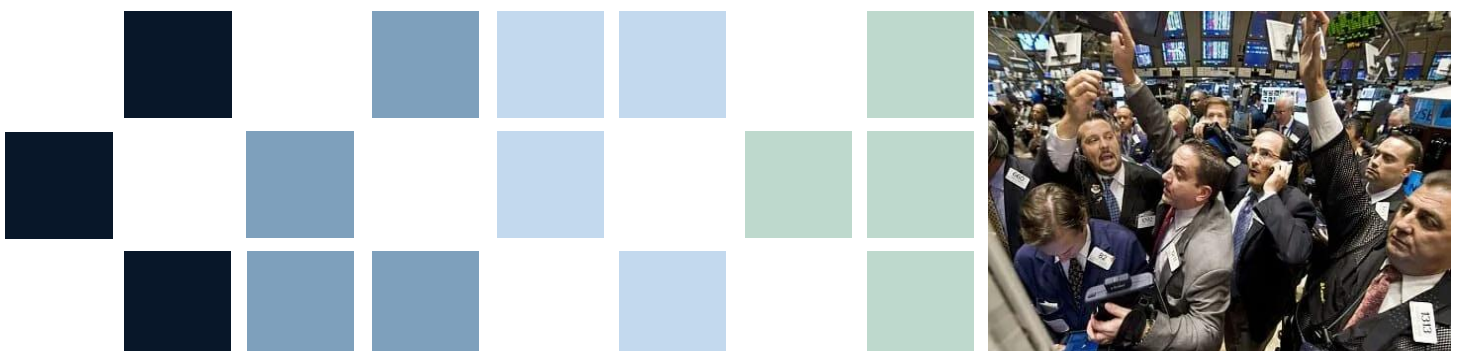


Mandatory Market Making under high stress conditions

Response to **Expiry of Urgent Code regarding market making under high stress conditions** consultation

Toby Stevenson, Corina Comendant and Rohan Trill
14 April 2025



Contents

1. Our brief and the Authority's preference.....	1
2. Response to the Authority's questions in the consultation paper.....	2
3. Market making.....	7
3.1 History of market making for exchange traded futures on the ASX.....	7
4. The events of 2024.....	9
4.1 Market making.....	9
4.2 What happened?.....	9
4.3 Rationale for intervention when futures prices are volatile.....	13
5. The consultation paper	15
5.1 The Authority's framework to assess options is not fit for purpose	15
5.2 A CBA framework is appropriate for assessing trade-offs from proposed intervention	20
5.3 BAU settings are not appropriate for stressed markets.....	22

Tables

Table 1: Types of costs and benefits linked to Option 1 and 2.....	16
Table 2: EA's assessment of Options 1 and 2, and our linkage of EA's logic to the delivery of stated objectives.....	18
Table 3: Qualitative assessment of impact from maintaining tight bid-ask spreads against the Authority's CBA intervention logic	24

Figures

Figure 1: Linkage between market-making and economic benefits.....	3
Figure 2: Applying EA's 2011 CBA high-level framework to subsequent decision-making on market making enhancements.....	3
Figure 3: Futures prices, wholes market prices and futures trading volume Jun – August 2024	10
Figure 4: Futures open interest and active OTC contracts.....	12
Figure 5: Trading volume in OTC products	12
Figure 6: Linkage between market-making and economic benefits.....	20
Figure 7: Applying EA's 2011 CBA high-level framework to subsequent decision-making on market making enhancements.....	23

Glossary

Abbreviation

ASX

Code

ETAG

FIA

Gentailers

MW

MWh

NZX

OIA

OTC

Authority

VCM

Stands for

Australian Securities Exchange

Electricity Industry Participation Code 2010

Electricity Technical Advisory Group

Future Industries Association

Generator retailers

Megawatts

Megawatt hour

New Zealand Stock Exchange

Official Information Act

Over The Counter

The Electricity Authority

Volatility control mechanism

1. Our brief and the Authority's preference

We have reviewed the case for embedding a circuit breaker into market making settings in New Zealand electricity futures to apply during periods of high volatility, and the appropriate trigger for activating the provision, following the events of 2024.

The question is whether the long-term benefits to consumers from mandatory market making are greater or lesser if a circuit breaker or some sort of fast market activated mechanism, with a trigger based on statistical volatility, was introduced.

The context for this paper is the Authority's consultation paper¹ that considers the future market making settings in the aftermath of the events of 2024 and the Authority's interventions.

The consultation paper considers the effectiveness of three options which would be aimed at maintaining market making that is reliable, sustainable and fit for purpose (i.e., that improves efficiency and promotes competition):

- Option 1: Let the urgent Code amendment expire, and revert to the status quo
- Option 2: Make the current urgent Code amendment permanent
- Option 3: Modify the urgent Code amendment provision

The Authority decided that Option 3 had significant drawbacks relative to Option 1 and Option 2 and did not assess it any further. The Authority states:²

"Option 1 is the preferred, and default option given it will revert to the current state with no further action. Consequently, Option 2 needs to be a clearly stronger solution for it to be the Authority's preference."

Having settled on Option 1, the Authority allows it remains open to alternatives should submissions present new information and evidence.

Based on the new information and evidence contained here we propose an alternative option. In our option, if market conditions for individual products went from green to amber signalling high market stress conditions, the Authority would confirm whether there was any reason why they would not provide some relief to market makers from their obligations. If relief were provided the system would move to red. The relief would take the form of a predefined volatility control mechanism (VCM). Our preference for the indicator of high stress conditions is the measured level of volatility for individual products or grouped subsets of products e.g. any specific quarter or an annual strip.

¹ Electricity Authority Expiry of Urgent Code regarding market making under high stress conditions 17 March 2025

² *ibid* para 10.3

2. Response to the Authority's questions in the consultation paper

1. The Authority notes that the Urgent Code amendment provisions have not been activated yet. What is your feedback on the costs and benefits to consumers of the urgent Code amendment?

It is hard to tell what the **costs and benefits to consumers of the urgent Code amendment (or letting it expire)** are based on. We note the following:

1. References in the paper to the costs and benefits to consumers of the urgent Code amendment do follow the Cost Benefit Analysis framework the Authority established in 2011³. The costs and benefits were quantified for the 2011 assessment and a qualitative assessment using the same framework was deployed in 2022.⁴
2. The previous 3 assessments of changes to provisions for market making (including the 2019 benefits analysis) linked settings to broader economic benefits rather than the narrower effects in the paper. Those effects are prerequisites to achieving the economic benefits.
3. The previous assessments did not appear to include the risk of market makers withdrawing which was central to the Authority's intervention in August 2024.
4. The consultation paper acknowledges that costs and benefits in the 2022 consultation on the commercial scheme included a "comprehensive qualitative cost benefit analysis which helped the Authority determine a level of market making services that was for the long-term benefit of consumers." That analysis sought to strike an appropriate balance between the broad costs and economic benefits arising from the services rather than on maintaining the effects of market making which lead to the economic benefits.
5. The 2011 and 2022 cost-benefit analyses used the diagram in Figure 1 to describe the linkages between the impact of market making and the economic benefits expected to flow from them. Figure 2 uses the same approach to assess how well the Authority has applied this framework in 6 distinct situations:
 - a. In 2011 there was a clear, direct and quantified link drawn between the intervention and the benefits.
 - b. In 2020 a qualitative assessment was made between the intervention and one benefit, retail competition.
 - c. In 2022 a qualitative assessment was made between the intervention and all of the benefits in the framework.

³ Electricity Authority, Market-Making Obligations 21 November 2011

⁴ Electricity Authority, Hedge Market Enhancements: Commercial market-making scheme Code Amendment Consultation paper 15 February 2022

- d. In August 2024 the assessment of the link between the intervention and the desired effects was weak. No link was made to the economic benefits.
- e. In September 2024 the assessment of the link between the intervention and the desired effects was weak. No link was made to the economic benefits.
- f. In the current consultation the assessment of the link between the intervention and the desired effects was weak. No link was made to the economic benefits but an assessment is made against some policy criteria.

