

BEFORE

Palmerston North City Council

IN THE MATTER

of the Resource Management Act 1991

AND

IN THE MATTER

of Proposed Plan Change 15B to the
Palmerston North City Plan.

STATEMENT OF EVIDENCE OF ERIC PYLE

3rd December 2015



Groundfloor
114 The Terrace
PO Box 553
Wellington 6140
Ph: 64 4 499 5025
Fax: 64 4 473 6754
www.windenergy.org.nz

Introduction

1. My name is Eric Pyle. I am employed by the New Zealand Wind Energy Association ('NZWEA' or 'Association') as its Chief Executive and have the authority of the Association to provide this evidence on its behalf.
2. My position involves overall responsibility for all of NZWEA's activities promoting, encouraging and enabling the uptake of wind energy in New Zealand both within the wind industry and to a wide range of stakeholders including Government, regulators and the public. I have held this position since July 2011.
3. I have a background spanning 20 years in environmental management and energy. My role exposes me to the full range of wind energy-related activities across New Zealand.
4. Most recently I was employed by the Ministry of Research Science and Technology and had responsibility for environmental, energy, natural hazards and social research. This role required me to take a broad overview of the environmental management and energy systems in both New Zealand and globally and understand both the immediate and long term issues facing New Zealand and where research and development could add value.
5. Prior to working for the Ministry of Research, Science and Technology I was employed by the Royal Forest and Bird Protection Society as its Conservation Manager. I have also worked for the World Wide Fund for Nature (NZ) as its Conservation Director. Before that I worked for the Ministry for the Environment. I have also worked in environmental consultancy in the UK, as well as for the Department of Conservation and the DSIR.
6. I have a Bachelor degree with a physics major and a Masters degree in Natural Resource Management.
7. I confirm that I have read and will comply with the Code of Conduct for Expert Witnesses. This evidence is within my area of expertise, except where I state I am relying on what I have been told by another person. I

have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

8. I am providing planning evidence in relation to the provision for wind farm development in Plan Change 15B of the Palmerston North City Plan. My focus is on the issue of noise.
9. I will outline some relevant facts and information about the wind industry globally and in New Zealand. I will then focus on the issue of noise.

About the New Zealand Wind Energy Association (NZWEA)

10. The Mission of NZWEA (outlined below) is to promote the uptake of New Zealand's abundant wind resource as a reliable, sustainable, clean, and commercially viable energy source.
11. NZWEA is a membership-based industry association. It was incorporated in 1997 and its Mission and Objects are set out in the Association's Rules under the Incorporated Societies Act 1908 as follows:

Mission

The mission of the Association is to promote the uptake of New Zealand's abundant wind resource as a reliable, sustainable, clean and commercially viable energy source.

Objects

The objects of the Association are to achieve its mission ... by means of:

- (a) policy advocacy with local and central government officials and elected representatives, regulatory bodies, industry groups and other interested organisations to raise the awareness of, and develop the concept of Wind Energy in New Zealand;
 - (b) organising seminars, conferences and other promotional and educational events, and to distribute information, relating to Wind Energy in New Zealand;
 - (c) providing a forum for external and internal networking, discussion and co-operation amongst persons with an interest in Wind Energy in New Zealand;
 - (d) promoting the economic, environmental, social and other benefits of Wind Energy in New Zealand; and
 - (e) promoting research and development of Wind Energy technology in New Zealand.
12. NZWEA is a non-Governmental, non-profit organisation. NZWEA's activities are funded by its members and from industry events such as its annual conference.
 13. NZWEA's membership includes around 40 companies and organisations involved in the New Zealand wind energy sector, including:

- all of the major electricity generator-retailers (Contact Energy, Genesis Energy, Meridian Energy, Mighty River Power & TrustPower);
- Independent electricity generators;
- a number of major international & domestic wind turbine manufacturers; and
- a range of other companies with interests ranging from site evaluation through to operations and maintenance.

A list of NZWEA's members is available at <http://windenergy.org.nz/about/members>.

14. The views of NZWEA do not necessarily represent the views of its individual members. But our views do represent the collective position of the industry.
15. NZWEA has no financial involvement in wind farms in the Palmerston North area nor in any other wind farm development.

Status of the New Zealand and global wind energy industry

16. The wind industry has grown rapidly internationally. This year in excess of 60GW of new wind generation will be installed globally. To put that in context that is some 7 times all the generation in New Zealand put together. On an annual basis wind generation now supplies the equivalent of the electricity demand of Japan, the world's third largest economy.
17. The wind industry has recently surpassed 400 GW of installed capacity. This is some 40 times the total amount of electricity generation in New Zealand. Today wind energy is one of the world's leading sources of new electricity generation.

