Submission
No 99

INQUIRY INTO RURAL WIND FARMS

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Submission to General Purpose Standing Committee No 5: Inquiry into Rural Wind Farms

Parkesbourne/Mummel Landscape Guardians Inc (PMLG) is a community group of residents living in Parkesbourne, Mummel and other districts around Goulburn, NSW. It was formed in 2006 to act to protect the landscape beauty of the area, and to protect the quality of life and general amenity of its members, and of the wider community of Parkesbourne, Mummel and adjacent districts.

PMLG is especially concerned about current plans for large-scale wind farm development in the Goulburn/Crookwell area (one of Premier Nathan Rees's five designated 'precincts' for wind farm development in NSW). It opposes the Gullen Range Wind Farm project, which has now received approval from the Minister of Planning. PMLG is currently discontinuing a process case against the project in the Land and Environment Court (LEC), since the Minister's approval of the project has undermined the case. PMLG has now launched an appeal on grounds of merit against the project in the LEC.

The Gullen Range Wind Farm will stretch over 22 kilometres, and have 73 turbines (reduced by the Department of Planning from 84). The turbines will be 121, 125 or 126 metres high (tip height), i.e. around 400 feet high. There are 32 non-involved residences within 1.5 kilometres of the proposed turbines, 60 non-involved residences within 2 kilometres, and 118 non-involved residences within 3 kilometres. In view of these figures PMLG feels that the project is quite misconceived, and inappropriately located, in what is, by rural standards, a residential area. PMLG, therefore, invites the members of General Purpose Standing Committee No 5 to visit the

area, and judge for themselves the likely impact of the wind farm on neighbouring residents. We hope the Committee will be able to accept the invitation.

R. L. Galland, the Chairperson of PMLG, and I would be pleased to address, and be questioned by the Committee, at the public hearing. We realize that the Committee will want to take evidence from experts in the various aspects of wind farm development. But we hope that the Committee will also be willing to discuss the issues with those who view the matter from the standpoint of the local communities that will have to live close to these wind farms.

I apologize for the length of this submission. Rural wind farm development presents so many problems from so many points of view for local communities that a lengthy treatment of the issues is unavoidable.

Yours sincerely

David Brooks
Deputy Chairperson
Parkesbourne/Mummel Landscape Guardians

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Part I: Developing Wind Farms

Government Policy and Finance

The Federal Government's Mandatory Renewable Energy Target (MRET) is for 20% of Australia's electricity supply to come from renewable energy by 2020. According to the Government, this means increasing the MRET to 45,000 gigawatt-hours (GWh) in 2020.

45,000 GWh would require a generation capacity of 5137 megawatts (MW). If all this energy were to come from wind, then it must be considered that wind turbines operate at a capacity factor of only 30% (on average). This means that the total installed capacity of wind turbines would have to be 17,123 MW. If all the turbines were of 2 MW capacity each, then the total number of wind turbines would have to be 8562. Since South Australia, Victoria and New South Wales can probably take at least 2500 turbines each, this total of 8562 turbines for all Australia is certainly feasible.

Back in December 2008 ABC Radio announced that some Australian wind farm projects, close to being built, were unlikely to proceed because of the global credit crunch. However, the financial situation now seems to have eased. In June this year Pacific Hydro declared that two of their wind farm projects in Victoria had been put on hold, only because of the failure of the Federal Government to pass its new MRET into law. The spokesman for Pacific Hydro said that money for the projects was not forthcoming from the banks because of the Government's failure.

Now that the MRET is likely to become law before the end of this week, it is probable that finance for wind farm projects will become available, not only from banks but also from superannuation funds looking for secure returns to make up for their big losses over the last two years.

It would seem, then, that wind farm development is likely to go ahead across Australia. This is now practicable. But is it desirable?

The Desirability of Wind Farm Development

The desirability of wind farm development can be considered from different points of view: environmental, economic, political and social. In this section I will consider the matter only from the environmental, economic and political points of view. I will leave the social aspect to the remainder of this submission.

The environmental and economic value of wind energy is controversial. PMLG does not have an official position on this matter. What draws its members together is a concern that some wind farms may be inappropriately located, unjustly imposing burdens on the local communities that will have to live in their vicinity, and also the injustices and absurdities of the NSW planning system, by which wind farms can be imposed on rural communities.

However, PMLG has recently become aware of the research discussed by the journalist Terry McCrann in the *Herald Sun* of 4.8.09. We have now read the articles to which McCrann refers, and we feel compelled to put their findings before you, as they present evidence which suggests that wind energy is both an ineffective and very expensive way of reducing greenhouse gas emissions. The case presented by these articles runs as follows.

Wind blows intermittently. Consequently, the supply of electricity generated from wind is also intermittent. It has been claimed that this intermittency does not matter, as "the wind is always blowing somewhere." In this way a constant, or at least semi-constant supply of electricity from wind is possible. This claim has now been refuted by one of the articles discussed by McCrann. The authors of the article used data from the Australian Energy Market Operator (AEMO, formerly NEMCO) for wind farms across South Australia, Victoria, Tasmania and New South Wales, for power generation monitored at five minute intervals for June 2009. Their analysis demonstrates that the wind rises and falls almost uniformly across all four states. The variations are so slight as to be negligible. This means that when wind farms in, say, NSW, cease to operate because the wind drops, one cannot rely on wind farms starting up in one or more of the other states. Across the four states the wind farms tend to operate, and cease to operate together.

This unreliability of the electricity generated from wind means that wind energy can supply neither base load power nor peak load power. It can only supply intermediate or 'shoulder' load power. This in turn means that wind power will not displace power from coal-fired power stations or power from hydro-electrical power stations. Wind power will displace power from Closed Cycle Gas Turbines (CCGTs), which are currently used to generate intermediate power.

Because of the unreliability of the supply of electricity from wind farms, its entry into (and exit from) the grid must be 'shadowed' by another source of power, viz. Open Cycle Gas Turbines (OCGTs).

Therefore, to calculate accurately the benefit from wind farms in reducing greenhouse gases, and also the cost of using wind farms to reduce greenhouse gases, both the CCGTs displaced by the wind farms, and the OCGTs used to back up the wind farms must be taken into account. The author of the second article discussed by McCrann makes these calculations, and his results tend to cast doubt on the value of wind farms as a way to reduce greenhouse gas emissions. He finds that the contribution of wind energy to reducing greenhouse gases is small (much smaller than what is claimed by wind farm developers). He also finds that the cost of reducing greenhouse gases by wind energy is enormous, compared to the cost of doing so by means of CCGTs: for wind with OCGT back up - $1149 per tonne of CO2 avoided; for CCGTs - $33 per tonne of CO2 avoided.

In addition, the unreliability of wind power causes instability in the grid. The author of the second article notes that this can lead to the use of valuable hydro power to stabilize the grid, when the supply of hydro power in Australia is limited. The authors of the first article state: "[Wind farms] will load the distribution system with variations in power that are not predictable and are of a size that is an order of magnitude larger than the random variations of user demand."

If the case made by these articles is correct, then we can draw the following conclusions:

1. The opportunity cost of investing in wind farms rather than in CCGTs is enormous.
2. The problem of the instability of the grid will only get worse, the more wind farms are built.
3. For any given sum of money that Australia wishes to invest in reducing greenhouse gas emissions, wind farms will lead to a smaller reduction of emissions than would come from the use of CCGTs.

It will be said that gas is not a renewable source of energy, whereas wind is. This is of course true. However, it would appear that wind is an ineffective and very expensive form of renewable energy. Since the task of reducing greenhouse gas emissions must begin now, it would be wiser to invest in CCGTs in the short and medium term, while providing adequate research funds for solar, tidal and geothermal forms of renewable energy for the long term, since these forms of renewable energy can provide a reliable supply of power. It would be unwise to depend entirely, or even mainly, on the massive development of wind farms across Australia, since in ten years' time we would discover that our reduction of greenhouse gas emissions was small, and that our power grid was becoming increasingly unstable.

