CONSULTATION PAPER

NATIONAL ELECTRICITY AMENDMENT (MARKET MAKING ARRANGEMENTS IN THE NEM) RULE 2019

PROPOONENT
ENGIE

20 DECEMBER 2018
ABOUT THE AEMC
The AEMC reports to the Council of Australian Governments (COAG) through the COAG Energy Council. We have two functions. We make and amend the national electricity, gas and energy retail rules and conduct independent reviews for the COAG Energy Council.

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INTRODUCTION

On 25 October 2018, ENGIE submitted a rule change request to the Australian Energy Market Commission (AEMC or Commission). The rule change request seeks to introduce changes to the National Electricity Rules (NER) that would require the Australian Energy Regulator (AER) to operate “a tender for market making responsibilities in the NEM”.

Market making relates to a service within the contract market that would allow for the continuous provision of quotes to buy and sell a particular contract and the continuous opportunity for participants to do so, at a price. Such a service provides for greater liquidity and greater transparency for all market participants. The contract market enables users of electricity, retailers or large consumers, to agree fixed prices for electricity over a particular period or to obtain hedges that protect them from high prices. This enables retailers and consumers to gain greater certainty over the cost of electricity in the near future.

A liquid contract market helps developers of new generation assets to reduce the risk associated with investment, by allowing them to agree a fixed price for electricity over a particular period, or to obtain hedges to protect them from low prices. This reduction in risk helps to promote further investment in the NEM.

There has been much work recently on the changes seen in the contract market, in relation to both high prices and contract liquidity. The retirement of existing generation assets in South Australia and Victoria, the availability of fuel supply, the concentration of generation ownership and the degree of vertical integration across the wholesale and retail supply chain have all been mentioned, amongst other factors, in the context of these changes.

Contract market liquidity has also been addressed in markets outside the NEM. In particular, market making in electricity contract markets has been introduced in New Zealand (2010), the United Kingdom (2014) and Singapore (2015). In Australia, there are currently no market making arrangements in place for the NEM, but there are provisions for market making in Western Australia where Synergy is required to offer products under a Standard Product Arrangement in place since 2014.

The rule change is intended to address issues that have been identified both in the work of the ACCC and the ESB in relation to financial contract market liquidity in the NEM and the difficulty some retailers have had gaining contracts of the duration, granularity, or price they would prefer. While the proponent does not dispute that this has been the case, the proponent does question the value of compulsory market making as the solution for South Australian market conditions and does not believe the case has been well made that vertical integration is the primary, or even a significant contributor, to the challenges faced by market participants on both sides of the market in South Australia.

The rule change proposes an alternative solution to a compulsory obligation, in the form of a tender for a voluntary market making arrangement in the NEM.

This consultation paper has been prepared to facilitate public consultation on the rule change request and to seek stakeholder submissions. Submissions are to be lodged online or by mail by 7 February 2019.
This paper:

- sets out a summary of, and a background to, the rule change request
- identifies a number of questions and issues to facilitate the consultation on this rule change request
- outlines the process for making submissions.
2 BACKGROUND

2.1 The role of the contract market in the NEM

2.1.1 The contract market supports the electricity spot market

For an electricity system to work effectively, generation must equal demand plus reserves (near) instantaneously. Because of this need to co-ordinate generation and demand in real time, all electricity is bought and sold in a centrally coordinated spot market, governed by the NER and operated by AEMO. This physical market is supported by a voluntary and informal financial derivatives contract market, which provides parties with more certain revenues and costs over the term of their contracts.

The variability of market conditions results in fluctuations in spot prices that can range from the market price cap of $14,500/MWh to the market floor price of -$1,000/MWh. Both buyers and sellers in this market appreciate that large swings in spot prices have a similar effect on their costs and revenues and, consequently, their profits and share prices. This variability encourages both buyers and sellers to agree contracts that convert volatile spot revenues and costs to more certain cashflows or it may support a greater degree of vertical integration (investment in both generation and retail assets).

