

**Submission
No 66**

INQUIRY INTO RURAL WIND FARMS

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Submission on Inquiry into rural wind farms Bathurst Community Climate Action Network

This submission is made on behalf of Bathurst Community Climate Action Network Inc (BCCAN) and is authorised by John Kellett; President.

This submission is endorsed by other climate action groups Sutherland Climate Action Network, Climate Action Newtown and 450ppm.

Bathurst Community Climate Action Network Inc (BCCAN) is a community based network of organisations and individuals that work together to promote action on climate change and equitable and sustainable development. BCCAN has been a vibrant force for change in Central Western NSW engaging with the local community, business and industry along with the three tiers of Government.

BCCAN is working on a number of projects related to renewable energy including facilitating and advocating for a community wind farm in Central Western NSW.

Support for wind energy in NSW

We share the view voiced by many leaders and recognised experts that climate change is the key challenge of our time, and that urgent action to reduce carbon dioxide emissions is needed to avoid dangerous climate change.

NSW is one of the highest per-capita emitting jurisdictions in the world, so the NSW Government should adopt policies that will lead to major reductions in emissions as soon as possible. In particular, policies should be adopted that provide strong encouragement to rapid wide scale implementation of zero emission technologies, of which wind energy is currently the most cost-effective.

Companion policies should be adopted that will reduce electricity waste and avoid any expansion of coal-fired power stations and de-commission existing ones.

Accordingly the NSW Government should provide support, incentives and a business environment that will result in deployment of several GigaWatts of wind generation capacity - thousands of wind turbines - over the next few years.

Wind generation can provide a useful proportion of power to a large energy grid such as the National Energy market, if distributed widely across the network. Wind generation can provide a mechanism for community involvement and participation in sustainable energy supply.

BCCAN advocates a NSW Government policy framework aimed at maximising the exploitation of viable wind generator sites over the long term. NSW has good wind resources, particularly along the Great Dividing Range, as shown in the NSW Wind Atlas. This natural resource could be the foundation of a sustainable industry for NSW, linking a supportive planning and regulatory policy setting with clear energy market signals, a strong manufacturing base, skilled technical training and support and engaged local communities including local investment and employment opportunities.

Benefits to NSW

BCCAN sees many advantages for NSW in the development and deployment of wind turbines and farms.

Wind power good for the environment

Greenhouse Gas Emissions

The increased deployment of wind, solar and other appropriate energy technologies has the potential to significantly reduce the emissions of greenhouse gases which give rise to global warming and climate change. The effects of human-induced climate change are having a catastrophic effect upon the

environment and this is going to impact upon how we feed, clothe and shelter ourselves on a world scale. Wind power can make a significant contribution to the community by reducing greenhouse emissions.

Reduced Reliance on Coal Mining

The majority of electric power produced in Australia is derived from coal. The adoption of wind power technologies reduces the need to either open new mines or expand existing mines.

Whilst there are significant economic benefits to mining there are also significant costs borne by the community and environment at both the local and national level. At the local level coal mining may result in the wide-scale compromise of the environment such as is experienced in the Hunter Valley. It is highly unlikely that the Muswellbrook environs will or could be restored to a pre-mining state. The experience in the Hunter Valley and in Lithgow and the Wollondilly has shown that there is significant risk of permanent and irreparable damage to rivers, streams and aquifers posed by coal mining activities. Damage to Sydney's drinking water supply has occurred as a direct result of coal mining in Cataract catchment where cracks have opened in the creek bed. Water from the Cox and Oberon Rivers which would otherwise have flowed into water storage has been taken for cooling power stations. The situation at Oberon dam is so dire that the dam has had no flow for months and the output of Wallerawang power station is threatened by a lack of water. Once these community assets are compromised they cannot be restored.

On a broader level the reduced dependence on non-renewable resource preserves the natural capital of the country. Coal is an energy rich resource and it may well be put to some better use in the future.

Improved Utilisation of Existing Infrastructure

The dominant model of electricity generation and consumption within NSW is one of large-scale generation located adjacent to coal resources distant from markets with a tiered distribution network through transmission and distribution companies. This infrastructure was predominantly developed and paid for by the community through government ownership of those assets and most, at this time, remain in Government hands.

The deployment of widely distributed generation offers the opportunity to better utilise these distribution assets by being able to service a greater demand without incurring additional capital expenditure. Embedded generation also offers the potential to avoid the necessity for additional large-scale generation investments such as building additional coal-fired power plants.

It is important that embedded generation technologies have as wide as possible access to the distribution network. This is important for two reasons. Firstly so that the utilisation of the existing network can be increased so that the community receives a greater return on investment. Secondly, wind power can provide a more stable supply when the wind farms are widely distributed.

