.8 | 39.9 | 42.3 | 44.8 | 47.3 | 47.3 | 47.3 |
| Cwm-mawr              | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.5 | 37.5 | 37.5 | 38.0 | 40.0 | 42.2 | 44.7 |
| Cwm-mawr Stud         | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.5 | 37.5 | 37.5 | 38.0 | 40.0 | 42.2 | 44.7 |
| Ddol                  | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.5 | 37.5 | 37.5 | 38.0 | 40.0 | 42.2 | 44.7 |
| Ddol - Holiday Home   | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.5 | 37.5 | 37.5 | 38.0 | 40.0 | 42.2 | 44.7 |
| Garn                  | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.6 | 41.0 | 44.6 | 48.2 | 51.9 | 55.8 | 59.7 |
| Gatehouse Farm        | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 40.3 | 44.2 | 48.2 | 52.1 | 55.9 | 59.3 | 59.3 |
| Great House Barn      | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.8 | 39.9 | 42.3 | 44.8 | 47.3 | 47.3 | 47.3 |
| Green Hollow          | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 40.3 | 44.2 | 48.2 | 52.1 | 55.9 | 59.3 | 59.3 |
| Gwenlas               | 37.5   | 37.5 | 37.5 | 37.5 | 38.3 | 39.7 | 41.3 | 42.9 | 44.7 | 46.5 | 48.6 | 50.7 |
| Hendy                 | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.8 | 39.9 | 42.3 | 44.8 | 47.3 | 47.3 | 47.3 |
| Higher Fiddlers Green | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.5 | 37.5 | 37.5 | 38.0 | 40.0 | 42.2 | 44.7 |
| Hopes Castle Farm     | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 39.3 | 42.8 | 46.4 | 49.9 | 53.0 | 53.0 | 53.0 |
| Killowent             | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.8 | 39.9 | 42.3 | 44.8 | 47.3 | 47.3 | 47.3 |
| Little House Farm     | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.8 | 39.9 | 42.3 | 44.8 | 47.3 | 47.3 | 47.3 |
| Llanrhys              | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.8 | 39.9 | 42.3 | 44.8 | 47.3 | 47.3 | 47.3 |
| Lower Fiddlers Green  | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.5 | 37.5 | 37.5 | 38.0 | 40.0 | 42.2 | 44.7 |
| Lower Green           | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.7 | 40.2 | 42.9 | 45.7 | 48.5 | 48.5 | 48.5 |
| Lower House Farm      | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.8 | 39.9 | 42.3 | 44.8 | 47.3 | 47.3 | 47.3 |
| Lower House Holt      | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.8 | 39.9 | 42.3 | 44.8 | 47.3 | 47.3 | 47.3 |
| Maes-gwyn             | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.7 | 40.2 | 42.9 | 45.7 | 48.5 | 48.5 | 48.5 |
| New House             | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.8 | 39.9 | 42.3 | 44.8 | 47.3 | 47.3 | 47.3 |
| Pink House            | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.8 | 39.9 | 42.3 | 44.8 | 47.3 | 47.3 | 47.3 |

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| Location          | Standardised 10 metre-height Wind Speed (as defined in accordance with the attached Guidance Notes to the noise condition) |      |      |      |      |      |      |      |      |      |      |      |
|-------------------|--|------|------|------|------|------|------|------|------|------|------|------|
|                   | 1  | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   |
| Rhuvid            | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.8 | 39.9 | 42.3 | 44.8 | 47.3 | 47.3 | 47.3 |
| Scrubs Farm       | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.8 | 39.9 | 42.3 | 44.8 | 47.3 | 47.3 | 47.3 |
| Sign              | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.5 | 39.4 | 42.2 | 45.2 | 48.4 | 48.4 | 48.4 |
| Tansomalia        | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.8 | 39.9 | 42.3 | 44.8 | 47.3 | 47.3 | 47.3 |
| Tynybryniau       | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.7 | 40.2 | 42.9 | 45.7 | 48.5 | 48.5 | 48.5 |
| Upper Cae-glas    | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.7 | 40.2 | 42.9 | 45.7 | 48.5 | 48.5 | 48.5 |
| Upper Green       | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.7 | 40.2 | 42.9 | 45.7 | 48.5 | 48.5 | 48.5 |
| Upper Ty-Ilidiart | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.8 | 39.9 | 42.3 | 44.8 | 47.3 | 47.3 | 47.3 |
| Waen              | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.5 | 39.4 | 42.2 | 45.2 | 48.4 | 48.4 | 48.4 |
| Wood Cottage      | 37.5   | 37.5 | 37.5 | 37.5 | 37.5 | 37.8 | 39.9 | 42.3 | 44.8 | 47.3 | 47.3 | 47.3 |