Figure 1: Linkage between market-making and economic benefits

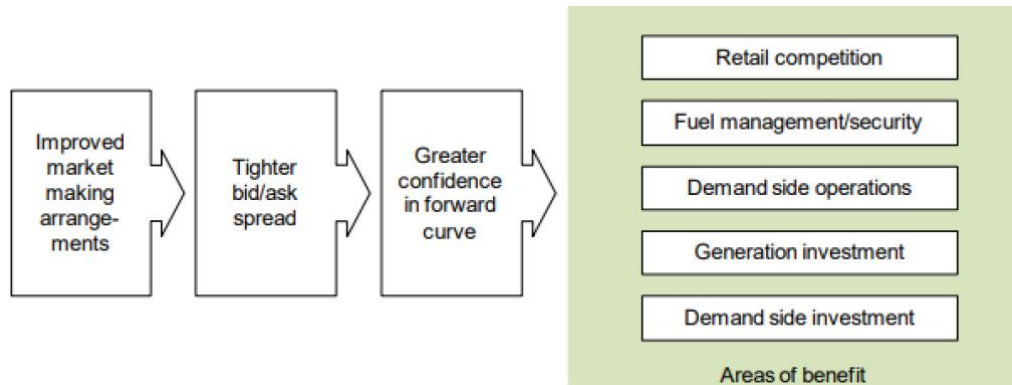
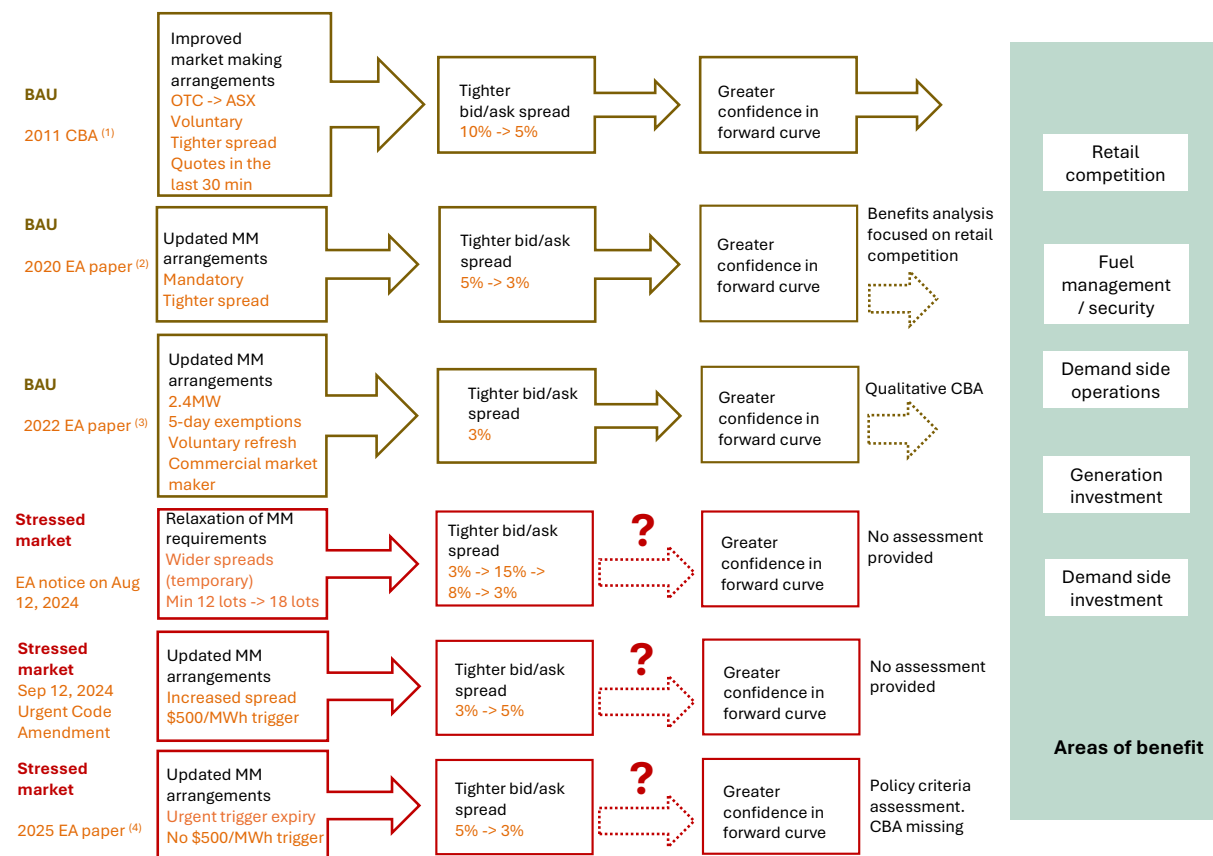


Figure 2: Applying EA's 2011 CBA high-level framework to subsequent decision-making on market making enhancements



6. Table 1 of the consulting paper provides an assessment of policy options against policy criteria. We can't see how the policy criteria were developed and they seem to be a mix of mechanisms and aspirations. We can't see how the assessments were made. No account is taken of the balance of liquidity, price discovery and retention of market making services at different bid ask spreads. This assessment does not substitute for the full costs and economic benefits to consumers of the urgent Code amendment
7. Costs and benefits are referred to throughout the paper but there is no clear differentiation between the efficacy of services between business as usual and a volatile market. There are only three reference points to volatile periods or provision for volatile periods in the paper:
 - a. The Pohokura outage in 2018 when services declined but the service levels weren't relaxed
 - b. The period when service levels were relaxed in 2024 but no discussion of the merit of different levels of service from that period.
 - c. The urgent code which has never been activated and is not proposed to be allowed to expire.

If we assume the outcomes for regulated market makers, commercial market maker and participants are in balance in business as usual (BAU) periods the question is whether that balance is the same and the economic benefits the same when the market is volatile. For example, at the spreads that applied during August 2024 the costs to market makers fell, price discovery was sustained but participants were reluctant to "cross the spread" so liquidity fell. At a wider bid ask spread than BAU but a narrower spread than 2024 the cost to market makers would likely still be manageable, price discovery would be sustained but liquidity and the propensity to trade would be greater.

This balance and these trade-offs in BAU compared to periods of high volatility are not fully dealt with in Section 9. It dismisses the case for a better calibrated mechanism during periods of volatility by saying that, with reference to the changes during August 2024, 'recent analysis shows that reduced obligations on market makers is correlated with poorer market outcomes.' That analysis is not provided.

8. The paper conspicuously ignores the benefit of price discovery in the futures market on pricing in the OTC market. There are a number of reasons hedgers use the OTC market in preference to futures and as a rule OTC prices reference futures at least for the years where futures are active. If spreads are too tight during periods of volatility prices are discovered but, for the purposes of pricing OTC contracts, they become unreliable.

Q2. Please provide feedback about your view between reliability and cost of market making with and without the urgent Code amendment?

The paper reiterates the Authority's previously stated position that the continued success of market making in the New Zealand electricity futures market can be characterised as a trade-off between three key factors:

- a. The cost of providing the services by market makers.
- b. The service levels of market making.
- c. The reliability of market making services.

The paper notes that “maintaining service levels under any circumstances will increase the reliability of market making services but will also increase their costs.” This ignores the cost to market participants if trying to force market makers to stay market making on BAU settings during periods of volatility fails. In 2024 Authority staff advised the board that maintaining service levels during periods of high stress on BAU settings may undermine reliability:⁵

it is now less costly to default on their (market maker) obligations rather than to continue to market make. The withdrawal of market makers from futures market will reduce or eliminate price discovery and liquidity in the electricity futures market. Participants will be unable to reliably access hedges on the exchange and this will increase operating costs. Participants will also be unable to estimate the future costs of electricity.

The Authority proceeded to relax enforcement conditions but the spreads permitted may have been too wide to balance maintenance of service and the benefits that flow from market making. The urgent code amendment sought to address the issue. If the urgent code amendment is allowed to expire and no replacement brought to the fore the same dynamics reflected in the board paper may arise again.

Our position on the relationship between **reliability and cost of market making with and without the urgent Code amendment** is that there will be market maker settings that maintain a level of market making services during volatile periods but at less cost and risk (to market makers and participants) than BAU settings. What we learned in 2024 is that spreads of 3% are not sustainable during a period of high volatility but widening them to 15% was probably too much. A properly calibrated service level during periods of high volatility would maintain some reliability. We see such a mechanism activated by a volatility trigger and then the subject of an Authority decision on the day.

Either the urgent code amendment should be retained or a properly calibrated mechanism introduced to replace it during periods of high volatility.

Another aspect of the advice to the board is the different incentive structure for commercial market makers compared to the regulated market makers. For regulated market makers the penalty of “withdrawing the service” outside of the permitted exemptions is a fine, reputational risks and contagion whereby if one goes they all go. For commercial market makers the penalty is a commercial contract issue. We can’t tell whether the Authority staff’s advice to the board refers to regulated market makers or just the commercial market maker. Reference to “less costly” would mean something quite different to a commercial market maker or a regulated market maker. In any event the **“cost of market making”** should recognise this nuance.

Q3. Please provide feedback on your preferred option for the market making urgent code amendment, and how your option is consistent with the Authority’s statutory objective (section 15 of the Electricity Industry Act 2010).

This question is focused on a binary option to enter into the process that would lock in the code amendment or let it lapse and revert to the status quo i.e. a market without the provisions in the

⁵ Electricity Authority board paper, Proposed guidance to market makers 10/08/24 released under the Official information Act 1982

urgent code amendment. In the paper the Authority introduces a third option being to amend the urgent code but then dismisses these based on the preliminary analysis in section 8.

