

February 12th, 2014

Commissioners
Mr. Garry Payne AM (Chair)
Mr. Paul Forward,
Mr. David Johnston,
Planning Assessment Commission,
GPO Box 3415,
SYDNEY NSW 2001

Dear Sirs,

**PLANNING ASSESSMENT COMMISSION
FLYERS CREEK WIND FARM
BLAYNEY NSW 2799**

**SUBMISSION TO PUBLIC MEETING
11-12 FEBRUARY, 2014**

1. INTRODUCTION

Thank you for this opportunity to forward this submission to you concerning Flyers Creek Wind Farm. I wish to inform you of my total opposition to this proposed industrial development and request that you do **NOT** approve the Department of Planning and Infrastructure's recommendation.

I am a registered medical general practitioner and have practised in the Carcoar/Blayney district for over thirty years. As such I believe I have an exceptional knowledge of the district, my patients and the effects this proposed wind farm will have upon them. In recent years I have made an extensive study of the adverse health effects that can impact on residents who have the misfortune to live in close proximity to industrial wind turbines (IWTs).

There are several aspects that I bring to your attention.

2. ADVERSE HEALTH IMPACTS

The Flyers Creek Wind Turbine Awareness Group 2011 Submission to the Department of Planning and Infrastructure, and several of my personal submissions since have outlined the possible adverse health effects (AHE) that are attributed to IWTs. They are

considerable and it is impossible to lightly dismiss them (for example trivialised as a “nocebo” effect by some of my supposedly public spirited colleagues).

There seems to be an attitude by the wind industry and government planning and health departments that starts from the base that there are no AHEs from IWTs. The corollary thus becomes that it is up to the victims of IWT noise (be it audible or inaudible, the latter incorporating low frequency noise and infrasound – LFNI) to prove that they are being harmed. This is a perversion of what should be occurring. It should be the responsibility of the wind industry and government to prove, ABOVE ALL DOUBT, that IWTs are safe. They cannot.

In support of this contention, some months ago, Arra and Lynn (2013)¹ conducted the most extensive literature search and meta-analysis concerning the health impacts of turbines ever attempted. Their study surveyed virtually every major source of peer-reviewed publications and journals in the English language.

Arra and Lynn’s report considered various types of studies from around the world related to noise exposure from the turbines and specifically from infrasound exposure. They ranged from cohort and randomized studies, cases studies and series and even anecdotes and opinions. They came from medical, environmental and acoustic publications, **all peer reviewed**.

The objective was to search the literature investigating the presence and absence of association of wind-turbine induced noise in human distress. The hypothesis was that there would be no association between wind turbine noise and human distress. I particularly refer you to Tables 1 and 2 contained at the end of the presentation.

They concluded that there are NO studies in the world that prove there is NO association at all between turbine noise and ill health. None.

Arra and Lynn also found there were a number of studies indicating that sleep deprivation was prevalent; some studies showing a dose response relationship between wind turbine noise and ‘the effect’ and that whilst the current levels of evidence were not strong using the accepted hierarchy of clinical evidence, still Nissenbaum et al’s study² and Shepherd et al’s study³ listed within the review were robust and of excellent quality. This is an area where more research would be useful.

Extremely good research has been conducted by Professor Alec Salt and his team at the Washington University in St. Louis, USA (Department of Otolaryngology) principally teasing out the physiological pathways involved in human responses to low frequency sounds and infrasound.^{4,5}

Professor Alec Salt is a world authority and his expertise in this field exceeds any and all known Australian authorities on this subject. This opinion is not only my own but was

imparted to me from acoustic research fellows at Sydney University. For any Australian individual or institution to deny his work is arrogance beyond stupidity and yet this is happening. It is therefore essential that any and all Australian authorities who deny harmful sound from IWT explain to the world where Professor Alec Salt is in error and reap the academic scorn they deserve.

3. GOVERNMENT RESPONSIBILITY REGARDING NOISE

In 2013 I co-authored a paper which was presented at the Fifth Wind Turbine Noise Conference in Denver (August 2013) (See Krogh et al, 2013)⁶. In the main it deals with the Canadian situation and the problems that are occurring with IWT noise, adverse health effects and government response to an increasingly contentious (and litigious) problem. **However, the parallels with the Australian (and NSW) situation are notably identical and I quote directly from the Discussion and Conclusions.**

“Canada accepts the WHO Constitution and thereby acknowledges the highest attainable standard of health is one of the fundamental rights of every human being. Since the inception of the WHO Constitution, there has been significant advancement of our understanding of physical health mental and social well-being. We now understand “Mental health is as important as physical health to the overall well-being of individuals, societies and countries.” “The goal of improving the quality of life, alongside preventing avoidable ill health, has become of increased importance in health promotion.”