2.1.2 The contract market provides both short and long term benefits

Market participants typically hedge their exposure to wholesale electricity price risk physically (vertical integration) or via financial contracts either traded bilaterally between counter parties (referred to as over the counter or OTC trades) or on a central trading platform such as the Australian Securities Exchange (ASX).

On a short-term, operational time scale (e.g. hourly), these contracts provide certainty for participants and inform their decisions in the face of risky market conditions. For instance, a generator and retailer may agree a fixed price for a specified quantity of electricity every trading interval for a quarter. Such a deal is common and is called a fixed quantity swap. It is called a swap because both parties have agreed to swap the spot price for a fixed price. When spot prices are high, holding a fixed quantity swap contract incentivises:

- the generator, who sold the contract, to generate the quantity contracted to earn revenue in the spot market to fund payouts on their contract
- the retailer, who bought the contract, to have arrangements with its customers to manage demand to the quantity contracted (or lower) so it pays no more than the contract price (it would be charged the spot price for any electricity in excess of its contract quantity).

In the medium term, the contract market underwrites retailers’ fixed-price offers to end-consumers, such as households and small businesses. Retailers’ use of the contract market mitigates their exposure to the spot market, providing them with a more stable price for electricity, which in turn allows them to offer longer-term contracts, with stable prices, to their retail customers. The contract market also provides larger customers who participate in the wholesale market with greater certainty over their input costs.
In the longer term, the contract market provides market participants with signals of market expectations of future spot prices (a forward price curve). The forward price curve supports decisions to fund new generation projects (or retire existing ones), locate and fund a new energy-intensive industrial factory (or retire an existing one), or demand-side management capability (or retire an existing capability).

The contract market lowers the cost of financing investment in new generating capacity. By providing generators with a steadier stream of income compared to taking spot price exposure, contracts increase the confidence of parties providing funding to generators, such as debt and equity holders, that they will realise the value of their investment. This lowers the overall cost of capital required to finance the project and lowers the cost of the new generating capacity.

2.1.3 A more liquid contract market accrues a higher level of benefits

The degree to which the contract market delivers the benefits described depends on the liquidity of the various contracts being traded. The benefits accrue to a greater degree in regions where the market for the contracts being traded is relatively liquid.

A high number of trades and a large quantity of open interest (outstanding contract positions not closed or delivered) provides confidence to investors and traders about the health of trading in the market.

A liquid contract market is one where generators and wholesale market customers are confident they can buy or sell to suitably hedge their risks at any time and without significantly affecting the price. This quality reduces the cost to traders of changing their positions, increases participants willingness to trade and provides investors with more confidence in the forward prices signalled by trades.

By lowering transaction costs and the cost of entry and exit, a liquid contract market supports greater levels of competition and more efficient levels of reliability. There are indications from the experience in other electricity markets (see section 2.3) that suggest making markets in the appropriate exchange-traded financial contracts could boost liquidity and confidence in the Australian electricity contract market.

2.2 What is market making?

Market making is a service designed to increase the liquidity of traded commodities or financial instruments. This service is made available in less liquid markets or instruments so that parties always have an opportunity to buy and sell. Market makers boost liquidity by issuing quotes during the trading day, updating their prices to reflect changes in the underlying markets.

A market making contract will usually specify a minimum time period each day for issuing quotes and a minimum liquidity requirement (bid and ask quantity). There is often also a limit on the maximum spread between the bid and ask price that a market maker can quote (5% is typical). To promote the market making service, the terms and conditions of market making contracts may include incentives for being a market maker.
The credibility of any market relies on the confidence participants have in their ability to trade (buy or sell) at prices that reflect fair value. The liquidity of a market directly relates to a market’s credibility as it concerns the speed and ease at which trades can be made. A liquid market has many buyers and sellers, can accommodate trades of reasonable quantities at any time without significantly affecting prices, and there is little cost in reversing a trade. Increasing liquidity can be self-sustaining as it increases confidence in the market and as a result supports more trading.

