

PROPOSED TARARUA DISTRICT COUNCIL TE RERE HAU EASTERN EXTENSION CONDITIONS

General

1. The proposed Te Rere Hau Wind Farm be constructed and operated generally in accordance with all the information, site plans and drawings accompanying the application or submitted as additional information.
2. Each turbine shall be located within a 30m radius of its nominated co-ordinates as outlined in the Application (Kevin O'Connor Associates drawings 1 to 28, Job No. 208166).

Advice Note: The ability to alter the specific location of each turbine within a 30m radius is to provide for likely movement related to detailed design layout, to take into account the geological conditions of the site and the recommendations made in the Applicant's ecologist's report.

Construction Noise

3. Noise from all construction and decommissioning work including (but not limited to):
 - (a) site works;
 - (b) wind turbine generator (WTG) foundation construction;
 - (c) WTG assembly and placement;
 - (d) WTG removal;
 - (e) foundation demolition and removal; and
 - (f) land reinstatement

shall be measured, assessed and controlled using NZS6803:1999 *Acoustics – Construction Noise*. The noise limits shall be those set out in Table 2 of NZS6803:1999 for works of a "long term" duration.

Operational Noise (Non-Turbine Related)

4. Noise from all other activities (other than WTG operation and construction activities) shall not exceed the following limits at or within the boundary of any land (other than the windfarm site or a road):

7.00am to 7.00pm 55dBA L10

7.00pm to 7.00am 45dBA L10 and 70dBA Lmax

Sound levels shall be measured in accordance with New Zealand Standard NZS6801:1999 *Acoustics – Measurement of Environmental Sound* and assessed in accordance with NZS6802:1991 – *Assessment of Environmental Sound*.

Operational Noise (Design of Wind Farm)

5. Prior to the commencement of construction of the TRHE wind farm, a report prepared by a suitably qualified and experienced person shall be submitted to the Manager Environmental Services Tararua District Council stating that the wind farm has been designed and laid out so that sound levels when measured in accordance with NZS6808:1998 together with any sound emitted from any other wind farm in the area (which is consented at the time of the TRHE grant of consent) operating in compliance within its consent conditions, does not exceed the noise limits set out in Condition 9.

Operational Noise Management Plan

6. Prior to the installation of any wind turbines, a noise management plan shall be prepared by suitably qualified and experienced person(s) engaged by the consent holder, with input from representatives of the Tararua District Council. This Plan shall include:
 - A process for managing complaints;
 - Agreed procedures for investigation of complaints;
 - Agreed remediation measures if compliance is not able to be demonstrated;
 - Procedures for ongoing consultation and liaison with the community.
7. The information collected as part of the implementation of the Noise Management Plan shall be provided to the Manager Environmental Services Tararua District Council.

Advice Note: All costs associated with the preparation and implementation of the Noise Management Plan shall be met by the Consent Holder.

Operational Noise (Turbines)

8. For the purposes of these consent conditions, the “notional boundary” mentioned in condition 9 below shall be interpreted as a line 20 metres from any side of a dwelling, or the legal boundary where this is closer to the dwelling.
 9. The regression curve representing sound levels measured at Pt Lot 2 DP 51393, Section 115 BLK VI Mangahao SD, and Section 9 BLK XIX Mangahao SD during the operation of TRHE wind farm shall not exceed the greater of 40dBA or the best fit regression curve of the A-weighted background sound level (L95) plus 5dB when measured in accordance with NZS6808:1998 *Acoustics – The Assessment and Measurement of Sound from Wind Turbine Generators* and in accordance with the following additional conditions:
 - (a) The 10 minute background sound levels (L95,10) shall be measured at any point within the notional boundaries of the three dwellings existing at the date of this consent on Pt Lot 2 DP 51393, Section 115 BLK VI Mangahao SD, and Section 9 BLK XIX Mangahao SD]
 - (b) The 10 minute average wind speeds shall be measured at a height of 30 metres concurrently with the wind direction and the 10 minute background L95,10 measurement (and called data pairs).
 - (c) The wind speed and wind direction measurements shall be made within the TRHE site.
 - (d) Background sound level L95,10 shall be correlated with wind speed, and wind direction and time of day.
 - (e) The size of each class in each parameter shall not be more than:
 - wind speed – 1m/s bins
 - wind direction – 45° arc
 - time of day – night time (1 hour after sunset to 1 hour before sunrise) and daytime
- The four predominant wind direction areas are:
- WNW – 270°-315° relative to true north (typically 37% frequency)

- NNW – 315°-0° relative to true north (typically 28% frequency)
- SSE – 135°-180° relative to true north (typically 19% frequency)
- ESE – 90°-135° relative to true north (typically 8% frequency)

The total number of data points obtained across all wind speed and directions shall not be less than 1440. In respect of each of the four predominant 45° wind direction arcs, the total number of data points obtained for background sound or compliance testing shall (unless exceptional wind conditions preclude it) be not less than 200 (but not less than 350 for arcs SSE and ESE) and shall be sufficient to cover the range of wind speeds set out in NZS 6808:1998

In respect of the other four 45° wind direction areas, there shall be no minimum number of data points for any or all wind speed bins.