“It is accepted that that noise can seriously harm human health including risks of annoyance, sleep disturbance, stress and other health effects.

“Health advancement is at risk of being reversed if governments accept consultant suggestions that individual “mental and social well-being” be traded off for the greater demand for IWT energy; or that the WHO definition of health “is not applicable to any human being on the planet”.

“Government policies can either improve or worsen human health. In recent years both federal and provincial governments in Canada have adopted policies and programs to support the development of the wind energy industry. At the same time it appears some governments have lost sight of their responsibility to help individuals maintain and improve their health.

“A 2011 Ontario Environmental Review Tribunal (ERT) considered evidence and testimony under oath and found that wind turbines can harm humans if they are placed too close to residents.

“This case has successfully shown that the debate should not be simplified to one about whether wind turbines can cause harm to humans. The evidence presented to the Tribunal demonstrates that they can, if facilities are placed too close to residents. The debate has now evolved to one of degree.”

“Unwanted sound from IWTs can cause annoyance, stress, and sleep disturbance which can have other health consequences. This harm to human health is avoidable, as Canada has one of the lowest population densities in the world. However **IWTs are being sited too close to humans purely for economic reasons.**

“IWT development in Canada provides a contemporary example of government policy trading off “human health” for competing economic interests.

“Governments have been exposed to lobbying efforts from the wind energy industry to: increase permitted noise levels for wind turbines, remove requirements to address low frequency noise, and avoid penalties for amplitude modulation.

“Some governments in Canada have developed IWT noise guidance which is expected to result in adverse health effects.

“At the provincial government level the Ontario Ministry of Environment has developed IWT noise guidelines which:

- permit higher levels of IWT noise (up to 51 dBA) than other sources of industrial noise;
- do not address IWT low frequency noise;
- exempt IWTs from existing Ontario adjustments for amplitude modulation;
- use an average A-weighted metric;
- do not account for uncertainty in the noise modelling predictions;
- are expected to result in a non-trivial percentage of persons being highly annoyed; and
- can be expected to contribute to stress related health impacts.

“The situation is similar at the federal government level. Health Canada is the federal department responsible for helping Canadians maintain and improve their health, while respecting individual choices and circumstances. However, instead of helping Canadians maintain and improve their health, the department has developed a “justification” for causing health effects from exposure to IWTs. Health Canada’s “justification” for a 45 dBA IWT noise criterion fails to employ critical accepted noise principles. Specifically the Health Canada authors propose a noise criterion which:

- is not based on a dose response relationship specific to IWTs;
- does not adjust (+5dB) to reflect IWT are usually a newly created source of noise;
- does not apply adjustments for audible amplitude modulation;
- does not apply adjustments for audible low frequency noise;
- uses an A-weighted metric;
- is not to be considered a strictly applied limit; and
- is predicted to result in adverse health effects (i.e. an increase in percentage highly annoyed).

“To summarize, government policy to support IWT development in Canada has resulted in harm to human health.

“Specifically Health Canada and The Ontario Ministry of Environment developed IWT noise criteria which are expected to result in a non-trivial percentage of persons being adversely affected. These two government agencies are now funding research intent on studying the effects of exposing humans to IWT noise with the objective of informing government policy.”

In Conclusion:

“Wind energy facilities can produce unwanted sound and negative health and socio-economic effects when sited too close to humans. In some cases the effects are so severe Canadian families have effectively abandoned their homes; been billeted by wind energy developers; or negotiated financial agreements with wind energy developers. Canada has one of the lowest population densities in the world. Harm to human health can be avoided by siting IWTs a protective distance from residents.

“Government has a responsibility to help individuals maintain and improve their health.

“However some governments in Canada have developed IWT noise criteria which are expected to result in a non-trivial percentage of the exposed population experiencing harm to human health. This avoidable harm is in conflict with the WHO constitution which accepts the enjoyment of the highest attainable standard of physical, mental and social well-being as one of the fundamental rights of every human being.

“The references cited in this paper support the conclusion that human health is being traded off in favour of government policies that support IWT development in Canada.”

