

**Submission
No 104**

INQUIRY INTO RURAL WIND FARMS

Organisation: New South Wales Government
Name: Mr Peter Duncan
Position: A/Director General, Department of Premier and Cabinet
Date received: 27/08/2009



NEW SOUTH WALES GOVERNMENT SUBMISSION

TO

**LEGISLATIVE COUNCIL GENERAL PURPOSE STANDING COMMITTEE NO 5
INQUIRY INTO RURAL WIND FARMS**

AUGUST 2009

**NSW GOVERNMENT SUBMISSION
LEGISLATIVE COUNCIL GENERAL PURPOSE STANDING COMMITTEE NO. 5
INQUIRY INTO RURAL WIND FARMS**

Introduction

The NSW Government has a clear plan to develop the clean energy industry in NSW and is presently implementing a broad suite of measures to facilitate the uptake of clean energy and to promote clean energy jobs in our State.

The NSW Government is implementing a range of measures to maximise the State's share of increasing renewable energy generation to 2020 and beyond and is ensuring that renewable energy is a key part of our energy mix into the future.

NSW already has a renewable energy target in the *State Plan*, and is currently consulting with the NSW community on enhanced targets for private sector investment in renewable energy generation.

The first component of the NSW Government's strategy is implementing measures to facilitate and expedite the introduction of renewable energy technologies that are commercially viable under the expanded Renewable Energy Target (RET), such as wind power.

On 17 August 2009, the NSW Premier announced the next steps in the establishment of renewable energy precincts in NSW. This includes the establishment of wind energy precincts in areas with the best known wind resources and state-wide reforms to attract new investment in renewable energy. Six Renewable Energy (Wind) Precincts are being established across New South Wales in the New England Tablelands, Upper Hunter, Central Tablelands, NSW/ACT border areas, South Coast and Cooma/Monaro. The reforms will facilitate wind farms through a strategic approach to grid connection, streamlined planning approval processes, and enhanced community consultation processes.

New South Wales will also be legislating to reduce the threshold for renewable energy projects across the state to be classified as 'critical infrastructure' under Part 3A of the *Environmental Planning and Assessment Act 1979* from 250MW to 30MW for renewable energy generation facilities. This provides increased certainty for investors and the community and allows the resources of the NSW Government to be used to assess applications in a streamlined manner.

The key new measures announced by the Premier include:

- Four month turnarounds – clean energy projects anywhere in the state qualifying as critical infrastructure will have planning processes managed within four months;
- Financial incentives – critical infrastructure fees will be waived (for projects of 30 megawatts or more) from August 2009 to 30 June 2011; and
- Better community partnerships – new dedicated environmental staff will be employed in each of the new renewable energy precincts to drive the clean energy agenda and work with the local communities.

The Government is also developing options for encouraging other forms of renewable energy development and has signed a Memorandum of Understanding with the Clinton Foundation which includes the investigation of the potential to develop solar precincts.

Under the NSW Solar Bonus Scheme, announced on 23 June 2009, a net feed-in tariff of 60 cents per kilowatt hour will be paid for the electricity fed back to the grid from rooftop solar photovoltaic (PV) systems. The Solar Bonus Scheme, which is due to commence on 1 January 2010, will increase installations of small-scale solar photovoltaic systems in NSW.

The second component of the Government's strategy is to support the development and commercialisation of further-from-market technologies in New South Wales.

The \$40 million Renewable Energy Development Program (RED) provides funding for the demonstration and early commercialisation of new renewable energy technologies. The RED Program supports new emerging technologies (such as solar thermal systems and geothermal technologies) as well as new designs for other more established technologies (e.g. a new photovoltaic design).

On 20 July 2009 the NSW Government announced that it will offer a \$5 million prize called the NSW Energy Challenge Prize. This Competition is open to anyone from around the world, but the winning consortium must include a NSW-based company and NSW-based university.

The NSW Energy Challenge Prize sends a clear signal to the international community that New South Wales is serious about research and innovation, as well as finding clean energy solutions. The Prize complements our previous investments in research facilities dedicated to clean energy solutions, including through support for the CSIRO Energy Centre, the Australian Research Council (ARC) Photovoltaics Centre of Excellence, and significant investment into Carbon Capture and Storage. In addition, the NSW Climate Change Fund supports both large and household scale adoption of clean energy and water efficient technologies.

Specific comments in relation to each of the Inquiry's terms of reference are set out below.

1. (a) The role of utility-scale wind generation in reducing greenhouse gas emissions generated by electricity production

Wind power is one valuable and proven way of reducing the carbon intensity of electricity production.

Wind farm proposals approved or under assessment by the Department of Planning provide an indication of the scale of planned wind generation facilities (summarised in **Attachment A**). A total of nine wind farms with a capacity of more than 1,300 MW have planning approvals. This includes Australia's biggest wind farm at Silverton, approved in May 2009. Two of these nine projects have commenced construction. There are a further six wind farm proposals under assessment with a combined capacity of over 1,500 MW.