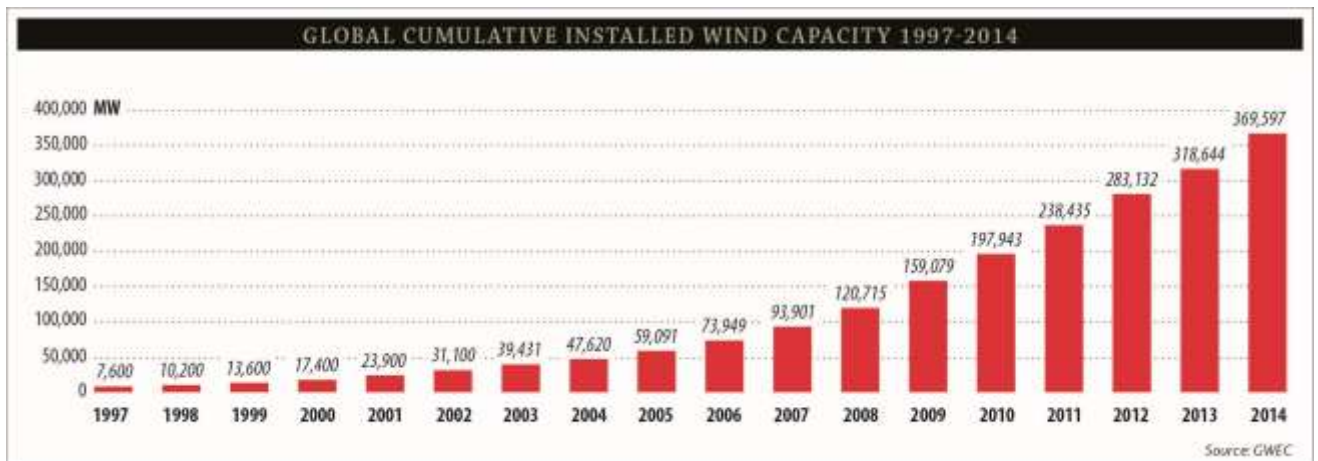


Figure 1 – Global wind energy development³

18. Turbines have grown in scale. In 1993 the Brooklyn turbine near Wellington was state of the art with a rotor diameter of some 27 m. Some of the largest turbines now have rotor diameters of over 160 meters and some wind turbine towers are up to 160m tall.
19. The New Zealand wind industry has grown steadily since 1993. Following the Brooklyn Turbine the Haunui wind farm near Martinborough was constructed in 1996. Significant developments occurred in 1999, 2004, 2007, 2009 (when a record of 171 MW of new capacity was installed), 2011 (116MW) and 2013. New Zealand has nearly 700 MW of

- installed wind energy capacity, representing 5% of average electricity generation.
20. Resource consent has been obtained for over 2,000 MW of new capacity¹. The major electricity generators are either operating or seeking to establish wind farms, as are a number of other independent companies. The total capacity of wind energy projects with or seeking consent exceeds that of any other generation source, and demonstrates the recognition that wind energy is an important and viable source of electricity generation for New Zealand.
 21. New Zealand has some of the best wind in the world. The V90 turbines at the Tararua windfarm hold the record for producing the most electricity from any wind turbine in the world. These are the white turbines on the south side of the Manawatu Gorge.
 22. The significant amount of development activity that has occurred also means that there is an ever-increasing quantity of well-researched and scientific evidence about the actual experience of building and operating wind farms, both in New Zealand and overseas.
 23. The point is that with some 250,000 wind turbines installed all around the world there is considerable global experience in managing environmental issues associated with those turbines. There is a good international body of practice on managing noise from wind turbines and New Zealand experts are well connected to international best practice, attending international conferences, giving papers at conferences etc.
 24. In terms of noise the key message is this: Noise contours based on modelled noise levels are regarded internationally as the most appropriate way to manage wind farm noise. Arbitrary set backs are not considered to be best international practice, or even good international practice. This kind of approach is considered as poor practice.

Energy, Climate Change and Government Policy

¹ NZWEA publishes a list of projects that have either been consented, are in the consent process or that have been publicly notified on its website, windenergy.org.nz.

25. The current Government has reaffirmed New Zealand's commitment to global action on climate change. The energy sector has been identified as a key action area for reducing New Zealand's greenhouse gas emissions. This intent that energy-related emissions be reduced is demonstrated through this being a focus area of the New Zealand Energy Strategy (NZES, 2011) and New Zealand Energy Efficiency and Conservation Strategy (NZECS). These strategies update the earlier strategies released in October 2007.
26. The two strategies place a strong emphasis on the importance of renewable energy, most significantly noting that the government has retained the target set in the earlier strategies in stating that **"90 per cent of electricity generation be from renewable sources by 2025** (in an average hydrological year) providing this does not affect security of supply (my emphasis).
27. The 'national significance' of renewable energy development, and this target is also identified in the objective of the Government's 'National Policy Statement for Renewable Electricity Generation' ('NPS') released at the NZ Wind Energy Conference in 2011:
- "To recognise the national significance of renewable electricity generation activities by providing for the development, operation, maintenance and upgrading of new and existing renewable electricity generation activities, such that the proportion of New Zealand's electricity generation from renewable energy sources increases to a level that meets or exceeds the New Zealand Government's national target for renewable electricity generation."*²
28. This NPS demonstrates the Government's commitment to renewable energy and its desire to reinforce the significance that is accorded to renewable energy under s7(j) of the RMA. It sets a clear direction for the consideration of renewable energy projects. The New Zealand

² The NPS and supporting documents are available from the Ministry for the Environment's website at <http://www.mfe.govt.nz/rma/central/nps/generation.html>.

