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Electricity investment underway for long-term security

As hydro lake storage levels begin to recover after the long autumn drought, the electricity industry is looking towards the future and evaluating the levels of investment that need to occur in new electricity generation and transmission.

According to Dr Patrick Strange, Chief Executive of Transpower and Convener of the Winter Power Group, “the mid to long term outlook is very encouraging. A period of major investment in new electricity infrastructure - of a scale not seen for 30 years - is underway to secure New Zealand’s long-term energy future.

“New Zealand now has more new electricity generation options - both in quantity and diversity than at any other time in its history.

According to figures released by the Electricity Commission, there are now more than 1,300 megawatts (MW) of new generation projects on the drawing board over the next four years, equating to roughly \$3.5 - 4 billion of capital investment. This is about 15% of New Zealand’s entire generation capacity today.

The 1,300 MW of new generation includes projects that the Electricity Commission, which is tasked with monitoring the security of New Zealand’s electricity supply, counted as committed or highly likely in October last year (see table below). Since then, further generation projects have been announced.

Transpower is also advancing \$3.5 billion of investment in electricity transmission projects: “The wave of new generation, much of which will be sustainable projects located some distance from major load centres, will pose challenges for Transpower’s engineers,” said Patrick Strange



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However, he stressed that Transpower would be working to ensure that new generation could reach consumers when it was needed. In the longer term Transpower is also initiating a project to develop its 30 year outlook for transmission planning.

“As with any market, only the best projects will be developed.” He noted that across the industry there is a healthy divergence of views over which types of generation projects are the mostly likely to succeed, and which represent the best options for New Zealand.

“The diversity of options available to New Zealand is a great strength for the electricity system here and is the envy of other countries”. Patrick Strange is also “cautiously confident that the industry will be capable of meeting the winter North Island peaks next year, despite the unexpected shutdowns of the 300 MW generation plant at New Plymouth and the half of Pole 1 of Transpower’s HVDC link late last year.

“In planning for next winter, Mighty River Power’s Kawerau 90 MW geothermal plant which is currently in the final stages of testing will be a welcome addition. Contact Energy is also reviewing options for ensuring that at least one 100 MW unit at the New Plymouth station will be available and it is possible though less likely that two 100MW units could be available.

Patrick Strange noted that, “On average, New Zealand currently needs between 150 - 200 MW of new generation capacity every year to meet demand growth. With over 1,300 MW of new generation capacity over the next four years, the industry will be adding significantly to the country’s energy security margins”.



New generation will come from a diverse range of sources. Not relying on any one fuel type adds to the strength of the New Zealand electricity system.

1. There is a geothermal renaissance underway in the central North Island, with new renewable power stations totalling over 800 MW under construction or in planning and expected to come on stream in the next four years
2. Wind is becoming increasingly economic, with strong competition among the generators to secure and develop the best wind sites. At least 300 MW is either under construction or in planning and expected to be generating in the next four years
3. At least 200 MW of gas-fired peaking plant is underway and scheduled for the winter of 2010. In addition, a \$200 million gas storage project which will support gas-fired peaking plant is scheduled for operation in 2010
4. A number of generators have options for baseload gas-fired power stations which, if needed, can be developed relatively quickly and are located close to a major load centre. At least two consented sites exist for combined-cycle gas-fired plants
5. A range of either new hydro options or increases in capacity of existing plants of around 50 MW are forecast to come on line by the end of 2012.

Patrick Strange said the level of investment in new generation and transmission reflected that the electricity industry players were responding to the critical need for secure supplies going forward.

Electricity generation costs have risen over the last five years as the market has absorbed rapidly rising natural gas prices as the era of cheap Maui gas comes to an



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end. These higher costs have led to very strong competition among the generators to secure and develop the most economic and effective new generation options.

Taking a longer term perspective shows an even greater range on new generation options.

Over the next seven to 10 years, the Electricity Commission's analysis, based on industry disclosures, shows the number of new projects being developed by generators is, in energy terms, approximately four times the expected growth in demand over that period.

In total, the Electricity Commission lists 6,200 MW of potential new generation capacity. Since that analysis was completed a number of new projects have been announced, making the 6,200 MW figure conservative.

Ends

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Mighty River Power's new 90MW geothermal power station at Kawerau nears completion (photo taken 9 June 2008)