- (f) The pre-installation analysis shall exclude sounds from the existing Te Rere Hau windfarm.
- (g) The following effects shall be excluded from the pre-installation and compliance analysis:
 - seasonal sounds (eg of seasonal cicadas, crickets and frogs etc)
 - other identifiable noise sources (eg tractors working at night, pumps, periods of precipitation etc)
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- (h) Sufficient data shall be gathered such that accurate best-fit regression curves can be obtained.
- (i) Post-installation compliance testing shall be carried out at the same locations as the background sound monitoring as soon as reasonably practicable over a 6 month period after completion of the wind farm. If the wind farm is not completed within a year then compliance testing shall be undertaken annually in any year in which turbines are constructed.
- (j) The same parameters as required for the background noise monitoring shall also be measured for post-installation compliance testing. The cut-in operation times of the WTG shall also be recorded and this shall be indicated on the results.
- (k) A best fit regression curve shall be provided for the day and night time period for each of the four predominant wind directions described in condition (e) above. Each curve shall include wind speeds from cut-in to 14m/s.
- (l) The best fit regression curve of the L95,10 of the WTG's for each of the regression curves prepared under condition (k) above, is not to exceed the relevant noise limit for the site.
- (m) If special audible characteristics are present at the notional boundary of Pt Lot 2 DP 51393, Section 115 BLK VI Mangahao SD, and Section 9 BLK XIX Mangahao SD an appropriate penalty (as identified in 'n' below) shall be applied.
- (n) Tonality shall be assessed at the residential locations listed in condition (m) using the method described in Annexure C to ISO 1996-2:2007 and the penalty for tonality shall be as described in that standard.
- (o) Assessment of compliance of other properties may involve on-off testing. This shall be carried out for Lot 1 DP 73900. Where reasonable doubt exists regarding compliance at any other dwelling (at the notional boundary) existing at the date of this consent then monitoring shall be repeated at that location.

- (p) Sound monitoring equipment shall conform to the following requirements:
- the complete measurement and analysis measurement system shall conform to the requirements of NZS6808:1998 and the Standards referred to by NZS6808, and
 - microphones shall be fitted with a wind shield such that the noise generated by wind on the wind shield is, to the extent practicable, at least 10dBA below the noise being measured.
- (q) All results shall be provided in a timely manner to the Manager Environmental Services, Tararua District Council.
- (r) All sound monitoring shall be carried out by suitably qualified and experienced persons.
- (s) The consent holder shall provide all necessary data required to carry out the compliance testing including:
- wind speeds at 30m and direction during periods of compliance testing;
 - the times at which individual wind turbines are operating above the cut-in wind speed;
 - the number of turbines operating which:
 - where the wind farm is not fully constructed, represent the nominal full operation of the wind farm turbines constructed as at the date of monitoring;
 - once construction is complete, represent the nominal full operation of the wind farm.
 - any other information required by the Manager Environmental Services Tararua District Council.
- (t) The operator of the wind turbines shall pay all costs associated with compliance testing.
- (u) Where compliance is not achieved then the consent holder shall propose and implement remedies within three months. If compliance is not achieved within that time then the consent holder shall cease operation of the WTG's until modifications are made to reduce the noise. Further WTG operation shall only be for sound measurement checks as specifically agreed with Council's Manager Environmental Services to demonstrate compliance.
- (v) For the purposes of ascertaining the contribution of sound from the TRHE wind farm to total wind farm sound received at or within the notional boundary of any dwelling existing at the date of the grant of the consent, the consent holder shall upon reasonable request from the Manager Environmental Services Tararua District Council, make arrangements for the TRHE wind turbines to be temporarily switched off, as soon as reasonably practicable after the request, for the purposes of sound measurements.

Advice Note: Such switch off periods shall only occur for the purposes of sound measurements, and the measurement regime should be designed to minimise the amount of time shutdowns are required.

.Roading and Traffic

10. Prior to any construction works commencing, the Consent Holder shall submit and have approved by Tararua District Council's Roading Manager, a Traffic Management Plan including, but not limited to, a construction timetable, details of heavy vehicle movements to and from the site and specific management techniques to avoid conflict between cyclists and heavy vehicles using the Pahiatua Track.

Advice Note: The Plan is to be prepared in accordance with the Palmerston North City Council (PNCC) Traffic Management Guidelines (2000), as PNCC has delegated responsibility for North Range Road and should provide for safe and practical access to and from the site during the construction phase of the wind farm.

Advice note: During times when the Manawatu Gorge is closed, no heavy vehicle traffic relating to the proposed Te Rere Hau Eastern Extension shall be permitted to turn right into North Range Road from Pahiatua Track.

11. The Consent Holder shall regularly carry out sufficient roading maintenance works to maintain the length of North Range Road from Pahiatua Track to the wind farm site to the same standard (or better) that it was at the date of the grant of this consent. The maintenance works are to be carried out until all construction works for the wind farm have been completed, at which time the maintenance liability will revert back to the Council.
12. No oversize vehicles associated with the construction, use and/or maintenance of the wind farm shall be permitted to access North Range Road via direct right-hand turn from Pahiatua Track in instances where the Manawatu Gorge is closed.

