Economic Analysis of the Electricity Authority's Proposed Level Playing Field Measures

Report prepared for Genesis Energy Ltd

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Executive summary

The Electricity Authority (the Authority) is seeking feedback on an approach to Level Playing Field measures as proposed by the Energy Competition Task Force (Task Force) in September 2024 (Electricity Authority, 2025).

The measures are intended to address what the Authority perceives as competition risks in the market for peak hedge contracts arising from control of the New Zealand's flexible generation base by four vertically integrated generator retailers (gentailers). The gentailer with the highest market share of the retail market is Mercury Energy with 25 per cent. Meridian Energy has the highest market share of generation supply at 31 per cent.

The Authority sees current liquidity and pricing concerns in flexibility contracts as symptomatic of competition risks and lays the blame on vertical integration within the New Zealand electricity market. However, the Authority provides no quantitative or qualitative analysis that vertical integration is the root cause of insufficient peak hedge contracts being made available for competing retailers and generators.

It is the case in New Zealand that since the impacts of the net zero carbon emissions target on electrification were being released investment plans and resource consenting for increased capacity have been slow to catch up. It has become a particularly acute problem for flexible generation because of low investment in peak gas fired generation. As a result, it remains hard for all participants to precisely match generation shape with load shape or to provide hedge cover to parties without their own flexible generation.

The hedging that has taken place has been on the OTC market. The Authority has led an initiative to get a more standardised flexibility product traded and has created a flexibility hedge products dashboard to increase transparency of hedge disclosure data. The OTC market continues to be where the bulk of arms-length hedge contracts between generators and retailers (integrated or otherwise) are undertaken:

- the volume of currently active hedge contracts in the OTC market (at 108,262 GWh) is close to 7 times the volume of open interest in the futures market (at 15,554 GWh).
- The contract volume shown in the OTC market would be greater by 5,000 GWh per annum (i.e. 1250 GWh per quarter) if the Tiwai smelter load was included.
- These figures do not include retail hedges other than where parties have entered into arm's length transaction to cover some of their retail load.
- MBIE statistic show that ~33 per cent of total annual load (39,135 GWh in 2023) is retail load (13,238 GWh in 2023).

The volume of hedge contracts available (via the OTC and futures market) show that vertical integration is not the main factor impeding supply of peak hedge contracts.

The Authority expresses concern that the vertically integrated generator-retailers may raise rivals costs by raising hedge costs or refusing supply to independent retailers and to independent generators. For a vertically integrated to foreclose a rival in a manner that would harm competition and consumers requires it to have the ability and incentive to do so. None of these conditions are met in the New

Zealand electricity market. No single gentailer acting unilaterally has sufficient market power to deny a rival access to a hedge backed by flexible generation because flexible generation is owned by four competing entities. Nor could any gentailer expect to subsequently recover the loss of a profitable sale.

The Authority has previously recognised that OTC super-peak hedge prices will trade at a *substantial unquantified premium over ASX baseload prices adjusted for shape*. However, it was not able to determine the efficient level of such a premium or whether observed prices exceeded that efficient level (Electricity Authority, 2024).

The Authority acknowledges that the evidence points to fuel or capacity scarcity often being the driver behind the current thin and illiquid market for shaped hedge cover. Yet it proposes no measures to address the physical state of fuel or capacity scarcity.

Instead, its proposals will damage incentives to invest and maintain sources of flexible generation by significantly increasing regulatory uncertainty. It proposes a predetermined roadmap of escalating interventions without assessing whether the long-term benefit to consumers from each step will exceed the long-term costs to consumers.

The Authority glosses over the benefits vertical integration bring to the market. Vertical integration creates revenue stability whereby the price and volume risk to the generator and the retailer are matched to some degree. This reduces credit and recontacting risk. It also creates an incentive for gentailers to offer competitively to ensure dispatch. This is why vertical integration is the prevailing organisational form in most electricity markets and the source of the bulk of new investment in generation. The Authority would remove this established means of managing risk when alternative mechanisms of risk management are under-developed or costly.

The Authority seeks a level playing field i.e., products such as peak hedge contracts made available by gentailers on substantially the same terms as gentailers supply themselves internally. This contention by the Authority seems to misconstrue the dynamics of competition, would run counter to the well-established parameters for a competitive level playing field, and would result in a less efficient allocation of scarce resources.

The Authority's notion of even-handed appears to give little to no weight to the intangible factors which mean vertical integration is an efficient means of managing risks of investing in and maintaining long-lived flexible generation assets. Ignoring these factors would result in the Authority's non-discrimination rules biasing the market in favour of entities that do not make and maintain investments in long-lived assets; a bias which would unambiguously not be in the long-term interests of consumers.

The flexibility within gentailers' physical portfolios is currently at work supporting pricing to their retail consumers. If gentailers were forced to release some of the earmarked fuel or flexible capacity to independent retailers, in the absence of more physical flexibility becoming available, the risk is that gentailers retail prices would go up to account for their increased risk. But the regulatory risk goes beyond that.

It is also important to distinguish *competition* from *competitors*. Effective competition is entirely consistent with the demise of individual competitors. As competitors vie to offer consumers better

products at cheaper prices and to adopt the most cost-effective means of delivery, individual firms may adopt different strategies. Some will succeed and others will fail.

Under the Authority's proposal, it expects to see a fundament change in how scarce flexible generation resources are allocated in the market. The Authority would require suppliers of flexible generation to shift from a *price* allocation method to a *quantity* allocation method for available hedge capacity.

A move by the Authority to favour a quantity allocation method of a scarce resource is perplexing. The policy shift runs counter to established literature on the design of efficient markets. The Authority appears not to have turned its mind to the distortions to the efficient operation of the market (one of its statutory objectives) that would be introduced by its proposed rule. This apparent lack of analysis is surprising, as a matter of economic analysis, and because the Authority is required by the Office of Minister for Energy 2024) to have regard to "the benefits that accurate price signals and decentralised risk management provide in promoting efficient reliability and security of supply."

By unnecessarily increasing regulatory uncertainty, the Authority is embarking on a path that conflicts with the regulatory version of the old Hippocratic oath; first do no harm.

1. Introduction

The Electricity Authority (the Authority) released its Level Playing Field measures: Options Paper (Options Paper) on 27 February 2025. Genesis Energy asked us to undertake an economic analysis to critically assess the paper.

1.1 The Authority's has identified several concerns

The Authority is concerned non-integrated generators and retailers may be hindered in competing with integrated generators and retailers (Gentailers) (Electricity Authority, 2025, para 1.4). The Authority identifies several factors which it considers support its view competition may be hindered. These factors include:

- The market share of small-and-medium-sized retailers stagnating from 2021, after a 10-year plus period of growth (Electricity Authority, 2025, para 3.13).
- The four largest retailers (Mercury, Gensis, Contact and Meridian) sustaining their retail market shares, supplying in aggregate around 85 per cent of the residential retail electricity market (Electricity Authority, 2025, para 3.13, Figure 2).
- These same four firms also produce around 85 per cent of total electricity generation (Electricity Authority, 2025, para 3.14; Figure 3).
- A rapid increase in the gap between the forward curve derived from ASX hedge prices and the cost of new baseload generation from around 2021; with this gap projected to reduce materially, but not be eliminated, in the years to 2027 (Electricity Authority, 2025, para 3.41, Figure 4).

The Authority highlights these concerns against a backdrop of a market which it considers:

- Exhibits increasing wholesale market price volatility (Electricity Authority, 2025, para 2.10).
- A tightening supply of hedge contracts backed by flexible generation resources (Authority, 2025, para 3.32a) in its Reviewing risk management issues paper the Authority found that "The evidence points to fuel or capacity scarcity often being the driver behind the current thin and illiquid market for shaped hedge cover" (Electricity Authority, 2024).

1.2 The problem as perceived by the Authority

The Authority considers (Electricity Authority, 2025, para 3.22, footnote 19):

> Competition can be harmed where a vertically integrated firm, **with at least some degree of market power** in one of the markets in which it operates, can leverage its position at one level of the supply chain to benefit its operations at another level of the supply chain. (emphasis added)
>
> Conversely, vertical integration would generally not be expected to lead to competition concerns where it is not combined with market power.

The Authority considers the key risks to competition arising from vertical integration of generators and retailers are (Electricity Authority, 2025, para 3.23):

- **Reduced liquidity** in hedge products—non-integrated retailers or generators are less able to hedge their demand or output and pay a premium to do so).
- **Input foreclosure**—raising the cost of hedges, or refusing to supply hedge products, to independent retailers so as to favour the gentailer's own retail business.
- **Customer foreclosure**—reducing the ability of non-integrated generators to sell their output to retailers by refusing to provide firming contracts for those generators.
- **Lack of transparency**—difficulties in comparing the performance of firms and whether a gentailer is favouring its own retail business over non-integrated retailers.

1.3 The Authority's proposed solution

The Authority considers it should address these perceived risks of vertical integration by requiring gentailers (or at least the four largest generator-retailers) to provide non-integrated generators and retailers access to hedge products on substantially the same terms as provided to its internal operations. It is this like-for-like concept which the Authority refers to in the title of its report, and throughout the report, as a "level playing field".

The Authority proposes three-steps of escalating interventions:

Step 1, the Authority would introduce principles-based non-discrimination obligations for gentailers into the Code (paragraph 6.19). These obligations would apply to all hedge contracts (and equivalent financial instruments).

Step 2, the Authority would introduce more detailed (prescriptive) rules governing gentailers' interaction with buyers of hedge products (paragraph 6.25). These more prescriptive rules would remove (or at least substantially reduce) the discretion under principles-based rules of step 1. These more prescriptive rules could include key access terms and detailed regulatory accounting requirements.

Step 3, the Authority would require gentailers to sell and purchase all their hedging via a market platform (paragraph 6.29). This step would effectively prevent gentailers from internally hedging and require them to hedge (sell and buy) through a market mechanism.

If it implements step 1, the Authority would continue working on steps 2 and 3 so they could be implemented relatively quickly (Authority, 2025, para 6.5). These escalations would be implemented if the Authority considers "the risk of competition issues persist" (Authority, 2025, para 6.3).

1.4 Are the problems as described by the Authority and will its proposal improve outcomes for consumers?

In the following sections we consider whether the foundations of the Authority's problem definition are sound and whether its proposed solutions can be expected to lead to better or worse outcomes

for consumers. We follow the order in which the Authority introduces its perceived risks, addressing liquidity and then the risk of foreclosure.

2. Is vertical integration impeding liquidity

2.1 Flexible generation to support hedges is declining relative to demand

As the Authority observes, hedge contracts matter. Hedge contracts "support the financial viability of new and independent retailers and generators in the electricity sector" (Authority, 2025, p. 2). We would reinforce the Authority's observation by adding that these contracts are also important for existing retailers and generators. However, the availability of flexible, or shaped, hedge products is limited by flexible generation capacity, and the security of its fuel supply, necessary to support those contracts.

Under-writing a contract of any length relies on there being suitable generation capacity for the shape of the contract, and fuel. Before making a contract offer, generators must decide whether their generation portfolio has the capacity to fulfil it, and how large are any associated risks (e.g., fuel and outages), as these will affect the price they offer.