We strongly recommend the Authority pursue 8.12 d):⁶

“building relief to market makers into the Code with discretion to the authority to trigger it as required.”

However, that doesn’t answer the consultation questions. A mechanism is required to address the risk of market makers withdrawing from their market maker obligations rather than to continue to market make. Our view is that insisting on having market makers persist with BAU settings during periods of volatility undermines the long term interests of consumers. Continuing with the urgent code amendment or, better still, introducing a properly calibrated mechanism is more likely to ensure some level of liquidity and price discovery during periods of volatility thereby supporting the economic benefits from market making and the long terms interest of consumers more than letting the urgent code amendment lapse.

We propose a volatility control mechanism (VCM) is introduced based on the learnings from the relaxation of service level requirements 2024 and common practice in other exchanges. The mechanism we propose would be that an alert signalled by pre determined statistically measured levels of volatility leads to the VCM conditions being activated. The exception would be where the Authority can make the case to not activate the VCM. In our view, this would satisfy the Authority’s policy criteria: the regulatory certainty, simple to understand, ease of implementation, durable and effective and minimum intervention necessary. In the context of the cost benefit analysis the Authority has used previously to decide on changes to the market making regime it would balance the concerns over liquidity and market makers withdrawing their services with maintaining price discovery. By not testing this option the Authority risks satisfying the short-term interests of consumers while undermining the long term interests of consumers.

Q4. The Authority is scoping a further review of market making and market making settings. Please provide your feedback on the costs and benefits of the volume, bid-ask spread, exemption levels, how volumes are offered and the role of commercial market makers.

1. The Authority should assess the full costs and economic benefits of options for evolving the market making regime using the CBA framework applied to previous interventions in the market making regime.
2. As discussed above, in addition to a discussion around establishing a statistically normal range of volatility, to base decision making on, the Authority should assess the use of VCMs in other markets. The resilience of price discovery, liquidity and the risk of services being withdrawn should be assessed against several scenario settings in volatile periods. Data is limited so it is challenging to quantify **the costs and benefits of the volume, bid-ask spread, exemption levels, how volumes are offered and the role of commercial market makers** . However, experience in the New Zealand market and experience with market making during volatile periods in other markets forms a basis for considering a sustained VCM.

⁶ Electricity Authority **Expiry of Urgent Code regarding market making under high stress conditions, Consultation paper**, 17 March 2025.

3. Market making

3.1 History of market making for exchange traded futures on the ASX

The origin of the market making regime we have today can be traced back to the initiative taken by generator retailers in 2009. This move was partially a response to the 2009 Ministerial Review of Electricity Market.⁷ The government and the Electricity Technical Advisory Group (ETAG) review panel were unsure whether the industry would take the steps necessary to support a viable futures market alongside the over the counter (OTC) market in operation. An industry group had worked with the ASX to arrive at the first iteration of the current arrangement. They agreed an initial set of voluntary service requirements for market making.

Minister Brownlee submitted recommendations of the ETAG to Cabinet in July 2009.

Recommendations and expectations for the development of some form of exchange traded electricity contracts through 'market maker' arrangements were clear. The recommendations included a deadline for implementation of a satisfactory exchange. An assessment was to be made of satisfactory market depth with the principal yardstick being 3,000 GWh of 'unmatched open interest' within a reasonable period (say 12 months after its establishment). If the threshold wasn't met and the Authority didn't then make rules regarding a liquid hedge market and 'market maker' arrangements the legislation gave the Minister the power to do so.

The open interest target was achieved. It didn't take long for the newly established Electricity Authority to look at arrangements and seek to enforce tighter service standards, albeit within the voluntary arrangements. In 2011 the Authority used the leverage over the generator retailers (gentailers) to impose tougher market maker service levels than they had agreed amongst themselves:⁸

1.1.6 This paper analyses the costs and benefits of introducing tighter market-making requirements, via either voluntary agreements or amending the Electricity Industry Participation Code (Code)²

- (a) quotes must be provided for all quarterly New Zealand electricity futures contracts traded on the ASX;
- (b) market makers must adhere to a spread between bids and offers of no more than 5%; and
- (c) quotes must be maintained for the final 30 minutes of trading each business day."

Over these past few years, a number of market effects and the implications of a legislated emissions target have led to some periods of high volatility in the spot market. The consequential volatility in the futures market has meant that market making has become more challenging. Market makers report

⁷ See [Ministerial Review of the Electricity Market, 2009](#).

⁸ Electricity Authority's Information Paper Cost Benefit Analysis – Market-Making Obligations, 21 November 2011 (provided by Electricity Authority on request).

losing on market making from time to time. Examples can be found in investor presentations and annual reports for Contact, Meridian and Genesis.⁹

The volatility was amplified by moves to strengthen the obligations on market makers. The Authority reports:¹⁰

“In May 2019 the ASX and the voluntary market makers developed a new voluntary scheme to balance the risk concerns with service provision. In January 2020 the voluntary market makers increased the service levels they provided in response to a request from the Authority. In February 2020 the Code was amended to include a back-stop mandatory market making provision. (Initially introduced under an urgent Code amendment and formally established through a later process.)”

The service requirements were tightened or changed in 2022, culminating in market making being made effectively mandatory for Contact, Mercury, Meridian and Genesis through the Code. The 2022 changes included the addition of a commercial maker, bringing the total number of market makers to five.

⁹ See for example [Meridian’s submission to the Authority on hedge market enhancements, 16 June 2020](#); [Genesis Energy’s FY 23 Results Presentation](#); <https://contact.co.nz/aboutus/investor-centre/media-releases-and-announcements#2025>

¹⁰ Electricity Authority Hedge Market Enhancements Market Making Ensuring market making arrangements are fit for-purpose over time 21 April 2020

4. The events of 2024

4.1 Market making

On 12 August 2024 the Authority relaxed the compliance requirements on market makers to spreads of 15 per cent (increased from 3 per cent) and volume requirements of at least 12 lots (a reduction from 24 lots):¹¹

"Authority issued a notice advising that it would exercise its discretionary powers not to undertake enforcement action, subject to market makers continuing to provide services."

In September 2024 the Authority codified an urgent amendment providing market makers relief from market making obligations during periods of high futures prices:¹²

"This change was intended to reduce market makers' financial exposure, preserving liquidity and access to electricity futures contracts for retailers and other purchasers.

The urgent Code amendment increased the bid-ask spread from 3% to 5% on contracts where the price exceeds \$500/MWh."

The provisions of the urgent code amendment have never been activated and this consultation: ¹³

"Seeks feedback on whether to make the urgent Code amendment permanent and provide some relief to market makers from their obligations in times of market stress; or to let the urgent Code amendment expire and revert to previous settings."

We propose the Authority continue to provide some relief to market makers from their obligations in times of market stress whether it is the same as the terms of the urgent Code amendment or a voluntary control mechanism along the lines we propose.

4.2 What happened?

During winter 2024, lake levels fell, and as the winter unfolded the market realised that there was not enough thermal fuel available to maintain orderly supply—wholesale prices became very volatile. Prices spiked in August when, in addition to the low hydro storage, significant constraints in gas availability were revealed. Volatility in the futures market reflected the situation.

On August 12, when the Authority intervened by enforcing urgent changes to market making arrangements the case for the intervention was set out as follows:¹⁴

"The forward market is currently experiencing stress due to underlying physical conditions impacting prices in the spot market. The Authority is aware that market makers are

¹¹ Electricity Authority Expiry of Urgent Code regarding market making under high stress conditions 17 March 2025