Ecological

Bird Strike

13. The Consent Holder shall engage a suitably qualified avifauna expert to prepare a Strike Monitoring Programme in order to locate and record any bird or bat strike on the TRHE Wind Farm for a period of three years after the wind farm becomes operational. The recorded location from which dead or injured birds have been retrieved / recovered shall be recorded on a New Zealand map grid co-ordinate.
14. The Strike Monitoring Programme shall include:
 - a. A dedicated “collision carcass retrieval team” who will undertake grid searches in an area of 100m² beneath 30% of operational turbines once a day for one day a week in the months of January, August and November for a period of three years post-construction;
 - b. The retrieval of bird carcasses found during routine maintenance at each turbine, with increased surveillance by ground staff during the breeding season (spring and early summer) for the entire consent period;
 - c. The identification and age of bird carcasses as well as the cause of death (where possible) determined by a professional avian autopsy service;
 - d. Recording of the weather conditions at the time the carcass is found and at the time the bird died (where possible).
15. A report will be produced by a qualified avifauna expert at the end of each year detailing all bird fatalities, known or likely cause of death and any species, seasonal or spatial patterns and a copy of this report shall be submitted to the Environmental Services Manager Tararua District Council and the Department of Conservation (Wellington) office.

Resident Birds and New Zealand Pipit

16. A suitably qualified avifauna expert shall develop and undertake a survey for resident birds, in particular kereru, tui and New Zealand pipit, in late spring before construction commences in order to determine relative abundance of these key species, use of the site, use of the turbine rotor sweep area, and locate any

nesting pipit. The results of this survey shall be provided to the Manager Environmental Services Tararua District Council and the Department of Conservation (Wellington Conservancy). Should the Manager Environmental Services Tararua District Council consider that it is necessary, one further survey shall be undertaken in summer and/or one in autumn in the first year after construction has commenced. The results of this survey shall be provided to the Manager Environmental Services Tararua District Council and the Department of Conservation (Wellington Conservancy).

New Zealand Falcon

17. A suitably qualified avifauna expert shall develop and undertake New Zealand falcon surveys in November, December and January in order to determine use of the site by New Zealand Falcon. The results of this survey shall be provided to Manager Environmental Services Tararua District Council and the Department of Conservation (Wellington Conservancy). The November survey shall be undertaken before construction commences. Should any nesting falcon be located, construction works shall be delayed in a 200m radius from the nesting site until the falcon chicks have fledged.
18. If New Zealand falcon are identified as utilising the site, the Consent Holder shall agree the extent of further monitoring required with the Manager Environmental Services Tararua District Council in order to assess how much these falcon use the wind farm area and to establish risk and options for mitigation. The results of this additional monitoring shall be provided to the Manager Environmental Services Tararua District Council and the Department of Conservation (Wellington Conservancy).

Bats

19. A suitably qualified ecologist shall undertake a monitoring survey for bats on the site in late spring and again in summer, using a minimum of four automated bat boxes deployed for a period of seven at each sampling event to confirm whether any bats are utilising the site. The results of this bat survey shall be provided to the Manager Environmental Services Tararua District Council and the Department of Conservation (Wellington Conservancy). The spring survey shall be undertaken before construction commences. Should any bat roost sites be located, construction works shall be delayed in a 200m radius from the roost site until the bats and/or any pups have vacated the roost.
20. If bats are identified as utilising the site the Consent Holder shall agree the extent of further monitoring required with the Manager Environmental Services Tararua District Council in order to assess how much the bats use the wind farm area and to establish risk and options for mitigation. The results of this additional monitoring shall be provided to the Manager Environmental Services Tararua District Council and the Department of Conservation (Wellington Conservancy).

Reptile

21. Prior to construction works commencing a suitably qualified ecologist shall develop and carryout a further survey of reptiles and potential habitats subject to construction activities, to determine whether any reptiles are using these areas, particularity targeting Ornate Skink, Wellington Green Gecko and Pacific Gecko. The results of this survey shall be provided to the Manager Environmental Services Tararua District Council and the Department of Conservation (Wellington Conservancy).
22. If any reptiles are found, a translocation plan shall be developed in consultation with the Manager Environmental Services Tararua District Council and any necessary permits obtained from the Department of Conservation before the translocation occurs.

Advice note: If any reptiles are found in Horopito Scrub habitat, consent for the clearance of that habitat will be required from the Manawatu-Wanganui Regional Council.

Landscaping and Earthworks and Other Site Works

23. The external parts of the turbines shall be finished in a light blue-grey colour to assist in reducing the prominence of the turbines when viewed from a distance. In addition, to minimise blade glint, the paint used for the turbine blades shall have a gloss level not exceeding 30%.
24. The Consent Holder shall submit for approval to Manager Environmental Services Tararua District Council detailed earthwork plans for all cut and fill earthworks. These plans must:
 - identify the disposal sites for fill;
 - for all cuts less than 1.5 metres, show recontouring into the existing topography.
25. The Consent Holder must ensure that all cut and fill earthworks and disposal of fill is undertaken generally in accordance with the approved earthwork plans required by Condition 24.

