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SUBMISSION ON MIGHTY RIVER POWER LTD APPLICATIONS FOR RESOURCE CONSENT

Section 145 of the Resource Management Act 1991

To: Freepost Call In
Ministry for the Environment
PO Box 10362
The Terrace
Wellington 6143

OR Email: turiteacallin@mfe.govt.nz
Fax: 04 439 7705

RECEIVED
23 FEB 2009

[Note: If you are emailing or faxing your submission, please mark in the subject line: 'Turitea Call In']

This submission relates to the applications for resource consent lodged by Mighty River Power Ltd for the Turitea Wind Farm proposal as identified on the next page.

CLOSING DATE AND TIME FOR SUBMISSIONS: 5.00 PM MONDAY 23 FEBRUARY 2009

Title: Mr Mrs Miss Ms (Please circle the appropriate title(s) or print clearly below)

My/Our Full Name(s): Douglas Roger Scott PRINGLE

Postal Address: 29 Kenner Street ; PALMERSTON NORTH

Work Ph: 06 350 5699 or 2038 Home Ph: 06 358 3319 Cell: 027 204 7319

Work Fax: Home Fax: Email: drspringle@wspire.net.nz

Please tick the relevant boxes on the next page to identify whether you are making a submission on all applications for resource consent or just some of them (please identify).

Please also indicate on the back of this form (✓) whether you support, oppose, or are neutral in relation to the applications. If you are making a submission only on parts of an application for resource consent, please note this when specifying the reasons for your submission.

The reasons for my/our submission are:

If you are attaching further information tick for yes

As per attached email

Please use more pages if you need to.

I/we seek the following decision from the Board of Inquiry (provide precise details including the nature of any conditions sought):

As per attached email

Please use more pages if you need to.

Use a clear tick in the appropriate box below (✓)

I/we wish to be heard in respect of my/our submission (to speak at the public hearing).

I/we DO NOT wish to be heard and hereby make my/our submission in writing only.

Signature(s): D R Pringle

Date: 23 Feb 2009

(Signature of submitter, or person authorised to sign on their behalf is required. Note signature is not required for electronic (email) submissions. If this is a joint submission by two or more individuals, each individual's signature is required.)



Ministry for the Environment
Manatū Mo Te Taiao

Use the tick boxes below to indicate the called-in applications for resource consent that your submission concerns.
Use a clear tick in the appropriate box or boxes (✓).

I/we make my/our submission concerning all applications for resource consent below

OR

My/our submission only concerns the applications for resource consent that I/we have ticked below:

Support Oppose Neutral

	Support	Oppose	Neutral
Manawatu-Wanganui (Horizons) Regional Council – Land-use Consents			
104553: for vegetation clearance and land disturbance in rare or threatened habitats, near streams and on highly erodible land throughout the general wind farm site.			
104554: for the construction of a double culvert in an un-named tributary of the Kahuterawa Stream as shown on the included map.			
Manawatu-Wanganui (Horizons) Regional Council – Discharge Permits			
104555: for the discharge of dust to air from the concrete batching plants to be located as generally shown on the included map.			
104556: for the discharge of dust to air from the mobile crushing plant throughout the general wind farm site.			
104557: for the discharge of wastewater from two operations and maintenance facilities to land to be located as generally shown on the included map.			
104558: for the discharge of stormwater from substations to land to be located as generally shown on the included map.			
104559: for the discharge of cleanfill to land in the form of spoil disposal sites throughout the general wind farm site.			
104560: for the discharge of stormwater from roads, turbine platforms and other areas to land.			
Palmerston North City Council – Land-use Consents			
RC0068: <ul style="list-style-type: none"> to establish and operate a wind farm in the areas within the Palmerston North city jurisdiction as generally shown on the included map to undertake earthworks associated with tracking and roading, turbine construction and associated buildings in the areas within the Palmerston North city jurisdiction as generally shown on the included map for the western side of Pahiatua Aokautere Road not meeting access requirements at the location shown on the included map for the storage of diesel (10,000 L) in bunded areas outside the Turitea water supply catchment, generally located at the two substation laydown areas shown on the included map, that exceeds the 0.2 effects ratio maximum in the rural zone for the construction of a 220 kV electricity transmission line and substations as shown on the included map. 		✓	
Tararua District Council – Land-use Consents			
1448: <ul style="list-style-type: none"> for a wind farm (which is not listed as a permitted or controlled activity) in the areas within the Tararua District as generally shown on the included map for land disturbance of more than 200 m³ of soil and cleanfill material associated with tracking and roading, turbine construction, spoil disposal and other associated works in the areas within the Tararua District as generally shown on the included map for upgrades to South Range Road and the construction of new site access at the location shown on the included map for turbine and wind monitoring mast structures not meeting height requirements within the Tararua District for the modification of a Significant Natural Feature in Schedule 3.3 (ie, Tararua Ranges Ridgeline) for not meeting noise requirements for clearance of indigenous vegetation in the areas within the Tararua District as generally shown on the included map. 		✓	✓