¹² *ibid*

¹³ *ibid*

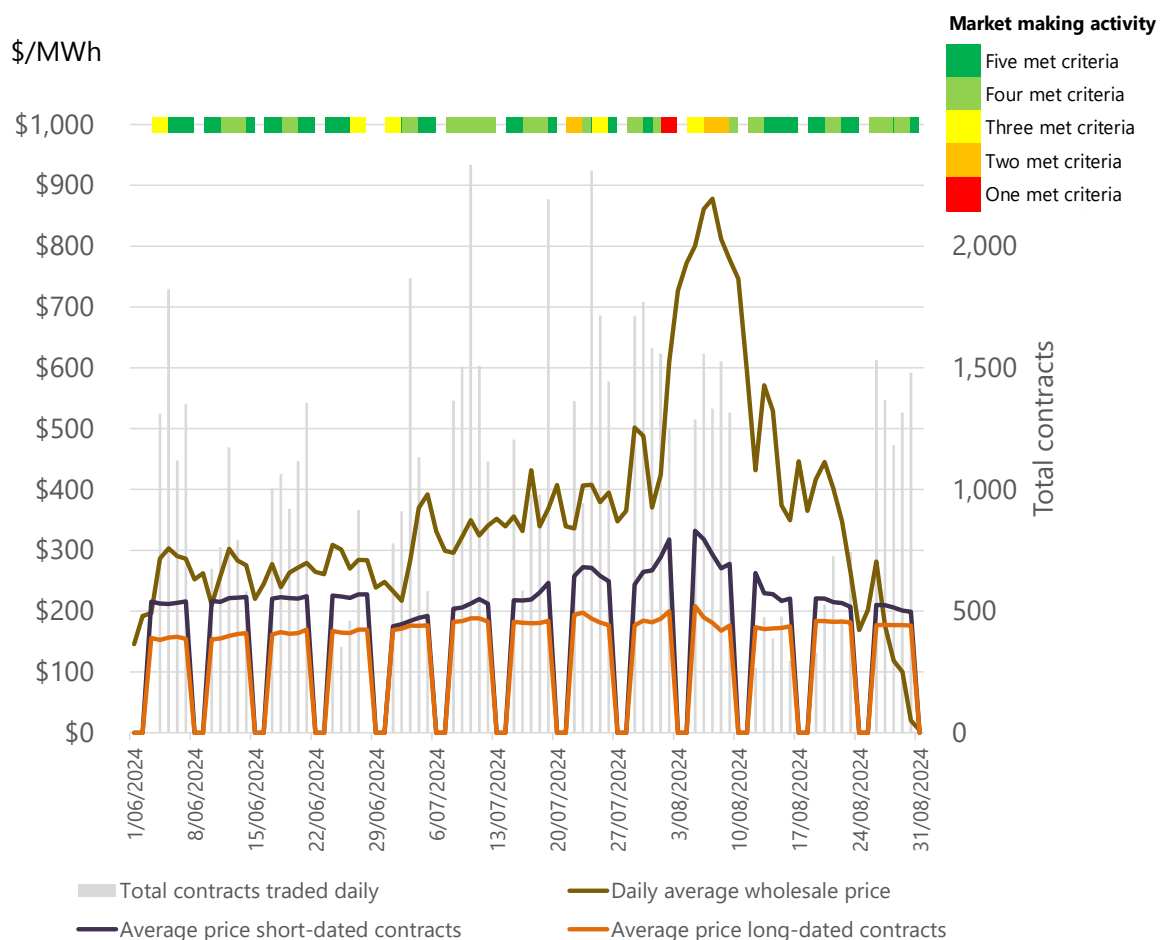
¹⁴ Electricity Authority, email to All Market Makers in the New Zealand Electricity Futures market, Urgent changes to market making requirements, 12 August 2024.

increasingly unable to fulfil their obligations to the standard specified under their contractual requirements and in the Electricity Industry Participation Code 2010 (Code). Financial conditions are such that it may be less costly to default on their obligations than to continue to market make. **Defaulting on obligations will reduce or eliminate price discovery and liquidity in the market** and create an inability for participants to access hedges. The immediate risks are likely to be mitigated by widening spreads and reduced lot size, at least in the short term, to reduce the impact of current conditions and to **enable market makers to manage the costs of providing liquidity and price transparency.**"

In Figure 3, we see how unfolding events impacted futures prices and liquidity.

- The gold line is the daily average wholesale electricity price at Otahuhu. Prices during July stepped up from June prices and spiked in early August.
- The dark blue line is the average daily settlement prices for all futures contracts with expiry dates at or less than 12 months. Here, the prices can be seen to be impacted by what is happening in the wholesale spot market.
- The orange line is the average daily price of all long dated (greater than 12 months) futures contracts. Here, the response to what is happening in the underlying physical electricity market is more subdued.

Figure 3: Futures prices, wholes market prices and futures trading volume Jun – August 2024



The grey lines in the background are daily volumes across all futures maturities. The drop in volume during the period of 15 per cent spreads for two weeks in August can be clearly seen. As an indicator of liquidity, daily traded volumes traded on the ASX electricity futures ranged from 583 (5 July) to 2334 (10 July). In the two weeks following the Authority's intervention, daily volume ranged from 266 (12 July) to 743 on July 23.

The traffic light colours across the top of the chart show the number of market makers taking advantage of the permitted exemptions each day. Here, we see higher incidence of exemptions being used through July and during the first week of August.

The complete picture of hedging activity has to include Over the Counter (OTC) trading. Hedging through direct OTC bilateral arrangements was the norm before the futures market became more liquid and that avenue for hedging continues today. These contracts provide the ability to be more flexibility in the terms and conditions and, critically, are based on counterparty risk 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 that many OTC contracts reference futures prices for the quarters that trade on the ASX. The consultation paper ignores that relationship. In particular it ignores reports that OTC volumes were down during the period of high volatility last year. While BAU terms were being asserted OTC pricing became unreliable and when prices from futures with 15% spreads weren't that much more reliable. For the OTC market to continue to provide a source of hedge contracts during periods of high volatility we need service level (mainly bid ask spreads) to widen enough, but not too much, to ensure hedges at prices that reflect market conditions are available. We have seen evidence of parties trading out of futures into OTC contracts when variation margins place too much stress on the firm's banking facilities which reinforces the importance of the relationship between futures prices and OTC pricing.

We checked to see how the scale of OTC contracts in force compares with open interest in the futures. Figure 4 shows futures open interest and the comparable OTC contracts currently active. We can't tell how much of the futures contract open interest is speculators and how much represents strictly hedge contracts. We know 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 live OTC contracts is 123,816 GWh.

Figure 5 shows the volumes traded per month and that even though prices were still high/volatile in August the traded volumes fell away.

Figure 4: Futures open interest and active OTC contracts

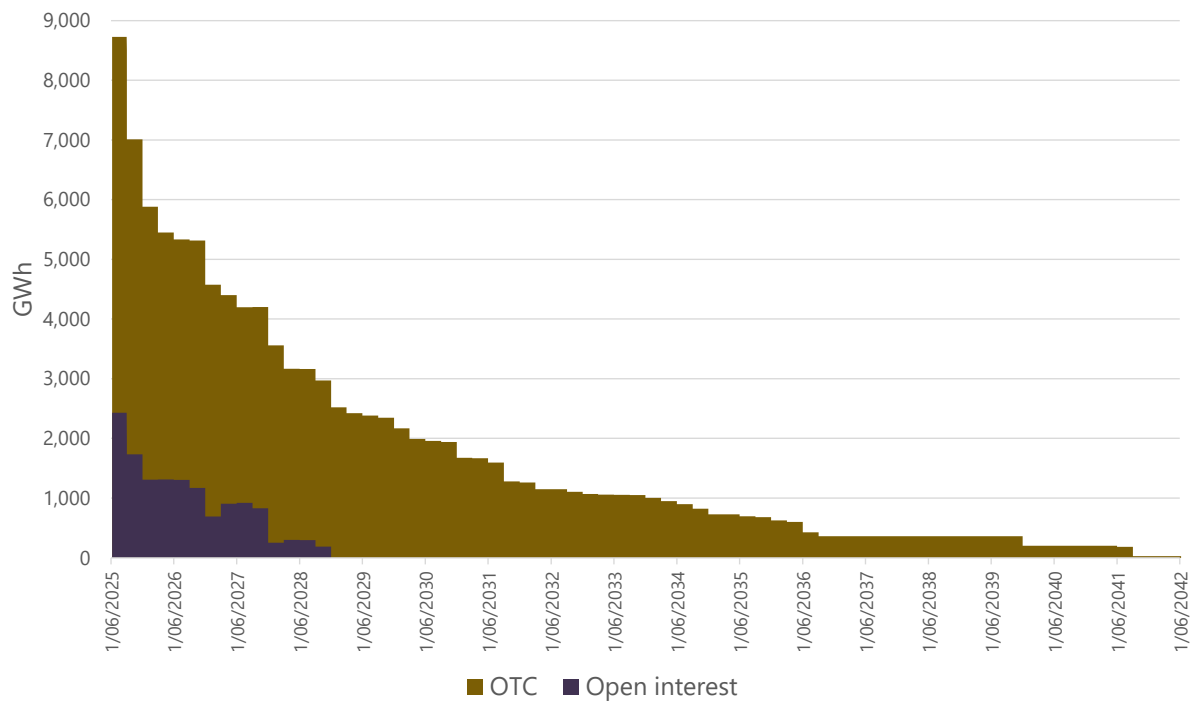
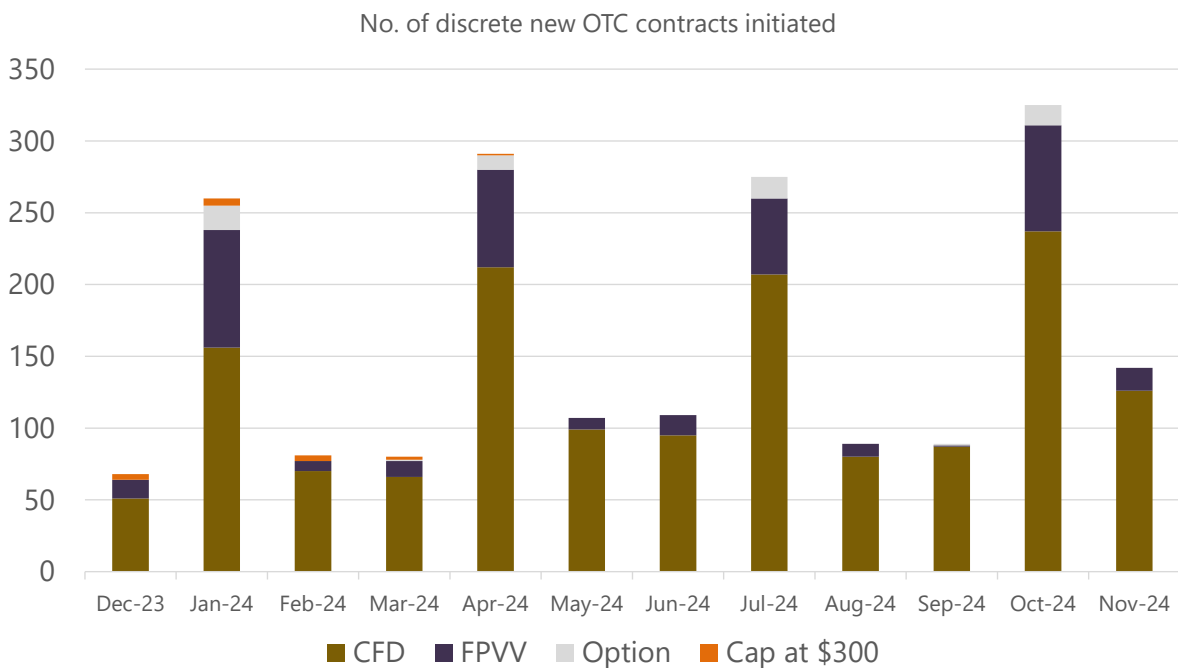


