

29th July 2012

Department of Planning & Infrastructure,
GPO Box 39,
SYDNEY NSW 2001

Dear Sir,

Re: **Bodangora Wind Farm MP10_0157**

I, [REDACTED] am aware of Infigen Energy's proposal to build up to 33 wind turbines outside the township of Bodangora, some 20 kilometres north-east of Wellington.

I do not give permission for my personal details to be released to the proponent, the public or any other government department.

I wish to lodge my objection to this wind turbine proposal because of the following:

I live 20km due west of Mudgee in an area where my husband's family have run fine wool sheep for four generations. From our property we will potentially see industrial wind turbines from 3 different proposed wind farms i.e. Bodangora, Uungala and Hargraves/Triamble (farmers are just being asked to sign licences for wind studies for the latter wind farm). There is the possibility of over 750 turbines being constructed in the region bounded by our property, Bathurst and Wellington.

My research into the cumulative effects of 750 turbines has revealed that nowhere else in the world are there as many turbines, of the size proposed in these wind farms, in such a small region. The Alta Wind Energy Centre in California is the biggest wind farm in the U.S. and comprises 390 turbines in 7 wind farms and covers 36square kilometres. Whitelee Wind Farm in Scotland is advertised in it's website as the biggest wind farm in Europe. Whitelee has 140 turbines currently in use and even with it's planned 75 turbine extension comes nowhere near the potential 750 for our area.

Bodangora will include 33 turbines, 150m tall and between 2 - 4MW, Uungala includes 330 turbines up to 188m tall and between 1.5 - 4.5MW and Triamble approx. 100 turbines. Turbines from these 3 wind farms will be able to be seen from our farm. From maps of proponents' wind farms and from discussions with potential hosts we estimate that we could possibly see 100 turbines from our property.

The size and concentration of wind turbines in my local vicinity severely exacerbates my concerns about industrial wind turbines in general and the Bodangora Wind Farm in particular:

1. Health Impacts

Carl V. Phillips, 2011, *Properly Interpreting the Epidemiologic Evidence about the Health Effects of Industrial Wind Turbines on Nearby Residents*, Bulletin of Science, Technology, and Society, vol. 31, no. 4 (August 2011), pp. 303-315.

Abstract:

"There is overwhelming evidence that wind turbines cause serious health problems in nearby residents, usually stress-disorder type diseases, at a nontrivial rate. The bulk of the evidence takes the form of thousands of adverse event reports. There is also a small amount of systematically-gathered data. The adverse event reports provide compelling evidence of the seriousness of the problems and of causation in this case because of their volume, the ease of observing exposure and outcome incidence, and case crossover data. Proponents of turbines have sought to deny these problems by making a collection of contradictory claims including that the

evidence does not “count”, the outcomes are not “real” diseases, the outcomes are the victims’ own fault, and that acoustical models cannot explain why there are health problems so the problems must not exist. These claims appeared to have swayed many non-expert observers, though they are easily debunked. Moreover, though the failure of models to explain the observed problems does not deny the problems, it does mean that we do not know what, other than kilometers of distance, could sufficiently mitigate the effects. There has been no policy analysis that justifies imposing these effects on local residents. **The attempts to deny the evidence cannot be seen as honest scientific disagreement, and represent either gross incompetence or intentional bias.**”

Health Canada is to study the health impacts of industrial wind turbines after complaints from residents who live near smaller turbines and smaller wind farms than Bodangora. Investigations of similar complaints in Australia are required before more wind farms are constructed.

“Health Canada is aware of health-related complaints from individuals living in close proximity to wind turbine establishments.

“This study is in response to questions from residents living near wind farms about possible health effects of low frequency noise generated by wind turbines,” said the Honourable Leona Aglukkaq, Minister of Health. “As always, our Government is putting the health and safety of Canadians first and this study will do just that by painting a more complete picture of the potential health impacts of wind turbine noise.”

