Submission
No 61

INQUIRY INTO RURAL WIND FARMS

Name: Mr Geoff Putland & Christine Thompson

Date received: 21/08/2009

19th August 2009

The Director
General Purpose Standing Committee No. 5
Legislative Council
Parliament House
Macquarie Street
SYDNEY NSW 2000

Attention: Mr Ian Cohen MLC
Committee Chair

Dear Mr Cohen

Re: Inquiry into Rural Wind Farms in New South Wales

We attach our submission in relation to the above inquiry into Rural Wind Farms in New South Wales.

We are residents of the Furracabad Valley, west of Glen Innes on the northern tablelands of New South Wales. We are situated at the foothills of the Waterloo Range, 14 kilometres west of Glen Innes where it is proposed to construct a wind farm consisting of up to 27 wind turbines.

Our submission is written from our perspective and relates to our experiences with the proposed Glen Innes Wind Farm and discussions with other residents and consultants to the Wind Farm industry.

Let us state unequivocally, that we are completely supportive of sustainable energy solutions and supportive of the State and Federal Governments' initiative to produce a portion of the country's electricity needs from renewable sources by 2020. However, we have serious concerns about the design and execution, to date, of wind farms in Australia.

We do not oppose the development of wind farms. However, the positioning of very large wind turbines (currently 130 metres in height) in extremely close proximity to rural residential homes and Government community buildings, eg. Schools, hospitals etc, should not be allowed.

We believe that it is essential for the NSW State Government to show leadership in Wind Farm Energy Generation and develop Guidelines in relation to the development of rural wind farms. Many Councils throughout Australia, including the Glen Innes Severn Council, have produced Development Control Plans for Wind Farms ("DCP") which include a minimum 2 kilometre setback from rural homes or home sites. In our situation in Glen Innes, this setback is supported by local residents, hundreds of local petitioners to State Parliament, signatures that were gathered in response to the proposed Glen Innes Wind Farm development, our local member, the Hon. Mr Richard Torbay MP and turbine manufacturers in Europe.

We believe a minimum 2 kilometre setback of turbines from rural residences is essential. Under Common Law, any turbine situated closer than 2 kilometres could be considered a "Nuisance" due to the adverse auditory, visual and financial impact of such turbines situated within close proximity to homes.

Many wind farm developers are employing consultants to produce their required Environmental Assessment Reports in order to seek approval for their wind farm developments. The reports being produced, and we can speak of our own experience with the proposed Glen Innes Wind Farm and the Environmental Assessment can, in many areas, only be described as a perfunctory review of the local environment, with complete disregard for the opinions and rights of people living in the nearby community. Premier Rees has gone on the record and stated that "As long as this fast-tracking (of renewable energy developments) does not trample over community concerns regarding noise and visual pollution, it will (the fast-tracking) help to establish a more environmentally sustainable energy sector in NSW, to create green jobs and attract more investment." (Glen Innes Examiner, 17 March 2009).

The proposed Glen Innes Wind Farm Environmental Assessment ("EA") contained numerous inaccuracies and omissions and frankly did not do the developers justice in terms of their consultative processes with local communities. At present, EAs are resulting in hostile local communities, which was certainly the result in the Furracabad Valley.

We have been liaising with the NSW Department of Planning on the proposed Glen Innes development, however the absence of any guidelines developed and implemented by the New South Wales Government has not assisted all parties, ensuring that this development proceeds in a timely manner. It cannot be underestimated the impact this proposed development has had on local residents who will be negatively and severely impacted by the positioning of certain turbines close to their homes – many residences will be "hugged" by numerous 130 metre high turbines around their homes.

Legislation stating that wind turbines should not be positioned closer than 2 kilometres from people's homes (or home sites) will protect the innocent and provide guidelines for developers. We believe that, if this occurs, wind farm developments would, largely, proceed with very little opposition from local communities.

It is our sincere desire that this Inquiry will result in the establishment of a strong set of guidelines for wind farm Developers, and provide protection for local residents who are currently being severely and negatively impacted by wind turbines being positioned too close to their homes.

Yours faithfully

Geoffrey W Putland

Christine VA Thompson

Encl: Submission in response to the Legislative Council's General Purpose Standing Committee No. 5 - Inquiry into Rural Wind Farms.

cc. Mr Richard Torbay MP
Mr Tony Windsor MP
Glen Innes Shire Council

SUBMISSION TO THE

LEGISLATIVE COUNCIL

GENERAL PURPOSE STANDING COMMITTEE NO 5 –

INQUIRY INTO RURAL WIND FARMS

From

GEOFFREY W PUTLAND AND
CHRISTINE VA THOMPSON

FURRACABAD STATION
GLEN INNES, NSW

MEMBERS OF THE
GLEN INNES LANDSCAPE GUARDIANS INC

19TH August 2009

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INTRODUCTION

With an increasing interest in regional New South Wales for the location of Wind Farm developments, it is essential that the NSW State Government have in place Development Control Regulations for these Proposed Wind Farms ("NSWDCRWF"), with which wind farm developers must comply. Such Control Regulations will give local communities and potential developers the necessary guidance for wind farm developments and will allow for better decision making on such proposals.