Figure 5: Trading volume in OTC products



4.3 Rationale for intervention when futures prices are volatile

Many formal exchanges (currencies, bonds, money market, equities, futures and derivatives) have volatility control mechanisms (VCMs) to protect participants in that market from undue volatility while at the same time maintaining continuity of price discovery. Mechanisms include provisions for suspension, trading halts and trading suspensions. The duration of these mechanisms vary, but they are all driven by a desire to maintain price discovery. The idea is that in moments of madness, a short-term circuit breaker can be the best option to maintain an orderly market. FIA outlines best practices for exchange VCMs:¹⁵

“Volatility controls “should be designed to avoid market disruptions without unduly interfering with that market’s price discovery function” and “to preserve the efficient and orderly functioning of financial markets.”

To ensure the orderly functioning of markets, exchanges should adopt a principles based approach to the management of extreme market volatility, especially during periods of significant stress. By instituting multiple layers of pre-trade, including volatility, controls and continuously monitoring the criteria and their effectiveness, exchanges can strike the right balance between protecting the market from erroneous or disruptive activity and facilitating genuine price discovery for market participants who wish to manage their risk, even during times of broader market volatility.”

The NZ electricity futures market on ASX has four regulated market makers and one commercially incentivised market maker to enhance liquidity and price discovery. The underlying idea is that economic benefits will flow from these effects. However, there is no enduring mechanism for the market to take relief from extreme market volatility, especially during periods of significant stress.

The Authority has had many opportunities to introduce the equivalent of a VCM based on an assessment of ‘fast market’ or highly volatile price conditions, but had not until August 2024. Up until that point the response to the decline in the market making service during periods of volatility has been to enforce service provision features and require these to be held through thick and thin. What the Authority did in August 2024 was effectively to assess the market as a fast market and introduce the equivalent of a VCM on an ad hoc basis by relaxing enforcement of the code within prescribed parameters.

The formal introduction of such a mechanism would rebalance the ability for market makers to reasonably maintain the service with the benefits to the workings of the market during certain conditions.

In the event, in 2024 the Authority board was advised that:

“Staff are concerned that it is now less costly to default on their [market makers] obligations rather than to continue to market make. **The withdrawal of market makers**

¹⁵ See [FIA Best Practices for Exchange Volatility Control Mechanisms, 2023](#).

from futures market will reduce or eliminate price discovery and liquidity in the electricity futures market. Participants will be unable to reliably access hedges on the exchange and this will increase operating costs. The participants will also be unable to estimate future costs of electricity.

An inability to access spot price risk management in this market will likely increase costs and financial risk for participants and such costs could be passed on to electricity consumers.

Staff consider that **widening the allowable spread between a market maker's bid and offers will reduce the impact of current conditions and enable market makers to manage the costs of providing liquidity and price transparency."**

Based on the information available in the public domain, no cost-benefit analysis or benefits analysis accompanied the recommendation.

We propose that an enduring VCM, based on the level of volatility, is introduced into the Code if a cost benefit analysis using the CBA framework applied in previous interventions supports it.¹⁶ We propose that this mechanism would be activate when volatility of a futures product or products reached a pre determined level unless the Authority had good reason not to. The Authority would be able to take into account the circumstances of the market at the time. Mechanisms like this are operate in many derivative markets. We refer the Authority to the Future Industries Association (FIA)¹⁷ paper looking at the best practice for exchange control mechanisms:¹⁸

"Volatility controls "should be designed to avoid market disruptions without unduly interfering with that market's price discovery function" and "to preserve the efficient and orderly functioning of financial markets."

The FIA distinguishes between three forms of VCM: price bands on orders, daily price limits and mechanisms to interrupt continuous trading. Providing relief to mandatory market making during periods of high price volatility is most analogous to the third category:

"Long duration market pauses (commonly referred to as circuit breakers or dynamic circuit breakers) are a VCM that provides another layer of protection from extreme volatility events. Except for the timing or duration component, circuit breakers function similarly to short duration market pauses. While circuit breaker functionality varies, they typically assess market moves over a longer time period (e.g., price moves over a rolling one-hour period or over the course of a trading session) and involve longer market pauses than short duration market pauses (e.g., a few minutes versus a few seconds). The price moves required to trigger a circuit breaker event are also usually wider than price moves for short duration market pauses (e.g., 5%+ of previous settlement price)."

¹⁶ See Appendix A for a discussion on how a volatility trigger might be developed.

¹⁷ FIA is the leading global trade organisation for futures, options, and centrally cleared derivatives markets. FIA represents a wide array of market participants from around the world that depend on these markets.

¹⁸ See [FIA Best Practices for Exchange Volatility Control Mechanisms, September 2023](#).

5. The consultation paper

5.1 The Authority's framework to assess options is not fit for purpose

There are significant gaps and overlaps in the assessment framework used by the Authority in the consultation paper

The Authority contends that reliable market making services are critical for meeting two key objectives of market making: ensuring (i) a robust forward price curve (Objective 1), and (ii) availability of risk management tools (Objective 2):

The Authority's primary objective in considering the urgent Code amendment is to consider reliability. To meet the goals of a robust forward price curve and available risk management tools, the Authority needs reliable market making services at all times, particularly in times of high stress.

Three options are put forward for ensuring market making is reliable, including in times of high stress:

- Option 1: Let the urgent Code amendment expire
- Option 2: Make the urgent Code amendment permanent
- Option 3: Modify the urgent Code amendment provision.

Option 3 considered several options for modifications, including

building relief to market makers into the Code with discretion to the Authority to trigger as required (para 8.12(d)).

However, Option 3 is discounted based on a preliminary analysis provided in section 8. The Authority uses the following policy criteria to assess Options 1 and 2:

- Narrower mean bid-ask spread
- High liquidity
- Provides regulatory certainty
- Simple to understand
- Ease of implementation
- Durable and effective
- Minimum intervention necessary
- Equitable treatment of market makers and other participants
- Supports market confidence.

Although not explicitly stated, we assume this framework corresponds to a Multi-Criteria Analysis (MCA). However, a robust MCA process requires a careful selection of criteria, based on a range of qualities, such as:¹⁹

- whether the criterion is significant in terms of its benefits, impacts or effects
- whether the criterion will differentiate between options, and
- whether the criterion appropriately reflects the main objectives of the project that are considered important by decision makers, partners and key stakeholders.

We have the following issues with EA's assessment framework:

1. The EA consultation paper **does not explain how the policy criteria were chosen**, and how their significance has been assessed in terms of benefits or impacts. Some criteria do not reflect impact at all: e.g. a narrow mean bid-ask spread is the intervention, not an effect; the "durability" of a mechanism appears to be based on a judgement on whether the intervention is "too specific" or not. Without clearly establishing expected benefits and impacts, the assessment risks focusing on symptoms rather than final outcomes.
2. Criteria can have **different relative weighting**, depending on their importance towards achieving the states objectives. It is not clear from the Authority's paper how the relative materiality of selected criteria has been determined.
3. Our assessment indicates that **some of these policy criteria overlap** when viewed through the type of costs or benefits arising from them, as shown in Table 1 below. For example, the criteria of 'ease of implementation' and 'simple do understand' both point to an overall objective of minimising the regulatory burden.