” Health Canada media release July 10, 2012

Oral testimony of Professor Anderson, NHMRC, to the Senate Inquiry 31st of March, 2011. “...we are very aware that the high-quality scientific literature in this area is very thin. That is why we were at pains to point out that we believe that a precautionary approach should be taken to this, because, as you would understand, the absence of evidence does not mean that there might not be evidence in the future”.

A moratorium on wind farm development is required until research into health effects is carried out. Rapid reviews of literature are not adequate. Most onshore wind farms overseas consist of twenty or so turbines of a much smaller size than those of Bodangora. Studies of the cumulative health effects of over 700 turbines have not occurred. We must err on the side of caution where health is concerned. We don’t need another asbestos story.

2. Noise pollution both audible and infrasound.

“Evidence has been mounting over the past decade, however, that these utility-scale wind turbines produce significant levels of low-frequency noise and vibration that can be highly disturbing to nearby residents.”

Punch, J et al Wind-Turbine noise: What Audiologists Should Know

*“As wind turbines get larger, worries have emerged that the turbine noise would move down in frequency and that the low frequency noise would cause annoyance for the neighbours. The noise emission from 48 wind turbines with nominal electric power up to 3.6 MW is analyzed and discussed. The relative amount of low-frequency noise is **higher for larger turbines** than for small turbines.....**Due to air absorption the higher low-frequency content becomes even more pronounced** when sound pressure levels in relevant neighbor distances are considered. **Even when A-weighted levels are considered, a substantial part of the noise is at low frequencies**, and for several of the investigated large turbines, the on-third-octave band with the highest level is at or below 250 Hz. **It is thus beyond any doubt that the low-frequency part of the spectrum plays an important role in noise at the neighbours.**” Moller and Pederson 2011*

Larger turbines mean more noise and lower frequency noise. The noise from wind turbines is more annoying because of its fluctuations. The cumulative effect of turbines is not considered in noise

monitoring data collection. Noise data is collected at a residence from the nearest turbine only. In rural residences the noise levels at night are very low. At night, if the breeze 'is right', we can hear noises occurring at a neighbouring property over 10km away.

The surface terrain and composition, the incidence of inversion layers, the difference in wind speed at the hub and at ground level are all factors shown to affect noise levels in a residence. The cumulative effect of many turbines from different wind farms on the one residence must not be ignored. The Bodangora Wind Farm must not proceed until noise information about cumulative effects of turbines and wind farms is collected from existing wind farms in Australia.

Current models for noise monitoring are proving to be inaccurate, actual measurement in homes of people affected by wind turbine noise need to be monitored. Small scale problems in existing wind farms, in smaller wind farms with smaller turbines, will only be magnified by the large number of 3 and 4.5MW turbines in our vicinity.

3. Effects on the microclimate

The many hundreds of turbines proposed in our area could have a devastating impact on our agricultural pursuits. The following study shows effects were experienced up to 23km downwind of a wind farm.

Baidya Roy, S., Simulating impacts of wind farms on local hydrometeorology. J. Wind Eng. Ind. Aerodyn. (2011), doi:10.1016/j.jweia.2010.12.013

Abstract

*"Results show that wind farms significantly affect near-surface air temperature and humidity as well as surface sensible and latent heat fluxes. The signs of the impacts, i.e., increase or decrease, depend on the static stability and total water mixing ratio lapse rates of the atmosphere. The magnitudes of these impacts are not only constrained by the hub-height wind speed but also **depend to some extent on the size of the wind farms. Wind farms also affect the hydrometeorology of an area up to 18–23 km downwind.** More work is required to conclusively estimate the length-scale of wind farm wakes."*

The proposed Bodangora wind Farm is to be built on some of the best agricultural land in NSW. Further studies of the effects of turbines on the microclimate must be undertaken before neighbour landholders live to suffer the consequences of reduced production and viability (as well as reduced land values). Until these studies occur the following is not possible

"suitability of the proposal to co-exist with the grazing and cropping land use activities on the subject land which can continue during the operation of the project" BODANGORA WIND FARM ENVIRONMENTAL ASSESSMENT PROJECT JUSTIFICATION 2-21.

