Hedge Market Enhancements (market making)

Ensuring market making arrangements are fit-for-purpose over time

Discussion paper

November 2019

Foreword

The exchange traded New Zealand electricity futures market performs two key functions: participants use it directly and indirectly to manage their spot price risk, and participants and other interested parties use the forward price curve the futures market creates to inform a wide range of investment and operational decisions. These market functions promote the long-term interests of consumers by enabling efficient decisions and fostering competition.

The futures market, supported by market making services, works well most of the time. However, when there is significant uncertainty about future prices in the underlying spot electricity market (stress events) the difference between the best price to buy a contract and the best price to sell a contract widens, and the activities of market makers on the ASX platform can become inconsistent, move to bilateral over the counter contracts, or can cease entirely.[1] There is also evidence that suggests bid-ask spreads widen too far and remain wide for too long during stress events.

Electricity market participants, other stakeholders, and the Authority have expressed significant concerns about the efficiency of prices, and the ease with which deals can be struck, particularly since the Pohokura gas field outage in spring 2018. In addition, the current arrangements rely on the voluntary participation of market makers, and some of them have signalled they may not provide services on this basis in the future.

The Electricity Price Review (EPR) Panel picked up on the concerns about the performance of the futures market in its May 2019 recommendations to the Minister of Energy and Resources. The Government accepted the recommendation that the Authority should impose a '*mandatory market-making obligation on vertically integrated generator-retailer companies unless a better solution can be found (potentially an incentive-based scheme funded largely by the vertically-integrated companies)*'. The Minister considers this to be a high priority.

Since the time the EPR Panel considered this matter the voluntary market making arrangements have evolved to be more robust to stress events. For example, they were amended so that market makers could pull back from the market five times each month, instead of being able to pull back whenever they claimed financial stress. The Authority continues to actively monitor the hedge market and can urgently bring in temporary mandatory market making arrangements – without consultation – if consumer interests are threatened.

The Authority is reviewing enduring market making arrangements. We have heard and understood the concerns raised by the Minister, the EPR Panel and stakeholders. Our review will take an objective and evidence-based approach to understand how the futures market and market making arrangements have performed – this is a necessary step to ensure any intervention builds confidence in the market, enhances its performance, and provides long-term benefit to consumers. Our work will identify how a well performing futures market in the New Zealand context (one that is workably competitive) behaves normally and during stress events.

The Board of the Authority intends to make a high-level decision on enduring market making arrangements in May 2020. The options it will consider at that time will include mandatory and likely incentivised solutions. The feedback we receive from stakeholders will help us decide

[1] All markets and market making arrangements are challenged by significant price uncertainty in the underlying asset. Even very liquid and heavily traded markets, such as those for major currencies, can experience widening of spreads and reductions in market making at such times.

what other options we pursue, and how all those options may be designed at a detailed level including, for example:

- which parties bear the costs of the options (whether directly or indirectly) and how those parties are selected (for example, Trustpower, Pioneer/Pulse, and Todd/Nova are potentially suitable market makers as they share features with existing market makers – they are generator retailers, and have some scale)
- expectations of market making performance during and after stress events
- transparency of market making performance provided to the Authority and to stakeholders
- the level of services provided (such as bid-ask spread requirements during normal market operation and during stress event)
- how the Authority would enforce market making commitments.

This discussion paper seeks feedback on the Authority's initial analysis of problems and opportunities, and seeks information and evidence from stakeholders to support further analysis. We will consult again in early 2020 on options for market making arrangements, and will be actively working with the existing market makers over this period to ensure their commitment to the current arrangements in the interim. By going through this process we will ensure any changes improve market making performance in a way that provides maximum net benefit to consumers in the long-term. We look forward to receiving your input.

James Stevenson-Wallace

Chief Executive

Contents

1 What you need to know to make a submission

Purpose of this document

1.1 Participants, stakeholders, and the Authority have identified high level concerns with the current market making arrangements. Many participants and stakeholders have expressed a clear preference for specific interventions, ie, incentivised or mandatory market making, and which parties should bear the costs of intervention. For any intervention to work effectively and provide long-term benefit to consumers, it is important to first fully understand the problems and opportunities that need addressing. The purpose of this document is to seek feedback on the Authority's analysis of problems and opportunities with market making, and to gather further information from stakeholders to ensure problems and opportunities are robustly defined so that any intervention will provide maximum benefit to consumers.

How to make a submission

1.2 The Authority's preference is to receive submissions in electronic format (Microsoft Word). Submissions in electronic form should be emailed to HME.feedback@ea.govt,nz with 'Discussion Paper—Hedge Market Enhancements' in the subject line.

1.3 If you cannot send your submission electronically, post one hard copy to either of the addresses below.

Postal address	Physical address
Submissions Electricity Authority PO Box 10041 Wellington 6143	Submissions Electricity Authority Level 7, Harbour Tower 2 Hunter Street Wellington

1.4 Please note the Authority wants to publish all submissions it receives. If you consider that the Authority should not publish any part of your submission, please:

(a) indicate which part should not be published

(b) explain why you consider that part should not be published

(c) provide a version of your submission that can be published (if the Authority agrees not to publish your full submission).

1.5 If you indicate there is part of your submission that should not be published, we will discuss with you before deciding whether to not publish that part of your submission.

1.6 However, please note that all submissions received, including any parts that are not published, can be requested under the Official Information Act 1982. This means the Authority would be required to release material that was not published unless good reason existed under the Official Information Act to withhold it. The Authority would normally consult with you before releasing any material that you said should not be published.

When to make a submission

1.7 Please deliver your submission by 5PM on Monday 2 December.

1.8 This deadline allows three weeks for submissions, rather than the Authority's standard six week consultation period. This is because the Authority is seeking to meet with interested stakeholders and also because it will conduct formal consultation at a later date.

1.9 The Authority will acknowledge receipt of all submissions electronically. Please contact HME.feedback@ea.govt.nz if you do not receive electronic acknowledgement of your submission within two business days.

Further information

1.10 The Authority's website contains useful background material about the Authority's previous work, the work of its advisory groups, and the work of its predecessor (the Electricity Commission) relating to hedge markets: https://www.ea.govt.nz/development/work-programme/risk-management/hedge-market-development/.

1.11 The Government's recent Electricity Price Review (EPR) considered issues with the hedge market in general and market making in particular. The EPR Panel's two interim reports (and submissions to those reports) are on the website of the Ministry of Business, Innovation and Employment: https://www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/energy-consultations-and-reviews/electricity-price/.

1.12 Please direct any specific questions or queries to: HME.feedback@ea.govt.nz.

2 Background and context

The hedge market allows participants to manage a volatile spot market and provides visibility of future price expectations

2.1 The wholesale electricity spot market allows for electricity demand in New Zealand to be supplied at the lowest price. The spot price varies as supply and demand fluctuate, and with the transmission network's ability to transport electricity from suppliers to consumers. The nature of supply, demand, and the transmission network in New Zealand means that prices can be volatile.[2] As long as the volatility reflects market fundamentals, it provides participants with accurate price signals for short- and long-term decision making.[3]

2.2 However, businesses and consumers often prefer certainty, and the hedge market operates alongside the spot market as a tool to manage the price risk of buying and selling on the volatile spot market. The hedge market does this by allowing participants to agree a price for electricity ahead of time, effectively locking in the price at which each will buy or sell electricity. A byproduct of hedge market activity is that a collective view of future spot prices is produced and can be made publicly available - producing a forward price curve.

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2 New Zealand has a particularly volatile spot market for many reasons, including because the majority of generation is weather dependent (hydro and wind generation), the market is relatively small compared to the size of individual plant (outages can have a relatively large effect), and the transmission network is relatively long and stringy.

3 Some of these considerations are discussed in our recent market commentary. Electricity Authority, *Wholesale Electricity Market Commentary – March 2019,* 2019. Available at: https://www.ea.govt.nz/about-us/media-and-publications/market-commentary/market-insights/wholesale-electricity-market-commentary-march-2019/.

The futures market is uniquely important because it also produces a robust forward price curve

2.3 The Authority views the hedge market as comprising three distinct types of hedge contract: over-the-counter (OTC) contracts, financial transmission rights (FTR), and exchange traded futures and options.[4] Each contract type is both a complement to and a partial substitute for each of the others, and each type has important functions for the Authority as market designer and administrator. A particularly important feature of futures is that they produce the most useful and widely used forward price curve – the current price at which electricity can be bought and sold at different periods in future. This is principally because futures contracts are standardised and trade relatively frequently and the prices and volumes traded are published.

