Submission
No 107

INQUIRY INTO RURAL WIND FARMS

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The voice for the environment since 1955

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28th August 2009

Beverly Duffy
The Director
General Purpose Standing Committee No. 5
Parliament House
Macquarie St
Sydney NSW 2000

Dear Ms Duffy,

Re: Legislative Council's Inquiry into Rural Wind Farms

The Nature Conservation Council of NSW (NCC) welcomes the opportunity to comment on the Legislative Council's rural wind farm inquiry, conducted by the General Purpose Standing Committee No. 5.

The Nature Conservation Council is the peak environment organisation in NSW. We work closely with 120 member groups, local communities, government and business to ensure a positive future for our environment.

General
Wind power is a mature technology that can play a major role in rapidly reducing carbon emissions in NSW and securing a safe climate future.

While concerns about specific proposals must be sensitively addressed, the social, economic and environmental benefits of expanding wind power in this state outweigh concerns regarding their impacts.

We face a climate emergency. According to the latest science, to ensure a safe climate the world must reduce carbon dioxide (CO2) to below 350 parts per millions (ppm) and restrict warming to less than 1.5 degrees. Since the industrial revolution we have increased CO2 in the atmosphere from 280ppm to about 390ppm. Temperature has increased 0.8 degrees. That means we need to quickly and drastically reduce carbon emissions and then implement mechanisms to draw CO2 out of the atmosphere.

Wind turbines have the capacity to produce clean energy on a large scale. Massive investment in wind turbines as well as other renewable technologies is necessary to avoid climate catastrophe.

The NCC recognises that there are some valid concerns about wind farms. However, we believe that these concerns are far outweighed by the urgent need to reduce carbon emissions from fossil fuels. Furthermore, the NCC believes that the immediate environmental impact of other forms of power is far greater than that of wind turbines. For example, coal mines, especially open cut coal mines do exponentially greater damage to an immediate environment. In addition, coal mining and coal-fired power stations use

enormous amounts of water in their processes. Transport of fossil fuels by rail, ship and truck causes additional carbon emissions and the infrastructure involved; rail, road and ports, have a significant environmental impact.

Certainly the limited environmental and other impacts of wind turbines should be examined and addressed where possible, but the NCC urges the General Purpose Standing Committee to examine these impacts in comparison to the impacts of the fossil fuel extraction and power generation industries, and within the context of responding to the climate emergency.

Australia has very good wind resources, by global standards, with the right wind conditions for power generation occurring 30 to 40% of the time. Background wind speeds in NSW are comparable to northern Europe, where there is a large proportion of the International wind generation.[1] In particular, there is strong potential for wind power along much of the NSW coast and in exposed parts of the Great Dividing Range. [2] In addition to a good wind resource, NSW has an extensive electricity transmission network, providing easy access for new wind farms to the national electricity grid.

The NSW Department of Water and Energy has developed a Wind Atlas providing a snapshot of the State's wind resource, which will help when planning new wind farms.

NSW Potential

NSW currently has four wind farms, representing 0.8% of the installed generation capacity in NSW, compared to approximately 20% in South Australia.

Currently, NSW has 150 megawatts of wind power, installed or under construction. [3] However, the electricity grid in NSW could readily accommodate over 3000 megawatts of wind power as long as the wind farms are well distributed across NSW and supported by advanced wind turbine technology and wind forecasting. This would be enough to supply greater than 10% of electricity generation in NSW. Even more wind power could be used with modification of the electricity grid to allow for the variability of wind power. [4]

Barriers

The Institute for Sustainable Futures Report (2007) found the main barrier for the wind power industry is the failure to include the costs of climate change in the cost of electricity generation.[5] Certified Wind Farms Australia predicts that wind energy will be cost competitive for consumers in 10-15years. However, if a cost on greenhouse gas emissions is imposed, wind power costs would be significantly less than for power from burning coal and fossil fuels.