If costs and benefits associated with each policy criteria are considered in isolation from each other, without an adequate assessment of impacts *overall* for the market, there is a real risk of overstating a particular impact.

Table 1: Types of costs and benefits linked to Option 1 and 2.

Note: In black are types of costs/benefits that we interpret the EA to have considered (though not necessarily having used the same wording). In red are cost and benefit categories that are missing from EA's analysis (not necessarily a comprehensive list)

	Cost	Benefit
Regulatory certainty	Susceptibility of market settings to lobbying	Reduced risk of lobbying from having market stress parameters codified in advance
Ease of implementation	Regulatory cost <ul style="list-style-type: none"> • Cost of regulatory revision (of trigger mechanism) 	Regulatory predictability: reduced risk of ad-hoc regulatory

¹⁹ <https://www.nzta.govt.nz/assets/resources/multi-criteria-analysis/multi-criteria-analysis-user-guidance.pdf>

	Cost	Benefit
Simple to understand	<ul style="list-style-type: none"> Cost of regulatory implementation Avoiding ambiguity in the application of the intervention Implementation cost on the system/ participants /regulator 	intervention <i>in response to high market stress</i>
Minimum intervention	There is a trade-off between mitigating the risk of market maker exit and the cost of providing relief. However, it is not clear what the cost of providing relief exactly is. If it is a regulatory cost then this is covered in the line above. If it is reduced market liquidity, then this needs to be assessed against the risk of MM exit.	
Durable and effective	Market maker loss from trading	Durability – not clearly explained Reduced risk of market maker exit Increased propensity for market makers to trade and contribute to liquidity for the whole-of-the market
Equity across all parties	Cost transfer: relief to market making entities may come at the expense of future market participants. Market maker loss from trading	Reduced risk of market maker exit Increased propensity for market makers to trade and contribute to liquidity for the whole-of-the market
Minimum intervention Market confidence		Reduced risk of market maker exit

Source: Sapere analysis based on Table 2

4. Our assessment in Table 1 also indicates that not all benefits have been considered when assessing the policy criteria. This could be the result of the criteria being assessed in isolation from each other, causing duplication and overlap, critically undermining the validity of the overall result. **We think the particular benefits of mitigating the risk of market maker exit and low incentives to trade have not been appropriately considered.**

We also caution against singling out impacts of cost *transfers*, unless these transfers clearly cause a net change in benefit/cost overall for the market. We explain some of the inconsistencies and gaps in cost/benefit impact analysis in Table 2.

Table 2: EA's assessment of Options 1 and 2, and our linkage of EA's logic to the delivery of stated objectives

	Our interpretation of EA's reasoning	Option 1	Option 2
Narrower mean bid-ask spread			
High liquidity			
Regulatory certainty	<p>Having relief settings in the Code makes them susceptible to lobbying, therefore undermining the reliability of the forward price curve and availability of risk management tools.</p> <p><i>This logic is questionable, given that the intervention parameters are codified (and therefore less susceptible to lobbying).</i></p>	EA assessment: Neutral	<p>EA assessment: Weak</p> <p>Increased chances of participant lobbying for changing the nature of the relief settings and type of relief.</p> <p>Trigger mechanism will need constant revision.</p>
Simple to understand	Avoiding ambiguity in the application of the intervention helps support the delivery of Objectives 1 and 2.	<p>EA assessment: Strong</p> <p>All parties have worked with the model to date and is it well understood.</p>	<p>EA assessment: Strong</p> <p>Although the model is new, it has a simple, explicit and fixed price-based trigger and relief mechanism.</p>
Ease of implementation	Avoiding undue implementation cost on the system/ participants /regulator helps support the delivery of Objectives 1 and 2.	<p>EA assessment: Strong</p> <p>The implementation is to let the urgent Code amendment expire.</p>	<p>EA assessment: Strong</p> <p>This option currently exists in the Code.</p>
Durable and effective for market stress periods	<p>Having pre-determined parameters in the Code means the intervention may not meet Objectives 1 and 2 in a range of likely scenarios.</p> <p><i>This logic is questionable, as it assumes a perfect intervention is possible, where no trade-off are required. The question that needs asking is what parameters provide a good balance between costs and benefits.</i></p>	<p>EA assessment: Neutral</p> <p>Does not provide relief in cases of high prices, therefore has risk around durability.</p>	<p>EA assessment: Neutral</p> <p>May not be durable given it has a pre-determined trigger point and relief parameters.</p>
Minimum intervention	BAU settings for market making provides the better balance between the risk of exit during high stress and the cost of implementing the relief.	<p>EA assessment: Strong</p> <p>No relief provided, but risk of market makers exiting in times of high stress.</p>	<p>EA assessment: Neutral/Weak</p> <p>Relief is provided only when prices exceed \$500/MWh,</p>

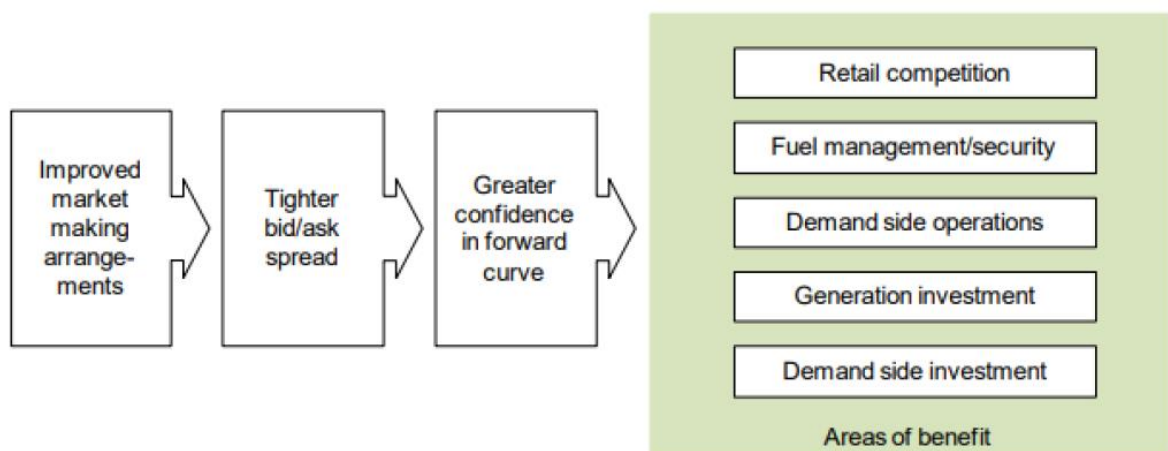
	Our interpretation of EA's reasoning	Option 1	Option 2
	The logic and rationale presented are questionable. It is not clear what the cost is from implementing the relief (other than implementation costs already covered through other criteria). Furthermore, it is the extent to which the Option <i>mitigates</i> the risk of exit that is important (noting the risk cannot be eliminated for all scenarios).	Current Code parameters are sufficient for market makers to remain in the market.	which reduces intervention. However, if triggered, it is a temporary measure. Furthermore, despite the relief, market makers may still exit.
Equity across all parties	<p>Having different settings for periods of high stress and BAU may not ensure that parties knowingly trade under the same conditions even when prices are elevated.</p> <p>The logic is questionable. The fact that parameters for a high-stress market are codified provides the transparency needed to ensure symmetric information.</p> <p>A cost transfer is undesirable.</p> <p>The EA does not clearly explain why a possible cost transfer is undesirable (for the purpose of achieving the two Objectives) if net benefits for the market overall do now worsen. Furthermore, the EA does not consider the costs of market exist in the counterfactual (i.e. if relief is not provided).</p>	EA assessment: Strong	EA assessment: Neutral Cost transfer: relief to market making entities may come at the expense of future market participants.
Market confidence	<p>Low market confidence can result in a price increase for a commercial market maker due to the risk of regulatory intervention, or the risk of disorderly trading as a result of limited supply.</p> <p>The risk of regulatory intervention can be minimised by codifying market making parameters specific to high stress situations. The absence of these increases the risks of ad-hoc regulatory intervention, therefore Option 1 is not "Neutral" against this criterion. We also think this criterion is linked to the criteria on regulatory certainty and minimum market intervention above.</p>	EA assessment: Neutral The EA "is assuming" previous settings are sufficient to market markets regardless of whether the market is stressed or not.	EA assessment: Neutral/Strong Relief is provided when market makers need it most, reducing the pressure they face at times of high stress, and thereby mitigating the risk of market exit.

