



## JOHN MADIGAN

Democratic Labour Party Senator for Victoria

Mr Stephen Cornish  
CEO, Pyrenees Shire  
5 Lawrence Street,  
Beaufort Victoria 3373

11<sup>th</sup> October 2013

Dear Mr Cornish,

I wish to bring to your urgent attention what I consider to be serious limitations in your Healthy and Well Pyrenees 2013-2017 draft municipal plan and thank you for the opportunity to provide the following submission.

### **THE IMPACT OF NOISE NUISANCE QUALIFIES AS A HEALTH DETERMINANT AT PYRENEES**

Under the Health and Wellbeing Act, 2008 ("HAWB Act"), Section 26 (s) (a) describes the requirements of a Municipal public health and wellbeing plans.

**A municipal public health and wellbeing plan must include an examination of data about health status and health determinants in the municipal district;**

Pyrenees Shire Council is aware that wind farm produced noise nuisance is having a profound and continuing detrimental effect on the health and wellbeing of many constituents. There are a few loose references to wind farm development in the draft but there has not been adequate discussion of the divisive social impact of wind energy development within the municipality, nor has appropriate consideration been given to those who are most affected by noise.

The Waubra Wind Farm is a 192 megawatt industrial power station comprising 128 wind turbine generators that have been constructed close to residential homes within an established rural community. It is known to Council that the operator has been forced to purchase seven properties (so far) in a continuing and expensive effort to try to comply with noise related conditions of planning consent. Council is also aware that residents who have not been compensated by the operator have purchased an additional property elsewhere in an effort to escape the noise nuisance and to achieve uninterrupted sleep. Others have had no other choice but to simply abandon their homes due to poor health they attribute to exposure to noise from the Waubra Wind Farm. It is important for Council to be mindful that all displacements of families, where their relocation is compensated by the wind farm operator or not, are an immediate reflection of the Waubra Wind Farm's noise.

Wind Farm noise within Pyrenees Shire presents as a serious nuisance. Exposure to noise and amplitude modulation has been said to reduce amenity and compromise health and wellbeing. In order to provide good governance, understanding and protecting public exposure to excessive wind farm noise is essential and a nuisance to which Council should swiftly respond.

It is almost scandalous that there is not a single reference to 'noise' in the Healthy and Well Pyrenees draft plan for the next four years. It is my hope that Council will recognise wind farm noise nuisance as a determinant that impacts on the health and wellbeing of the municipality.

## **NOISE AND NUISANCE**

In this submission, the use of the term "noise nuisance" refers specifically to sounds caused by the operation of an industrial wind energy facility which annoys the community.

For the purpose of this submission, noise considers day time and night time exposures to full spectrum noise, including low frequency noise and infrasound noises with special audible characteristics ("SACs") and noise that is heard both inside and outdoors. Noise should be noted to include sounds that can be heard as well as inaudible sounds. Although these are not heard, sound at low frequencies can still be perceived. Both have the potential to affect amenity, health and wellbeing.

Nuisance should throughout this submission generally be taken as the consequence of exposure to the unwelcome, unavoidable and annoying accumulative effects of constant noise. Noise that 'annoys' in the acoustic sense causes nuisance in that it influences sleep, health, wellbeing and behaviours.

The noise nuisance/annoyance caused by the operation of the wind farm has generated unresolved and ongoing complaints from the affected community. These complaints mostly refer to the experience of adverse health effects which include but are not limited to: sleep interruption, sleep deprivation, fatigue, irritability, confusion, headaches, head pressure, ear aches, tinnitus, nausea, vibration, hypertension, depression.

Noise nuisance results in reduced amenity, health, wellbeing and liveability. This nuisance will continue unless Council resolves to consider all those living within the Pyrenees Shire who are now or will in the medium term be exposed to the nuisance of industrial wind energy developments. The inclusion of measures to avoid such nuisance in the drafting of Healthy and Well Pyrenees 2013-2017 provides that platform and is the logical place to start.

