

**To the Inquiry into the Social and Economic Impact of Rural Wind Farm  
Community Affairs References Committee  
Department of Senate  
P.O. Box 6100  
Parliament House  
Canberra  
ACT 2600**

4/2/2011

This submission has been made in an attempt to highlight how ordinary Australian's are being treated by those associated with the development of the Wind Powered Electricity Industry. As neighbours of a wind energy development that declined the offer to have wind-turbines on our land, we believe our thoughts and experiences should be of interest to governments and the broader community.

My wife Helen and I first discovered that a Wind Energy development was proposed for our district. on the 16<sup>th</sup> of February 2006. Mark Headland from Investec Bank rang asking for permission to bring people onto our farm to do a flora and fauna survey, because they wanted to build a Wind-Farm. We had an appointment in Hamilton that afternoon and were hurrying to get to this appointment, so suggested to Mr. Headland that he make a appointment to see us on another day when things could be discussed. Mr Headland did come and visit us about two weeks later, when he presented us with a contract to sign if we wanted to host wind-turbines proposed in a development with Wind Lab Systems and Investec Bank. When asked about the survey which was asked for earlier Mr Headland's reply was, "it was not important and there was no need to have it done now". This change in Mr Headland's attitude to what surveys were required, did seem unusual and made us some-what suspicious about the project. We later discovered in the Planning Permit Application that our farm was shown as a area Biosis (The company that did the Flora + Fauna Surveys) was not given access to when doing their surveys between the 23 – 27 October 2006. We definitely did not deny access to our place in October, and believe it was not reasonable to expect access without notice in February.

Most people who hear we were offered wind-turbines ask, "How much money were you offered". But because we were unable to establish exactly how many turbines we were being offered, where exactly they were to be sited, and what the exact details of the accompanying infrastructure was we rejected their offer before negotiating any money details.

Background noise measurements were taken at our house in September 2006. We gave permission for this as we would have for the flora + fauna work, but did ask the gentleman who did this work for a copy of the actual data obtained. Mr. Delaire of "Marshall Day Acoustics"(acoustic consultants employed by the proponents) agreed to this when installing the equipment, but when removing the equipment suggested this information would not be of any use to us because we would not be able to understand it. We still have not received this data, and believe only "Marshall Day Acoustics" and those associated with operating this wind-farm have access to this information. As will be shown later the way this information on background noise has been handled suggests there will be no noise restrictions of this industry. We informed

Mr. Headland during the last few days of this background noise monitoring that we had decided against having turbines.

Because of the unusual way this project was being handled we felt the need to check as many of the claims being made as possible. We joined other neighbouring landowners who were against this proposed development, and formed our own Landscape Guardian's group. This group has helped us obtain contact with other Landscape Guardian's Groups and members, who have informed us of their experiences with this industry. My main concern became sound from these machines, and we purchased a hand held noise monitor.

A visit to the Baungor district, near Ararat, Victoria, one evening to listen to noise from turbines on the Challicum Hills Wind-Farm. I recorded the noise there with a Sound Level Meter during May 2007. This visit showed how noisy turbines can be. There was a stiff south wind blowing, and plenty of cloud cover when we made this visit. We found a gravel road heading south of the Western Highway about two kilometres north of the township of Baungor, where we travelled south a few hundred metres across a railway bridge to make our observations. I discovered that wind turbines can make noise that can be heard above background noise from wind in trees at three kilometres, and this background noise was measured at minium levels of 42 - 48 decibels during a number of two-minute test periods. The sound we could hear was a very audible type of noise, which I believe will be very difficult to ignore. These noise levels are very different to information displayed at the information day on our neighbouring project, which suggested turbines only make 35 decibels of noise at 350 metres.

Our Sound Meter has also been used to measure the level of sound from our Alarm Clock Radio, at its usual setting to wake us in the morning with readings in the 40 to 45 decibels high. We were unable to get low readings because quiet periods were below what our meter can register.

Upon scrutiny of the Federal Governments referral document relating to the Environment Protection and Biodiversity Act (EPBC) by us, we noted that the proponent had ignored serious environmental issues of the area and had falsely filled out certain aspects of the referral document. If you use Google Maps to view just south of Glenthompson along "Cherrymount Road", you will see where this disbanded road is cut with lots of eroded gullies.