To put the availability of standardised flexibility products into perspective we need to account for the fact that a) liquidity in flexibility products is limited by the amount of fuel and peaking capacity available and b) that flexibility is being put to use and reflected in retail prices by the main owners of the flexibility; that is, gentailers. Demand for, and the constraint of supply of, peaking capacity has emerged recently as an issue after many years of a focus on energy reliability resulting from the dominance of hydro in our system.

Designers of the New Zealand electricity market and market participants did not need to be concerned about peak demand for the first decade and a half of the New Zealand wholesale electricity market, from 1996 to about 2015. Peak demand was not a concern because we had 3,000MW of highly flexible hydro generation capacity (able to supply nearly half the system peak demand in the late 2000's), plus a decent amount of gas and coal-fired generation.

These legacy assets meant that when the task of scheduling generation plant to meet demand shifted to the market[1] in 1996, there was sufficient generation capacity within the system to meet peak demand. The market design effort could concentrate on how to achieve the most efficient use of that existing capacity.[2] New Zealand's electricity reliability concerns then centred on whether the available generating capacity could produce sufficient energy over time to meet demand; we were energy constrained.

[1] From being an internal management decision by the former monopoly ECNZ, to 'least cost' dispatch based on competing offers to supply.

[2] The New Zealand wholesale market was the first electricity market globally to dispatch generation based on price offers and to solve simultaneously for both energy and short-term reserves. In testimony to the New Zealand Commerce Commission in 2002, Professor Bill Hogan of Kennedy School of Government at Harvard University described the rules of the market at that time as "at the forefront of best practice" (Kieran Murray et al., 2009, p. 12).

By contrast, designers of electricity markets in the United States, Europe, and Australia were concerned with whether sufficient generating capacity would be in the market at the instant the system reached its peak demand. These markets are capacity constrained. In these markets, some generating capacity, invariably thermal generation, is maintained to be used for only a small fraction of the hours during a typical year.

The Authority's Options paper underplays, if not ignores, the reality that there has not been enough new investment in supply (peaking generation, BESS and demand side response) that would underpin more flexibility contracts. Babu Bahirathan, the outgoing Chief Executive of Nova Energy makes the observation simply (Milne, 2025):

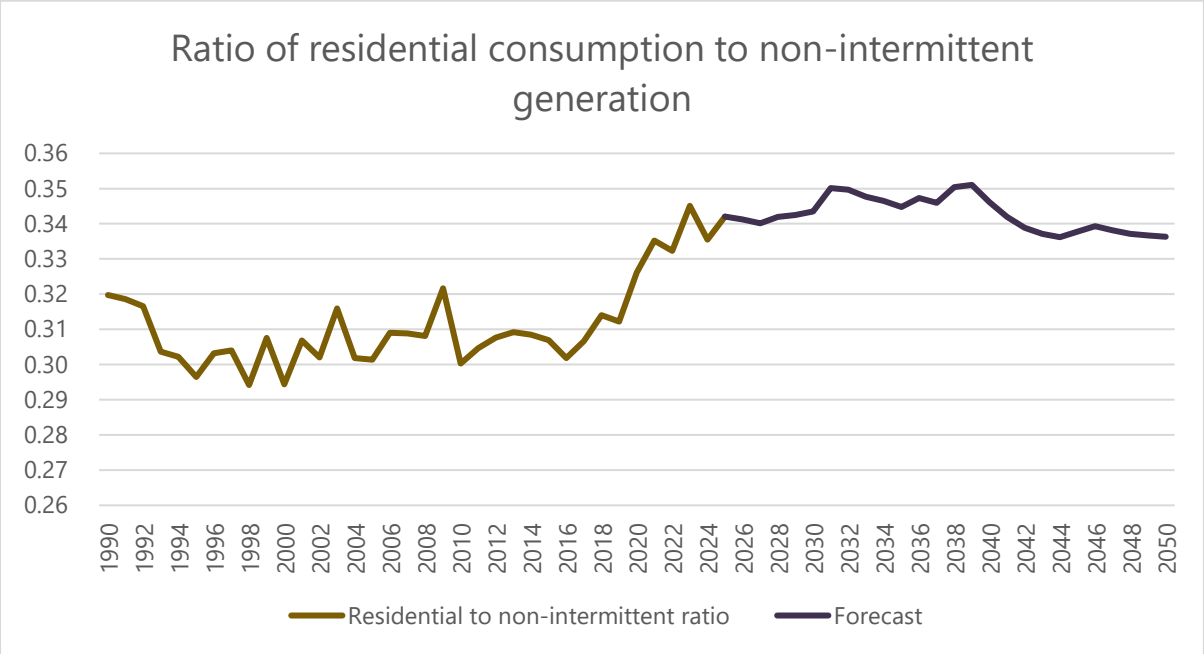
> "We are desperately short of kilowatt hours for the grid, right? Splitting the guys who can actually fund it the most, and creating turmoil for two to three years, ain't going to put another extra electron on the Grid."

The primary issue facing the market today is that the amount of flexible generation available to underpin flexibility contracts is declining as a proportion of total generation.

Figure 1, shows that residential consumption has increased significantly relative to non-intermittent generation since 2020 and is forecast to plateau until 2050.[3]

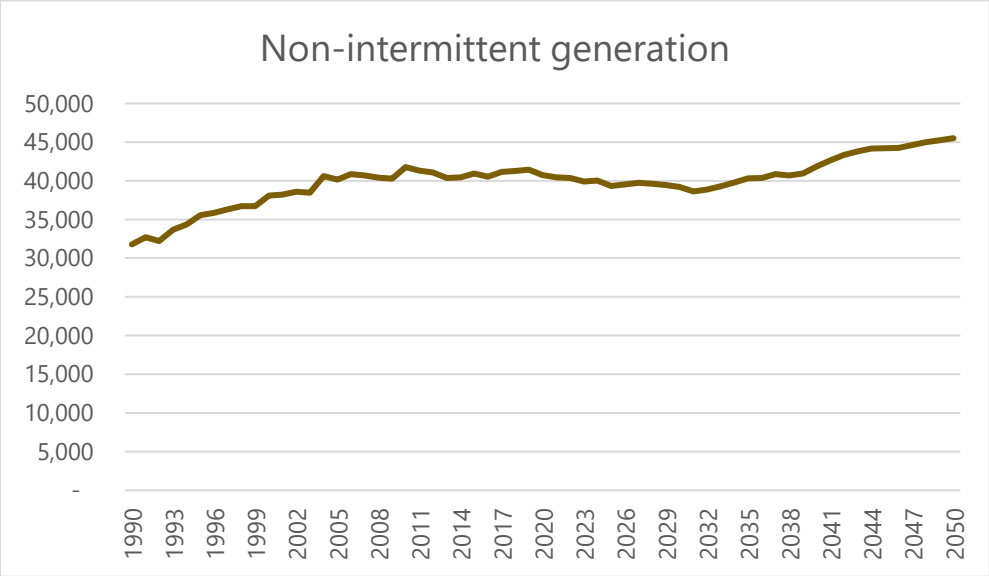
[3] According to the MBIE "reference" scenario (Ministry of Business, Innovation and Employment, 2024).

Figure 1: Ratio of residential consumption to non-intermittent generation



In absolute terms, non-intermittent generation is expected to decline until 2030, when increased geothermal is projected to offset the decline in gas generation. However, geothermal generation is baseload and doesn't lend itself to providing shaped hedge cover.

Figure 2: Non-intermittent generation



These observable changes in the physical characteristics of generation capacity relative to demand have fundamental implications for the Authority's work:

- Something is (or has) damaged incentives to maintain and invest in flexible generation capacity relative to demand; that problem cannot be vertical integration because as the Authority observes, vertically integrated Gentailers are the entities that have invested in and maintained flexible generation (Electricity Authority, 2025, p. 2).

- Any intervention by the Authority that further damages incentives to maintain and invest in flexible generation will result in long-term detriments to consumers, and these detriments may be severe (as illustrated by the events of 10 May 2024[4]).
- Efficient operation of the market will be impacted by how the increasingly scarce flexible generation is allocated amongst competing demands—the Authority's proposal would intervene to substitute a price allocation mechanism with a quantity allocation mechanism.

As discussed below, uncertainly caused by poorly conceived regulatory proposals has been a major factor undermining needed investment, and this uncertainly will be compounded by the Authority's proposals. It's proposed substitution of proportionate allocation mechanisms for price mechanisms for the allocation of increasingly scarce flexible generation will unambiguously be economically inefficient.

2.2 Gentailers already face strong incentives to hedge externally

The Authority refers to the concept of a "natural hedge", from the gentailers' point of view (Authority, 2025, para 3.30) as:

> [T]he ability of their retail arms to have first call on the flexible generation operated by their generation arms

As

Figure 1 and Figure 2 show:

1. This natural hedge cover has declined significantly in the past 5 years.
2. The availability of natural hedge cover will at best stay the same and at worst decline given that planned new generation is less flexible than the replacement geothermal generation.

Vertical integration does not remove the need for integrated generator retailers to sell and buy hedges, and hence support liquidity. Not all gentailers are the same. Their customers have different

[4] Transpower warning notice of 9 May 2024 at 10:51, warning that there may not be sufficient generation and reserve offers to meet demand and N-1 security.

demand profiles and their generation portfolios are diverse. Let us consider the types of generation offered in New Zealand:

- baseload: largely geothermal – output is constant
- intermittent: wind and solar
- limited ability to control: generation at an industrial site
- run of river – little ability to control and varies according to precipitation in previous time periods
- intraday – hydro which can be controlled to the extent that the demand portfolio can be followed
- strategic – Gas fired and coal powered generation; Waitaki scheme.

The following table shows our assessment of each gentailer's share of the generation base:

Table 1: Share of generation base of each gentailer

Row Labels	Contact Energy	Genesis Energy	Mercury	Meridian Energy	Nova	Grand Total
Baseload	535		256			**791**
Interday	752	545	1084	212		**2593**
Intermittent		8	351	416		**775**
Limited		76			34	**110**
RoR		139				**139**
Strategic	585	1400		865	102	**2952**
Grand Total	**1872**	**2168**	**1691**	**1493**	**136**	**7360**

For the purposes of managing exposure to peak prices with generation, the interday and the strategic assets are principally relevant.

Interday flexibility can help to conform the generation shape with the customer profile. However interday flexibility does not remove exposure to seasonal risk, and if the gentailer is short on generation the exposure of part of the customer base is still there.

The strategic assets on the other hand can help deal with seasonal risk. Where generators have an ability to store fuel (water), the fuel can run out so that the ability to manage risk has a time limit.

The coal units at Huntly are the best asset for dealing with the seasonal risk but are less useful for dealing with sudden price spikes because of ramp-up times.

The open-cycle gas turbines can deal with seasonal and short-term risks. However, there is still a residual risk that gas supply is not available.

Because of this diversity, gentailers will seek to cover their risk in ways that are open to independent retailers. For example:

- contract a risk-product with another gentailer
- use the advantage of a large balance sheet to ride out temporary price spikes
- structure contracts to customers to smooth load (e.g. peak pricing)
- contract with customers who have consistent, level load patterns
- contract with customers who can interrupt load when prices peak.

2.3 Access to flexible generation in New Zealand

The issue of liquidity for products that provide flexible cover was a central feature of MDAG's 2023 **Price discovery in a renewables-based electricity system** paper, the Authority's 2024 **Risk management options for electricity retailers paper**, the joint Commerce Commission and Authority's **Energy Competition Task Force** following the events of August 2024, the Authority's

initiative to encourage liquidity in a standardised super-peak hedge contract in early 2025 and the subject of this consultation.