As noted above, in recognition of the role that utility-scale wind generation can play in reducing greenhouse gases, and as a way of attracting RET-driven renewable energy investment to NSW, the NSW Government has announced that wind energy precincts will be established. The creation of precincts will allow for better, more coordinated engagement with local communities and will include the employment of 'go to' people within each precinct to drive a clean energy action agenda. The NSW Government will also take action to streamline planning and approvals processes for renewable energy developments across the state.

1. (b) The role of utility-scale wind generation in producing off peak and base load power

The energy generated by wind turbines typically displaces energy which would otherwise be generated by baseload plant (which burn coal or gas) and reduces the intensity of operation of base load power stations. This is despite the output from wind generators being dependent on wind strength and therefore not as consistent as some other forms of power generation.

A number of changes have already been made in the operation of the National Electricity Market (NEM) to facilitate greater integration of wind generation. These have included the creation of a new category of generation (semi-scheduled) to better manage wind energy connected to the NEM, investment in sophisticated wind forecasting technology, and increased control for the market operator over the permitted output of wind generators.

In addition, the Australian Energy Market Commission (AEMC) is currently reviewing the impact of major climate change policies such as the planned Carbon Pollution Reduction Scheme (CPRS) and RET on the operation of the energy market and is considering any reforms that may be required to the energy market framework to respond to a changing mix of fuels and generation technologies. In particular, the AEMC has outlined a significant amendment to the National Electricity Rules aimed at assisting remote generation, particularly wind, connect to the Grid. The AEMC's final report is due to be submitted to the Ministerial Council on Energy on 30 September 2009. The NSW Government has made a public submission to the Commission's review providing in-principle support to the proposed new framework.

Significant research and development activity into energy storage technologies is occurring, with the aim of increasing the certainty and consistency of supply from intermittent renewable energy technologies such as wind and solar.

Round 1 of the NSW Government's Renewable Energy Development Program, administered by DECCW, allocated \$1,425,000 to Smart Storage for Ultra Battery Smart Storage for wind applications. Smart Storage has now changed its name to Ecoult. The capacity to store wind-generated energy using new battery technology will be demonstrated at the Hampton Wind Farm in NSW.

The batteries can store wind-generated electricity and smooth its voltage and power delivery to grid connected transmission lines. The demonstration project will also feature wind forecasting techniques to dramatically increase the effectiveness of the energy storage and supply.

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

Locating rural wind farms to optimise wind resource use

Wind strength is the most important factor influencing the location and viability of a wind farm development, and is normally considered by development proponents rather than public authorities. There is some limited, low resolution publicly available wind mapping information published by the NSW and Australian Governments but most wind farm development sites are identified using high resolution wind mapping information. This being the case, most wind farm developers erect their own monitoring towers (or commission a consultant to do this) and have their own wind resource database. To facilitate investment in

wind energy, in early 2008 the Department of Planning introduced new planning legislation which exempted developers from the need to obtain any form of planning approval to erect wind monitoring towers subject to meeting certain requirements. An extract of the relevant planning legislation is provided as **Attachment B**.

In August 2009 the NSW Government announced that it will establish wind energy precincts in six areas across the State. Intensive community engagement and consultation will be undertaken within these precincts, to address community concerns and improve community understanding of wind farms. The precinct areas have been based around local government areas (LGAs) known to contain high wind resources. Using LGAs as the boundaries was intended to reduce the risk of omitting or excluding potentially viable sites which may currently be under investigation by industry, particularly given increasing technological improvements which will make lower quality wind areas more attractive.

Locating rural wind farms to minimise residential and environmental impacts

The Department of Planning has primary responsibility for assessing whether impacts of major wind farm proposals are within acceptable limits when assessing development applications. For some issues, the Department of Planning will seek advice from other agencies (such as the Department of the Environment, Climate Change and Water) or refer to their standards and requirements, for example, related to noise and threatened species.

In 2004, the Department of Planning released *Environmental Impact Assessment Guidelines for Wind Energy* to promote best practice and assist industry and the community with understanding the assessment process and requirements. The guidelines include advice on site selection. The Department will update these guidelines as part of the renewable energy precincts initiative. The updated guidelines will take into account various existing publications, including:

- national guidelines being prepared by the Environment Protection and Heritage Council, understood to be due for completion in early 2010;
- the Victorian Government's *Policy and planning guidelines for development of wind energy facilities in Victoria*, published in 2003; and
- Auswind's (now the Clean Energy Council) *Best Practice Guidelines for Implementation of Wind Energy Projects in Australia*, published in 2006.

