Do we need a new electricity market?

On 7 August the New Zealand power system was close to its limits. It had to shed water heating load and resort to emergency generation while prices skyrocketed. The fact that this happened well after the winter peak demand period and when the the lakes in both islands were close to full shows that the market has failed to provide an economic and reliable supply.

We seem to have forgotten that electricity is the lifeblood of the economy: if the price goes up, the economy suffers and if the supply fails, it is a disaster.

New Zealand's electricity market is based on short term trading of kWh. This market is increasing consumer prices because increases in the cost of gas and coal has increased the cost of generation at thermal stations. This higher price is paid to hydro and other lower cost stations and brings windfall profits when it is passed onto the consumer.

A market like ours works where there are a lot of factories producing similar widgets with similar technology and new factories have the lowest production cost. So paying all factories the price bid in by the most expensive factory ensures that newer factories are profitable and encourages the construction of more factories. Electricity is different because the old hydro stations have the lowest cost. There is no alternative to electricity so the generators have a captive market and quickly learn that the way to make money is to keep the system on the edge of a shortage and jack up the price.

A small amount of expensive gas or coal generation pushes up the price paid to all generators. This high price is passed on to consumers so consumers suffer and industry shuts down.

The carbon tax exacerbates the situation. If gas is setting the price then all the generators get the carbon tax boosted price and the unfortunate consumer ends up effectively paying carbon tax on hydropower!

The market results in more wind and solar being built than the system can economically manage while efficient baseload power generation becomes uneconomic and retires from the grid. The price and the frequency of shortages increase. System stability is also at risk: system frequency is more difficult to manage and it is harder to keep the voltage stable.

New Zealand was the first country to adopt an electricity market. Even though the decision makers were advised that, as the Electricity Corporation of New Zealand delivered a reliable and economic supply a change was not needed, they decided to adopt a market and then rejected the option of a single buyer market in favour of a more risky kWh market.

A single buyer market recognises that electricity is the lifeblood of the economy. Its prime objective is to provide a reliable supply at least cost to the consumer. The big advantage of the single buyer is that that new power stations are built and operated as a result of open competition instead of by a centralized and often inflexible monopoly organization.

The ideal single buyer is a non-profit organisation independent of the government. It coordinates the whole system to ensure that the generation mix and the fuel supply held in reserve minimises the cost to the consumer while providing adequate reliability. It must also ensure that there is sufficient inertia and voltage support to keep the system stable.

Organisations in the business of building and operating power stations compete for long-term contracts that reward them for building, operating and maintaining the station. They are recompensed at cost for any fuel they consume and for variable operation and maintenance costs so the amount a station generates does not affect its profits. This means that they don't care if the system operator instructs them to generate or to shut down as required to minimise the cost to the consumer.

The single buyer would sell electricity to distributors using cost reflective tariffs. The distributors would sell electricity to the consumers so there would not be any need for energy traders competing to sell exactly the same product.

Because it adds genuine competition to the ECNZ model we can be confident that it would deliver in line with its objectives. The risk that the single buyer would gold plate the system can be minimised by ensuring that power plans are independently scrutinised.

The single buyer market would incentivise building power stations with a long life, reliable output and low and stable operating costs into the future.

A single buyer would be responsible for managing the transmission system and building new lines. The cost of transmission lines needed for new generators would be factored into the generator tender evaluation.

With a single buyer market consumers are likely to enjoy a substantial reduction in price and certainty of stable prices into the future because the power system would be operated to minimise the overall cost and windfall profits would be eliminated along with the nonsense of consumers effectively paying carbon tax on power generated by hydropower stations.

The existing market has failed us and tampering with it has made it even worse. Other options urgently need to be considered before we further damage our economy, industries, commerce and ordinary people.

We need an independent study that compares the current market with alternative markets to see which is the best at providing a reliable and economic supply. Continuing with the present flawed market will result in rapidly increasing costs as the cost of gas increases together with more frequent shortages and blackouts.

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