

BEFORE THE BOARD OF INQUIRY

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

SUPPLEMENTARY EVIDENCE OF EMANUEL KALAFATELIS

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 supplementary evidence in accordance with the Environment Court Code of Conduct for Expert Witnesses (July 2006).
- 1.2 I am providing this supplementary evidence to comment on and respond to some of the supplementary evidence provided by James Talbot Baines on the S.42A Report prepared by Ms Rose dated 15 July 2009, presented on behalf of Palmerston North City Council (PNCC).

2. Summary

- 2.1 The main points I make relate to the following:
 - (a) Mr Baines' criticism of the usefulness of the Research New Zealand Survey.
 - (b) The validity of the PNCC Panel Survey, the Ex-post Surveys and Mr Baines' group discussions.
 - (c) The validity of some statistical analysis that Mr Baines has commissioned, correlating distance and the visual and noise effects of wind farms.
 - (d) More detailed information is outlined below point by point.

3. Point 1 of Mr Baines' supplementary evidence

- (a) Mr Baines criticises the Research New Zealand Survey for its "limited usefulness" in terms of assessing social impact given that it is just a survey. That said, of all the survey and other research that has been presented by both the applicant and others regarding the proposed Turitea Wind Farm, I consider it is the most technically robust and objectively analysed piece of work. There is, therefore, no doubt in my mind that it **accurately** measured public opinion at the time it was conducted (27 March – 7 April 2009).
- (b) In contrast, as discussed further in particular by Dr Phillips in his rebuttal evidence, Mr Baines' analysis of the PNCC Panel Survey, his own Ex-post surveys based on

Ashhurst residents and his group discussions have been far from objective, while also being technically unsound and, therefore, not at all representative.

4. **Point 3 of Mr Baines' supplementary evidence**

- (a) In this point, Mr Baines refers to the statistical analysis completed in relation to his Ex-post surveys that “demonstrates that a significant percentage of rural residents experience negative visual and noise effects up to 3,000m post construction and there is a strong statistical correlation between distance and experience”.
- (b) As expected, the data shows a correlation between visual and noise effects, and distance. However, to subject any data to any form of statistical testing that proves the information is significantly correct, requires that data to have been collected in a **random** fashion in the first instance. This ensures that any conclusions drawn from that data is **representative** of the population in question.
- (c) In my caucusing with Mr Baines, he led me to believe that the residents concerned were literally hand-picked.
- (d) Furthermore, the international research literature clearly shows that post-construction, the opinions and perceptions of residents become more positive than they might have been pre-construction. Therefore, the results of Mr Baines' Ex-post Surveys (assuming they are valid in the first place) run contrary to this extensive body of literature.

5. **Point 12 of Mr Baines' supplementary evidence**

- (a) In this point, Mr Baines criticises the relevance to the wind industry of results from attitudinal surveys, where “respondents have been responding to generalised propositions about renewable energy or about a wind farm”. I do not believe this is a valid criticism for two reasons:
 - (i) The Turitea Wind Farm project was indeed presented to respondents in the Research New Zealand Survey in a “generalised” manner, but this reflects the manner in which people largely process information they source from the media (the main source of information in these types of cases). Furthermore, the proposal was presented in this manner after preceding questioning had

clearly established respondents' awareness of existing and proposed wind farms in the area concerned, their opinions about power generation, etc. etc. In other words, the proposal was presented to respondents at a stage when they could reasonably consider it. It was not presented out of context.

- (ii) Second, it should be noted that government ministries make business decisions involving millions of dollars of taxpayers' money on the basis of similar types of studies. It should also be noted that Mr Baines has made extensive use of such studies in his own evidence in chief.

6. Point 13 of Mr Baines' supplementary evidence

- (a) In this point, Mr Baines refers to "a statistical analysis of the correlation between distance and experience of adverse noise and visual effects". I have already noted above and in my rebuttal evidence my concerns regarding the statistical validity of Mr Baines' Ex-post surveys on which this statistical analysis is based.

7. Point 14 of Mr Baines' supplementary evidence

- (a) In this point, Mr Baines states that he has "not changed any of my conclusions as a result of reading (Dr Philips' and Mr Kalafatelis' rebuttal) statements". This is a surprising statement, given that there is no doubt that the statistical validity of Mr Baines' Ex-post surveys and the PNCC Panel Survey can be called into question.

8. Point 22 of Mr Baines' supplementary evidence

- (a) In this point, Mr Baines states that he "can find no factual basis in the report to substantiate the assertion made that the (PNCC Panel) survey did not make use of a random sampling approach".
- (b) However, as a result of my caucusing with Mr Baines, I came to the conclusion that he did not necessarily understand some of the more basic fundamentals of survey research which would have left little doubt in his mind as to the shortcomings of this survey. This is for the following reasons:
 - (i) The PNCC Panel Survey involves a two-stage process. While the first stage, involving the recruitment of panel respondents, might reasonably be considered to have employed random contacting techniques (although there

still remains the question of non-response), the second stage involving interviews with enrolled panel members did not.