Additionally, the development of wind power in NSW has been hindered by a lack of consistent government support, at both Federal and State levels, and by community resistance to particular wind farm proposals.[6]

In Germany, Spain and Denmark, where wind power supplies a significant proportion of total electricity generation, the following conditions are in place:

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[1] Department of Water and Energy NSW, 'Wind Energy in NSW', http://www.dwe.nsw.gov.au/energy/sustain_renew_wind.shtml accessed 21/08/09

[2] Institute for Sustainable Futures Report, 'The Role of Wind Power in NSW', page iv (2007)

[3] Department of Water and Energy NSW, 'Wind Energy in NSW', http://www.dwe.nsw.gov.au/energy/sustain_renew_wind.shtml accessed 21/08/09

[4] Institute for Sustainable Futures Report, 'The Role of Wind Power in NSW', page v (2007)

[5] Institute for Sustainable Futures Report, 'The Role of Wind Power in NSW', page 49 (2007)

[6] Institute for Sustainable Futures Report, 'The Role of Wind Power in NSW', page v (2007)

- Higher electricity prices (particularly for fossil fuels);
- The availability of low-interest loans to wind farm developers;
- Strong renewable electricity targets;
- Guaranteed access to the electricity network for wind farms;
- Guaranteed payment of a premium price for wind power fed into the grid.

Government's goal of 20 per cent renewable energy in Australia's electricity supply by 2020, can be supplemented by rural wind farms. Australia has 23 renewable energy technologies that have equal access to MRET, of which wind power is one of the most attractive, as it is cheap, proven and a mature technology, available today.[7] However, wind cannot account for 100% electricity, as the right wind conditions occur approximately 35% of the time. Therefore careful consideration must be given to the location of wind farms, ensuring they are placed evenly and widespread.

Government policy including low-interest loans to wind farm developers and strong renewable energy targets have seen wind power growing rapidly overseas, including in Germany, Spain and Denmark. NSW and federal governments should consider such policies.

NSW Government's Incentives:
NSW Premier Nathan Rees has announced incentives to boost investment in clean energy generation, including moves to fast-track planning decisions relating to wind farms. The development and critical infrastructure fees that are associated with such projects will also be waived until June 30, 2011.

Under the plan a wind farm that generates 30 megawatts will be treated as critical infrastructure. Previously a project had to produce at least 250 megawatts to receive that treatment. All clean energy projects in NSW that qualify as critical infrastructure will also have their planning process managed within four months.

There is some concern however that the fee-free period is not lengthy enough to bring NSW up to the installed generation capacity levels of other states, such as South Australia.

Benefits:
The rapid global growth of wind farms is driven by their low greenhouse impact, their potential to create jobs, their technological maturity, their contribution to the diversity of electricity generation and their use of a fuel that is free, abundant and inexhaustible[8].

Some of the benefits of wind power include:
- Wind power is free, renewable, in exhaustible and generates no greenhouse emissions during operation;
- Wind power is a mature technology with one of the lowest costs of all the available renewable energy technologies;
- There are an abundance of good wind resources globally, and in NSW;
- Wind farms can be built rapidly in response to climate change;
- Wind farms provide employment (often in rural areas) and can bring other economic benefits through local investment, manufacturing and construction;
- Wind farms pay back energy used in their construction in 3-7 months and then operate emission free for another 20-30 years;
- No fuel costs, low running costs;

[7] Australian Wind Energy Association, www.auswind.org, accessed 21/08/09
[8] Institute for Sustainable Futures Report, 'The Role of Wind Power in NSW', page 29 (2007)

- Wind farms can contribute to peak load power, often supplying power when it is most needed. Most Australian wind farms are subject to hot northerly winds, therefore supplying on hot summer days. Additionally, wind speeds can be forecasted 24-48 hours in advance, giving electricity production from wind farms some predictability;
- Wind turbines are efficient systems, converting ~ 50% of energy from wind into electricity, whereas brown coal conversion is closer to 25%;
- Rural and regional job generation;
- Other activities such as cropping or grazing can be conducted under wind farms, providing farmers with additional and a reliable source of income.

