Renewable Energy and Energy Efficiencies

Introduction

This site has good summaries on a range of renewable energy technologies
http://worldenergyresearch.com/index.aspx

The NSW Government has set targets through the State Plan to achieve 20% renewable energy consumption by 2020 in light of the Federal Government's expanded Renewable Energy Target.

Currently about **six per cent** of the state's total electricity usage is provided from renewable energy sources comprising:

- 88% hydro
- 5% biomass
- 5% landfill methane
- 1% wind
- 1% solar This information comes from the *NSW Dept of Industry and Development's* website

The proportion of renewable energy is increasing, but given the target, we have a long way to go by 2020 – hence ParraCAN's focus on the need to drive the development of renewable energy resources and the need to pursue more than one option for renewable energy

This summary focuses on wind power.

Wind farms in Australia

This site contains a table of wind farms in Australia - http://worldenergyresearch.com/index.aspx - ie

	Installed	Proposed
South Australia	338	1986
Western Australia	199	243
Victoria	134	2632
Tasmania	67	555
NSW	17	1193
QLD	12	176
Northern Territory	0	0
Total	767	6785

Dated: Not dated – Website copyrighted 2009

Wind Farms in NSW
The following information comes from **http://www.industry.nsw.gov.au/energy/sustainable/renewable/wind**

Blayney Wind Farm, in the Central Tablelands of NSW, has 15 wind turbines, each with a capacity of 660 kW. It was commissioned in October 2000, and will produce enough electricity annually to power 3500 homes.

Crookwell Wind Farm was the first grid-connected wind farm in Australia when installed by Pacific Power in 1998. It consists of eight 600 kW turbines giving a total capacity of 4.8 MW. Now owned by Eraring Energy, the wind farm supplies electricity to Country Energy's GreenPower customers.

Hampton Wind Park is a two hour drive from Sydney, past the Blue Mountains. Power from two 660 kW wind turbines enhances the quality of supply in the surrounding rural electrical grid. This wind farm supplies electricity to Integral Energy's GreenPower customers.

Kooragang Island's single 600 kW wind turbine has been operated by EnergyAustralia since its installation in 1997. It provides GreenPower for Energy Australia's Pure Energy customers.

Capital Wind Farms, Taralga (Bungendore) (November 2009) The Capital Wind Farm, at Bungendore in NSW, will generate enough capacity to power 60,000 homes with its 67 turbines.

It will help power the NSW government's desalination plant at Kurnell, which aims to use 100 per cent renewable energy when it starts supplying water to Sydney in 2010. It will

- boost Australia's wind power capacity by 10 per cent.
- the Bungendore site will be among about 50 wind farms operating in Australia (note chart above).

Silverton Wind Farm Silverton Wind Farm represents one of the largest on-shore wind projects in the world. With a potential operational capacity in excess of 1,000MW, the wind farm will generate approximately 4.5% of New South Wales' current total power consumption. In a typical year, the electricity generated from the site will be equivalent to the consumption of over 430,000 NSW homes.

Silverton Wind Farm will contribute to the generation of renewable energy in New South Wales, allowing for a reduction of approximately 3,500,000 tonnes per annum of greenhouse gas emissions in NSW.

Silverton Wind Farm will contribute more than $700 Million to the regional economy, providing jobs and other economic benefits.

This information comes from http://www.silvertonwindfarm.com.au/
See also http://www.power-technology.com/projects/silverton/

Report by Nature Conservation Council

The Nature Conservation Council of NSW commissioned the Institute of Sustainable Futures to conduct a thorough review of the Wind Power industry. **This report is dated July 2007**)

"The Role of Wind Power in NSW" reviews the criticisms levelled at the industry and finds many to be inaccurate. The report examines the technical, economic and policy barriers to an expansion of wind power and finds these can be overcome through the right government policy.

Overall the report finds the benefits of the wind industry outweigh these concerns and concerns over impacts on property prices, tourism and bush fires are largely unfounded.

The electricity network in NSW could readily accommodate 10% of our electricity being generated by wind power, and an upgraded network could accommodate much more.

With a combination of renewable energy technologies we can easily reach 25% renewable energy by 2020.

The report finds the main barrier for the wind power industry is the failure to include the costs of climate change in the cost of electricity generation. If the costs of climate change are taken into account wind power costs significantly less than power from burning coal and fossil fuels.

While polls have found the majority of Australians support wind farms there has been vocal opposition to a number of projects. The impact of wind farms on visual amenity is one of the most contentious issues, with no objective way to resolve differences of opinion on the aesthetics.

Noise impacts have been overstated, however local noise impacts must be examined thoroughly.

Impacts on biodiversity have been found to be minor when compared to the impact of land clearing, vehicle use and climate change overall.

In conclusion the report calls for proponents to effectively engage communities early in developing wind farm proposals to improve site selection and gain community support. The benefits of expanding wind power in NSW outweigh concerns about their impacts. Wind power is growing rapidly around the globe.

The key recommendation to the NSW government is to increase support for the wind industry in NSW. The NSW renewable energy target should be increased to 25% by 2020 and should require projects to meet the NSW renewable energy target be located in NSW.

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04.03.10