

## Why the margin matters so much in the New Zealand electricity market

The wholesale price of electricity can be set in two alternative ways: average cost or marginal cost. Until 1984 in New Zealand the rule was average cost – the “Bulk Supply Tariff” which was set by the Government’s monopoly supplier, NZED, to recover all the costs of generating and transmitting electricity, including the costs of investing in new capacity to meet rising demand.

Because the best hydro and geothermal sites had been developed by the end of the 1970s, it was clear in the early 1980s that new generating stations, constructed to add capacity at the margin of the supply system to meet rising demand, would cost more to build and run than the existing ones. This had two clear implications<sup>1</sup>:

- over time, under the state monopoly model, the Bulk Supply Tariff would have to rise to cover the costs of new investments; and
- so long as NZED priced its supply so as to average out the costs of new and existing plant, the Bulk Supply Tariff would be lower than the entry costs of new private-sector firms, which meant that NZED was safe from the entry of independent producers.

In 1984 the New Zealand Treasury embarked on a frontal assault against the NZED model, with three goals in view. First was to make NZED, along with other state enterprises, more profitable, as a means of bringing in more revenue to cut the budget deficit. This, obviously, required an increase in the wholesale price. Second was to focus decision-making on the most “efficient” use of resources, which meant seeking the lowest-cost development projects at the margin of supply. This pointed to a wholesale price set at the marginal cost, not the average cost, of supply. Third was the aspiration to move away from state monopoly towards a competitive market in which private sector generators could enter, enabling the state to shed responsibility for new investment.

The Treasury project was steadily implemented over the following two decades. A wholesale market was designed and built in which the price fluctuates to match short-run demand and supply, matching the marginal unit of generation to the marginal unit of demand. The state monopoly of supply was broken and generation assets were sold off, in whole or in part (the “Mixed Ownership Model”) to private operators. Responsibility for new investment was handed over to players in this market.

Three decades on, the shortcomings of the more-market approach are easy to see. The wholesale price has been driven up not just to the short-run marginal cost of supply but above it, to the tune of billions of dollars. Ownership of the pre-existing stock of low-cost hydro dams has given the new generation companies enormous market power to drive out competition because of their ability to cut prices below the cost of new entry. The downstream integration of generators into retailing has enabled that same market power to be used equally to shut out new retail competitors. The prices charged to final consumers – basically, the markup on wholesale price - have swung radically in favour of commercial and industrial customers and against powerless households, creating a social crisis of energy poverty. Productivity has collapsed as rent-seeking has replaced enterprise. And at the margin of supply, New Zealand remains as exposed as ever to the risk of dry-year shortages.

The margin of wholesale supply, and hence the price of wholesale electricity under the market model, is currently dominated by fossil-fuel-burning generators, the largest of which is the Huntly

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<sup>1</sup> See discussion of these issues in Brian Easton and Phillip Pryke, “The future pricing of electricity”, *NZIER Quarterly Predictions* June 1985 pp.48-51.

station owned by Genesis Energy. The large incumbent generators have a strong vested interest in maintaining this situation.