Cultural and Archaeological

26. If at any time during the site excavations authorised by this Consent potential historic artefacts or cultural remains or koiwi items are discovered, then all work shall stop and the Consent Holder shall immediately advise the Manager Environmental Services Tararua District Council, the Historic Places Trust (to determine whether a consent from the Historic Places Trust is required), Tanenuiarangi Manawatu Inc, Rangitane o Tamaki a nui a rua and Nga Hapu o Himatangi. The Consent Holder shall also call its archaeological advisor to the site to verify whether or not the objects form archaeological evidence. Further excavation work at the site shall be suspended should tangata whenua wish to carry out their procedures and tikanga for removing taonga. In the interim the contractor, supervising engineer or Consent Holder shall secure the site until approval to proceed has been granted. Work at the site shall not recommence until approval to do so has been given by the Manager Environmental Services Tararua District Council.

Advice Note: The Consent Holder is reminded of its obligations under the Historic Places Act 1993.

27. If Historic Places Trust consent is required pursuant to condition 27, work may only recommence once the appropriate consent has been obtained and a copy provided to the Manager Environmental Services Tararua District Council.
28. Where tangata whenua have nominated that sites of significance exist in relation to this site, the Consent Holder shall invite tangata whenua to be present at times excavations are being undertaken in these nominated sites, in order that they may observe the excavations to identify if any historical artefacts or cultural remains or koiwi are uncovered.

Advice Note: Any discussion regarding reimbursement for representatives of tangata whenua being present on the site is a matter that is between the Applicant and tangata whenua.

29. Prior to the commencement of any works on the application site, the Applicant will provide to Council for certification an 'Accidental Discovery Protocol' to be adhered to during the construction phase of the wind farm. This will include, but not be limited to, procedures to respond to any discovery of archaeological or cultural artefacts as described in Condition 26 above.

Implementing Consent

30. Upon completion of the work required by conditions 6, 9, 14, 15, 17, and 22 above and prior to the operation of the wind farm, the Consent Holder shall give written notice to the Manager Environmental Services Tararua District Council, or their nominee, that the conditions that have been complied with. On receipt of that notice the Manager Environmental Services or their nominee will carry out an inspection of the site, if necessary, to ensure that the conditions have been complied with. Once the conditions have

been fully met a performance certificate will be issued and the operation of the wind farm may be commenced.

31. This consent shall lapse eight years after the date of commencement, unless the consent is either given effect to before that lapsing date, or unless the Tararua District Council fixes a longer period pursuant to section 125 of the Resource Management Act 1991.

Wind Farm Decommissioning

32. Within 12 months of the wind farm ceasing to operate all structures used for the operation of the wind farm (including all turbine structures, and accessory buildings but excluding the foundations) shall be removed completely from the site by the Consent Holder.

Consent Monitoring

33. A monitoring fee set in accordance with the Tararua District Council Annual Plan, shall be paid at the time the resource consent is granted to cover the cost of monitoring compliance with the above conditions.
 - (i) A fee will be payable by the Consent Holder if any non-compliance with the conditions of this consent are discovered as a result of monitoring. This fee is set in accordance with Section 36(1) of the Resource Management Act 1991 and Section 690A of the Local Government Act 1974.

Proposed Manawatu-Wanganui (Horizons) Regional Council Consent Conditions

General

1. The activities authorised by these Discharge Consents / Land Use Consents shall be restricted to the following:
 - a. Discharge Consent to discharge stormwater to land where it may enter water from various locations throughout the wind farm site including; turbine sites, roads and access tracks, and spoil disposal sites during construction;
 - b. Discharge Consent for the discharges of cleanfill to land associated with spoil disposal sites throughout the wind farm site; and
 - c. Land Use Consent for the construction, installation, use and maintenance of culverts in the beds of unnamed tributaries of the Makaretu Creek,

at the NZ Windfarms Ltd Wind Farm eastern extension site on properties legally described as: Section 6 Block II Mangahao SD (WN25B/416); Section 2 Block II Mangahao SD (WN42C/720); Section 4 Block II Mangahao SD (WN23C/569); and Part Section 1 Block XIX Mangahao SD (WN36B/480) - which are located approximately two kilometres to the north of the Pahiatua-Aokautere Road and North Range Road junction, and approximately 10 kilometres north east of Palmerston North - for a term of:

- a. 15 years for the discharge of stormwater to land and water,
- b. 35 years for the discharge of cleanfill to land,
- c. 15 years for the construction of culverts,

in general accordance with the resource consent application except as otherwise provided for by conditions of these consents.

2. These Consents are granted by Manawatu-Wanganui Regional Council subject to its warranted officers being permitted access to the Property at all reasonable times for the purpose of carrying out inspections, surveys, investigations, tests, measurements or taking samples which are required in order for the Manawatu-Wanganui Regional Council to determine whether these conditions are being met.
3. These Consents lapse within 10 years (i.e. by 1 January 2020) unless they are given effect to or an extension is granted under the provisions of Section 125 of the Resource Management Act 1991.

Silt and Sediment Management

4. The location, design, implementation and operation of all earthworks and associated discharges of sediment-laden stormwater to land and water shall be undertaken in general accordance with the following documents, unless any modifications are required to comply with any of the conditions of these consents:
 - a. The consent application lodged with Manawatu-Wanganui Regional Council on 29 May 2009;
 - b. Further information and amendments received by Manawatu-Wanganui Regional Council on 14 September 2009 and 21 September 2009;

- c. Greater Wellington Regional Council's Erosion and Sediment Control Guidelines for the Wellington Region dated September 2002 and any subsequent reviews (**GWECG**); and
- d. Any additional plans or information to be prepared and submitted and certified by Manawatu-Wanganui Regional Council in accordance with various conditions of these consents.