Wind Farm Development Control Regulations will give local communities and potential developers the guidelines for wind farm developments so as to ensure such developments do not significantly adversely impact on the community and can proceed in a timely manner.

Wind Farm development applicants should be required to comply with the NSW Government Development Control Regulations for Wind Farms when designing a commercial wind farm in New South Wales and preparing their Development Applications.

Currently there are no formal guidelines in New South Wales (except the Draft Guidelines issued in 2002) OR the Federal Government for wind farms. Local Councils are leading the way for wind farms. How can this be acceptable to anyone involved in the Wind Farm Development process in the current era of social awareness and accountability?

There must be regulations protecting the rights of unrelated land owners (ie: neighbours to farms hosting wind turbines) from having turbines in close proximity to their homes and hence their livelihoods. The absence of such regulations is cruel and unconscionable, given the vast spaces in Australia that can be utilized.

If wind power generation is to be successful it needs to adhere to "principled guidelines" that create a "win-win" situation for all parties involved. In that way rural communities are not polarized, which is happening at present. The developers need to look at tracts of land that don't impact on densely settled areas. These options are vast within Australia's huge continent.

We are not against wind farm development per se and other projects which mitigate CO2 production – we already undertake substantial CO2 reduction processes and strategies on our properties.

Based upon our experience with the proposed Glen Innes Wind Farm, and our discussions with residents living in close proximity to both proposed and operating wind farms throughout Australia, two fundamental issues are polarizing rural inhabitants and delaying the establishment of Wind Farms viz:

1. Inadequate community consultation; and

2. How close should wind farm developments be permitted to: residential houses, schools, hospitals etc; now that it is known that wind farms have severe negative:

   - Social,
   - Noise,
   - Visual,
   - Health, and
   - Financial

   impacts on people living in close proximity to a wind farm.

Our view, which is also supported by several local Councils' Development Control Plans for Wind Farms is that Wind Farms should not be allowed within 2 kilometres of residential houses, residential building sites and public buildings eg: schools, hospitals.

We discuss the importance and reasoning behind our 2 kilometre set-back position as well as other matters which should be addressed in the NSW Development Control Regulations for Wind Farms, in the following pages.

OBJECTIVES OF THE NSW DEVELOPMENT CONTROL REGULATIONS FOR WIND FARMS ("NSWDCRWF")

The objectives of the NSWDCRWF should be:

1. To provide development controls and guidelines that assist in achieving the objectives of the relevant Local Environmental Plan(s) and comply with the relevant local Councils' Development Control Plans for proposed Wind Farms;

2. Provide information to be included and assessed with each development application for commercial wind power generation;

3. To ensure adequate local community consultation occurs;

4. To ensure the local community concerns and rights are adequately considered, addressed and complied with in terms of the comments made by Premier Rees in March 2009, that the fast-tracking of Renewable Energy Projects would not undermine community or council requirements.

   Mr Rees said "As long as this fast-tracking does not trample over community concerns regarding noise and visual pollution, it will (the fast-tracking) help to establish a more environmentally sustainable energy sector in NSW, to create green jobs and attract more investment." (Glen Innes Examiner, 17 March 2009).

5. To eliminate local residents and land use conflicts arising from proposed wind farm developments – a major problem area at the moment;

6. Ensure road and access issues are identified as significant aspects of gaining consent for a wind farm; and

7. To ensure that adequate provisions are made to restore developed land at the end of a project's useful life.

THE MATTERS WHICH SHOULD BE INCLUDED IN THE NEW SOUTH WALES DEVELOPMENT CONTROL REGULATIONS FOR WIND FARMS

The NSWDCRWF should ensure that all Wind Farm Development Environmental Assessment Applications address the following matters:

1. Fully comply with the relevant Local Council's Development Control Plan for Proposed Wind Farm Developments.

2. Adequate and regular local Community consultation must occur at the earliest possible time, including the local communities' concerns about the visual and noise issues of wind turbines.

3. Minimum Set–Back of Wind Turbines from Residential Properties and Government Buildings.

4. Health Issues of people living in close proximity to Wind Turbines.

5. Effect on Property Values.

6. Effect on Livestock and Pastoral Businesses.

7. Noise Amenity Impacts.

8. Visual Amenity Impacts.

9. An evaluation of flora and fauna impacts.

10. The heritage significance of the site and surrounds. .

11. An evaluation of the electromagnetic radiation and/or interference from the wind turbines and/or transmission lines. .

12. The location of the proposed wind farm, boundary dimensions and site area.

13. The site plan or plans.

14. A description of the wind turbine/s to be used.

15. A land-use description of the adjoining land and/or affected lands.

16. A construction program environmental management plan.

17. A decommissioning and site restoration plan and programme.

18. All of the relevant issues in the Planning NSW EIA Guidelines and the NSW Wind Energy Handbook.

19. Demonstration that relevant Agencies issues have been addressed.

20. A Operation Monitoring Program.

21. Conflict of Interest.

FOLLOWING IS A DETAILED ANALYSIS ADDRESSING THE ABOVE POINTS.

