

# Noise Watch Australia Inc.

## Protecting our rights to Quiet.

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Public Officer

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Noise Watch Australia Inc. thanks Parliamentarians and the Senate for initiating this consultation to evaluate the placement of wind turbines to reduce the incidence of detrimental effects in our rural communities. This review process should be broad ranging to influence better integration of the wind turbine technology. Unwanted noise has been identified by those who live near turbines already installed, demonstrating that State planning processes involved deserve significant review. Limited and separate jurisdiction between national and state agencies is not contributing positively to strengthen integration of this or any other change. Development designs underpin health in our community.

To encourage review of the many points we are compelled to make in this submission, we offer a summary of points that points to the complexity of the issues associated with the introduction of wind turbines into rural settings. We encourage you to also look at the more detailed discussion of those points further into the document.

### SUMMARY POINTS

An above ground electricity grid that loses almost half of its energy in transmission, and is prone to storm damage, motor vehicle collision and more, is expensive to maintain and not suited to more extremes in weather. It is not the most cost effective way household energy needs can be met in the future.

Small scale, stand alone energy production, combined with isolated storage facilities, will be a more economically sound and flexible strategy; reducing the costs of system maintenance and repair disruption enormously. Removing

power poles will make roads safer. This different design should be part of consideration now.

Separate jurisdictions between national and state and local government is not contributing positively to strengthen integration, nor providing shared information about the changes that are put in place.

- National Commission to investigative planning rules is desperately needed to audit and improve development change process.

Accountability for Public administration

- A 1800 phone contact for the electorate to drive an open display on the internet, (with an anonymous numerical id) of what is not working in our dysfunctional community design would put power in community hands. The community should be able to drive a national direction for Public administrative accountability.

There have already been many poor experiences with development processes, in guiding the placement of turbines and wider planning decisions.

Planning processes fail to examine potential harm, identify individual vulnerability, or to revisit the changes with reference to the quality of what is done. Development change that is dependant solely on legal challenge is driven by one side of the development.

No residential expertise in epidemiology at Local Government, State Planning, or even as public representation in the courts.

- Unmonitored noise is a growing component in every development change. It is costing us \$Billions annually in health and social injustice. This when Europe has strengthened its social capacity by mapping noise to evidence risk profiles and acts to contain unwanted noise.
- We would ask parliamentary members to consider reviewing Noise policies, with a view to unifying better management profiles for Australia's future.

In 2005 medical research at the Garvin Institute published how noise acts in our body system; invoking an autonomic stress response.

- Contact Professor Herbert Herzog, Director, Neuroscience Research Program, Garvan Institute of Medical Research; NHMRC Principal Research Fellow; Adjunct Professor, Faculty of Medicine, The University of New South Wales, <http://www.garvan.org.au/about-us/our-people/herzog>

*“Noise triggers a stress response in the brain, causing nerve cells to secrete the hormone neuropeptide Y. NPY is elevated in the bloodstream, and then inhibits the activity of helper cells, (TH1), in the immune system. The secretion of NPY eliminates immune system response to diseases such as rheumatoid arthritis, multiple sclerosis, Crohn's disease, type one diabetes and lupus. It weakens individual well being and resilience.”*

This explanation goes beyond the pituitary-adrenal cortex activation of sympathetic activation that stress factors have been associated closely with in the past. It presents the influence of a constant mode that is more harmful.

Potential low frequency noise from wind turbines 24/7 will impact most on individuals most vulnerable. Eg. infants, the unborn, the aged and the unwell.

- What will be done to ensure such personal risk is not ignored?

Population health data associated with intruding industries in urban environments, and increasing traffic through suburbs with houses closely associated with main traffic routes, is evidence of the reality that has been ignored. Vulnerability is being ignored by the planning system, and health service requirements have doubled in the last 5 years, as it all gets closer.

Modelling relating the potential risks of turbines done by the industry is based on plant that is much smaller than that developed and being placed in the field today. 30mts vs 100mts blades. There is a significant increase in the noise associated with machinery size.

Planning legislation in Australia fails to identify and associate the scale of development, or development change, with the vulnerability of those who might be directly affected.

Industry and technology change scale dramatically. Even markets change dimension, but State Government management of industrial technology does not make that connection.