Researchers Outhred & MacGill (2006) observed one factor that reduces the variability of a large power system like the National Electricity Market is that wind regimes across the power system are unlikely to be correlated. That is, if wind turbines were widely distributed across the network, it would be rare for all of them to be operating at full output, although it would be more common at a regional or local level. Conversely there would be few occasions when none of a set of widely distributed turbines would be operating. Simply put, if the wind is not blowing in Bathurst there is a good chance that it is blowing in Tenterfield or in Cooma. So smaller wind farms distributed widely across the network would produce less variability than the same number of turbines in just a few locations.

Wind supports sustainable communities

Local Employment

The deployment of wind turbines and wind farms offers significant employment opportunities during the construction and during ongoing operation to local communities. The large majority of wind turbine

parts, such as towers and blades, can be manufactured locally without a large investment in technology or training. Transportation and construction create local and regional jobs. Operational jobs such as repairs and maintenance are generally undertaken by skilled local technicians.

Local Income

Wind farms make considerable contributions to local incomes through payment of occupancy rents. Most wind farms are located on rural grazing properties that are able to continue their farming operations with minimal impact from the wind turbines. Typically these rents are \$6500 pa per MW generating capacity. Importantly the deployment of wind turbines offers a diversity of income to rural and regional areas making the local economies more resilient. Auswind, the Australian Wind Energy peak body, claims that every year \$2.5 million goes directly to landholders in Australia who host wind turbines on their land, while another \$19 million is spent on operational and maintenance costs, much of it in rural areas.

Community Participation

Wind turbine deployment offers the local community the opportunity to participate in the fulfilment of the community's energy needs. There has been a number of community based wind farm developments around the world. One significant example is the Daylesford development in Victoria where the local community has raised \$9 million through a combination of debt and equity to fund a local community owned wind farm. Construction and commissioning are expected in early 2010.

BCCAN supports local ownership and control of utility scale wind farms. The advantages of community ownership include:

- Scaling the wind farm to the needs and preference of the local community
- Investment opportunity for local individuals and businesses
- Fostering local jobs
- Keeping profits in the local community
- Returning some profits to education and other community development

Community-owned wind farms have been popular and viable energy sources for up to 20 years in countries such as Denmark, Germany, Netherlands, UK and USA.

Barriers to wind farm development in NSW

Presently there are a number of barriers to the widespread adoption of wind turbines and farms.

Big and Inconsistent Government

As the wind industry has unfurled, Government policy has struggled to keep abreast of public sentiment. The industry has been beset by ever changing policies and directions. Wind technologies can generally be typified as requiring extensive capital at the start and very little thereafter. The ever changing policy framework has given rise to a very uncertain investment environment which has held back the development of a substantial wind industry. It has also forced smaller organisations, including community based organisations wishing to establish wind turbines or farms to simply give up – too hard.

Differential Development Costs

Presently developments of State significance and developments by the State or State owned instruments are largely exempt from contributions to the local community as they are outside the Local Government Act and hence are not bound to make Section 94 contributions.

Grid Connection Costs

The network connection cost for embedded generators is an upfront cost. It would be encouraging to embedded generators to have the cost of connection amortised over a suitable period or the cost of connection to be carried by the network owner and the costs recouped through transmission charges.

Lack of appropriate transmission infrastructure

NSW has a plentiful wind resource, particularly along the Great Dividing Range. Elevated sites, sparse population, consistent wind regimes and proximity to large electricity markets make wind generation an attractive proposition in NSW. However, many suitable sites are constrained by a lack of suitable power transmission infrastructure. For example, a single utility scale wind turbine produces too much power to connect to the typical rural 11,000 volt powerlines. Potential wind farm sites in NSW located close to powerlines rated at 66,000 volts or higher are rare. Connecting a new wind farm to distant powerlines involves considerable additional expense and is often uneconomic unless the wind farm is very large, such as the proposed 600 turbine Silverton wind farm. This is a deterrent to smaller distributed wind farms, including community owned wind farms. New powerlines would drive development in the NSW Government's Renewable Energy Precincts for wind energy.

Pre-development funding

Many of the costs of developing a wind farm are incurred in the pre-development stage, when capital is scarce and income will not be realised for several years.

Recommendations

1. Install new powerlines suitable for connection of utility scale wind farms along high wind sites on the Great Dividing Range. Recover capital expenses through an annual levy on wind farms connected to it.
2. Implement true accounting for the cost of electricity including the cost of CO₂.
3. Apply community contribution charges equally and evenly across the spectrum of possible energy developments from the community level through to developments by the State.
4. Enable options for the cost of network connection to be recouped by transmission charges rather than be an upfront cost.
5. Encourage the participation of communities in the development of community owned and operated assets.
6. Develop and implement consistent policies enabling the community to make appropriate longer term decisions.
7. Allow wind farm developers to delay payment of NSW government fees until the wind farm has been commissioned.
8. Facilitate access to the distribution network for small and medium scale wind farms.
9. Enable community wind farms to be eligible for NSW Feed in tariff.