Market liquidity is assessed and monitored using a variety of metrics, including:

- trading volume
- open interest
- bid-ask spread
- trading volatility (e.g. high-low difference and standard deviation).

The outcome of a liquid market is that parties are confident they can buy or sell in the market without significantly affecting the price. This keeps the cost of changing a position low, which increases the willingness to trade. It also provides investors more confidence in forward prices and in the investment and retirement decisions they make on the basis of them.

Market making has been addressed in the context of the Australian Electricity Futures market recently by the Energy Security Board (ESB) and the Australian Competition and Consumer Commission (ACCC). The ASX also separately commenced a process in July 2018 to introduce voluntary market making in the Electricity Futures market. The scheme is planned to commence on 1 April 2019. In addition, Commonwealth legislation circulated in November 2018 and currently with the Senate Economics Legislation Committee looks at measures that would require an electricity company to offer electricity financial contracts to third parties. This work is addressed in section 6.

2.2.1 How market making services might change ASX trading

Parties trading electricity futures on the ASX exchange can choose to trade a variety of products, including swaps, caps and options in each region for the current period, two months or several quarters ahead. Trading takes place between 10am and 4pm on exchange trading days (business days). Each contract is for 1 MW of electricity for the life of the contract term, which is 2,160 MWh for the quarter ending 31 March 2019.

Traders make bids and offers to buy and sell contracts during each trading day. A market making contract might require a market maker to post buy and sell quotes for:

- at least three contracts (minimum market making quantity)
- a subset of the trading hours on each ASX trading day (market making period)
- quarterly and monthly swap and cap products for the first eight quarters and all the months listed on the exchange (market making products).

A market maker could be subject to a continuous quoting requirement, which makes a significant difference to the potential quantity of risk (i.e. being forced to sell or buy many
contracts in the market making period). This can be mitigated by market intervention or via a relaxation of contract terms that reduce the potential costs they face. For instance, the market making contract could waive the requirement to issue another sell quote once they have sold six contracts in a single market making period, apply a 60-second grace period for reloading a quote, or allow participants to comply with market making terms less than 100 percent of the time.

While it is theoretically possible to require parties to make markets for OTC contracts, monitoring and enforcement is much easier if quotes are required to be posted on an online bulletin board or on an exchange.

2.3 Market making arrangements in other electricity markets

The Commission has identified four jurisdictions that have market making arrangements for electricity futures:

- New Zealand (voluntary)
- Singapore (voluntary)
- United Kingdom (compulsory)
- Western Australia (compulsory)

The following subsections outline the arrangements and experience in those jurisdictions.

2.3.1 New Zealand

In 2008, the National Government commissioned a Ministerial review, *Improving electricity market performance*. The resulting Electricity (Amendment) Act 2010 established the Electricity Authority and, among its other obligations, charged the Authority with implementing the recommendation for generators to open an electricity hedge market with the following characteristics:\(^1\)

- standardised, tradable contracts
- a clearing house to act as a counterparty for all trades
- lower barriers to participation and low transaction costs
- market makers (offering buy and sell prices with a maximum spread) to provide liquidity.

The Government gave generators until 1 June 2011 to achieve "satisfactory market liquidity, defined as 3,000 GWh of ‘unmatched open interest’ (contracts without matching offsetting contracts)".

In January 2010, four generators had signed market making contracts with the ASX and began market making swaps at both market nodes (Otahuhu market node in Auckland and Benmore market node in the South Island). On 3 October 2011, the maximum bid-ask spread

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was reduced from ten percent to five percent. We understand the four market makers receive a small rebate in their ASX fees for signing market making agreements.