The Authority says in its Risk management options paper (Electricity Authority, 2025,, para 3.39):

> The evidence points to fuel or capacity scarcity often being the driver behind the current thin and illiquid market for shaped hedge cover.
>
> and
>
> While the evidence points to scarcity, it did not definitively show why some gentailers sometimes elected not to respond to requests for proposals for shaped hedges, or why some gentailers provided non-conforming responses.

The Authority says in this consultation (Electricity Authority, 2025, para 3.34; Electricity Authority, 2024, para. 2.8):

> As acknowledged in the Risk Management Review, some concerns we have raised have both a scarcity and a competition risk component to them, and it has been difficult to draw an exact line between the two.
>
> and
>
> We found no evidence to suggest that there is any discrimination in the pricing of contracts. Prices traded with other participant types (eg, other gentailers) fall within the range of prices traded with NIRs. While some of these prices offered to other customer types are towards the lower end of the range, there are justifiable reasons for this (such as contract duration, or a flatter and more predictable load profile for FPVV contracts, or the industrial customer being able to provide demand response).

2.4 Testing liquidity in the hedge market

Often liquidity in the electricity hedge market focuses on traded volumes and open interest in NZ Electricity Futures traded on NZX. No information is available on the volumes or open interest attributed to speculators or market-makers but those figures overstate the hedge component (while aiding liquidity).

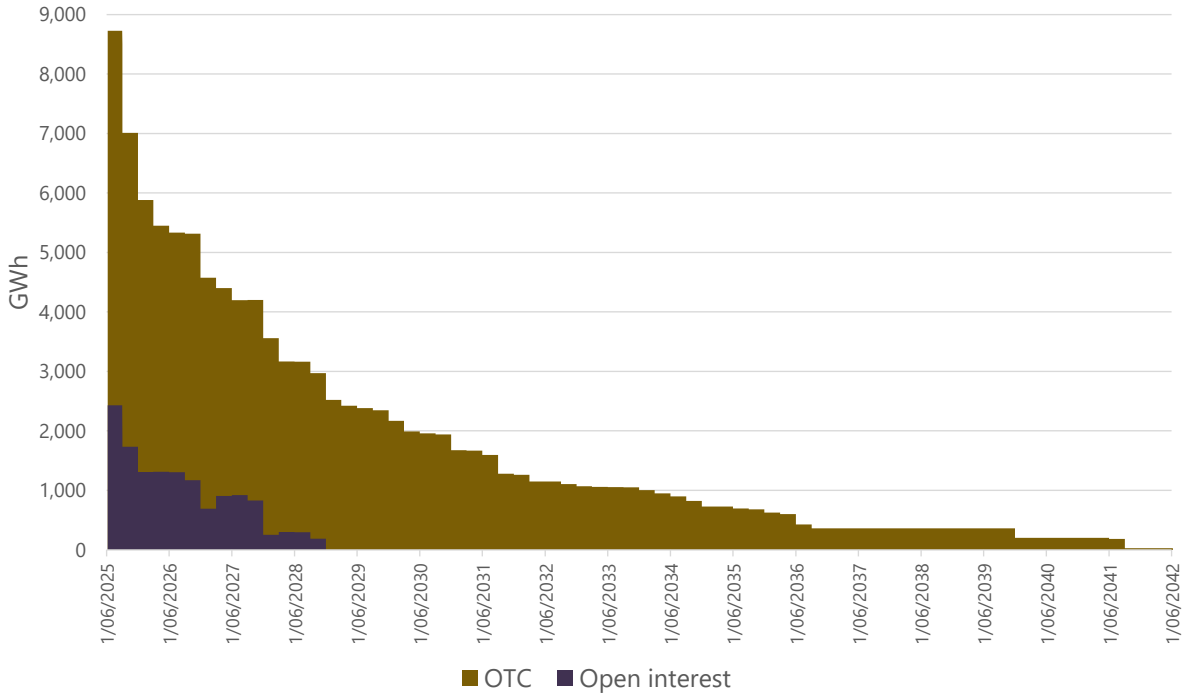
The complete picture of hedging activity in the New Zealand electricity market must include Over the Counter (OTC) trading. Hedging through direct OTC bilateral arrangements was the norm before the futures market became liquid and that avenue for hedging continues today. These contracts provide the ability to be more flexible in the terms and conditions and, critically, are based on credit risk terms rather than initial margins and variation margins to cover prudential requirements as is the case with the futures market. And, of course, PPPs are a form of OTC trade as well.

We know many OTC contracts reference futures prices for the quarters that trade on the ASX. We have seen evidence of parties trading out of futures into OTC contracts when variation margins during periods of volatility place too much stress on the firm's banking facilities. This reinforces the importance of the relationship between futures prices and OTC pricing.

We checked the Authority's Electricity Hedge Disclosure site[5] to see how the scale of OTC contracts in force compares with open interest in the futures. Figure 3 shows futures open interest and the total market "open interest" including futures and all OTC contracts. We note that the OTC profile is likely all hedging and that it does not include the smelter contract.

The sum of all futures contracts open (i.e. the area under the curve) is 15,554 GWh. The same figure for distinctly OTC contracts is 108,262 GWh.

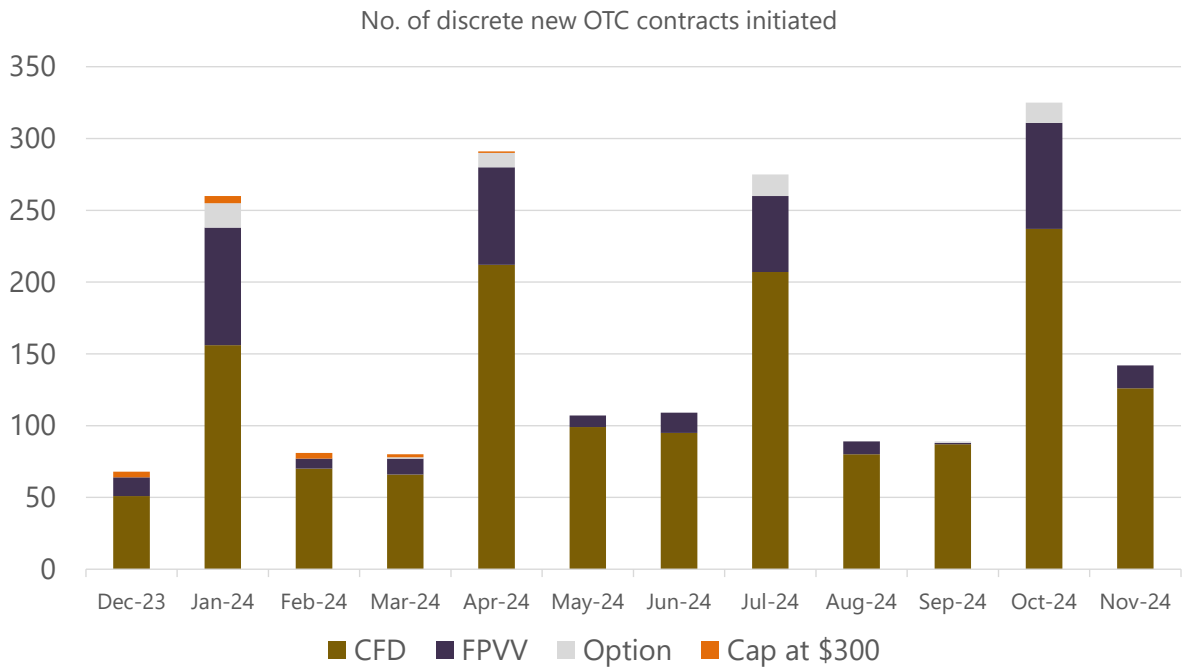
Figure 3: Futures open interest and active OTC contracts



We also checked trading volumes in the OTC market through 2024. Figure 4 shows the volumes traded per month. The level of activity is steady bearing out our observation that the OTC market is active.

[5] See the Electricity Hedge Disclosure System.

Figure 4: Trading volume in OTC products



To put the data behind these charts into context we observe.

- The volume of currently active hedge contracts in the OTC market is close to 7 times the volume of open interest in the futures market.
- The volume shown in the OTC market would be greater by 5,000 GWh per annum (i.e. 1250GWh per quarter) if the Tiwai smelter load was included.
- These figures do not include retail hedges other than where parties have entered into arms length transaction to cover some of their retail load.
- MBIE statistic show that ~33 per cent of total annual load (39,135 GWh in 2023) is retail load (13,238 GWh in 2023).

2.5 Vertical integration is not the constraint on liquidity

This chapter asks whether vertical integration is impeding liquidity. We show that the constraint on liquidity is explainable by capacity and fuel; vertical integration is not the root cause. We agree liquidity in hedge market should be of interest to the Authority but the solutions do not lie in its application of competition analysis and its proposed solution i.e. non-discrimination provisions.

The Authority is not the first regulator to ask about the relationship between competition issues and liquidity for hedge products. In 2016, the UK's Competition and Markets Authority (CMA) considered the relationship between liquidity and competition issues for baseload, monthly and peak products as part of its Energy Market Investigation. The CMA looked at the Six Large UK Energy Firms supply arm's explicitly hedged volume, and then offset uncontracted expected generation against the remaining unhedged demand. It found that the Six Large UK Energy Firms tended to have a substantial degree of 'total hedge' for their supply activities even three years ahead of delivery. They also found that vertically integrated suppliers do not generally seem to hedge further out in gas than in electricity.

They concluded that both the internal behaviour of the Six Large Energy Firms and their hedging patterns in gas supported the view that vertical integration does not substantially affect the supply of hedging:

> 147. The corollary of this is that if there were no vertical integration, we have no good reason to think that there would be greater availability of the type of products where we have found low liquidity (Competition & Markets Authority, 2016).

CMA wrote in their summary of **effects of the level of liquidity on competition**:

> 157. We found that the Six Large Energy Firms' trading and hedging patterns differed from those of independents. We did not find evidence that product availability was likely to be causing this. The Six Large Energy Firms generally conducted their hedging strategies using products that were available and traded; there was no indication that they were gaining an advantage by systematically using internal trades of products that were not available to other, non-integrated (or less integrated) parties. We also found that they did not hedge further ahead in gas than in electricity, which we would expect to be the case if vertical integration was distorting their hedging strategies in electricity, or if liquidity in electricity were a serious constraint on their trading.
>
> 158. If product availability is not the cause of this difference between the Six Large Energy Firms and independents, it may be that the main causes are either other factors (such as collateral and credit) or simply different commercial strategies. Neither of these implies any competitive harm arising from the state of liquidity. Therefore, we did not find evidence to suggest that liquidity was causing competitive distortions (Competition & Markets Authority, 2016).

Our conclusion is that as with the UK system: (1) the big issue facing the New Zealand electricity market is maintaining incentives to invest in flexible generation, and its alternatives; (2) vertical integration appears not to have impeded the availability of hedges.

