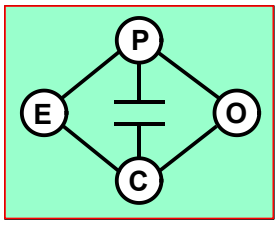

Level Playing Field measures

Consultation paper

Submission by Electric Power Optimization Centre

The University of Auckland

This document was prepared by

Professor Andy Philpott

https://www.epoc.org.nz

December 2, 2025

Executive Summary

This document is a response to the call for submissions on the Electricity Authority Consultation paper "Level playing field measures" published on October 14, 2025.

In a previous submission[1] we outlined reasons why vertical integration of electricity generation and retail was welfare enhancing, and argued against the introduction of level playing field measures (LPFs) as proposed. We do not relitigate these arguments in this document, but our feedback draws on the theoretical discussion that was included in our previous submission.

The current consultation document seeks feedback on a preferred approach to LPF measures called "Retail price consistency assessment" (RPCA).

The motivation for RPCA is to provide transparency on the calculation of gentailer retail prices to ensure that these are not based on an unjustifiably low cost of supply. This is preferable to the previous proposals that required the more onerous specification of internal hedge portfolios for gentailers.

The extent to which the RCPA improves welfare depends on how it is defined. We contend that in perfectly competitive, risk averse settings, gentailer retail prices can rationally be chosen to be lower than those of independent retailers. If the RPCA can disincentivize gentailers from selling at even lower retail prices with the intention of reducing competition in the retail market then this would be beneficial. Identifying when this is happening is not straightforward.

In perfect competition, a gentailer maximizing profit should not set retail prices so low that they miss opportunities to sell at higher prices (albeit with risk) in the hedge market. The RCPA should then compare risk adjusted prices in the hedge market with retail prices.

Our response in this submission focuses on RCPA and addresses only Q11-Q16 of the consultation paper with short answers. The grounds for these answers are explored in more detail in an appendix to this submission.

[1] Consultation on Level Playing Field measures Options paper, Submission by Electric Power Optimization Centre, The University of Auckland, April 23, 2025

Retail price consistency assessment	
Q11. Do you agree that by providing transparency on margins, the RPCA would materially improve stakeholders' confidence that retailers compete on a LPF for the long-term benefit of consumers? If not, why? Can you share any evidence that supports your view? How could we adjust the test to further improve confidence?	We would support an RCPA that provides transparency on a gentailer's calculation of retail prices in terms of their cost of supply. Margin transparency should be defined in terms of the risk-adjusted return on retail sales in comparison with the risk-adjusted return on other market products.
Q12. What impact do you think the RPCA will have on retail prices and incentives to invest in generation? How does this compare to the impacts you posited in response in the LPF Options paper? Can you share any evidence that supports your view?	If the RPCA does not identify any predatory pricing by gentailers then the effect on retail prices and generation investment will be negligible. The assumption of lower retail prices in the cost benefit analysis of the consultation paper is predicated on establishing the existence of such predatory pricing, and preventing it to encourage more retail competition.
Q13. How could the proposed approach to the RPCA be improved?	The RPCA needs a clearer definition. As argued in the appendix, the risk attitude of the gentailer is a key parameter in determining retail prices. This needs to be identified to implement a robust RCPA. One option is for each gentailer to provide the Authority with a (confidential) description of their current retail pricing methodology that incorporates their risk attitude.
Q14. How often should gentailers make and disclose their assessment – should it be more or less frequent than every six months, and why?	One might imagine gentailers providing the Authority their current retail pricing methodology at the beginning of each year and the regulator then applying this every time that retail prices change.
Q15. Would it be sufficient for the Authority to provide gentailers with guidance on the methodology for the RPCA or should it be prescribed in the Code, and why?	Each gentailer will have a different risk attitude and operating procedures. These cannot easily be prescribed for all gentailers in the Code.
Q16. If you do not support the RPCA approach, what would you propose instead to demonstrate compliance with non-discrimination principles?	We do not believe that retail price discrimination by gentailers has been demonstrated to be a problem that urgently needs addressing. The cost of intervention using a generally applied RCPA seems to be high compared to the perceived welfare benefits of this that we believe have not been rigorously identified.

Appendix: Discussion on Retail Price Consistency Acceptance (RPCA)

RPCA is defined in terms of expected energy cost. Some guidance for expected energy cost is provided in Authority documents[2] as

"A wholesale energy cost of supply benchmark ($/MWh) based on market prices (preferably observable to all parties):

- starting point for wholesale energy cost: market observed prices of risk management contracts (OTC/ASX)
- the cost of which is adjusted to account for the differences between the portfolio's shape and the shape of customers' demand
- for an appropriate duration

the key benchmark input cost for which we are seeking to ensure that gentailers are not discriminating between their own retail functions and other retailers.*"*

Preventing discrimination through regulation is problematic. Gentailers enjoy advantages from reduced risk that independent retailers do not. In simplified models (assuming perfect competition) they should make more return per customer than independent retailers because they can hedge risks more effectively. This means that they can offer lower retail prices than independent retailers, ceteris paribus.