Table 3: Coordinate locations of the properties listed in Tables 1 and 2

| Property          | Easting | Northing |
|-------------------|---------|----------|
| Blaen-nant-du     | 310772  | 281936   |
| Blaen-nant-du 2   | 310535  | 281877   |
| Bryn-mawr Cottage | 312712  | 281598   |
| Bwlch-gwyn        | 314530  | 276779   |
| Cork Cottage      | 314124  | 282351   |
| Cwm yr Hob        | 315104  | 279678   |
| Cwm-gwyn Hall     | 313667  | 282633   |
| Cwm-mawr          | 310786  | 279885   |
| Cwm-mawr Stud     | 310692  | 279592   |
| Ddol              | 311201  | 279689   |
| Ddol Holiday Home | 311344  | 279818   |
| Garn              | 310215  | 281777   |
| Gatehouse Farm    | 315162  | 280038   |
| Great House Barn  | 314944  | 281823   |

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| <b>Property</b>       | <b>Easting</b> | <b>Northing</b> |
|-----------------------|----------------|-----------------|
| Green Hollow          | 316167         | 279704          |
| Gwenlas               | 311435         | 280395          |
| Hendy                 | 314897         | 282374          |
| Higher Fiddlers Green | 311658         | 281737          |
| Hopes Castle Farm     | 313288         | 281753          |
| Killowent             | 315017         | 280583          |
| Little House Farm     | 314734         | 281967          |
| Llanrhys              | 315899         | 278546          |
| Lower Fiddlers Green  | 311761         | 281614          |
| Lower Green           | 312910         | 278434          |
| Lower House Farm      | 315527         | 278940          |
| Lower House Holt      | 315460         | 279110          |
| Maes-gwyn             | 315029         | 277734          |
| New House             | 315556         | 278508          |
| Pink House            | 315655         | 278530          |
| Rhuvid                | 314814         | 281316          |
| Scrubs Farm           | 316152         | 280018          |
| Sign                  | 312131         | 279161          |
| Tansomalia            | 316061         | 280298          |
| Tynybryniau           | 312296         | 278537          |
| Upper Cae-glas        | 313496         | 276907          |
| Upper Green           | 312768         | 278726          |
| Upper Ty-Ilidiart     | 314475         | 282226          |
| Waen                  | 312205         | 282244          |
| Wood Cottage          | 315841         | 280678          |

Note to Table 3: The geographical coordinate references are provided for the purpose of identifying the general location of dwellings to which a given set of noise limits applies.

### **Guidance Notes for Noise Condition 32**

*These notes are to be read with and form part of the noise condition. They further explain the condition and specify the methods to be employed in the assessment of complaints about noise immissions from the wind farm. The rating level at each*



*integer wind speed is the arithmetic sum of the wind farm noise level as determined from the best-fit curve described in Guidance Note 2 of these Guidance Notes and any tonal penalty applied in accordance with Guidance Note 3. Reference to ETSU-R-97 refers to the publication entitled "The Assessment and Rating of Noise from Wind Farms" (1997) published by the Energy Technology Support Unit (ETSU) for the Department of Trade and Industry (DTI).*

### **Guidance Note 1**

(a) Values of the  $L_{A90,10 \text{ minute}}$  noise statistic should be measured at the complainant's property, using a sound level meter of EN 60651/BS EN 60804 Type 1, or BS EN 61672 Class 1 quality (or the equivalent UK adopted standard in force at the time of the measurements) set to measure using the fast time weighted response as specified in BS EN 60651/BS EN 60804 or BS EN 61672-1 (or the equivalent UK adopted standard in force at the time of the measurements). This should be calibrated in accordance with the procedure specified in BS 4142: 1997 (or the equivalent UK adopted standard in force at the time of the measurements). Measurements shall be undertaken in such a manner to enable a tonal penalty to be applied in accordance with Guidance Note 3.