5.2 A CBA framework is appropriate for assessing trade-offs from proposed intervention

The Authority has previously formalised a CBA framework on market making activities

1. The Authority has previously formalised its CBA framework on market making activities in its 2011 CBA of market-making obligations. That framework provided a logical flow between the intervention, the certainty of the forward curve, and the consequent impact on wider benefits (see Figure 6 below).

Figure 6: Linkage between market-making and economic benefits



Source: EA (2011) Cost benefit analysis – Market-making obligations. Information paper

2. From the 2011 cost-benefit analysis for the Authority's intervention we learn:²⁰

"This lack of confidence in forward prices inhibits parties from entering into hedge arrangements (both futures contracts and OTC products). Tighter market-making arrangements would increase confidence in forward prices because:

- (a) reducing the maximum bid-ask spread would directly contribute to price certainty
- (b) reducing the maximum bid-ask spread would make it harder for market makers to adopt relatively passive strategies that inhibit trading and price convergence. After each executed transaction, a new assessment is being made by the price maker of fair value, which in itself then provides information to the wider market
- (c) tighter spreads will reduce the size of initial margins (another barrier to participation) and also potentially lead to further reduced initial margins due to offsetting between futures positions

²⁰ Electricity Authority's Information Paper Cost Benefit Analysis – Market-Making Obligations, 21 November 2011 (provided by Electricity Authority on request).

(d) in combination, the above effects would facilitate trading by non-market parties (including new parties with no underlying physical position), further improving the robustness of price discovery. This arises because tighter spreads and greater market depth would make it easier for parties to trade in and out of positions that they wish to change, reducing the barriers to entry; and

(e) the open access nature of the futures market means that persons with an alternative view on prices would be able to exercise their view by freely transacting on the futures exchange.

The consequential benefits are:

a) stronger retail competition, because parties entering or expanding their presence in the retail market are able to better manage their exposure to price risk

(b) improved fuel management (hydro and thermal fuels) decisions because parties have a more robust indicator of expected future conditions

(c) improved demand-side operating decisions, such as whether to commit to a production order or buyback contract, because they have a more robust indicator of expected conditions and greater confidence to enter into contracts

(d) improved generation investment decisions leading to stronger generation competition, because parties have a more robust indicator of expected future conditions

(e) improved demand-side investment decisions, such as whether to expand production facilities or develop demand response capacity, because they have a more robust pricing benchmark for the future."

3. We consider that framework to be appropriate for the current consultation, given that the Authority assesses the proposed Options from the perspective of achieving the outcome of a "reliable" market making service, which is key to ensuring a robust forward price curve and availability of risk management tools.
4. Our view is that a CBA framework is more appropriate for assessing proposed interventions, given that it helps determine net impacts *overall* for the market and broader economic benefits, with an explicit consideration of costs and benefits that apply. These costs and benefits would have to reflect the three trade-offs between the key factors that describe the success of market making in the New Zealand electricity futures market:
 - a. The cost of providing the services by market makers
 - b. The service levels of market making
 - c. The reliability of market making services.
5. The costs should include both regulatory, but also those on market makers (distinguishing between the nature of costs for regulated and commercial market makers) and other market participants.

5.3 BAU settings are not appropriate for stressed markets

We posit that business-as-usual settings in a fast market break the causal link between tighter market making arrangements and greater confidence in a forward curve

In Figure 7, we track each intervention and the rationale. The arrows are shown as dotted lines where the metrics supporting the case are not quantified, indicating that the benefits achieved from further intervention are qualitative. We note that the relationship between the codified rules and greater confidence in the forward curve may be broken at the earlier step in a fast market. That is consistent with the language the Authority uses to justify the impromptu intervention when volatility was high in August 2024. However, the Authority also explicitly identified liquidity in the rationale for the 2024 intervention. The risk that market makers might withdraw their services is the risk that liquidity and price discovery might suffer.

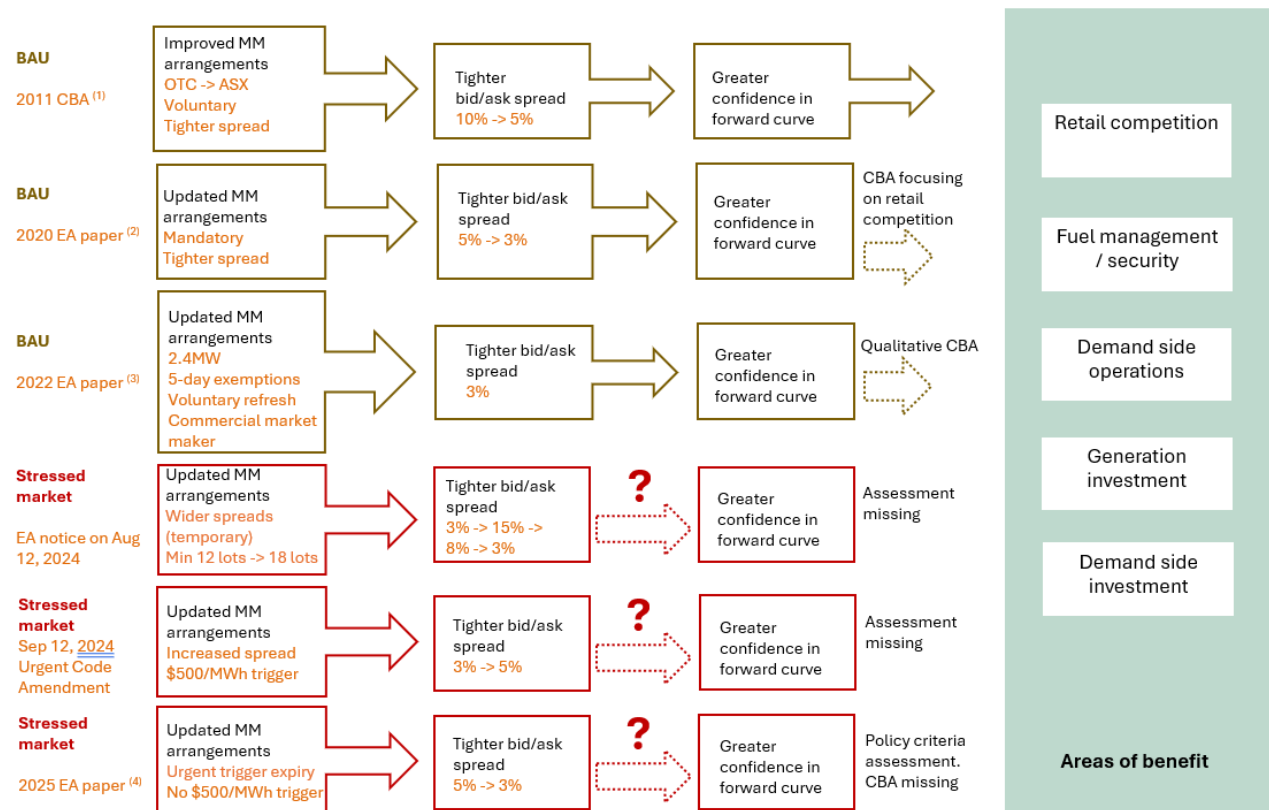
We went back to the original quantified cost-benefit analysis that supported the intervention to lock in the voluntary arrangements.²¹ We looked into the assessment frameworks used to guide the Authority's decisions regarding interventions in high-stress markets, and also asked whether the rationale established in the 2011 CBA would hold up in periods of volatility today.

Figure 7 clearly shows that no robust assessment process has been used to inform the Authority's decision-making with respect to changing bid-ask spreads in situations of high market stress. As noted in the previous section, there are significant gaps and overlaps in the policy criteria analysis used in the current consultation paper.

The point of breakdown in the logic for maintaining tight spreads during fast market conditions is shown in the bottom row. We suggest that maintaining tight spreads in these conditions undermines confidence in the forward curve.

²¹ Electricity Authority's Information Paper Cost Benefit Analysis – Market-Making Obligations, 21 November 2011 (provided by Electricity Authority on request).

Figure 7: Applying EA's 2011 CBA high-level framework to subsequent decision-making on market making enhancements



In Table 3 we consider the impact of maintaining tight bid-ask spreads against the intervention logic used by the Authority previously. We also consider what happens when the spreads are on the wider/higher end (e.g. 15 per cent) and whether the benefits are commensurate with the relief provided to market makers. Finally, we consider whether there is a goldilocks spread that would balance the objectives of the market maker scheme with the incentives for market makers to continue to provide the service.

Our thesis is that low bid-ask spreads increase incentives for market makers to reduce their trading activity during periods of high volatility, thereby undermining price discovery and liquidity

This, in turn, diminishes the benefits that come from having a market making scheme. This impact of volatility is borne out by the August 2024 evidence that two out of five market makers breached the five-exemption rule,²² and at least one market maker observed to the Authority that it might be less costly to "default on their obligations" than to continue to market make.