## **MEASURES AVAILABLE TO PROTECT AMENITY, HEALTH AND WELLBEING FROM NOISE NUISANCE**

Recently, Council received a petition from ratepayers rightly complaining of noise nuisance attributed to the operation of the Waubra Wind Farm, a wind energy facility that has operated within the municipality for over four years, despite never having been determined to be compliant with noise regulations and terms of planning permit conditions.

The petitioners requested that Council make an application for an enforcement order, on their behalfs, requiring the Minister, as the responsible authority, to make a decision within 30 days as to whether the operator had achieved compliance and to enforce compliance if the facility was found to be operating in breach with the relevant standard.

Council refused this request and as complaints continue to be made without resolution, has failed to take the appropriate steps to remedy the noise nuisance.

Section 58 of the Health and Wellbeing Act, 2008, ("HAWB Act") applies to nuisances which are, or are liable to be, dangerous to health or offensive in particular to nuisances arising from or

constituted by any noise or emission, activity; or other matter or thing- which is, or is liable to be, dangerous to health or offensive. In this section, offensive means noxious or injurious to personal comfort.

Council's officers have repeatedly expressed frustration at Waubra Wind Farm's unresolved planning matters. Pyrenees Council has identified the inadequate noise regulation of the power station and notably, Council has publically acknowledged the resulting annoyance and noise nuisance within the municipality.

### **STEPS COUNCIL HAS TAKEN TO PROTECT AMENITY, HEALTH AND WELLBEING**

Council has been sufficiently concerned to consult with Moyne Shire Council and the Regional Rural Flying Squad to try to implement measures to mitigate public exposure to future wind-farm development noise nuisance within the municipalities. Pyrenees Shire Council is concerned to the extent that it has taken steps to restrict any future development within 2 kms of a wind turbine.

The report, prepared by Mr Hall on behalf of Assett and Development services was entitled: **MEASURES TO CONTROL HOUSING DEVELOPMENT IN AREAS AFFECTED BY EXISTING AND APPROVED WIND FARMS.** It is noted that Council understands that:

'Such developments if not adequately regulated, could potentially expose their residential occupants to **serious acoustic and other amenity impacts** ' and **'....and there can be no doubt that dwellings in close proximity to wind turbines (within 2 kilometres) have/will have the potential to be profoundly noise-affected – to a point where the amenity of their occupants will be seriously diminished.'**

Under the Public Health and Wellbeing Act 2008 - SECT 24 provides that the function of a Council is to seek to protect, improve and promote public health and wellbeing within the municipal district. The Act notes that this can be achieved by initiating, supporting and managing public health planning. To the credit of the officers of the Pyrenees Shire, Council has acknowledged that there is "no doubt" that dwellings within close proximity to turbines have the potential to be profoundly noise affected and have sought to address future nuisances by restricting future developments.

However, Council has the obligation to equally protect, improve and promote the health and wellbeing of those residing within the municipality whose amenity is *already* affected and *continues* to be diminished, as a consequence of the constant, excessive noise of Waubra Wind Farm's operation and the nuisance this causes the affected community.

### **THE ROLE OF COUNCIL TO PROTECT AMENITY, HEALTH AND WELLBEING**

The Health and Wellbeing draft plan briefly acknowledges the strong influence of wind farms in the municipality but is quick to note that: **the planning and health guidelines pertaining to this development are the responsibility of the State and Federal Government(s).**

For the purposes of the Planning and Environment Act, 1987 ("PE Act"), the Victorian Planning Minister remains the responsible authority for the regulation of Waubra Wind farm and approved but not yet constructed wind farms in Pyrenees Shire Council. Should Council approve any further wind energy developments, however, Council would assume the same responsibility.

It is therefore important to make the distinction between that which is required of the responsible authority from a planning perspective under the PE Act and to identify those duties which remain

the municipal government's responsibilities under the HAWB Act and the Local Government Act, 1989, ("LG Act").