There is little quantitative evidence that market making has boosted liquidity. However, there is an article in the Energy Economics journal by Fergus Bevin-McCrimmon, Ivan Diaz-Rainey, Matthew McCarten, and Greg Sise that considered a variety of questions about liquidity and risk premia in the New Zealand electricity futures market following the introduction of market making.² The authors studied daily trading data from 2 October 2009 to 31 December 2015. They found “no statistically significant change around the introduction of mandatory market making, implying that this policy intervention failed to achieve its objective of enhanced liquidity”. However, they found that the reduction in the bid-ask spread did have a positive impact on volume and liquidity for near-dated futures.

The authors suggested the first result “may suggest that the market makers simply posted quotes with the maximum spread allowed by the exchange (10%), carrying out their duty yet making no material contribution to improving market liquidity”. Market makers may have been under pressure at the time to conform with their market making obligations while they were finalising the details of their contracts with the ASX.

2.3.2 Singapore

The Energy Market Authority (EMA) is the body responsible for electricity policy in the Singapore electricity market. In partnership with the Singapore Exchange (SGX), the EMA launched the electricity futures market in April 2015, starting with quarterly base load futures contracts and adding monthly base load electricity futures contracts in April 2017.

In contrast with the New Zealand approach, the EMA adopted an incentive-based approach for securing market making services.

The EMA tenders for market making services for the quarterly and monthly base load electricity futures contracts via a uniform price auction where the awarded price will be based on the highest marginal bid among the selected tenderers.³ The EMA determines the number of tenderers selected based on the bids made by the respective tenderers (indicating it could choose any number between four and seven). Each awarded tenderer provides market making services for a duration of three years (the current tender period is from 1 August 2018 to 31 July 2021).

Tenderers are not required to be holders of electricity licences issued by the EMA. This enables participation by a more diverse range of market makers, which the EMA notes may be useful in improving liquidity, as well as increasing competition for market making services, potentially reducing the cost.

The SGX provides incentives which are based on transaction volumes for other products to encourage more trading from the market makers and non-market makers. The EMA is of the

view that a performance incentive scheme based on transaction volumes could complement
the proposed market making scheme (including tighter spreads). Overall, it can improve the
liquidity of the electricity futures by encouraging users (both market makers and non-market
makers) to trade in the electricity futures.

The EMA provides an example of a performance incentive scheme called the “price-pool”
concept. Firstly, a minimum overall market volume must be met before a bonus pool of
money will be activated. Subsequently, all participants will be rewarded from the bonus
incentive pool based on their transaction volume contribution.

Any payment for the market making services will be based on fulfilment of the market
making obligations for each monthly period. Failure to fulfil any of the associated market
making obligations within the period will result in non-payment for that period. EMA reserves
the right to terminate the contract after two months of non-performance by the awarded
tenderer in a six-month rolling period. The termination of the contract at any point in time
would result in a penalty fee of 100% of the annualised awarded price.

2.3.3 United Kingdom

Ofgem, the electricity and gas regulator in the United Kingdom, has been actively considering
liquidity in the electricity market since it published findings of its investigation in energy
supply markets in 2008. It noted that liquidity in the wholesale electricity market in Great
Britain was in a period of decline since 2001 and is lower than some other energy and
commodity markets, including some European electricity markets. Ofgem’s Energy Supply
Probe in 2008 found that low liquidity in the electricity market was a concern, as it created a
barrier to new entry into supply markets and a source of competitive disadvantage for
independent suppliers.4

To address its concerns about liquidity, Ofgem introduced a new special condition of the
electricity generation licence, which obligated the eight largest generating companies to post
bids and offers for each of the mandated products during the two trading windows on every
business day. This obligation took effect from 31 March 2014. The details of the obligation
are set out in a draft guideline, which outlines:5

- Nominee to discharge market making requirements
- Qualifying trading platforms for market making
- Maximum reloading time after acceptance of first bid or offer
- Circumstances that suspend market making obligation
- Volume cap within market making window that obviates obligation to post bids and offers
- Products subject to market making obligation (baseload and peak products).