- Australian planning change relies on litigation for solution, when that is the slowest process. By being led by litigation we are not advancing our culture beyond that of bullying that has dominated our schools and work places for decades.
- Prioritise a better system for engaging administrative and planned integration design. Our existing development process is dysfunctional. The process is directed by segregated government agencies and departments at different levels of authority, and run by different Ministers.

Exciting technical developments of digital systems in recent times provide design and evaluation capacity for local access control of broad networks and databases. We put to you that reorganising access to existing data systems utilising such developments would improve connection between departments and agencies. Such change would provide immense cost and efficiency benefits to many parties in every Australian electorate, and incredibly timely if it could be facilitated in the evolution of the \$Billion broadband rollout.

- In November 2008, National Environment Protection Council published a report on dysfunction associated with wind farm development; [Report on Impediments to Environmentally and Socially Responsible Wind Farm Development - Nov 2008](#)

The Environment Protection and Heritage Council have reinforced their national commitment to a stronger capacity for Wind Farms to establish, by going on to produce National Wind Farm Development Guidelines in 2010; <http://www.ephc.gov.au/taxonomy/term/25> [Draft National Wind Farm Development Guidelines - July 2010](#)

- No national binding policy. Continuing parochial containment by reactionary process in court proceedings.

Such an approach is too lay back and open to corruption. It is time the Australian Government was willing to issue legislative rules to planning authorities to protect the public from risks to personal health.

- Health systems have more than enough service backlog to indicate we need to actively pursue opportunities to reduce health service requirement. A community less exposed to health risk is critical to economic stability too.

Noise Watch Australia has been contacted by people living with wind turbines in close proximity, and they have strongly complained. Unannounced health risks and other issues affecting bystanders are part of the current change process. Neither deception nor incompetence that has become part of a planning culture should make our political leaders proud.

## **DISCUSSION**

Our submission to you is stimulated by poor experiences of those affected by inadequate planning development processes that have guided the placement of existing turbines. Again, this is like so many other aspects in our state planning systems; they have failed to examine potential harm, identify individual vulnerability, or to revisit the changes with reference to the quality of what is done. Unwanted noise is a growing component in such change, and

managed in the current way, it is costing us \$Billions annually in health and social injustice<sup>1</sup>. We would ask committee members to also consider reviewing State noise policies with a view to unifying better management profiles for our future. We would welcome your contact to undertake such a review.

We accept that renewable energy sources are critical to our future. We suggest that an above ground electricity grid that loses almost half of its energy in transmission is not necessarily the most trouble free and cost effective way household energy needs might be met in the future. What costs and disruption occurred as a consequence of our dependence on the network system during the recent floods? Our expectation is that small scale stand alone energy production, combined with isolated storage facility, may be a more economically sound and flexible strategy; reducing the costs of system maintenance and repair, and running costs for residents and offices. Why has the Government not identified such a strategy? Is it not part of the business anymore? This different design should be part of consideration now.

Wind energy companies are pushing for the wide introduction of a technology into our communities when the interaction of the technology with public health has not been fully identified and understood. Noise is one of the inherent by-products that flow from turbines. Only medical research in 2005 has been able to identify it's mechanism of action in our body system; it invokes an autonomic stress response<sup>2</sup>.

There is other research that supports the involvement of the neuronal systems with immunity too<sup>3-4</sup>; we suggest the committee contacts the researchers at the Garvin Institute to provide detailed explanation. *Briefly, noise triggers a stress response in the brain, causing nerve cells to secrete the hormone neuropeptide Y. NPY is elevated in the bloodstream, and then inhibits the activity of helper cells, (TH1), in the immune system. The secretion of NPY eliminates immune system response to diseases such as rheumatoid arthritis, multiple sclerosis, Crohn's disease, type one diabetes and lupus. It weakens individual well being and resilience.*

Contact details are here for Professor Herbert Herzog, Director, Neuroscience Research Program, Garvan Institute of Medical Research; NHMRC Principal Research Fellow; Adjunct Professor, Faculty of Medicine, The University of New South Wales, Email: [h.herzog@garvan.org.au](mailto:h.herzog@garvan.org.au), <http://www.garvan.org.au/about-us/our-people/herzog>

A Fundamental bimodal role for neuropeptide Y1 receptor in the immune system, Julie Wheway, Charles R. Mackay, Rebecca A. Newton, Amanda Sainsbury, Dana Boey, Herbert Herzog, and Fabienne Mackay, Journal of Experimental Medicine, 2005, Vol. 202, No. 11, December 5, 2005 1527–1538; <http://jem.rupress.org/content/202/11/1527.full.pdf+html>

How badly noise impacts can vary according to existing predisposition of individuals, particularly relating their maturity and health stability. For infants, the unborn, the aged and the unwell, noise that can endure for 24hrs/days at a time, is an acute threat.

