**Parkesbourne/Mummel Landscape Guardians Inc.**

# Submission concerning the Jupiter Wind Farm Project (SSD 13_6277)

**February 2017**

**Parkesbourne/Mummel Landscape Guardians Inc.**

**PO Box 1237, Goulburn, NSW 2580**

**E-mail: gadshilldb@activ8.net.au**

**Tel.: 02 4829 2346**

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Department of Planning

Sydney

NSW 2000

**Submission re Jupiter Wind Farm Project (SSD 13_6277)**

**Declarations**

Neither I nor Parkesbourne/Mummel Landscape Guardians Inc has made any reportable political donations within the last two years.

I agree to the Department of Planning using my submission in the ways described in the Department's Privacy Statement.

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On behalf of Parkesbourne/Mummel Landscape Guardians Inc I object to the Jupiter Wind Farm Project (SSD 13_6277).

My objections are as follows.

**Dimensions of the project, noise impacts and health**

I understand that the turbines of the project are to have a tip height of 173 metres, and that there are to be 88 turbines covering an area about 24 kilometres in length. Such turbines will be about 43 metres higher than the turbines of the Gullen Range Wind Farm (about 130 metres).

An extra 43 metres in height will ensure that the wind farm produces even more noise than the Gullen Range Wind Farm. Since neighbours of the Gullen Range Wind Farm are already suffering from sleep disturbance, and the symptoms of headache, nausea, dizziness, etc, it is certain that the potential neighbours of the Jupiter Wind Farm will suffer from the same adverse effects.

It should also be noted that increasing the height of turbines tends to decrease the frequency of the characteristic 'note' of the turbine noise. In other words, the higher the turbine, the lower the note of the turbine (Møller and Pedersen, 2011). This is of concern, as the lower the frequency of a sound, the further it takes to attenuate, and the more easily it can penetrate the fabric of a building.

According to the Secretary's Environmental Assessment Requirements (SEARs), the noise impacts of the Jupiter Wind Farm Project are to be assessed in relation to the *South Australian Noise Guidelines* (2009) and low frequency noise criteria of the Department's adoption.

The *South Australian Noise Guidelines* (2009) are almost identical to the *South Australian Noise Guidelines* (2003). The only difference between the two documents has been eliminated by the Department's election of the noise limit *35 dBA or background noise + 5 dBA, whichever is greater*. In every other respect the two documents are the same. It has been pointed out to the Department many times, both by laypeople and by noise experts, that both sets of *South Australian Noise Guidelines* are completely inadequate to measure accurately all relevant aspects of wind turbine sound emissions, and so are incapable of protecting neighbours from adverse impacts. The setting of a noise limit for wind turbines in terms of dBA has been shown to be inappropriate in multiple ways (see Cooper, 2012, 2016). The *South Australian Noise Guidelines* take no account of the abundant research on wind turbine sound emissions since 2003. What is worse, the *South Australian Noise Guidelines* ignore the research conducted for the US Department of Energy by NASA and SERI in the 1980s and 1990s (James, 2012). The *South Australian Noise Guidelines* make the false assumption that infrasound is not present at any modern wind farm site (see Zajamšek et al, 2016). The Department should have abandoned the *South Australian Noise Guidelines* years ago. They should not be used to assess the Jupiter Wind Farm or any other wind farm.

It has been pointed out to the Department many times that the LFN noise limit of 60 dBC is too high to protect neighbours, since it is more than 20 dB above the official limit of 35 dBA.

The Department still stipulates no limit for infrasound, despite the work of Steven Cooper on the impacts of low frequency noise and infrasound at the Cape Bridgewater Wind Farm in South Australia (Cooper, 2016). Cooper has established the link between modulated infrasound emissions from wind turbines and adverse health effects reported by neighbours of the wind farm. It is irresponsible of the Department to ignore the work of Cooper and others on wind turbine infrasound.

The SEARs require the Jupiter proponent to "consider" amplitude modulation. There is *nothing* about amplitude modulation in the *South Australian Noise Guidelines* (2009). Nor has the Department set its own limit for the Jupiter proponent to observe.

On the subject of adverse health effects from wind turbine sound emissions there is now a comprehensive literature survey compiled by two distinguished noise experts, Jerry L Punch, Professor Emeritus, Department of Communicative Sciences and Disorders, Michigan State University, and Richard R James, E-Coustic Solutions LLC, and Adjunct Professor, Department of Communication Disorders, Central Michigan University (Punch and James, 2016). They conclude:

> The available literature, which includes research reported by scientists and other reputable professionals in peer-reviewed journals, government documents, print and web-based media, and in scientific and professional papers presented at society meetings, is sufficient to establish a general causal link between a variety of commonly observed AHEs [adverse health effects] and noise emitted by IWTs [industrial wind turbines]. (Punch and James, 2016, p. 54)

The Department should recognize the sufficiency and abundance of the evidence to indicate the potential for adverse health effects from wind turbines, and cease to hide behind the discredited reports of the NHMRC.