In assessing development applications and dealing with stakeholders including proponents, landowners and environmental interest groups, it is the Department of Planning's experience that the most important and contentious issues that commonly arise relate to noise and visual impact (typically more so than threatened species issues).

As part of the establishment of wind precincts, the Government will establish community-based Precinct Advisory Committees, which will have a role in providing advice to local councils on regionally appropriate and consistent approaches to wind development assessment issues not covered by the Department of Planning's state wide guidelines.

3. The impact of rural wind farms on property values

There does not appear to be any conclusive data as wind farms are relatively new and, in Australia, have usually been built away from population centres, but the major studies to date have found no impact or only temporary impacts on property values.

The Government precinct program aims to help communities adjust their perceptions and valuations around wind farms. While some people view wind farms as a visual intrusion,

others value them as evidence of a new approach to tackling climate change and transforming our energy systems towards sustainability.

The NSW Government is working to manage the impacts of wind farms, whilst enabling the economic benefits wind farms bring to rural areas. NSW Planning and Assessment Guidelines for Wind Farms (consistent with the proposed National Guidelines) will be developed to provide standardised assessment criteria and model conditions of consent. Community consultation processes will also be improved, including through the establishment of Precinct Advisory Committees, and the employment of precinct-based dedicated environmental staff to drive the clean energy agenda and engage with local communities on clean energy issues.

In order to provide a NSW-based source of information to add contextual objectivity to this debate, the NSW Valuer General has engaged a consultant to undertake a preliminary study on the impacts of wind farms on surrounding land values in Australia. This report is currently being finalised.

4. Mechanisms for encouraging local ownership and control of wind technology

One mechanism for encouraging local ownership is through the establishment of community wind farms. Community wind farms are cooperatives of local community members that enlist investors to purchase and operate wind farms. The revenues from selling the electricity are then divided amongst members.

Community wind farm cooperatives are the leading form of wind turbine ownership in Denmark and cooperatives or other forms of community ownership have also developed in other countries, including Germany, The Netherlands, the United Kingdom, and the United States. However, companies following a community model comprise only a small portion of the overall wind energy industry in Australia. Community wind farms are currently being progressed in Hepburn, Victoria, Denmark, Western Australia, and Mt Barker, Western Australia. Within NSW, there is interest from the Bega based community group Clean Energy for Eternity, and more broadly along the south coast by the Southern Council Group led by Kiama Council.

To provide support and encouragement to local communities interested in establishing community wind farm cooperatives, the NSW Government will develop a Handbook on Community Renewable Energy.

5. The potential role of energy generated by rural wind farms in relation to the Australian Government's proposed Renewable Energy Target

Wind farms, which are typically located in rural areas away from dense population centres, will play an increasingly important role as NSW and Australia reduce the emissions intensity of electricity generation, in order to reduce greenhouse gas emissions.

Wind farms are a valuable low-carbon contribution to the mix of energy sources feeding into the electricity network.

Under the planned CPRS, as the carbon price increases over time renewable energy technologies are expected to increase their market share of Australian electricity supply. However, in the short to medium term, the primary driver for increased uptake of renewable

energy will be the expanded RET of 20 per cent by 2020. NSW supports the RET which will mandate that 45,000 GWh of electricity be generated from renewable sources by 2020.

Wind energy is expected by all market analysts and modellers to make a significant contribution to meeting the RET. Modelling carried out for the Commonwealth Government by McLennan Magasanik Associates suggests that almost half of the new renewable generation built under the RET is likely to be wind generation. This is because wind is a market-ready technology which is currently highly cost-effective, relative to other types of renewable energy such as solar or geothermal.

The NSW Government is positioning NSW to attract substantial new wind farm and other clean energy investment. Building vibrant sustainable industries and promoting 'green' jobs is a top priority.

Amidst the global financial crisis, the investment that will occur in renewable energy in coming years stands out as one of the brightest 'green shoots' in the Australian economy. Around \$25 - \$30 billion of investment is expected to occur to meet the expanded national RET of 20 per cent by 2020, and NSW wants to attract a large share of this.

There are a significant number of sites in NSW with competitive wind resources. Comparable to many European countries with extensive wind power generation already in place, sites in NSW have the advantage of proximity to market, potentially reducing transmission costs.

Conclusion

The NSW Government is implementing a range of measures to boost investment in wind and other clean energy generation within the State. These include the establishment of wind energy precincts, more streamlined planning and approval processes for renewable energy developments, and better partnerships with the community. Wind power is a commercially viable, proven solution to reducing the carbon intensity of electricity production, and wind farms are likely to play a key role in the change to a low carbon economy. They are also likely to play a key role in making sure NSW is able to take advantage of the economic activity and investment that will be driven by the Commonwealth's RET.