NOTE: A copy of this submission form MUST also be sent to Mighty River Power Ltd at:

Freepost – MRP
Mighty River Power Ltd
PO Box 445
Hamilton 3240
Attention: Stephanie Froggatt

Or email turitea@mightyriver.co.nz or fax (07) 857 0192

I/we have sent a copy of my/our submission to Mighty River Power Ltd as per Section 96(4) of the RMA.



Ministry for the
Environment
Manatū Mo Te Taiao

New Zealand Government

Kim Morgan

From: Pringle, Doug [D.R.Pringle@massey.ac.nz]
Sent: Monday, 23 February 2009 4:39 p.m.
To: TuriteaCallin
Cc: 'turitea@mightyriver.co.nz'; 'Doug Pringle (drspringle@inspire.net.nz)'
Subject: Turitea Call in (found some typos use this one please)
Attachments: Document.pdf

Signed submission form attached as pdf file

SUBMISSION By Douglas Roger Scott PRINGLE

I am a landowner in Ngarere Park sub-division and hope one day to construct a residential dwelling on that land. There are existing residences close by already. These residences and my building site are all exposed ridge top positions at 242m altitude without any protection of terrain. The property is within 1 km of several of the proposed turbine zones to the East and South East.

I have degrees in Agricultural Science, and Science and work in health and safety in a University. Part of my work includes teaching about noise and its measurement.

I am opposed to construction of wind turbine generators (WTG's) in close proximity to existing and potential residences for the following reasons:

1. I and my neighbours have predicted noise levels above 40 dBA L_{eq} which contravenes New Zealand Standard 6808 which requires 40 dBA L_{95} . The 40 dBA L_{95} is substantially higher than measured background noise of 25 dBA at night.
2. The predicted measurement sites used in AEE are not at residences on exposed ridges, but taken at lower altitudes which afford terrain protection.
3. Sound measurement levels are logarithmic and the proposed sound pressure level proposed for Ngarere park residences is in excess of 5 times the existing background night levels.
4. The residences' health will be adversely affected as evidenced in WHO reports on noise (discussion appended).
5. The noise standard 6808 used is now over 10 years old and fails to take account of emerging research in WTG noise transmission.
 - o For example there are no calculations for showing effects of atmospheric stability on noise transmission from turbines in low wind conditions. As such, the AEE understates the likely perceived noise by residents.
 - o The standard has no health input in its development, meaning health matters are not included in the standard.
6. The AEE uses references older than 10 years in its support. As such it fails to present to the Board of Inquiry and Mighty River Power up to date information on WTG noise transmission and observed results from residents who live close to WTG's
7. There is no calculation or assessment of Doppler effect under steady low velocity wind conditions.

Further information on the health effect of noise is attached

would seek the following decision from the board of inquiry

in view of

- adverse impact on health of residents near WTG's
- the aged methodologies used in AEE,
- uncertainty in emerging science of WTG noise transmission
- observed disparity by residents near existing wind farms and predicted noise levels

risk adverse position is taken in granting any exemption to noise. Accordingly it requested a wider separation of 3km occurs between any proposed WTG and residential properties.

noise:

noise impact on educational facilities is considered in terms of health effects and transmission.

