

had in fact consulted as per the Panel's requirement and that that consultation had been properly concluded.

- [6] If, as confirmed by Mr Auckram, the consultation has not been completed, and NZWF have published proposed conditions, albeit on time but, in the absence of the required consultation with the Council being completed, then the submitters will not be informed as to the Council's view of the proposals until after their opportunity for submissions have closed, if at all.
- [7] If that is the case then there is a risk that the submitters will not be properly heard as to the outcome of the consultation process as per the Panel's minute.
- [8] Could the Panel please advise if either:
- a. Paragraph [10] of minute 4 has been completed as per the Panel's directions; or,
 - b. The submitters will be provided with the opportunity to be heard on the Council's view of the proposed conditions if an extension of time is allowed and the requisite consultation is similarly allowed be completed.

Date: 16 October 2017



Lawrence J Hill
Submitter

In the Matter of Resource Consent Conditions

UNDER the Resource Management Act 1991

BETWEEN New Zealand Windfarms Limited
Applicant

AND Palmerston North City Council
Consenting Authority

**Submission of Lawrence John Hill
as to Conditions Proposed by NZ Windfarms**

Dated 13 October 2017

1. I previously made a submission to the Palmerston North City Council's Hearing Panel (**the Panel**) on 2 June 2017 as to changes to the Consent Order (dated 30 May 2005 in Env W 0039/05 and 0041/05).
2. I then made a Supplementary Submission dated 8 September 2017 and spoke to that submission on 13 September 2017 to the Panel.

Proposed Conditions by NZ Windfarms.

3. I have reviewed the conditions proposed by New Zealand Windfarms Limited (NZWF) sent to me on 10 October 2017 at 4.12pm (**proposed conditions**).
4. I am gravely concerned that none of my submissions nor my oral evidence appears to have been considered by NZWF. Had NZWF properly considered my submissions then, at the very least, two typographical errors I had identified would have been corrected in their proposed conditions.
5. So, as it stands, those errors remain unchanged, and the submissions I have made have gone unconsidered. Moreover, the problems identified in my submissions been completely ignored and those problems have been not only been repeated, but have been exacerbated.
6. The question must now be put as to whether NZWF is acting in good faith with the community?
7. I stand by the conditions I submitted dated 8 September 2017 and again recommend those to the Panel.

Main Areas of Concern

8. I do not intend to fully comment on all of NZWF's proposed conditions as I have addressed these either in my submissions or my oral evidence. However, the Panel should be directed to the following errors and concerns:

1. I recommended that Condition 1 be amended to include:

Each turbine will be of a type known as a Windflow 500-33 as described in the Lloyds Register under Design Appraisal Document No. O 16845 and Type Approval Certificate RE 1005 dated 17 September 2010.

It is now an almost certainty that, should NZWF chose to expand the windfarm, the Windflow 500-33 turbine type will not be used. This is because of the curtailment of the necessary manufacturing facilities for Windflow Technology Limited. This curtailment was reported to the New Zealand Stock Exchange dated 26 September 2017.¹

For certainty, any turbine erected as part of the expansion must be known to the Council and community. At the hearing, comment was made by Panel member Mr Kym Burgemeister, to the effect that, should a less noisy turbine type be

¹ See - <https://www.nzx.com/companies/WTL/announcements/307808>

erected then that may comply with the conditions of the consent. That is only partly correct because noise is only one aspect of the consent. There are other considerations, and other environment effects, other than noise. The community must be properly advised of, and considered for, all effects. There must be a process that allows all views of the community to be heard.

- 4.1 Where there is mention of 35 dB(A) there is no descriptor as to how that should be assessed. The absence of whether the assessment is L10, Leq, or L90 is problematic. To properly protect the community there must also be a maximum noise threshold especially for night time operations. In my submission I recommended:

4.1 35 dB(A) L90 and 60 dB(A) Lmax

- 4.2 Again there is no descriptor as to how background noise level should be considered. In my submission I recommended:

4.2 The background noise level plus 5 dB(A) L90

- 5.1 As above. I recommended:

5.1 40dB(A) L10 and 60dB(A) Lmax; OR

- 5.2 As above. I recommended:

5.2 The background noise level plus 5 dB(A) L10.

- 8.2 I have identified the problems where the proposed conditions baldly refer to the IoA amplitude modulation metric – see my Supplementary Submission at para 22. In my oral evidence I stated the reason for both the IoA methods 2 & 3 not being unsuitable is because the Nyquist frequency used in methods 2 & 3 (1.43 Hz) is incompatible with the Windflow 500-33 turbine as the blade pass frequency is greater at 1.48 Hz. Significant under reporting errors will occur if either of IoA methods 2 or 3 are used to assess amplitude modulation generated by a Windflow 500-33 turbine or similar.