If we put all this in a political context, it is hard to resist the cynical idea that governments see wind farm development as a boost to public morale while we wait to see if 'clean coal' technology will save the coal industry. Wind farms are large, and very visible, and the sight of them alone may persuade large numbers of people that something is being done about global warming. They have considerable value for public relations. But if 'clean coal' technology turns out not to work, or not to become available soon enough, and if research into solar, tidal and geothermal is not adequately funded, and if it still takes ten years to build a nuclear power station (with all the attendant risks of nuclear power), what shall we do in ten years' time, when we discover that all our wind farms have done little or nothing to reduce our greenhouse gas emissions? Wind farm development may be a dangerous illusion. Its real value needs to be very critically examined.

In view of the research discussed by McCrann in the *Herald Sun*, and summarised above, PMLG can only urge the Committee to consult expert opinion on both sides of this question, and try to form an opinion as to which side has the better of the argument.

The Location of Wind Farms in NSW

The rest of this submission assumes that wind farm development will now take off in Australia. It therefore seeks to describe the probable social consequences of that development, and offers to make a case for protecting the interests of the local rural communities who will have to bear the burdens of living close to wind farms.

If we plot the location of NSW wind farms and wind farm proposals on the *NSW Wind Atlas*, we can see that all but two of them are located close to, or within reasonable distance of power lines. The exceptions are: (i) Kooragang, which consists of a single 0.6 MW turbine on Kooragang Island, near Newcastle; (ii) Silverton, which, at the opposite extreme, is to consist of up to 598 turbines, and be connected by a new power line to Broken Hill, 25 kilometres away, and then by another new power line to the grid in Victoria, 300 kilometres away.

Kooragang and Silverton are exceptions. The usual situation is for a wind farm to be located no more than about 30 kilometres from a power line, and usually much closer. So, for example, the Black Springs wind farm will straddle a 550 kV line; Blayney, already operating, is about 30 k from a 330 kV line; Paling Yards will be next to a 330 kV line; Taralga will be about 10 k from a 330 kV line; the site for Gullen Range is bisected by a 330 kV line; Capital is very close to a 330 kV line; and so on.

It should be noted that wind farms are not only proposed for areas of the very highest wind speeds. Most are, but there are exceptions. The Conroy's Gap and Yass proposals are for locations that are classified as falling within one of the second highest areas for wind speed. The Silverton project is for a location that falls within one of the third highest areas for wind speed.

What all this indicates is that wind speed is not the decisive criterion by which locations for wind farms are selected. The decisive criterion is proximity to a power line. The decisive criterion is commercial, not meteorological. The explanation for this is obviously that wind farms are proposed, built and operated by private companies, not by a nationalised industry or by charities or by NGOs. Private companies must seek to maximise their profits by reducing their costs. The closer to a power line, the lower the cost of connecting to the grid. If wind farms are not to be located close to power lines, the question must arise: who will pay the extra cost of the infrastructure for connection to the grid? This aspect of the matter must be remembered when the issue of externalities or external costs imposed on local communities by a wind farm comes up. When a wind farm is located in a residential district (because of proximity to a power line), the extra cost avoided by the developer or owner-operator is imposed on the local community as an externality in the form of property devaluation, loss of subdivision potential, and deterioration of the quality of life (see below).

A review of project applications, preliminary assessments, and Environmental Assessments (EAs) suggests that proximity to residences is *not* a factor that influences the selection of locations for wind farms. In other words, wind farm developers do not select a site because there are few inhabited residences near the proposed turbines; but neither do they avoid a site because it would have many inhabited residences near the turbines. The number of residences within, say,

2 kilometres of a proposed wind farm is a matter of complete indifference. So, if there are hardly any residences within 2 k, that is fine. But, equally, if there are many residences within 2 k, that is fine as well. The number of residences is just not a matter for consideration. This, of course, reflects the interests of the wind farm company. It does not reflect the interests of the local community.

That proximity of residences is not a factor that influences the selection of locations for wind farms can be seen from some examples: Boco Rock (revised proposal) has 0 non-involved residences within 2 k; Cullerin and Silverton each have 3 non-involved residences within 2 k; Black Springs has 4; Conroy's Gap has 5; Glen Innes has 8; Capital has 12; Sapphire has 17; Flyer's Creek has about 38 (estimate); Gullen Range has 60.

The number of non-involved residences within 2 kilometres of the proposed turbines has nothing to do with the size of the wind farm. Boco Rock is to have 109 or 127 turbines, but there are 0 non-involved residences within 2 k; Silverton is to have up to 598 turbines, but there are only 3 non-involved residences within 2 k; by contrast, Glen Innes will have only up to 27 turbines, but will have 8 non-involved residences within 2 k; Flyer's Creek will have 30 to 40 turbines but will have about 38 non-involved residences (my estimate) within 2 k. And whereas the Capital Wind Farm, with 63 (soon to be 67) turbines, has only 12 non-involved residences within 2 k, Gullen Range, with 73 (reduced from 84) turbines, will have 60 non-involved residences within 2 k.

The proponent of the Gullen Range Wind Farm has located the project within 2 kilometres of 60 non-involved residences, merely because a 330 kV power line bisects the site. From the proponent's own commercial point of view, the opportunity is too good to pass up, and the owners of the 60 non-involved residences just do not count.

The terms of reference of this inquiry include:

> 2. Locating rural wind farms to optimise wind resource use and minimise residential and environmental impacts.

If this topic is to be considered seriously, the Committee must understand that at present wind farm developers are just not interested in how many non-involved residences there will be, close to a proposed wind farm. This is a matter of complete indifference. Later in this submission I will argue that the proximity of residences to proposed wind farms is not of much concern to the Department of Planning either. If the interests of local communities are to be protected, and not sacrificed, a completely new attitude towards the proximity of residences to a proposed wind farm will need to be adopted. Such a new attitude will need to be formalised in new policy.

But before I make suggestions as to what needs to be done, I have to consider the issues of noise impact, visual impact, and impact on land value. At present I am only laying out the problems of wind farm development, as seen from the point of view of local communities that will have to live with wind farms.

Noise

The criteria for determining the noise impacts of wind turbines in NSW are chosen by the Department of Environment and Climate Change (DECC), and passed on to the Department of Planning (DoP). DECC has chosen the criteria of the South Australian Noise Guidelines. (NSW has no guidelines of its own.) The SA Noise Guidelines stipulate that the noise impact on non-involved residences shall not exceed 35 dbA or 5 dbA above background noise (whichever is greater).

The noise guidelines ought to provide protection for non-involved residences. Because the threshold of acceptable/unacceptable noise is expressed numerically, it is possible to differentiate with certainty between an impact that is above, and an impact that is below the threshold. However, there are residual problems.

First, the only noise assessment is carried out by a consultant who reports to, and is paid by the wind farm developer. The DoP does not carry out its own assessment. So, a judgment on the noise impact of a wind farm project is entirely dependent on the report of the consultant hired by the proponent. The neighbours of the project are unlikely to be able to carry out their own check on the consultant's figures, since to carry out a noise assessment costs thousands of dollars. How are non-involved residents to be protected from any inaccuracy in the consultant's calculations?

Second, in NSW it has become the practice for the DoP to accept wind farm proposals where the capacity of the turbines to be used is not specified. A proponent will refer to a range of turbine capacities, on the commercial ground that the uncertainty of the market for turbines makes it impossible to specify a definite turbine. So, for example, the EA for the Gullen Range Wind Farm refers only to a range of turbines from 1.5 MW to 3.3 MW. This might be justifiable, if the worst case scenario were presented in the EA. But, in the EA for the Gullen Range Wind Farm the worst case scenario for noise has not been presented. When this sort of thing happens, the noise assessment loses all rigour and force.

