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Submission on Proposed Flat Rocks Wind Farm

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From :

Helen and Paul Bignell

PO Box 155

Kojonup 6395

Ph: 9821 0048

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Submission regarding the proposed Flat Rocks Wind Farm (FRWF) .

Many people in the districts of Kojonup and Broomehill/Tambellup are un-informed about wind farms and are unaware of any problems associated with them .

People are unaware of the ramifications of having a wind farm built in the area. We believe that *all* residents in the shires affected should be informed so as to understand the impact on close neighbours and the general community.

Wind farms are *not* tourist parks – they are industrial and commercial installations.

As neighbours of the proposed Flat Rocks Wind Farm (FRWF) we have several areas of concern.

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1. HEALTH.

A number of health issues are commonly mentioned by those living close to wind farms in all parts of the world . It cannot be coincidental that all the symptoms complained of are similar no matter in which country the wind farms are situated. They include, but are not limited to

- migraines and headaches,
- sleep disturbances,
- inner ear and balance problems,
- anxiety and nausea
- mental health problems
- depression
- increased blood pressure.

Increasingly, research in this area points to many of these problems being due to the low frequency sound of the turbines.

Sleep is vital for the body to rest, heal and to function well. Some studies show that the effects of lack of sleep are similar to being drunk with a decreased ability to function effectively. Sleep disturbances can disrupt nocturnal cortisol secretion. Con tinued night time disturbance results in an accumulation of cortisol levels in the blood which can lead to long term stress activation and a higher risk of a major depressive episode .

Other physiological symptoms noticed in subjects exposed to noise whilst asleep include increased heart rate and respiration rate.

At a recent **International Symposium on the Global Wind Industry and Adverse Health Effects, held Oct 29 to 31 , 2010** Dr Michael Nissenbaum, a radiologist at Northern Maine Medical Centre and certified by the Royal College of Physicians of Canada, and American Board of radiology was one of the key speakers.
He presented **the world's first controlled study of alleged adverse health effects related to industrial wind turbines.** The techniques used are accepted by the medical fraternity worldwide.

'Nissenbaum stated the sound energy from wind turbines has a more disruptive sleep effect than any known industrial noise of the same sound pressure. This is thought to be due to the complex tones generated by the turbine blades as they

pass by the tower. Nissenbaum also noted the sound energy is mostly in the low frequency range, which readily passes through building materials and into the home and penetrates the ground as well as deep within the body.' (*Wind Watch : Industrial Wind Energy News by Jim Curry, The Wellington Advertiser)*

Dr Nissenbaum's research also found that **low frequency noise impacts the emotion centres of the brain, releasing stress hormones that trigger fear, anxiety, suspense, flight and arousal.**
Low frequency sound (ultrasound) is used to scan deep within the body.

Somewhat alarmingly,his research found that **people within 1.5 km of the turbines have**

- **higher incidence of mental health issues,**
- **increased stress levels,**
- **higher anger levels,**
- **increased use of psychotropic medication,**
- **poorer sleep**

than in a control group 4.5 km away from turbines.

As the distance from turbines increased mental health improved.

Interestingly, prior to the study, both groups of people involved in the research (those close to the turbines and those 4.5km away) felt that the turbines would be beneficial for their area. However, after the turbines started to produce energy the attitudes were completely opposite. People close to the turbines were very agitated and wanted the turbines stopped.
Although most in the control area 4.5 km away had no problems , *some people were affected even at that distance.*

Rural areas already have a high incidence of people suffering mental health issues which are often undiagnosed and/or untreated due to lack of health services and health outcomes are poorer in regional Australia. It would seem unwise to build any facility which could exacerbate mental health issues.