Council is not burdened with the responsibility to facilitate the administration or enforcement of planning permit conditioned noise compliance of Waubra Wind farm, however, Council retains the duty to ensure that the operation does not cause nuisance within the shire and holds powers that are sufficient to ensure this occurs.

Similarly, whether or not Council developed the planning or health guidelines does not absolve Council from the responsibility to attend to a nuisance which interferes with the amenity, health and wellbeing of its constituents. Council still has the duty under the HAWB Act to create an environment which supports the health of ALL members of the local community and strengthens the capacity of the community and ALL individuals to achieve better health.

In addition to observing state and federal guidelines, Council must endeavour to initiate, support and manage public health planning processes at the local government level, creating an environment which supports the health of members of the local community and strengthens the capacity of the community and individuals to achieve better health;

Importantly, Section 24 provides that this can be achieved by:

- developing and implementing health policies and programs,
- developing and enforce up-to-date public health standards and by,
- intervening if the health of people within the municipal district is affected.

Pyrenees Shire Council should aspire to provide representative, responsible governance that would protect the health and wellbeing of all constituents within the municipal district who are adversely affected by noise nuisance, now and beyond 2017.

## **REVIEWS AND RECOMMENDATIONS**

In light of Council's contentious experience with wind energy in the shire, it is most unreasonable to rely on a vague reference to the NHMRC's 2010 review of, (at the time) available literature, particularly when the "up-to-date" NHMRC review will imminently supersede NHMRC's 2010 advice and is expected to be released within weeks.

The precautionary principle provides that when a public health risk poses a serious threat, lack of full scientific certainty should not be used as a reason for postponing measures to prevent or control the public health risk. Section 60 of the PAWB Act instructs that a Council has a duty to remedy as far as is reasonably possible all nuisances existing in its municipal district.

Section 8 refers to the Principle of accountability while Section 5 provides for the Principle of evidence based decision-making:

**Decisions as to (a) the most effective use of resources to promote and protect public health and wellbeing; and (b) the most effective and efficient public health and wellbeing interventions should be based on evidence available in the circumstances that is relevant and reliable.**

The timing of the preparation of Healthy and Pyrenees 2013-2017 not only presents as an opportunity for Council to develop and implement noise related health policies and programs within the municipal district, it provides Council with a rather unique opportunity.



I encourage Council to pursue all available research opportunities by making immediate application to the Commonwealth government to work with the Pyrenees Shire to research wind farm related noise nuisance and the impact on health and well being. in order to promote and protect all public health and well being.

In 2011 the Senate Community Affairs References Committee launched an Inquiry into the Social and Economic Impact of Rural Wind Farms. The report was published in July 2012. Among the recommendations were several that called for further research.

*Recommendation 1*

2.44

***The Committee considers that the noise standards adopted by the states and territories for the planning and operation of rural wind farms should include appropriate measures to calculate the impact of low frequency noise and vibrations indoors at impacted dwellings.***

*Response:*

*This is a matter for consideration by state/territory governments, local governments and planning authorities.*

*Recommendation 4*

2.101

***The Committee recommends that the Commonwealth Government initiate as a matter of priority thorough, adequately resourced epidemiological and laboratory studies of the possible effects of wind farms on human health. This research must engage across industry and community, and include an advisory process representing the range of interests and concerns.***

*Recommendation 5*

2.102

***The Committee recommends that the NHMRC review of research should continue, with regular publication.***

*Recommendation 6*

2.103

***The Committee recommends that the National Acoustics Laboratories conduct a study and assessment of noise impacts of wind farms, including the impacts of infrasound.***

*Response:*

*The Australian Government accepts these recommendations in principle. The National Health and Medical Research Council (NHMRC) is already actively engaged in supporting the assessment of available research on this issue and will shortly commission a comprehensive review of the literature to inform any update to its 2010 public statement. The review will include audible noise, infrasound and low-frequency noise.*

*A reference group will be established to advise on the review and will include members of the public, industry, researchers, sound engineers/consultants and planning representatives.*

*The results of the literature review and the revised public statement will be published on the NHMRC website.*

*Further, there are a range of funding mechanisms within the Australian Government, in particular within the NHMRC, that could be used to fund additional research on the possible impacts of wind Farms on human health, including epidemiological and laboratory studies.*

The Inquiry found many of the same recommendations noted in a report that was funded and published by the Australian Government Department of Health and Ageing in 2004 entitled The Effects of Environmental Noise Other Than Hearing Loss.