Third, a question can be raised whether the SA Noise Guidelines are strict enough. Houses that are within 1 kilometre of wind turbines of 2.0 MW or higher capacity will certainly hear noise when the turbines are operating. This can be verified by a visit to the Cullerin Wind Farm. The Gullen Range Wind Farm project has 12 non-involved residences within 1 k of the proposed turbines, and a few more just over 1 k. The owners of these properties will certainly hear noise whenever the blades turn. Even if the noise does not breach the noise guidelines, why should these people have to suffer this radical change to their quality of life?

Fourth, there is the matter of the van den Berg Effect, a phenomenon named after the Dutch expert, Fritz van den Berg, who has visited Australia and publicly discussed the effect. The van den Berg Effect concerns night-time noise related to temperature inversion. At night there can be differences of temperature at different heights above ground. This can lead to the wind blowing at different speeds at the tip height of the turbine, at the lowest point of the blade's swing, at the base of the turbine, and at the level of the house receiving the noise. Since the blades of the

turbine have to be set for a particular wind speed, they cannot easily cope with having to pass through several different wind speeds. The result is a special kind of noise, the effect of this 'shearing'. This is the van den Berg Effect.

Wind farm developers, their noise consultants, and the DoP tend to dismiss the van den Berg Effect, claiming that it has only been found in flat terrain. But expert evidence presented in the second Taralga wind farm case argued that temperature inversion is likely to occur in the hilly terrain of the Goulburn-Taralga region. It is therefore more likely than not that such temperature inversion will be found up and down the Great Dividing Range in NSW.

The relevance of the van den Berg Effect to wind farm development in NSW is still controversial, and the science of it is still developing. But wind farm developers and the DoP are at present unwilling to investigate this matter. This leaves local residents open to a risk that proponents and officials are not even willing to consider.

Visual Impact

Wind turbines now regularly have a tip height of 120-135 metres. This is the equivalent of a building of 39 – 44 storeys. By day they are a gigantic intrusion into the landscape. By night between a quarter and a half of them will be illuminated by flashing, red lights. The landscape where they are located will be massively transformed. But proponents of wind farms will downplay this, by saying – as the Gullen Range developer says – that the turbines will be "absorbed" into what is already a human-affected landscape, and that at night people will be inside their houses. This is just spin-doctoring, masquerading as expert testimony.

Where the tallest structures in a landscape are 50 foot trees, the presence of 400 foot turbines can only be a radical transformation of the landscape. Where a ridge is 200 metres high, from base to top, a 125 metre turbine placed on top of the ridge is a radical transformation of the landscape (125 m = 62.5% of 200 m). Neither the developers nor the DoP acknowledge the extreme nature of the change that the construction of a wind farm imposes on rural landscape. The attempt to pretend that the change is not extreme is just disingenuous.

In the case of the assessment of visual impact the DoP has no authoritative guidelines, by which to abide, as it has with the case of noise. There are no criteria to distinguish an acceptable visual impact from an unacceptable one. This leaves the developers and the DoP to operate on the tacit principle that there is no such thing as an unacceptable visual impact. Any visual impact is to be considered acceptable, if only because the promotion of wind farms is government policy. (See the *Major Project Assessment* for the Gullen Range Wind Farm, pp. 19-25.)

No definite method for assessing visual impact is imposed on proponents. Booklets such as *Wind Farms and Landscape Values* do not describe a method. They only offer general advice on topics to be considered, and tasks to be performed. The construction of the methodology is left to the consultant employed by the developer. This results in significant differences in methods used by different consultants, with sometimes preposterous results. Some consultants behave honourably.

The visual assessment in the EA for the Capital Wind Farm is serious, straightforward and honest. It estimates the objective visibility of its wind farm by reference to distance from the turbines, the viewfield angle, and the number of turbines. It does not offer to modify the estimate by reference to viewers' tastes. By contrast, the visual assessment for the Gullen Range Wind Farm is a farrago of absurdities. It begins by making a similar objective assessment by reference to distance from the turbines and viewfield angle. But it then modifies this estimate by reference to the 'sensitivity' of the landscape, and viewer numbers. One example of its viewpoints – Pomeroy Road, Mummel – is given a high rating for objective visibility, a low rating for landscape sensitivity (i.e. in farming country a wind farm won't be noticed), and another low rating for viewer numbers (i.e. Pomeroy Road doesn't have the volume of traffic of George Street, Sydney). One 'high' and two 'lows' equate to a final rating of *low*. So, a prospect of 31 turbines, set on an open ridge, stretching from one horizon to the other, overlooked by a dozen houses within 2 k or within 3 k, is converted from a high visual impact to a low visual impact. This sort of assessment has no intellectual integrity. The real visual impact at Pomeroy Road, Mummel – as at other points around the site – will be colossal. The proponent and the DoP are just pretending that this is not so.

Because no definite method is imposed on the proponent, the proponent seems to be free to interpret the Director-General's Requirements (DGRs) for visual impact in as vague a way as he may wish. The DGRs for the Gullen Range Wind Farm instruct the proponent to "assess the visual impact of all project components on this landscape (including existing and approved dwellings) for a distance of at least 10 kilometres from the turbines ...." Any reasonable person would interpret this to mean that a visual impact assessment must be carried out on the existing and approved dwellings within 10 kilometres. Not so the proponent. The proponent's consultant has not carried out a single visual assessment on any individual property. Precisely 3 "representative" assessments (all from public roads) are to stand for all the dwellings within 10 kilometres. There are 118 non-involved residences within 3 k. There are about 250 residences within 5 k. The proponent has not bothered to find out how many there are within 10 k. This assessment of visual impact has been accepted by the DoP! This is irresponsibility on the part of both the proponent, and the DoP. There might as well be no requirement for a visual impact assessment. The procedure has become meaningless, devoid of all rigour and substance.

As mitigation of the visual impact on residents the proponent offers screening by tree-planting, and this is endorsed by the DoP. Neither the proponent nor the DoP allow themselves to recognize that trees take 20 to 30 years to grow to a height where they have a chance of screening out the wind farm. 20 to 30 years is precisely the life of the wind farm! So when the wind farm is decommissioned (if it is), it will be screened! This is nonsensical. Moreover, the wind farm is to be placed on 22 k of ridgeline. So, in many places trees will not screen out the wind farm, no matter how fast or how tall they grow.

As it stands at present, the requirement for a visual impact assessment is just a sham. Local communities cannot depend on the DoP to enforce rules. There are no rules.

Land Value

Prima facie, it would seem reasonable to think that the presence of a wind farm would not affect the value of agricultural land, but would affect the value of residential land. A wind farm does not prevent a farmer from growing crops, and livestock seem to be unaffected by wind farms. But, the visual impact, and noise impact of a nearby wind farm would, one would expect, detract from the experience of living in a residence. The existence of noise guidelines and the requirement on proponents to provide screening presuppose that the neighbours of a wind farm need some protection from its presence. If no protection is needed, why does the DoP insist on observance of the noise guidelines and the provision of screening? And, if a residence needs protection from a nearby wind farm, why would anyone want to purchase such a property, if they could purchase another, unaffected by a wind farm, instead? This in turn implies that a property close to a wind farm will have a lower value than a comparable property where there is no wind farm.

This common-sense view is supported, implicitly, by the judgments in the Taralga wind farm case, and by the Minister's approval of the Gullen Range Wind Farm. In the first Taralga case the Applicant, the wind farm developer, received the following order from the LEC:

> Within (3) months of receiving a written request from a landowner with acquisition rights (determined by condition (4) of this consent), the Applicant must make a binding written offer to the landowner based on: (a) the current market value of the owner's interest in the property at the date of this written request, *as if the property was unaffected by the development the subject of this consent* [i.e. the wind farm] ... (my italics)

In approving the Gullen Range Wind Farm the Minister of Planning has adopted the wording of the LEC's judgment. In the *Project Approval* she writes:

> Within three months of receiving a written request from a landowner with acquisition rights under conditions 2.23 and 2.24 of this approval, the Proponent shall make a binding written offer to the landowner based on: (a) the current market value of the landowner's interest in the property at the date of the written request, as if the property was unaffected by the project ....

