

## **Submissions**

4 February 2011

# **Social and Economic Impact of Rural Wind Farms**

Submissions on behalf of

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### ***1. Introduction***

I am a fourth generation farmer at Berrybank. I am making this submission to the senate inquiry because the wind energy industry and former Brumby State Government decided that Western Victoria should be the wind energy hub of Victoria, without first consulting the rural communities located in this region. I strongly believe this decision has been entirely based on political reasons and is definitely not to the benefit of small rural communities and the electricity consuming residents of Victoria.

This submission is based on generations of agricultural experience, some of which was passed down from great grandparents who first settled the Berrybank area pre 1927 and combined with experience gained as an engineer dealing with a broad range of engineering issues, such as noise, air pollution, and air flow design. This has been undertaken in a career encompassing manufacturing, project management, design engineering and work in the power transformer industry.

The reasons for objections are numerous and are outlined further in this

documentation. In general there are contradictory, misleading and unsubstantiated statements made in relation to the now approved Berrybank development by the proponents (Union Fenosa Wind Australia) and their paid expert witnesses. The information the proponents submitted should have been clarified and proven as fact, in consultation with relevant independent world experts and authorities. Unfortunately this never occurred throughout the 2 week panel hearing at Berrybank. It would seem that the Wind Industry submits the same re branded information at each and every panel hearing they attend.

Compliance with the sometimes inadequate, planning code was the proponent's intent, however compliance in many cases is not achieved or proven and in some cases no relevant legislation was in place to adequately address all of the economic, health and environmental concerns raised both at Berrybank and numerous other, now approved wind farm locations across Western Victoria.

## **2. Location**

Berrybank is a beautiful rolling grass plain area that has remained generally unmodified since its settlement. The only major changes to the environment are the fencing of paddocks and the planting of strip plantations in some areas. It is highly productive livestock and cropping land designated as agricultural land not industrial.

There are many concerns about the negative visual impact a development such as this will have sited on flat terrain such as that found around Berrybank which was before settlement treeless. The proposed Berrybank Wind Farm is entering into the unknown in this respect and will not be as viable as other more undulating higher wind resource areas. From my bedroom window alone I will have view of approximately 80 turbines. The only way the proponents suggest I overcome this problem is to plant vegetation screenings near my house, effectively closing me in. As the turbines are 130m in height, this screening would have to be very close to my house windows to offer adequate screening of the turbines. Trees take at least 15 years to establish and grow to a useful height in this area. What does the proponent suggest I do to screen turbines for the first 15 years or should I just stop looking out my window for 15 years?

It is highly debatable as to whether there is enough stable wind flow at Berrybank to ensure that the wind farm is economically and commercially viable. The wind at Berrybank is inherently unreliable, being either extremely strong for very short durations, or totally non existent for the majority of times. Therefore the wind turbines will be stopped for a significant amount of time. This will create a heavy reliance on reliable back up generation (spinning reserve). When Sustainability Victoria was asked why not forget the wind farms and just utilize the spinning reserve as the main supply, they would not respond.

Wind data collected at the site has not been made available to any one at the

Berrybank hearing, even though it was requested on numerous occasions by the hearing panel and opponents to the development.

Why was this the case when it is so vital in:

- Independently assessing noise levels at residents dwellings?
- Determining if in fact Berrybank is an adequate wind resource?
- Assessing the viability of this development?

It would seem that wind farm viability is only a decision of the proponent as there is no State Government frame work in place to ensure that a minimum standard of viability is achieved. Are the proponents not concerned about this developments ability to generate electricity. Is it that their only interested in the renewable energy certificates (RECs) which they will be granted and can to sell off?

If this development is unviable it will be at the detriment of the neighboring residents and the local community at Berrybank as well as all the electricity consumers in this state who will ultimately be forced to pay the cost of this development.

It is morally and ethically wrong that many landholders have signed with the wind energy proponents with the intention of leaving the district. This is happening at Berrybank and has created a total split in the small rural community.

The worst part of Wind Farm Developments is that all adjoining farm land will be substantially devalued (independent experts estimate 30 to 50%) or in some cases made totally unsaleable. So the families unfortunate enough to have a wind farm forced on them are forced to stay and suffer turbine terror simply because can't afford to sell their land at a loss and aren't usually financial enough to afford the cost of relocation.

### **3. *Design & Construction***

Red aviation lighting located on the wind turbine nacelles will make it difficult to sleep at night. Not all residences around the proposed development site have vegetation screening around them to help negate this problem.

The effect of this lighting reflecting off turbine blades and cloud cover also adds to the disruptive nature of this lighting at night. An area of the state with clear perfect night skies will no longer exist. The shielding of this lighting only has an effective radius of up to 455m from the turbine base, and as all dwellings are further away than that, the shield will achieve nothing.