2.4 The forward price curve produced as a result of activity in the futures market provides significant benefit to all interested parties – even those who do not trade futures or are not industry participants. Decisions which may rely on this information include:

(a) whether or not to make an investment in generation, demand response or distributed energy resources (DER), or in some other sector where electricity is used as an input to production

(b) whether or not to operate generation plant, undertake demand response or operate DER, or run an industrial plant or process for which electricity is used as an input

(c) the value a generator places on its ability to store fuel

(d) what price to offer to sell electricity to retail customers.

2.5 The forward price curve embodies information about expectations of future prices because if expected future spot prices rise, then the futures price rises and vice versa. The width of the bid-ask spread indicates, among other things, the level of uncertainty about future spot prices. If uncertainty increases the bid-ask spread will widen (in the absence of other factors). The bid-ask spread is a component of the risk premium associated with securing a fixed price for future electricity purchases or sales in the face of that uncertainty.

2.6 An example of the importance of the forward price curve is its role in ensuring security of supply. During the Pohokura gas outage in 2018 the high future spot prices signaled by the forward price curve would have influenced a range of decisions:

(a) Genesis decided to import coal at short notice to run its generation assets at Huntly, in anticipation of doing so profitably based on prices in the forward price curve

(b) some hydro generators conserved water in the short-term so that they could run during periods of anticipated high prices.

2.7 These decisions all contributed to ensuring that there was sufficient supply to meet demand during the period of reduced gas supply.

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[4] Currently, the only exchange traded futures and options are those traded on the Australian Securities Exchange (ASX) platform.

Without market making services the forward price curve would be less robust

2.8 Many individual participants hold information that is relevant to the expected price of electricity in the future. It would be costly to participants or any other interested party to obtain all that information and form a view of future spot prices. When parties offer to buy or sell a futures contract, the information they have and their analysis of it is implicitly disclosed in the price. The more that informed parties participate in a futures market, the more information is disclosed to the market about expected future spot prices.

2.9 The forward price curve produced by activity on the futures market can be regarded as a public good, in the sense that term is used by economists: it is non-excludable and non-rivalrous. It is non-rivalrous because one party using the forward price curve (for example, to inform a decision whether to invest in generation) does not prevent other parties from also using it (for example, to inform a different and competing generation investment decision, or to inform an entirely different decision such as a factory's decision to purchase electricity for a manufacturing process). It is also non-excludable because futures prices are published and freely available to all parties and so it is not possible to exclude any parties from using the information the forward price curve contains.

2.10 One of the common problems of markets recognised in economics is their tendency to supply less than the optimal quantity of public goods. This is because parties that provide them cannot obtain payments from others who benefit from them because they cannot be excluded from receiving the benefits if they do not pay.

2.11 In the context of futures markets, parties that trade incur transaction costs and will only do so voluntarily up to the point where the benefits they receive outweigh these costs. The benefits to others of access to the forward price curve does not get factored into their decisions and so trading that would be socially beneficial but is not privately beneficial will not occur.[5]

The futures market is currently supported by voluntary market making

2.12 When the Authority was created in 2010 it was required, among other obligations, to either amend the Code within a year to facilitate or provide for an active market for trading financial hedge contracts for electricity, or report to the Minister explaining why it had not.[6] At the time the four largest generator retailers worked with NZX and ASX to

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5 To create a robust futures market on a voluntary basis requires attracting enough active participants who see sufficient private net benefit over costs for themselves from trading to sustain the market so it produces efficient forward prices.

History shows achieving this is very difficult. For many assets, goods and most services there are no futures markets. There is typically only one active market in the world when there is a market at all. Very few markets are found in small economies like New Zealand's, where the market for the underlying assets are also small. Most attempts to establish futures markets fail, even those by established exchanges that already host market making expertise. Moreover, for most futures only the near dated contracts trade actively and have material numbers of contracts open in them so the forward price curve often effectively covers only a short period.

There were three attempts to establish an electricity futures exchange in Australia but only one – promoted by Transpower's subsidiary d-Cypha – was successful. There were two attempts to promote electricity futures exchanges in New Zealand and even the second attempt was a failure until the 2009 Ministerial Review made it clear that the Electricity Authority should have a legal mandate to promote such a market.

6 Section 42 of the Electricity Industry Act 2010. Available at: http://www.legislation.govt.nz/act/public/2010/0116/latest/DLM2634376.html.

facilitate voluntary market making arrangements for electricity futures instead of waiting for the Authority to amend the Code and impose requirements on them. The generator retailers decided to proceed with market making on the ASX platform.

2.13 Under the market making arrangements the four largest generator-retailers agreed with ASX, they undertook to continuously provide offers to buy and sell specific futures products with a maximum spread between the buy and sell price during a half-hour window at the end of each trading day. The original obligation related to quarterly contracts out to four years and included a provision that allowed the obligation to be suspended in the event the market maker experienced portfolio stress.

2.14 These arrangements facilitated the relatively quick establishment of an active electricity futures market that provided a reasonably robust forward price curve covering four years.

2.15 The Authority decided to support the voluntary arrangements its threat of intervention had facilitated because it considered '*the long-term interests of electricity consumers are likely to [be] better served by building hedge market activity without resort to Code amendments, provided ongoing progress is reasonable.*'[7] The Authority made it clear to market makers it had developed draft Code amendments providing for compulsory market making as a fallback option it could introduce under the urgent Code amendment provisions in the event voluntary market making failed.

2.16 The 2011 arrangements evolved over time with the changing needs of the market. For example, the bid-ask spread obligation was originally 10%. This meant that market makers had to offer to sell contracts at prices no more than 10% higher than they offered to buy them. Over time this obligation was tightened from 10% to 5%, and the arrangements were also extended to cover six months of monthly baseload futures. Key indicators of market performance, such as open interest, trading volume on market and through block trades, and bid-ask spreads suggest the market has continued to develop. Most of the time the market appears to provide an efficient tool to manage spot price risk and produces a robust forward price curve.

3 Some stakeholders have questioned whether current arrangements are fit for purpose

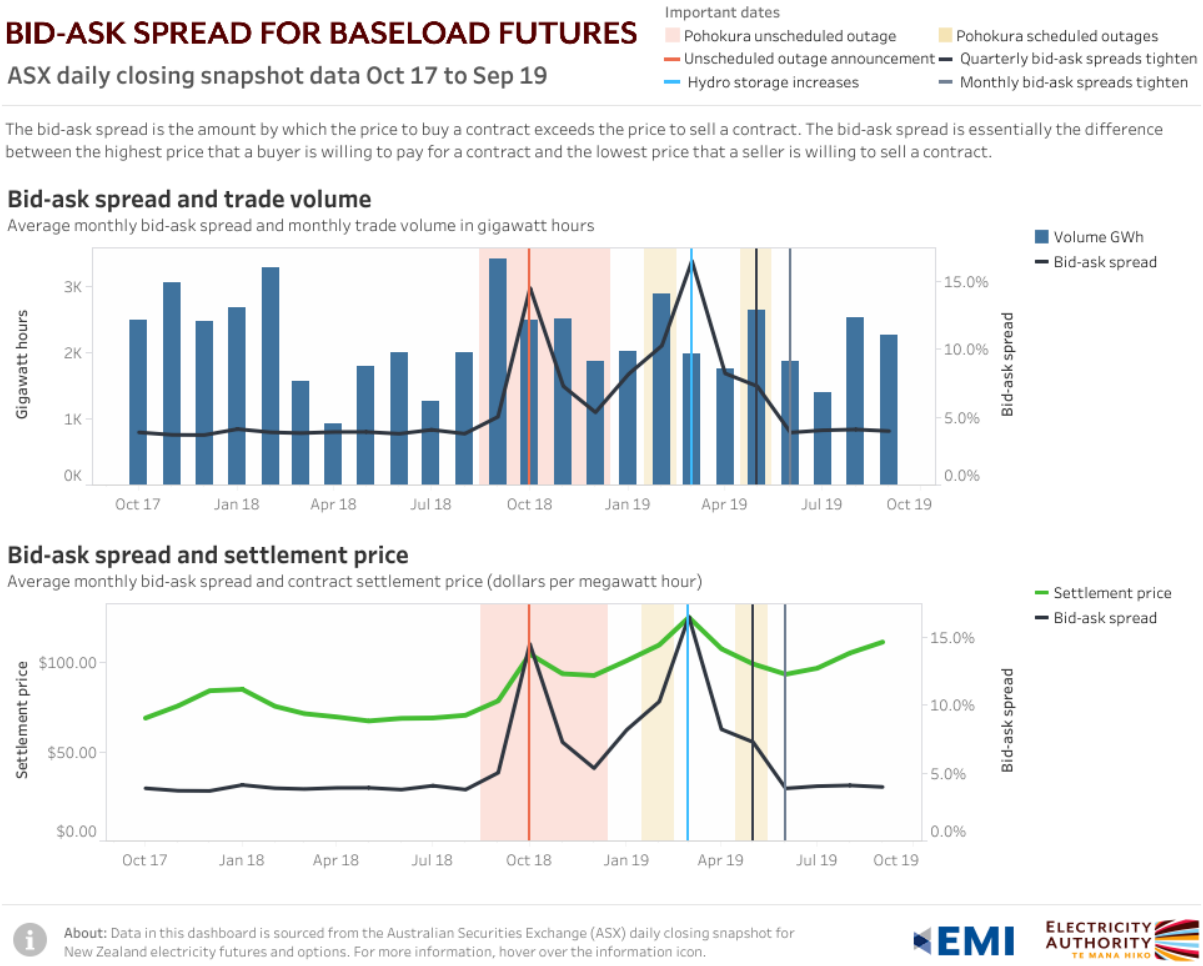
3.1 During periods of wholesale market stress participants' views of future spot prices become less certain and this is reflected in wider bid-ask spreads for futures. Voluntary market making arrangements have not prevented bid-ask spreads widening during such events, and it is an expected outcome of increased uncertainty. For example, during the market stress period in spring 2018 future spot prices became highly uncertain as low lake levels were compounded by the extent and duration of the Pohokura gas outage being unclear.