4. NATIONAL HEALTH AND MEDICAL RESEARCH COUNCIL

In 2012 I was largely responsible for the section on Noise and Health in the Submission made to the Department of Planning and Infrastructure by the Friends of Collector concerning the proposed (now approved) Collector Wind Farm. This was a decision by the Planning and Assessment Commission which is already having a huge impact on the Collector community and one that is to be greatly regretted.

The NHMRC 2010 Rapid Review is anonymously written and supposedly peer reviewed, again anonymously. Why? Is it so shameful and careless that no one will admit to writing it?

I reiterate my position on the NHMRC here, and extend my observations as well:

“The National Health and Medical Research Council’s 2010 rapid review⁷ has been criticised both nationally and internationally as being careless, superficial and inadequate. The authors are unaware of any other NHMRC document that has been so vehemently criticised or biasedly misquoted as this review. While this rapid literature review represents a sad indictment on the

reputation of this organisation, there seems very little regret expressed by the NHMRC executive. The NHMRC's CEO, Professor Warwick Anderson, qualified the review at the Federal Senate Enquiry⁸ when he admitted that "high quality scientific literature in this area is very thin." As a consequence the **NHMRC advocated that a precautionary principle should be followed** because **"the absence of evidence does not mean that there might not be evidence in the future"**.

"Professor Anderson also clarified the position of the anecdotal evidence which is worldwide at the present time: "Anecdotes are very valuable ways of honing the questions to be asked." And added: "We do not say that there are no ill effects. We definitely do not say it that way."

"The NHMRC has been forced to revisit its position and is again looking at the literature, both peer reviewed and "grey", and will be releasing an updated Review in 2013. In the three years since its last review there has been more peer reviewed research and literature published and it is hoped that this time the NHMRC will be able to make a more measured assessment of the current state of noise and health with respect to industrial wind turbines.

"A large section of the scientific world believes that any review or research of the possible adverse health effects of industrial wind turbines must logically include patient interviews and examination. Further there must be correlated research on infrasound levels and frequencies **within** homes of affected residents.

"This research must include:

- 1. Simultaneous Electroencephalograms (EEG) monitoring of the occupants.**
- 2. As well as resident cortisol levels.**

"Monitoring times must include a full range of climatic and seasonal conditions to demonstrate maximal turbine activity as well as periods when there is no wind turbine generating taking place. The climatic conditions must ensure the van den Berg effect is fully explored as well."

The NHMRC has apparently recently completed its draft review. According to the press it has been sent to Federal Government Ministers for comment and/or approval and/or modification. These include Minister Hunt (Environment), Minister Dutton (Health) and Minister Macfarlane (Industry and Science). Minister Macfarlane has been noted in the press to be consulting with the wind industry on a number of issues. He has made no attempt to consult with Australian citizens affected by IWTs and adverse health effects.

In view of the fact that the NHMRC has taken a considerable amount of time to compile the review one could (possibly) make the assumptions that:

- A. It has found it a larger task than formerly supposed and has decided to do the review thoroughly and
- B. It has sent the draft to the Federal ministers because there are political ramifications derived from conclusions it may have drawn.

There are also confounding factors now as well. The recently announced review by the Federal Government concerning the Renewable Energy Target and future power generation options has potential implications for renewable power industry generally.

The Planning Assessment Authority would be well advised to delay any decision regarding Flyers Creek Wind Farm until both these reviews become public.

5. NEW SOUTH WALES HEALTH

In relation to health impacts of IWTs the Department of Planning and Infrastructure (and by association the Planning Assessment Commission) has completely relied on NSW Health for advice. This would be appropriate in ideal circumstances but it is apparent that NSW Health is dismissive of any health implications. Its officers, specifically Professor Wayne Smith, Dr. Kerry Chant and Dr. Jeremy McNulty, regularly regurgitate the NHMRC 2010, out-dated, flimsy and inaccurate Rapid Review and state that there is no problem with adverse health effects.

NSW Health routinely dismisses all publications concerning infrasound (including refereed publications) and denies that infrasound is a problem for IWTs. However it does appear to have a strong opinion and guidelines for audible sound. Since audible sound is also considered a problem of IWTs what the NSW Health has to say about this is relevant.

For instance, in its submission to the Department of Planning and Infrastructure about the proposed Coalpac Consolidation Project at Cullen Bullen⁵⁰ it expressed particular concern about the noise levels within a school classroom:

“The recommended L_{Aeq} Noise Levels from Industrial Noise Sources [in the NSW Industrial Noise Policy – the INP] suggests that acceptable noise levels in a school classroom (internal) at the noisiest time of day should not exceed 35 dBA L_{Aeq} (1 hour) with a recommended maximum of 40 dBA L_{Aeq} (1 hour).”