1. **Fully comply with the relevant Local Council's Development Control Plan for Proposed Wind Farm Developments.**

   The guidelines developed by the relevant local council for Proposed Wind Farm Developments provide the best indication of the wishes/desires of residents of the local community for such development.

   Premier Rees has confirmed the importance of local community wishes/desires in his statement: "As long as this fast-tracking does not trample over community concerns regarding noise and visual pollution, it will (the fast-tracking) help to establish a more environmentally sustainable energy sector in NSW, to create green jobs and attract more investment." (Glen Innes Examiner, 17 March 2009).

2. **Adequate and regular local Community consultation must occur at the earliest possible time, including the local communities' concerns about the visual and noise issues of wind turbines.**

   Developers must be required to consult with the local community, particularly non-related property owners who may be impacted by the proximity of wind turbines. A detailed Community and Stakeholder Communication and Consultation Plan must be prepared at the feasibility stage. The Community and Stakeholder Communications and Consultation Plan needs to demonstrate how the community and affected stakeholders will be informed throughout the development of the project. It should also include opportunities for them to participate in a dialogue at relevant phases of the project.

   Consultation with Stakeholders should be one of the most important activities in ensuring a successful outcome to a wind farm development. Developers should:

   a) Identify stakeholder groups;

   b) Provided stakeholders with information that explains the nature of the development, its potential impacts and contact details.

   c) Seek the input of the local community, particularly their expectations and perceptions of the proposed development.

d) Consider issues raised during the consultation and where practicable incorporated measures within the management of its operations to address the community issues as they arise.

With the Glen Innes experience, there was no evidence of input sought from the local community. We, as a group and as individuals, certainly had expectations and perceptions of the proposed development and every attempt on our part to discuss this with the proponents or their consultants was met with a stony silence. This is evidenced in our documented phone calls and letters to both the proponents, NP Power's Colin Paterson, and Jeff Bembrick of Connell Wagner as they have not engaged with the local community, setting up antagonism and ultimately confrontation – a very unsatisfactory outcome for everyone.

In our experience with the Proposed Glen Innes Wind Farm, there was no Consultation or engagement with the local community.

3. **Minimum Set–Back of Wind Turbines from Residential Properties and Government Buildings.**

Where visible, how close should wind farm developments be permitted to: residential houses, schools, hospitals etc; now that it is known that wind farms have severe negative:

- Social,
- Noise,
- Visual,
- Health, and
- Financial

impacts on people living in close proximity to a wind farm.

Our view, which is also supported by several local Councils' Development Control Plans for Wind Farms is that Wind Farms should not be allowed within 2 kilometres of residential houses, residential building sites and public buildings eg: schools, hospitals etc.

If a 2 klm setback is adhered to then noise issues, visual issues, common law issues of nuisance, including nuisance in terms of loss of value on properties and potential health issues raised in this submission, would, in the main, diminish, if not disappear entirely. It would seem impossible for approval authorities to ignore all the evidence to support this distance of setback from homes and people's lives.

EuropeanTurbine manufacturer Retoxo-RISP GmbH recommended a minimum 2km setback to residences in their brochure "Important factors when planning a wind farm". *"Buildings, particularly housing should not be nearer than 2km to the wind farm".*

There is ample evidence to indicate that such setback would ameliorate much, if not all, of the impact and opposition to many wind farm proposals.

We recommend a 2 km setback, as documented in the Glen Innes Severn Council and other Councils' Development Control Plans and this cannot simply be dismissed as irrelevant.

Where turbines are proposed to be significantly higher than such properties/dwellings or where the turbines will dominate the immediate view from the dwelling or dwelling lot, increasing these separation distances is recommended.

Turbine locations should not surround a property. Where a property has turbines adjacent to more than one axis of the property, there should be sufficient setbacks/distances to the development to minimize the visual impact on that property.

4. **Health Issues of People living in close proximity to Wind Turbines.**

The environmental Assessment must fully assess the affect of the proposal on people for a distance of at least 10 kilometres from the turbines taking into consideration the affect/impact of noise, visual and blade glint and flicker.

Wind Farm Developers generally push that **"There are no health issues likely to arise from a wind farm development".**

However, Wind Turbines close to homes can seriously impact on the health of the occupants residing close by.

A recent item on Channel 9's "A Current Affair" Friday 14th August 2009, portrayed, quite effectively, the plight of residents living too close to wind turbines.

We are not medical experts, however there are numerous articles and professionals today taking a serious interest in the health affects when living too close to wind turbines. Therefore, as part of our submission, we have attached a series of articles by Dr Nina Pierpont MD, a physician-scientist from USA who has undertaken extensive research on this topic.

The following is her website relating to her research on the health effects of wind turbines being positioned too close to homes and for your information, we include her Curriculum Vitae.

Website link: www.windturbinesyndrome.com

Enclosed as Appendix 1 are the following articles by Dr Nina Pierpont MD:

Attachment – Health Concerns 1. ***Health, Hazard, and Quality of Life near Wind Power Installations: How Close Is too Close? (3-2-05)***

Attachment – Health Concerns 2. ***Noisy Wind and Hot Air (5-7-05)***

Attachment – Health Concerns 3. ***Health Effects of Wind Turbine Noise (3-2-06)***

Attachment – Health Concerns 4. ***Wind Turbine Syndrome: Testimony before the New York State Legislature Energy Committee***

(3-7-06)

We submit her research and articles as well as her website to support our position of a 2 kilometre setback of wind turbines from non-related homes and home sites.