' Noise induced sleep disturbance is well known to have adverse health effects and has been studied extensively although not with particular reference to wind turbines. Due to the indisputable restorative function of sleep , noise induced sleep disturbances are regarded as the most deleterious effects of noise.' (Dr Amanda Harry M.B.Ch.B. P.G.Dip.E.N.T Feb 2007 - Wind Turbines, Noise and Health)

The low frequency noise produced by wind turbines is thought to be the result of the displacement of air by a blade and of turbulence at the blade surface. The low frequencies make up part of the overall audible noise and also produce a 'seismic' characteristic which is a common complaint of people living near wind farms , that they can ***feel*** the noise as well as hear it. This results in a feeling of ***motion sickness***, or ***nausea.*** People who complain of these symptoms find the symptoms disappear when they move away from the vicinity of the turbines.

Much research has been done in Portugal into issues concerned with high levels of low frequency noise and they have been found to cause a complex disease known as ***vibroacoustic disease.***
It is beyond the scope of this submission to elaborate succinctly on this condition but it is felt that lower levels of low frequency noise, such as that produced by wind turbines and to which those living near to wind farms would be subjected, would over time produce similar problems.

The syndrome is dose dependent and has various stages.
Stage 1 – MILD (1-4 years) Symptoms include slight mood swings, heartburn, indigestion, throat and mouth infections, bronchitis
Stage 2 – MODERATE (4 -10 years) Chest pain, definite mood swings, back pain, fatigue, allergies, inflammation of the stomach lining, skin infections
Stage 3 – SEVERE (> 10 years) psychiatric disturbances, haemorrhages, duodenal ulcers, colitis, headaches, decrease in visual acuity, severe joint pain, intense muscular pain, neurological disturbances.

Given that the life span of the proposed wind farm is at least 20 years this is extremely worrying as exposure to even low levels of low frequency noise would be prolonged.

The strobe-like disturbance caused by blades flickering in sunlight has been likened to a flickering fluorescent light and can cause problems for susceptible people.
The flickering/flashing lights at night have been a source of annoyance for some neighbours of wind farms.
www.windaction.org/study shows health problems which can be viewed for further information.

Dr Sarah Laurie, a GP from South Australia who is looking into health problems associated with wind farms suggests that people who live close to wind farms at Cape Bridgewater and Cape Nelson in South Australia might need to begin monitoring their blood pressure. From an article titled **'Wind farms linked to health problems'** in the Herald Sun January 17, 2011 " ...Dr Laurie said there was a link between early morning high blood pressure, heart attacks and the turbines at wind farms.

She said anyone who lived within 5km of a wind farm should consider buying their own blood pressure monitoring equipment and see a doctor if they had a reading above 140/80."

2. NOISE

The noise caused by a number of turbines together has been likened to 'a relentless rumble like unceasing thunder,' as loud as a motorcycle or being in a flight path of planes.

The penetrating low-frequency aspect to the noise, which is a thudding vibration a bit like a throbbing bass in a nearby disco, travels much further than the usually measured ' audible' noise.

Since the sound is projected outwards, although it is often quiet at the base of a turbine the noise becomes louder further away from the base.
John Zimmerman from Enxco(an energy company) admitted that ' wind turbines don't make good neighbours.'
Some wind farm developers have complained that they are unable to comply with noise regulations.
A five year investigation into wind power found that noise levels could not be predicted before developing a site.
These problems are common to wind farms in different countries and are not isolated complaints.

As mentioned previously it is not only the audible noise of the turbines which is a nuisance but the low frequency inaudible noise which often causes the greatest problems.

Developers of wind farms often say that the *noise* is not a problem. Many people living near wind farms refer to the *feeling* of the vibrations. Decibels measure noise but do NOT measure vibration. It is the constant *vibration* which can be the problem.

3. VISUAL IMPACT.

We chose the site of our home for the picturesque views.
A recent article in *The Weekend Australian January 22-23,*2011 showed a pictorial representation of turbines compared with other structures.
The proposed turbines for the Flat Rocks Wind Farm will be almost as high as the Sydney Harbour Bridge at it's highest point from *water* level not street level.