3. Vertical integration is a feature of competitive electricity markets

3.1 Vertical integration

Many goods or services involve a series of steps, or functional levels, to produce and supply products to consumers. The term "vertical integration" refers to a situation where two or more of these functional steps are owned by the same firm. There are six vertically integrated generator-retailers (gentailers) in New Zealand, four of which in aggregate own around 90 per cent of all flexible generation and supply approximately 85 per cent of the country's total generation.

Vertical integration of electricity generation and retail activities is not unique to New Zealand. Vertical integration has emerged as the prevailing organisational form in most electricity markets in which the wholesale and retail sectors are opened to competition. For example, the electricity markets in both Singapore and Australia are wholesale gross pools, a market design very similar to New Zealand. In Singapore the seven largest vertically integrated generator retailers produced around 90 per cent of total electricity generation (Energy Market Authority, 2024). In Australia, the three largest vertically integrated firms in each region supplied the majority of the retail market. These three vertically integrated forms account for (Australian Energy Regulator, 2024):[6]

- 74 per cent of the residential electivity customers number in NSW
- 72 per cent of the residential electivity customers number in Queensland
- 73 per cent of the residential electivity customers number in South Australia.

In this section we discuss the reasons why vertical integration emerged as the predominant organisational form in competitive electricity markets, as a foundation for understanding the implications for consumers should the Authority continue on its roadmap toward "full vertical disaggregation" (Authority, 2025, para 6.29).

3.2 Studies of shipping between integrated entities

3.2.1 Industrial organisation focused on physical integration

Explanations of the cause and consequences of vertical integration that emerged from the study of industrial organisation following World War II tended to assume vertically integrated entities ship goods between their divisions (Carlton & Perloff, 2015). Industrial theorists like Bain (1959) viewed the boundaries of a firm narrowly as encompassing activities that were clearly physically related to one

another; an upstream division was assumed to supply inputs to a downstream division, and the downstream division supplied the customer.[7]

This assumption of an upstream entity supplying a downstream entity led to three theories for why firms vertically integrate. Two of these theories—sharing fixed costs and eliminating double marginalization—conclude that vertical integration reduces costs; the third theory 'raising rivals costs' would lead to reduced competition.[8]

We evaluate the cost/efficiency arguments below, before turning to the competition risks in chapter 4.

3.2.2 Spreading fixed costs

It is possible there are economies of scope from jointly owning generation and retail. Managing wholesale risk involves developing skills and dedicating resources to forecasting, monitoring the market, updating forecasts and positions, trading and ensuring compliance with risk management policies. A vertically integrated generator-retailer might achieve economies of scope from, for instance, integrating its risk teams, and using the same team to provide risk management to both its generation and retail activities.

While the potential for economies of scope may exist, it is not clear to us why such economies would be vertical-integration specific in the electricity sector; that is, why non-integrated firms might not be able to achieve similar efficiencies, say, through contract. Further, it is not obvious to us that the retail entities that have entered and expanded in the New Zealand market in recent years without investing in generation assets—including national retailers Ecotricity, Electric Kiwi, Flick Electricity and Vocus—have a higher operating cost structure (for a given service level) than vertically integrated retailers.[9]

We are aware that our argument conflicts with Simshauser (2020), who cites several authors as concluding that partitioning generation from retail results in cost efficiency losses of 20 per cent to 40 per cent. However, on our reading, the studies cited by Simshauser in support of this finding reviewed the separation of generation from distribution and transmission, not a separation of retail from generation. It is the cost of impeding vertical integration between retail and generation which are relevant to assessing the Authority's proposals.

In short, we consider it unlikely economies of scope or scale are a substantive explanation for vertically integrated firms emerging as the prevailing organisational form in competitive electricity markets.

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[7] Economics literature tends to refer to entities supplying inputs into a production process as "upstream firms" and the firms producing goods as "downstream". Historically in Europe and the United States, firms used the flow of rivers to ship goods downstream to be processed and on-sold to consumers.

[8] We do not discuss a fourth reason discussed in the industrial organisation literature, third degree price discrimination, as the requirements for this behaviour to be profitable fit neither the Authority's explanation of its concerns nor the characteristics of the electricity sector. Third degree price discrimination would involve charging customers with less elastic derived demand a higher price and customer with more elastic derived demand a lower price, with vertical integration used to prevent the elastic (low price) customer on-selling to the customer charged higher prices.

[9] In a previous submission to the Commerce Commission, Electric Kiwi stated "we believe we are among the most efficient retailers in the market" (Electric Kiwi, 2021).

3.2.3 Eliminating double marginalisation

A classic explanation for vertical integration is that it can eliminate "double marginalisation", and hence lower prices for consumers (Slade, 2019, p. 5). Double marginalization can occur when a firm with a monopoly in an upstream market sells to a firm with a monopoly in a downstream market. As monopolies, each firm would mark up their prices. This double mark-up would lead to higher prices than a price set by a vertically integrated monopoly, leading to lower overall output and lower aggregate profits.

An integrated firm would set the downstream price based on the firm's combined upstream and downstream profits (Spengler, 1950). A large body of empirical work shows that removing double marginalisation benefits consumers (Lafontaine & Slade, 2007).

We are sceptical the benefits identified in many of these studies can be assumed to apply to the New Zealand electricity sector. None of the gentailers are sufficiently dominant in either the generation or retail markets to implement double marginalisation should they operate as separate generation and retail entities.

3.3 Vertical integration as a means of navigating market imperfections

3.3.1 Vertical integration can reduce contracting hazards

A limitation in the theories of vertical foreclosure discussed above is that the motivation for vertical integration does not require product flows. In a study of vertical integration in United States manufacturing sector, Atalay, Hortacsu, & Syverson, (2014), found one half of upstream establishments do not ship to their downstream divisions. In electricity markets with gross pools (such as Australia, New Zealand, Singapore), there is no physical supply between generators and retailers. Instead, the motivation for vertical integration primarily involves intangibles.

Transaction cost theories pioneered by Nobel Laureate, Oliver Williamson (1975), and the work of those who built on his insights both theoretically and empirically, have changed the way economists think about vertical integration. An important conceptual lesson from Williamson's work is that it is not particularly useful to think about a sharp dichotomy between vertical integration and market transactions; rather, there is a continuum of governance arrangements between spot transactions (anonymous sales and purchases) through to bringing activities in-house. These hybrid forms include various types of long-term contracts, non-linear pricing arrangements, joint ventures, and so on.

Transaction cost theories recognize that contracts are incomplete (it may be impractical or prohibitively costly to write a contract that covers every possible contingency and to stipulate appropriate responses). Because contracts are incomplete, contractual hazards arise—one or other party might undertake actions that do not suit the other party after the contract has been agreed.

Modern theories of vertical integration turn in one way or another on the presence of these market imperfections; that is, on deviations from the long list of explicit and implicit assumptions associated

with textbook models of perfect competition. Vertical integration provides a means of navigating these real-world imperfections.

Internal organisation mechanisms provide the potential to better harmonize conflicting interests and can provide for a smoother and less costly adaptation process, thereby facilitating more efficient ex-ante investment and more efficient adaptation to changing supply and demand conditions over time (Joskow, 2010, p. 23). As Williamson observed (Williamson, 1971a, p. 61):

> The advantages of integration thus are not that technological (flow process) economies are unavailable to non-integrated firms, but that integration harmonizes interests (or reconciles differences, often by fiat) and permits an efficient (adaptive, sequential) decision process to be utilized…

The theoretical literature has identified several forms of contract hazards which might be ameliorated through vertical integration. We introduce these problems below, before turning in the following section to consider whether these hazards are likely to be material in New Zealand electricity markets.

Economic theory (and empirical research) suggests relationship-specific investments can be undermined where contractual relationships are susceptible to ex-post bargaining and performance problems (Joskow, 1987; Klein et al., 1978; Williamson, 1971b, 1985). A relationship-specific investment may have little value outside of its use in a specific trading relationship. Once the investment is made, a risk of 'hold-up', a form of opportunistic behaviour, occurs. The investing party's bargaining power is reduced once they have made an investment, because the value of the investment becomes dependent on another party for either sale of their output or a source of inputs. This exposure reduces the incentive to undertake an otherwise efficient investment. An example of this outcome is where an investment in long-term assets is required, but only short-term sales commitments are available in the market.

Where recurrent bargaining is required as market circumstances change, internal organisation has an advantage over market exchange in that it permits adaptation and forecloses future haggling. In contrast, recurrent contracting can be impaired as each party seeks to adjust the terms to their advantage as market conditions change.

Contracting for an item whose final cost or quality is subject to uncertainty raises issues about incentives. The supplier could bear the uncertainty but would charge a risk premium. If the buyer regards the premium as excessive and prefers to bear the risk, they may seek a cost-plus contract. Under this type of contract, the supplier has less incentive to achieve least cost performance, so the buyer may therefore wish to monitor the supplier and, where external monitoring is difficult, integration may become the most effective option. Typically, incentives to behave opportunistically are reduced and monitoring costs are lower where firms are vertically integrated.

Property rights theories identify alignment of investment incentives with better performance (Grossman & Hart, 1986; Hart & Moore, 1990). Hart (2017) argues that integration will occur between firms in response to incomplete contracts if it is more efficient for one of the firms to hold the residual control rights than for these to be shared between the firms. The firm with residual control rights has the power to make decisions about things that are left out of the contract. Offsetting these benefits, divisions within an integrated firm lose control rights and may have less incentive to innovate or invest, because they are unable to capture all the benefits of innovation. Whether integration is

efficient depends on which distortion is more important (Hart, 2017, p. 1734). Commercial entities have strong incentives to strive for the optimum balance between these incentives.

Vertical integration can also incentivize multi-tasking (Holmstrom and Milgrom, 1991), and improve coordination, by reducing transaction costs. Moral hazard models highlight productivity gains due to alignment of incentives to exert effort and the rewards of those efforts (Lafontaine and Slade, 2001).

In the following sections, we consider some of the contracting hazards arising in electricity markets and whether vertical integration is likely to be an efficient response to those market imperfections.

3.3.2 Incentives to invest

In the wholesale market, the supply of flexible generation necessitates entities making investments in and maintaining expensive, long-lived assets. To commit to and maintain these investments, the generator must be confident it will sell the output of the plant at a price that makes the investment profitable.

In concept, spot price fluctuations have opposite effects on retailer and generator profits; an increase in the spot price affects the revenue of the generator positively to the detriment of the retailer, and a decrease in spot price benefits the retailer to the detriment of the generator.[10] As the price risk profile of a retailer and generator are negatively correlated, long-term fixed price forward contracts should, in principle, align the hedging needs of both parties.

However, when contract prices are fixed, the ex-post distribution of risks across the parties depends on the duration and magnitude of the periods during which the spot price will be above or below the contractual fixed price. In the electricity sector, the duration and magnitude of these periods is not foreseeable, especially in the New Zealand electricity sector with its reliance on hydro-electricity generation and electrical isolation from other markets (unlike, for example, Europe).

As entry costs into the retail sector are comparatively low,[11] any period of sustained spot prices below the contract fixed price may induce profitable new entries into the retail market. Retail firms sell electricity on short-term fixed price contracts with their customers. Retailers with a significant level of sourcing through long-term fixed-price contracts would be exposed to a risk of price-squeeze from the new entrant retailers; retailers on long-term fixed-price contracts and exposed to a risk of price-squeeze would, in turn, expose generator counterparties to the risk of default by thinly capitalised retail entities.