Population health data is available to identify where the hot spots are in the present community design; *Interactive mapping*; <http://www.publichealth.gov.au/interactive-mapping/>, *Data*; <http://www.publichealth.gov.au/data/>

These centres of poor health are associated with intruding industries in urban environments. With increasing traffic through suburbs with houses and schools even, closely associated with main traffic routes. Such evidence illustrates the reality that has been ignored<sup>5-8</sup>.

An 80-year-old woman presents to the emergency room with confusion and is recovering from vertigo and nausea. She needed assistance to get to the emergency service area. Her symptoms were not familiar to those who were not aware of the complications of the movement of particles in the inner ear. Intruding low frequency noise causes a shift of these particles, and on occasions, induces an acute response. If the cause is ongoing, and no assistance is available, she will not recover.

A myriad of reports have come from the wind turbine industry, often referring to perceptions associated with intrusive noise by residents living near turbines. Impact modelling of turbines in reports showing little change in the environment. Such modelling is based on plants with blades of 30 meters. Plant being installed today has blades of up to 100mts long. There is a significant increase in the noise associated with such size increase. The mechanics managing the flow from such blades is also under greater pressure. Existing use in planning legislation does not rest of the scale of activity. What changes for the future when a smaller turbine is installed?

Planning legislation in Australia fails to identify and associate the scale of development, or development change, with the vulnerability of those who might be directly affected. Industry and technology change scale dramatically. Even markets change dimension, but State Government management of industrial technology does not make that connection. Here we have example of varying size of the principle production plant, the turbines, varying more than three scales of magnitude, but planning consideration is the same, regardless of local vulnerability.

Australian planning change relies on litigation for solution, when that is the slowest process. When it is the last thing on most people's mind, and is the

least affordable process for individuals. By being led by litigation we are not advancing our culture beyond that of bullying that has dominated our schools and work places for decades.

We commend the Committee for being involved in wind turbine placement now, and encourage your influence to prioritise a better system for engaging administrative and planned integration design, in our existing dysfunctional development process. The process is directed by segregated government agencies and departments at different levels of authority, and run by different Ministers.

Exciting technical developments of digital systems in recent times provide design and evaluation capacity for local access control of broad networks and databases. We put to you that reorganising the existing computer systems utilising such developments to improve connections between departments and agencies would provide immense cost and efficiency benefits to many parties in every Australian electorate, and could be facilitated in the evolution of the \$Billion broadband rollout.

The National Environment Protection Council acknowledges their critical role of requiring annual reports from States on pollution issues and monitoring. States fail to monitor and coordinate responses to pollution elements such as noise. Neither has South Australia fulfilled its obligations for Air quality for the city of Adelaide since its carbon monoxide monitor was damaged in 2005. The EPA is thinking about setting it up again just now.

In November 2008 the Australian Environment Protection & Heritage Council, (EPHC), organised and published a report on dysfunction associated with wind farm development;  
[Report on Impediments to Environmentally and Socially Responsible Wind Farm Development - Nov 2008](#)

The Council have reinforced their national commitment to a stronger capacity for Wind Farm establishment by going on to produce National Wind Farm Development Guidelines in 2010; <http://www.ephc.gov.au/taxonomy/term/25> [Draft National Wind Farm Development Guidelines - July 2010](#)

While acknowledging in the guidelines the risks associated with accompanying turbine noise, the Council fails to take a leadership role in proposing a national set or rules to allow those who are at risk from such change, to relocate without disadvantage. We put it to you that the politics of allowing continuing parochial containment by reactionary process in court proceedings is selling too many Australians out. Continuing such an approach is too lay back and open to corruption. It is time the Australians Government was willing to issue legislative rules to planning authorities to protect the public from risks to personal health. Our Health system has more than enough service backlog to

indicate we need to actively pursue opportunities to reduce health service requirement. A community less exposed to health risk is critical to economic stability too.