4. Visual Pollution

The destruction, degrading, fragmenting and destroying of our environment, heritage, flora and fauna along with the assault upon the natural beauty and aesthetics by the construction of wind energy developments and their additional infrastructure of heavy duty roads, substations, transformers and power lines is of ever increasing concern.

We will potentially view 100 wind turbines from part of our property that we regularly visit, or take visitors to admire, to admire the view or watch the sun set. We have an approximately 270 degrees view that stretches from a full view of the eastern side of Mt Bodangora, to the southern side of Mt Canobolas, to Boiga Mountain in Pyramul, and then around to Bocoble. A scene of inspiring natural beauty that will be replaced by the visual pollution of a 100 turbines.

5. Devaluation of affected land and surrounding land

These 100 turbines will actually reduce the financial value of our property. Just as ocean views add to the value of coastal residences, inland natural panoramas add to the value of rural properties.

"Using data on 11,331 arms-length residential and agricultural property transactions between 2000 and 2009 in Clinton, Franklin, and Lewis Counties in Northern New York to explore the effects of relatively new wind facilities"

Heintzelman and Tuttle found

"... that landowners, particularly those who do not have turbines on their properties and are thus not receiving direct payments from wind developers, are being harmed and have an economic case to make for more compensation." Heintzelman, Martin D. Tuttle Carrie M. Values in the Wind: A Hedonic Analysis of Wind Power Facilities (May 23, 2011).

We have personally experienced the negative effects of the possibility of wind turbines on potential buyers of our land. In the last few days we have had potential buyers ask about wind farms in our area in a manner that indicated very definitely that they were not interested in buying the land if a wind farm was in the vicinity.

The presence of turbines on neighbouring land, sometimes within metres of a boundary, limits the options for the older members of society to follow their retirement plan, often made many years prior to 2007 when the law permitting turbines was introduced. Why should a turbine host have so much influence over what their neighbours can do on their land? Most older farmers have plans to eventually retire to the nearest town. Host landholders tell us that if the turbines are too noisy they will "buy a house in town" or "retire to the coast", plans they will be able to follow thanks to the proponents payments. Non-host landholders will not have any proceeds from the proponent, will have devalued land, and may not even find a buyer who is prepared to tolerate the neighbouring turbines. Non-host neighbours will be unable to follow their retirement plans, stuck on a farm they are no longer able to manage, remote from the facilities needed to look after them in their old age. This spending social disaster must be addressed.

The magnanimous benefactor image of a proponent who will support the local community financially as he considers fit, is extremely insulting to neighbours of the wind farm who will suffer so many of the adverse consequences of its presence.

6. Safety issues and the inability to fight fires and control pests & weeds near turbines

How close to turbines aircraft will be able to fly? This is an area of major concern to rural property dwellers and an area that has not been given a definitive answer. We rely on planes to put out bushfires and helicopters for important weed & pest control (e.g. serrated tussock & locusts). We have been given one answer to this question by a proponent, and another answer by the pilots we have asked. Even the RFS' answer depends on whom you ask. This question needs to be answered and appropriate written guarantees given.

"..the AAAA's outright opposition to the siting of windfarms in areas of agricultural production or bushfire risk on the grounds of their direct threat to aviation safety and to their potential impact on the

economic viability of aerial application.” Aerial Agricultural Association of Australia, submission NSW Planning Draft Guidelines – Wind Farms.

7. Further damage to already dangerous country roads

If the proponent is not prepared to upgrade all roads that will be carrying trucks concerned with the development then the Bodangora Wind Farm should not go ahead until the federal or state governments agree to do the work both before the wind farm is started and again after it is completed. Otherwise it will just add to the list of how rural communities are bearing the consequences of this poorly informed pretence of allowing people to think they are doing something to reduce carbon emissions. Enabling residents on the coast to feel happy because they feel they are doing something about an environmental issue, just not ‘in their own backyard’. An uninformed decision which would lead to the conclusion that wind energy developments are being built because of an ideal, not because of their true environmental, economic or energy benefits.