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Curriculum Vitae

Posted August 11th, 2008.

Nina Pierpont, MD PhD

Fellow of the American Academy of Pediatrics

January 15, 2008

Education

1991	M.D.	The Johns Hopkins University School of Medicine
1985	Ph.D.	Princeton University (Behavioral Ecology)
1981	M.A.	Princeton University (Behavioral Ecology)
1977	B.A.	Yale University (Biology), National Merit Scholar (cum laude)

Post-Doctoral Training

1992 to 94 Pediatrics Dartmouth-Hitchcock Medical Center, Lebanon, NH
1991 to 92 Pediatrics Children's National Medical Center, Washington, DC
1985 to 86 Ornithology American Museum of Natural History, New York, NY

Licensure and Certification

1997 Licensed Physician, New York
1997 Licensed Physician, New Hampshire (expired)
1995 Pediatric Advanced Life Support Instructor and Affiliate Faculty
1994 Diplomate, American Board of Pediatrics (recertified 2000, expires 2008)
1994 Licensed Physician, Alaska (expired)

Hospital or Affiliated Institution Appointments

10/00 to 12/03 Senior Attending in Pediatrics Bassett Healthcare, Cooperstown, NY
1997 to 00 Attending Pediatrician Alice Hyde Hospital, Malone, NY
1995 to 96 Chief of Pediatrics Yukon-Kuskokwim (Yup'ik Eskimo) Delta Regional Hospital, Bethel, AK
1994 to 95 Staff Pediatrician Yukon-Kuskokwim (Yup'ik Eskimo) Delta Regional Hospital, Bethel, AK

Other Professional Positions

2004 to ... Private Practice (Solo) Pediatrics (emphasizing Behavioral Peds) Malone, NY
1998 to 00 Private Practice (Solo) Pediatrics Malone, NY
1997 to 00 Staff Pediatrician St. Regis Mohawk (Iroquois) Health Services, Hogansburg, NY
1997 to 98 Staff Pediatrician North Country Children's Clinic (clinic for needy children), Malone, NY

Academic Appointments

2000 to 03 Assistant Clinical Professor of Pediatrics, Columbia University, College of Physicians and Surgeons

5. **Effect on Property Values.**

The Environmental Assessment must fully assess the negative affect of the proposal on all property values for a distance of at least 10 kilometres from the turbines taking into consideration the affect/impact of noise, visual, health and blade glint and flicker.

Whilst wind farm developers dismiss the impact of Wind Turbines close to homes as not having an impact on land values, this conclusion is not supported by the facts. There is evidence to support a significant impact on land values for properties in close proximity to wind turbines.

Sales of properties in the local Furracabad/Matheson valley areas have already "fallen through" due to the specter of Wind Farm developments in the region – a 100% reduction in the land value.

Ballarat-based valuer, Alan Hives has stated that there has now been enough sales of property featuring or near wind farms to draw some conclusions of their impact on property values.

In a recent report he stated that "the more intrusive the wind turbines in "lifestyle" terms, the bigger the price impact" on property owners (National Wind Watch, posted 14 November 2008). "In some coastal areas of Gippsland with high lifestyle value, property values had fallen by as much as a third", he states.

A valuer from Yarram Victoria, John J. Jess, AAPI, Certified Practising Valuer and member of the Australian Property Institute, has completed extensive research and appeared as an expert witness at the proposed Bald Hills Wind Farm development. For evidenciary purposes, we can discuss one such valuation. Mr Jess completed a valuation in 2006 on a property in Devon North, positioned in close proximity of a Wind Farm. The valuation was based on 2 criteria: 1. Market value of the property on the basis of ignoring any detrimental effect due to proposed wind farm on adjacent land, and 2. Market value assuming the proposed wind farm to be constructed on adjacent land.

The value of the property under criteria 1. was $350,000. The value of the property under criteria 2. was $255,000. A decrease in market value of $95,000 or a 27% decline in market value for this property. (Data based on Valuation dated 22 March 2006 of a property in Bolgers Road, Devon North. We hold this document but for privacy reasons, have not included it as an attachment. For confirmation Valuer J. Jess & Associates Pty Ltd.

can be contacted or we also hold this document, available for perusal, if required.)

Neighbours to a proposed Wind Farm will have permanent capital losses on their properties. Such losses significantly impact key areas such as a person's capacity to borrow, the cost of borrowing and their capacity to provide adequately for themselves in retirement.

Values for rural land can be split into two broad components:

a) Agricultural value – the value which is paid for the current and potential agricultural earning capacity of the land, plus its rural amenity (being able to enjoy living in a rural area).

b) Locational value unrelated to its agricultural value – this relates to its value from being located in an area of high visual or other amenity, and its proximity to local towns, schools, universities and medical care etc. People wish to "get away from it all" (built up areas, including industrial areas), and enjoy unspoiled natural rural beauty, both during their active family life and in retirement years.