3.2 The uncertain and volatile trading conditions increased the cost and risk of providing market making services, and market makers relied on a provision in their agreements that released them from the obligation to market make when they experience financial stress. These provisions are often referred to as the 'portfolio stress' provisions. The criteria used by each market maker when they relied on the portfolio stress provisions

[7] Electricity Authority, *Report on Completion of Section 42 New Matters in the Electricity Industry Act 2010*, 2011. Available at: https://www.ea.govt.nz/dmsdocument/11908-1-november-2011-report-to-the-minister-on-section-42-matters.

was opaque, both to other market makers and the wider wholesale market. That two of the market makers had direct involvement in the gas market and two did not added very significantly to the perceived risk of market making for the two without gas involvement as they feared parties with better gas related information could use this to their disadvantage. The outcome was wide spreads for most market made futures contracts, but particularly for near-term contracts. This can be seen in Figure 1, which shows average end of day bid-ask spreads across all market made contracts.

Figure 1: Bid-ask spread – baseload futures[8]



3.3 The market making arrangements were recently amended to replace the 'portfolio stress' provision with a provision that allows each market maker five daily exemptions each month to withdraw from market making.[9] Market makers are not restricted in when they may use each of their exemptions. Under the new arrangements we would expect to see similar patterns of wider bid-ask spreads during periods of market stress and uncertainty as market makers are able to withdraw services.

8 An interactive version of this figure is available at: https://public.tableau.com/profile/electricity.authority#!/vizhome/Hedgemarketenhancementproject/Bid-askspread.

9 For completeness, market makers can also withdraw if it would be unlawful for them to trade, or if the trading platform is disrupted.

3.4 During the market stress period in 2018 and 2019[10] many participants and other stakeholders urged the Authority to urgently intervene to ensure that bid-ask spreads were reduced. During this period the Authority explicitly considered what criteria it would apply when considering whether to intervene. At a high level, the Authority would intervene urgently if the hedge market was no longer achieving the Authority's statutory objective, and the Authority considered it necessary or desirable in the public interest to intervene.[11]

3.5 The hedge market in general, including but not limited to the futures market, supports the Authority's statutory objective by providing a robust forward price curve and enabling participants to efficiently hedge their spot price risk in the short and long-term. Those functions are not directly measurable, but the Authority currently tracks the following measures as a proxy for whether they are occurring:

(a) the bid-ask spread of market made futures

(b) the open interest of market made futures

(c) whether one or more market makers have effectively ceased market making, including by materially reducing the services provided

(d) volume of trades across both futures and OTC contracts.

3.6 The Authority did not intervene at the time of the stress events. As part of this project the Authority is seeking to build evidence and understanding of how market stress events such as those in 2018 and 2019 impact on consumers in the short and long term.

3.7 In response to stakeholder concern, and to ensure that it fully understands the problems and opportunities with market making, the Authority initiated a project to ensure that market making arrangements are fit-for-purpose over time. In this context, fit-for-purpose means that the market making arrangements provide long-term benefits to consumers in both normal market operation and during stress events.

3.8 The EPR Panel made recommendations regarding market making in its final report to the Minister which was completed in May 2019 - before the voluntary market making arrangements were amended to replace the portfolio stress provision with the five days a month withdrawal from market making provision. The EPR Panel's final report was released to stakeholders on 3 October 2019.[12]

3.9 The Government accepted that the Authority should impose a '*mandatory market-making obligation on vertically integrated generator-retailer companies unless a better solution can be found (potentially an incentive-based scheme funded largely by the vertically-integrated companies)*'. The Minister considers this to be a high priority.[13]

3.10 As noted by the EPR in its final report, the Authority has developed an interim mandatory market making arrangement that could be implemented urgently, if consumer interests

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10 The market stress period began when the Pohokura gas field experienced unscheduled outages in September 2018 and continued until mid-2019.

11 Around this time the Authority wrote to a group of non-integrated retailers setting out the factors it would consider when deciding whether to intervene. This letter is published on the Authority's website: https://www.ea.govt.nz/development/work-programme/risk-management/hedge-market-development/correspondence/.

12 Final report available at: https://www.mbie.govt.nz/assets/electricity-price-review-final-report.pdf.

13 The Government's response to the final report is available at: https://www.mbie.govt.nz/assets/electricity-price-review-government-response-to-final-report.pdf.

are threatened. The Authority's analysis to date does not support immediately introducing mandatory market making using its powers to make urgent Code amendments – the current market makers are meeting their contractual obligations with the ASX and are aware of the threat of urgent intervention – but it remains an option. However, we are open to reconsidering this question on the basis of the information gathered in response to this paper. That is, the information we gather will inform both our immediate monitoring of the hedge market and the design of enduring market making arrangements. The Authority considers urgent Code amendments to be a blunt instrument with a high risk of unintended consequences. Consequently, the Authority would not use an urgent Code amendment lightly, and there are legal safeguards around when they can be used.

3.11 The Authority's focus at this stage is to robustly identify the problems and opportunities with market making to ensure that any intervention is appropriately designed and targeted. Identifying the correct problems and opportunities will ensure the most appropriate type of intervention and is also necessary before undertaking the detailed design of any particular intervention.

4 Our analysis identified potential issues for further analysis

4.1 From the Authority's perspective the futures market has two key functions:

(a) enabling participants to manage their exposure to volatile spot prices

(b) producing a robust forward price curve.

