

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of a Board of Inquiry appointed under s146
of the Resource Management Act 1991 to
consider an application by Mighty River
Power Limited for resource consents to
construct, operate, and maintain a wind
farm at Turitea

REBUTTAL EVIDENCE OF EMANUEL KALAFATELIS

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1. INTRODUCTION

- 1.1 My name is Emanuel Kalafatelis. My qualifications and relevant experience are set out in my evidence in chief. I confirm that I have prepared this rebuttal evidence in accordance with the Environment Court Code of Conduct for Expert Witnesses (July 2006).
- 1.2 I am providing this rebuttal evidence to comment on and respond to some of the primary evidence presented in respect of these applications that relate to public perception matters. In particular, I will comment on the evidence of James Talbot Baines presented on behalf of Palmerston North City Council (PNCC).
- 1.3 Specifically, I shall address the following matters:
 - (a) Issues raised by Mr Baines with respect to the Public Perceptions Survey completed by Research New Zealand between 27 March and 7 April 2009, with a randomly selected sample of residents living within 15 kilometres of the site of the proposed wind farm in the Turitea Valley.
 - (b) Methodological aspects of the other surveys referred to by Mr Baines in his statement of evidence: the PCNN's Citizen's Panel Survey, the Ex-post Surveys relating to the Ashhurst area, and Chamber of Commerce Survey.
 - (c) Mr Baines's interpretation of the results of these other surveys.
- 1.4 To be able to comment on these matters, I have requested and received additional methodological information about the PNCC's Citizen's Panel Survey and the Ex-post Surveys. I have also received and reviewed the transcripts of the focus groups that were held with residents living in areas close to the Turitea Valley, including a group of residents actually living in the Valley. The following points are noteworthy in that they appear to have been largely ignored by Mr Baines in his statement of evidence:
 - (a) The transcripts of the focus group with Turitea Valley residents do not only contain negative comments about wind farms, as Mr Baines largely suggests in his statement of evidence. There are also many positive comments (also often referred to as "tensions" between residents). Importantly, this finding reflects the results of the Research New Zealand Public Perceptions Survey, in which as many residents

living in the Turitea Valley were in support of the Turitea Wind Farm Proposal as were opposed.

- (b) In my professional opinion, the Ex-post Surveys are crudely designed surveys in that that there is little preamble to assist respondents prepare for the questioning. Furthermore, the questioning commences by referring to “the visual effects that you experience from existing wind farms” and “the noise effects that you experience from existing wind farms”. In my professional opinion, reference to these effects would have cast a negative tone on the interview, immediately suggesting to respondents that there are such negative effects. In other words, they create a leading line of questioning.

2. PUBLIC PERCEPTIONS SURVEY

- 2.1 In his paragraph 8.3, Mr Baines makes the point that the results of the Research New Zealand Public Perception Survey for MRP “indicate a very different response from those surveyed to the response gained via the Citizens’ Panel Survey”.
- 2.2 He does this by comparing the response to a question relating to the “expressed preference on further wind farm development on the ranges east of the City” asked in the Citizen’s Panel Survey, with a question relating to the degree of “support of opposition to the Turitea Valley Wind Farm Proposal” asked in the Research New Zealand Public Perception Survey. In my opinion, these two questions are so significantly different that such a comparison can not be justified. Notwithstanding this, it is notable that, in the Citizens’ Panel Survey, 41 percent of respondents state they “would be happy to see more wind farm development” compared to 16 percent who state there “is already too much wind farm development”. Mr Baines also appears concerned that Research New Zealand approached the issue of asking a question about further wind farm development in a “binary fashion” (8.6). I believe asking residents whether they supported or opposed the proposal reflects the manner in which people generally consider issues of this nature. That is, 5-point scales are the inventions of researchers and people don’t walk around with these types of scales firmly implanted in their heads. To conclude that people who responded “don’t know” or “neither support or oppose” the Turitea Proposal might have responded by saying “there is about the right amount of wind farm

development on these ranges” is also a conclusion that has no basis of fact. These people could equally have been supportive.

- (a) In paragraphs 8.8 to 8.17, Mr Baines makes the point that 29 percent of residents interviewed for the Research New Zealand Public Perception Survey lived on the eastern side of the Tararua Ranges and that their results are significantly different from those residents living on the western side. He tries to illustrate this by comparing the results across a number of questions.
- (b) In doing this, Mr Baines draws conclusions on very small numbers of residents living on the eastern side of the Tararua Ranges compared to those living on the western side; conclusions which cannot be supported from a statistical point of view. The following table (Table 1) illustrates this and provides a basis on which to dispute the general conclusions he makes in paragraph 8.15 that those living on the eastern side of the Tararua Ranges are not interested in wind farm issues. As can be seen, very few of the differences he notes are statistically significant at the 95 percent confidence level (refer to the fourth column of the table).