Both the LEC and the Minister assume that the presence of a wind farm may affect the value of a nearby residence, and that therefore the purchase must take place at the price that the property could command if there were no wind farm present.

All this is common sense. But now the DoP leaves common sense behind.

There are two problems besetting any consideration of the impact of wind farms on land values. One is that the DoP has no authoritative guidelines determining what is an acceptable impact, and what an unacceptable impact, or specifying what measures of mitigation would be necessary in the case of an unacceptable impact. The second problem is a shortage of hard data relating to the impact of wind farms on land values. This leaves the matter obscure and uncertain.

So, on the one hand we have the common sense position that wind farms are likely to cause a fall in the value of residential property. The risk at least of this happening is recognized by both the LEC and the Minister. On the other hand, we have an inadequate supply of data, and no rules for the DoP to apply when it is assessing a development application.

What happens in this unsatisfactory situation is that (i) the developer is likely to rest in the comfortable position that the matter is completely uncertain, and that there is nothing to be said; (ii) the DoP will endorse the developer's position or, even worse, slide from the view that there is no evidence for a possible fall in land values to the conclusion that there will be no fall in land values. This *non sequitur* is illustrated by the *Major Project Assessment* for the Gullen Range Wind Farm:

> ... *no conclusive evidence of significant value changes, transfers or inequities can be identified* to property values in the vicinity of the proposal. The Department therefore considers property values *will not be adversely affected by the proposal* especially in the light of the general property downturn (my italics).

If there is no conclusive evidence, how can we jump to the conclusion that there will be no impact on property values? The DoP, it seems, cannot tell the difference between having enough evidence to draw a conclusion, and not having enough evidence to draw a conclusion. One cannot resist the suspicion that the DoP wants to assert that there will no effect on property values, even though it does not have enough evidence to justify this claim. The hidden motive here is the DoP's desire to approve the proposal, despite all objections. This kind of *non sequitur* casts doubt on the integrity of the assessment procedure.

That this is not an unfair suspicion is indicated by two other anomalies in the above quotation. First, the passage says that the DoP cannot identify any changes to property values *in the vicinity of the proposal.* The proposal has not been built yet! How could there be any changes "in its vicinity"? Second, the passage restricts its pondering to the present of the "property downturn". This is a contingent factor that has nothing to do with the issue. The DoP should be concerned with normal economic conditions (even if these take a few years to return).

The author of the *Major Project Assessment* was not thinking straight, because he or she was intent on bolstering up an untenable position. He or she was wanting to find that there will be no fall in property values around the site of the Gullen Range Wind Farm, even though he or she had no evidence for this.

Clearly, two things are necessary: (i) hard data as to changes in land values under the impact of wind farms. There ought to be enough operating wind farms in Australia now for this data to be collected; (ii) a definite set of rules for the DoP to apply in the assessment of any wind farm proposal in relation to impacts on land values. These rules would need to specify exactly what the proponent is expected to do in the EA, in order to estimate probable land value impacts, and what compensation is to be rendered to non-involved neighbours who see a fall in the value of their property, or who lose the potential for subdivision, or who simply suffer from noise and

visual impact. This aspect of the assessment of any wind farm proposal needs to be given the definiteness of the noise guidelines. Without such definiteness the assessment of impact on land values will remain a sham, as the visual assessment is a sham. The developers will hide themselves in uncertainty, while the DoP waffles, and indulges in sophistry.

So far, there is only one fixed point in all this matter: in the two Taralga wind farm cases the LEC found that five properties would be so badly affected by the wind farm that the proponent should offer to purchase them (with the owners' consent). However, this judgment really bears on noise and visual impact, not compensation. At present the law does not recognize any necessity to compensate non-involved neighbours for a fall in land value, or a loss of subdivision potential, or deterioration in the quality of life. This is unjust from the point of view of the local communities who will have to live next to wind farms.

Externalities

From the above discussion of the location of wind farms, of the impact from noise, of visual impact, and of the impact on land value it should be apparent that an externality or external cost is imposed by a wind farm development on the local community that has to live with it. An *externality*, in the language of economists, is a cost imposed by a project on those who do not share in the ownership of the project. An externality is therefore a kind of informal (and forced) subsidy.

When a wind farm is located in a residential district because of the proximity of a power line, in order to reduce the wind farm company's costs of production and increase its profits, there is an externality imposed on the local community of non-involved residents, which takes the forms of a fall in land value, the loss of subdivision potential, and deterioration in the quality of life.

At present the law does not recognize the need for any compensation to affected landholders. The only exception to this is the precedent set by the Taralga wind farm case, and that only applies if the noise guidelines are breached, or if the LEC judge considers that the visual impact is unacceptable. (N.B. the unacceptability of a visual impact is a matter in the judge's discretion, since there are no recognized criteria to determine what is an acceptable visual impact, and what is an unacceptable impact.) There is as yet no general principle in law for compensation to be paid for loss of property value, loss of subdivision potential, or deterioration in quality of life. This is unjust.

The argument that this lack of a general principle of compensation is unjust is outlined in the next section.

Justifying Compensation

As things stand at present there is inequality in the distribution of costs and benefits from wind farm development. The state government and the DoP support the location of wind farms close to power lines, regardless of the number of non-involved residences close to the wind farm. This helps to reduce the costs of production of the wind farm developer, and to increase its profits. The wind farm developer, therefore, not only gets a profit from the venture, but gets an enhanced profit, greater than what it would be if the interests of non-involved residents were to be taken into account. In addition, the MRET, whether at state or federal level, guarantees a market for the wind farm owner's product, electricity from a form of renewable energy. A guaranteed market means a guaranteed profit. Again, the owner of the wind farm is probably an energy company that already operates fossil-fuel power stations. So the energy company not only gets a profit from selling the electricity to a power supply company; it also gets carbon credits with which to offset the pollution of greenhouse gas emissions from its fossil-fuel power stations. But, the introduction of electricity from wind turbines into the grid requires 'shadowing' by Open Cycle Gas Turbines (OCGTs). The OCGTs are probably owned by the same energy company that owns the fossil-fuel power station and the wind farm. OCGTs are said to be expensive to run, and therefore very profitable. The energy company therefore stands to make enormous profits on multiple levels.

The local landowner who hosts the wind turbines receives rent from the wind farm company. In areas where there are many non-involved residents the host will probably require a rent of at least $10,000 per turbine per year, to compensate him for alienating his neighbours. If he hosts 5 turbines, he receives $50,000 per year for 20 – 30 years. If he hosts 10 turbines, the rent is $100,000 per year. It is said that the 46 turbines for Crookwell II are all on one landowner's land. Members of the Committee may do the sum.

The general community in NSW enjoys the production of electricity from a source of renewable energy. (Whether this is the best way, or even a good way, to reduce greenhouse gas emissions has been questioned, as we saw earlier. However, for the sake of this argument let us suppose it is.)

Even the state government benefits, since it will now stand a better chance of getting Green preferences at the next election. It can hardly be cynical to make this observation, given the enthusiasm of Nathan Rees for wind farms, wind farm 'precincts', and fast-tracking wind farm development in NSW at his media conferences.

Non-involved residents who neighbour the wind farm get nothing. They make a loss. They will suffer a fall in property value, lose the potential for subdivision (if they own enough land), and experience a deterioration in quality of life. (If the wind farm developer donates annually a sum to the local council, this collective good is no substitute for the losses suffered by each individual non-involved neighbour. If my property falls in value, or I am woken up in the middle of the night, it is no consolation to me to know that the council has more cash to spend on repairing the roads.)

