

8 February 2011

Department of the Senate  
Community Affairs Committee  
PO Box 6100  
Parliament House  
Canberra ACT 2600

Dear Sir/Madam,

## **Re: Inquiry into the Social and Economic Impact of Rural Wind Farms**

I am writing to voice my support for rural wind farms in Australia. Wind turbines are a globally proven technology capable of producing clean, renewable electricity. In addition to electricity, the wind industry here in Australia creates jobs and rental income streams for communities. Every country in the world needs to do their part in reducing their carbon emissions and wind power is currently the cheapest, most effective technology by which to achieve this.

Unfortunately some members of the public are spreading fear and misinformation about health effects caused by wind turbines. My submission references some independent, scientific investigations into these issues, and then moves on to describe what I suggest is a solution to empowering communities to embrace the inevitable shift of our power generation towards renewable sources.

Community ownership of appropriately scaled wind farms is commonplace in Europe, the United States and Canada. These community wind farms are scaled to offset the energy needs of nearby towns and are often only two or three turbines. Community ownership allows people to take part in the solution to climate change, and to benefit financially from the sale of electricity. This ownership model has huge potential here in Australia to combat negative community sentiment, to drive the uptake of renewable energy and to help us to achieve our goals in carbon emission reduction. Policy settings such as Feed in Tariffs have been internationally proven to drive this sector and could be adopted here in Australia.

### **Health Effects**

Recently there has been a lot of media surrounding the rumoured health effects of living near wind turbines. Unfortunately, judging by the responses to this inquiry, it seems that a vocal minority are being heard in the community, and are spreading fear without the backup of scientific data.

In order to ease the anxiety of these community members, scientists all over the world have undertaken research and written reports disproving the link between wind turbines and directly-related illness. Instead, it seems that there is a general agreement that it is the people's anxiety about becoming sick that is having physiological effects.

To see some of these reports, you can follow the links here:

#### **Australia:**

- The [National Health and Medical Research Council](#) (NHMRC) recently found that “there is currently no published scientific evidence to positively link wind turbines with adverse health effects”.
- The [Victorian Department of Health](#) after examining both peer reviewed and validated scientific research stated “The Department of Health has examined the available scientific literature on wind farms and has concluded that there are no direct health effects that can be attributed to modern wind turbines.”
- In late 2010, the [Clean Energy Council \(CEC\)](#) commissioned expert independent noise consultants Sonus to provide the latest information on environmental noise from wind farms. Sonus found there is no evidence that residents will suffer any direct health effects from living near operating wind farms.

#### **International:**

- The [American and Canadian Wind Energy Associations](#) established a scientific advisory panel comprising medical doctors, audiologists and acoustic professionals from the US, Canada, Denmark and the UK. The panel concluded that ‘wind turbine syndrome’ is not a recognised medical diagnosis but rather reflective of symptoms associated with annoyance. Factors culminating in annoyance include the nocebo effect defined as “an adverse outcome, or worsening of mental or physical health based on fear or belief in adverse affects.”
- The new organisation [RenewableUK](#) (formerly the British Wind Energy Association) has published an independent report finding that “the consistent and scientifically robust conclusion has always been that there is no independent evidence to demonstrate any significant health effects from noise at the levels of that generated by wind turbines”.

It is important to note that these reports, although commissioned by pro-renewables bodies, were written by independent experts.

## **Noise and Vibration**

A wind turbine is a large piece of rotating machinery, containing bearings and gearboxes just like so many other machines familiar in our society. Like a car, a turbine emits vibrations both in the audible frequency spectrum, and slower in the spectrum known as ‘infrasound’. Infrasound is no different to normal sound except that it vibrates too slowly for human ears to pick up.

Australian company [Pacific Hydro](#) commissioned the independent noise consultant Sonus to measure and compare infrasound levels from wind farms and some common environment infrasound sources, both natural and human-made. The report “[Infrasound and Measurements from Wind Farms and Other Sources](#)” found that “*The measurement results indicate that the levels of infrasound in the vicinity of the two Australian wind farms are:*

- *well below the perception threshold established in International research as 85 dB(G); and*
- *of the same order as other International infrasound measurement results (a table summarising the results of other measurements is provided in this study); and*
- *of the same order as that measured from a range of sources including the beach, the Adelaide Central Business District and a power station.”*

It found conclusively that the infrasound levels were too low to be detectable to humans, and in fact were comparable to living near the beach, an activity generally considered beneficial for health.

## **Economics**

The wind industry generates investment and creates jobs all over the world, including here in Australia. Rental income to farmers who have turbines on their land can be a welcome supplementary income especially as turbines have very little impact on normal farming activity. The wind farm construction phase in particular generates income for local hotels, shops and restaurants. Some key facts and figures are referenced below.