Concerns:
Community concerns about wind power need to be seriously considered, particularly in terms of site specific projects. Many concerns which arise over wind farms can be reduced or eliminated with careful management and appropriate site selection, while others have little supporting evidence.

The Australian Wind Energy Association and Australian Council of National Trusts have developed the Wind Farms and Landscape Values: National Assessment Framework (2007) for wind farms to help minimise potential landscape impacts from wind farms and guide site selection.[9] Additionally the Best Practice Guidelines (2002), developed by Australian Wind Energy Association, document best practice processes from site selection, preparation for development application, through to construction, operation and decommissioning at the end of the development's life.[10]

Some of the main concerns relating to wind power include:
- Visual impact and landscape values;
- Noise;
- Property prices;
- Tourism;
- Biodiversity minimal impacts compared to land clearing and electricity wires.

Other potential Impacts/ concerns include: (Site Specific assessment needed)
- Aviation;
- Electromagnetic interference (EMI);
- Mineral resource Sterilisation;
- Hydrology;
- Traffic Impacts;
- Bushfire risk;
- Impacts related to transmission line connection to grid.

Property price concerns
The Australian Wind Energy Association suggests there is little evidence to support wind farms having a negative impact upon land values of neighboring properties.[11] For those properties hosting wind farms, guaranteed rental income may actually increase property value. Available research indicates that impacts on adjacent property prices are uncertain but likely to be small.

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[9] Australian Wind Energy Association, 'Wind Farms and Landscape Values: National Assessment Framework, www.auswind.org/landscapevalues/, accessed 21/08/09
[10] Australian Wind Energy Association, ' Best Practice Guidelines", www.auswind.org/bestpractice/, accessed 21/08/09
[11] Institute for Sustainable Futures Report, 'The Role of Wind Power in NSW', page 34 (2007)

Community Engagement

Community engagement and consultation is key to a successful wind farm. The ISF report calls for proponents to effectively engage communities early in developing wind farm proposals, to improve site selection and community acceptance. As such, wind farm proponents need to go beyond the minimum consultation requirements, to genuinely engage the affected community as early as possible. The Australian Wind Energy Association has developed Best Practice Guidelines for implementation of wind energy projects that include a Community and Stakeholder Engagement Framework. Wind farm proponents should follow this Framework as a minimum. There is potential to go even further and establish Citizen Advisory Panels that would be involved in all aspects of the decision to build a wind farm. This kind of collaborative approach to community engagement can help to confer legitimacy on a wind farm proposal and defuse community tensions.[12]

Additionally the ISF Report recommends wind industry should consider the potential of small-scale wind power and community-owned wind farms as a way of easing tensions over wind farm proposals and increasing wind farm acceptance within the community..

Community Farms

Community wind farms may provide a mechanism for encouraging local ownership and control of wind technology.

Community wind farms allow local residents and landholders to own their own renewable energy source. Communities are involved in decisions from the outset and receive benefits from local development. Community ownership of wind farms has grown rapidly overseas and could play a big role in the future of energy generation.

Most existing wind farms have lease agreements with farmers, where the farmers typically receive 1-2% of the gross revenue of the wind farm in return for having turbines on their land. [13] On the other hand, community wind farms are co-operatives of local community members that enlist investors to purchase and operate wind farms. The revenues from selling the electricity are then divided amongst members.

Some of the advantages of community wind farms include:

- Economic benefits do not only go to the leaseholder, but are spread throughout the community – and these benefits are likely to stay local (Galluzo, 2005);[14]
- Greater community involvement and control in decision making;
- Community owned wind farms tend to be smaller (less than 10 turbines) and have less visual and noise impact than commercial farms, and hence greater community acceptance (Parliamentary Commissioner for the Environment, 2006);[15]
- Local Job creation;
- A new means of using the land productively and a source of additional income. Typically, 96-97% the land can be farmed as normal, for crop planting or grazing.[16] This could greatly benefit farmers as NSW continues to suffer from drought.