Members of the Committee may consider whether the situation outlined above is fair. PMLG thinks that it is unfair.

Where there are five parties to a development, and four of the parties gain, while the fifth party loses, the four parties who gain should compensate the fifth party for the loss. This is elementary justice. The four parties who gain are the wind farm company, the landlord, the general community of NSW, and the state government. The party that loses is the local community of non-involved residents. The wind farm company, the landlord, the general community of NSW, and the state government should compensate the local community. If this does not happen, it is a simple and straightforward injustice.

Let no one say that this is not possible because it is not expedient. It is possible. Profits can be taxed, rent can be taxed, levies can be raised. This is possible. Whether any state government would have the courage and the honesty to do it is of course another question. PMLG can only appeal to the sense of justice of the Committee.

Part II: Planning

The NSW Planning Framework

(PMLG has made a submission to the Inquiry into the NSW Planning Framework, being conducted by the Standing Committee on State Development. PMLG's submission has been classified as No 113.)

Local communities will not only suffer from the impacts of constructed and operating wind farms. Local communities already suffer from the inequities and absurdities of the planning process in NSW, by which wind farms are proposed, assessed and approved. I have touched on this already in relation to noise, visual impact and impact on land value. What follows is a more methodical account. I will try to be succinct.

1. When a development proposal goes on public exhibition, the general public has only 30 days to examine the proposal, understand it and its ramifications, and to write a submission on it. This period of time is very much too short. A development application may be 1000 pages long, and contain specialist studies based on science and engineering. People who are working or bringing up a family cannot possibly make a full examination and criticism of such a document in 30 days.

2. Part 3A of the planning legislation removes planning authority for 'state significant' proposals from the local council to the state government. This removes from the local council the power to protect the interests of its constituents, and tends to reduce the ability of local residents to have an input into the planning process.

What is at stake here can be illustrated from the Gullen Range Wind Farm proposal. If the Upper Lachlan Shire Council (ULSC) were the planning authority for this proposal, the council's Development Control Plan would insist on a buffer zone of 2 kilometres (or 15 times the tip height of the turbine used, whichever is greater). The developer would be obliged to offer to purchase (with the owner's consent) any property falling inside the buffer zone. This being so, the proposal for this wind farm would almost certainly never have been made, as there are 60 non-involved residences within 2 kilometres of the proposed turbines. The transfer of planning authority from the local council to the state government clearly advantages the interests of wind farm developers, and disadvantages the interests of local communities.

3. In 2008 the planning category of *critical infrastructure* was introduced. If a proposal is approved by the Minister of Planning as critical infrastructure, then the general public loses all right of appeal to the LEC. There may be no appeals whatever on grounds of merit. Appeals on the ground of process may only be made with the consent of the Minister. This is draconian, deprives the citizens of NSW of a valuable right of self-protection, and abolishes the possibility – desirable in itself – of testing in court proposals that are contentious, or even dangerous. At present, for a wind farm to count as critical infrastructure it must have a total installed capacity of 250 MW or more. This would mean 125 x 2.0 MW turbines, or 84 x 3.0 MW turbines. When the category of critical infrastructure was introduced, the proponent of the Gullen Range Wind Farm increased the number of turbines proposed from 80 to 84, and increased the maximum capacity of the turbines proposed from 3.0 MW to 3.3 MW.

   The situation with regard to critical infrastructure has now been made worse by Premier Rees's announcement in February 2009 (repeated earlier this week) that the threshold of critical infrastructure for renewable energy power stations, including wind farms, will be reduced from 250 MW to 30 MW. When this proposal is gazetted, it will mean that virtually every wind farm proposal in NSW will count as critical infrastructure, since it will be possible to attain the threshold of 30 MW by having merely 10 x 3.0 MW turbines, or 15 x 2.0 MW turbines. When the proposals are approved, local communities will have no right of appeal to the LEC. The DoP will still be under pressure from the state government to approve all wind farm proposals, regardless of the quality of the EA, or the merits of the proposal (see below). This means that wind farms will be imposed on rural communities by administrative decree. This is the unacceptable reality of what Premier Rees calls "fast-tracking". If there is any incompetence in the EA, or negligence in the DoP's assessment, there will be no protection for non-involved neighbours by testing the approval in court. The absence of a judicial sanction, coupled with political pressure from the state government, will almost certainly lead to a general deterioration in the quality of EAs, and to the construction of oppressive, and perhaps dangerous projects.

4. The EA, or Environmental Assessment (so called) is not in any real sense an assessment of the proposal. It is rather the proposal itself. The EA is prepared for the proponent by an environmental service company that is paid by the proponent. The EA is therefore a

partisan document in support of the proposal. This is commonly admitted at the beginning of an EA by the environmental service company that has authored the document (e.g. the EA for the Capital Wind Farm).

5. Assessment of a proposal must be carried out by the DoP, but the DoP does not carry out any investigations as extensive as those of the EA are supposed to be. Moreover, the role of the DoP as a judge of the proposal is compromised by the DoP's *de facto* role of helping the proponent to construct the proposal. Over a period of months the proponent will submit drafts to the DoP, which the DoP will criticize. The DoP will then advise the proponent on how to improve the EA so that it attains a standard necessary for the EA to go on public exhibition. The dual role of the DoP as judge and helper tends to undermine the integrity of the assessment process, as the DoP allows standards to fall in order to push through a dubious proposal presented in a deficient EA. This could be proved by a line-by-line examination of the EA of the Gullen Range Wind Farm, and an account of the negotiations between the proponent and the DoP. (In connection with the process case that PMLG is currently discontinuing, PMLG has subpoenad and examined two volumes of correspondence that passed between the proponent of the Gullen Range Wind Farm and the DoP from 2007 to 2009.) There is a conflict of interest between the DoP's function of assessing development proposals and its function of 'facilitating development'.

6. No wind farm proposal has ever been rejected by the DoP. The DoP behaves as if its only options are approval, or approval with conditions. Where rejection of a proposal is no longer a real possibility, standards of assessment are likely to slip, since the DoP officials will know that their real function is not to judge the proposal, but to re-fashion it, so that it may be approved with a show of justification. When the new critical infrastructure threshold is gazetted, an approved wind farm project will be immune from criticism, since there will be no appeal to the LEC.

7. It is reasonable to suppose that the quality of an assessment by the DoP is in direct relation to the quality of the EA. A responsible and intellectually reputable EA, such as that for the Capital Wind Farm, does not require the DoP to indulge in sophistry and evasion. But an EA of poor intellectual quality, such as that of the Gullen Range Wind Farm, does.

8. Only in the case of noise impact are there strict, authoritative guidelines, which the DoP must apply. There are no comparable authoritative guidelines for the location of wind farms (e.g. concerning buffer zones), visual impact, or the impact on land value.

   The DoP must take notice of the submissions of other government agencies (such as DECC), or statutory bodies (such as CASA). As things stand, water quality, and flora and fauna are better protected than neighbouring residents, whose submissions will be read, and then dismissed.

9. After approval has been given by the DoP, there is a need for a compliance authority, dedicated to monitoring the developer's compliance with the conditions of consent, and even to receive complaints (e.g. about noise) that may suggest that the conditions of consent are not strict enough. At present, neighbours must rely on the integrity of the developer, and of the DoP. This may be unsafe, especially in the absence of any right of appeal to the LEC. Non-involved neighbours are unlikely to be able to afford to pay for their own noise tests, since these will cost thousands of dollars.