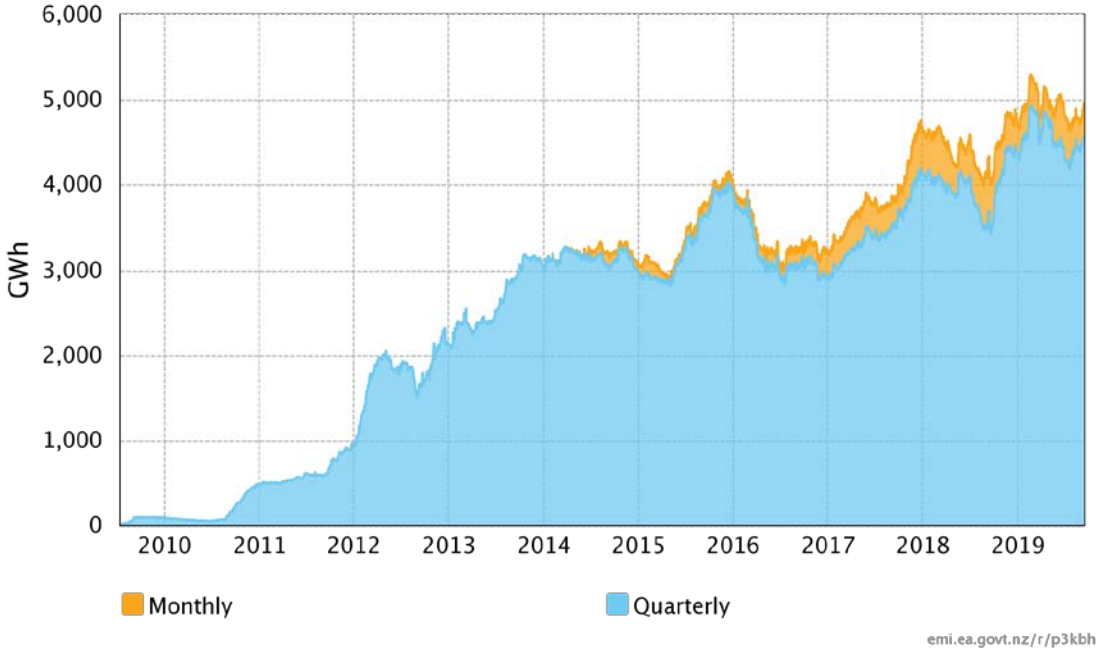
4.2 Market making services on the futures market started around the same time as the futures market itself. Accordingly, it is not possible to directly observe the impact of market making on the functions of the futures market – however, we consider that market making arrangements have played a very significant role in the success of the futures market to date. Market making was originally justified with reference to creating an active market for trading financial hedge contracts for electricity, with a non-legislative target of increasing open interest to 3,000GWh. Open interest can be characterised as a measure of whether the futures market is achieving its two functions, for example:

(a) open interest relates to the amount of trading on the futures market, which shows whether participants are using the futures market to manage their spot price risk

(b) open interest is a measure of financial exposure to changes in futures prices. As open interest increases, participants have greater incentive to ensure futures prices reflect their view of future spot prices.

4.3 Open interest has increased reasonably steadily since the start of the futures market, suggesting the futures market, supported by market making arrangements, is successfully performing its functions. Figure 2 below shows open interest for baseload futures contracts (most of which are currently market made).

Figure 2: Open interest – baseload futures



4.4 Open interest aside, at times the Authority and stakeholders have expressed concern the futures market may not be fulfilling one or both of its functions sufficiently to support the Authority's statutory objective – most recently during market stress events in 2018 and 2019. In particular, some participants and other stakeholders have claimed several specific issues with performance of the futures market's functions and the market making arrangements. Claims include:

(a) that market making arrangements are fragile[14]

(b) bid-ask spreads become too wide during market stress events and/or are too slow to narrow again[15]

(c) there is not enough volume available in the futures market, particularly during stress events[16]

(d) the futures market is not sufficiently liquid[17]

(e) futures prices are too high[18]

(f) the market making arrangements are not sustainable.[19]

4.5 The potential problems listed above were identified by, and in submissions to, several reviews and investigations relating to the hedge market, including:

(a) the Authority's (now disestablished) Wholesale Advisory Group's discussion paper *Hedge Market Development* in 2014[20]

14 For example, this was identified by the Authority in its review of winter 2017 and the EPR Panel.

15 For example, this was identified by a number of small and non-integrated retailers in submissions to the EPR Panel.

16 This has been identified by many participants since at least 2015.

17 This has been identified by many participants since at least 2015.

18 For example, the Authority has heard complaints that futures prices are too high, or that they are too high compared to some observed OTC contract prices.

19 This issue has been raised repeatedly by some of the existing market makers.

(b) the Authority's consultation paper *Enhancing trading of hedge products* in 2015[21]

(c) the Authority's review of winter 2017[22]

(d) the Authority's decision on a claimed Undesirable Trading Situation in spring 2018 that was released in 2019[23]

(e) the EPR Panel's *First report* in 2018 and *Options paper* in 2019.[24]

4.6 As part of our initial analysis we considered the evidence available to us relating to each of the issues identified above.

Market making fragility is derived from general performance of the futures market

4.7 The Authority and the EPR Panel have both expressed concern about the fragility of market making arrangements. For example, in its review of winter 2017 the Authority identified the fragility of market making arrangements as a concern. Widening spreads, in response to low hydro conditions, could lead to actual or effective withdrawal of the market makers under more severe circumstances than winter 2017. The market stress events in 2018 and 2019 were much more severe than winter 2017, and during that period market making services reduced but were not materially withdrawn. We think market making fragility is best considered in terms of the effects on bid-ask spreads and available volume, which we assess in the following sections.

Q1: Is market making fragility a distinct problem from considerations of bid-ask spread and volume?

There is some evidence that bid-ask spreads included factors beyond market uncertainty

4.8 Participants expressed concern that bid-ask spreads widened too far, and stayed wide for too long, during recent stress events. Some have also expressed concern that bid-ask spreads are too wide even during normal market operation.

4.9 In general, we expect bid-ask spreads to widen during periods of market stress as a function of increased uncertainty of future spot prices during those periods. We would be concerned if bid-ask spreads *could not* widen during periods of uncertainty – as this could remove an important signal about expectations of price possibilities and mute the market's collective view of the future.

4.10 However, it is not clear that the width of bid-ask spreads during 2018 and 2019, and the duration they remained wide, was entirely related to uncertainty in the futures market. In particular, by early 2019 uncertainty of gas supply had reduced and the Authority noted

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20 Paper and submissions available at: https://www.ea.govt.nz/development/work-programme/risk-management/hedge-market-development/consultations/#c14195.

21 Paper and submissions available at: https://www.ea.govt.nz/development/work-programme/risk-management/hedge-market-development/consultations/#c15362.

22 Report available at: https://www.ea.govt.nz/monitoring/enquiries-reviews-and-investigations/2017/winter-2017-review/.

23 Decision available at: https://www.ea.govt.nz/code-and-compliance/uts/undesirable-trading-situations-decisions/15-september-2018/.

24 Papers and submissions available at: https://www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/energy-consultations-and-reviews/electricity-price/.

to the EPR Panel that bid-ask spreads narrowed after advocacy by the Authority and ASX.

4.11 We suspect that bid-ask spreads in early 2019 may have reflected, at least in part, unwillingness by market makers to increase their risk positions. We consider the changes ASX made to its market making scheme in mid-2019 may influence their risk analysis. In particular, ASX now provides daily performance reports to each of the market makers and the Authority and has replaced the 'portfolio stress' provision with five exemptions from service provision per month per market maker.

4.12 The Authority is also aware that bid-ask spreads are likely to be wider at the end of the day than intra-day, particularly when there is considerable uncertainty about prices and they are volatile as a result. Offering narrow spreads at the end of trading risks the trader being caught with only part of a deal transacted and limited opportunity to complete it or trade out of it.

4.13 In any event, the extent market makers' internal incentives, for example, their own treasury policies, drive their market making behavior, and therefore bid-ask spreads, needs further testing.

Q2: a) Are bid-ask spreads an issue during non-stressed periods?

b) How could the Authority robustly measure the influence of factors unrelated to uncertainty on the bid-ask spread? Expressed differently, how could the Authority determine the influence of uncertainty on the bid-ask spread compared to the influence of other factors on the bid-ask spread?

c) What interventions should the Authority consider to address this issue?

Evidence suggests futures are available to trade, even during stress events

4.14 Some participants express concern that futures are either unavailable or unavailable in sufficient volumes, particularly during market stress events. For example, non-integrated retailers and large consumers have identified measures such as churn ratio and market depth as showing there is not sufficient volume of contracts to trade.[25] Accordingly, we have considered whether the futures market, supported by the current market making arrangements, provides sufficient volume of contracts to trade.

4.15 Steadily increasing open interest and trade volumes suggest the futures market is, at least to a significant extent, enabling participants to manage risk. Even during market stress events, such as in 2018 and 2019, the Authority has not seen direct evidence there was insufficient volume of contracts available in the futures market. For example, Figure 2 (above) and Figure 3 (below) show little correlation between the market stress events and open interest or trade volumes for market made futures – there is a small decline in trade volumes over the relevant period, but this trend appears to have started several months before the stress events. These data suggest that the volume of

[25] For example, these concerns were raised by a group of non-integrated retailers in submission to the EPR Panel: https://www.mbie.govt.nz/dmsdocument/4868-independent-retailers-submission-electricity-price-review-options-paper-pdf. Large consumers, such as Winstone Pulp, have raised similar issues: https://www.mbie.govt.nz/dmsdocument/4240-winstone-pulp-international-electricity-price-review-first-report-submission. Independent generators have also raised similar concerns.