Seventy four of these structures would have a significant visual impact on the landscape.
Atop each turbine would be a red flashing light .
Given the massive height of the proposed FRWF wind turbines at 146ms one wonders whether the proposed site is the best site for a wind farm.

The proposed turbines would be considerably taller than the current ones in use at the Albany wind farm.

The Kojonup/West Broomehill (Flat Rocks) area is renowned as a prime location for its natural beauty and high productivity giving it a high aesthetic and monetary value. These attributes would be compromised by the establishment of a wind farm. Property values in other parts of the world, including Australia, have been affected by the proximity of a wind farm.

Compensation has been awarded to land owners when it has been acknowledged that the value of their property has been compromised by the proximity of a wind farm.

4. BUFFER ZONES.

Due to a number of problems and complaints with wind farms in Europe and America it is recognized that a buffer/exclusion zone of **2000ms (2kms)** is generally considered to be the minimum requirement from dwellings . Some of these recommendations were made when turbines were smaller than those now being manufactured. It is possible that a bigger buffer zone should be considered with larger turbines to lower the risk of possible adverse effects on neighbours.

We feel it is *essential* that the buffer zone be 2000ms from **property boundaries** otherwise it precludes any future dwellings being built closer to a boundary than current dwellings on a property and could render large tracts of land incapable of ever being built on .
Legal proceedings could arise in the future should a landowner near a wind farm want to build on a small location or if a farm is sub-divided.

There have been several law suits in respect to wind farms. In Ireland a criminal suit was brought against a wind farm owner for noise violations of their environmental law.

A developer had to pay a home owner for loss of property value.

In England a group sued the owner and operator of the Askam wind plant claiming it was ruining their lives.

Lawsuits are also pending in Ontario and in the United States by residents living close to wind farms and claiming adverse effects.

'German marketer Retexo-RISP specifies that turbines not be placed within 2 kilometers (1.25 miles) of any dwelling.'

One of the recently elected Baillieu Victorian state government election pledges was to mandate for a **2km exclusion zone between wind turbines and houses.**

Due to the effects of turbulence and wind patterns created by wind turbines they could also impact on planes used for crop dusting and urea spreading as it may be unsafe to fly too close to the turbines.

Farmers who own and fly small planes may be adversely affected by the proximity of a wind farm.

5. ELECTROMAGNETIC INTERFERENCE.

Wind farm owners including the proposed Flat Rocks Wind Farm acknowledge that television and radio reception, GPS and microwave links can all be adversely affected by wind farms but are *unlikely* to cause 'unacceptable interference'. This is a subjective measure and the current FRWF proposal does not specify exactly what might constitute 'unacceptable' interference .

In the submission by Moonies Hill Energy it states
"... All licensed microwave links occurring within the vicinity of the FRWF site have been mapped and none were found to pass through the site. Consultation with registered licensed communication operators has been carried out and no issues identified"

I believe this is incorrect as 2 licensed operators in the vicinity of the proposed site were NOT consulted.
One of the operators has communications through the proposed site which would be adversely affected.

Raglan Community Board Chairman, Rodger Gallagher, a former Telecom engineer in New Zealand, said wind farm interference with mobile phone coverage was a known problem. Since there are already problems with mobile phone signal coverage in this area a wind farm could exacerbate the problem.

6. FAUNA.

The FRWF proposal states that
" At this stage of the review it should be noted that the proposed FRWF is not situated in any significant fauna movement corridors ... the development site contains no threatened species are likely to be at significant risk as a result of the if the FRWF development."

This is incorrect as the threatened **Carnaby's Black Cockatoo** has and still does frequent the area of the proposed wind farm. Four of these birds were seen on our property 2 weeks ago. An area of bush on a land owner's property close to the proposed wind farm consisting of stands of white gum are possibly nesting sites and habitat for these cockatoos.

I believe the Carnaby's Black Cockatoo mates for life and should one of a pair die, the other cockatoo will not mate again.

An **Australasian Bittern,** a species vulnerable to extinction, is believed to live in or around the **Ngopitchup swamp** which is in the centre of the proposed wind farm site, in April 2010.