Noise Watch Australia has been contacted by people living with wind turbines in close proximity, and they have strongly complained of the intrusion of noise that neither the developers nor planners identified as part of the development change when it was all happening. Withholding information is indicative of development processes for all development. Unannounced health risks and other issues affecting bystanders are often part of change. Neither deception nor incompetence that has become part of a planning culture in this country should make our political leaders proud.

### **Noise Management in Australia in the dark ages –**

Given the very casual reference to noise in OH&S guidelines, where noise levels of up to 85dBA for 8hrs are acceptable, the response of the legal fraternity, industry and planners to any significant health association with noise levels at lower levels, such as that associated with wind turbines, is understandable. None of them work or live in such conditions.

We also relate to the committee that by having noise guidelines in place that relate only to "A" weighted noise, and 8 hrs exposure, both industry and planners are able to bypass the different health impact of different sound frequencies not given prominence in policy guidelines. "A" weighting is our predominant hearing range. Focus only on this noise has only legal purpose, and invokes ignorance of the health impact of noise at lower frequencies. When people can no longer go home to quiet living environments, they have no respite, and are continually stressed.

The loudness of background noise, and its frequency, also significantly affects the social and biological impact of intruding noise. Rural areas have daytime levels of around 30 -35 dBA, while night time levels fall below the radar. Metropolitan areas on the other hand have daytime levels of 45-55dBA, and night time levels might fall to 30-35dBA. Think about the response you might have in moving between these different noise environments, and think about that which invokes the most personal strength and weakness.

Reference is made to background noise to reflect on the greater potential for noticeable noise intrusion in rural environments. For each 3dBA elevation above background noise, there is significant notice of intrusion into personal thinking space.

*The discount of noise impact in our community and on worksites ignores the complexity of interaction noise has with biological systems. We have made*



*reference to this complexity in this submission. Again, the Committee would gain further insight and understanding by asking researchers identified at the Garvin Institute, to meet with the committee to relate the interaction of noise and stress. It invokes the elevation of neuropeptide Y, and the connection of that protein with reactive elements in the immune system, overriding normal biological responses to other threats to our health.*

Noise has so many sources today; it is hard to keep up with where it is having the greatest health and social impact in our communities. Indeed given that stress in our community is not a focus of discussion with our GP, the causes of stress are accepted as part of life, regardless of the cause. However more GPs are recognising this deficiency, and accept that the summary response to accepting whatever is out there, should be revisited. I refer particularly to physicians associated with or the Waubra Association;

<http://www.windturbinesyndrome.com/news/2011/the-waubra-foundation/>

European Governments took positive action to engage unwanted noise when it was identified by World Health Organisation in the mid 1990s. See references here for the report, and responses;

**Noise Pollution: A Modern Plague: Adverse Health Effects of Noise;**

[http://www.medscape.com/viewarticle/554566\\_3](http://www.medscape.com/viewarticle/554566_3)

**Community Noise**, Edited by Birgitta Berglund & Thomas Lindvall, Center for Sensory Research, 1995, 2(1), 1-195;

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**New York Mayor in fight against noise pollution**, By Josh Fecht, US Editor, 10th June, 2004; [http://www.citymayors.com/environment/nyc\\_noise.html](http://www.citymayors.com/environment/nyc_noise.html)

A significant part of the response in Europe was to map noise levels. **European Commission for Environment – Noise Mapping;**

<http://ec.europa.eu/environment/noise/mapping.htm>

Noise Mapping has provided great insight into understanding risks to the community and workers on degraded industrial sites. It has put a priority on improving urban design and management of it. The reason why European and USA governments have been willing to allocate resources, is to overcome the cost of doing nothing about unwanted noise elevating stress in the community. To pass legislation to invoke better management of it, has been because these Governments have identified the real burden and cost that noise has been imposing.

Associated costs of the harm of noise are rarely identified in Australia. State Governments across Australia have failed to make this connection. Some businesses don't want them to. It imposes \$Billions in health and hearing

services in Australia annually. Not to mention diminished productivity. These lost \$Billions are also overlooked by better well being in our communities not being a recognisable policy goal. When the health service budget doubles, no action on causes, just more service.