10. To appeal a wind farm project in court is problematical in several ways. First, if a project is approved as critical infrastructure, there is no right of appeal to the LEC. When the reduction of the threshold for critical infrastructure from 250 MW to 30 MW is gazetted, it is virtually certain that all wind farm proposals will count as critical infrastructure. Second, a process case, where one challenges the validity of the Minister's consent, counts as a Class 4 action, in which case the challenger risks having the costs of the case awarded against him. This may deter a challenge, if the potential challenger is not wealthy. Third, while a merit case counts as a Class 1 action, in which each side pays its own costs, the costs are likely to be higher than in a process case, because expert witnesses, for noise, for visual impact, or for impact on land value (or for water quality, or flora and fauna), will need to be employed. PMLG was advised that a process case will cost $50,000, although ours has already cost more than that. (And this does not include paying the other side's costs.) PMLG was also advised that a merit case can cost between $200,000 and $300,000. These sums are quite beyond the resources of local communities. PMLG's merit case is to be fought without expert witnesses, unless some wealthy benefactor can be found to put up the funds. In these ways, the pursuit of justice is constrained by the possession of wealth (or the lack of it).

11. The state government's proposal for 'wind farm precinct' Advisory Committees is problematical, because of the risk of 'stacking'. Premier Rees has stated that the committees will include members drawn from local communities and local councils. But if these members are in a permanent minority, and the majority of members are drawn from the wind farm industry, their consultants, and pro-wind farm politicians and officials, then the committees will be another sham. If the committees are advised by the same DoP officials whose job is to help the proponent construct the proposal, the committees will be a sham.

Premier Rees wants to 'fast-track' wind farm approvals. He intends to reduce the threshold for critical infrastructure from 250 MW to 30 MW, thus abolishing the right of appeal to the LEC. The planning process for critical infrastructure wind farms (i.e. all wind farms) is to be shortened to four months. For the next two years critical infrastructure fees will be waived. Dedicated officials will "drive" the government's clean energy agenda. All this suggests that there will be no possibility whatever of a wind farm proposal being rejected. This will mean that standards of assessment are bound to fall. The Advisory Committees are bound to be stacked to pass the proposals without a

serious critical examination. The interests of local communities will always be sacrificed. This will be secured by the stacking of the committees. All this is foreseeable.

Note on the Gullen Range Wind Farm

A book could be written on the deficiencies of the EA for the Gullen Range Wind Farm, and of the assessment carried out by the DoP. I will list only the most salient points. This proposal and its assessment illustrate how standards in the planning process for wind farms in NSW can fall.

The EA for the proposal does not specify a definite capacity for the turbines to be used. It lists 24 turbine types with capacities ranging between 1.5 and 3.3 MW. It is thus impossible to tell whether the proposal qualifies as critical infrastructure (84 x 1.5 MW = 126 MW; 84 x 3.3 MW = 277.2 MW). Nonetheless, the proponent asked for the proposal to be considered as critical infrastructure, and the DoP classified it as such. Only 2 of the 24 turbine types would allow the proposal to reach the threshold of critical infrastructure, the 3.0 and the 3.3 MW turbines. All the other 22 turbine types would not allow the proposal to reach the threshold of critical infrastructure. (For the DoP's vacillations with regard to critical infrastructure, see below.)

Setting aside the question of critical infrastructure, offering a range of turbines might otherwise be justifiable if the worst case scenario had been presented. But this is not the case. The worst case scenario for noise has been bungled. The 3.3 MW turbine was not tested at all by the noise consultant, Marshall Day Acoustics. The 3.0 MW turbine breaches the noise guidelines at between 20 and 30 houses, but these cannot be clearly identified because the graphs for the 3.0 MW turbine are indecipherable. (Lines for noise levels at different houses are superimposed on one another; different houses are sometimes identified by the same symbol.)

The Director-General's Requirements (DGRs) stipulate that visual impact must be assessed for all existing and approved dwellings within 10 kilometres of the turbines. Not a single visual assessment has been performed on any individual property, even though there are 60 non-involved residences within 2 k, 118 non-involved residences within 3 k, and 230-240 non-involved residences within 5 k.

The DGRs stipulate that estimates must be made for the short term and long term impacts on land value, and on subdivision potential. These estimates have not been made.

(Of course, the EA does present *something* under the headings of noise, visual impact and impact on land value. But what it presents is superficial, perfunctory, or evasive – or even bungled – and, therefore, completely inadequate for what the DGRs require the proponent to do. The issue here is a matter of standards. PMLG contends that the DoP has allowed standards to fall to an unacceptable level. The DoP would presumably disagree. This matter will be tested in court.)

In this unfinished state the EA should not have been allowed to go on public exhibition by the DoP. Moreover, there was no necessity for the EA to go on public exhibition, in August 2008, since the DGRs for the project do not expire until 21 September 2009. The DGRs have not expired at the time of writing of this submission. The DoP could have insisted that the EA be revised so as to be presentable, in the full year that the DGRs still had to run. But the DoP failed to do this.

Having wrongly allowed the EA to go on public exhibition, the DoP wrongly classified the proposal as critical infrastructure, even though the DoP recognized that the proposal was not definitely critical infrastructure. As we now know from the *Major Project Assessment*, in early 2008 the DoP required the proponent to clarify whether the proposal was for a power station entirely above, or entirely below the threshold for critical infrastructure. The proponent never responded to this requirement, and the DoP did not insist (see *Major Project Assessment*, p. 13).

PMLG issued a challenge to the classification of the project as critical infrastructure in the LEC, since if the proposal were to be approved as critical infrastructure, PMLG would have no right of appeal to the LEC. Unbeknownst to PMLG, in March 2009 the DoP wrote its *Major Project Assessment*, in which it declares the proposal *not* to be critical infrastructure. Notwithstanding this, when the DoP put in its Points of Defence to the LEC in April 2009, it declared that the proposal *is* critical infrastructure. Having got itself into these difficulties, the DoP in June 2009 published its *Major Project Assessment* with the Minister's *Project Approval*. So in June 2009 the DoP's public position was that the project is *not* critical infrastructure. This public declaration aborted PMLG's case. PMLG is currently moving to discontinue the case, and claim its costs back from the DoP.

Over critical infrastructure the DoP's conduct has been vacillating, and irrational. But behind the DoP the proponent of the Gullen Range Wind Farm has been irresponsible, and has failed to comply adequately with the DGRs for the proposal. But the DoP has been weak in not insisting that the proponent comply with the DoP's requirements.

But the DoP has now approved the Gullen Range Wind Farm. In doing so, it has approved a proposal that (i) has no definite installed capacity (73 x 1.5 MW = 109.5 MW; 73 x 3.0 MW = 219 MW); (ii) has not presented the worst case scenario for noise; (iii) has not carried out visual impact assessments on any of the existing or approved dwellings within 10 kilometres of the turbines, in accordance with the DGRs; (iv) has not carried out the assessment of the potential impact on land value. The DGRs for the proposal might as well not have been written.

In effect, the DoP has allowed the proponent to ignore the DGRs, at least those that bear on the issues of most concern to residents. The DoP's conduct has been weak and incompetent.

The only plausible explanation for this erratic and arbitrary behaviour on the part of the DoP is that the officials are under pressure to approve wind farms, regardless of their merits, and the merits of their EAs.

When Premier Rees's change to the threshold of critical infrastructure is gazetted, and non-involved neighbours lose all right of appeal to the LEC for all wind farm proposals in NSW, the kind of inadequacy and irresponsibility displayed by the proponent and the DoP in the case of the Gullen Range Wind Farm will be immune from criticism. Local communities will be exposed to oppressive projects because the planning process will give them no protection.

PMLG appeals to the Committee to realize the danger in which rural communities now lie from self-interested wind farm developers, an irresponsible DoP, and a euphoric state government, and to recommend that institutions and policies be put in place to protect those communities.

Part III: What is to be done?

Location

There is an intractable problem with the location of wind farms. This is so, even if government and the general community are willing to sacrifice the needs and interests of non-involved neighbours of wind farms. The problem can be expressed as a dilemma.

