Taranaki’s first wind farm, planned to be built on the coast at Waverley, will probably contribute nothing to meeting the country’s peak winter power demand.

National electricity grid operator Transpower has revealed that turbines on the three Manawatu farms have been generating at less than 1% of their capacity during winter evening peaks for the past three years.

Bernhard Voll, the technical brains behind the 45-turbine Waverley project for Australian company Allco Financial Group, says this farm will probably perform no differently, because of a lack of wind at winter peak times, but it was a small issue.

“Wind farms are not designed to be peaking plants,” he said. “The issue is that wind farms displace fossil-fired power generation and contribute to the nation’s energy demand throughout the year. Picking on a singular issue of peak demand contribution is misleading.”

The Waverley consent hearing was postponed last month at Allco’s request and the South Taranaki District Council now says it could proceed some time in August.

Allco is selling assets to reduce debt, and that includes wind farm plans. Sydney-based Mr Voll says the Waverley consent hearing will proceed, regardless of any ownership changes.

Transpower system operations manager Kieran Devine says the country’s three major farms, clustered around the Manawatu Gorge, supplied less than one per cent of their capacity during peak load periods during the past three winters, 2005-07.

The highest peaks occurred in the North Island on cold, still weekday evenings, for three to four hours, starting between 5.30pm and 6.30pm.

This is when the electricity price also hits a peak. There was not enough wind blowing at those times to turn the blades fast enough.

The apparently flawed peak winter performance of existing wind farms has come out of the first three years of a 10-year wind generation investigation project.

Mr Devine says turbines on the Manawatu wind farms all behaved similarly, running up and down the generation scale together.

“Either there was insufficient wind at that time, or the current farms are all in the wrong locations and there’s not enough wind system diversity,” he says.
“We have real concerns about the large amount of wind generation planned in the lower North Island, because the preliminary information is that they will all have very similar characteristics to the Manawatu farms and that won’t help with winter peaks. We’d prefer they were spread around so that when one’s up others will be down and it would balance itself out.

“Fortunately, the wind characteristics at the new White Hill farm (29 turbines, near Dunedin) appear to be different to Manawatu.”

He says power planners are just beginning to discover what wind is all about because the detail needed for wind farm management has never been required in the past.

“In the long term, wind is very reliable but in short term you can never count on it being there when you need it in forward forecasting.”

The three farms generating from wind around the Manawatu Gorge are: Trustpower’s Tararua (134 turbines), NZ Wind Farms’ Te Rere Hau (104), Meridian Energy’s Te Apiti (55).

By Richard Woodd

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