### **Australia**

- In 2009-10, wind energy in Australia generated just under \$1 billion in investment ([Bloomberg. New Energy Finance. 2010](#))
- [Modelling by SKM-MMA](#) (Sinclair Knight Merz – McLennan Magasanik Associates) for the Clean Energy Council found that the wind industry is expected to provide 1600 direct employees by 2020 and 17,000 full time equivalent jobs in construction over the next decade. These jobs will be primarily in regional Australia.

### **International**

- A recent [UK report](#) by Warwick University's Institute for Employment Research (IER) and Cambridge Econometrics (commissioned by RenewableUK and the EU Sector Skills Council for the Power Sector) found that employment in the UK's burgeoning wind energy industry has almost doubled over the past three years, rising 91 per cent between 2007/8 and 2009/10 to over 10,000 full time employees.

## **Planning guidelines**

Wind turbines are a necessary, beneficial part of Australia's future infrastructure and should be treated the same as any other infrastructure project. All projects, including roads, blocks of flats, and gas stations, attract some resistance from the community. It is the responsibility of government planning officials to listen to these people while always acting in the interest of the greater good.

Planning guidelines for wind farms already require extensive investigation by independent experts into local flora and fauna, cultural heritage issues, noise levels, shadow flicker from the sun, visual amenity, electromagnetic interference, traffic management, and socio-economic issues. It is also a requirement to undertake community consultation.

Setback distances from houses are based on noise levels, and not on an arbitrary distance. This is in line with other planning guidelines and is scientifically robust. Noise testing is done pre and post construction to ensure that levels are not exceeded at homes.

## **Community-owned wind energy**

I suspect that a lot of community concern and resistance regarding wind energy comes from a feeling of powerlessness against large wind farm developers. A vital way to overcome this resistance is to allow local ownership. Local ownership can result in a more positive attitude towards wind energy in general,

increase education about renewable energy, allow community members without wind farm-suitable land to take part in projects and to own their own part of a sustainable municipal power source.

[Hepburn Wind](#), Australia's first community-owned wind energy is currently under construction. By June this year, the two 2.05 MW REpower wind turbines are expected to be generating enough clean electricity to power the houses of Daylesford and much of the surrounding area. Profits from the sale of emissions free electricity will be paid as dividends to co-operative members, as well as \$1m over 25 years to a Community Sustainability Fund. The fund will support local initiatives that promote the sustainability of the Hepburn Shire. Over the past two years Hepburn Wind has secured over \$8.6 million from more than 1,400 mostly local members. Hepburn Wind's membership numbers continue to grow and speak volumes about community support for this project. Other communities around Australia are in the process of developing their own projects like these.

In the United Kingdom and Europe, community-owned projects are commonplace. Denmark alone has over 200,000 investors owning more than 5,500 turbines. In the United States and Canada, the community renewables sector is strong and growing, with an installed capacity similar to Australia's entire renewables sector.

## **The benefits of community wind projects**

Community wind projects allow communities to be empowered in their own efforts against climate change, taking action on a larger scale than they could individually. They can own the infrastructure and benefit from financial dividends, or those that don't own shares can benefit from community funds set up by the infrastructure owners. The projects also create jobs and build skills for the volunteers working on them.

## **Enabling community wind projects**

At the moment, several commercial scale wind projects are on hold due to the failure of the REC price to stimulate the sector. Community wind projects have a small scale efficiency loss, so they are commercially unviable at the moment also. Enabling these projects and allowing them to deliver the benefits outlined above will require good policy settings that are transparent, long term and certain.

Internationally, Feed in Tariffs have been found to be the most effective way to establish community-owned renewable energy projects. A successful example of this is has been implemented in Ontario, Canada. The FIT Program was enabled by the [Green Energy and Green Economy Act, 2009](#) which was passed into law on May 14, 2009. The Ontario Power Authority is responsible for implementing the program.

By encouraging the development of renewable energy in Ontario, the FIT Program will:

- help Ontario phase out coal-fired electricity generation by 2014 - the largest climate change initiative in Canada
- boost economic activity and the development of renewable energy technologies
- create new green industries and jobs.

## **Conclusion**

Stalling the wind industry as a result of a few claims without scientific backing would be an enormous backwards step for Australia. This would also be seen unfavourably by many countries around the world who are doing their part to reduce their emissions.

Increasing community participation in climate change solutions will go some way in changing public attitude and acceptance, and community-ownership models can achieve this. Wind energy is an economic opportunity for regional Australia.

As I mentioned above, it is the responsibility of government to listen to individuals while always acting in the interest of the greater good. The installation of renewable energy sources is a vital step in protecting Australians against the effects of climate change.

Kind regards,

**Alicia Webb**