Bats are also affected by the vibration and frequency of the turbines and many bats are seen at dusk in the proposed wind farm site.

7. COST.

Wind power is a **very** expensive form of electricity to produce. Since it is an inconsistent form of power which fluctuates a constant 'back up' conventional source of power must always be available for times when the turbines are not producing power or are producing less power than required. This adds considerably to the cost of producing the wind power.

Wind energy companies often promote their output using ***nameplate*** capacity figures instead of the ***actual*** energy output which can typically be only a fraction of the nameplate capacity due to the inefficiency of wind power. The electricity output of a wind farm may be only 20% of its advertised capacity.

The amount of electricity required by the actual turbines themselves is usually not included in output figures. Not a single conventional power plant has been shut down since wind power is merely supplemental to existing facilities .

Electricity generated by wind turbines must either be used or fed into the grid since technology to store the energy isn't available. Since the FRWF is not close to the grid new transmission facilities are required. The proposed line to carry the electricity back to the Kojonup Substation requires an onsite substation to be built. The proposal merely states it
'... will be located in close proximity to the transmission line in the northern section of the proposed FRWF development site.', without specifying an exact location.
As a close neighbour to the proposed wind farm in the northern section this is rather worrying as it could possibly be quite close to inhabited dwellings.

Since there is some concern about the amount of radiation emitted from mobile phones, one can only surmise that radiation from a substation would be rather more than a mobile phone and hence more of a concern regarding possible health issues.

Reduction of CO_2 is one of the selling points of wind power. However with China's increasing energy usage and increased CO_2 emissions it is unlikely that the proposed wind farm will result in any actual CO_2 reduction.

Often the CO_2 used in the back up power source (coal- or gas-fired) is not included in figures of CO_2 reduction quoted by wind power producers. Wind power may even lead to an ***increase*** in CO_2 emissions since a back up power source, if it is able to, may need to be fired up quickly. When running below peak generation capability a back up power source facility will not be using it's fuel efficiently and this too can contribute to an increase in CO_2 emissions.

In the UK and Denmark , despite the installation of many wind farms, CO_2 emissions **rose** in 2002 – 2004.

The high cost of wind power generated electricity is passed on to consumers and this is a time when some consumers are already struggling to pay their electricity bills.
In 2010 there was a large increase in the number of clients wishing to pay their electricity bills over a longer period and requiring an extension.

Wayne Brunetti, head of Xcel Energy in the US and a supporter of wind power, has admitted that when customers have most need of power, it is typically not available through wind generation.

Since wind farms usually receive government funds/subsidies would these monies be better spent pursuing other alternative sources of power eg biomass or solar thermal power which may be cheaper?

8. FUNDING

While governments boast that they are looking to a 'greener' future what steps are they taking to actually reduce our reliance on fossil fuels?

Often the only beneficiaries of wind farms are the investors and the multinational energy companies who buy into the farms.
What happens if an energy company goes into liquidation? Are land holder lessees still paid for having turbines on their land?

Is it possible that wind farms may go the same way as agro-forestry if energy companies do not get tax breaks or if other cheaper and better sources of 'green' energy are expanded?

All alternative sources of power require government funding and subsidies but I wonder if the proposed FRWF is the best use of government funds.
Would these monies be better spent pursuing other alternative sources of power eg biomass or solar thermal power which may be cheaper?

9. CONSTRUCTION.

It is claimed that establishing and building a wind farm will result in extra jobs for the district.
In many instances construction takes some months but the turbine or energy company supplies it's own workforce, using only a few locals. Often only 1 maintenance worker is required for a large wind farm.

A large additional cost will be involved in preparing current roads and bridges to cope with the turbines, cranes and other equipment necessary for turbine construction. Who will pay for these substantial costs?

It is likely that road verges will have to be cleared and roads widened leading to the removal of mature trees and other vegetation. Electrical cable will have to be put underground to carry electricity from the turbines to the grid. It has been suggested that this will have to go by road verges.