Anticipating this risk of opportunism, generators would require a higher contractual premium, making long-term contracts more expensive, and therefore less attractive, for retailers. Absent long-term alignment of parties' interests, long-term contracts between generators and retailers necessary to support investment in new generation are not ''self- enforcing'' (Klein, 2000).

[10] In New Zealand, the vast majority of mass-market customers are on contracts that allow the consumer to vary the volume of electricity they consume at a fixed monthly price.

[11] In comparison to the cost of building new generation plant. In addition to systems and marketing costs, retailers must also fund prudential requirements in the wholesale market, lodge deposits with the network companies, and potentially fund prudential requirements in the futures market.

By contrast, vertically integrated generators rely on internalised incentives to maintain their retail base, eliminating hold-up risk and enabling investment in generation.

3.3.3 Reduced credit and re-contracting risk

A standalone generator could be expected to enter a series of wholesale finite term financial contracts with independent retailers. A vertically integrated generator substitutes these contract arrangements with a large, diverse, group of contracts directly with retail consumers. The bundle of retail customer contracts reduces both credit and re-contracting risk exposure.

In terms of credit risk, retail customers are more diverse than wholesale customers and their default risk is more easily and cheaply managed (for example via credit checks, bonds, and prepayment meters). In contrast, a non-integrated generator may have limited ability to assess the creditworthiness of the retailer (or other wholesale customer) and little ability to monitor the impact of their behaviour on their credit risk. Counterparty risk on a bilateral contract is managed by the parties themselves and by the exchange in exchange traded contracts. The generator or the exchange may impose some prudential requirement on the wholesale customer to reduce the generator's risk exposure; ultimately, the costs of prudential requirements must be recovered from consumers.

Re-contracting risk is also reduced by vertical integration. A non-integrated generator is exposed when contracts expire (or if a purchaser fails). This re-contracting risk is relatively more significant, although less frequent, than the equivalent risk associated with retail contracts and switching rates. Re-contracting risk is likely to be a significant concern for generators with long-term investments. Diversifying across a range of sales methods, including vertical integration with a retailer, may mitigate this risk, reducing capital costs.[12]

3.3.4 Managing residual volume risk

Retailers generally sell electricity to their retail customers on a fixed price variable volume contract. This form of contract means that there is uncertainty about both the volume of electricity the retailer will require and the intraday shape of the load. Some of this uncertainty resolves as the time gets closer (for example the weather becomes more predictable), but it is not fully resolved until real time (or once meters are read).

Due to the correlation of retail quantities and spot prices, electricity retailer price and quantity risks have been described as having ''flat hills and deep valleys'' (Boroumand & Zachmann, 2012). In periods of high wholesale prices, consumers are likely to demand more electricity than the retailer expects and has provided for; this higher than expected demand is one of the contributing reasons to higher prices. Thus, in the absence of vertical integration or contracts, a retailer's losses in periods where wholesale prices are above retail prices are over proportional. In periods of low wholesale

[12] An alternative strategy is for the output to be sold through a power purchase agreement (PPA). In this case the entire volume is sold, usually on a long-term basis, to a single party. In reality the single buyer is often a portfolio generator and, oftentimes, a vertically integrated portfolio generator. The price for PPAs reflects the fact that the buyer takes the risk on the variability of the generator's output.

prices (say, a summer holiday evening) retail customers demand less electricity so that a retailer's gain from the positive retail-wholesale price differential is under proportional.

This 'residual volume risk' explains why forward contracts alone are not sufficient for hedging a retail commitment. A vertically integrated generator may mitigate this risk by offering a larger quantity into the spot market at a more competitive price to cover short-term retailer volume risk.

3.4 The Authority's roadmap to higher risk and cost

Our conclusions of the role of vertical integration in efficiently managing risks for the benefit of consumers is consistent with other reviews of the literature and practical experience in reformed electricity markets. For example, in a recent review of the literature Dr Meade concludes (Meade, 2021, p. iii):

> In the main, distinctive features of electricity systems serve to reinforce the overall conclusions of studies of vertical integration and vertical separation from a wide range of sectors including electricity sectors. Specifically, that vertical integration – where it naturally arises – is superior to vertical separation in managing wholesale price risks, supporting investment, reducing incentives for the exercise of market power, and providing better outcomes for consumers.

Economic theory, and the practical experience of gross pool electricity markets, supports a conclusion that vertical integration is an important means to navigate real-world market imperfections. It is not a coincidence that since the inception of the wholesale electricity market 28 years ago, almost all new investment in new generation of scale has been under-taken by vertically integrated generator-retailers.[13]

The notable exceptions are Whirinaki (which was commissioned by the government and paid for by a regulated levy on consumers), several geo-thermal plant built by lines companies, the Waipipi windfarm, built by Tilt[14] and Lodestone's programme of solar farm investments.[15] Critically, for the matters being considered by the Authority, the *only* entities to commercially invest in flexible generation in the past 28 years—the form of generation the Authority acknowledges is increasingly scarce relative to demand—have been vertically integrated generator-retailers (including for this purpose Nova).

[13] Ecotricity 2020) argue that "gentailers" have controlled the development of new generation capacity into the market with the gentailer's retail base providing an internal hedge for the new generation volumes. The better view is that vertical integration improves incentives to invest by reducing hold-up risk and improving access to capital; this is a benefit of vertical integration.

[14] Rood (2020) reports the Tilt Waipipi output is all sold through a PPA to Genesis, that is, a vertically integrated portfolio generator: "Under the PPA, Tilt Renewables owns and operates the wind farm and Genesis purchases the electricity generated".

[15] Scoop reports, Lodestone Energy, Aotearoa's leader in utility-scale solar generation development, has reached another significant milestone with its third and largest solar farm to date, Te Herenga o Te Rā, starting generation. The farm will generate approximately 69 GWh of clean renewable electricity annually from over 71,600 high-efficiency bifacial solar panels – enough to power nearly 10,000 homes a year (Scoop, 2025).

Australian researchers have concluded standalone peaking generation in the Australian electricity market is "unbankable". This observation is not unique to New Zealand. Australian researchers have concluded that standalone peaking generation in the Australian electricity market is "unbankable". Vertical integration of generation and retail has proved necessary to support investment in flexible generation in that market (Simshauser, 2021).

The Authority seems intent to embark on a roadmap toward removing an established means of managing risk—a means which in practice has been necessary to support investment in flexible generation—when alternative mechanisms of risk management are under-developed or costly. Such an action cannot be reconciled with the long-term interests of consumers.

4. Competition risk of vertical integration

4.1 Analysis more complicated than horizontal integration

The reason the Authority has embarked on its roadmap is because it is concerned with "competition risks arising from control of the New Zealand's flexible generation base by, and vertical integration of, the four large generator-retailers" (Electricity Authority, 2025, p 2).

Potential competition risks of vertical integration are inherently more complex to analyse than horizontal integration (Ross & Winter, 2021, p. 20; Shapiro, 2019, para. 6). When two firms integrate in the same market (horizontal integration), competition is eliminated between the merging parties and the integrated entity would typically have a stronger incentive to raise prices; competition analysis then proceeds by assessing whether pressure from competitors would be sufficient to thwart that incentive or the integration produces other offsetting efficiency benefits (Slade, 2019, p. 9).

The Dairy Industry and ECNZ case studies referred to by the Authority (Electricity Authority, 2025, Appendix 2) involved concerns about *horizontal* integration—a single entity supplying most of the *same* market. Those examples concern a different problem to that described by the Authority and therefore provide little illumination of its proposals.

In the case of vertical integration, an entity operating in one market, say electricity generation, also operates in a separate market, say electricity retailing. Unlike with horizontal integration, common ownership of entities operating in separate markets does not in-of-itself reduce competition in either market—the same number of entities compete in each market with the same market shares.

An analysis of vertical integration therefore requires an assessment of the interface between entities operating in two separate markets and is inherently more complicated than an analysis of competition within a single market.

4.1.1 Electricity generation and retail are separate markets for competition analysis

The term "market" is a technical term in competition economics to describe a relevant range of activity by reference to economic and commercial realities. A market is the field of exchange (or potential exchange) in which the services being considered are substitutable. It is this possibility of substitution in response to changing prices or output that limits the ability of a firm 'to give less and charge more' (Re Queensland Co-operative Milling Association Ltd, 1976).

Generally, the Commerce Commission (and equivalent competition bodies internationally) identify separate markets at each functional level (Commission, 2022, pp. 21-22). It is sometimes possible for firms in different levels of a supply chain to be in the same market if firms could easily, profitably and

quickly (the Commission generally uses a period of one year) move from one level to another in response to a small, but significant, non-transitory, price increase.[16]

Firms in the electricity sector are unlikely to move from one level in the chain of supply to another in response to a small change in price. An electricity retailer would need to invest in generation assets to compete in the hedge market, and a generator is not equipped to compete effectively with retailers for mass-market customers without investing in systems and marketing etc. In our view, firms operating at one level in the supply chain—either generation or retail—are currently not a sufficient threat to constrain pricing in the other level of the supply chain.[17]

An analysis of integrated ownership of electricity generation and retail activities therefore necessitates an analysis of the interface between entities operating in two separate markets. To give rise to a competition concern, an integrated generator-retailer must be able to profitably impede competition in a manner which it could not do if it were not vertically integrated (Brennan, 2020).

4.2 Foreclosure (or raising rivals' costs)

Vertical integration can harm competition when an integrated entity can use its control over an activity in one market to weaken its rivals in another market. This harm is referred to in the economics literature as "partial foreclosure" when it results in cost increases (above competitive levels) or reduced inputs for the rival. The harm is referred to as "total foreclosure" if the rival is denied access to an essential input (Shapiro, 2019, para. 7).

From an economic perspective, total foreclosure is just a special (and extreme) case of partial foreclosure. For simplicity, we refer to both effects as "raising rivals' costs".

4.2.1.1 Input foreclosure and customer foreclosure

The Authority is concerned vertically integrated generators and retailers might raise rivals' costs in two ways (Electricity Authority, 2025, para 3.23):

- *Customer foreclosure*—reducing the ability of non-integrated generators to sell their output to retailers by refusing to provide firming contracts for those generators.
- *Input foreclosure*—raising the cost of hedges, or refusing to supply hedge products, to independent retailers so as to favour the gentailer's own retail business.

The analytical framework for assessing the competition risk of raising rivals' cost is well developed in the literature and guidance published by competition regulators. The extent to which an integrated supplier can harm competition depends on two critical conditions (Ross & Winter, 2021; Shapiro, 2021):

[16] Typically abbreviated to SSNIP; the Commission generally uses a SSNIP of 5 per cent, but for some markets, such as frequently purchased, low value products, a lower figure might be adopted (for example, 2 per cent for retail groceries).

[17] Distributed energy resources (for example, small scale solar) are blurring some of these market boundaries.

- The integrated supplier must have sufficient market power to deny its rival access to an essential input, or to raise the price its rival pays for that input materially above the competitive market price; that is, it must have the *ability* to unilaterally raise its rivals' costs.
- Denying a rival access to an input is usually costly for the integrated entity (as it loses what would otherwise be a profitable sale); the entity must therefore reasonably expect to recoup those losses from higher sales from its rival exiting the market; that is, it must have an *incentive* to take what would otherwise be an unprofitable action.