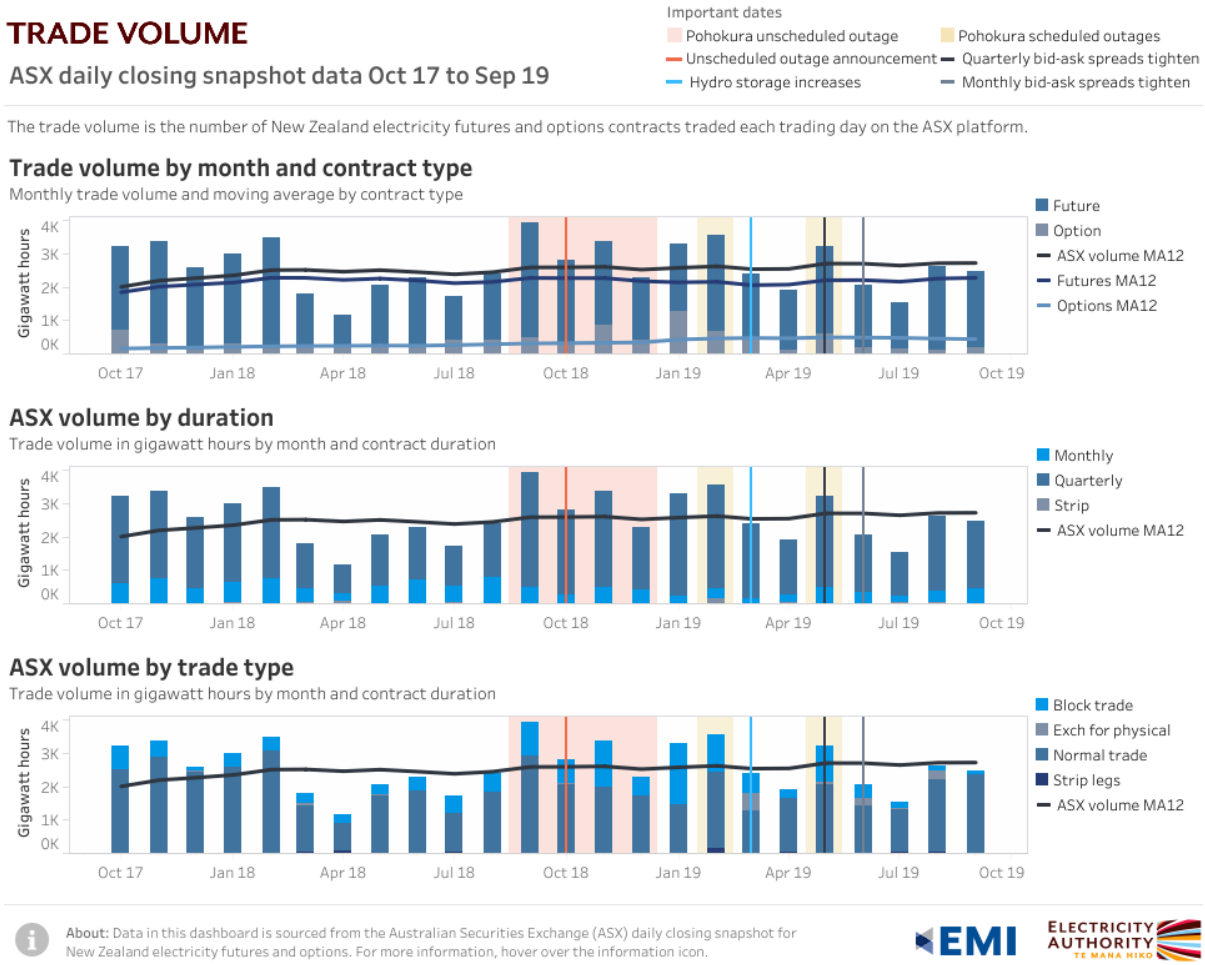
contracts available to trade is not materially impacted during market stress events. Further, these figures do not include data for exchange traded options, which experienced record levels of trade volume during the stress events.

4.16 An example of why reduced market making services during the stress event did not lead to reduced trade volumes is that some trading shifted ‘off-screen’ (called ‘block trades’). Block trades are done bilaterally off-screen but registered on the exchange. ‘On-screen’ trades are done without knowledge of who the counterparty is. The increased use of block trades during the stress event can be seen in the last graph in Figure 3 below. This trend toward greater use of block trades fell away once the stress event had passed.

4.17 A possible explanation of the correlation between increased block trades and the stress event is asymmetrical access to gas information (real and perceived) by both market makers and other participants. A participant with a perceived information deficit may be wary of trading anonymously with parties that are perceived to have more or better information.

4.18 The Authority notes that the Gas Industry Company is currently seeking to enhance gas information disclosure requirements. The Authority is involved in that process and is also reviewing disclosure requirements in the electricity industry more generally.

Figure 3: Trade volume - futures and options[26]



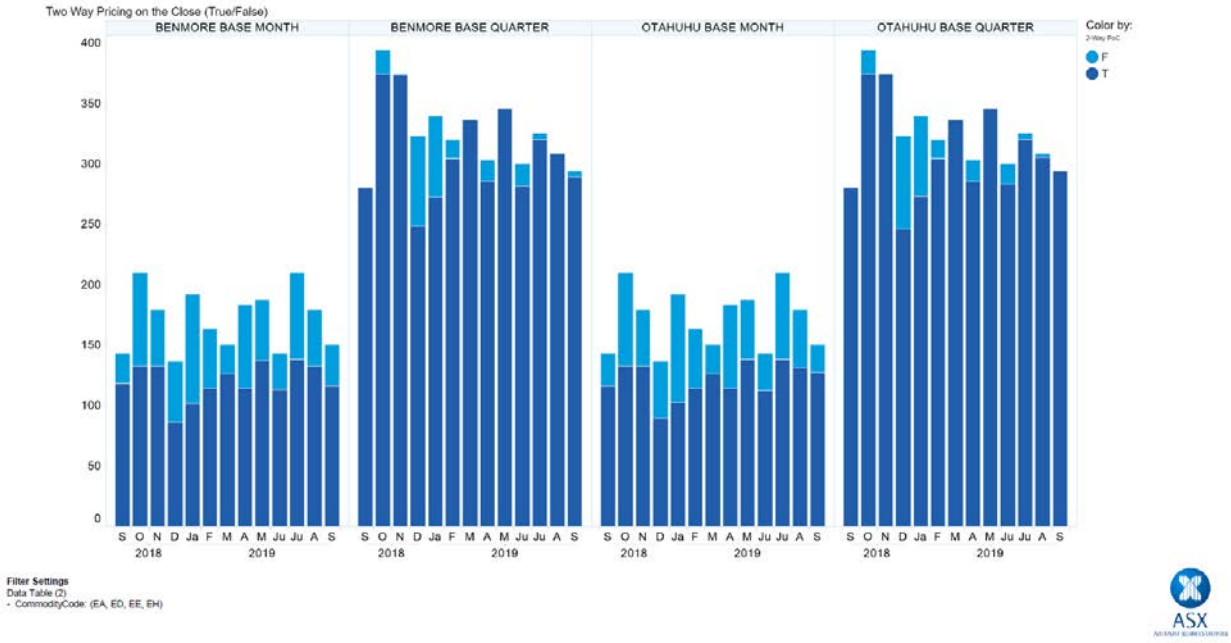
4.19 The data in the figures above relate to actual trades. They do not directly address whether futures were available for trade. ASX has analysed contract availability at the close of trading each day. Figure 4 below shows the number of occasions each month that bids and offers were available at the close of the market. That is, they show whether further volume was available for trade. The figures below underreport availability of market made contracts because:

(a) they only show availability at the close of market – more contracts may have been available earlier in the trading window

(b) the figure for monthly contracts includes all monthly contracts – market made and non-market made. Only the front six months are market made, and the remaining months are thinly traded.

26 An interactive version of this figure is available at: https://public.tableau.com/profile/electricity.authority#!/vizhome/Hedgemarketenhancementproject/Tradevolume.