When markets are imperfectly competitive, supply-function equilibrium models[3] show that vertical integration is pro-competitive in comparison with vertical separation when retail demand is correlated with system demand. This implies that preventing price discrimination from vertical integration in such a setting may reduce welfare.

The problem that RPCA is intended to address is gentailers selling at retail prices that are predatory, in other words lower than can be justified by risk-adjusted optimization, in order to reduce the profitability of independent retailers, who might be discouraged from entering or continuing to operate in the market. If it is to be introduced at all, then RPCA needs to be designed to identify these circumstances.

We can identify the appropriate design of RCPA under varying assumptions about market conditions. We look at three cases, perfect competition with risk neutrality, perfect competition with risk aversion and imperfect competition.

Perfect competition with risk neutral agents

If markets are perfectly competitive and agents are risk neutral then economic dispatch and system marginal prices are socially optimal. A risk-neutral generator in such a system would be indifferent between being paid the (random) wholesale price in each trading period and its expected value. Similarly, a risk-neutral load in such a system would be indifferent between

---

[2] Level playing field – Agenda and briefing document for 9 December 2025 workshop to develop retail price consistency assessment guidance

[3] Consultation on Level Playing Field measures Options paper, Submission by Electric Power Optimization Centre, The University of Auckland, April 23, 2025

paying the (random) wholesale price in each trading period and its expected value. No hedge contracts would be traded in such a market, since risk is irrelevant.

If we ignore retail mark-ups and fixed costs then the minimum price that a retailer could charge a fixed-price variable volume customer would be their load-weighted average price (LWAP). Different customers should then receive different fixed prices depending on their load profile. Even in the absence of vertical integration there is (justifiable) discrimination between retail customers.

Perfect competition with risk averse agents

If markets are perfectly competitive and agents are risk averse, and if we assume that all uncertainty is resolved in the short term, then we still have socially optimal economic dispatch and optimal system marginal prices. A risk-averse (perfectly competitive) generator still offers at its marginal cost. It could also choose to write a contract for differences (CfD) for expected load or to vertically integrate with a load selling at retail price R. These strategies have different risks.

Consider a simple example with known load L(t) equal to generation in each trading period, say t = 1,2,...,T. Then meeting all load exactly from generation gives a return to a gentailer equal to $R^*\sum_t(\mathrm{L(t)}$ with no risk. In contrast the generator could sell all power on the wholesale market and sell a CfD of Q at contract price f. This is what they would do if not vertically integrated. This strategy would pay the generator L(t)P(t) + Q(f-P(t)) in each period, which involves risk unless L(t)=Q is constant[4].

We can estimate a risk-adjusted valuation of this return using the gentailer's risk measure r(Z) and compare it to the risk-free payment $R\sum_t(\mathrm{L(t)})$ they would receive from vertically integrated load. The non-discriminatory retail price R^* is then

$$R^* = \frac{r(\sum_t(\mathrm{L(t)P(t)} + \mathrm{Q(f-P(t))}))}{\sum_t \mathrm{L(t)}}. \qquad (1)$$

R^* is the price at which a gentailer would be indifferent between selling generation to its retail customer and selling generation at the spot price along with Q hedge contracts[5] at price f, and so it is in a sense a consistent retail price. If the gentailer's observed retail price is below R^*, then (1) shows that they are receiving less from their retail customers than they would (in risk-adjusted expectation) by selling to an independent retailer with the same load, but who contracts for Q at price f. In this instance, R^* depends on the risk measure r of the gentailer.

Using (1) as a RPCA indicator is not straightforward. It is not clear how the risk measure r might be measured or litigated by the regulator. This would be particularly difficult in a more realistic setting with more customers and more financial instruments.

Imperfect competition with risk neutral agents

If markets are imperfectly competitive and agents are risk neutral, then one can study price formation under different models of agent behaviour. The most popular are Cournot models and supply-function models. As mentioned in our previous submission, vertical integration under a supply-function model increases welfare (compared with contracting) in the short term when

[4] A more complicated analysis would choose a shaped hedge in the form of Q(t), which would lessen risk without eliminating it unless L(t) is known when the hedge is traded.

[5] The gentailer could choose an optimal Q by maximizing the numerator of (1), the solution of which will depend on the risk measure r.

gentailer demand is correlated with system demand. The increase in welfare accrues to the gentailer and the consumer (who enjoys a lower retail price). The benefits of vertical integration come from joint asset ownership.

How might RPCA be implemented in practice?

Gentailers enjoy advantages in setting retail prices that independent retailers do not. In simplified models (assuming perfect competition) they should make more return per customer than independent retailers because they can hedge risks more effectively. This means that they can offer lower retail prices than independent retailers, ceteris paribus.

The intent of the RPCA is to prevent gentailers selling at retail prices that are predatory, in other words lower than can be justified by risk-adjusted optimization, in order to prevent entry or profitability of independent retailers. To determine if this is the case it appears as if the Authority must have a measure of the risk attitude of the gentailer in order to apply an analysis similar to equation (1). Alternatively, in order to avoid estimating risk aversion, the Authority could require each gentailer to provide them (at the beginning of each year) a (confidential) description of their current retail pricing methodology that incorporates their risk attitude. This could be used to compare observed gentailer retail prices with the supplied methodology as a test of retail price consistency.