Government's target for energy, as I earlier stated is 90% of generation from renewable sources by 2025.

29. Under Policy A of the NPSREG decision makers are required to "recognise and provide for the national significance of renewable generation activities, including the national, regional and local benefits of renewable generation".
30. Under Policy B of the NPS-REG decision-makers shall have particular regard to Meeting or exceeding the New Zealand Government's national target for the generation of electricity from renewable sources.
31. The NPS implies that councils should put in place effective planning regimes for wind farms.

Managing wind farm noise effects in the district plan

32. I will now focus on managing windfarm noise and look at what an effective planning regime is for managing wind farm noise.
33. In my opinion NZS6808:2010 is the appropriate mechanism for managing potential noise effects from wind turbines in New Zealand. Case law supports this view³ in terms of resource consents for windfarms. NZS6808 has been used to set resource consent conditions for all recent windfarm consents. Further, it has been used in some district plans, such as the Clutha District Plan.

NZS6808:2010 in a nutshell

34. The NZS6808:2010⁴:

...provides suitable methods for the prediction, measurement, and assessment of sound from wind turbines. In the context of the Resource Management Act, application of this Standard will provide reasonable protection of health and amenity at noise sensitive locations.

35. The Board of Inquiry into the Hauāuru mā Raki Wind Farm proposal summarised the nature and purpose of the New Zealand noise standard NZS6808:2010 as follows:⁵

[363] The purpose of NZS 6808:2010 is to provide suitable methods for the prediction, measurement, and assessment of sound from wind turbines for use in both wind farm development and local authority planning procedures...

[364] NZS 6808:2010 explicitly addresses several aspects of wind farm development, including cumulative effects, reverse sensitivity and wind farm specific noise characteristics...

[365] NZS 6801:2010 defines the basic quantities to be used for the description of sound in community environments and describes procedures for the measurement of these quantities. The procedures described are intended to enable consistent measurement of environmental sound for all conditions within the scope of the standard.

36. NZS6808:2010 provides the following noise limit:

³ For example refer *Ohariu Preservation Society v Wellington City Council* at par 109 or *Mainpower v Hurunui District Council* at par 398

⁴ NZS6808:2010 page 7

⁵ *Final Report and Decision of the Board of Inquiry into the Hauāuru mā Raki Wind Farm and Infrastructure Connection to the Grid* (May 2011) at [363] and [364]

At any wind speed wind farm sound levels (LA90(10 min)) should not exceed the background sound level by more than 5 dB, or a level of 40 dB LA90(10 min), whichever is the greater.

37. From this limit a noise contour can be developed. This contour has been developed for all the recently consented windfarms in New Zealand going back to the mid 2000s. NZS6808 and appropriate modelling of noise provides a robust approach to managing windfarm noise. As I mentioned earlier, internationally and in New Zealand modelling noise from windfarms is now well understood and there is a considerable body of international knowledge.
38. NZWEA is strongly opposed to arbitrary setbacks. Setbacks are not an evidence-based way to manage noise issues. We therefore ask that this reverse sensitivity issue is managed via NZS 6808 and a noise contour based on NZS6808.
39. Using NZS6808 is an effective planning framework for managing wind farm noise. Arbitrary setbacks are not an effective planning regime. The NPS implies councils use an effective planning regime, otherwise what is the point of the NPS? Therefore the NPS drives towards using a noise contour based approach, not an arbitrary set back.

Conclusion

40. Globally the wind industry is now a large sector. There are some 250,000 large wind turbines operating around the world.
41. There is now considerable national and international expertise in managing noise from windfarms. International and national experience is that managing windfarm noise via setbacks is poor practice. The appropriate approach is via noise contours.
42. The National Policy Statement for Renewable Energy implies that councils should adopt effective planning frameworks for windfarms. Arbitrary setbacks are not effective planning frameworks. Noise contours are an evidence based approach.
43. We ask that you adopt NZS6808 as the framework for managing noise from windfarms. NZS6808 has been tested repeatedly by the

Environment Court when considered wind farm consents and has been adopted as the framework for managing windfarm noise. In our view it should also be used as the planning framework.

44. We ask that the approach of using arbitrary setbacks is replaced with an evidence-based noise contour approach that uses NZS6808. That is the kind of planning framework that the NPSREG points you towards.

3 December 2015