Also, I referred to the problems associated with averaging the results using IoA method 1 because the averaging of the blocks will give misleading results. The IoA amplitude modulation metrics are not designed to be averaged in the manner proposed. The IoA method 1 produces 48 blocks each of which produces results from 100 fully analysed data points. Averaging those results (or blocks) will produce a statistically incorrect and a potentially harmful outcome.

- 16B The use of the words “occupiers and owners of properties” is, in my view, wrong as it constrains the meaning of community too narrowly and as such is inconsistent with s 5 of the Resource Management Act 1991.

9. With regards to proposed condition 5A to 5D, it is my view that creating conditions for two turbines as a subset of the total enterprise is unreasonable. The consent is for the operations by NZWF as whole and the isolation of two turbines in this manner is unnecessary and unreasonable.
10. If the two turbines concerned are known to, or anticipated to, breach the conditions then NZWF should be required to abate the breach or potential breach.

Plan Change 15

11. In my first submission I submitted that:
 48. It is also against the Independent Commissioners decision [dated 22 August 2016 at para 355 & 378] who favoured setbacks of 1.5 kilometres rather than the 40 dB isoclines argued for by some of the submitters. The Commissioners also preserved the 'high amenity' provision that would apply under NSZ6808:2010 thus preserving the character of the Rural Residential Area identified in the Council's District Plan as shown in the Rural Residential Overlay (and contained within the planning maps therein).
12. It is my view that the re-phrasing of the proposed conditions seeks to recast NZWF arguments before Independent Commissioners and thus furtively have those published decisions revisited.
13. I express concerns that the Panel should not be seen as a conduit to revisit the Independent Commissioners decisions.

Joint Statement of Acoustic Experts

14. In the Joint Statement of Acoustic Experts for NZWL and the Council dated 6 October 2017, at paragraph 9(k) they say that:

The *total* number of hours of likely curtailment is slightly lower for Option 1 than Option 2 (around 350 hours per year vs. 420, based on 2011 wind patterns). [Emphasis added]
15. In the 2017 annual report for NZWF, at page 6, in the CEO's review, he says that the average revenue from production is \$83.04 per Megawatt hour (**MWh**) and the costs for operations are, at page 5, \$29.22/MWh. So the nett financial benefit from the operation of the turbines is \$53.82/MWh.
16. From my Supplementary Submission at paras 6 -7 I presented the power curve for the Windflow 500-33 turbine. At 8 metres per second (**m/s**) wind speed the output from the turbine is 100 kilowatt/hour or 0.1Megawatts/hour (**MW/h**).
17. Therefore, if turbine T103 and T104's operations are curtailed such that the cut in wind speed is set at 8 m/s then conservatively, or the worst case scenario is that, the nett revenue loss of NZWF from these two turbines would be:

$$\$53.82/\text{MWh} \times 0.1\text{MW/h} \times (\text{say}) 400 \text{ hours} = \$2,152.80 \text{ annually.}$$

18. This should be compared to the total profit (EBIT) for NZWF of \$2,325,000 and the curtailment represents 0.0925% of those earnings. This is likely to be less than the cost of one hour of the Panel's time.
19. The total operational hours lost up to 10 m/s has not been disclosed. Therefore, the nett financial effects of increased curtailment, that is increasing the cut in speed to 10 m/s is unknown, but likely to be well less \$10,000 annually (more likely to be around \$7,000). In terms of community health, immediate and long term, this is a trivial amount.

Should the Panel seek anything further from me, I would be pleased to assist them.



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Lawrence J Hill

this 13th day of October 2017