Factors such as these are very important in setting the locational value that buyers are prepared to pay over an above agricultural value.

The Broken Hill area (where a substantial wind farm is proposed) is located in extensive (as opposed to intensive) farming country in Western New South Wales where land has limited agricultural use but little or no locational value. The extensive nature of the farming involves larger sized properties so that population and housing density is low and it is possible to site a wind farm power station away from houses, stock handling facilities and the general vicinity of neighbours. The comparative barren terrain is ideal for such a development. Because agricultural productivity and the rural amenity of neighbours are not greatly altered, the wind farm has little impact on land values.

Ideal conditions ... a computer-generated image of the proposed wind farm site outside Broken Hill.

We have attached the link to the information article dated 8 October 2007 supporting this development at Appendix 2.).

The Broken Hill development may be contrasted with the Proposed Glen Innes Wind Farm where land has considerable agricultural and locational value by reason of its location in a beautiful rural setting, within 2 ½ hours of the coast, 4 hours from Brisbane and 6 hours from Sydney, with airline access being an hour from Sydney to either Armidale or Inverell. Property sizes are of course smaller in the Glen Innes region and range from less than 100 acres to properties of several thousand acres and population density is higher. Grazing productivity is also commensurately higher.

An interesting comment by one of our Councillors recently said that really, we should be grateful for the wind farm as our rates would decrease. Clearly this would be a result of a reduction in the rateable value of our land! Therefore, he acknowledged the fact that our land would reduce in value. This has also been the case in the South Gippsland Shire where the Council has reduced the rateable value of some properties by as much as 40% as a result of their proximity to, and the effect from, the wind farms.

If one was in doubt about the reduction in neighbouring property values, just ask yourself, if you had a choice of purchasing a property with, or without, a neighbouring wind farm, which would you prefer. If you would prefer a property without the neighbouring wind farm, what would entice

you to buy it with a wind farm next door. There can only be one incentive – money – a reduction in price!

To further support our position, we have included some further comments:

- **Blot on the landscape** – Danny Buttley, Victoria (Australia) Herald Sun, 21 Feb 04: "Bruce Richards, Managing Director of PBE Real Estate in South Gippsland, said Victoria's property boom was going backwards in the shadow of the giant turbines. He said selling homes within 2km of Toora's 12 wind turbines was becoming increasingly hard. 'Anywhere close to the towers is very, very difficult to sell,' he said.

  South Gippsland Shire mayor David Lewis said rate valuations had decreased on some properties near turbines, but could not confirm if it was just due to wind farms. But there was no doubt they had depressed the immediate property market. 'My personal belief is that it does destroy property values,' he said."

- **Turbines Cast Shadow Over Land Values**: Paul Sellars, Weekly Times, 16 APR 2003... "Three prominent agents have told The Weekly Times that existing wind turbines -- and the prospect of more to come -- have turned potential buyers off properties. PBE Real Estate co-founding director John Evans said in 35 years working in South Gippsland, he had never seen a bigger threat to property values than wind farms... Wesfarmers Landmark Leongatha agent Glen Wright said wind farms were "definitely" having an impact on values. If they are near the property, buyers are staying away," Mr Wright said. "If I had to put a figure on it, I would say (a reduction of) 25 to 30 per cent on the going value."

  Pat Rice Hawkins Pty Ltd sales manager Bruce Falk said potential buyers were turned off by the prospect of wind turbines... 'I would have shown 50 or 60 people through that property and I would say half of those wouldn't even look at the place once they realized it's in the vicinity of wind turbines,' Mr Falk said...The agents' claims were rejected by the Australian Wind Energy Association." This is no surprise!

Further, would you purchase this property?

Photo courtesy of Ed Sliwinski

Fenner, NY. How much would YOU pay for this home?

There is a strong argument to say that no one would ever consider buying this property.

The value of properties within close proximity of wind turbines ARE impacted.

There is also the matter of Common Law, that if an owner's land value diminishes as a result of an action by a neighbour, litigation may result.

In summary, our main point in terms of Land Valuations is that Governments and Approval Authorities must give due consideration to the appropriate location of wind farms, preferably away from populated areas. But where developments are proposed in areas like Glen Innes on the top of the Waterloo Range, then specific setbacks from affected homes must be adhered to. We are proposing a minimum setback of 2 kilometers from affected homes.

6. **Effect on Livestock and Pastoral Businesses**

The environmental Assessment must fully assess the affect of the proposal on livestock for a distance of at least 10 kilometres from the turbines taking into consideration the affect/impact of noise, visual and blade glint and flicker.

The development should be sited and carried out to minimize impacts on, or restrictions to normal grazing, farming, forestry practices;

The development should be carried out in a way that minimizes any adverse effects on adjoining land and the development site, particularly in the way of:

a. Land degradation;
b. Alteration to drainage patterns;
c. Pollution of ground water;
d. Spread of noxious plants and animals;
e. Bushfire hazard; and
f. Amenity of adjoining/adjacent/affected landowners.