Expert for the proponent suggested aviation lighting, in his opinion, was not necessary. It would therefore be advantageous for all parties involved to seek clarification on the need for this requirement.

How are those living in and around Berrybank to be recompensed for all the inconvenience associated with construction noise, transportation movements and environmental impact during the construction phase?

The ultimate construction of the turbines to be used at Berrybank is too open ended. As an example there is a choice of 6 different turbines listed in the proposal. Why can't this be narrowed down to one so that the particular characteristics of the configuration are known to every one? This again shows the lackadaisical approach adopted in the approval process.

#### **4. Noise**

Wind farm turbine created noise is of major concern as it will be detrimental to the health and well-being of residents living in close proximity to this proposed development.

Wind turbine syndrome which is essentially chronic sleep deprivation, may manifest itself into more serious physical, psychological and cognitive problems. This phenomenon is well documented in many countries where wind power generation is used, and is well documented by the World Health Organisation.

It should be noted that residences well away from roads can have background noise less than 20 dBA at night. Therefore an acceptable emission level of 40 dBA will impact on many families ability to sleep during the night.

Why can't wind towers be kept away from any non agreement residential premises so that noise impacts on residences are totally negated? The Liberal State Government has adopted a 2 km set back distance and it has been suggested that 3kms is a more suitable set back distance. I currently have 5 towers under 2 kms from my residence and my mother has 22. This will make our dwellings uninhabitable! Some residents such as those at Leonard's Hill have approved wind turbine development as close as 600m from their dwellings.

Noise predictions calculated don't take into account many variables such as cross wind effects, cumulative effects, various wind elevations, inversion layers, and other wind & weather phenomenon. It has been proven that the wind prediction model used is flawed because the Waubra Wind Farm is not compliant and is the reason that land holders are being brought out (at least 8 families have been brought out. However I understand the current figure is higher.

Essentially this means we have no reliable noise level data for residential dwellings until the proposed development is built and in operation, by which time it will be too late to move a turbine away from the problem area. Who at a local council level is expert enough to correctly administer the post noise compliance monitoring? The only non compliance option would be to run the particular offending turbine at a reduced capacity or switch it off completely.

Not an efficient way to operate a wind facility, considering that it could have been sited further away in the first place to alleviate problems.

These concerns are particularly highlighted by the low frequency noise and vibration issues suspected to be affecting the health of residents located near windfarms. Note that low frequencies are not even tested for by the equipment used to monitor background noise levels conducted by Marshall Day Acoustics, specifically Z weighting. Surely just complying with a noise standard NZ6808:1998 that has been adopted by the Victorian State Government in the absence of a more stringent or suitable standard, is no reason to neglect the duty of care requirement that should be afforded to residents in and around the wind farm developments.

## **5. *Technological advances***

Wind power is old technology that has been around for decades in many overseas countries. These countries are now moving away from wind energy due to its unreliability and excessive cost. In some countries it has been decided to build wind energy facilities in coastal waters, away from shore lines to negate the environmental impacts and to benefit from the higher wind energy resources available. Why isn't Australia learning from this and adopting a similar approach? Surely if we are to adopt Wind energy as part of our renewable energy plan we should utilize the highest wind resource localities found along the coastline.

Emerging new technologies may make wind farms outdated sooner than expected. If this happens in the short term what is the point of investing excessively in costly and inefficient wind energy. Who is going to bother to operate or even decommission the wind farm at Berrybank if it becomes outdated early in its life?

The now defunct Brumby State Government was content to put all its eggs in one basket by adopting wind energy as the most appropriate means of meeting State and Federal Government renewable energy targets. What about the other alternative renewable energies such as geothermal, solar, tidal and hydroelectric, or meaningful investment in technologies such as clean coal, subsequestration of CO<sup>2</sup> emissions from coal and gas fired electricity generation? We have abundant coal and gas reserves which it is claimed shouldn't be burnt for electricity generation because it creates too many greenhouse gases for Australia, but at the same time hypocritically sell these to overseas countries which have no hesitation in creating CO<sup>2</sup> emissions from them.

Australia produces around one percent (1%) of the world emissions (Department of Sustainability Victoria figure), therefore why is the Australian Government so aggressive in their adoption of currently available inefficient wind energy. In the short term it doesn't matter what Australia does in terms of renewables it will have no current benefit on the world's impact on global warming. Why isn't the Australian government investing similar amounts of money in lobbying other developing countries to cut their emissions which would have more net benefit to the world?