The 'Glenelg Hopkins Catchment Authority' publications 'Salinity Plan 2005-08 under Surface Water at 12, 1, states (The Hopkins River is the most degraded and saline affected River in Victoria) It also should be noted salt readings for four of the five permanent springs that flow from our farm to the Hopkins River are usually above the river readings at Wickliffe.

So with the agreement we were offered containing restrictions on the planting of trees<sup>(1)</sup>, how could they honesty answer **NO** on page 15 under Water Environments. It also is very obvious that governments do not check the accuracy of information given.

For the Victorian State Planning Minister to accept an Environmental Effects Statement (EES) was not required, the Salinity and Erosion problems of this area must also have been over looked. This meant the proponent was not required to comply with all the formal guidelines used in an EES. The process we got allowed the proponents to present only what they wished, and to only answer questions they were

comfortable with. Government agencies also were allowed not to attend the hearing and answer questions.

Because we had serious doubts about submissions or lack of comment made by the proponent, government agencies like the Victorian Environmental Protection Authority, Department of Sustainability and Environment, Glenelg Hopkins CMA and the Shire of Southern Grampians, we sought permission to record the hearing proceeds. We obtained this permission from the panel on the condition we obtained written permission from those we wished to record. The Shire and EPA refused our request and failed to attend the hearing at any stage.

The fact that the EPA and Shire were able to withdraw from the public part of the approval process should not be seen as an excuse for the Planning Minister to grant a permit with standards well below that which would normally be required.

As sound from turbines has emerged as a major problem with neighbours at all the wind farm developments that we have investigated. We would like to highlight exactly what has happened with our neighbouring project, we also would like to question why those that normally are required to regulate levels of health related exposure to environmental outcomes from industry, have been distanced from the approval process.

Firstly a Cathrine Fahnle from the EPA Victoria did put a submission in which claimed our normal noise guidelines could not be used. The reason she claims they cannot be used is that for the turbines to be working there has to be wind, and the Victorian guidelines are only for calm or near calm conditions.

We disagree with this and made the following comments to the panel in our presentation; Most country people know calm conditions are not very common, and only occur during about 10% of any year, or about 33% of the time in the calmest months. Therefore are we to assume Victoria has guidelines that usually are not enforceable? I believe that there is an attempt to create double standards for this industry, and these double standards will discriminate against those of us that are to live or live near Wind Turbine developments. It is also very obvious that winds at the turbines are not always related to winds in the trees near affected residences.

The proponent did not give background information as night-day, and different wind directions. So for Cathrine to claim that the work had been carried out in accordance with the NZ Standards Association Guidelines<sup>(2)</sup> was false. The NZ Standards<sup>(2)</sup> require night and day, plus different wind directions to be considered.

For some reason Cathrine said the minister should note the South Australian Laws. We noted that because SA require background measurements to assess in a similar manner to that which in Mr. Delaire of "Marshall Day Acoustics" used, the lower base of 35dB is unlikely to ever be realized.

We tried during the hearing to suggest that we were entitled to the same or similar protection from noise as other country Victorians, and how the methods mentioned differs from the normal methods.

So we were very surprised when we found our family name associated with those asking for the SA method of assessment. I decided to write to the Chief Panel Person asking that this mistake be corrected.

The following is the letter I wrote and the reply we received:

To The Chief Panel Member  
Planning Panels Victoria

From Adrian Lyon

15/12/2008

Dear Sir / Madam;

I am writing to complain about being misquoted in the Oaklands Hill Wind Farm panel report.

The Panel Report referred to was prepared by Jenny Moles (Chair Person), Jack Chiodo, and Peter Sheehan, on the proposed Oaklands Hill Wind Farm, Permit application 2007/0370 under the Southern Grampians Planning Scheme.

It must be apparent to any person who attended this hearing, or views material from this hearing that I never asked for SA standards to be used in assessing potential noise problems. The part I am objecting to is made on page 91 (9.5.6), under the heading "Criticisms of New Zealand Standard".

