

Industry sees growing opportunity in New Zealand

Arthur O'Donnell, special to *Greenwire*

WELLINGTON, New Zealand -- Atop a ridgeline overlooking downtown Wellington, a single wind turbine has been in nearly continuous operation since it was commissioned as New Zealand's sole commercial wind energy project in 1993.

But the 225-kilowatt Brooklyn turbine has been joined in recent years by scores of others at a half-dozen locations across the country. Wind power in New Zealand has blossomed into a mainstream energy source.

As the industry matures, it could provide more than an alternative source of electricity. It might be the foundation for a homegrown industry that manufactures a large share of the hardware for power generation on this island nation, which currently imports most electrical components and steel towers.

New Zealand has about 170 megawatts of installed wind-powered capacity, but there is another 935 MW in planning or construction. A recent report by the Ministry of Economic Development and the Energy Efficiency & Conservation Agency (EECA) says wind energy could provide up to 20 percent of New Zealand's electrical energy without posing a threat to transmission system reliability.



Meridian Energy's 210 MW Project West Wind at Quartz Hill near Wellington has been approved but still faces residual local opposition.

Murray Kennedy, chairman of the New Zealand Wind Energy Association, said that would amount to about 2,000 MW of nameplate capacity. Kennedy expects 1,000 MW will be in operation or close to completion by 2010, citing a number of sites where new developments are under way or projects are seeking "resource consents" from local permitting authorities.

"We enjoy very good support in New Zealand for wind and renewables generally," Kennedy said. But such general support does not always translate into successful projects, and as development moves closer to cities, they encounter resistance.

Concerns about appearance, noise

In an area outside of Auckland, where a 48 MW wind farm had been proposed, a university-sponsored opinion survey found that

70 percent of respondents strongly supported wind, but the project still was denied siting consent based on concerns about visual impacts and noise controls.

A planned 270 MW Hawkes Bay wind farm, near Napier, has received approval, but the case is on appeal to the federal Environment Court.

Another example is the 70-turbine, 210 MW West Wind Project planned by Meridian Energy at a site called Quartz Hill, located on Oahu Bay just outside of Wellington. Located well away from the local beach community and hidden from view by surrounding hills, the project nonetheless encountered stiff opposition from nearby residents. Even though the project last month received full consent from Wellington officials, anti-project signs are still visible all along the road to Quartz Hill.

Unlike in the United States, where wind projects are mostly built by non-utility companies or small-project developers, New Zealand's wind farms are usually constructed by the large generation companies. This can fuel opposition from people who think the economic benefits of a project will flow beyond their community.

One exception is the greater Wellington Regional Council, which is planning a 26 MW to 38 MW Puketiro wind farm on land it manages northeast of the city. Kennedy, who also serves as manager of land and water supplies for the regional council, said the group received about 1,300 submissions concerning the project during a public outreach process, with 90 percent expressing support. "That, I think, is indicative of the support wind power has," Kennedy said.

Besides contributing to New Zealand's stated goals for increasing the amount of renewable energy delivered to consumers, renewable resources, and wind in particular, could offer a new base for creating a domestic manufacturing industry.

From yacht propellers to turbine blades?

For instance, Meridian Energy Chief Executive Officer Keith Turner told *Greenwire* that New Zealand has composite materials manufacturing capability developed for boats and racing yachts that could make blades for turbines.

NZWEA's Kennedy said that as much as a third of the materials that go into a typical wind project are "local content" but that is mainly in construction, cables and switchgear components. Some towers are locally made, but the trend has been for larger capacity turbines -- up to 3 MW -- that require steel towers that currently cannot be made locally.

"We have the expertise," Kennedy said. "What it would take is for an overseas manufacturer to import the production capability to ensure quality control for towers and blades."

A 2004 report from the Industry Capability Network found that using New Zealand-made turbines for 25 MW of projects could create hundreds of local jobs and keep about \$25 million from flowing to offshore firms.

One company promoting a "Made in New Zealand" campaign is Windflow Technologies, which has designed a 500 KW turbine now in operation at Gebbies Pass, near Christchurch.

Windflow touts its potential contribution to the national economy, saying that, if 1,000 MW of new wind farms employed its turbines, it would reduce the amount of money flowing offshore from \$1.6 billion (New Zealand dollars) to \$160 million, create 4,000 jobs over four years, and decrease government spending on unemployment by \$190 million.

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