Table 1: Statistical significance of differences between residents living on the Western vis-à-vis the Eastern side of the Tararua Ranges

Statement	Residents living on <u>Western</u> Side of Tararuas	Residents living on <u>Eastern</u> Side of Tararuas	Is the Difference Statistically Significant?
Those identifying (unprompted) wind farms/power generation as a local issue	17 percent	2 percent	No
Those aware of the Turitea proposal	34 percent	16 percent	Yes
Those not at all informed about the Turitea proposal	16 percent	31 percent	No
Those well informed about the Turitea proposal	20 percent	12 percent	No
Those identifying using the power of the wind as their preferred method of power generation	74 percent	74 percent	No
Those supporting the Turitea proposal	61 percent	70 percent	Yes, but only just

- (c) The more important issue is why he believes it is necessary to compare the results of those living on the eastern side of the Tararua Ranges with those of residents living on the western side. Even if attention is focused solely on those living on the western side (those residents who he identifies by his own admission as being most likely to be affected) the results are without doubt supportive of the Turitea Proposal:
- (i) 71 percent of western residents interviewed expressed a preference for wind powered energy generation.
 - (ii) 87 percent of western residents interviewed supported wind farms in New Zealand.

- (iii) 78 percent of western residents interviewed supported wind farms in the Manawatu.
 - (iv) (As shown above in the table) 60 percent of western residents interviewed supported the Turitea Proposal.
- (d) In paragraph 8.15 Mr Baines emphasises the use of “misleading question wording” in the penultimate survey question in the Research New Zealand Public Perception Survey, based on referring to “the Turitea Reserve lying approximately 10 kilometres southeast of Palmerston North city centre and approximately 11 kilometres west of Pahiatua (and) ... the proposed wind farm located along an approximately 14 kilometre stretch of the Tararua ranges within and around the Turitea Reserve”. In our opinion, his point about the land either side of the proposed wind farm site being differently populated is a moot point. Most residents responding to the survey would not have taken this technicality into account when answering the question.
- (e) In paragraphs 8.18 and 8.19 Mr Baines draws a comparison between the responses of residents living in the South-East Tararua area and those living in the Turitea Valley. He makes this comparison to show that the highest level of support for the Turitea Proposal is in the area least likely to be affected, while the lowest level of support is in the area most likely to be affected. He makes selective use of Research New Zealand’s Public Perception Survey information to illustrate his point. There is a danger in this for the following reasons:
 - (i) Residents living in the South-East Tararua area represent just 3.9 percent of the total population within the ‘survey catchment area’. In comparison, those residents living in Palmerston North City account for 85 percent. The responses of those living in the South-East Tararua area have been appropriately weighted in the final survey results to account for the fact that they represent a small proportion of the total population.
 - (ii) Mr Baines is correct when he says that residents living in the Turitea Valley were most likely to recall wind farms as an issue and be aware of the Turitea Proposal, and be the least supportive of this proposal. However, despite their relatively lower level of support, the fact that 48 percent supported the proposal should not go unnoticed. That is, there is

an even split between those who supported and those who opposed the proposal and it is this that is, in my opinion, one of the most remarkable results of the whole survey. In my opinion, if Mr Baines's assertion about tipping points, etc. is correct, then we would have expected to see this most clearly amongst residents in the Turitea Valley than anywhere else.

3. **METHODOLOGICAL ASPECTS OF OTHER SURVEYS QUOTED BY MR BAINES AND HIS INTERPRETATION OF THE RESULTS OF THESE SURVEYS**

(a) The Citizens' Panel Survey

- (i) This survey is run on a continuous, monthly basis by the PNCC to obtain representative feedback from the public on subject topics/issues of local interest and concern. Sampling for the panel is undertaken randomly from the local telephone directory, with contact and respondent selection initially made by telephone.
- (ii) Once respondents have agreed to participate, surveying is completed online. At the time the Citizens Panel Survey in question was undertaken (March-April 2009), the panel had 540 current members. Forty percent of these responded to the survey.
- (iii) My critique of the points made by Mr Baines in his statement about the results of this survey can be divided into those that are methodological and those that relate to his interpretation of the survey findings. The methodological points are as follows:
 - Mr Baines states the panel had 540 members at the time of the survey. He does not state how successful the recruiters were when they initially recruited these people, although he does suggest that younger people were under recruited. Therefore, from the beginning, the recruitment process introduces a degree of bias, although he does say this has been corrected by weighting.
 - The fact that panel members respond online and, therefore, need to have Internet connectivity and/or be comfortable with this interviewing method, also introduces potential bias.