. (Several aspects of the New Zealand Standard were criticised by Mr. Lyons and other submitters. Views were expressed that the use of the Standard is inappropriate because the LA95 noise levels do not adequately represent noise impacts, the Standard is under review, the Standard does not adequately cater for Australian conditions, and that the stricter South Australian noise limit for wind farms should therefore be applied.)

It was the EPA that made this suggestion in its written submission. This submission was written by Cathrine Fahnle, dated 10/8/2007, and had the reference number 24487-4.

My request was that the Victoria State Environmental Policy N3/89 be considered. My formal submission asked that the Vic SEP N3/89 be considered when assessing the suitability of this project, and this document along with the submission by the EPA has been on public display, and copies can be obtained from Panels Victoria records, or myself. My presentation gave reasons why I wanted the Victorian standards used which was also given to the panel in document form, as well as being voice recorded. This desire to have the Vic SEP guidelines recognised can be heard on sound recordings of questions to the proponent's noise expert at (Day 2, Ses 4, Part a, 1 hour 15 minutes), also during the GGLG's requests for conditions where it should be obvious that I had convinced other objectors not to ask for the SA standards at (Day 12, Ses 4, 24 minutes). Then finally {1 hour and 7 minutes into session 4 on the final day} at the conclusion I asked for the same protection from noise as other Country Victorians, and clearly stated I did not want the NZ standards.

My concern is that this mistake combined with omissions removes any references to the current enforceable Victorian Guidelines on noise, and leaves only selected parts of foreign guidelines to be considered when approving this windfarm.

Cathrine Fahnle obviously had not read my submission when she wrote her submission. Her submission assumed there had to be strong winds at our house if the turbines were working and making noise, and that the Victorian Guide Lines were not suitable in such conditions. The monitoring of noise at our house by the proponent clearly shows noise does not directly vary in relation to wind on our hills. It also

should be noted that there is a considerable difference between our Victorian Standards and those that are being promoted. The refusal of the EPA to attend our hearing and discuss these matters greatly diminished any respect for this organization that those living next to this proposed project might have had.

Then after putting so much into seeking an explanation into why our Victorian Guide Lines were not being considered, to see a report say we were seeking parts of another states guidelines is of great concern.

It is now very important that some one establishes whether the minister was properly informed about the Victoria's Guidelines on noise. If Panels Victoria does know that he was given details of why these Victorian Guidelines shouldn't be used, why is this information missing from the Panel Report. Then on the other hand if Panels Victoria hasn't any evidence that the minister was made aware of our Victorian Guidelines they should do so immediately. As a participant in this process I would appreciate if you could keep me informed on how things develop.

Yours Truly  
Adrian Lyon.



## Department of Planning and Community Development

22 December 2008

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Dear Adrian,

**RE: OAKLANDS HILL WINDFARM**

Thank you for your letter dated 15<sup>th</sup> December 2008 raising concerns about the Oakland Hill Windfarm Panel report.

As you are aware the Panel's report has now been submitted and the Minister has made a decision to approve the Oaklands Hill Wind Farm permit application.

While it is not my position to further interpret the Panel's reasons in their report, I would make the following comments. You have raised two concerns about the noise section of the Panel report. First you suggest that the Panel ascribes the request for application of the South Australian noise standard to you personally. It seems to me that the paragraph you quote should not be interpreted in that way as it refers to a number of criticisms of the use of the New Zealand Standard made by a number of submitters. The submitters in this matter included the EPA (see the list in Appendix D).

Second you are concerned that there is no direct reference to your request for application of the Victorian State Environment Protection Policy N3/89. However the Panel does discuss the Wind Farm Guidelines directive to apply the New Zealand Standard in a number of places and indicates that while it might be possible to depart from the policy directive to do so, it saw no reason to do other than apply them. This includes consideration of the issue you raise about the different wind speed on the subject site and at your house.

Thank you again for your letter.

Yours sincerely,

Kathy Mitchell  
Chief Panel Member  
Planning Panels Victoria



The minister by this time had granted the permit to build the proposed project. The conditions included in this permit, are in fact a watered down version of the NZ Standards Association, which gives us far less protection than is normally given to other country Victorians. The normal guidelines for country Victoria start at 32 dBA<sub>eq</sub> (an average reading), and permit 5dB above an assessed background noise that is measured as a L<sub>90</sub>. This is very different to the levels suggested in the project permit of 40dBA L<sub>95</sub> (lowest of 95% of readings) with a permitted 5dBA above an assessed background noise measured as a L<sub>95</sub>, as sound from turbines do vary a lot over the prescribed ten minute periods.