Competition regulators generally add an *effect on customers* test. As the United Kingdom Competition and Markets Authority observes, simply causing harm to upstream competitors is not sufficient; the test is whether the strategy harms end consumers (Competition and Markets Authority, 2016, A7.2, p. 3).[18] We discuss the important difference between policies aimed at protecting the competitive process and policies aimed at protecting particular competitors in chapter 6 below.

Figure 5 reproduces the analytical framework applied by the Competition & Markets Authority (2016) in its final report:

Figure 5: Framework for assessing customer foreclosure

As the Competition and Markets Authority emphases, for a vertically integrated to foreclose a rival in a manner that would harm competition and consumers "requires each of **ability**, **incentive**, and **effect** to be met" (emphasis in original) (Competition and Markets Authority, A7, para 47). The New Zealand Commerce Commission describes the same three step test: ability, incentive, and effect (Commerce Commission, 2022, pp. 35-36), as does the Australian Competition and Consumer Commission (ACCC, 2017, pp. 26 – 28).

None of these three conditions are met in the New Zealand electricity market.

As shown in Table 1, no gentailer acting unilaterally can deny a rival access to a hedge backed by flexible generation. This is because flexible generation is owned by four competing entities. Nor can any gentailer acting unilaterally deny a rival access to a significant share of the downstream retail market.

[18] Curiously, the Authority cites this report (at footnote 20) in identifying the potential risks to competition, but does not set out nor apply the tests for assessing whether vertical integration is harming competition.

The Authority incorrectly describes the risk of foreclosure arising where a vertically integrated firm has *at least some degree of market power* (Authority, 2025, para 3.22). The test is not "some degree of market power". In workably competitive markets, some (or all) firms may have a degree of market power. To foreclose a rival from obtaining an essential input (or sale), a firm would need a substantial, and sustained, degree of market power. As the Competition and Markets Authority observes (Competition and Markets Authority, 2016, A7 para 20):

> Unilateral ability to engage in customer foreclosure requires the foreclosing firm to have significant downstream market power.

None of the Authority's investigations have concluded that any of the gentailers have sufficient market power to in fact foreclose a rival. Furthermore, no gentailer could be confident of recuperating any losses (from denying profitable sales to a rival) should the rival exit the market. The customers of that rival may prefer another supplier. That is, no gentailer has the incentive to withhold profitable hedge sales. Nor has the Authority been able to identify any strategy implemented by vertically integrated gentailers which harm end consumers.

Put simply, none of the accepted tests for assessing the risk of market foreclosure are satisfied by vertical integration in the New Zealand electricity sector. There is no competition risk, as that risk is characterised by the Authority. Rather, as we discuss in chapter 6 below, the focus of the Authority's concern seems to be outcomes for particular firms and business models.

4.3 Telecom and ECNZ comparisons

Economists and regulators become concerned at the prospect of foreclosure when a single entity owns a "bottleneck"—inputs that must be obtained to compete in a downstream market but which are controlled (typically) by a single entity. Ensuring access to a 'bottleneck' facilities is the reasoning that led the government to separate Chorus (network) from Spark in the telecommunications sector, and Transpower (network) from ECNZ in electricity sector. These circumstances are simply not comparable to access to hedges which are offered by four or more competing gentailers.

5. International comparisons

5.1 The relevance of the case studies to the Authority's problem definition

The Authority characterises its proposed interventions as follows:

> This is orthodox infrastructure regulation, that has been applied overseas and in other contexts (often with more extensive interventions) based on the identification of similar competition risks.

For this statement to apply the Authority would have had to establish that the root of the problem it is trying to solve is "similar competition risks". The Authority does not establish that the competition risks are similar to these other jurisdictions. We take up the Authority's position that the evidence for the current thin and illiquid market for shaped hedge cover points to fuel for capacity scarcity. We have reviewed the international case studies the Authority provides in the consultation paper and tested whether they address the shaped hedge liquidity problem that currently faces the New Zealand electricity market.

Table 2: International case studies

Jurisdiction	The problem they were addressing	Analogies for the problem in New Zealand is facing
Australia: Tasmania's Generator Performance Standards Mechanism	Part of a broader market reform to limit the market power of Hydro Tasmania, which held a dominant position in flexible generation (Office of the Tasmanian Economic Regulator, 2013).	No discussion about fuel or capacity scarcity
United States: Texas ERCOT Virtual generation disaggregation	Create a more competitive environment by forcing dominant players to make generation capacity available to smaller players through regulated contract arrangements (Houston Kemp, 2018).	No discussion about fuel or capacity scarcity
United States: California	A goal of breaking up the vertical structure of the industry and creating a competitive electricity market, with the intent of lowering the cost of electricity for retail consumers. The three incumbent suppliers had to divest large parts of their power plant assets to reduce market concentration.	No discussion about fuel or capacity scarcity
France	To promote competition in the French electricity market. Of this, 5 GW was offered as Virtual Power Plant (VPP) contracts, and 1 GW through back-to-back agreements linked to existing cogeneration PPAs. The	No discussion about fuel or capacity scarcity

Jurisdiction	The problem they were addressing	Analogies for the problem in New Zealand is facing
	VPP contracts included 4 GW of baseload and 1 GW of peak-load capacity, with durations ranging from three months to three years (European Commission, 2006)	
Spain	Reduce market concentration and enhance competition and efficiency. A key focus of these reforms was promoting forward contracting in the wholesale electricity market. One innovative measure introduced was Virtual Power Plant (VPP) auctions, referred to in Spain as Emisiones Primarias de Energía (EPEs). Spain was the first European country to adopt VPP auctions as a regulatory measure to improve competition, rather than as a remedy for antitrust violations (Maurer et al., 2011).	No discussion about fuel or capacity scarcity. The VPPs are contracts underpinned by existing generation capacity. It assumes that there is generation capacity available.
The Netherlands	To address competition concerns, the NMa required Nuon to sell part of its generation capacity through a virtual power plant (VPP) auction as a condition for approving the acquisition.	No discussion about fuel or capacity scarcity.
UK	UK Competition and Markets Authority's view is that vertical integration does not have a detrimental impact on competition for independent suppliers and generators, and that there are likely to be some modest efficiencies resulting from vertical integration, that may be passed through to customers. As a result, our conclusion is that vertical integration does not give rise to an AEC (Maurer et al., 2011).	No discussion about fuel or capacity scarcity. The conclusion was that there is not an issue caused by vertical integration
UK Case study: Great Britain Electricity Generation Licence conditions	The Authority are "wary of attempting to directly mirror the GB licence conditions in the New Zealand market because: The original GB licence conditions have been in place for a long time. Our understanding is that they: (i) came into effect with deregulation, so no before-and-after comparison can easily be made; and (ii) were not specifically put in place to respond to concerns about access to flexible generation (that is, they are not a case study of whether this remedy will solve issues in the New Zealand market).	Electricity Generation Licences in GB were "not specifically put in place to respond to concerns about access to flexible generation". That is, they are not a case study of whether this remedy will solve issues in the New Zealand market.
Australia	*The ACCC has concerns about competition in wholesale electricity markets and this acquisition will effectively entrench existing concentration and vertical integration. However, while we consider this acquisition*	No discussion about fuel or capacity scarcity.

Jurisdiction	The problem they were addressing	Analogies for the problem in New Zealand is facing
	will lessen competition, it is unlikely to result in a substantial lessening of competition which is the test we must apply (Australian Competition & Consumer Commission, 2017).	
Australia	Concerns have also been raised about the 'over-the-counter' (OTC) contract market. Activity in this market is not disclosed publicly, which impairs market information regarding price signals and liquidity. The opacity of the OTC market also contributes to concerns about price discrimination against smaller retailers (Australian Competition & Consumer Commission, 2017).	That is not repeated in New Zealand. In fact Houston Kemp compares new Zealand's hedge disclosure obligations favourably with the corresponding lack of disclosure of OTC activity in the NEM.
Dairy Industry Restructuring Act (DIRA)	DIRA set specific regulations to limit Fonterra's market dominance by requiring the cooperative to share a portion of the raw milk it collected from farmers with independent processors (IPs) at regulated prices. This was done to ensure smaller competitors could enter the market and compete on fair terms.	Not analogous to vertical integration. This case involved concerns about horizontal integration—a single entity supplying most of the market. It provides little illumination of the Authority's proposals.
Separation of Telecom NZ and telco regulation	This move was aimed at promoting competition and improving access to broadband-based services in New Zealand. The functional (also called 'operational') separation included the following elements. • **Three separate business units**: Telecom NZ was divided into: ▫ An arm's-length fixed network business (Access Network Services) ▫ one or more wholesale units operating independently ▫ Retail service units operating separately from the network and wholesale functions	This case deals with access to a network bottleneck asset, which has already been dealt with in the electricity sector. It provides little illumination of the Authority's current proposals.
Separation of ECNZ	This breakup aimed to create competition in the electricity market by dividing ECNZ's assets and compelling new, smaller entities to enter the market. A strong focus on the spot market	Not analogous to vertical integration. This case involved concerns about horizontal integration—a single entity supplying most of the market. It provides little illumination of the Authority's proposals. In any event, following the separation the OTC market evolved and is still where the bulk of hedges are struck albeit priced

Jurisdiction	The problem they were addressing	Analogies for the problem in New Zealand is facing
		off the futures in the early years. A futures contract hosted by ASX wouldn't follow until the Brownlee review gave the sector players some impetus to breath life into it in 2010.

6. Authority's proposal would harm competition

6.1 Authority would provide a 'leg up' for some competitors

The Authority has labelled its proposals as "level playing field" measures (Authority, 2025). It appears to view a level playing field as providing market participants equal access—both in the supply and terms—to particular resources. In the current context, these resources are hedge contracts backed by flexible generation. The Authority says its proposals:

> would promote a level playing field by giving retailers and generators access to products (for example, hedge contracts) on substantially the same terms as Gentailers supply themselves internally (Authority, 2025, para 5.5).

> would mean that Gentailers are no longer able to allocate uncontracted hedge volumes to their own retail function in preference to third parties. Effectively at each point in time when selling hedges, Gentailers' generation functions would **need to ensure that they were being even-handed in their allocation** between all their customers (internal and external) (Authority, 2025, para 6.39.). (emphasis added)

The Authority considers proportionate allocation of resources will create a level playing field, ensuring all firms in the New Zealand electricity market compete on equal terms (Electricity Authority, 2025, p. 3).

The Authority's notion of even-handed appears to give little to no weight to the intangible factors, discussed above, which mean vertical integration is an efficient means of managing risks of investing in and maintaining long-lived flexible generation assets. Ignoring these factors would result in the Authority's non-discrimination rules biasing the market in favour of entities that do not make and maintain investments in long-lived assets; a bias which would unambiguously not be in the long-term interests of consumers.

Putting aside for the moment the important concern of regulatory induced market distortions in investment incentives, the Authority's contention that competition will be enhanced by ensuring all firms have equal access to a resource misconstrues the dynamics of competition.

6.2 Competition is a process of rivalry

Competition is a process of *rivalry* between sellers (or between buyers) to win and retain sales (or supplies), analogous to a sporting competition. It implies independence of action and continuous search to adapt and adjust and find better ways of meeting customer demands.