- Panels are notorious for creating ‘trained’ respondents (i.e. respondents who respond in the way the surveyor wishes them to respond). This is usually managed by retiring panel members and replacing them with new ones. In his statement, Mr Baines does not elude as to whether panel members are retired after a certain number of surveys.
 - Therefore, the most serious issue with this survey is the representativeness of the results. As there are clearly methodological issues directly affecting this, it is questionable as to whether one can have confidence in the accuracy of the results.
- (iv) Notwithstanding the methodological points made above, panel members provided generally positive responses to the key survey questions relating to wind farms, including:
- 82 percent agreement with the statement, “the Manawatu region should make a contribution to New Zealand’s sustainable energy future”.
 - 74 percent agreement with the statement, “I like having the wind farms here as they add interest to the City’s landscape”.
 - 77 percent disagreement with the statement, “I don’t like having the wind farms here; they have become an annoying feature of the City’s landscape”.
- (v) Despite these results, Mr Baines claims that “somewhat more Palmerston North respondents are not in favour of further wind farm development”, given that 41 percent are in favour and 49 percent are not in favour. While the difference is outside the maximum margin of error for the survey and is therefore statistically significant (error margins assume the sample for the survey in question is random in the first place and, as described above, there is a possibility that this is not the case), I do not believe the difference can be described as somewhat more because this in my mind implies a large difference.

- (vi) Furthermore, if we look at the nature of the response across the 5-point scale, two thirds of those not in favour gave a somewhat negative response rather than a strongly negative one (33 percent cf. 16 percent). That is, their negativity is mild rather than strong.
 - (vii) Mr Baines makes an interesting observation in his statement of evidence based on his cross-tabulating those who believe “there’s about the right amount of wind farm development” with the statement that “the wind farms ... add interest to the City’s landscape” (2.5.15). He believes the high proportion agreeing that the wind farms add interest can be interpreted as them saying “enough is enough”.
 - (viii) I disagree with this interpretation. The only interpretation that can be made is that even these people believe the wind farms have added interest. This does not reflect anything about cumulative effects or that public attitudes are at a tipping point. In fact, if there is such a tipping point, there is no evidence to suggest that public opinion is moving in a negative direction. Public opinion could in fact be tipping in a positive direction.
- (b) The Ex-post survey
- (i) In a section of Mr Baines’s statement of evidence, the results for two surveys completed with people living in the ‘eastern fringe’ of Ashhurst (April 2005 and April 2009) are compared in order to determine whether there is any change in the opinion of wind farms as a result of experiencing them. This is especially in relation to their visual impact and their impact with regard to noise. I believe Mr Baines draws a number of incorrect conclusions.
 - (ii) In paragraph 2.6.3, Mr Baines concludes that the majority of Ashhurst residents are “still happy to see the wind farms near them and fewer Ashhurst residents experience negative visual effects”. Of the 126 residents interviewed in 2009 who could see turbines from their property, 56 percent claimed their impact was “pleasant” compared to seven percent who said their impact was “negative”.

- (iii) While the difference between 56 percent and seven percent is statistically significant (at the 95 percent confidence level), assuming the surveys were based on randomly selected representative samples of Ashhurst residents, the difference between the seven percent who in 2009 said their impact was negative and the 15 percent in 2005 who claimed their impact was negative is not significant. This is because of the small numbers interviewed (please refer to the Appendix One of this paper for the original table – Table 6 of Mr Baines’s statement of evidence – and the table converted to raw numbers). That is, we cannot state that fewer Ashhurst residents now experience negative visual effects.
- (iv) In 2.6.4, Mr Baines also incorrectly states that “the experience of Ashhurst residents over time has improved slightly overall”, based on six percent stating that the visual effects of wind farms have “got better” compared to four percent stating that the effects have “got worse”. Again, because of the small numbers interviewed, the only thing we can really say with complete confidence is that 84 percent claim there has been “no change” (please refer to the appendix of this paper for the original table – Table 7 of Mr Baines’s evidence of statement – and the table converted to raw numbers). Six percent converts to eight residents and four percent to five residents.
- (v) In paragraph 2.6.7, Mr Baines comments on the proportion of Ashhurst residents who believe there have been negative noise impacts from the wind farms in the area. At 13 percent, the 2009 survey gives the impression that the negative impacts have increased compared to nine percent reporting negative impacts in 2005. However, the difference is again not statistically significant at the 95 percent confidence level because the numbers interviewed are again very small. Thirteen percent converts to 10 residents and nine percent to two residents. As before, the only thing we can really say with complete confidence (for both 2005 and 2009) is that most residents claim there has been “no (noise) impact”.
- (vi) Mr Baines also makes a number of other conclusions based on extremely small numbers that are subject to extremely large margins of error. This

includes the assertions that he makes based on very small sample numbers with regard to separation distance (2.6.11). If we were responsible for analysing the survey in question, we would not (for professional reasons) conclude that “a strong relationship (exists) between separation distance and experience of negative visual impacts” based on just five residents living up to 2000 metres from a turbine reporting negative impacts, compared to 17 and two living 2000-3000 metres and 3000-5000 metres from a turbine respectively (please refer to the appendix of this paper for the original table – Table 21 of Mr Baines’s evidence of statement – and the table converted to raw numbers).