The following is a report on what we discovered during a visit to a South Australian Wind-Farm.

#### Hallett 2 Report.

At the invitation of Mike Moraza of AGL we travelled to their Hallett 2 Wind-farm in the mid-north west of South Australia to see if the problems we had heard about wind-farms really do exist. This development has thirty-four S88. 2.1 MW Suzlon Turbines, which are the same machines, which are proposed for Glenthompson's wind-farm.

December 17<sup>th</sup> the day we visited was a cool wet day with a gusty southwest wind that was blowing at about twelve metres per second, or that was the wind speed they claimed was blowing at (hub height) eighty metres. The steep stony country showed no signs of erosion around earth works that had been carried out as part of this project, our Glenthompson soils might not be as easy to achieve such erosion control in; given that the Glenthompson soils have a high risk of tunnel erosion and comprises much sandier and more fragile soils. The strong winds did noticeably flex the giant forty-four metre blades. Noise levels were naturally fairly high as you would expect with strong winds and rain buffeting our safety hats, but we could hear swishing and whirring noises from the turbines. Most of us found the weather more of a discomfort than the noise, but my eighteen-year-old son did suggest he was affected by a build-up of pressure in his ears at certain points between the turbines. But this pressure was nothing like was experienced the evening before at a neighbouring property.

The previous evening we had managed to get ourselves invited to a neighbouring (the Thomas family) property who's occupiers were known to have publicly complained about noise from the wind-farm. Although during the approval hearing for the Glenthompson wind-farm most of us had become sceptical about claimed noise levels from these machines, I was still shocked by what we encountered when we stepped from our car. To me we were being surrounded by a muffled oppressive whirring sound. My wife (Helen) thought it was like being in a small room with a tumble clothes dryer. She also said she could feel vibrations bombarding her body when standing under a bull nosed veranda near the closest window of the house (bedroom) to the turbines compared to being less affected standing away from the house in the open. My eighteen-year-old son wanted to leave because he was experiencing ear pain, as he said it was like a pinpoint pain/pressure on his inner ear.

The others moved inside fairly quickly, with my son looking for relief from the sound. I stayed outside and tried to obtain noise level readings on a hand held monitor. This noise monitor displayed general highest levels, or more accurate highest and lowest recorded readings during pre-recorded periods. It could estimate these levels as an average of sound energy over 125 milliseconds, or a one second period if

nominated before the recording was made. One could also have readings shown as A or C weighted levels, if nominated before recording.

My highest A weighted reading was 57dBA observed under the veranda of the house from a short recording period. High readings for 125 milliseconds in the open away from the house were in the low fifties, with lows during the same recorded periods in the low to lowest forties. Similar recordings in the open with the longer 1-second calculation periods showed roughly half the difference between the highest and lowest readings, which suggested a true average (or eq) reading of about 46 dBA could be assumed during this period.

In the open away from the house C weighted levels for the shorter calculation periods were generally twenty-five to thirty decibels above the A weighted readings. This strongly suggests the presence of unusually strong sound waves that were being heavily discounted by the A weighting method.

The suggestion a wireless with-in one of the bedrooms, which could easily be listened to under one lot of weather conditions, could be drowned out when conditions changed, was a concern. Unfortunately I didn't get any measurements from with-in this house, but concluded the amplification of sound under the veranda suggested the turbine noise would not be reduced to the same extent as the normal noises we encounter.

The weather at the time these measurements were taken was still fairly hot, but the north wind had dropped and I couldn't feel, hear, or see any sign of wind near this house that was situated just over one kilometre from the nearest turbine. The flashing lights on the turbines illuminated enough of the blades to show they were working, so there must have been some wind up where they were.