Figure 4: Bid and offer availability at market close – baseload futures



4.20 The Authority recently acquired access to a large set of ASX data that will enable it to analyse the futures market in new ways. We expect to produce new analysis shortly. We are particularly interested in market depth, which will provide better insight to the extent participants are able to manage spot price risk on the futures market. We will also seek to reproduce ASX's analysis with more granularity. This analysis will help us to assess whether the futures market, supported by the current market making arrangements, provides sufficient volume of contracts during market stress events.

4.21 The data above is difficult to reconcile with the anecdotal concerns expressed by some participants relating to insufficient volume of contracts available for trade. If participants have further data, different interpretations of the same data, or more detailed/specific concerns, it would be useful to receive this in submissions.

Q3: a) Is there other data or evidence available that suggests there is not sufficient volume of futures available to trade?

b) When the Authority begins analysing the new ASX dataset, what particular measures should it prioritise?

Liquidity is not consistently defined

4.22 It is difficult at this point to respond to concerns that the futures market is not 'sufficiently liquid'. In stakeholder discussions and consideration of relevant literature it is clear there is no agreed understanding of what liquidity is, how it should be measured and tracked, and what an ideal level of liquidity is. A lack of consensus on these issues means it is difficult to robustly and directly link 'liquidity' to consumer benefit.

4.23 The Authority notes that metrics such as open interest, trade volumes and available bid and ask volumes did not decline significantly during market stress events (as evidenced above). These metrics are part of some definitions of liquidity.

4.24 The Authority prefers to concentrate on specific and discrete issues with a direct link to consumers. Accordingly, we do not propose to consider liquidity of the futures market as a problem in itself.

Q4: Would it be useful to seek consensus on a measure of liquidity, and how could this be linked to consumer benefit?

Futures prices are high when expected spot prices are high

4.25 Some participants have expressed concern that futures are unavailable at a reasonable price – particularly during market stress events. We expect futures prices to reflect the market's collective view of the future, plus the bid-ask spread. We have not, however, heard from participants that the price of ASX contracts does not reflect the market's collective view of the future (plus the bid-ask spread). During the market stress events we observed futures contracts trading at higher prices, indicating there were willing buyers and sellers at those prices.

4.26 We have also heard from some participants that OTC and retail contracts are being priced materially lower than prices available on the ASX. This potential issue is relevant to this project to the extent that if there was a persistent and widespread divergence between ASX prices and OTC contracts it would likely undermine confidence in the forward price curve. However, this issue, assuming it exists, may reveal more about OTC markets and other contracts than market making arrangements.

4.27 There are broader concerns among some market participants that spot prices are too high relative to the fundamentals of the market. These concerns are not about the futures market and so do not fall into this project. The Authority has regularly considered this matter since it was established in 2010. It has acted when it has observed discrepancies. For example, it reset prices as a result of an Undesirable Trading Situation (UTS) finding in 2011. It issued a warning letter to Meridian Energy in 2016 when it concluded it was in breach of the High Standard of Trading Conduct provisions and this had resulted in higher prices in the South Island than market conditions justified. The Authority routinely monitors pricing when market participants are net pivotal: that is, when their generation is required to meet demand and they have a financial incentive to raise prices, given their overall market position, taking into account their contracted sales and hedge positions.

4.28 Although it is not part of this work stream, the Authority is considering how it can better shine a light on its work in this area without undermining the commercial strategies of some participants. The aim is to provide a reassurance, and possibly a warning, to those who incorrectly assume the Authority is not pro-active in this area.

4.29 At this stage we consider the issue of divergence between ASX prices and OTC prices to be a separate issue to whether the current market making arrangements are fit-for-purpose but have asked for evidence parties have to assess this further. Specifically, it would be very useful if parties are able to explain why such divergences, should they occur, are not competed away quickly by traders buying in the relatively cheap market and selling in the relatively dear one, ie, by arbitrage.

Q5:	**a)**	**Do futures prices (taking into account the bid-ask spread) reflect the market's collective view of future spot prices? What evidence supports your answer?**
	b)	**To what extent does pricing behaviour in the OTC market reflect on market making arrangements in the futures market? What evidence supports your answer?**
	c)	**If there are systematic differences between the OTC market and the futures market, why are these differences not arbitraged?**

The Authority wants to understand whether the current market making arrangements are sustainable

4.30 In addition to concerns raised by consumers of market making services, some existing market makers have stated or implied that they may stop providing, or materially reduce, market making services. For example:

(a) Contact submitted to a Wholesale Advisory Group consultation in 2014 that the current arrangements were inherently unstable because there were 'free-riders' who benefit from market making but do not contribute to its costs[27]

(b) ASX's submission to the EPR options paper states 'market makers have expressed significant concerns around costs to them in periods of steady price increases, and there is some risk to the current arrangements'.[28]

4.31 It is difficult to assess these claims in a robust manner.

4.32 Each market maker faces its own incentives to continue providing market making services – likely informed by its own assessment of the private risks, costs and benefits of doing so. The Authority does not know how each market maker assesses its private costs and benefits, or whether those assessments have changed over time.

4.33 We want to understand the likely behavior of the remaining market makers if one or more left. We have observed a contagion effect that results in all market makers widening their bid-ask spread after the first one does during periods of market stress.[29] It is not clear whether this contagion effect applies in other contexts. For example, if one market maker stopped providing services permanently, it is not clear whether the other market makers would also stop, or if they continued, what would happen to bid-ask spreads.

4.34 The Authority is aware that if the prospect of a subsidy or incentive payment to be a market maker is offered this creates incentives for market makers to underplay the private benefits they get from the market and being a market maker so as to increase the payment they may receive. Similarly, if parties think that others will be required to bear all the costs of market making this creates an incentive for them to overstate the benefits the market and consumers will derive from improved arrangements.

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27 Contact Energy, *Re: Consultation on Wholesale Advisory Group Discussion Paper on Hedge Market Development*, 2014. Available at: https://www.ea.govt.nz/dmsdocument/18965-contact-energy.

28 Australian Securities Exchange, *Submission to Electricity Price Review Options Paper,* 2019. Available at: https://www.mbie.govt.nz/dmsdocument/4808-asx-submission-electricity-price-review-options-paper-pdf.

29 See for example Electricity Authority, *2017 Winter Review: Final Report,* 2018. Available at: https://www.ea.govt.nz/dmsdocument/23548-2017-winter-review.

4.35 The Authority also believes it is likely that the costs of market making differ very materially between periods of stress and other periods with the cost much higher during periods of stress. The Authority also thinks it is possible the recipients of the benefits of market making also vary significantly between these two circumstances.

Q6: What impartial evidence might exist regarding the likelihood that market making services will stop or materially decrease in the short- to medium-term?

The forward price curve is enhanced when more participants post bids and offers

4.36 The forward price curve produced by activity in the futures market is more robust when many parties trade and make offers based on their expectations of future spot prices. If non-market making parties simply wait for a bid or offer that is suitable to them, this provides less useful information to the market than if they make offers into the market based on their own understanding of the future. Offers and bids convey a lot of information even when there is no resulting trade.

4.37 The Authority is aware of anecdotal reports that few parties actively post bids and offers.

4.38 For example, we would expect a party that considers prices to be 'too high' in the futures market to be willing to offer to sell contracts at a lower price, with an expectation that it would still be a profitable trade. A willingness to sell would be indicated by a firm offer in the market.

4.39 The new ASX data may shed light on the activities of non-market makers in the market. If market depth is primarily provided by the four existing market makers, this would suggest that parties complaining prices are too high (or too low) are not confident in their assessment of the 'correct' price. We acknowledge that some market participants may face restrictions in taking positions through trading policies, or breaches of risk limits.

4.40 Arrangements and incentives are in place to encourage the current market makers to post offers and bids (for example, fee rebates provided by ASX and the potential for urgent mandatory Code amendments). The Authority is interested to learn what barriers there are to non-market makers (particularly buy-side participants) more actively participating in the market, and whether similar incentives would be effective in increasing activity. For example, solutions to reduce transaction costs for participants that post one-sided positions could be considered. In this context, non-market makers may include both electricity market participants and other parties with interest in the futures market such as financial intermediaries.

Q7: a) Do non-market making participants make active offers and bids in the futures market?

b) What is the significance of non-market maker behaviour in the market, and how does it impact consumer outcomes?

c) What changes could the Authority make to incentivise more activity by non-market makers?

5 We want to ensure we implement the solution that best addresses problems and opportunities with market making

5.1 The Authority's analysis of problems and opportunities with market making is not yet complete, and so we do not have a specific issue around which to design any solution. However, in order to move quickly once we have identified a robust set of problems and opportunities with market making, we have considered the incentives facing market makers, and how we might intervene to alter those incentives.