On the one hand, if a wind farm is located in the middle of a residential district, the proximity of residences threatens the effectiveness of the wind farm. The reason for this concerns the legal framework for noise impacts. If the noise from a turbine (or turbines) breaches the noise guidelines, then the turbine must be moved, or turned down whenever the direction and strength of the wind will cause the breach. The resident is legally entitled to refuse any offer of fans and double glazing from the wind farm company. (This rule was established in the Taralga wind farm case in the LEC.)

This in turn means that the wind farm company may have to choose between (i) a higher capacity turbine that will sometimes breach the noise guidelines, and have to be turned down periodically, or have to be moved to a less effective location, and (ii) a lower capacity turbine. Either way, the effectiveness of the turbines in generating electricity will be reduced. Moreover, if non-involved residences are located on three or four sides of the wind farm, the turbines will

need to be turned down, when the wind is blowing from three or four directions, i.e. most of the time. If this is the case, the lower capacity turbine will be necessary. So, the effectiveness of the wind farm is bound to be reduced.

(This is not an imaginary situation. It is exactly the situation of the Gullen Range Wind Farm, with its 32 non-involved residences within 1.5 kilometres.)

On the other hand, if a wind farm were to be located away from a residential area, and by being so were further away from a convenient power line, then the cost of connecting the wind farm to the grid would be increased. This would raise the question: who pays the extra cost? If the wind farm company has to bear the cost, this will reduce the company's profit. This in turn may discourage private investment in wind farms. If the state and the general community bear the cost, this will raise the price of electricity.

Those who support the development of wind farms in rural areas may be willing to sacrifice the interests of non-involved residents for the sake of proximity to a power line. But even if this alternative is adopted, the wind farm risks being less effective than it might otherwise be, because of the legal framework for noise impacts, referred to above.

Either way there is a problem: either the quantity of electricity is reduced, or the price of electricity increases. What is to be done?

If proximity to a power line is essential to encourage private investment in wind farms, then the problem of the proximity of residences must be made to disappear. The only way of doing this in a liberal democratic society is to mandate buffer zones for wind farms, as with coal mines. Wind farm companies must be ordered to offer to purchase any property that falls within the buffer zone. Residents would then at least have the choice of going or staying.

Buffer zones would also have the salutary effect of concentrating the minds of wind farm developers on the issue of the suitability of an area for a wind farm. Wind farm developers would come to recognize the reasonableness of not trying to put their profit-making enterprises down in the middle of a residential area. To do so would be too costly to them.

In this way, over time wind farms would only be proposed for areas where there were only a few non-involved residents, who could be bought out, without the costs of the wind farm being prohibitively increased.

The width of the buffer zone would have to depend on the capacity of the turbines to be used, and perhaps on other factors that influence the quantity of noise produced. Judging from the problems raised by the EA of the Gullen Range Wind Farm, one might say that a 2 k buffer zone would be adequate for a 2.0 MW turbine, but a 3.0 MW turbine would probably need a 3 k buffer zone.

Since there are buffer zones for coal mines, and since wind is another source of energy, and as wind farm operators have state-guaranteed markets and state-guaranteed profits, the mandating of buffer zones for wind farms is not an unreasonable constraint.

Noise

For the assessment of noise impacts the DoP is obliged to follow guidelines. As we saw earlier, NSW has adopted the South Australia Noise Guidelines.

What needs to be insisted on here is that the guidelines must be enforced by the DoP. This means that the DoP must insist that the proponent do the noise assessment seriously. There must be clear and complete lists of noise-affected houses in the EA, when the noise guidelines are breached. If the guidelines are breached, then the turbines that will have to be removed, moved, or turned down must be specified. All this cannot be left until after the DoP has given its approval, as in the case of the Gullen Range Wind Farm. This is absurd.

If the EA does not specify a definite turbine capacity, on commercial grounds, but only a range of turbine capacities, then the worst case scenario for noise *must* be done, and done clearly and competently.

It ought not to be necessary to spell all this out. It is only necessary because the DoP tends to let standards of assessment slip, when it is dealing with a deficient EA.

The EA must seriously investigate the potential for the van den Berg Effect to occur. There is now sufficient evidence to warrant this.

The proponent's wind data must be made public, so that it can be examined independently. If developers object that the data is "commercial-in-confidence", they should be reminded that they enjoy state-guaranteed markets and state-guaranteed profits, and therefore should be prepared to recognize the public interest in this matter. At the stage of project application developers should have to sign a declaration promising to make public their wind data. Any applicant who refuses to sign should have their application refused. This is only a matter of governments having the political will to insist.

Visual Impact

Visual impact assessments must be done on *every* non-involved residence, and on every house site on an approved subdivision, within 3 kilometres of the proposed turbines. A few "representative" assessments cannot be considered acceptable.

The methodology to be used for the visual assessment should be that used for the Capital Wind Farm. That is, distance from turbines, viewfield angle, and number of turbines should be used to determine a measure of *objective* visibility. This measure of objective visibility should not be compromised or undermined by any sort of spin-doctoring involving "landscape sensitivity",

"viewer numbers", perceivers' likes and dislikes, or any other kind of trickery by which a high visual impact can be converted into a low visual impact.

Screening by tree-planting cannot be considered a legitimate measure of mitigation, given the time it takes trees to grow, and given that wind turbines may be located on ridges. In fact, there can be no effective measures of mitigation when a cluster of 400 foot structures suddenly appears in a rural landscape. To talk of mitigation is just mystification.

What to do about an adverse visual impact can only be considered in relation to buffer zones (see above) or compensation (see below).

Land Value

The first task here is obviously the collection of hard data on changes to land value in the vicinity of wind farms. There are so many wind farms in the world now, it should be possible to do this. The obvious agent for the task is the Department of Lands.

In any case, we have to consider the future as well as the past. Our principle should be that *if* there is a fall in land value close to, and attributable to wind farms, then the victims of this should have a right to compensation. The same principle should apply to loss of subdivision potential. If no such falls occur, so be it. But if they do occur, then the principle should apply. This is elementary justice (see **Justifying Compensation** above).

The DoP must be provided with a clear set of rules specifying what exactly the proponent of a wind farm has to do in order to estimate short term and long term changes to land value and subdivision potential. Valuations and estimates should be made by a professional valuer on *every* non-involved residence within 3 kilometres of the proposed turbines. Without such a professional valuation and estimate the DGR for impact on land value will remain a dead letter. Proponents will continue to waffle, and the DoP will continue to accept the waffle.

To some extent this problem would be taken care of by buffer zones. But falls in land value and losses of subdivision potential may occur outside the buffer zone. So, the principle should apply to any adverse changes that occur outside the buffer zone.

Externalities and Compensation

I have already discussed these matters at length in Part I. Here I will only summarise:

1. Non-involved neighbours are likely to have an externality imposed upon them by the vicinity of a wind farm. The externality may take the forms of a fall of land value, a loss of subdivision potential, or a deterioration in quality of life.

2. Given the *very* unequal distribution of gains and losses amongst the parties to a wind farm development – developer, landlord, the general community, the state government, the non-involved residents – the parties that gain should compensate the party that loses.

3. If wind farm development is in the general interest, then the general community should be prepared to compensate those who suffer from it.

4. If private developers gain by exploiting a state-guaranteed market, which provides state-guaranteed profits, then the private developers should return something to the public in exchange for the privilege. What the private developers return may then contribute to the compensation that the general community provides to the non-involved neighbours.

5. The same principle applies to the landlords to whom accrues an unearned income in the form of rent.

(Compensation for deterioration in quality of life will presumably only arise for non-involved residents within the buffer zone. So, the mandating of a buffer zone should take care of that.)

The NSW Planning Framework

1. The period for submissions should be increased from 30 days to 90 days.

2. Part 3A of the planning legislation should be abolished, and planning authority returned to local councils. They are both competent to exercise the authority, and willing to protect the interests of their constituents, both the residents of the local government area in general, and the non-involved neighbours of the wind farm. If wind farm development is adequately regulated (in the sort of ways suggested in this submission), then local councils will have no difficulty in assessing wind farm proposals. It will merely be a matter of applying the regulations.