8. Division of rural communities & destruction of rural social infrastructure

The division in the local community, created by the proponent paying host landholders large sums of money, attacks the very fabric of our rural community. Alienation of families that have been working together and socialising together for generations, alienation even within families where one member is a ‘host’ and another is not.

The presence of turbines on neighbouring land limits the options for older members of the community to follow their retirement plan, often made many years prior to 2007 when the law permitting turbines was introduced. Why should a turbine host have so much influence over what their neighbours can do on their land? Non-host neighbours may be unable to follow their retirement plans, stuck on a farm they are no longer able to manage, remote from the facilities needed to look after them in their old age. Host landholders can use the money they receive from the proponent to live elsewhere. Their neighbours will only have the option of selling their property for a reduced amount if they are forced to move.

9. Enforced tax payer subsidies to the wind turbine industry

A public meeting at Wellington Civic Hall on 22/7/12, organised by citizens of the Wellington Bodangora district, was attended by over 200 people, a large number relative to the size of the community. Jonathon Upsom of Infigen Energy stated that the company needs to obtain the benefits of all the government subsidy schemes to be viable.

The citizens of this state will pay billions of dollars to have IWT’s built and billions of dollars to support the mechanisms that allow them to operate and billions of dollars “toll” money for years and years to allow companies such as Infigen Energy (coupled with host landholders) a chance of a quick windfall for no public benefit. What possible contingency plan can Infigen Energy have to meet any liabilities including future decommissioning and future law suits such as those faced by the likes of the Hardy’s asbestos cases?

The claims of reducing greenhouse gas emissions are greatly exaggerated and should no longer be based on computer modelling. It appears wind turbines cannot generate enough energy to reduce global CO2 levels to a meaningful degree. Wind is by nature intermittent and cannot generate a steady output, necessitating back-up coal and gas power plants that significantly negate the saving of greenhouse gas emissions.

There will be massive costs associated with implementing the infrastructure changes to cater for intermittent wind energy. These costs, combined with Renewable Energy Certificates, power pricing agreements forced on electricity retailers as a result of Renewable Energy Targets, the impact of the carbon tax, the cost of building open cycle gas fired power plants as back up and the interest on developers loans to finance construction, will result in an upward spiral of electricity prices. Every cent of this cumulative cost will be paid for by consumers of electricity and tax payers.

Wind turbines are presented to the public as renewable energy producers that reduce the carbon dioxide emissions from fossil power plants. Wind farm developers base their emissions calculations on computer modelling and not actual data from existing wind farms. Studies in U.S., Denmark and Ireland, using measured, real-time grid operations data show adding wind energy to the grid does little to reduce carbon dioxide emissions. The Bentek study of the Colorado and Texas grids, based on measured hourly (in case of Colorado) and 1/4-hourly (in case of Texas) power plant operations data of fuel consumption and carbon dioxide, polluting nitrogen and sulfur oxides emissions, proved that wind energy on the grid needs to be:

- balanced with energy from other plants, preferably quick-ramping gas fired power plants, to ensure grid stability and,
- that this balancing produces more carbon dioxide/kWh, more polluting gases (from coal plants on the grid), and uses more fuel/kWh with wind energy on the grid than without.

In Greg Sheridan's article in the Australian newspaper 7th July 2012, Warwick McKibbin of the Australian National University and formerly a board member of the Reserve Bank said "There is no evidence of substantial reductions in emissions through a market based mechanism, nor any other mechanism really, except building nuclear power stations".

10. Decommissioning and removal of old turbines

A decommissioning bond must be required as part of any wind farm approval. Sufficient funds need to be retained to adequately cover predicted future costs of decommissioning and rehabilitating the wind farm development.

I therefore petition the Department of Planning & Infrastructure to disallow this proposal and look forward to your Department's favourable consideration of this submission.

Yours faithfully,