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

(c) The  $L_{A90,10 \text{ minute}}$  measurements should be synchronised with measurements of the 10-minute arithmetic mean wind and operational data logged in accordance with Guidance Note 1(d), including the power generation data from the turbine control systems of the wind farm.

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

accordance with Guidance Note 2, such correlation to be undertaken in the manner described in Guidance Note 2. All 10-minute periods shall commence on the hour and in 10- minute increments thereafter.

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

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

## **Guidance Note 2**

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

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

(c) For those data points considered valid in accordance with Guidance Note 2(b), values of the  $L_{A90,10 \text{ minute}}$  noise measurements and corresponding values of the 10-minute wind speed, as derived from the standardised ten metre height wind speed averaged across all operating wind turbines using the procedure specified in Guidance Note 1(d), shall be plotted on an XY chart with noise level on the Y-axis and the standardised mean wind speed on the X-axis. A least squares, "best fit" curve of an order deemed appropriate by the independent consultant (but which may not be higher than a fourth order) should be fitted to the data points and define the wind farm noise level at each integer speed.

## **Guidance Note 3**

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

(b) For each 10 minute interval for which  $L_{A90,10 \text{ minute}}$  data have been determined as valid in accordance with Guidance Note 2 a tonal assessment shall be performed on noise immissions during 2 minutes of each 10 minute period. The 2 minute periods should be spaced at 10 minute intervals provided that uninterrupted uncorrupted data are available ("the standard procedure"). Where uncorrupted data are not

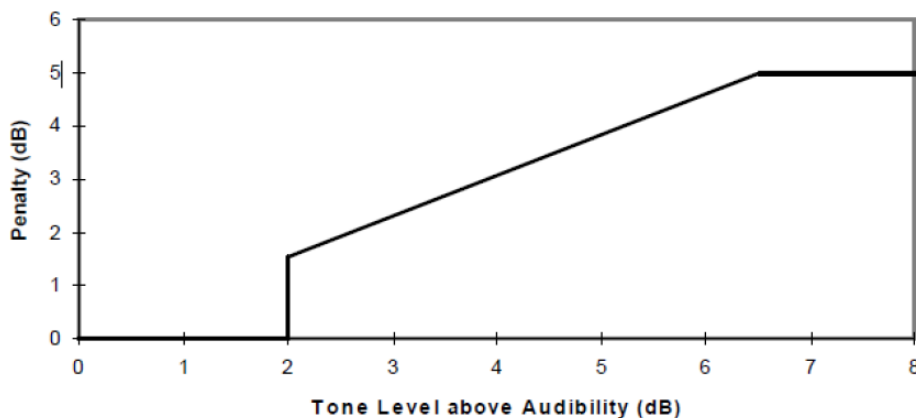
available, the first available uninterrupted clean 2 minute period out of the affected overall 10 minute period shall be selected. Any such deviations from the standard procedure, as described in Section 2.1 on pages 104-109 of ETSU-R-97, shall be reported.

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

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

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

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



#### Guidance Note 4

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

(c) In the event that the rating level is above the limit(s) set out in the Tables attached to the noise conditions or the noise limits for a complainant's dwelling approved in accordance with paragraph (e) 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 immission only.

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

(e) Repeating the steps in Guidance Note 2, with the wind farm switched off, and determining the background noise ( $L_3$ ) at each integer wind speed within the range requested by the Local Planning Authority in its written request under paragraph (c) and the approved protocol under paragraph (d) of the noise condition.

(f) The wind farm noise ( $L_1$ ) at this speed shall then be calculated as follows where  $L_2$  is the measured level with turbines running but without the addition of any tonal penalty:

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

(g) The rating level shall be re-calculated by adding arithmetically the tonal penalty (if any is applied in accordance with Note 3) to the derived wind farm noise  $L_1$  at that integer wind speed.

(h) If the rating level after adjustment for background noise contribution and adjustment for tonal penalty (if required in accordance with note 3 above) at any integer wind speed lies at or below the values set out in the Tables attached to the conditions or at or below the noise limits approved by the Local Planning Authority for a complainant's dwelling in accordance with paragraph (e) 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 Local Planning Authority for a complainant's dwelling in accordance with paragraph (e) of the noise condition then the development fails to comply with the conditions.