3. The category of critical infrastructure should be abolished. It is merely a form of oppression, that abolishes citizens' right of self-protection.

4. The function of assessing development proposals cannot continue to be carried out by a DoP whose role is also to 'facilitate development', i.e. to help developers to construct their proposals. Let the DoP continue to help developers, if that is considered desirable. But, if so, the function of assessing a proposal must be performed by some other body – the local council. It is unsafe to have the DoP combine the roles of judge and helper.

5. There must be a real possibility of rejecting a wind farm proposal. Without this, standards of assessment are bound to fall. There will be no sanction on developers to construct an adequate EA. And the planning authority will be constrained to approve

proposals, regardless of their merits. Project approvals will descend into sophistry and evasion. (This has already begun.)

This is another reason for removing planning authority from the state government to local councils. If regulations to govern wind farm development are brought into existence, as they should be, then they must be applied with impartiality and integrity. As local councils are independent of the state government, they are the obvious choice. It will be much easier to discover corruption in a small rural council than in the council for an urban agglomeration like Wollongong.

6. The assessments for noise, visual impact, and impact on land value must be tightened up, in the ways suggested above.

7. Compliance authorities should be established to monitor compliance with conditions of consent, and to deal with complaints during the construction and operational phases of the wind farm.

8. If the LEC continues to be the institution that hears appeals against planning approvals, then there must be an unqualified right of appeal to it. This means the abolition of the category of critical infrastructure (see above). It also means that no other planning categories that would tend to abolish the right of appeal should come into existence. Anything less is a violation of the spirit of a liberal democratic society.

9. If the procedure of appeal to the LEC is felt to be clumsy and burdensome (whether from the point of view of the developer, the planning authority or the local community), then a special tribunal should be set up to hear appeals against the approval of wind farms. There should be an unqualified right of appeal to the tribunal. The tribunal should be in the charge of a judge, or judges, so as to avoid loss of integrity from stacking. Individuals and communities should be able to represent themselves, without barristers, if that is their wish. In other words, the tribunal should combine judicial authority with popular access.

10. N.B. If an adequate body of regulations, concerning buffer zones, noise, visual impact, impact on land value, and compensation, are brought into existence, and if planning authority is removed from the DoP to some agency that will exercise planning authority with rigour and integrity, then the occasion for appeals will tend to decline, or disappear. Without such regulations, and an impartial and responsible planning authority, wind farm proposals are likely to remain contentious, and divisive of rural communities.

Disclosure

The operators of wind farms, and the state government (or whatever political institution or agency possesses the authority – see below) must make public the statistics for the quantities of electricity generated by wind farms, the quantities of the reduction of greenhouse gases for

which the wind farms are responsible, and the costs of these. These calculations should take into account the displacement of CCGTs, and the use of OCGTs to back up the wind farms. Without these statistics it will not be possible to know precisely what contribution wind farms will be making to reducing global warming. This knowledge must be in the public domain, for there is a real necessity to reduce greenhouse gas emissions, and this is a matter of the gravest public interest. It is not a matter for "commercial in confidence" secrecy, or state secrecy. If developers object, then once again they should be reminded that their markets and their profits are state-guaranteed.

Monitoring

Some permanent agency should be set up to monitor the effectiveness of wind farms in producing 'clean' energy, and also the environmental, economic and social consequences of wind farm development. Wind farms will be a major new source of capital investment in NSW, a major new branch of industry. The proponents of wind farms, and their supporters amongst government ministers, politicians and officials assert that wind farms will have all sorts of environmental and economic benefits, and that the social costs of wind farm development can be 'managed'. If these assertions are to have any substance, and not be merely spin-doctoring or public relations, then data must be collected, and analyses made. All the issues raised in this submission must be monitored, so that assertions about the costs and benefits of wind farms can be tested. As this is a matter of public interest, it should be carried out by a public agency.

The Wild West

It is an exaggeration perhaps, but not much of one, to compare wind farm development in NSW at present to the Wild West. While not absolutely lawless, the proposal and assessment of wind farms is liable to irregularity and arbitrariness, commercial self-interest and official irresponsibility, extreme inequality in the power and wealth of opposed parties, and the use of political power and the law to advantage developers, and to disadvantage local communities. All this needs genuine reform.

Premier Rees's "fast-tracking" measures are not the sort of reforms required. They are merely an extension of what already exists, and they will make matters worse.

For the last thirty years there has been a tendency, globally, to de-regulate business. This era may now be at an end. There will surely be little disagreement that the financial sector at least needs to be seriously re-regulated. If wind farms are to be effectively located in NSW, and if at the same time the needs and interests of rural communities are not to be utterly sacrificed, then strong regulation will be necessary to restrain the cupidity of the developers, the unscrupulous vote-seeking of governments, and the weakness of officials. Order and justice need to be brought to the Wild West of wind farm development in NSW.

PMLG commends the measures proposed in this submission to the attention of the Committee.

Yours sincerely

David Brooks
Deputy Chairperson
Parkesbourne/Mummel Landscape Guardians Inc.

Note on Sources

Information concerning wind farms and wind farm proposals in NSW is taken from the project applications, DGRs, preliminary assessments, and EAs tabled on the Department of Planning's website at http://majorprojects.planning.nsw.gov.au

Information concerning the Gullen Range Wind Farm also comes from the documents tabled on the DoP's website. The proponent of the Gullen Range Wind Farm is Epuron Pty Ltd: http://www.epuron.com.au

Supplementary information comes from the website of Epuron, and also from the private website *Wind in the Bush*: http://www.geocities.com/daveclarkecb/Australia/WindPower.html

The Federal Government's policy for the MRET is described on a Fact Sheet posted at: http://www.climatechange.gov.au

The ABC Radio news items are cited on the website *Wind in the Bush*.

The articles discussed by Terry McCrann in the *Herald Sun* of 4.8.09 are:

> Andrew Miskelly and Tom Quirk, 'Wind Farming in South East Australia' (2009)
>
> Peter Lang, 'Cost and Quantity of Greenhouse Gas Emissions Avoided by Wind Generation' (2009)

McCrann also discusses a third article that is of interest:

> Peter R Mitchell, 'Proposed Stockyard Hill Wind Farm and the Mortlake Open Cycle Gas Generation Power Station' (2009)

All these articles are in the public domain, and are seeking publication in professional/academic journals.

I will send copies of these articles to the Committee by e-mail.

The *NSW Wind Atlas* is available as a wall poster from the Department of Water and Energy.

The Taralga wind farm cases are:

Land and Environment Court of New South Wales: Taralga Landscape Guardians Inc v Minister for Planning and RES Southern Cross Pty Ltd [2007] NSWLEC 59

Land and Environment Court of New South Wales: RES Southern Cross v Minister for Planning and Taralga Landscape Guardians Inc. [2008] NSWLEC 1333

The South Australia Noise Guidelines can be viewed at:
http://www.environment.sa.gov.au/epa/pdfs/windfarms.pdf

Wind Farms and Landscape Values is published by the Australian Wind Energy Association and the Australian Council of National Trusts.

The Wind Power Generation Development Control Plan of Upper Lachlan Shire Council is available at: http://upperlachlan-e.nsw.gov.au/planning/1729/1856.html

Information concerning Part 3A, and critical infrastructure is available at the Department of Planning's website.

Premier Rees's media releases about wind farm development in NSW are available at:
http://www.premier.nsw.gov.au/Newsroom/Articles.html

The media releases are:

'Doing green business in NSW made easier', 27 February 2009

'NSW prepares for clean energy revolution', 17 August 2009

The *Major Project Assessment* and the Minister's *Project Approval* for the Gullen Range Wind Farm are available on the Department of Planning's website.