The 'EN HEALTH' report recognised the deleterious impacts of exposure to 'environmental' noise. Importantly, its results considered the health impacts of all noise exposures; even when that noise source was attributable to a wind energy facility.

1. The report found that Community noise, or environmental noise, is one of the most common pollutants. It understood that there is sufficient evidence internationally that windfarm noise may pose a general public health risk and recommended that additional research is needed to replicate the effects found in international studies in the Australian context; research that would have direct impact on policy would be intervention studies examining the effects of change in noise exposure on changes in population health.

A link to the EnHealth report and references to sections of the report are attached.

It is worth noting that, after nine years, none of the recommended research has been conducted. Perhaps the flurry of investment in a lucrative renewables market along with the rapid increase in planning approvals for wind farm developments did little to incentivise the government to find in their last nine budgets, any allocation at all for the funding to conduct the research that was identified as being urgently required in 2004.

## **FUTURE RESEARCH, RESULTS AND OPPORTUNITIES FOR PYRENEES SHIRE COUNCIL**

The Abbott government acknowledges the potential impacts of wind farms on the health of people living in the near vicinity of turbines. The federal member for Wannon has personally requested and confirmed Minister Macfarlane's commitment to commission testing that will ensure that **'comprehensive research is completed into the possible health effects of wind farms on residents and communities.'**

Further, it is expected the coalition will soon attempt to pass legislation that would require operators to make available to the public, the real-time monitoring of noise from all power stations.

There are several, reputable acousticians that have undertaken independent testing at properties near Waubra Wind Farm. These acousticians use best practice acoustic measurement techniques, state of the art acoustic equipment and are experienced in data collection, real time monitoring and in the assessment of audible and inaudible noise, agreeing that infrasound should be measured at the appropriate C weighting.

Mr Les Huson, Dr Bob Thorne and Mr Steve Cooper and are all suitably qualified to work with the Council and the Commonwealth Government to undertake the comprehensive research that will establish whether there is a causal relationship between wind farm noise and health. Council is in the perfect position to draw attention to wind farm noise and hold the government to account.

Mindful that the draft under review seeks to improve health and wellbeing in the municipality, it would be most prudent for Council to confer with Mr Tehan to negotiate with the government an agreement to conduct the appropriate research at Waubra Wind farm. Pursuing this option would allow the government to fulfil an election promise that would at the same time, identify and remedy noise nuisance within the shire.

Pyrenees Shire can provide valuable leadership in an issue that is important to the health and wellbeing of the entire municipal district. Council's experience and knowledge about wind farm development and noise has the potential to make a contribution that might remedy the noise nuisance in the municipality and assist untold rural communities across Australia.

Please feel welcome to contact me should you require any further information.

I thank you for taking the time to consider this submission and sincerely wish Pyrenees Shire Council every success in the completion of a sustainable and responsible plan for a Healthy and Well -and not too noisy- Pyrenees from 2013 and well beyond 2017.

Kind regards,

A handwritten signature in black ink, appearing to read "John Madigan". The signature is fluid and cursive, with a small dot above the 'i' in "Madigan".

Senator John Madigan  
Federal DLP Senator for Victoria

Attachs

The following excerpts have been taken from this report

This report recommends further research is needed to more fully assess the impact of environmental noise on community health. However, given the environmental and public health emphasis on prevention of adverse health outcomes, it may be prudent for relevant health agencies to immediately consider development of improved health-based noise guidelines, standards and policies. These tools would assist local government and environment, transport and planning agencies to better consider noise within relevant regulatory and policy frameworks. Strategic alliances with key sectors are also needed to advance necessary research on noise issues and advocate on behalf of sensitive groups within the population.