## **6. *Lack of public consultation***

There was a total lack of public consultation involved with the Berrybank Wind Farm Development. The one only public meeting the proponents had did not explain the proposal and was generally considered as being uninformative by the community.

Not one person from Union Fenosa attended, only their hired consultants who were unable to give clear and informative responses to peoples questions. Were the proponents too frightened to hold a public meeting and deal with the healthy debate which may arise from such a public meeting or were they just going through the motions in order to meet their planning obligations?

After the meeting it took approximately 3 months for Union Fenosa to respond to an email I sent on the 3 February 2009 containing a number of questions relating to the wind farms that were not properly answered at their only meeting they had. A response was not received until the 5 of May 2009 after Union Fenosa had once again been prompted.

In respect to the local knowledge on fire, flora and fauna, it has been admitted by the proponent's experts that they didn't take the time to contact the non agreement landholders or the general community. As a consequence many facts have been neglected in these experts evaluation of particular fields of interest.

It is also interesting to note that any document relating to codes of practice for wind farms always state that one of the most important factors in the planning and development of a proposed Wind Farm is "vigorous and adequate public consultation". Therefore why didn't this happen?

## **7. *Fire Hazard***

There is much documented evidence of wind turbines catching fire. What does the proponent and the State Government intend to put in place to prevent a major fire being started by the Berrybank wind farm which is located in one of the most fire prevalent parts of the world?

How is a fire started by this wind farm to be controlled when most of the land where this development is situated is on raised cropping beds? The proponent's experts have indicated fire trucks can not safely fight fires on raised bed country as fire trucks can not safely traverse this type of terrain. The proponent's experts also have conflicting views on whether or not aerial fire suppression is or is not possible, on and around the wind farm site. Therefore the use of raised beds under and around wind farms should be prohibited to allow the safe and timely access for the control of fires with ground based vehicles.

A fire that starts in a wind turbine nacelle will leak hundreds of litres of burning oil, causing spot fires for hundreds of metres down wind of the tower. Simply staying back and monitoring the situation will undoubtedly result in an

uncontrollable wild fire as experienced in the western district on many previous occasions. The CFA and state government need to come up with a policy in regard to wind farms situated in these high risk areas. To ignore this problem for any longer is not adequate and may ultimately result in loss of human life.

It has also been indicated that wind farm installations pose no more threat of starting fires than farm machinery. This may be true, however on proclaimed days and days of high fire risk harvest work is stopped. It would be interesting to know if the same courtesy will be extended to the community by the operators of wind energy facilities pre and post construction.

The other aspect relating to fire is that these turbines will wear significantly over a 30 year life span. As they reach the end of their life the probability of fire risk increases as it does with any type of aging machinery.

## **8. *Aerial spraying & spreading***

This area grows many types of agricultural crops. The proponent's expert made it clear that aerial applications could continue around the perimeters of the wind farm provided that there is a buffer zone of 500m for the aircraft to turn at the end of a spraying run. It has now been demonstrated that for this to happen in some situations the buffer zone would need to be from the boundary line of neighboring land holders perimeter to the wind turbine, and not merely a buffer from the turbine which may extend across non agreement landholders properties. Is my livelihood to be jeopardized by the fact that I can no longer spray and spread my crops by aircraft due to wind towers being located too close to my boundary line.

## **9. *Shadow Flicker***

It is more than obvious that shadow flicker will occur in regions on and off the proposed development site. Considering this effect has been calculated to be as high as 913 hrs in some areas and it was suggested by the proponent's expert that this may occur more during the winter months. The question was raised as to whether this effect may have an impact on crop germination and growth. It's worth noting that germination of crops in this area is difficult to achieve because of the cold, wet soils and lack of sunshine hours available throughout the winter months. More research should be undertaken to determine the extent of this problem. Again this may have a dramatic impact on my livelihood.

Also overlooked is the impact shadow flicker may have on motorists using the Hamilton Highway which currently sees a higher usage due to the completion of the ring road at Geelong. The proponents suggested that a study to see if shadow flicker affected motorists was unnecessary and merely a waste of money. However they could not provide any evidence that a motorist would not be affected by the strobing effect of turbine blades as they drive past the wind farm facility.



## **10. Flora & fauna**

There are many varieties of native and rare bird life located in this region such as Black yellow tailed cockatoos, Hawks, Owls, Brolgas, Wedge tail eagles, some varieties of Ducks etc. The original environmental report produced for this development was incomplete as it did not identify many of the bird species located in this area or specifically around the development site. The desktop study conducted was not adequate. Unfortunately the previous Minister for Planning decided that there was no need for an Environmental Effects Statement (ESS), based on the fact that the Flora and Fauna overview he received was incomplete. Further studies conducted by the proponent have also been questioned because they haven't included local knowledge and therefore missed relevant Brolga flocking and nesting sites. Signed landholders have been known to have destroyed Brolga nesting sites so that they wouldn't miss out on the opportunity to host wind turbines on their land. This is appalling and those undertaking this activity should have been prosecuted.