It is understood that both the NSW Industrial Noise Policy (INP) and the NSW Protection of the Environment Operations Act (POEO Act) have **callously excised** consideration of noise from IWTs although it appears that more recently there will be at least a fee collecting role for the EPA to play. Yet, from a health perspective this is not helpful. It

must be within the province of NSW Health to be **concerned about noise and health from whatever source**, whether regulated, legislated or otherwise, and whether the noise is audible or inaudible (LFNI). There will always be the risk that **Errowanbang School**, at 2 km distant, will be affected by noise. It is known, for instance, that infrasound will attenuate more slowly over longer distances and will develop characteristics of amplitude modulation and tonality within buildings (i.e. within class rooms).

NSW Health⁹ in its submission regarding Cullen Bullen goes on to state:

“There is increasing evidence internationally that environmental noise exposure may cause risk to public health, and is recognised by international bodies such as World Health Organisation (WHO) and the US Centre for Disease Control (CDC). There is some suggestion of the long-term effects of environmental exposure to noise on annoyance, sleep disturbance, children’s performance at school, hypertension and ischaemic heart disease.”

NSW Health is obviously aware of the health risks of excess noise. By concentrating on the effects of audible sound, and ignoring the effects of low frequency sound and infrasound it is obfuscating its duty of care to the public which is at risk. It is certainly not giving credible or well researched advice to either the Department of Planning or the Planning Assessment Commission. In pursuing their proper Duty of Care both government departments unfortunately must look elsewhere for advice of substance and accuracy.

6. CONCLUSION

The Planning Assessment Commission should not approve the Flyers Creek Wind Farm. It fails the test on many levels and I have only dealt with the issues surrounding adverse health effects. These in themselves are significant and should never be lightly dismissed, or put in the “too hard basket” because some of the evidence is anecdotal and not enough research has been done to date. It is very notable that recent research of a more rigorous nature is emerging, all indicating significant problems with both audible and inaudible noise and its resultant sequelae regarding health and annoyance.

For the Planning Assessment Commission to approve the wind farm in the light of this and to rely on the flimsy and dismissive advice of the NSW Health and NHRMC would be a travesty. Too often government and bureaucracy are not at the forefront of emerging science and have to “play catch up”. This often results in tragic consequences as the damage of poor advice and decisions is played out. Already around the world and in Australia we are seeing the consequences of poor government decisions regarding IWTs.

I therefore most earnestly urge the Planning Commission to dismiss the Flyers Creek Wind Farm application as a development unfit for purpose, entirely without any redeeming merit, detrimental to societal harmony and dangerous to the health of rural families.

Dr. Alan C. Watts OAM

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ADDENDUM

I have been requesting, along with other concerned Australians:

1. A moratorium on further installation of these structures until their safety has been established by,
2. Independently conducted research which,
3. Justly requires that the industrial wind proponents fund this research since they alone profit from the establishment of Industrial Wind Turbines and,
4. That all 7 recommendations proposed by the June 2011 Federal Senate Community Affairs References Committee on the Social and Economic Impact of Rural Wind farms, which have not been introduced by any Federal, State or Local Government anywhere in Australia, be implemented immediately.

Additionally, the previous Labor Federal Government's 20/20 renewable energy target (RET) and generous taxpayer subsidies are driving an enormous amount of foreign company investment in industrial wind turbines of very dubious effectiveness and efficiency.

Industrial wind turbines have been soundly criticised and described as an economic failure and environmental pollutant on the basis they in part represent:

1. A system of unpredictable, inefficient and intermittent electricity generation;
2. A system when idle, due to lack of or excessive wind, requires considerable electricity for maintenance and for restart which is not disclosed on the AEMO electricity production website;
3. A system incapable of base load power generation and often is unavailable at peak electrical usage times;
4. A system which does not in any meaningful way lessen greenhouse gas emissions;
5. A system which has not and cannot reduce our foreseeable coal dependency;
6. A system which requires constant coal or gas fired back up running at almost full capacity (stated 90%) due to the very variable and unreliable nature of wind. This represents the most wasteful, inefficient and expensive use of coal and gas;
7. A system which artificially induces significant electrical instability to the Eastern Australian Grid because of its inherent and fragile intermittency.
8. A system that due to its intermittency drives spot pricing for demand driven electricity to astronomical levels.
9. Electrical generation costing at least 3 times that of coal;