1/02/2009

The health effects of increased environmental noise are well documented by the World Health Organisation (WHO). The major effects are as follows:

- Sleep disturbance
- Physiological functions
- Mental illness
- Performance
- Social and behavioural effects (annoyance)

To consciously inflict these effects on residents as proposed in the Turitea Wind farm would be in direct contravention of New Zealand Health and Safety legislation. The Crown is not exempted from this Act.

The transmission of noise from the proposed renewable electricity generation in the Turitea Reserve is more difficult to assess. The study of wind turbine noise is an emerging science as evidenced by the first world conference being held in 2005 in Berlin, and the second held in France in 2007. Views on the transmission of noise effects on neighbours varies considerably as indicated below;

- The Dutch have elected to move turbines offshore (Sterling) - Note noise is one of several reasons for moving turbines off shore.
- The Hawkes Bay Today quotes UK scientists writing "that people living within an 8.2 km of a wind farm cluster can be affected"(Manley)
- A US medical practitioner refers to lesser distances such as 2.5 km (Pierpont)
- Acoustical engineers and wind farm power generators recommendations range from 2km to 400 m.
- The transmission of sound will be influenced by the choice of turbine.
- The intervening terrain and wind direction will affect noise transmission paths.

References:

British Wind Energy Association 1994. *Best Practice Guidelines for Wind Energy Development*.

Manley D. 2006 Quoted by Hawkes Bay Today – awaiting confirmation of context. Web <http://www.hbtoday.co.nz/storyprint.cfm?storyid=3673106>

Pierpont, N. 2006. *Health effects of wind turbine noise*. Web <http://www.aweo.org/Pierpont-noise-060204.pdf>

Sterling, T. 2006. *Dutch moving wind turbines offshore*. Associated Press, 16 September 2006.

WHO 1999. *Guidelines for Community Noise*. Edited by Berland, B Lindvall, T and Schwela D.H. Geneva. p7 of Executive Summary. Web <http://www.who.int/docstore/peh/noise/guidelines2.html>

Van den Berg G.P. 2006. *The sound of high winds: the effect of atmospheric stability on wind turbine and microphone noise*. Dissertation University of Groningen.

Doug Pringle
29 Henare Street
PALMERSTON NORTH 4412

Kim Morgan

From: Pringle, Doug [D.R.Pringle@massey.ac.nz]
Sent: Tuesday, 24 February 2009 11:08 a.m.
To: TuriteaCallin
Cc: 'turitea@mightyriver.co.nz'
Subject: Turitea call in - FW: DZ6808 Acoustics - Wind farm noise is now available for public comment

Late supplement to submission by Douglas Roger Scott PRINGLE

In my submission (point 5)I made reference to dated methods used in the AEE. The following information from Standard this morning illustrates the point

Regards Doug Pringle

From: Standards New Zealand [mailto:craig.watkin@standards.co.nz]
Sent: Tuesday, 24 February 2009 9:38 a.m.
To: Lawn, Julie
Subject: DZ6808 Acoustics - Wind farm noise is now available for public comment

You are subscribed as J.A.Lawn@massey.ac.nz | [Unsubscribe](#) | [View online version](#)

Acoustics - Wind farm noise



Public Comment

This draft of the revision proposed for NZS 6808 has been released for public comment. We would welcome public comment on this draft by **30 April 2009**.

Draft Standard for Public Comment: DZ 6808 (to be NZS 6808 Acoustics - Wind farm noise)

After two scoping meetings and a workshop held during the past few years, Standards New Zealand formed a committee to revise the standard. The committee comprised representatives of the organisations listed on the first page of the draft. This committee conducted a review of the 1998 edition of the Standard and produced this draft for Standards New Zealand. Once comments on this draft have been received from interested persons and organisations, the committee will consider the comments and complete a final draft of the revised standard for Standards Council approval and publication.

The 1998 version of this standard was written prior to significant wind farm development in New Zealand. The basic methodology proved robust, but experience and research over the following decade brought to light numerous refinements and enhancements which are now addressed in this revised version of the Standard. The terminology and format of the Standard have been updated in line with the 2008 editions of NZS 6801 and NZS 6802. This includes adopting L90 in place of L95 as a measure of sound levels. The original recommended noise limits are retained, but are added to by provision for a more stringent secondary noise limit where justified by particular local circumstances. The simple

