

## Case for a central market

**Energy consultant Bryan Leyland argues that the focus should be on reforming the 'electricity market' into a centrally coordinated market with a central buyer, not on the privatisation of state-owned generators.**

IN ABOUT 1957, I attended the annual conference of the Electrical Supply Authority Association and have clear memory of Stan Goosman, who was then the Minister for Public Works, announcing a restructuring of the electricity industry.

From then on, he said, the electricity industry would generate 40 percent of the capital needed for new power stations. As a financing model this continued in some way or another until the early 1990s, so it can be said that electricity consumers directly financed (and hence directly owned) 40 percent of the generation and transmission plant built over this very intense period of system development.

Electricity market reforms and de-regulation started in the 1980s when the New Zealand Electricity Department (NZED), a government department, which controlled and operated almost all electricity generation and operated the electricity transmission grid, was corporatised into the state-owned enterprise – the Electricity Corporation of New Zealand (ECNZ). In 1994 Transpower was separated out and created into an SOE. In 1996 the ECNZ was split into two SOEs, ECNZ and Contact Energy, and in 1999 ECNZ was split into three electricity generation SOEs – Mighty River Power, Meridian Energy, and Genesis Power.

When the ECNZ was originally formed in 1987, Treasury estimated the value of the generation and transmission system at about \$13 billion, but it was actually valued at only \$6.3 billion. The reason for doing this was that interest rates were very high at the time and a valuation of \$13 billion would have virtually doubled power prices - if it was, as an SOE, required to provide a rate of return equal to the interest rate. In my opinion, they should have used a realistic valuation and accepted a lower rate of return

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until interest rates returned to a normal region. But they didn't and as a result, the generating plant was effectively sold for \$1000 per kW for a hydro plant, while the thermal and geothermal plants were thrown in for virtually nothing. In comparison, when Transpower was split off in 1999 it was valued at \$1.75 billion, even though an internal assessment by the engineering staff valued it at \$1.25 billion, and Contact Energy (sold in 1999) was valued at much more than \$1000/kW.

### The trouble starts

The market started operating in October 1996 and, for a few years, power prices were reasonably steady and low, due to the fact that the system had considerable spare capacity. By 2001, however, the spare capacity had been used up and there was an electricity shortage that caused very high prices. This happened again in 2003, 2006 and 2008.

As a result of the higher prices that we have seen over the last few years electricity generators have steadily racked up the value of the hydro and other power stations and their present valuation would be between \$300 and \$4000/kW.

Over the same period, a relatively small amount of money was spent on upgrading these stations. These power stations now generate about 6 percent of our energy, so now the unfortunate consumer is now paying for the return on an investment that was, largely, never made, and on plant that they directly paid for. And that is the main reason why electricity is now so expensive.

Now that these generators are putting up prices in advance of building new plant, it has to be asked – would this happen in a truly competitive market? How would you react if you walked into a supermarket one day and saw a notice that said, “We have decided that, in order to serve you better, we need to extend this supermarket. Therefore, we will be raising our prices are five percent in order to pay for it”?

The real problem is that the electricity “market”, although based on ‘marginal’ pricing, is inherently designed to deliver shortages and high prices.

This is because in most markets, a commodity delivered from a modern production plants costs less than one delivered on old and less efficient plant. So pricing everything at the marginal cost generally drives prices downwards and kills off obsolete plant and encourages efficient modern plants.

However, with electricity generation mostly from hydro, the reverse is true. A 50 year-old hydro station is only marginally less efficient than a modern hydro station.

As most of the operating cost consists of capital charges, the real financing cost associated with an old power station is very small indeed. Most hydropower stations have an indefinite life – although the generating plant may need to be replaced completely after 100 years or so, the dam will

probably last into the foreseeable future. So, in reality, depreciation charges should be very low.

So the 'marginal cost market model' has produced enormous windfall profits from the older stations and provided a relatively small amount of money for investing in new stations.

The only way that the generators can make sure they make sufficient money to justify the racked up asset values and the building of new stations is to keep us on the edge of a shortage and, I believe, this is what they have been doing since 1992. Helped, of course, by the Resource Management Act that makes it extremely difficult to build anything but wind farms.

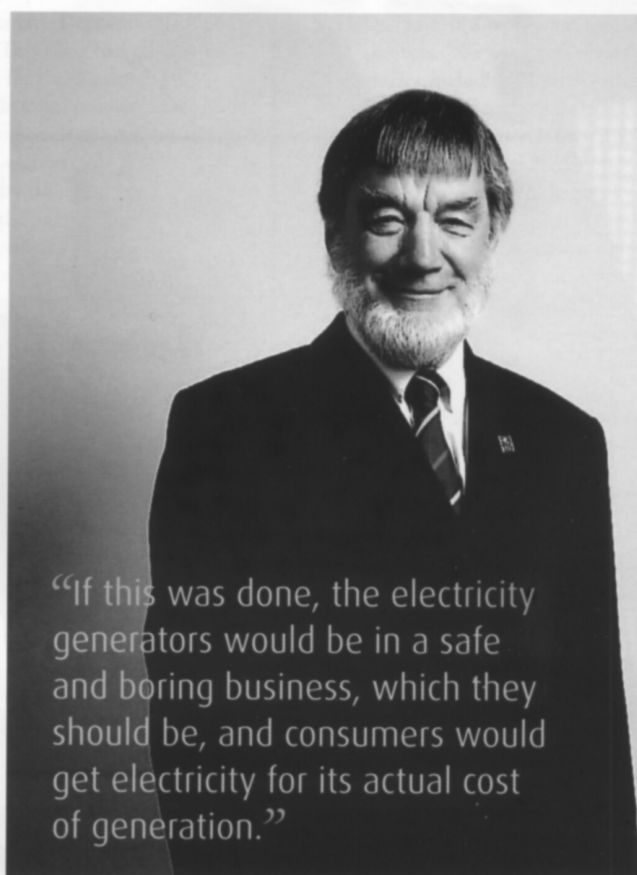
### A solution

In my opinion, the present electricity market is fatally flawed and has proven a failure. One solution – but perhaps not the only one – is to change the market to a centrally coordinated one, with a central buyer who contracts with individual power stations or groups of power stations to provide electricity.

The contract would be designed to give them an adequate return on their investment and to be neutral as to whether they generated a large or small amount of electricity. The central buyer will also contract for reserve capacity. If this was done, the electricity generators would be in a safe and boring business, which they should be, and consumers would get electricity for its actual cost of generation.

If the Wholesale Electricity Market Development Group, who was behind the original reforms, had adopted centrally coordinated market with a central buyer, I believe we would be in a comparatively better situation with lower power prices and fewer shortages.

And, as long as most of the generators are still in government hands, it is still possible to make a change for the better, but once partially privatised, it will become much more difficult and we will be in for more of the same – higher prices and insecure supply. ○



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