Advice Note 1: Any change from the location, design concepts and parameters implemented and / or operation may require a change in consent conditions pursuant to Section 127 of the Resource Management Act 1991.

Advice Note 2: Where there may be contradiction or inconsistencies between the application and further information provided by the Applicant, the most recent information applies. In addition, where there may be inconsistencies between information provided by the Applicant and conditions of the consent, the conditions apply.

Aquatic Monitoring

- 5. The Consent Holder shall prepare and submit to the Manawatu-Wanganui Regional Council Environmental Protection Manager:
 - a. One Preconstruction Aquatic Monitoring report;
 - b. Annual aquatic monitoring reports for the duration of the construction works covered by the consents.

- 6. The Preconstruction Monitoring Report shall:
 - a. Identify locations for monitoring that are representative of the receiving water and the discharge points which have been determined in consultation with the Manawatu-Wanganui Regional Council Environmental Protection Manager and which must include:
 - i. Three tributaries of Makaretu Creek that may receive stormwater run-off from the windfarm extension;
 - ii. Two locations within the main stem of Makaretu Creek: one upstream and one downstream of the subcatchments affected by the construction works;
 - b. Identify the monitoring locations that can be used as reference sites in comparable catchments unaffected by the activities covered by these consents;
 - c. Contain details of the monitoring procedures and responsibilities as well as the personnel involved in the monitoring;
 - d. Include a monitoring timetable that identifies when pre construction monitoring commenced, the frequency and duration of monitoring, how rainfall was recorded within the project site, how data was logged or recorded; and the maintenance procedures used to ensure monitoring was achieved; and
 - e. State the monitoring parameters and methods, that were used which must have included:

Parameter	Number of sampling occasions		Timing of sampling
	Tributaries	Main stem	
Deposited sediments (quorer method)	N/a	2	Within 3 hours of the end of significant rainfall events.

APPENDIX TWO

Turbidity (NTU)	3	3	Within 3 hours of the end of significant rainfall events. Sampling to coincide with sampling in the Makaretu Creek
Suspended solids (g/m ³)	3	3	Within 3 hours of the end of significant rainfall events.
Macroinvertebrates (Reporting indices shall include: MCI, QMCI, %EPT taxa)	1	2	At least 10 days after a significant rainfall event

Table 1: Preconstruction monitoring for the tributaries and main stem

Advice note: Significant rainfall events are events with rainfall greater than 15 millimetres (in a 24 hour period) as measured at the NZ Windfarms site office located on the existing Te Rere Hau wind farm site.

- f. Be submitted to the Manawatu-Wanganui Regional Council's Environmental Protection Manager at least 30 working days prior to bulk earthworks commencing.

7. The Annual Aquatic Monitoring Reports shall include:

- a. Details of the further monitoring which shall include monitoring of the tributaries and Makaretu Creek at the preconstruction locations stated in condition 6(a) above (or such location as may be approved by the Manawatu-Wanganui Environmental Protection Manager) and at the frequencies and for the parameters set out in Table 2 below.

Parameter	Frequency		Notes
	Main stem	Tributaries and reference sites	
Deposited sediments (quorer method)	Twice per April – September season	None	Within 3 hours of the end of significant rainfall events.
Macroinvertebrate communities	Twice per April – September season	Twice per year	Reporting indices shall include: MCI, QMCI, %EPT taxa
Turbidity (NTU) & suspended solids (g/m ³)	8 times per year	8 times per year	Within 3 hours of the end of significant rainfall events.

Table 2: Annual Aquatic Monitoring frequencies and parameters

- b. Results of the Annual Aquatic Monitoring undertaken including identification of levels of specific parameters that shall, if exceeded and if shown to be a consequence of construction activities, require additional monitoring or the implementation of contingency measures and identification of specific measures to be implemented when trigger levels are breached;
- c. A requirement that the monitoring shall be undertaken by a suitably qualified person;
- d. A requirement that all monitoring results obtained in accordance with the conditions of these consents be recorded in a log on site, be available for inspection during normal office hours and be submitted to the Manawatu-Wanganui Regional Council's Environmental Protection Manager at quarterly intervals;

- e. A requirement that records also be kept to show where monitoring is not possible due to dry conditions or where no sediment control structure inflow or outflow exists;
- f. A requirement that the Annual Aquatic Monitoring shall be implemented at the same time as the bulk earthworks commence on site and shall continue to be implemented until the site is approved to be stabilised by the Manawatu-Wanganui Regional Council's Environmental Protection Manager.

Advice note 1: Significant rainfall events are events with rainfall greater than 15 millimetres (in a 24 hour period) as measured at the NZ Windfarms site office located on the existing Te Rere Hau wind farm site.

Advice note 2: If due to dry weather conditions there is no discharge, then sampling shall be limited to times when rain events generate observed discharges.

8. The procedures required to implement Conditions 7a to f above shall be submitted to the Manawatu-Wanganui Regional Council's Environmental Protection Manager for approval at least 30 working days prior to bulk earthworks commencing on site. Bulk earthworks shall not commence until the approval of the Environmental Protection Manager for these procedures is obtained.
9. Should the results of the Annual Aquatic Monitoring reports show exceedance of the trigger levels determined in Condition 7b above and where this exceedance can be shown to be attributable to the bulk earthworks activities, the Consent Holder shall immediately advise the Environmental Protection Manager and shall undertake such remediation measures as may be required to comply with these conditions, such compliance to be achieved within 10 working days of notice being given of the breach.