10. A system which has contributed to a lowering of Australia's standard of living and comfort especially those Australians of lower socioeconomic means, due to increased electricity bills;
11. A system which has destroyed Australia's once comparative manufacturing advantage due to cheap electricity and with it our ability to compete internationally;
12. A system of visual blight due to industrialisation of the rural landscape;
13. A system that causes untold harm and destruction of wild life and unique remnant bushland (important because much of the original vegetation has disappeared from the Tablelands areas and locations favourable to the wind industry);
14. An industrial development resulting in significant reduction in rural land valuation and agricultural land usage especially cropping, fertilizer application, weed control, fencing and farm based disease containment. Resulting in an erosion of the principle of protection of Australian food security;
15. A system with inherent industrial problems of hazardous fire (and the inherent difficulties of fighting both turbine fire and bushfires), blade throw, flicker and glint as well as dangers to all forms of flight;
16. A development which has serious legal consequences for land owners because of access, disease spread, sale and subdivision rights. And also by "gag" clauses incorporated into IWT contracts effectively removing aspects of a IWT host's freedom of speech;
17. An industrial structure which requires one tonne of a rare earth, Neodymium and other rare earths, to increase the magnetic strength and which is sourced primarily from China (Inner Mongolia which has 95% of the world's resource). Its extraction process involves boiling sulphuric acid which is highly toxic to both the environment and the operators.
18. An industrial complex with commonly disputed ownership at the time of decommissioning which is typically 120,000 hours or 15-25 years. Although international research now estimates the functional life of an industrial wind turbine may be closer to 12-15 years;
19. IWT decommissioning and disassembly does not remove the huge concrete foundations which remain forever present;
20. An electrical system which legally requires the farmer host to decommission and remove the wind towers at the end of their functional life if a legal entity cannot be located with provable ownership. There are international examples of derelict "wind farms" with disputed ownership being left to rot. In excess of 14,000 in California alone;
21. A system where payment of a decommissioning bond by the proponents has been strenuously fought by them. Again indicating the fragile economic nature and in some cases the insolvency of this transient industry;

22. A system of electrical generation with such fragile economics that frequent change of ownership is common. This adds to the legal confusion as to who has most direct responsibility for decommissioning and removal of these structures;

23. A system which has produced social disharmony, family destruction and economic hardship in rural communities rivalling only that of coal mining and coal seam gas extraction;

24. A system which has polarised debate to such an extent and level that truth and fairness are now completely compromised within the renewable energy debate;

25. A system based on myth, greed, ignorance, subsidy and institutional deceit that has generated such wealth that there now exists no honourable or honest return from these entrenched self-interested opinions;

26. An industry so inefficient that it is entirely dependent on taxpayer subsidy to persist and without it, it would cease to exist;

27. A system which has captured all irrational thought, concentrated greed, distorted science, befriended the gullible, nurtured the craven, harvested taxpayer funds and has ransomed genuine research with the assistance of the politically naive.

28. A system which has deflected energies and funding away from what can only be described as the most sensible renewable source of energy on earth, namely geothermal. Geothermal is infinite, clean, truly green and possible, as in Iceland. The largest natural nuclear power source on earth is beneath the Earth's crust as molten magma, an unimaginable source of heat. Geothermal energy is the only renewable energy on earth capable of providing base load power and as such cannot in any way be compared to any other renewable energy source.

29. A system of production which is totally unique to the Australian political landscape and which enjoys political and legislative protection like no other.

The Australian politically ignorant has allowed an industry to flourish in this country which is:

- a. Totally and completely devoid of any merit, green, environmentally or climatically.
- b. Subsidised to ensure survival.
- c. Ineffectual and inefficient.
- d. Enabled by having an end product that requires compulsory purchase by energy suppliers, with legislated penalties for noncompliance.
- e. Assured a future with increasing and possibly endless targets.
- f. Artificially supported with industry forward payments and prepayments.
- g. Supported with undeclared tax concessions.

- h. Mainly operated by overseas companies that currently have no Australian companies involved in turbine manufacture of any consequence.
- i. Currently operating beyond their legal guidelines.
- j. Currently operating beyond conditions of consent with no financial penalty for illegal operation.
- k. Placing the Australian Government in a position of implicit state sponsored fraud.
- l. Causing adverse health effects (AHE) to Australian families which are disgracefully ignored.
- m. Without any significant Australian content, ensuring expatriation of Australian funds off shore via foreign companies.