7. **Noise Amenity Impacts**

The Environmental Assessment must include a comprehensive assessment of the predicted noise impacts resulting from the construction and operation of the proposed wind farm. The assessment must include consideration of noise impacts of the project, with a particular focus on the particular/local and meteorological conditions characteristic of the specific locality which may exacerbate impacts (such as the van den Berg effect for wind turbines). The probability of such occurrences must be quantified. Sufficient information must be provided to enable a clear understanding of which criteria have been used.

As a minimum, the noise assessment should consider the following guidelines:

- *Wind Turbines* – The South Australian Environment Protection Authority's *Wind Farms – Environmental Noise Guidelines, 2003;*

- *Remaining Structures* – in accordance with the NSW EPA *Industrial Noise Policy, January 2000*;

- *Construction Noise* – undertaken in accordance with Chapter 171 of the Environmental Noise Control Manual (EPA, 2004) for noise impacts associated with the proposal, particularly along the main access routes to the site.

At present, the criterion for Noise evaluation is the South Australian guidelines.

Noise perception is in many circumstances entirely separate to the meeting of specific regulatory criterion.

The fact that a sound can be discerned and identified by a sensitive receiver within the general background noise, can be sufficient aggravation and cause undue stress and other negative impacts on the receiver. The human ear is particularly adept at discriminating and identifying noise sources within a total environmental noise.

The fact is the turbines will be heard within a noise environment even if they are simultaneously meeting regulatory noise guidelines. Also there are effects due to changes in wind direction and harmonic effects as turbines take up new directions (similar to the harmonics experienced when the engines of a twin-engine aircraft are out of synchronization, a sound experienced by many passengers).

The very effect of noise "nuisance" is a major concern.

The Environmental Assessment must clearly outline the noise mitigation, monitoring and management measures the proponent intends to apply to the project. This must include an assessment of the feasibility, effectiveness, and reliability of proposed measures and any residual impacts after these measures have been implemented.

Where noise levels are found to exceed EPA guidelines, remediation work such as cessation or decommissioning of the turbines to reduce the noise impacts on sensitive receptors such as residential dwellings should be carried out.

Noise from turbines will be minimized if a 2 kilometre setback is applied.

8. Visual Amenity Impacts

The Environmental Assessment must fully describe all project components, locations and dimensions. A photographic assessment clearly demonstrating the potential visual amenity impacts must be provided along with a clear description of visual amenity mitigation and management measures that the Proponent intends to apply to the project. An assessment of the feasibility, effectiveness and reliability of the proposed mitigation measures and any residual impacts after these measures have been implemented must be included.

The Environmental Assessment must also assess the visual impact of the proposal of the particular landscape (including existing and approved dwellings) for a distance of at least 10 kilometres from the turbines, taking into consideration the impact of shadow "flicker" and "blade glint". The visual impact assessment should be prepared with regard to the Australian Wind Energy Association and Australian Council of National Trust's *Wind Farms and Landscape Values: Stage 1 Report – Identifying Issues, March 2005, Appendix B; Wind Farms and Landscape Values: Final Issues Paper.*

The developer must assess the visual impact of the project including an assessment of scenic value. The developer must consult with the local Council and the community on appropriate visual impact and their mitigation measures.

The developer must assess the cumulative impact of the development in regard to existing wind farms or identified sites or proposed wind farms. Large expanse of ridgelines cannot be covered with wind farms and turbines.

Turbine locations shall be located sensitive to residential dwellings surrounding the development. Existing and proposed screenings could be used to minimize visual impacts to residential properties – Note that due to the height of turbines, screening is not the preferred choice of dealing with visual impact. The developer's priority should be endeavouring to position the turbines in locations with low visual impact to nearby properties, especially existing dwellings and lots provided for dwellings.

Broadly, three criterion are used to evaluate the issue of Visual Impact.

a) Distance of the nearest turbine,
b) Spacial visibility of the turbine;
c) Number of turbines visible.

Given the size of today's turbines (130 metres to 150 metres in height), their scale in any landscape can be significant for the closest residences.

In relation to the proposed Glen Innes Wind Farm, a non-related property affected not only has one turbine that impacts on it, it is "hugged" by several turbines. The impact of these turbines on this one property, if they proceed, is overwhelming and must be considered unacceptable and a Nuisance at Common Law, due to visual and auditory impacts.

Numerous other properties in the Furracabad Valley at Glen Innes are also severely impacted, thus giving rise to Nuisance at Common Law.

Guidelines must be implemented to protect all parties from this situation.

Developers admit that the impact on residences close to wind turbines is high. However, Wind Farm Proponents are still refusing to reconfigure wind farms to improve the position of severely impacted homes.

The value of properties will be severely impacted by the specter of wind turbines closer than 2 km from homes. We believe that there may be a Common Law case of Nuisance, due to Visual and Auditory Impacts at homes closer than 2 kilometres to wind turbines.

Developers with experience in wind farm developments, are fully aware of neighbours concerns – it is one of the major issues raised. No one issue can be looked at in isolation - it is the cumulative impact of all issues.

Visual Absorption Capability. The scale and form of wind turbines contrast with rural scenes and as such there is low visual absorption capability for wind farms in a rural environment. Developers know this, and that is why they must select sites that are more suitable.