The economic theory of perfect competition—where all entities have the same access to resources—is not intended to describe real world markets. Rather it establishes the formal structural conditions for

certain theoretical equilibrium outcomes associated with allocative efficiency.[19] The theory of perfect competition is an equilibrium condition, in which all firms earn a normal rate of return and resources are efficiently allocated, such that there is no incentive for anything to change and hence the process of competition almost ceases to exist (Hayek, 1948). Firms in a perfectly competitive equilibrium do not alter their prices, do not advertise or differentiate their products or attempt to reduce their costs or innovate.

The idea of workable, or effective, competition is usually adopted as the benchmark for public policies which seek to promote competition. Renown Australian competition economist, Maureen Brunt described workable competition as "… a situation in which there is sufficient rivalry to compel firms to produce with internal efficiency, to price in accordance with costs, to meet consumers' demand for variety, and to strive for product and process improvement" (Brunt, 1970). In workably competitive markets, firms continuously strive for competitive advantage against actual and potential rivals by adapting and finding more efficient ways to utilise resources.

Importantly, competition is the process by which additional resources are directed to the products and areas of consumer demand, in this case flexible generation and its alternatives. Even-handed allocation of existing resource would dull, not enhance, the competitive process of rivalry.

It is also critical to distinguish *competition* from *competitors*. Effective competition is entirely consistent with the demise of individual competitors. As competitors vie to offer consumers better products at cheaper prices and to adopt the most cost-effective means of delivery, individual firms may adopt different strategies. Some will succeed and others will fail. As the Australian High Court said in *Queensland Wire Industries*:

> Competition by its very nature is deliberate and ruthless. Competitors jockey for sales, the more effective competitors injuring the less effective by taking sales away. Competitors almost always try to 'injure' each other in this way.

6.2.1 Other reasons may explain why independent retailers have not recently increased market share

We saw in section 2 that the gentailers have quite different risk profiles: the cover provided implicitly to their retail arms is not the same. In managing these risk profiles, gentailers compete in the same market as independent retailers for the same peak products. Many of the same means of reducing peak risk are employed at present by the independent retailers and the gentailers. However, as expected in a competitive process of rivalry, retailer offers are not the same.

The reasons people might choose one retailer over another vary. A recent article in the Consumer Magazine suggests "New Zealanders who stick with one of the big power providers are less satisfied with the service they receive" (Consumer NZ, 2024). In a survey, consumers gauged their satisfaction with their retailer on the basis of:

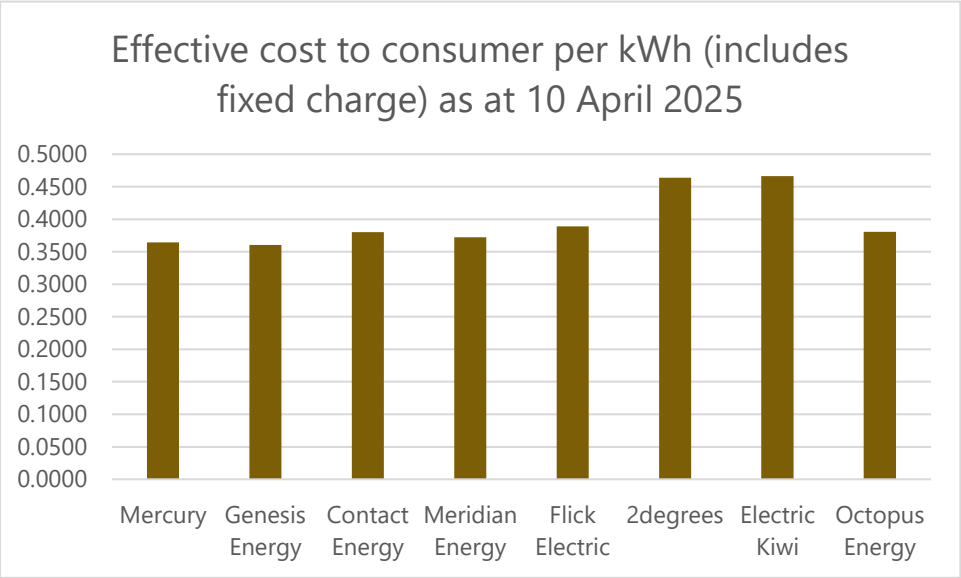
- Overall satisfaction

[19] These conditions are homogeneous products, an infinite number of buyers and sellers, the absence of economies of scale, independence of action, perfect information and free movement of resources.

- Competitive pricing
- Resolving problems in a timely manner
- Helping you save energy
- Renewable energy production
- Helping you select an appropriate plan
- Customer support
- Green credentials
- Value for money.

Taking just one attribute of the retail offer, we undertook a price comparison of electricity retailers: the four largest gentailers; and four independent retailers (Flick, 2degrees, Electric Kiwi, and Octopus). The results were as follows (average cents/kWh including fixed charges):

Figure 6: Effective cost to consumer per kWh (included fixed charge) as at 10 April 2025



The results show six of the eight retailers offer similar prices, with 2degrees and Electric Kiwi, offering prices above the others. We note that 2degrees offers a single rate, whereas the standard contract offered by Electric Kiwi and Octopus is for tariffs that are tailored to different time periods (e.g. peak).

The Authority makes no mention of pricing or other attributes of retail offers when it observes that the market share of small-and-medium-sized retailers has stagnated from 2021 (Authority, 2025, para 3.13). This lack of apparent curiosity as to market dynamics is troubling, when the Authority is contemplating tilting the playing field in favour of particular entities.

6.3 Neutral rules, except in very limited circumstances

In its toolkit for regulators, the Organisation for Economic Co-operation and Development (OECD) explains competitive neutrality is achieved when "all Enterprises are provided a level playing field with respect to a state's ownership, regulation or activity in the market" (OECD, 2024). To achieve a level playing field, government intervention should not distort the market in favour of particular market participants. Instead, firms should compete on their merits.

The *Competitive Neutrality Toolkit* published by the OECD does not envisage commercial entities competing within a workably competitive market being required to make their resources available to competitors on a like-for-like basis, as proposed by the Authority. Such an approach would favour competitors over competition.

Asymmetric regulation may be required in very limited circumstances where an entity controls a bottleneck asset or an 'essential facility'; that is, it unilaterally holds substantial market power over a resource which is required to participate in the market. The examples provided by the OECD are control over natural monopoly components of the market, such as networks.[20] New Zealand has already dealt with this concern with the separation of Transpower from ECNZ, and separation of distribution networks from retail.

Absent a single entity controlling an essential facility (which is not the case with flexible generation) compelling firms to share the source of their advantage is otherwise in tension with promoting competition, since it may lessen the incentive on all parties to invest in those economically beneficial assets. Moreover, compelling negotiation between competitors to "ensure that they are being even-handed in their allocation" may facilitate the supreme harm to competition: collusion.

6.4 No apparent thought to other competitive effects

The Authority assumes its intervention would increase competition. For the reasons set out above, there is no identifiable means by which vertical integration impedes competition in the manner assumed by the Authority. However, there is evidence that its interventions could reduce competition in the wholesale electricity wholesale market (in addition to the adverse impact on investment incentives).

New Zealand's wholesale gross pool market means vertically integrated generators sell their electricity through the spot market: they cannot sell it directly in an internal transaction to their affiliated retailer. This market structure differs from other some markets such as the United Kingdom.[21]

In a gross pool, the generator wants to ensure its generation is dispatched so that they earn revenue from generation to offset the cost of their retail purchases. This incentive is likely to be at least as strong as the incentive created by a hedge contract between a generator and non-affiliated retailer since the internal hedge position (i.e., the proportion of generation committed to its retail base) is likely to be at least as great as that which would be committed to an external hedge position. Thus, vertical integration is likely to be at least as effective as hedge contracts in limiting the exercise of market power in the wholesale market (Australian Competition & Consumer Commission, 2018).

Vertically integrated generator retailers have the same, additional incentive, as stand-alone generators to offer generation capacity so if demand is higher than expected and prices commensurately higher

[20] The one exception referred to by the OECD concerns customer information in Lithuania, which is addressed in New Zealand through customer switching processes.

[21] The National Electricity Market (NEM) of Australia, Singapore and the Philippines also operate gross pool markets.

they can capitalise on those opportunities.[22] However, a vertically integrated generator is likely to act in a more conservative way—offer additional generation at dispatchable prices—because they have to cover an unknown retail volume. In contrast, the stand-alone generator knows their contract position.[23]

Because a vertically integrated generator faces greater demand uncertainty than a non-integrated generator, the integrated generator is more likely to offer at prices closer to marginal cost than a stand-alone generator. This result arises because competition in the wholesale electricity market most closely corresponds to Cournot quantity competition (Hogan, 2011). Cournot, or quantity competition, is one of the two key models applied in competition economics to understand how firms interact and compete for market share in markets that are not perfectly competitive (that is, almost all real-world markets); the other model is "Bertrand" or price competition. Under Cournot quantity competition, firms behave as though they set quantities based on their knowledge of demand and the quantities they expect other firms to set.

Where a market exhibits Cournot-like competition, an increase in capacity will typically lead to increased competitive pressure, and hence lower prices and increased trade. However, a generator faces many different possible demand levels even when it has a good level of knowledge about its competitors' production levels. Uncertain demand means that the market outcome will move away from the Cournot equilibrium to an outcome that has smaller price-cost margins (Borenstein et al., 1995). Demand uncertainty means that wholesale prices are expected to be closer to the perfectly competitive outcome than in a market with more certain demand.

Consistent with the prediction from economic theory, empirical analysis of the Australian NEM shows that vertical integration increases the amount of capacity offered into the market at competitive prices. Frontier Economics (2017, paragraph 12) explained:

> We found that vertically integrated generators in fact behave more competitively on average than when they were operating as stand-alone generators…. This statistically significant, robust and striking result is contrary to claims that vertically integrated generators will bid at higher prices than stand-alone generators.[24]

Frontier's conclusions are consistent with our expectations: generation only provides a hedge for its retail business if that generation is dispatched, hence increasing the incentive for integrated generator-retailers to offer into the wholesale market.

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[22] There are nuances around this incentive including where a generator may not want to face the warm-up cost and some 8-10 hours warm up period for a thermal unit. Another case is where hydro capacity may be offered from storage reservoirs but priced at the opportunity cost of releasing today compared with the value of being available to manage risk in the future. In the latter case the capacity is offered but the price might be more associated with scarcity value.

[23] To date, this has been a hypothetical construct as all generators of scale have been vertically integrated. We understand that the sale by Trustpower of its retail base will be accompanied by relatively long-term hedge contracts to the purchaser of the retail base.

[24] In the NEM, generators are said to 'bid' into the market, whereas the NZEM uses the term 'offer' (to sell and bid to buy) consistent with commodity and other exchange traded markets.

6.5 Using a quantity adjustment to resolve scarcity will reduce efficient operation of market

Under the Authority's proposal, it expects to see a fundament change in how scarce flexible generation resources are allocated in the market. The Authority would require suppliers of flexible generation to shift from a *price* allocation method to a *quantity* allocation method for available hedge capacity. This intent is made explicit by the Authority in its explanation of how it anticipates its non-discrimination principles would be implemented (Authority, 2025, para 6.43):

> All other things being equal, a valid non-discriminatory approach would be to offer them [available hedges] proportionately to internal and external customers…

This move by the Authority to favour a quantity allocation method of a scarce resource is perplexing. The policy shift runs counter to established literature on the design of efficient markets. The economic function of organised markets, such as the electricity market, is largely to aggregate dispersed information into a signal, in the form of prices, of value and scarcity. That is, market prices are primarily a means of collating and conveying information. Market prices help solve the central problem of economics—how to secure the best use of resources known to and controlled by individual members of society for ends whose relative importance only these individuals know (Hayek, 1937).