- (vii) Similarly, we would not conclude that there is “a strong and unsurprising relationship between separation distance and experience of negative noise impacts” based on the small number of respondents as made in 2.6.12 of Mr Baines’s statement of evidence (please refer to the appendix of this paper for the original table – Table 13 of Mr Baines’s statement of evidence – and the table converted to raw numbers).
- (viii) I also believe it is important to point out that in the Research New Zealand Survey, 12 percent of those residents who opposed the Turitea Proposal stated that this was because of noise and 19 percent opposed the proposal because of its likely visual effects. These figures convert into just two percent and four percent based on the total sample interviewed. Furthermore, a detailed examination of what residents actually said points to the fact that most comments were of a general rather than a specific nature based on exact noise and/or visual effects.

(c) The Manawatu Chamber of Commerce’s email survey

- (i) The reference to the Manawatu Chamber of Commerce’s email survey of members adds little to Mr Baines’s argument, as even he says the response to this survey was very low at about 10 percent.

4. CONCLUSIONS

- 4.1 To summarise, I believe the results of the Research New Zealand Public Perception Survey more accurately reflect current public perceptions than any of the other surveys referred to by Mr Baines in his statement of evidence. This is primarily because of the robust, scientific nature in which the survey was designed and undertaken, and the objective manner in which the results have been analysed. Mr Baines's surveys are both methodologically flawed and he draws seriously incorrect conclusions that cannot be supported by the data.
- 4.2 There is no evidence of the "tipping point" that Mr Baines refers to. In fact, the Research New Zealand Public Perception Survey shows that as many residents have changed their opinions about wind farms for the positive as have changed them for the negative over time.
- 4.3 Overall, the large majority of residents support wind powered generation in the Manawatu and in New Zealand generally. This, in turn, is reflected in the fact that three times the number surveyed support the Turitea Wind Farm Proposal as oppose it. This even includes residents living in the Turitea Valley itself, where opinion is evenly split between those in favour and those not in favour of the proposal.

Emanuel Kalafatelis

5 June 2009

Appendix One**Table 6: Response to visual effects of existing wind farms – 2005 & 2009**

Survey variable	Ashhurst 2005	Ashhurst 2009	Whole survey sample 2009	Non-Ashhurst sub-sample 2009
# interviewed	54	127	212	85
# who see turbines	52	126	204	78
Pleasant impact %	58%	56%	48%	35%
No impact %	13%	26%	29%	33%
Mixed impact %	13%	10%	11%	13%
Negative impact %	15%	7%	12%	19%

RAW NUMBERS**Table 6: Response to visual effects of existing wind farms – 2005 & 2009**

Survey variable	Ashhurst 2005	Ashhurst 2009	Whole survey sample 2009	Non-Ashhurst sub-sample 2009
# interviewed	54	127	212	85
# who see turbines	52	126	204	78
Pleasant impact #	30	71	98	27
No impact #	7	33	59	26
Mixed impact #	7	13	22	10
Negative impact #	8	9	24	15

Table 7: Changes in experience of visual effects of existing wind farms over time

Survey variable	Ashhurst 2009	Whole survey sample 2009	Non-Ashhurst sub-sample 2009
# interviewed	127	212	85
No change in experience	84%	74%	58%
Got better	6%	5%	2%
Got worse	4%	11%	22%

RAW NUMBERS**Table 7: Changes in experience of visual effects of existing wind farms over time**

Survey variable	Ashhurst 2009	Whole survey sample 2009	Non-Ashhurst sub-sample 2009
# interviewed	127	212	85
No change in experience	107	157	49
Got better	8	11	2
Got worse	5	23	19

Table 21: How often respondents report hearing turbine noise, by separation distance

Separation distance	Up to 2000m	2000-3000m	3000-5000m
Total responses	17	158	30
% hearing turbines once/week or more frequently	29%	12%	3%
% hearing turbines occasionally (1x or 2x/month)	35%	21%	3%
% rarely hearing turbines	12%	27%	3%
% never hear turbines	24%	40%	90%

RAW NUMBERS**Table 21: How often respondents report hearing turbine noise, by separation distance**

Separation distance	Up to 2000m	2000-3000m	3000-5000m
Total responses	17	158	30
# hearing turbines once/week or more frequently	5	19	1
# hearing turbines occasionally (1x or 2x/month)	6	33	1
# rarely hearing turbines	2	43	1
# never hear turbines	4	63	26