There will be 140 residences within 3 kilometres of the proposed Jupiter Wind Farm, and more than 250 residences within 5 kilometres. Many of the residences within 3 kilometres of the turbines will suffer from intrusive and offensive noise, and some of the residents of some of those residences will suffer from sleep disturbance. Some neighbours who are susceptible to low frequency noise and infrasound will suffer from the well known symptoms of headache, nausea, dizziness, etc, as well as sleep disturbance. Neighbours within 3 kilometres, and neighbours at 4 or 5 kilometres will be exposed to this risk.

**Visual impact**

The presence of the Jupiter Wind Farm will inevitably have a deleterious effect on the surrounding landscape. There are two reasons for this, each of which is sufficient in itself. First, at 173 metres in height the turbines are grossly out of proportion with the features of the existing landscape, whether natural like hills, trees and shrubs, or

artificial like farm buildings. The wind farm will simply not fit in aesthetically. Second, the impact of the wind farm on the landscape will be aggravated by the fact that the blades of the turbines move, thus attracting attention to themselves, and away from the landscape. The result will be that a picturesque landscape is ruined. This can be verified at any rural wind farm site.

With regard to the visual impact on residences, it is impossible to screen a wind farm effectively from the view of a residence, unless a wall of trees is planted so close to the residence as to imprison the residence from all views. Any trees planted to screen the wind farm will probably take as long to grow as the wind farm's life.

The assessment procedures and criteria for visual impact are a complete sham, and provide no protection whatever to residents.

**Impact on property value**

The Department of Planning has been in denial on this issue for years. It defies reality to claim that the intrusion of a gigantic industrial structure into a rural residential district, with the accompanying noise and visual impacts, will have no effect on property value. Why else does the NSW Land & Environment Court, when it grants acquisition rights to a neighbour of a wind farm, insist that the developer offer to purchase the neighbour's property at a market price, *as if there were no wind farm*? Clearly, the Court makes the distinction between pre-wind farm and post-wind farm prices.

The flaws in the methodology of surveys on property value impacts, conducted on behalf of the Department, have been pointed out to the Department many times. They have also been pointed out to the NSW Parliamentary inquiry (2009) and the two federal Senate inquiries (2011, 2015). The Department can consult the relevant submissions.

**Bushfire risk**

The presence of a wind farm in a rural area must increase the risk of bushfire. This is unavoidable. It should be noted that the recent Currandooley Fire started within the Capital Wind Farm. It burned out many paddocks and destroyed one house. Bushfires

pose a risk to the life and limb of both humans and farm stock, as well as to property (homes, farm buildings, etc). It is irrational to increase the risk of bushfire for the sake of an electricity-generating power station that cannot provide secure or reliable power (see below).

Aerial water-bombing becomes much more difficult, if not impossible, in the vicinity of wind farms, thus reducing the probability that a fire will be extinguished before it inflicts damage on life and property.

Residents, including members of the Rural Fire Service, have pointed out the risks of wind farms in bushfire-prone areas many times. The Department must share in the responsibility for damage to life and property from bushfires in the vicinity of wind farms.

**Decommissioning**

For years the Department has been claiming that it can impose a bond for decommissioning on the developer. Now the Department has discovered that it does not have the legal authority to do so. In law the obligation to decommission belongs to the land on which the wind farm stands. This means that if the developer fails to contract with the leasing farmer to decommission the wind farm, or if the developer defaults on his obligation by allowing the company holding the wind farm to go bankrupt, the farmer is likely to be ruined, since the cost of decommissioning turbines is likely to be higher than the total rent received for one term of the lease.

(Cost of decommissioning 5 turbines @ $400,000 per turbine = $2 million. Rent received for 5 turbines for 25 years @ $10,000 per turbine per year = $1,250,000.)

**Dangers that wind energy poses to the electricity supply and to the grid**

That wind energy poses dangers to the power supply and to the grid has been known for years. Articles on this subject were circulating in 2009, when they were referred to and discussed by the journalist Terry McCrann. In 2012 the electrical engineer Paul Miskelly published a comprehensive analysis of electricity production from wind farms for the Eastern Grid, and proved its unreliability (Miskelly, 2012). The case that wind energy is unreliable, and tends to destabilize the power grid was presented to the

NSW Parliamentary Inquiry in 2009, and to the federal Senate Inquiries in 2011 and 2015. Politicians and officials cannot claim that they were ignorant of these dangers. The dangers have been ignored, and both politicians and officials, at both state and federal levels, are culpable.

