



Consultation  
on  
Level Playing Field measures  
Options paper

Submission by Electric Power Optimization Centre  
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## Introduction

The New Zealand wholesale electricity market is regarded by many as uncompetitive. Independent electricity retailers and large industrial consumers can find it difficult to negotiate contracts with electricity producers especially during periods where there is a perceived risk of shortage. These parties cite vertical integration of retail and generation (forming “gentailers”) as being a reason for this difficulty. A level playing field for retailers is sought.

EPOC believes that vertical integration is a secondary concern and should not be given high priority. Contracts will always be priced at a premium when there is a perceived risk of shortage. It is important to establish whether such premia are reasonable and competitive.

### Is vertical integration anti-competitive?

EPOC student Keith Ruddell wrote about vertical integration in his PhD thesis (see [4],[5]). Ruddell identified two effects - short-term and long-term.

**Short-term:** Allaz and Vila's classic paper [1] shows that contracting reduces the incentive of producers to exercise market power. This effect is also reported in other papers including [6]. In [4], Ruddell studies this incentive under vertical integration with uncertain demand. He shows that the situation is identical to contracting (as in [1]) if the gentailer load is statistically independent of overall demand. If the gentailer load is correlated with overall demand (which is more likely to be the case in practice) then the incentive to exercise market power is reduced even more than if contracted. Furthermore, vertical integration tends to make the dispatch more efficient as the quantity risk is covered as well as price risk. In the short term, Rudell concludes that vertical integration is pro-competitive and enhances efficiency.

**Long-term:** Ruddell mentions that vertical integration puts independent retailers and large wholesale energy purchasers at a disadvantage compared with gentailers. This is true even if they hold hedge contracts, since gentailers will face lower risks (being hedged against both volume and price variation). This might discourage entry in the retail market.

### Is the advantage faced by gentailers the cause of high prices?

The main problem faced by independent retailers and large consumers is that they cannot get a reasonably priced super-peak contract (or even base-loaded contract) to cover their risk when needed. In times of surplus generation, hedge contracts are plentiful and inexpensive (as are expectations of wholesale spot prices). When energy is expected to be scarce, gentailers price hedge contracts at a premium, while reserving energy supply for their own retail customers. The retail price faced by consumers builds in a combination of cheaper vertical integration hedging and more expensive contracts.

It is not obvious how separation of retail from generation will make energy more plentiful, so the quantity of energy to be traded forward will remain unchanged. With more retail

competition for hedge contracts, it is likely that all retailers (including ex-gentailers) will pay the current hedge contract premium, putting upward pressure on retail prices.

### **Implementing level playing field measures**

It is proposed that gentailers offer independent retailers hedge contracts on the same terms that they offer their own retail arm. It is not clear exactly how these terms are to be monitored. For example, a gentailer could contract at a very high price with their retail arm, but since seller and buyer have a common owner this contract will make no difference to gentailer total earnings. The same is true for any stated internal transfer prices.

Each gentailer might be monitored to ensure that their retail arm acts profitably under the stated contract terms, offered to independent retailers. This would be a defacto separation of retail from the gentailer. Since this increases quantity risk, outcomes (assuming perfectly competitive agents) would be less efficient, and are likely to lead to higher spot and retail prices. It is not clear if this is the case with imperfect competition: the hope is that gains from increased retail competition might alleviate these effects.

### **Monitor contract prices**

Independent retailers and large consumers should be able to purchase hedge contracts at competitive prices. The call for level playing field measures is motivated by observed premia in peak-load contracts, some at prices well above the long-run marginal cost of new entry. If these premia arise mainly because of external risks (e.g. low gas availability, dry winter forecasts, generator and transmission outage forecasts) then these should be identified. These risks will not disappear with a level playing field. Notwithstanding, through some form of monitoring it is important to identify the extent that these risks contribute to market premia to identify whether market power is also a cause.

Monitoring contract prices using competitive benchmarks should be a priority of the Electricity Authority. Mellor (see [3]) used an early version of EPOC's JADE model to investigate what he called the February effect (i.e. large hedge contract price premia compared with expected spot prices) These premia are well documented in other reports (see e.g. [2]). In his project report, Mellor studied prices in 2012, and found JADE expected future average price for 2012 was \$55/MWh, while the base-load contract price in February was \$88/MWh.

There is further evidence that these premia arise from market power rather than risk aversion only. For an explanation, see [6]. One also often sees ex-post average prices much lower than contract prices and sometimes generator offer curves remain below marginal cost up to contract quantities, an effect that is strategic (In a perfectly competitive market, contracting should not affect offer behaviour (even when agents are risk averse<sup>1</sup>).

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<sup>1</sup> Risk averse agents that offer supply functions (under ex-post optimality) seek quantities and prices to optimize their profit in each demand shock realization and so risk attitude will not change this outcome. The situation is

## Conclusions

EPOC is not in favour of the level-playing field measures proposed in the Options paper. The measures appear to be a set of rules that (by design or accident) will remove any risk and efficiency advantages of vertical integration for gentailers, leading to voluntary separation. We claim that this will be inefficient and anti-competitive in the short term. The case for improvements in long-term dynamic efficiency is not obvious. To assist in the growth of a liquid and competitive hedge market, the Electricity Authority should monitor hedge prices using perfectly competitive benchmarks, and litigate the exercise of market power when it can be shown to have contributed to price premia.

## References

- [1] Allaz, B. and Vila, J.L., 1993. Cournot competition, forward markets and efficiency. *Journal of Economic theory*, 59(1), pp.1-16.
- [2] Energy Link, 2014. *Spot Price Volatility and Premiums in the Futures Market*.
- [3] Philpott, A., Kapelevich, L. and Mellor, H., 2016. Recent advances in DOASA, EPOC Winter Workshop, <https://www.epoc.org.nz/ww2016.html>.
- [4] Ruddell, K., 2016. Vertical Integration and Market Power. EPOC Winter Workshop, <https://www.epoc.org.nz/ww2016.html>.
- [5] Ruddell, K., 2017. Supply Function Equilibrium in Electricity Markets, PhD thesis, University of Auckland.
- [6] Ruddell, K., Downward, A. and Philpott, A., 2018. Market power and forward prices. *Economics Letters*, 166, pp.6-9.

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more complicated in settings where ex-ante optimality is required (e.g. with transmission constraints) and the probability distribution of the demand shock (and risk preferences) then affect the optimal supply function.