My conclusion was that if acceptable levels of noise were only assessed in the manner suggested during our approval hearing, then the noise we experienced that evening would probably be considered acceptable. But this method was adopted because it was assumed that if the turbines were working there would be winds at the receiving dwellings that made noise monitoring difficult. This assumption has been shown to be incorrect. So why can't we consider imposing the normal Victorian Guidelines For Country Areas, which would require noise levels from such a industry to be at or below 32 dB  $A_{eq}$  which would be some 14Db below what we experienced, at Hallett. It should also be noted that if a member of this household wanted to escape the heat and sleep on the veranda, they would have to tolerate noise levels 27dB above what is recommended by the World Health Organization for quality sleep.

A third comparison could be made with nighttime noise levels recorded in Melbourne, Victoria's EPA Regulation 280 indicates that a survey of forty sites showed average levels during the night dropped to just above 35 dB  $A_{eq}$  which is 11 dB below what we experienced that evening.

Then most importantly we should not over look the large differences in air pressure that can be caused by these machines. These pressure differences are not adequately covered by noise regulations that only consider A weighted measurements. If it can cause pain, then it will naturally be offensive, and most probably will cause permanent physical damage if allowed to continue. We also have to recognise that most neighbours will not only have to live near these things, but they will usually have to spend a lot of time out side working close to them.



We have also made several visits to the Waubra Wind Farm and made ourselves known to some of the neighbouring residences of this development. It definitely appears that Waubra residences have similar problems to what we encountered in South Australia. As we have discovered the Pyrenees Shire has refused to get involved in the problems experienced by neighbours of the Waubra Wind-Farm We believe that the Southern Grampians Shire is also planning to refuse to police the manner in which our neighbouring wind farm operates. We have approached the councillors at a meeting with management staff present and put the following to them

27/01/2010. My presentation to the mayor and councillors of the Shire of Southern Grampians (South West Victoria) as part of a group presentation from our Landscape Guardians group.

Mr. Mayor, fellow councillors, thank you for agreeing to hear our concerns about the proposed Wind Energy Development that is approved for our district.

We know that on occasions this development will create noise at neighbouring residences and properties above acceptable levels  
If you believe that winds can effect the distribution of sounds, then you would have to have doubts about the predicted levels for this project because wind was not considered when calculating sound levels.<sup>(1)</sup>

The prediction method also doesn't consider that there will be any reflection of sound from the ground or clouds.<sup>(1)</sup>

As well an absorption factor of .005dBA per metre was applied, which is above what would be considered normal for sound with a large portion of low frequency sound<sup>(1)</sup>.

Then when we asked Mr. Delaire (The proponents noise expert) during the approval hearing if he had found the method of assessment accurate in other developments that were now operating, he refused to answer for legal reasons.<sup>(2)</sup>

Other similar developments like the Hallett 2 Wind Farm in South Australia have shown how noisy these machines can be. I have recently visited this Wind Farm, along with one of its neighbouring properties occupied by the Thomas family. A detailed report on what was discovered has been put with this document.<sup>(9)</sup>

Noise and air pressure variations are known to cause health problems for people who are exposed to them. Studies of populations exposed to noise levels have shown the levels that affect people's health. Further studies have shown that blood pressure increases during sleep even if the sleeper is not woken by the noise. So the World Health Organization (WHO) produced guidelines that I have included on the CD.<sup>(4)</sup>

Victoria has guidelines produced by its Environmental Protection Agency (EPA) that have been designed to assist in the protection of all Victorians, and are available for anyone free on their web site.<sup>(5)</sup>

We have EPA State legislation that gives the appropriate authorities the power to enforce these guidelines, and the Shires are mentioned.<sup>(6)</sup>

There also is legislation in the form of a Health and Wellbeing Act that defines who is responsible to protect people.<sup>(7)</sup> Yes the Shire is mentioned as an authority that should enforce our state legislation under this Act. There is even penalties set out for failure to investigate a complaint in this Act.

The minister's approval for this project names the Shire as the authority to investigate noise complaints, but it suggests levels very different to what is specified as acceptable in our State legislation. <sup>(8)</sup>.

It is of considerable concern that Shires now appear to be claiming they are not in a position to enforce any noise controls on the Wind industry. We tried to sort this out during the Panel Hearing, but this Shire, <sup>(3)</sup> declined our requests to answer such questions.