The power crisis in South Australia has proved that these dangers are real. First, wind energy is intermittent, and needs to be backed up by baseload power generators (coal, or gas in Australia). But the fact that wind farms are subsidized through the Renewable Energy Target means that the (unreliable) supply of electricity generated by wind farms tends to render uneconomic those baseload power stations, so that they are driven out of business. This has happened in South Australia, such that South Australia no longer has an adequate supply of baseload power of its own. South Australia, therefore, has to depend on imports of power from Victoria through interconnectors. Too great a demand on the interconnectors makes them fail, with the result that the whole of South Australia loses its power supply.

Second, the electricity supplied to the grid must have the quality of synchrony if it is to be able to keep the frequency of the flow of power in the grid within the necessary frequency range. As we now all know, the electricity produced by wind energy does not have this quality. Baseload generation does, but that baseload generation is threatened with becoming uneconomic by the subsidized wind energy.

This situation is clearly insane. Wind energy should be removed from the grid. The only reasons for this not happening are that politicians are too embarrassed to admit their blunder in patronizing wind energy, and are terrified of their governments being sued by wind farm operators over "sovereign risk".

**Wind energy and the reduction of greenhouse gas emissions**

Wind energy cannot be justified by the claim that it contributes to the reduction of greenhouse gas emissions, since it is an uneconomic method of reducing greenhouse gas emissions, and because it fails to provide a reliable power supply. Because of the intermittency of its electricity production, wind energy must be backed up by baseload generators. These can be either coal-fired power stations run in 'spinning reserve' or open cycle gas turbines. Both methods are very productive of greenhouse gas emissions themselves. Therefore, the greenhouse gas emissions produced by the back-up need to be summed with the reduction of greenhouse gas emissions of the wind farms. When this sum is performed, the reduction of greenhouse gas emissions by the package of wind energy and back-up is about halved. Moreover, it is still

expensive, and the same quantity of greenhouse gas reductions could be achieved for about a third of the cost by the use of just closed cycle gas turbines (Lang, 2009).

Therefore, from the point of view of reducing greenhouse gas emissions it is clearly insane to choose wind farms and their back-up rather than closed cycle gas turbines. But, wind farms are (we are told) electorally popular, while gas, as a fossil fuel, is not. On this matter politicians and officials have failed to lead. Those politicians and officials must be considered culpable for putting politics before the real interest of Australian citizens.

**Effect on electricity prices**

Wind energy tends to increase the price of electricity because the cost of the subsidy in the form of the Renewable Energy Certificate must be passed on to the consumer by the retailer.

Years ago this increase in the cost of electricity might have been justified as a social cost that needs to be borne in order to save the planet from 'climate change', i.e., anthropogenic global warming. But, it has become glaringly obvious that this justification no longer has any force. Wind energy is an inefficient and uneconomic method of reducing greenhouse gas emissions; it cannot provide a reliable supply of electricity; it tends to destabilize the grid; it increases the cost of electricity for no good reason.

The unavoidable conclusion must be that the claim that wind energy will help us to combat 'climate change' can no longer serve as a "strategic justification" for state and federal governments patronizing the development of wind energy.

**Conclusions in relation to the Jupiter Wind Farm Project**

The Jupiter Wind Farm proposal should be rejected for the following reasons:

- Unacceptable impacts of audible noise, resulting in annoyance and sleep disturbance for some neighbours.

- Adverse health effects from low frequency noise and infrasound for some neighbours.

- The inadequacy of the assessment procedures and criteria relating to wind turbine sound emissions.

- The failure of the Department of Planning to consider adequately the potentiality for adverse health effects.

- Unacceptable visual impacts on both the landscape and individual residences.

- The inadequacy of the assessment procedures and criteria relating to visual impact.

- The likelihood of property devaluation for many neighbours.

- The failure of the Department of Planning to consider the issue of property devaluation with adequate seriousness.

- The increased risk of bushfire from the presence of a wind farm in a bushfire-prone area.

- The lack of any guarantee that the wind farm will be decommissioned at the end of its life, and the risk of financial ruin to hosts.

- The proven dangers that wind energy poses to the reliability of the power supply, and to the stability of the power grid.

- The inefficiency and uneconomic nature of wind energy as a method of reducing greenhouse gas emissions.

- The tendency of wind energy to increase the cost of electricity without any adequate justification.

The Planning Assessment Commission should consider that, if it approves the Jupiter Wind Farm Project, and if the expected adverse impacts on neighbours, on the landscape, on property, on hosts, on the power supply, on the grid, and on electricity prices eventuate, then the Planning Assessment Commission will share in the culpability of NSW politicians and officials in the Department of Planning who have knowingly and deliberately allowed this situation of multiple dangers to come into being. The Planning Assessment Commission, as well as Ministers of Planning and officials in the Department of Planning, may expect to be called to account.

David Brooks

Chairman

Parkesbourne/Mummel Landscape Guardians Inc.

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