5.2 Market makers face private costs and benefits from the service they provide. The Authority could alter their incentives by, for example, increasing the benefit to market makers. The Authority could also override these incentives by regulating that market making services are provided.

Increasing the private benefits: incentivising market making

5.3 Market makers receive private benefits from market making. The benefits include:

(a) being able to utilise the forward price curve (in the same way that other interested parties can do so without incurring the cost of market making)

(b) in more frequently traded markets, market makers may profit from providing market making services. As described above, at least one incumbent market maker has made a profit in at least one recent year. However, we expect that market making for New Zealand electricity futures is a net cost to the incumbent market makers on average

(c) market makers receive consideration from the exchange provider (ASX). We understand the annual amount is significantly less than the costs to market makers of providing the services.

5.4 The most obvious way to increase the benefit to market makers is to increase their consideration. This idea is not uncommon in other jurisdictions. Payments could be made to existing market makers to increase their incentive to continue market making.

5.5 Making payments to market makers opens up the possibility of procuring market making services on a commercial basis – the Authority would contract with service providers and make payments and enforce obligations via contract.[30] All things being equal, we expect a professional service provider may be more efficient at providing the services than the incumbent providers – however, a professional service provider would not benefit from the forward price curve in the same way, and so would likely require more consideration than the incumbents in order to provide the services.

5.6 Based on our understanding of the benefits of market making to the wider industry and New Zealand (we think the core benefit is a robust forward price curve), we expect that there is a large pool of businesses and consumers willing to pay for market making services. That is, they would be willing in the sense that they receive benefit from it – now they have no incentive to pay because they receive the benefit of the forward price curve for free. If the Authority intervened in this way it could be characterised as addressing a positive externality or missing market problem.

[30] For example, the Authority could run a tender for service providers similar to a proposal it received from ASX in 2018.

5.7 Such an approach would likely require a material increase to the Authority's annual appropriations (by increasing existing levy rates) and may even require a change to primary legislation (for example, to introduce a new levy). The Authority would likely seek to recover the cost of market making services from those who benefit from it (as this is what would happen in a workably competitive market). The EPR Panel recommended that this extra cost be largely funded by the generator-retailers – who we consider derive significant benefit from market making. For example, the benefit to informing generation operation decisions would roughly align with generation market share. The Authority also acknowledges there are other beneficiaries of the forward price curve, including independent retailers, independent generators, and industrial consumers. In line with the well-established principle of 'beneficiary pays' other participants could also reasonably be expected to meet a proportional cost of market making activities.

5.8 Treasury's guidance on setting charges in the public sector contemplates others ways of allocating charges (such as allocating charges to risk exacerbators).[31] Our first impression is that an exacerbators pays approach is not appropriate in these circumstances – we think this would misidentify when it is appropriate to label a party an exacerbator and it would be efficient to require it to pay. We are interested to hear from participants what other ways may be appropriate to allocate the cost of market making, and how they would be applied in practice.

5.9 We expect that the (likely significant) cost of a commercial market making arrangement will be passed on to consumers, and we would only progress such an option if the benefit to consumers outweighed those costs.

Q8: a) Will the changes described above increase the private benefit to market makers?

b) What value do you place on accessing the forward price curve? What value do you place on the tightness of the bid-ask spread? For example, what is the difference in value between a 5% bid-ask spread obligation and a 3% bid-ask spread obligation.

c) How should the costs of a commercial arrangement be allocated? If on a 'risk exacerbators' basis, what evidence do you have that some parties exacerbate risk?

d) Are there any other changes that increase the private benefits of market making that are within the Authority's powers and the scope of this project?

e) Will the changes affect the usefulness of the forward price curve or have other unintended consequences?

f) How could the changes described above be implemented?

g) Do you have experience of these potential interventions from other jurisdictions that you can share?

[31] Available at: https://treasury.govt.nz/publications/guide/guidelines-setting-charges-public-sector-2017-html.

Mandating market making services in the Code

5.10 Instead of altering market makers' incentives, the Authority could mandate that certain parties provide market making services in the Code. At its simplest, this would seek to recreate the current market making arrangements within the Code.

5.11 However, amending the Code opens the possibility of implementing a scheme that shares the cost of market making more widely amongst the beneficiaries of market making. For example, an obligation to post prices could be extended to all generators and retailers/consumers above a certain size threshold.

5.12 Codification of a market making scheme carries risks with it – either of unintended costs and consequences, or of driving behaviour change to avoid mandatory obligations.[32] Such an approach would also create compliance and monitoring costs, and would likely result in a loss of good will from the mandated parties. These risks and costs are a core driver behind this discussion paper – allowing the Authority to design a better targeted scheme that is more likely to ultimately provide the most benefit to consumers at the least cost.

5.13 Another possibility with a mandated scheme is a transferrable obligation, under which a participant with market making obligations under the Code could contract out their obligation to a service provider. Having this flexibility within the Code provision may help to lower the cost of market making – as a professional provider may be more efficient.

5.14 The changed incentives inherent in mandatory market making can also be applied less directly. Currently, the incumbent market makers know that we have committed to intervening if market making services stop, and Trustpower knows that it was identified as a suitable provider at the time market making started in 2011. The Authority has a draft urgent Code amendment prepared if market making stops – but this would still take time to implement.

5.15 It is possible to alter market makers' and potential market makers' incentives, based on the risk of regulatory intervention, by placing mandatory obligations in the Code that activate once certain preconditions are met (for example, this could be an objective measure of market performance, or a decision by the Authority's Board). This option could be used to compel more market makers to join the existing scheme.

[32] Ofgem in the UK is currently considered whether to suspend its mandatory market making obligation as many of the original participants have restructured with the result that the obligation applies to a much reduced pool of participants – which is expected to reduce further (potentially to one) in the foreseeable future.

Q9:	**a)**	**Will the changes described above ensure that market making services are provided?**
	b)	**What are the key parameters that should be included in a mandatory market making scheme, and why?**
	c)	**Are there any other ways the Authority can regulate to provide market making services that are within its powers and the scope of this project?**
	d)	**Will the changes affect the usefulness of the forward price curve or have other unintended consequences?**
	e)	**How could the changes described above be implemented?**
	f)	**Do you have experience of these potential interventions from other jurisdictions that you can share?**

Further complementary options

5.16 Market makers can incur material costs to provide market making services. This is the case under the current voluntary arrangements and will be the case regardless of the intervention chosen. For example, in the past several years market makers have reported market makings costs from $1-4 million per year (and also a profit[33]).[34]

5.17 These costs were selectively disclosed with little context, and so it is not clear whether reliable comparisons can be made between market makers and between years. In any event, market making appears to be a material cost to market makers, on average. Market makers also face a risk that realised costs are much higher. Reducing the potential cost of market making services (while ensuring they still provide sufficient benefit to consumers) will be an explicit consideration if the Authority decides to procure services on a commercial basis – as the cost of those services will likely ultimately be borne by consumers.

5.18 The Australian Energy Markets Commission (AEMC) is currently considering whether to intervene in the Australian National Electricity Market (NEM) in relation to market making for exchange traded futures. AEMC commissioned a report from NERA economic consulting regarding the costs and benefits of market making, which provides some useful insights. The NERA report identified key cost drivers for market making, including the following:

(a) the number of market makers

(b) staff costs

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33 Contact reported a $5 million profit in FY17 (available at: https://contact.co.nz/-/media/contact/pdfs/about-us/investor-centre/media-releases/contact-energy----annual-results-investor-presentation-2018.ashx.

34 Contact reported a $2 million loss in FY18 (available at: https://contact.co.nz/-/media/contact/pdfs/about-us/investor-centre/media-releases/contact-energy----annual-results-investor-presentation-2018.ashx). Genesis reported a $4 million loss over 12 months ending in 2019 (available at: https://gesakentico.blob.core.windows.net/sitecontent/genesis/media/new-library-(dec-2017)/about_us/investor/pdfs/2019/announcements/genesis-energy-hy2019-result-presentation.pdf). Meridian reported its annual costs to be around $1-2 million per year to the EPR Panel (and more during volatile periods) - available at: https://www.mbie.govt.nz/dmsdocument/4885-meridian-energy-and-powershop-submission-electricity-price-review-options-paper-pdf.