To evidence a big chunk of the cost of noise, we point to the Access Economics report in 2005-6 on the cost of hearing loss, done for CRC Hearing and Vic Deaf; *Listen Hear*, (2006);

<http://www.accesseconomics.com.au/publicationsreports/getreport.php?report=71&id=81>

**Our submission is to identify the need to account for the impact on the health of people living within 5km of wind turbines.** Low frequency noise associated with wind turbines has powerful energy capacity. Whales use it to communicate across the oceans. It travels beyond the logic of noise assessment profiles so far identified by various State Government agency reviews, establishing different criteria for noise management in different states. These criteria critical to guiding State and Local Government administrators, planners and regulators, into accounting for reasonable harm in our communities. *There is no legislative reference enforcing such administrators to consult with physicians caring for the health of those affected.*

The result of investigations reviewing interests associated with noise management has given the Australian community different criteria in EPA Noise Policies in different states. No doubt the same variations will occur in relation to wind turbine placement. There are also differences of interpretation of potential harm associated with noise from wind turbines between the NH&MRC and the CSIRO. We ask you, is either of these organisations right? Why don't they see the issues and solutions identified by the Europeans? Personal communications with World Health Organisation representatives and staff agree there is need for considerably more attention in evaluating the harm of noise before the matter can be settled.

***We put to the committee that a good first step in this review would be to insist on uniform legislation relating the placement of turbines in association with residents across Australia.***

We ask Committee members to consider most, the experiences of those who have lived with wind turbines the longest. For this to guide greater insight than has been identified in previous investigations of the character, mechanisms and risks in that proximity, associated with the noise emissions. To listen to their doctors. The morality of ignoring such strong ethical association is illogical and wrong.

We accept that the technology associated with turbines has changed. Already mentioned, we relate that in this change, the scale of the instrument is of such a dimension that it overshadows everything in the vicinity. The potential for noise generation is not reduced in this increased dimension.

There have not been a significant number of reports of wind turbine noise relating physiological changes identified by medical practitioners or researchers published in peer reviewed medical journals. I place those we have identified as relevant to this discussion in the reference section at the end of the document. Included will also be some reference to the health impact of noise.

Further research into the connections between wind turbines and public health needs support. For medicine, the focus of funding has not on evaluating causative issues, but on physiology and critically, potential of market products. Billions of our research dollars and hours are put to evaluating the potential of new drugs; but few public funds allocated to discover more about implicit causes of poor health. Until these areas are understood, there is an unidentified impost in wide areas in our community, which holds back a shared and positive outlook for our future.

## **CONCLUSIONS**

An above ground electricity grid that loses almost half of its energy in transmission, and is prone to storm damage, motor vehicle collision and more, is expensive to maintain and not suited to more extremes in weather, floods or fire.

Independent, smaller renewable energy sources and storage systems can deliver energy capacity to individual sites.

Low frequency noise is a stress agent that neutralises immune capacity. It is health risk also destabilising our mechanical hearing system and is costing \$billions annually in our community. It disrupts stability and communication in natural environments.

Noise is ignored by current process in Environment Protection Authorities. It is ignored on worksites by OH&S authorities. It stresses our bodily systems and diminishes productivity. It is not ignored in other parts of the world. Leaving Australia is not the answer for Australians.

Australian State planning systems have failed to identify health vulnerability in approving development change. Ministers directing dispute about health risk, encourage court action. Litigation is the slowest and least comprehensive

solution. By being led by litigation we are not advancing our culture beyond that of bullying that has dominated our schools and work places for decades.

Further example of how present planning is not delivering, many schools and child care centres are located on major roadways, when our kids health systems are most vulnerable. State planning systems cannot be trusted to care for our health risks.

Why not pick up the challenge and work done at a national level, and establish legislation for national noise guidelines that can be applied to wind turbines.

Prioritise a better system for engaging administrative and planned integration design. Our existing development process is dysfunctional. The process is directed by segregated government agencies and departments at different levels of authority, and run by different Ministers.

Approving more wind turbines via a dysfunctional planning process to introduce potential for constant noise into rural settings is not the best decision for today.

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