These principles of efficient price discovery apply not just to the wholesale spot price, but to the pricing, and hence allocation, of all scarce resources. The Authority would like to improve on existing market outcomes for the supply and demand of hedges. It hopes by introducing an allocation rule for hedges it would constrain the exploitation of market power but not constrain or otherwise impede competitive conduct (Authority, 2025, para 6.24). In practice, achieving this degree of precision in targeting a regulatory intervention is an impossible task, and, as a practical matter, it is important to recognise that impossibility so that the expected costs could properly be weighed against the expected benefits.

We see this manifest itself in the development of the mandatory market making provisions under the code. Mandatory market making is a cost imposed on gentailers thereby creating an uneven playing field. A review of the case for locking in the mandatory market provisions and service requirements in 2022 reveals no quantitative economic cost benefit case was made. The original initiative in 2011 to lock in the service requirements for market making, as agreed with the gentailers, provided a model for such an exercise. The assessment in 2022 to introduce mandatory market making followed the 2011 model qualitatively but not quantitatively.

Enforced sharing requires the Authority to act as a central planner, identifying the proper price, quantity, and other terms of dealing. The reason why it can safely be said that the Authority can be expected to make significant mistakes in this role is because discovering the efficient allocation of a resource has to do with information. Efficient allocation of scarce resources is a process that (implicitly) makes use of huge amounts of information, of such scale and scope as cannot feasibly be processed by a single decision-making unit such as a regulator (Yarrow et al., 2008). Fundamentally, the information a central decision-maker needs to promote social welfare (such as individual preference functions and supplier production functions) is hidden from it.

The Authority would impose on Gentailers a requirement to price hedges to third parties seeking shaped hedge cover "on a broadly like-for-like basis" (Authority, 2025, para 6.45(a)). It is easy to show how such a pricing rule would lead to economic inefficiency in the presence of fixed costs. Consider, for example, the illustration provided by Professor Varian of the University of California at Berkeley (Varian, 1996). In his example, a supplier offers a service that has fixed costs of $10 and marginal costs of $2 per unit supplied. Two customers each want to purchase one unit of the service. Customer A is willing to pay $12 for the service; customer B is willing to pay $5.

A number of pricing scenarios are possible, including:

a) The service could be sold at marginal cost - in this case the producer would sell the service at a price of $2 to each of the customers, but would fail to recover its fixed costs, which is not economically viable.
b) The service could be sold at a flat price—in this case the supplier would find it most profitable to set a price of $12 and sell only to customer A. Customer B would not purchase the service even though it would be willing to cover marginal cost.
c) Different prices could be charged to A and B—the supplier could set a price of $10 for customer A and $2 for customer B. Each customer would be served, and the supplier would be able to cover its full costs.

The variation in prices under scenario (c) is consistent with the condition for static efficiency, as the price at the margin equals the marginal willingness of customer B to pay (and customer A pays a price less than its willingness to pay, resulting in a consumer surplus).

Price discrimination of this nature is ubiquitous in industries that exhibit large-fixed costs; airlines, for example, operate sophisticated yield management systems whereby two passengers flying at the same time and in the same cabin class may have paid very different prices for their tickets. According to Professor Damien Geradin and Nicolas Petit of the University of Liege:

> A key insight of economics is that price discrimination is most likely to expand output where the seller has declining average total costs. Expanding output through price discrimination is an essential strategy for firms facing problems of fixed cost recovery. Price discrimination allows firms facing large fixed costs (in practice all firms that make substantial investments) to expand their output and thus spread fixed costs over a large number of units.

The Authority appears not to have turned its mind to the distortions to the efficient operation of the market (one of its statutory objectives) that would be introduced by its proposed rule. This apparent lack of analysis is surprising, as a matter of economic analysis, and because the Authority is required by the Government Policy Statement (2024) to have regard to "the benefits that accurate price signals and decentralised risk management provide in promoting efficient reliability and security of supply."

7. First do no harm: the regulatory test neglected by the Authority

7.1 Extensive and persuasive literature on harm to consumers from regulatory uncertainty

There is an extensive and growing literature on the impact of economic policy uncertainty on firms' decisions and behaviours (see for example Al-Thaqeb & Algharabali, 2019; Baker et al., 2016). Economic policy uncertainty[25] arises when the future path of regulatory policy is unknown, unclear or unpredictable. Even moderate amounts of regulatory uncertainty can affect investment and employment (Rodrik, 1991).

When firms invest in both tangible and intangible assets, they forgo present income to increase future income. Firms are willing to make this investment when they expect the benefit from the investment will exceed its costs. Expected benefits and costs are informed by the impact of regulatory actions, as well as the firm's analysis of future market conditions.

Increased uncertainty tends to both lower the level of investment and delay the timing of investment. Most major investments by firms in the electricity sector are irreversible: the firm cannot disinvest, so the expenditure is a sunk cost; it cannot be used by another firm or industry (Pindyck, 1988). When regulatory processes increase uncertainty, holding off investment allows firms to gain more information about the possible future state (Dixit & Pindyck, 1994). The higher the uncertainty, the greater the value of delay, and the more cautious firms become (Bloom, 2009; Vural-Yavaş, 2020).

In addition to decision paralysis ("wait and see"), regulatory uncertainty leads to resource misallocation (Giertz & Feldman, 2012). With increased uncertainty, firms may favour holding liquid assets or invest in assets with a shorter economic life; this is a particular concern when considering the incentive to invest in new flexible generation, which tends to have a long asset life. This is the case with gas fired peakers e.g. Todd announced they would not proceed with their Otorohanga peaker in October 2021 (Newsroom, 2021). It is also the case with grid scaled batteries which are just now starting to emerge. It is less the case with demand side response.

As firms switch from productive investment to holding liquid assets or assets with shorter economic life, resources are misallocated (Duong et al., 2020). This misallocation, while a rational response by the firm, creates a "deadweight loss" to the economy—the unrealised gains to firms and consumers from reduced productivity (Bloom, 2009, p. 164).

Increased caution is reflected access to capital. Banks are reluctant to lend when uncertainty is high; this might mean finance is harder to obtain or is more costly (Alessandri & Bottero, 2020; Bloom, 2014).

[25] We use a broad definition of uncertainty that includes risk (something that is not certain to happen but for which it is possible to assign probabilities to the possible outcomes – the 'known unknowns') and uncertainty (the 'unknown unknowns').

Reduced investment flows through to consumers through its impact on the availability, quality and price of services. Where uncertainty induced by regulation delays the introduction of new services and service innovation, the loss to consumer welfare can be significant; in economic terms, equating to the whole area under the demand curve for that new service (Hausman et al., 1997).

In small economies, the interdependencies in the interests of various stakeholders are likely to be more significantly affected by a regulatory intervention. Hence, the "risk of costly interest-group-affected industrial policy in the guise of competition law becomes high" (Gal, 2006, p. 9).

This risk of rent-seeking behaviour increases with regulatory uncertainty (Giertz & Mortenson, 2014). When economic policies are uncertain, firms divert resources to lobbying politicians and regulators to obtain more clarity or more favourable policy. Rent-seeking is used by firms, who see advantages from the change, to consolidate potentially beneficial policies.

7.2 Investment in New Zealand impacted by uncertainty

Available New Zealand evidence is consistent with the international literature. Rice et al. (2018) explore the effect of general uncertainty on the New Zealand economy over the period 1997 to 2016. They find that both domestic and global uncertainty reduces output, consumption, and investment. The impact on investment is significantly larger than the impact on consumption, and global uncertainty has in the past been relatively more important than domestic uncertainty in driving the New Zealand business cycle. Ratcliffe and Tong (2021) identify the key drivers of business investment in New Zealand over the past two decades and find that uncertainty has a strong negative effect on investment, but it is not clear whether this involves a cancellation or a delay in investment.

Ryan (2020) examines the effects of policy uncertainty using measures derived from New Zealand's parliamentary record from 1975 to 2017. The results show that uncertainty has a large negative impact on output and share prices, consistent with declines in investment and consumption.

Sense Partners (2020) developed an economic uncertainty index for New Zealand based on media articles related to uncertainty and examined its impact on investment. Their results mirror those in the literature: firms delay investment and hiring decisions until the outlook is clearer, and households reduce their spending. These impacts persist: the economy is much weaker several quarters after the uncertainty shock hits. Of interest to the factors observed by the Authority (see section 1.1 above), the Sense Partners' uncertainty index peaked in March 2020, when New Zealand first went into level 4 lockdown, waned subsequently but remained about 20 per cent higher than normal largely because of Russia's invasion of Ukraine.

7.3 The Authority is avoiding the elephant in the room

The New Zealand electricity market is emerging from a period of heightened investment uncertainty compounded by poorly conceived policy interventions. The sources of investment uncertainty included:

- The Minister of Energy (previous government) indicating the government was considering entering the electricity market by building a large-scale peaking generator through its

New Zealand Battery Project; with the prospect of the government entering the market to provide firm capacity on a massive scale, the business case for commercial investment in peak-supporting plant became very difficult, at best.

- The (former) government moved to ban offshore exploration and in 2022 paused issuing permits for onshore exploration in Taranaki (Wannan, 2024). These interventions, combined with concerns about how the government might view the role of gas as the New Zealand economy decarbonises, and with investors increasingly less willing to allocate capital to the greenhouse gas-emitting industry, significantly reduced incentives to invest in maintaining New Zealand gas production.
- At the same time as the government intervened in the gas markets, major gas fields (Pohokura, Maui, and Kupe) had production problems and declining production rates. The resulting disruption to the gas market made it progressively more difficult to obtain a fuel contract for a gas-fired generator to meet peak demand.
- During the same period, Rio Tinto's threat to close the Tiwai aluminium smelter raised the prospect of a significant reduction in demand that would have reduced wholesale prices, further undermining the business case for new firm capacity.

Oddly, the Authority barely acknowledges this uncertainly. A regulator concerned to reduce the long-term harm to consumers would be highly sensitive to the reality that the electricity sector is emerging from an extended period of heightened uncertainty due to poor policy development.

The Authority's three step roadmap is particularly damaging to investor confidence. No policymaker can be sure its decisions are optimal; welfare-enhancing decisions are made at the margin based on good information and sound policy principles. Yet the Authority states it would move to steps 2 and 3 if its initial step 1 fails to produce competitive gains. It commits to this direction of policy intervention without an assessment of whether the long-term benefit to consumers in moving to step 2, or to step 3, would exceed the long-term cost to consumers.

Perhaps more damaging, the Authority does not allow for the possibility that the reason its step 1 might not produce the competitive gains it expects is because the policy itself is flawed. Without objective assessment of its own policies, the Authority risks 'chasing its own tail' as it introduces further interventions to counter the unintended effects of its previous interventions, with little hope of converging on a stable set of policies necessary to underpin long-lived investment.

By unnecessarily increasing regulatory uncertainty, the Authority is embarking on a path that conflicts with the regulatory version of the old Hippocratic oath; first do no harm.

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