In our view, a spread of 3 per cent is too tight during periods of high price volatility. It appears to us that 15 per cent was too wide to expect to still get the benefits from having a market making scheme in place.

²² Interview with ASX on Feb 28.

Table 3: Qualitative assessment of impact from maintaining tight bid-ask spreads against the Authority's CBA intervention logic

Assessment against intervention logic:	Risk premia / OTC-ASX price link	Passive strategies	In/out trades	Cost of initial margins
Summary impact of tight bid ask spreads during high volatility	Tight bid ask spreads in fast markets create incentives for MM to increase risk premia especially on pricing of OTC hedges	Tight bid-ask spreads in fast markets reduce incentives to trade actively due to the increased probability of MM losses	Tight bid-as spreads in fast markets makes it more expensive for MM to get out of positions because of the obligation on them to trade	There is a risk that initial margins are increased during fast market conditions if price discovery breaks down
3%	In BAU with a 3% spread, there is a given ability for all participants to exercise their view by freely transacting, and we know that in BAU the OTC prices will be in lock step with the futures prices. In fast markets, there is disconnect between futures and OTC prices -> increased risk premia -> less certain about pricing hedges and staying in the market .	When market making in a volatile market MMs have to be more nimble and take more chances when they refresh their bids and offers -> Greater prob of losses from market making -> greater prob of using exemptions or not trading	In volatile markets, it becomes more expensive for MM to get out of positions they don't want and have only got into because of their obligations. The quid pro quo for the market is some continuity in price discovery. At the extreme maintaining an obligation of tight bid ask spreads during periods of volatility raises the risk of market makers pulling out of the scheme. Note the consequence of "pulling out" are different for parties obligated through the Code and the contractual arrangement for commercial market makers.	The level of volatility impacts initial margins so changes to the bid ask spread would have a flow on effect to initial margins. Where that leads to higher initial margins that creates a barrier to participation.
15%	Maybe a better sense of risk premiums (albeit higher) but that means other commercial arms of market makes can factor that into their decisions			High cost to MM
Trade-offs for the 'goldilocks' bid-ask spread	Achieve balance between availability of hedge offers and ability to manage market marker's own risk	Trade off is to minimise losses to MM while maintaining some continuity in price discovery		Trade-off between cost of initial margins and impacts on price discovery / liquidity
	Maintain the role of the futures market in enabling price discovery in OTC during periods of volatility	The presumption is that liquidity and price certainty are inextricably linked. The critical goal of market making is price certainty but the spreads need to be calibrated to achieve price certainty AND liquidity.		

We strongly recommend that the Authority considers an alternative Option that builds relief to market makers into the Code

The analysis above indicates that service levels should reflect the fact that the market makers propensity to trade would depend on a calibrated bid-ask spread so that it is not too-high or too-low in cases of high market stress. Furthermore, the reliability of services should account for the risk of market maker exit and also for regulatory predictability.

We therefore strongly recommend the Authority pursues the option described in para 8.12 d):

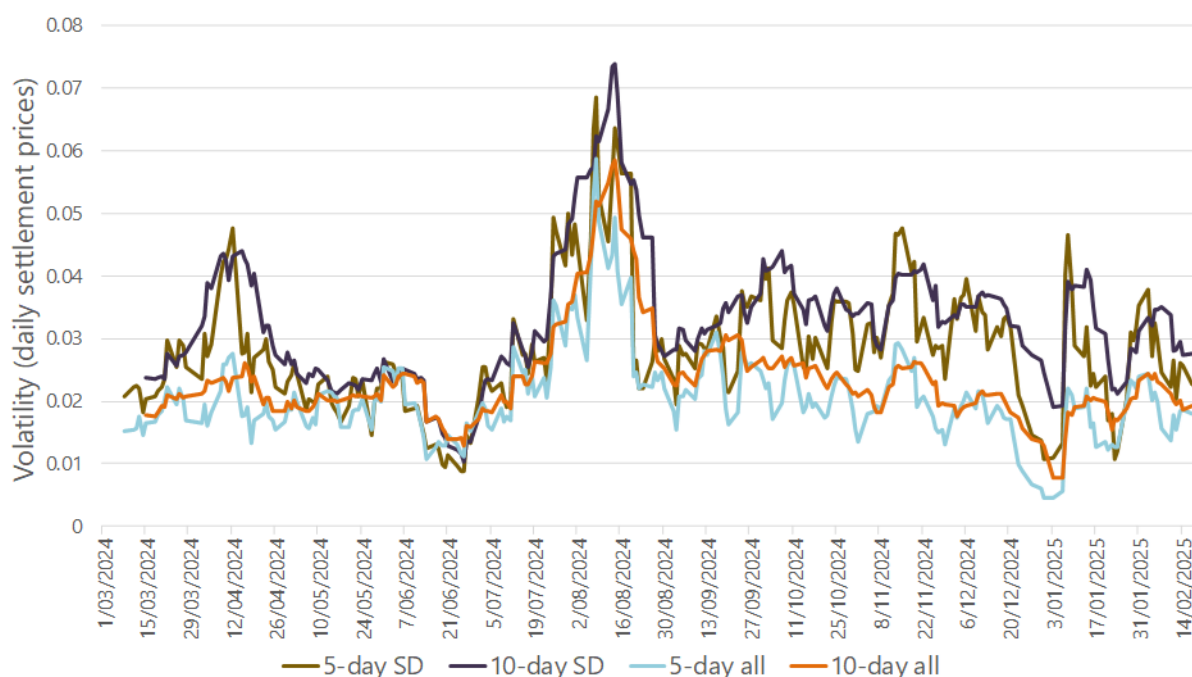
"Building relief to market makes into the Code with discretion to the Authority to trigger as required."

Appendix A The trigger for a VCM

We can see that some mechanisms designed to deal with a fast market or high volatility kick in often, and sometimes for very brief periods of time. If the preference is for a VCM for in NZ Electricity futures to activate occasionally, and in times of high volatility in futures prices, then the trigger would have to detect just that so the Authority can be well informed when they activate the mechanism. In Figure 8 we show four measures of volatility to illustrate the point.

Volatility has been measured using the standard deviation of log returns on the daily settlement prices of futures products. This approach is widely used in financial markets as it provides a consistent measure of price movements and risk. Volatility has been calculated over rolling five-day and 10-day windows for short-dated contracts, and contracts of all maturities that market makers are active in (short and long-dated). The five-day moving volatility captures short-term price fluctuations, reflecting more immediate market dynamics, while the 10-day moving volatility smooths out some of the short-term noise to provide a broader view of risk if there are consistently observed fluctuations in settlement prices. The actual value of volatility represents the typical percentage deviation in prices over the given period. For example, if the five-day moving volatility is 0.03 (or 3 per cent), this means that, on average, daily settlement prices over the past five days have deviated by 3 per cent from their mean.

Figure 8: Four measures of volatility in NZ Electricity futures during 2024



On the basis of a preference for a VCM that activates occasionally when prices are volatile that points to a trigger that simulates the point where business-as-usual market making could break down as discussed in the Authority board paper from August 2024. Our preliminary thinking is a slower rolling average of volatility based on the average of all contract settlement prices.

About Sapere

Sapere is one of the largest expert consulting firms in Australasia, and a leader in the provision of independent economic, forensic accounting and public policy services. We provide independent expert testimony, strategic advisory services, data analytics and other advice to Australasia's private sector corporate clients, major law firms, government agencies, and regulatory bodies.

'Sapere' comes from Latin (to be wise) and the phrase 'sapere aude' (dare to be wise). The phrase is associated with German philosopher Immanuel Kant, who promoted the use of reason as a tool of thought; an approach that underpins all Sapere's practice groups.

We build and maintain effective relationships as demonstrated by the volume of repeat work. Many of our experts have held leadership and senior management positions and are experienced in navigating complex relationships in government, industry, and academic settings.

We adopt a collaborative approach to our work and routinely partner with specialist firms in other fields, such as social research, IT design and architecture, and survey design. This enables us to deliver a comprehensive product and to ensure value for money.

For more information, please contact:

Toby Stevenson

Phone: +64 21 666 822

Email: tstevenson@thinkSapere.com

Wellington	Auckland	Sydney	Melbourne	Canberra	Perth	Brisbane
Level 9 1 Willeston Street PO Box 587 Wellington 6140	Level 20 151 Queen Street PO Box 2475 Shortland Street Auckland 1140	Level 18 135 King Street Sydney NSW 2000	Level 11 80 Collins Street Melbourne VIC 3000	GPO Box 252 Canberra City ACT 2601	PO Box 1210 Booragoon WA 6954	Level 18 324 Queen Street Brisbane QLD 4000
+64 4 915 7590	+64 9 909 5810	+61 2 9234 0200	+61 3 9005 1454	+61 2 6100 6363	+61 8 6186 1410	+61 7 2113 4080

www.thinkSapere.com

independence, integrity and objectivity