In the Moonies Hill Energy planning application it states on page 5
'... MHE has consulted with Main Roads and the Shires of Kojonup and Broomehill-Tambellup regarding the most suitable route for heavy vehicle deliveries and daily traffic to the FRWF site.'
Talking with people in Kojonup it appears that the Kojonup Shire was aware of the wind farm plans for ' almost 2 years'.
However a couple of Broomehill-Tambellup shire councillors knew nothing of the proposed wind farm until October/November 2010. This begs the question – to whom did the FRWF applicants speak and how was the consultation done if some councillors were unaware of the proposal?

10. BIO FUEL.

The development of a wind farm may pose a threat to potential development of new industries such as renewable bio-energy from growing oil mallees. With the current FRWF proposal only a few (6) farmers will derive benefit from the project. With oil mallees hundreds of farmers would be able to , if they wished, to diversify and gain benefit from an alternate source and use of their land.

Wind farms may be able to take up line capacity for electricity which would be supplemented from the public purse in times of under supply thus discriminating against other renewable energy technologies such as biomass.

Growing oil mallee trees could also assist with lowering water tables and helping in the fight for salinity.

11. DE-COMMISSIONING OF WIND FARMS.

The current proposal for FRWF is for 20 years.
At the end of this time will the turbines be de-commissioned?
Is there a fund to provide for the dismantling of the turbines as this will be an extremely expensive exercise? Can the FRWF ***guarantee*** that the turbines will be removed once de-commissioned or will they be left to slowly fall into disrepair as has happened to wind farms in the US and Canada? This would be a real blot on the landscape.
If solar or bio-energy become more developed as is probable in the future will the turbines be de-commissioned earlier?

12.ACCIDENTS

There have been several accidents associated with the operation ofwind farms. A list of these is available on www.caithnesswindfarms.co.uk

13. SOLAR POWER.

A Nobel prize-winning director of the CERN particle physics laboratory in Geneva, Professor Jack Steinberger, ' said that wind represented an illusory technology – a cul-de-sac that would prove uneconomic and a waste of resources in the battle against climate change.
"Wind is not the future," he told the symposium of Nobel laureates at the Royal Society. '
He said " I am certain that the energy of the future is going to be thermal solar. There is nothing comparable. The sooner we focus on it the better."

Professor Steinberger said that because intermittent sources of power, such as wind, required back-up power generation, this undermined their contribution to emissions reductions.

14. TOURISM

It has been suggested that wind farms could become a tourist attraction however the experience in many other parts of the world is that wind farms as tourist attractions are closing due to lack of visitors.

15.COMMUNITY

In almost every community with wind farms they have proven to be ***very*** divisive. Often those who will benefit financially are very 'pro' wind farms. Close neighbours who are often adversely affected by the problems outlined in this proposal are much opposed to wind farms.
I have personally spoken to 12 neighbours of the proposed FRWF and **ALL are opposed** to the development.

There is some disquiet over the manner in which the wind farm was established. A meeting held on August 6th 2008 did not include several people who would be adversely affected by the proposed wind farm, including ourselves, although the planning application states that landowners within a 10 km radius of the development site were invited.

A meeting held in Kojonup in September 2010 was by invitation. I have spoken to neighbours, again within 10 kms of the proposed wind farm site, who would have liked to have attended the meeting but did not know about it.

Obtaining information about the proposed development was difficult as farmers had to sign confidentiality clauses before they themselves were told about the wind farm and I believe there was the possibility of legal action if they broke this agreement. This is of concern to us – if a wind farm is so beneficial for this area why the need for so much secrecy?

Rural communities are small places and it is distressing to see the negative effects wind farms can have on people in these districts.

Whilst wind power may have a place in energy production it is probably better suited to large farms with thousands of hectares held by a single owner where the impact would be far less than a wind farm in an area comprising several smaller farms with many neighbours impacted by the turbines.