ATTACHMENT A
WIND FARMS APPROVED OR UNDER ASSESSMENT
BY THE NSW DEPARTMENT OF PLANNING AT JULY 2009

APPROVED PROJECTS			
Crookwell II (Upper Lachlan Council)	Gamesa Crookwell Pty Ltd and Crookwell Development Pty Ltd Now Union Fenosa	110MW	<i>Approved 10/6/05.</i>
Taralga (Upper Lachlan)	RES Southern Cross	186MW	<i>Approved by the Land and Environment Court in February 2007. Modification to increase turbine height approved by the Court in 2008. Further issues re conditions being considered by the Court</i>
Cullerin (Upper Lachlan)	Epuron (was Taurus) – now Origin Energy	30MW	<i>Approved 21/2/07 Under construction</i>
Woodlawn (Goulburn- Mulwaree & Palerang)	Woodlawn WindEnergy Joint Venture	50MW	<i>Approved 4/10/05.</i>
Capital (Goulburn- Mulwaree and Palerang)	Renewable Power Ventures	132MW	<i>Approved 7/11/06. Four additional turbines approved 4/6/08 – additional 8.4MW. Under construction</i>
Conroys Gap (Yass)	Epuron – now Origin Energy	30MW	<i>Approved 31/5/07</i>
Black Springs (Oberon)	Wind Corporation Australia (Allico Wind Energy Mgt)	18.9MW	<i>Approved 10/07/08</i>
Silverton (Stage 1)	Silverton Wind Farm Developments (Epuron & Macquarie Bank)	493-846MW	<i>Approved 24/05/09</i>
Gullen Range (Upper Lachlan)	Gullen Range Wind Farm (Epuron)	Up to 278MW	<i>Assessment being finalised. Objectors have commenced proceedings in the Land and Environment Court, seeking declaration that it is not critical infrastructure, that the exhibited Environmental Assessment is inadequate, and that the Director-General be restrained from reporting to the Minister.</i>

TOTAL APPROVED 1,328 – 1,681 MW

PROJECTS UNDER ASSESSMENT			
Silverton (Stage 2)	Silverton Wind Farm Developments (Epuron & Macquarie Bank)	553-948MW	<i>Concept approved with further assessment required.</i>
Yass (Yass Valley, Harden)	Epuron	Up to 500MW	<i>DGRs being finalised</i>
Glen Innes (Glen Innes-Severn)	Glen Innes Wind Power (Babcock & Brown/ National Power)	Up to 81MW	<i>Environmental Assessment exhibited until 17/12/08. Late submissions accepted until 16/1/09</i>
Saphire (Glen Innes, Inverell)	Wind Prospect CWP Pty Ltd	302-390MW	<i>DGRs issued</i>
Boco Rock (Cooma-Monaro and Bombala)	Wind Prospect CWP Pty Ltd	Up to 146MW	<i>DGRs issued. May increase to >250MW.</i>
Kyoto (Upper Hunter)	Pamada	89-126MW	<i>Draft Environmental Assessment under review to determine adequacy for public exhibition. Also includes solar 3-10 MW and 1 MW closed loop hydro.</i>

TOTAL UNDER ASSESSMENT 1,671-2,191 MW

ATTACHMENT B
PLANNING CONTROLS FOR WIND MONITORING TOWERS

Extract from the *State Environmental Planning Policy (Infrastructure) 2007*

39 Exempt Development

- (2) Development for the purpose of a wind monitoring tower used in connection with the investigation or determination of the feasibility of a wind farm is exempt development if:
- (a) it complies with clause 20 (2) (Exempt development), and
 - (b) the tower:
 - (i) is erected in accordance with the manufacturer's specifications, and
 - (ii) has a height of not more than 110m, and
 - (iii) is removed within 30 months after its erection is completed, and
 - (c) the site of the tower:
 - (i) is enclosed by a fence that prevents unauthorised entry to the site, and
 - (ii) is not within 100m of any public road, and
 - (iii) is not within 1km of any other wind monitoring tower or a school, and
 - (iv) is not within 1km of any dwelling except with the prior written permission of the owner of the dwelling, and
 - (v) is not within 500m of any State heritage item, and
 - (vi) does not affect a significant view to or from any such item that is identified in a conservation management plan (as defined by clause 3 of the Heritage Regulation 2005) for the item, and
 - (d) before the tower is erected, the Civil Aviation Safety Authority (established under the Civil Aviation Act 1988 of the Commonwealth) is notified in writing of:
 - (i) the tower's "as constructed" longitude and latitude co-ordinates, and
 - (ii) the ground level elevation at the base of the tower, referenced to the Australian Height Datum, and
 - (iii) the height from ground level (existing) to the topmost point of the tower (including all attachments), and
 - (iv) the elevation to the top of the tower (including all attachments), referenced to the Australian Height Datum, and
 - (v) the date on which it is proposed to remove the tower.