The power and appeal of wind

Anyone who has struggled to stay upright in a strong Wellington or Taranaki gale is aware of the intrinsic power of the wind.

Wind energy has been harnessed by people for centuries. From the familiar windmills of Europe to the world's most famous explorers who mapped the globe by sailing ship. Indeed the first Polynesian and European colonists of New Zealand were brought to these shores by the power of wind.

Recent research and development means that wind can now be harnessed to generate electricity. These modern machines, that work in much the same way as the old European windmills, are called wind turbines.

Wind turbines can generate significant amounts of electricity. Our own Energy Efficiency and Conservation Authority (EECA) states "the total long-term potential [for wind energy generation] has been assessed to be in the order of 100,000 gigawatt hours per year, three times our present generation." [1]

Wind is powerful and renewable – meaning there is an endless supply. Wind is clean (it doesn't pollute the air and atmosphere like coal or produce toxic waste like nuclear). And wind is free.

Wind's success in Europe and beyond

Wind energy is the fastest growing energy source in the world. Global wind capacity has quadrupled over the past five years growing from 7,600 Mega Watts (MW) at the end of 1997 to more than 31,000 MW at the end of 2002 – enough to power 16 million average European homes.[2]

[1] EECA, Review of NZ's wind energy potential to 2015, May 2001, Pg 8.
[2] European Wind Energy Association website: http://www.ewea.org/

In Wales initial concern about wind farms being unattractive has turned to an appreciation of the farms' aesthetic appeal. New Zealand's own Tararua wind farm has even become a tourist destination.

In 2001 some 6,500 MW of new wind energy generation was installed internationally, representing annual growth of almost 40 percent! Germany alone installed more than 2,600 MW in 2001. Wind energy is seeing activity in many areas of the world with wind power currently meeting over 18% of Denmark's electricity needs. Other countries are rapidly adopting wind including Germany, Spain, India, and the USA[3]. Australia has just approved the construction of the biggest wind farm in the southern hemisphere capable of meeting the electricity needs of 200,000 people.[4]

Wind energy in New Zealand

New Zealand has one of the most under utilised wind resource for power generation in the world.[5] EECA's research shows New Zealand can conservatively produce 3,070 MW using wind, currently we produce only 170.8 MW.

The successful and spectacular wind turbines along the Tararua Ranges have the

[3] Sustainable Energy Development Authority website: http://www.seda.nsw.gov.au/
[4] 3 May 2003, Pacific Hydro has received final planning approval from the Victoria state government for 180 megawatt Portland Wind Energy Project: http://www.planetark.org/dailynewsstory.cfm/newsid/20671/story.htm
[5] A 1987 report for NZ Energy Research and Development Committee found that NZ is one of the most favourable parts of the world for large-scale introduction of wind energy.

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capacity to generate 31.7 Megawatts of energy which meets the electricity requirements of around 15,000 homes. The 48 turbines represent stage one of a two-stage project, which may ultimately see 103 turbines along the Tararua horizon with the capacity to generate 67 Megawatts of energy annually.[6]

The 55 turbine Te Apiti wind farm proposal (total capacity 82 -96 megawatts) was launched in the Wairarapa by Energy Minister Pete Hodgson on 8 May 2003.[7] The first commercial South Island wind turbine at Gebbies Pass on Banks Peninsular was also opened in May 2003.[8] These are just the beginning; there are numerous other ideal locations for wind around New Zealand.

Visual impacts and employment opportunities from wind

Wind power is currently recognised as the most environmentally friendly way to generate electricity in New Zealand. Opinion polls in Britain show a pattern of strong local support among people living near to a wind farm. The majority of local residents questioned on the Taff Ely wind farm in Wales thought it made the scenery more interesting rather than spoilt the scenery.[9]

Wind farms are unlikely to have irreparable impact on the landscape. The lattice towers of the Tararua turbines minimise visual pollution and the turning blades generate minimal noise. The Tararua wind farm has also provided a unique opportunity for local employment with several of the farms surrounding the site diversifying into tourism to accommodate the high number of people wishing to visit the site.[10]

Wind can generate as many local jobs as other forms of energy, such as coal, but without the negative health and environmental impacts such as air and water pollution and landscape destruction. Unlike land flooded for hydro generation, 97% of the land occupied by wind farms can continue to be used for grazing.[11]

Climate change and renewable energy

Global warming, caused by burning fossil fuels, is one of the worst environmental problems we face today. Governments worldwide support the latest and starkest evidence that human activity is changing the climate that made life on earth possible. The results are expected to be disastrous - extreme weather events, such as droughts and floods, disruption of water supplies, melting Polar regions, rising sea levels, loss of coral reefs and much more.

New Zealand's ratification of the internationally agreed Kyoto Protocol in 2002 is the first step to slowing global warming and avoiding the climate catastrophe that scientists predict.

The world needs to phase out the burning of fossil fuels such as oil, coal and gas and phase in renewable sources such as wind and solar. In New Zealand wind energy is just one of the renewable energy solutions that offers abundant clean energy that is safe for people and the environment and good for the economy.

[6] Tararua District Council website: http://www.tararua.com/explore.asp?menu=aec
[7] Scoop website: http://www.scoop.co.nz/mason/stories/PA0305/S00172.htm
[8] Windflow website: http://www.windflow.co.nz/latestnews/
[9] The British Wind Energy Association website: http://www.bwea.com/ref/taffely.html
[10] Tararua District Council website: http://www.tararua.com/explore.asp?menu=aec
[11] Windflow website: http://www.windflow.co.nz/backgroundinfo/