The World Health Organization, European Community members and numerous other countries have determined there is 'sufficient evidence' linking noise with annoyance, school children's performance, sleep disturbance, ischaemic heart disease and hypertension.

Internationally it is accepted that further research is required to develop better measurements of noise exposure, better measurements of health outcomes and better consideration of confounding factors and the effect of modifiers in the association between noise and health.

Priority areas for further research in Australia are sleep disturbance, annoyance, school children's performance, cardiovascular disease and wellbeing.

Research that would have direct impact on policy would be intervention studies examining the effects of change in noise exposure on changes in population health. Health agencies have a critical role to play in developing the research framework with academic institutions, transport, and environment and planning agencies.

Noise stimulates the brain's reticular activating system. Neural impulses spread from the reticular system to the higher cortex and throughout the central nervous system. Noise can, therefore, influence perceptual, motor, and cognitive behaviour, and also trigger glandular, cardiovascular, and gastrointestinal changes by means of the autonomic nervous system (Suter, 1991)

#### Conclusions - Annoyance

Noise annoyance is clearly a reflection of impaired quality of life.

Noise interferes with sleep in a number of ways: awakening – it can cause a sleeper to awaken repeatedly resulting in poor sleep quality (as reported) as well as other impacts, alter sleep pattern – noise may cause sleep to change from heavier to lighter sleep, reduce the percentage and total time in REM sleep, increase body movement, change cardiovascular responses, cause effects on slow wave sleep.

These changes can affect mood and performance the next day

#### Conclusions – Sleep disturbance:

Noise affects people's ability to gain the appropriate amount and type of sleep needed for maintenance of good health and there are suggestions of disturbed sleep leading to more serious health problems. On the whole, community studies have tended to show much smaller effects on sleep (Horne et al., 1994) than laboratory studies.

Data from community studies are more relevant for public health policy. The extent to which



environmental noise levels are creating sleep disturbance and other sleep related adverse health effects requires further attention.

This is an area where a relatively small amount of additional research could provide useful information that could protect people's health.

Conclusions – Impairment of early childhood development.

Research must be undertaken into the effects on learning performance in children, sleep disturbance, annoyance and cardiovascular health and mental wellbeing.

There is sufficient evidence supporting a conclusion that chronic noise exposure at schools affects child health and performance. The importance of these impairments of early childhood development have been recognised by the United States Federal Interagency Commission on Noise; the World Health Organization and the European Commission.

In examining auditory and non-auditory health impacts of noise, researchers place particular emphasis on using non-intrusive testing to measure autonomic system responses as elements of a stress response. Physiological responses that have been studied include: a circulatory response dominated by vasoconstriction of peripheral blood vessels and other cardiovascular changes affecting blood pressure, heart rate and blood pressure variabilities, a reduced rate of breathing, Galvanic skin response, a reduction of the electrical resistance of the skin, a brief change in the skeletal-muscle tension, measured electrically, (electromyograph) (Kryter, 1994) hormonal changes.

Exposure to infrasound or low frequency sound has been found to elicit stress reactions and in some instances resonance responses in vocal cords (10 Hz) and internal organs. Responses to very high levels of infrasound may resemble stress reactions that include bizarre auditory sensations termed 'pulsation and flutter'. Further research is needed to determine the health effects of low frequency noise exposures.

Mechanisms for coping with stress include increased release of stress hormones such as adrenaline, noradrenaline and cortisol. Cortisol raises blood pressure and reduces inflammation. It can also temporarily suppress the immune response and sharpen attention.

The general pattern of endocrine responses to noise is consistent with noise as a stressor, exciting short-term physiological responses. (HCN, 1994, 1999; IEH, 1997; Stansfeld et al., 2000)