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[12] Institute for Sustainable Futures Report, 'The Role of Wind Power in NSW', page 42 (2007)

[13] New Zealand Wind Energy Association, 'A wind farm on your land', http://windenergy.org.nz/documents/factsheets/farm.pdf, accessed 21/08/09

[14] Galluzo, T.W. 2005. Small packages, big benefits: Economic advantages of local wind projects. Policy brief for the Iowa Policy Project. Iowa: The Iowa Policy Project.http://www.iowapolicyproject.org/2005docs/050405-wind.pdf

[15] Parliamentary Commissioner for the Environment, 2006. Wind power, people and place. Wellington: Parliamentary Commissioner for the Environment.

[16] New Zealand Wind Energy Association, 'A wind farm on your land', http://windenergy.org.nz/nz-wind-farms/host-a-wind-farm, accessed 21/08/09

Community wind farms are particularly prevalent in Denmark and Germany. In Denmark, a quarter of all wind farms are locally owned, mostly through cooperatives (Gipe, 2004)[17], and 85% of wind generation capacity in Denmark is made up of small turbine clusters (up to three) rather than large wind farms (Bolinger, 2001).[18]

In Germany, 300,000 people are shareholders in wind farm projects (Gipe, 2004)[19], with around 80% of its wind farms owned by the community as at the end of 2000 (Bolinger, 2001).[20] Wind energy has gained very high social acceptance in Germany and Denmark, with the development of community wind farms playing a major role.

Examples of successful community wind farms in Australia include:

- Hepburn Community Wind Park, Vic
- Denmark Community Wind Farm, WA

Current Community Wind Farms in developmental stages:

A community wind farm project for the Bathurst region is in pre-development stage, with 23 landowners having nominated their land for the project. Rather than initially ascertaining appropriate sites for the wind farm and then engaging with landowners to generate interest, the community first identified landowners who were strong advocates for the program to ensure ease of progress. A working group of the Bathurst Community Climate Action Group has since assessed the sites and developed a short list of 9 potential locations. The next stage will require selecting a wind farm developer to work with and do further assessments of the selected sites.

Support for the project within the Bathurst region is high, with unanimous support from 70 attendees at a 2008 wind farm forum.

A community owned wind farm near Daylesford, Victoria looks likely to go ahead having passed all approval processes and raising 92% of funds required. The developer, Future Energy, has been engaged to manage the project.

Finally, a community wind farm has been proposed by the Southern Council Group in NSW and a feasibility study is underway.

Thank you again for the opportunity to comment on the Legislative Council's rural wind farm inquiry, we trust that the information provided within this submission will be taken into account with regard to future assessments.

Yours sincerely

Cate Faehrmann
Executive Director

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[17] Gipe, P. 2004 Renewable energy tariffs: Has their big day come? 2 August 2004 http://www.wind-works.org/FeedLaws/RETHasTheirDayCome.html .

[18] Bolinger, M. (2001) Community Wind Power Ownership Schemes in Europe and their Relevance to the United States. Lawrence Berkeley National Laboratory, Environmental Energy Technologies Division, May 2001. http://eetd.lbl.gov/EA/EMP/reports/48357.pdf

[19] Gipe, P. 2004 Renewable energy tariffs: Has their big day come? 2 August 2004 http://www.wind-works.org/FeedLaws/RETHasTheirDayCome.html .

[20] Bolinger, M. (2001) Community Wind Power Ownership Schemes in Europe and their Relevance to the United States. Lawrence Berkeley National Laboratory, Environmental Energy Technologies Division, May 2001. http://eetd.lbl.gov/EA/EMP/reports/48357.pdf