Construction and Environmental Management Plan

10. The Consent Holder shall prepare and submit a **Construction and Environmental Management Plan (CEMP)** for all construction activities related to the project to the Manawatu-Wanganui Regional Council's Environmental Protection Manager for certification, at least 30 working days prior commencing bulk earthworks. Bulk earthworks shall not commence until the certification of the Environmental Compliance Manager is obtained. The CEMP shall include, but not be limited to:
 - a. Roles and responsibilities, including appointment of a representative of the Consent Holder to be the primary contact person in regard to matters relating to the consents;
 - b. Construction timetable for all works and the sequencing of the works;
 - c. A requirement to notify the Manawatu-Wanganui Regional Council of who the contractor(s) is for each phase of the works a minimum of 10 working days prior to commencement of bulk earthworks;
 - d. A requirement to:
 - i. Provide all contractors with a copy of the conditions of these consents; and
 - ii. Obtain an undertaking from contractors to comply with these conditions;
 - e. A requirement to hold a pre-construction site meeting between all relevant parties (New Zealand Windfarms authorised representative(s) and Environmental Advisors) and representatives of relevant consent authorities, prior to any works authorised by these consents commencing on the site to discuss implementation of erosion and sediment control measures;
 - f. Procedures for earthworks, selection of fill disposal areas, erosion and sediment control methodologies and detailed design;

- g. Procedures for identification of areas on the site of historical, cultural and/or ecological significance and management of activities in proximity to such areas;
- h. Procedures to ensure all contractors are educated regarding the indigenous vegetation and wildlife values of the wind farm site;
- i. Details of landscaping and revegetation proposed for exposed areas including rehabilitation methods and vegetation mixes;
- j. Procedures for managing hazardous substances and spill contingencies;
- k. A requirement to consult with tangata whenua prior to construction commencing;
- l. An Environmental Pest Plant Management Plan, including contingency measures to eradicate environmental pest plant species and post construction environmental pest plant monitoring;
- m. Fire Management Plan; and
- n. Details of a suitably qualified and experienced engineer for the purposes of certifying all earthwork activities including fill areas; and
- o. Procedures for keeping records of public complaints, for notifying the Manawatu-Wanganui Regional Council of the complaints and any action taken to rectify the cause to the complaint;

Contaminant Management

- p. Details of how earthmoving machinery will be thoroughly cleaned of unwanted vegetation (e.g. environmental pest plants), seeds or contaminants prior to coming on site to commence bulk earthworks;
- q. Details of how fixed re-fuelling areas will be bunded or contained in such a manner so as to prevent the discharge of contaminants;
- r. A requirement that no machinery is cleaned, stored or refuelled within 50 metres of any seepage, ephemeral or permanent watercourse;
- s. Requirements that all mobile fuel tankers carry spill kits and that spill kits are stored at bulk storage tank locations at all times;
- t. Details of a spill prevention and response procedure specifying those trained in spill response, how spills will be contained, remedied and any material used disposed of. Contents of proposed spill kits, including absorbent pads, booms, pillows and socks and appropriate pegs/rope to hold the absorbent material in place should also be included in this procedure;
- u. Details of an internal and external notification procedure in the event of a spill (e.g. The Manawatu-Wanganui Regional Council Environmental Protection Manager for external notification);
- v. Procedures for notifying the Manawatu-Wanganui Regional Council of incidents, including who is responsible and the timeframes;
- w. Procedures for recording details of incidents and responses to those incidents;

Erosion and Sediment Control

- x. Details of the erosion and sediment control structures required for the project to address Section 5 of the GWECG. including requirements that:
 - i. The sediment retention pond embankments must be thoroughly compacted with suitable material free of humus and other organic material. The embankments are to be laid in no greater than 150 mm layers to achieve the equivalent of at least 95 % of maximum dry density as determined by NZS 4402: 1986 Test 4.1.1;
 - ii. Sediment retention ponds shall generally be required where it serves a contributory catchment greater than 0.3 hectares except where an alternative

- method is approved by the Manawatu-Wanganui Regional Council's Environmental Protection Manager;
- iii. All sediment retention ponds serving fill sites which have a discharge to land within 50 metres of a perennial stream shall be fitted with a flocculation system where necessary;
 - iv. All ponds shall be fitted with an outlet structure that disperses the flow over the full width of the grass buffer area (not as a point source).
- y. Details of who is undertaking the erosion and sediment control work and their contact details;
 - z. A method statement covering construction method, monitoring, auditing and contingencies;
 - aa. A work programme;
 - bb. A plan or a series of plans showing:
 - i. Areas to be disturbed;
 - ii. Fill areas which must not be within 10 metres of any identified seep zones, ephemeral or permanent streams, and must not be on sites with slopes of greater than 20 degrees;
 - iii. Soil stock pile areas;
 - iv. Culverts;
 - v. Erosion and sediment control measures including but not limited to cut off drains, surface water control works, silt ponds, progressive rehabilitation of earthworks areas and any other sediment control measures;
 - vi. The areas where re-vegetation and is to be undertaken;
 - cc. Inspection and reporting schedule in particular in response to adverse weather conditions;

Advice Note: It is understood all water is to be sourced off site. If however, any water is required for activities on the wind farm site it shall comply with the Permitted Activity Rules (SW Rule 4 of the Land and Water Regional Plan and POP Rule 15-1 of the Proposed One Plan) and shall be used within the catchment in which it is abstracted, otherwise a resource consent application will be required.