There is no possibility of rural landscapes absorbing 130 metre high wind turbines positioned on top of hills. These turbines are not consistent with a rural landscape as developers often suggest.

In Glen Innes, the developer has downplayed the rural amenity of the Valley. It has ignored the fact that the Valley would be changed from a pastoral landscape to a rural industrial landscape, as well as the associated loss of amenity and the valley's sensitivity to that loss.

Tree screening is generally provided as the only mitigation option for adverse Visual Impact. This is not true – the removal or relocation of turbines away from non-related homes is the obvious solution.

Developers have stated that to remove turbines could make a wind farm unviable. Unviability should not, and cannot be a reason. Individual landowners' rights MUST take precedence.

Developers state that "tree planting" is the best mitigation option.

The suggestion of planting tall trees of **"... 10 to 20 metres height within 30 to 50 metres of a residence to provide screening..."** is of no practical use for the following reasons:

1. Trees will take over 20 to 30 years to grow. By then, new technology will be available and the wind farm will be obsolete.

2. Rural areas rely heavily on northern aspects to warm homes in the winter and minimize energy use, trees on northern aspects are generally not an option.

3. The lack of winter sun by a northerly barrier destroys the possibility of solar panels as an alternative energy source.

4. In rural areas, an important aspect is the landscape view itself; the trees will block it out.

In terms of overseas trends, there is a strong push to ensure that neighbouring residents are not too close to wind turbines. There is enormous data on numerous websites railing against turbines in close proximity to homes.

In fact, a builder of wind turbines also recommend a 2 kilometre setback of turbines from buildings, especially homes, viz:

"RetexoGruppe - RISP GmbH" is a major builder of Wind Turbines for Europe. They also assist developers in the planning of their wind farms from assisting with the site location; measurement of the wind intensity to ensure it is satisfactory; the amount of area required to construct a wind farm; Grid connection and liaising with local Electricity suppliers.

TetexoGruppe – RISP unequivocally state that "Buildings, particularly housing, should not be nearer than 2 km to the windfarm".

Today in overseas locations, the new and successful wind farms are located in remoter areas or developed with adequate distance from residential homes. They are not near private homes therefore they are not fighting opposition to their developments because they are locating turbines too close to homes. Overseas developers now realize that

sensitivity to people and people's lives and wellbeing is critical to keep the public supportive. There does not need to be a "sacrificial lamb" if developments are thought out properly.

In conclusion, there is only one real option to mitigate the visual impact of wind farms – position turbines more than 2 kilometres away from non-related homes and home sites.

9. **An evaluation of flora and fauna impacts**

With specific mention of migratory species potentially impacted by the development. Where the development is in close proximity to known habitats of rare or endangered species, early consultation with the Department of Environment and Climate Change is highly recommended.

10. **The heritage significance of the site and surrounds.**

Reference shall include the local Councils' guidelines, the Heritage Council, NSW DEC (former NP& WS), the National Trust of Australia and the Australian Heritage Council. The draft Heritage Council of NSW policy on wind farms shall also be referenced.

11. **An evaluation of the electromagnetic radiation and/or interference from the wind turbines and/or transmission lines.**

This should include impacts on human and animal health and local television and radio reception and other local communications.

A communications study should identify the existing status of communications and detail the proposed method of dealing with potential communication interference. The development should not detract from the reception of radio, TV, mobile phone, two-way reception or other communication methods. Where necessary, it may be required to install additional services (boosters/communication towers/re-transmission towers etc) to maintain such services in the vicinity of the development. Where this is determined to be necessary, the work and equipment shall be at the developer's cost.

12. **The location of the proposed wind farm, boundary dimensions and site area.**

This should include a map of 1:25,000 scale showing the location of the proposed development, the route of transmission lines to the electricity grid (and include access road, pylon, gradient and erosion control assessments), the service roads on and to the site, and the proximity to significant features such as dwellings, environmentally sensitive land, prime crop and pasture land, forests, national parks, heritage items and aircraft facilities.

The development shall not be located within two times the height of the turbine (including the tip of the blade) from a formed public road.

The development shall not be located within two times the height of the turbine (including the tip of the blade) from a non-related property boundary.

13. **The site plan or plans**

showing positions of the proposed wind turbines, site boundaries, native vegetation, the proposed vehicular access points, the location of existing and proposed vegetation and trees on the land, the location and uses of all existing and proposed buildings, power lines, sub-station and fences on the land.

A Bushfire Threat Assessment is to be prepared by a suitably qualified Bushfire Consultant, addressing, but not limited to, the risk of bushfire originating from the development site and the potential for harm/damage should a bushfire encroach on the site.

14. **A description of the wind turbine/s to be used.**

Including all relevant details such as number, make, model, dimensions, generation capacity materials and colour.

15. **A land-use description of the adjoining land and/or affected lands**

A land-use description of the adjoining land and/or affected lands and landscape including assessment of the likely future impact.