A more detailed and rigorous evaluation of the site and surrounding areas should have been undertaken preferably by an independent body not associated with the wind industry.

Normally the proposed development site is a flight path for bird life as it is close to Ramsar wetlands. This has been less evident over the last decade due to nation wide drought conditions, but will become an issue when we revert back to normal rainfall. Evidence has been given by Department of Sustainability and Environment that the proposed development may exclude Brolga from the use of temporary wetlands which they rely on for breeding and foraging purposes.

## **11. Conclusion**

There are many conclusions to be drawn from the points raised which need to be thoroughly addressed. In summary:

- Why did the Brumby State Government take the planning process away from VCAT and decide to appoint their own panel to deliberate on wind farm development approvals? Was this designed to take away individuals right of appeal to decisions and or a way of fast tracking wind farm approvals?
- What is the point of the current Panel Hearing System when objectors raise objections that aren't adequately addressed or responded to?

- Why has nearly every wind farm project under a Brumby state government been approved regardless of how strong the opposition to it has been?
- Is the proposed development viable given that Berrybank is a unreliable and erratic wind energy resource or is it just about obtainment of renewable energy certificates for the proponents?
- What other criteria has been considered for building a wind farm at Berrybank apart from;
  - Access to the power grid at either end?
  - A willingness of a few landholders to participate for financial gain?
- How can the proponents and previous Victorian Government state that there is no adverse Health effects due to wind farm when;
  - There is numerous evidence world wide and locally that these facilities do affect people's health.
  - There is strong evidence that NZ6808:1998 doesn't adequately address issues relating to wind farm noise.
  - There is no commitment to fund an independent scientific study to find out why people located close to wind farms are getting sick?
  - The Waubra Foundation believes there is a link between health issues and wind farms?
- Why was the Victorian state government pushing wind energy with a vengeance as the best renewable energy source when there may be more viable alternatives that don't require fulltime (100%) coal or gas fired backup?
- Why has there been a lack of public consultation in relation to this proposed development with respect to:
  - Brolga sites located on and around the development site?
  - Issues relating to fighting turbine fires on grass plains?
  - The views of the local community on a wind energy facility being built at Berrybank?
  - The impact of the development on the vast beauty of the site and surrounding areas?
- What alternatives are being offered by the proponents to fight fire on and around the proposed facility:
  - When evidence has shown that wind turbines do start fires?
  - When Aerial fire fighting capabilities may be nonexistent or severely diminished?
  - When raised beds make it impossible to undertake safe ground based fire fighting operations?
  - As signed up landholders leave the district and there are less people available to fight fires?
- Are aerial spraying & spreading applications possible if a 500m buffer

is not maintained between boundary lines and Wind Turbine Towers?

- Will shadow flicker effect the emergence of newly sown crops and impact on the safety of passing motorists?
  
- Will the effects of noise and environmental disturbance impact on flora and fauna.
  - Specifically Broglas but also including other fauna species?
  - Native grass land disturbance and removal?
  - Possible impact on livestock located on and around the site?
  
- Does the fact that this development may impact so adversely on the occupants of dwellings, on and around the wind farm site.
  - That their dwellings will become uninhabitable?
  - That their properties will become significantly devalued or even unsaleable?
  - That their quality of life will be so severely diminished that they will lose their strong affinity with the land they love and respect?
  - That they will be forced out of their homes they own and love, some for 50 years or more?
  - That their livelihood will be taken away from them?
  
- How are small shire councils going to administer the permit conditions placed on the proponents;
  - When this responsibility has been lumbered on them by the former state government?
  - When any windfalls they derive from this development will be chewed up with the cost of administering permit condition?
  - When local communities health and well being can't be protected if local councils don't have the skills and resources to administer permit conditions correctly?

I trust the senate inquiry will force the government of the day at a State and Federal level to stop this unregulated wind energy madness and develop universal:

- 1. Planning and Policy Guidelines for Wind Energy Projects.**
- 2. Formal Development Process for Wind Energy Projects.**
- 3. Changes to the Planning Panel Process for Wind Energy Projects.**
- 4. And most importantly force the federal Government to overturn State Government Approvals on all Wind Energy Projects until adequate**

***independent scientific studies have been conducted to determine the impact of economic, social and particularly health impacts wind energy facilities impose on rural communities.***