Stream Works

- dd. A requirement that fish passage is maintained or restored during and on completion of the construction of any new and replacement crossing structures on the tributaries of the Makaretu Creek which cross tracks 10, 13 and 21.
- ee. A requirement that the Consent Holder shall not cross the tributaries of the Makaretu Creek outside the construction areas on tracks 10, 13 and 21 by driving machinery through the bed of the tributaries;
- ff. A requirement that the Consent Holder is to obtain ecologist input into the final design of culverts, roading and stormwater management in the immediate vicinity of the crossing points of the tributaries of the Makaretu Creek crossings on tracks 10, 13 and 21;
- gg. A requirement that the Consent Holder maintain and keep clear from obstructions and debris all culverts which are subject to these conditions, for the duration of the land use consent for the construction of culverts.

Advice note 1: The CEMP shall not include details of aquatic monitoring as this is subject to separate conditions stated above.

Advice note 2: The CEMP does not include details of flora and fauna monitoring as these activities are covered in the Tararua District Council consents.

11. The CEMP may be amended at any time. Any amendments shall be:
 - a. Only for the purposes of improving the efficiency or effectiveness of the measures outlined in the CEMP;
 - b. Consistent with the conditions of this resource consent; and
 - c. Prepared by an appropriately qualified person and submitted in writing to the Council prior to any amendment being implemented.
 - d. Certified by Manawatu-Wanganui Regional Council's Environmental Protection Manager.

Advice Note 1: Whilst Condition 10 states that the CEMP shall be provided at least 30 working days prior to construction commencing the Environmental Protection Manager shall work with the Consent Holder to enable approval to be obtained as soon as practicable.

Advice Note 2: The Council may obtain an independent peer review of the CEMP and all costs associated with obtaining such a review will be met by the Consent Holder pursuant to section 36 of the Resource Management Act 1991.

12. The Consent Holder shall ensure that no sediment retention ponds, chemical flocculation systems or perimeter controls are to be removed or decommissioned unless the removal or decommissioning has been approved by the Manawatu-Wanganui Regional Council's Environmental Protection Manager and the entire area is stabilised, unless such removal and decommissioning is in accordance with the requirements of the CEMP.
13. The works authorised by these consents shall remain the responsibility of the Consent Holder and be maintained so that:
 - a. Any erosion, scour or instability of the stream bed or banks that is attributable to the works carried out as part of these consents is remedied by the Consent Holder within 15 working days;
 - b. Fish passage is not impeded on completion of works;
 - c. The culverts shall not adversely affect the ability of the streams to convey flood flows or floating or flood borne debris and shall remain substantially free of debris; and
 - d. The structural integrity of the structures remains sound.

Annual Monitoring Report

14. The Consent Holder shall compile an Annual Monitoring Report for the year ending **30 June** each year that these Consents are current. As a minimum the Report shall contain:
 - a. Data to demonstrate whether or not compliance with the Conditions of this consent has been achieved;
 - b. Include all other data and information collected under the conditions of these consents;
 - c. Critically analyse the information collected in accordance with the conditions of these consents in terms of compliance and actual or potential adverse environmental effects;
 - d. Make recommendations on the need to undertake mitigation measures to reduce or eliminate any actual or potential adverse environmental effect.

- e. A certificate signed by an appropriately qualified and experienced engineer to certify that any permanent structures authorised under these consents have been constructed in accordance with the conditions of these consents.
15. The report shall be to a standard acceptable to the Manawatu-Wanganui Regional Council and shall be forwarded to the Manawatu-Wanganui Regional Council's Environmental Protection Manager by 30 August for each year that these are current.

Review

16. In accordance with section 128 of the Resource Management Act 1991, the Manawatu-Wanganui Regional Council may at one year after the commencement of these consents and at one yearly intervals during the construction period and thereafter at five yearly intervals after the commissioning and full operation of the windfarm, serve notice on the Consent Holder of its intention to review any of the conditions of these consents for any of the following purposes:
- a. To deal with any adverse effects on the environment that may arise from the exercise of these Consents which it is appropriate to deal with at a later stage;
 - b. To require the Consent Holder to adopt the best practicable option to mitigate any adverse effects; or
 - c. For the purpose of avoiding, remedying or mitigating any adverse effect on the environment that may arise from the exercise of these consents and that was not anticipated at the time of commencement of these consents.
17. Subject to condition 16, the Review of conditions shall allow for:
- a. The deletion or amendment to any conditions of these Consents; and
 - b. If necessary and appropriate the, adoptions of best practicable options to avoid, remedy or mitigate any adverse effect on the environment.

Advice Note: Costs associated with any review of the conditions of these consents shall be recovered from the Consent Holder in accordance with the provisions of Section 36 of the Resource Management Act 1991.