16. **A construction program environmental management plan**

Incorporating the proposed staging of the project, erosion and sedimentation controls, heavy vehicle movements, site access including all service roads, transmission towers, substation, underground wiring, construction phase impacts including facilities, waste disposal, staff/contractor numbers etc, weed control, farm impacts and all other works.

The construction phase of the wind farm shall occur only on identified roads/routes. Construction vehicles, including concrete trucks, carriers of turbines components, and related heavy vehicles (including relevant contractors) shall only travel the approval road. This route shall be identified in the development application for each of the construction components and/or contractors.

Local townships will require road works to cope with the over size and over weight traffic movements related to the construction of a wind farm. Bonds will also be required for any potential damage to roads during the construction phase. This should be held by the respective Local Councils.

All infrastructure related to the wind farm should be included in the development application. Management of temporary facilities, waste, numbers of contractors/employees, etc., should be part of the Development Application information. All infrastructure should be located in low visual impact locations and interconnection cables/wiring and the like should be underground.

17. **A decommissioning and site restoration plan and programme.**

Within six (6) months of the wind turbine generators becoming redundant, any rights of carriageways that were constructed to enable maintenance to be conducted on the wind turbine generators are to be extinguished by the developer.

Within six (6) months of the Wind Turbine Generators becoming redundant, they are to be fully dismantled and removed from the site by the developer or current operator of the development at the time.

18. **All of the relevant issues in the Planning NSW EIA Guidelines and the NSW Wind Energy Handbook current at the time of the application.**

Developers must consider and refer to the Planning NSW Environmental Impact Assessment Guidelines for wind farms, the NSW Wind Energy Handbook, Best Practice Guidelines for implementation of Wind Energy projects in Australia (AusWEA), S.A. EPA Wind Farm Noise Assessment Guidelines and all other relevant policies and legislation applicable to the proposed development. Reference to relevant Council policies and documents should also be made. Particular reference must be made to "Wind Farms and Landscape Values Foundation Report" and any subsequent documents arising from this report or produced by the Department of Environment and Heritage relative to wind farm developments.

19. **Demonstration that relevant Agencies issues have been addressed** (eg. CASA for aviation safety, SCA for water quality issues etc.).

20. **An Operating Monitoring Program**

An operating monitoring program detailing, but not limited to, health issues, property values, livestock and pastoral businesses, noise measurements (locations, times and dates), shadow flicker assessments (locations, times and dates), fauna impact surveys, traffic movements, maintenance schedules. The Program will identify those issues to be addressed in a Report which is to be lodged with the respective Council on an annual basis and made available for public viewing. Any inconsistencies arising from the operation of the wind farm and any consent issued are to be addressed in the report. The requirements of the Monitoring Program identified as a result of the community consultation and development assessment process.

This program must also detail what actions will be taken by the wind farm operators if the proposed operating conditions are not complied with eg. Decommissioning of the wind farm, dismantling of the wind farm etc.

21. **Conflict of Interest.**

No local council should receive a fee/contribution for allowing a wind farm to be developed in their area of responsibility – this eliminates any conflict of interest.

Donations to political parties by Wind Farm Developers and their consultants should also be disclosed.

OTHER ISSUES

It cannot be disputed at the moment that the insensitive sighting on Wind Farms in Australia and throughout the rest of the world, and the inability of Wind Farms to provide base load electricity, is causing a ground swell of opposition to Wind Farms.

There is a strong case that the lack of appropriate guidelines and set backs for Wind Farms is giving a right to affected parties to have an action at Common Law for Nuisance against the relevant parties – refer to Appendix 3 for a summary of a legal position in this regard. We believe that a minimum of 2 kilometres set-back of turbines from residential houses will significantly reduce, if not eliminate, the many ill effects from turbines too close to homes and will result in the significant reduction in "Nuisance" cases at Common Law.

Enclosed as Appendix 4 is a recent newspaper article about a French Nation Wide opposition to wind turbines being sited in inappropriate areas.

We also enclose as Appendix 5 a recent newspaper article by Terry McCrann which outlines argument against the use of Wind Farms as a viable means of power generation.

CONCLUSION

- We are not against sustainable energy solutions and support the Federal and State Governments' target of producing a portion of the country's electricity needs from renewable sources by 2020.

- This will not be achievable if sustainable energy project proponents and authorizing bodies do not have regulations which properly protect, consider and effectively consult affected local residents and work together to find constructive "win-win" solutions for all parties.

- More care is needed in the siting and design of wind farms to avoid the proximity to neighbouring residences, and the adoption of minimum setbacks would provide certainty for developers, authorizing bodies and residents alike.

- Although we would have preferred a 3 km setback from Wind Turbines, we have embraced the COMPROMISE 2 KM SETBACK of the Glen Severn Council's DCP. In the Glen Innes area, this setback is also supported by valley residents, the hundreds of local petitioners to State Parliament, our local member, the Hon. Mr Richard Torbay MP and turbine manufacturers in Europe.

- If inappropriately sited, Wind Turbines would, under Common Law, be considered a "Nuisance" due to their adverse auditory, visual and financial impact.

- **Most, if not all, objections to Wind Farms can be resolved if the 2 kilometre setback is included in the New South Wales Development Control Regulations for Wind Farms.**