(c) transactions costs (which increase with market volatility) related to:

(i) total volume required to be offered (and potentially transacted)

(ii) obligation to trade for a particular time period

(iii) maximum bid-ask spread

(iv) cost of prudential requirements

(v) transaction fees.

5.19 For example, the Authority could change the cost and risk drivers for market makers by:

(a) introducing more market makers

(b) introducing new, or changing existing, fast market rules to change the risk faced by market makers during market stress events. For example, the number of exemptions per month (currently five) could be increased, or some other mechanism could also be used to reduce obligations during periods of market stress

(c) incorporating a 'soft opening' at the start of each market making period. For example, a 10% spread obligation for the first 10 minutes, followed by a tighter obligation.

5.20 In considering options to reduce the cost of market making, it is also important to take account of other consequences of the intervention including, most importantly, whether the intervention reduces the reliability of the forward price curve or some other undesirable outcome that negatively impacts consumers in the long term.

Q10: a) Will the changes described above reduce the private costs to market makers?

b) Are there any other changes that reduce the private costs or risk of market making that are within the Authority's powers and the scope of this project?

c) Will the changes affect the usefulness of the forward price curve or have other unintended consequences?

d) How could the changes described above be implemented?

e) Do you have experience of these potential interventions from other jurisdictions that you can share?

6 The Authority can make better decisions if it receives better information

6.1 As noted in the executive summary, the Authority has heard and understood the Minister's expectation that the Authority gives a high priority to improving the performance of market making. We will move fast on this project, but are also conscious of the importance of this market, and the need to 'get it right'.

6.2 The more and better quality data the Authority has access to, the better its decisions will be. Our hypothesis is that market making for futures provides long-term benefits to consumers. Previous work by the Authority, its advisory groups, the EPR Panel and comment from a wide range of stakeholders supports this hypothesis. However, in the next stage of the project we want to confirm this empirically by using a cost-benefit analysis. That analysis will help us design enduring market making arrangements that will provide the most long-term benefit to consumers.

6.3 Empirical analysis requires data to confirm the benefits and costs of possible interventions. We want to understand how consumers' electricity costs vary (both in the level of price, and the frequency of changes in the price offered) with changes in the futures market, including the presence (or absence) of market makers. We want to understand prices to all consumers, including mass market, commercial and industrial consumers.

6.4 The Authority does not have this information and therefore we need to rely on participants providing it. We understand that participants may have concerns with sharing information about how futures prices link to electricity prices for consumers. There will be important commercial issues to consider for participants, but we believe having a strong set of data will allow for a higher quality decision. A high-quality decision will lead to better outcomes for consumers.

6.5 It is in participants' interests to assist the Authority to develop a sustainable arrangement. While our focus is on the benefits to consumers of market making, participants themselves benefit as users of exchange traded futures and the forward price curve they produce.

6.6 We are open to participants providing other methodologies for showing the benefit to consumers from market making to assess the benefits and costs of various options. As part of our initial engagement on this discussion paper, we wish to meet with interested participants.

6.7 To mitigate participants' concerns, we will create a confidential submission process, where data provided would not be published or shared beyond the Authority. If participants prefer it would be possible for us to contract a third party to do the data analysis, so that the Authority does not see participants identified information, only summarised and anonymous information. The undertakings the Authority can make regarding confidentiality are subject to Authority's obligations under the Official Information Act 1982, discussed further in paragraph 1.6 above.

Q11: What is the best way for the Authority to procure data from participants?

7 The project is tightly focussed on market making, and will engage stakeholders regularly

The project is tightly focused on market making arrangements

7.1 In designing the project, the Authority is responding to feedback that it should adopt a 'less is more' approach and tightly focus its projects. This particular issue will be resolved as a high priority by focusing on ensuring market making services are provided in a way that is fit for purpose over time. The focus will ensure a quality decision can be delivered as quickly as possible.

7.2 The tight focus means the Authority will not consider other potential problems and opportunities with the hedge market, for example:

(a) issues relating to exchange traded contracts, such as whether additional types of contract should be developed

(b) issues relating to other markets in the hedge market, such as developing a standardised OTC contract or new FTR nodes

(c) issues relating to the hedge market as a whole, such as institution and organisation settings, including vertical separation of market making entities, or enhanced information disclosure. This is covered by a separate Authority project.

The project takes an iterative approach to engagement

7.3 In designing the project the Authority has taken into account feedback that it should involve participants more in its decision-making processes. The project responds to that feedback by taking an iterative approach to stakeholder engagement. Under the iterative approach the Authority will engage stakeholders early and regularly.

7.4 This approach manifests in our initial engagement with stakeholders using this discussion document. A robust problem definition is the foundation of any successful project and we want to make sure it is correct by engaging with stakeholders early in our analysis. We have necessarily undertaken further work on the project on the basis of our initial problem definition, but we will revisit that work if our understanding of the problem changes as a result of stakeholder evidence.

Appendix A What does a successful solution look like?

A.1 Selecting and designing an intervention option will focus on addressing the problems and opportunities we identify with the current market making arrangements. To ensure we focus our analysis on the most promising options, we want to identify the characteristics of a successful solution.

The Authority and stakeholders value transparent performance

A.2 A successful solution will provide transparency over the performance of market making to the Authority and to interested participants. Lack of visibility of the current arrangements has been a constant concern expressed by stakeholders.

A.3 The Authority recently started receiving performance reports from the ASX, but only with the consent of each of the existing market makers. The ASX has also started to make some performance information publicly available. While the Authority appreciates these efforts, it is not appropriate to rely on permission from the existing market makers. A successful solution will ensure reliable and appropriate performance information is provided to the Authority and participants. This will likely require a change to the Code.

Intervention is an opportunity to incorporate best regulatory design

A.4 Designing a solution provides an opportunity to incorporate best regulatory practice.

Less regulatory intervention is better

A.5 In principle, we prefer options with a low level of regulatory intervention. This is for several reasons, including because less intervention results in less risk of unintended consequences. This preference is also reflected in the Code amendment principles set out in our consultation charter.

An adaptable option is better

A.6 The electricity industry is constantly changing, and this change is projected to accelerate over the next thirty years as new technologies become cheaper and as the New Zealand economy moves towards fewer emissions. Accordingly, the market making arrangements that are fit-for-purpose in today's market may not be fit-for-purpose in the future, and we place value on the ease with which the arrangements can evolve (if necessary) to meet the changing needs of the market.

A less risky option is better

A.7 Some options carry greater implementation risk than others, and we prefer options that present lower risk. Implementation risk includes such things as whether the option will take a long time and be costly to implement, and the likelihood of unforeseen barriers to implementation. For example, if an option requires something completely new in the Code, or requires us to cooperate with parties outside our jurisdiction, it will carry a greater implementation risk than a familiar approach that is completely within our control.

Options that can be implemented in stages are better

A.8 All government interventions carry the risk of unintended consequences, including that the original aim of the intervention is not achieved. We prefer options that can be implemented in a way that minimizes this risk. For example, we prefer options that can

be implemented in easily reversible stages, or on a trial basis, and for which it is easy and low cost to step away from, with few long-term consequences for the market.

A successful solution will promote efficiency

A.9 We prefer designs that promote efficiency. We will quantify efficiency impacts at the time we undertake a detailed cost benefit analysis. However, at this stage we want to consider efficiency impacts on a qualitative basis. Our initial thinking is set out below.

The Authority prefers to involve markets in decision-making

A.10 Some options may utilise the market to inform the design of the solution. For example, under a commercial arrangement, we could design the tender in a way that reveals real cost/benefit tradeoffs. The alternative to this is the Authority administratively deciding the solution, based on analysis. We prefer the market to inform those tradeoffs.

The market will select the most efficient providers

A.11 We have no reason to believe that the incumbent service providers are the most efficient services providers, or that the most efficient providers will be industry participants. Providing market making services at least overall cost will benefit to consumers.

The beneficiaries of a service should pay for it

A.12 There is a large pool of entities benefitting from the forward price curve that bear none of the costs of producing the forward price curve. We favour options that allow the cost of market making services to be borne by the parties that benefit from it because we would expect this in a workably competitive market. We do not see a beneficiaries-pay approach as in conflict with the expectation of the Government that any scheme will be funded largely by the vertically integrated companies. The generator-retailers, which include Trustpower, Todd/Nova and Pulse/Pioneer, in addition to the four created from ECNZ, are a very large part of the market and we believe obviously very major beneficiaries of there being a robust futures market and forward price curve.