SECONDARY NOISE LIMITS – ALTERNATIVE VIEW

(Clr Warren Davidson)

NB - The Hearing Commissioners have been in agreement on all issues except for the Secondary Noise clause issue and I have accepted the option to contribute an alternate view. This is set out below.

1. THE ISSUE.

- 1.1 The Geographic formation of the Tararua Range at the TRHE site gives the potential for differential wind conditions – the wind can be strong enough to operate the turbines and at the same time be calm at neighbouring residences at lower altitudes.
- 1.2 Generally, wind occurs at both wind turbines and residences at the same time which mitigates turbine noise. This is not always the case. This is acknowledged by the Standard (NZS6808:1998) and provision may be made for Secondary Noise Limits.

2. PREVIOUS DECISION/PRECEDENT.

- 2.1 Mr Hunt in his supplementary evidence (para 22) in response to the question - Are you aware of any other wind farms having used a different standard? - referred to two instances (Gebbes Pass and West Wind) but did not consider the examples an appropriate basis for imposing a lower noise limit on TRHE.
- 2.2 NZ Windfarms Ltd referred in submissions in reply (para 62 p11) to an Environment Court decision (Motorimu Wind Farm v Palmerston North City Council (W067/08) (Motorimu) in relation to another matter which brought to my attention the following clause in that decision;

(o) Operational Noise (Quiet Night time) (Turbines).

When background sound conditions between the hours of 10 pm and 7 am the following day are at or below 25dBA L95 determined from the appropriate regression curve without the interference of the wind farm, and when mean wind speed at a representative location for the dwelling is less than 1.5 m/sec measured at a height nominally of 3 metres above ground-level, then noise from the wind farm shall not exceed 35 dBA L95 when measured at the notional boundary of dwellings existing and permitted at the date of this consent (excluding any dwelling on the Wind Farm site and excluding any dwelling for which the consent holder has reached agreement with the land owner).

3. BASIS FOR IMPOSING SECONDARY NOISE LIMIT.

- 3.1 NZS6808:1998 is the standard by which objective information can be recorded to give a basis for decision making. In my view judgement is required as to the significance of the effect and when it should reasonably apply.

4. EVIDENCE.

- 4.1 Appendix J – Assessment of Environmental Noise effects Malcolm Hunt Associates describes the method and results of Ambient Sound Level Monitoring and wind speed and direction data, and includes:

- Table 3 including the Start/finish dates.
 - Poff - Sunday 14 Sept 08 to Saturday 27 Sept 08
 - Day - Sunday 28 Sept to Wed 15 Oct 08
 - Wind Rose - Figures 5 and 6 are of 12 month (1992-1993) wind speed and direction data and August to October 2008 respectively.
 - Figure 22 Day residence Scatter Graph and regression curve of ambient sound level All wind directions.
- 4.2 Mr Lloyd and Mr Day gave evidence that showed the regression curve is not representative of the ambient L95 sound levels measured in the range 6m/sec to 10 m/sec which is the critical range, when differential wind conditions may occur. I accept that the regression curve is calculated as specified by the NZ Standard. I also accept that the regression curve has limited relevance in the critical range of 6 m/sec to 10 m/sec.
- 4.3 In my view the wind rose showed that the potential differential wind conditions are common - especially West North West direction of relevance to the Day property.

5. RECORDING SITE.

- 5.1 During the hearing submitters commented on the suitability of the Poff residence as a sound recording site. On inspection of the Poff/Stewart/Grassick properties it became clear that the sound environment varied significantly due to proximity to the road and trees around the properties. In summary submitters said using the data collected from the Poff residence would not be a fair representation of the environment and I agree with that position.

6. HOW AND WHEN SHOULD A SECONDARY NOISE LIMIT APPLY.

- 6.1 Mr Hunt addressed the question – Are there grounds for setting a standard other than NZS6808 such as the use of a secondary standard or something else?
- 6.2 Mr Hunt replied in his supplementary evidence (paragraph 10) that “NZS6808:1998 refers to the possibility of setting wind farm noise limits at less than the “normal” 6808 limit of “40 dBA or the average background sound level plus 5 dB, which ever is the higher. Unfortunately NZS6808:1998 provides no criteria as to how or when a lowered limit should reasonably apply”.
- 6.3 Mr Halstead (Accusafe peer review of AEE p10) noted “Secondary Noise Limits have been imposed where monitoring has indicated that there is a disparity between the wind speed at the wind farm and wind conditions at the residences”.
- 6.4 Mr Halstead noted that monitoring in the NIA does not indicate that such disparity exists.
- 6.5 Mr Lloyd observed in questioning that both sound and weather monitoring at the receiving site would be required to identify such a disparity.

7. CONCLUSION.

- 7.1 In my view the relevant evidence of sound recording is limited (14 -18 days).
- 7.2 Testing did not include weather testing to identify whether the crucial differential conditions occur, and if they do, if it is for a significant amount of time.
- 7.3 Sound recordings to date do not adequately demonstrate the range of background sound levels that exist in the area in a wide range of weather and seasonal conditions.
- 7.4 For these reasons I felt a Secondary Noise Limit condition is appropriate [clause o) Motorimu Environment Court] and should be included in the Conditions.
- 7.5 I also think further comprehensive wind and weather testing is required to demonstrate if significant quiet background sound levels do occur and, if so, the Secondary Noise Limit should apply.