**The big question we have now is:**

**Is this Shire preparing to fulfil its duty and protect the health and wellbeing of neighbours of this new project?**

**If so how are they going to do so? .**

- (1) Planning Permit Application. Appendix O. (Disc 5)
- (2) Hearing Recordings. Disc 1, Day 2, Session 4, At hour 1, min 9.
- (3) Shire rejection of request to record presentation and questions at Hearing. (Attached sheet)
- (4) WHO Guidelines for Community Noise. (Disc 5 + attached sheet)
- (5) Vic EPA Guidelines (Disc 5 Regulations + attached sheet)
- (6) Vic EPA Legislation. (Disc 7)
- (7) Health and Wellbeing Act (Disc 7)
- (8) Ministers Approval for Project (Disc 5)
- (9) Hallett 2 Report. (Attached sheets)

Thankyou for your time, if you have any questions I would be happy to attempt to answer them at any time.

The above written report was read by me and given to all councillors, it has referenced material that has not been included with this report, but should be available through state government departments, or the WHO web site.

It should be noted that the Shire has refused to respond to our questions, which leaves us in no doubt that like Waubra residences we will not be protected from any level of noise, under any legislation.

At present the media is full of claims that Wind Farms are not detrimental to people general health and wellbeing. They are using a report called "A Rapid Review of Evidence" by the National Health and Medical Research Council of Australia {NHMRC} as proof of these claims. We have read this report and find the amount of material referred to that has come from groups associated with the development of wind-farms unusually high. It also appears to misrepresent material from the World Health Organization. As well it never considers that noise at Wind Farms ever exceeds the levels claimed by this industry.

The following extract from the "World Health Organizations" Guidelines for Community Noise published in 1995, leaves no doubt that noise can cause adverse health effects for those exposed to it at relatively low levels.

*"Sleep disturbance* is a major effect of environmental noise. It may cause primary effects during sleep, and secondary effects that can be assessed the day after night-time noise exposure. Uninterrupted sleep is a prerequisite for good physiological and mental functioning, and the primary effects of sleep disturbance are: difficulty in falling asleep; awakenings and alterations of sleep stages or depth; increased blood pressure, heart rate and finger pulse amplitude; vasoconstriction; changes in respiration; cardiac arrhythmia; and increased body movements. The difference between the sound levels of a noise event and background sound levels, rather than the absolute noise level, may determine the reaction probability. The probability of being

awakened increases with the number of noise events per night. The secondary, or after-effects, the following morning or day(s) are: reduced perceived sleep quality; increased fatigue; depressed mood or well-being; and decreased performance.

For a good night's sleep, the equivalent sound level should not exceed 30 dB(A) for continuous background noise, and individual noise events exceeding 45 dB(A) should be avoided. In setting limits for single night-time noise exposures, the intermittent character of the noise has to be taken into account. This can be achieved, for example, by measuring the number of noise events, as well as the difference between the maximum sound level and the background sound level. Special attention should also be given to: noise sources in an environment with low background sound levels; combinations of noise and vibrations; and to noise sources with low-frequency components.

Since the time of the above "World Health Organizations" guidelines there has been an ever expanding acceptance that noise or sound levels do affect people health. A Study referred to as the Hyena Study, which was funded by the European Commission (Grant QLRT-2001-02501), and released in December 2007, is an example of how the developed world is treating noise. Unfortunately this study did not look at people exposed to wind-turbine noise.

The conclusion of this study was:

Our results indicate excess risk of hypertension related to long-term noise exposure, primarily for night time aircraft noise and daily average road traffic noise.

Why is it that governments in Australia at all levels are refusing to check claims made by the developers and operators of large Wind-Turbines

It should be the right of all-Australian's to equal quality of life, and protection from known causes of reduced health and wellbeing. Is it acceptable to discriminate against people because of where they live?

We have decided to attach copies of the following two documents with this submission because they are not easily obtainable, and we have referred to them.

- (1) The Wind-Lab and Investec Bank agreement to have turbines.
- (2) The New Zealand Standard, (NZS 6808:1998) **Acoustics** The Assessment and Measurement of Sound from Wind Turbine Generators.

If the inquiry requires copies of any of the information referred to above, Helen or myself would be happy to provide such. Please contact us if you require further clarification on any point.

Adrian Lyon.