- (ii) Furthermore, it should be remembered that Mr Baines states in his own evidence in chief that the panel membership may be skewed in terms of age, to the point that it comprises a disproportionately higher number of older people.
- (iii) In addition, he also reports that less than 50 percent of enrolled panel members responded to the PNCC Panel Survey on wind farms (stage two of the process). Given this, and the fact that enrolled panel members decided themselves whether they would complete the survey, the survey is completely **non-random** and, therefore, **not** representative.

9. **Point 24 of Mr Baines' supplementary evidence**

- (a) It is not at all clear what Mr Baines is saying here. On the one hand he says that he is drawing "attention to comparisons between percentages", while on the other hand he says he is "not (drawing attention) to absolute values". Quite simply, in any analysis of research data, you can not draw comparisons without referring to the absolute values.
- (b) Then he goes on to say that he is making "use of all the relevant data points in the survey, not just the small numbers of data points in some cells". In my opinion, this is effectively stating that he is being selective in terms of what he is choosing to focus on and regard as useful information. This is being far from objective, and in my opinion is not good practice.
- (c) Furthermore, the fact remains that some of the tabular information he draws conclusions from (e.g. from his Ex-post surveys) involve very small base numbers. It is a statistical fact that, the smaller the sample or sub-sample, the higher the margin of error. Regardless of this, it is not clear whether he has applied any form of statistical testing to the data he has based his conclusions on. The testing I have completed points to the fact that many of his conclusions can not be defended on statistical grounds.

10. Point 36-38 of Mr Baines' supplementary evidence

- (a) In these points, Mr Baines refers to concerns that Ms Rose expressed in her evidence with regard to his Ex-post Surveys and group discussions, namely her assertion that: "The introduction to the Ex-post surveys and the focus groups are not included in evidence. The influence of the introductions on responses is thus not known and cannot be assessed".
- (b) Mr Baines states that this information was "explicitly referred to in the questionnaire which was included in (his) evidence, and (he) provided a copy of the text to Mr Kalafatelis when he requested it". However, he then goes on to state that the equivalent information on Research New Zealand's Survey was not provided – "Therefore, I do not understand why Ms Rose chose to criticise my omission but not to mention Mr Kalafatelis' greater omission".
- (c) This criticism is unfounded as this information and more was provided to Mr Baines' office by letter dated 12 May 2009. As attachments to this letter, Mr Baines was also provided the questionnaire and a full set of tabulations based on the unweighted (i.e. raw) numbers.
- (d) More importantly, coming back to Mr Rose's original criticism, it should be remembered that, in my rebuttal evidence, I criticised the manner in which Mr Baines introduced his Ex-post surveys to respondents as introducing a degree of bias. This and the fact that respondents appear to have been hand-picked (i.e. not random) make these surveys a very poor example of research (as outlined earlier with respect to Point 3 of Mr Baines' supplementary evidence above).

11. Point 39-42 of Mr Baines' supplementary evidence

- (a) In these points, Mr Baines criticises the fact that I have not provided any baseline population data. While Mr Baines has provided data on the numbers of occupied dwellings, in my evidence in chief, population statistics were provided (refer to Table 1, Point 7.6).
- (b) Mr Baines also criticises the lack of recreational data provided. Mr Baines' recreational data (refer to Section 3.5 in his evidence in chief), and particularly that based on SPACR surveys, is at best superficial.

12. Point 43 of Mr Baines' supplementary evidence

- (a) In this section, Mr Baines makes confusing remarks relating to the differences between raw data, weighted data, frequency counts and percentage counts. For the sake of clarity, the following should be noted:
- (i) The data for the Research New Zealand Survey was weighted because of the over-sampling that was undertaken in relation to particular regions of the catchment area surveyed. To provide results on any other basis would have been misleading and totally unprofessional.
 - (ii) However, as noted above, unweighted data was subsequently provided to Mr Baines.
 - (iii) Mr Baines is inaccurate when he says that "Mr Kalafatelis declined my request for the weighting data he used to adjust his raw survey data". I told him what the weighting parameters were and where those were sourced from (2006 Census of Population & Dwellings, Statistics New Zealand). What I did not do was provide him with the weighting formula used as this is a) a standard formula and b) requires some mathematical expertise to apply.

13. Mr David Saville's statistical analysis, attached as an appendix to Mr Baines' supplementary evidence

- (a) As outlined earlier in this supplementary evidence, while Mr Saville's calculations show some correlation between distance and effect, the data cannot be presented as being significant and, therefore, cannot be considered to be representative, as it was not collected in a random fashion in the first instance.

14. CONCLUSIONS

14.1 To summarise, I do not believe Mr Baines has provided any additional information in his supplementary evidence which suggests there can be any confidence in the conclusions he has reached based on his interpretation of the PNCC Panel Survey, the Ex-post Surveys of Ashhurst residents or his group discussions.

14.2 His criticism of the usefulness of the Research New Zealand Survey is also unfounded. Of all the survey and other research that has been presented by both the applicant and

others in relation to the present applications, it is in my opinion the most technically robust and objectively analysed piece of work.

Emanuel Kalafatelis

20 July 2009