10 February 2011

The Secretary to the Committee,
Inquiry into the Social and Economic Impact of Rural Wind Farms
Department of the Senate
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Parliament House
Canberra ACT 2600
community.affairs.sen@aph.gov.au

Dear Sir/Madam,

Thank you for the opportunity to contribute to this inquiry.

I am a wind industry professional working for Windlab Developments - a Canberra based Wind Farm developer that was the result of spun-off research and development from the CSIRO. I am a civil engineer that has chosen to work in the wind farm industry rather than in the popular coal mining and black energy market. My decision to do so rests in my personal belief of the necessity of long term responsible and sustainable energy supply and increasing concern of the future state of our planet as a place to support future children I may eventually choose to have. Personally I think we don't need any further reasons for the slowing down of installing new clean power. Australia's energy consumption is set to double by 2050 and we will need every form of clean energy production to keep pace with this expected demand. It is in this light, that I sincerely hope that any recommendations arising from this inquiry consider the minor negative impacts arising from the modernisation of our future energy supply in relative terms to the substantial positive impacts.

1. **Health Effects of Turbine Operation**

Most Australians like me do not have the first hand perspective of living close to a wind farm and instead must rely on adequate and well tested scientific evidence and observations to judge their impacts on human health. A cursory review of the evidence to date however seems rather conclusive;

- The National Health and Medical Research Council of Australia concludes in its "Wind Turbines and Health" paper – "There are no direct pathological effects from wind farms and that any potential impact on humans can be minimised by following existing planning guidelines." This review cites many well researched sources and studies.
- Those studies that claim to reveal that there is a link between human health and wind turbine noise are typically based on a limited number of cases (seems like those in the study were selected based on how much they were complaining of a purported effect) and go a long way short to producing accurate study findings. The symptoms of "Wind Turbine Syndrome" seem to be similar to that caused by anxiety and it seems that the more these negative studies are promoted, the more number of such cases arise. It seems that people are starting to become worried about their health and in doing so may become anxious, causing stress related illnesses. I think a better description of the problem could be "Fear of Wind Turbine Syndrome Syndrome".

2. **Excess Noise and Vibrations**

Current planning guidelines restrict the owners of wind farms from producing more noise than that granted to them in a development approval. If the turbines do not comply with the limits then they are required to turn them off. The wind farm owners would seriously reconsider placing them in locations that would jeopardise the ability to produce energy and thus a return on their investment. Australia has some of the strictest noise restrictions placed on wind farms anywhere in the world – we use the NZ standard which typically means that no turbines are able to be built within 700m or so of a turbine. The result is noise levels that are lower than those found in any urban environment.

3. **Property values**

The value of Agricultural land is typically determined by its current usage and improvements and its location to markets and services. Wind farms, unlike many other large scale developments in rural areas, have a very minimal impact on the nearby agricultural environment. There is no pollution or disturbance of groundwater, no loss of topsoil or increase in erosion, and no negative change to the productive capacity of the land. The properties hosting the turbines see an increase in value as 2% of the area is taken up by the wind farm with a guaranteed annual income attached. Nearby neighbours may complain that a portion of the market looking to purchase land may prefer to look elsewhere when alerted to the neighbouring wind farm, but fail to recognise that this may not be the only purchase factor that changes over time. Infrastructure upgrades, market fluctuations for products produced on the land, variable season quality, and a whole range of other externalities are likely to be more significant contributors to rural property values than any impact of nearby wind turbines.

4. **Employment opportunities**

Most wind farms are being proposed and built in rural areas. Rural communities typically have fewer opportunities for skilled jobs and lower incomes relative to their urban based peers. The high number of workers required on wind farm construction sites encourages subcontractors to employ as many suitable locals as they can to avoid bringing in people from other areas. After construction is complete, smaller numbers of well paid highly skilled technicians are then based locally to support the operation of the wind farm. The resulting families can help to support the small towns and communities around the wind farm through a flow on effect. I have seen figures of 3-5 indirect jobs are supported by every permanent job created by wind farms.

5. **Farm income**

I grew up on a farm and I know how impossible it is to manage an agricultural business, when weather, fluctuating costs of production and volatile markets risk long term reliable income generation. Wind farm rental income, which is guaranteed to be paid every year, without risk or investment on behalf of the farmer comes as a blessing. The income helps to sustain the business through adverse times to help to secure productive supply from the farm. There is no doubt that this is extremely important not only for the farmer but for the communities that support the farm.

Improvement for farm management and operation

a. Farm access

Wind farms must feature suitable roads to access the turbines for construction and maintenance. This in turn provides improved access for farmers around their properties.

a. Reduced pressure on the productivity of soils

Rent payments from wind turbines on the land may result in farmers reducing the pressure on the land to produce an income. "Flogging" the land by overstocking and not giving it time to recover reduces soil carbon, removes seed banks, increases soil erosion, causes dryland salinity issues. Many of these issues could be avoided by allowing farm owners to manage their land properly without forcing short term production to the detriment of long term farm sustainability.

b. Securing productive assets

Additional support provided by wind turbine rental acts as a form of subsidy for involved properties and ensures that they continue to operate as productive businesses rather than being tempted to cease operating and subdivide or dispose otherwise of their land.

c. Improvement on crop plants

Another very small but interestingly identified benefit of wind turbines is also a net reduction of wind speed and an increase of turbulence in the air passing through the blades. An Ames Laboratory study has shown that this can benefit crops and grasses nearby by increasing heat exchange of crops and keeps crops cooler during the day and warmer at night. Extra turbulence can also help to dry crops which may reduce fungi and diseases that may grow on plants. These factors can improve crop yields, extend growing seasons and reduce the need for chemicals. Sounds to me like a unique benefit.

6. Commonwealth, State and local planning laws

Approvals of wind farm projects must allow for the local, regional and national importance of such developments to be assessed in their relative terms. Wind farms produce a much more significant positive effect for the common good of Australians at all national, state and local levels than the minor negative effects caused at the local level. We should not lose sight of this point.

7. Improved fire access

Access roads for wind farms provide additional opportunities to control bush and grass fires. Wind farms are often proposed on ridge lines which are ideal locations for back burning in advance of an approaching fire front. The additional local support provided to fire crews by the wind farm owners help to protect the wind farm assets as well as the local area.

8. Economic Impact of global warming

I have read that agricultural production in developing countries may fall between 10 and 25 percent due to global warming (worse case this will cost GDP in Australia to AU$39 billion a year), and if global warming progresses unabated, agricultural capacity in some countries could fall as much as 40

percent. Thus, we need to address this phenomenon now before the world's developing countries are adversely and irreversibly affected. Wind farms alone may not present a comprehensive end to this problem, but are a well proven part of the solution. It is the responsibility of the government as the representatives of the people to act in the best interest of the country as a whole and not be swayed by a vocal minority which is highly influenced by self interest.

Yours faithfully,

Daniel MacDonald
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