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4 Ofgem, Liquidity in the GB wholesale energy markets discussion paper, 8 June 2009.
5 Ofgem, Liquidity in the Wholesale Electricity Market - Draft guidance,
Ofgem has noted some improvements in liquidity since this obligation was introduced. In its *State of the energy market report 2018*, Ofgem noted:

There is evidence of a deterioration of liquidity in the market during 2017 measured by the churn ratio – the number of times one unit of electricity is traded – and total traded volume of electricity. Both were down on 2016. However, both indicators are still higher than they were in 2014. In contrast, bid-offer spreads continued to narrow in 2017, indicating that the ability of firms to trade has improved over the period. We have also observed greater traded volumes of products for forward delivery (e.g. months and years ahead of delivery) and this is consistent with some improvement in the availability of products that support hedging.

In 2017, Ofgem launched a review of the Secure and Promote policy to determine whether the improvements were being sustained and if there is a possible need to adapt the framework. In August 2018, Ofgem published an open letter to seek views on a proposal to suspend the market-making obligation (MMO) licence condition until it had completed a further review of the provision. It appears that concerns about changing market conditions on the costs of market making for at least one market maker have caused Ofgem to commence a wider review of the criteria for requiring licensees to market make, including exploring other potential mechanisms for market making. It plans to complete this review in 2019.

### 2.3.4 Western Australia

Synergy owns about 70 percent of generation in Western Australia and is required to offer standard products for sale and purchase at published prices.

The Standard Product Arrangements were gazetted on 19 May 2014 under section 38(1) of the Act and 26(1) of the EGRC Regulations.

The Standard Product Arrangements specify the products Synergy is required to offer and the minimum quantities that must be made available. Synergy must offer both flat and peak standard products on a quarterly and annual basis in increments of 0.5 MWh in each trading interval (i.e. 1 MW). Across all product types and durations, Synergy is required to offer a minimum 150 MW for sale and 100 MW for purchase. The Standard Product Arrangements also specify the percentage spread between the buy and sell price.

The goals for obliging Synergy to adhere to the standard product arrangements include:

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9 Ibid.

• maintain private sector activity by imposing discipline on Synergy’s wholesale pricing
• act as a price discovery mechanism, providing transparency and predictability for short to medium dated contracts for market participants
• provide a competitive benchmark price to the wholesale supply of electricity on a non-discriminatory basis
• provide simple products that are an alternative to customised products, reduce barriers to entry for new entrant retailers, and allow market participants to rebalance their portfolios at the margins.
3 DETAILS OF THE RULE CHANGE REQUEST

The rule change request proposes that the NER mandate a tender process for market making responsibilities in the NEM. The tender would be run by the AER for parties to voluntarily nominate to perform market making services. The proponent maintains this is the most appropriate method for identifying parties who have the sophistication and appetite to take on the risk associated with market making.

This is proposed as a preferable alternative to the compulsory market making proposals that were outlined recently in the ESB consultation paper on Market Making Requirements in the NEM. The ESB consultation paper addressed a market making obligation that would promote liquidity in the event the Retailer Reliability Obligation is triggered and would also address the ACCC’s recommendation, made as part of the ACCC Retail Electricity Pricing Inquiry (REPI), in relation to a market making obligation in South Australia to boost contract market liquidity.

Copies of the rule change request may be found on the AEMC website, www.aemc.gov.au.

3.1 Rationale for the rule change request

The proponent argues that several fundamental questions around the justification for market making obligations, either in South Australia or more broadly, have not been adequately addressed. The proponent maintains that introducing a compulsory market making requirement that compels physical participants to trade contracts they are unwilling to trade freely, due to a lack of financial incentives and additional risk exposure, is a significant change in the operation of the NEM. Further, these changes may conflict with existing laws covering the provision of financial services.

The proponent lodged the rule change request to enable more detailed consideration of the issue, the appropriateness of a mandatory market making mechanism and to propose an alternative approach that seeks to manage the issues with a compulsory obligation that it claims were identified but not addressed in the ACCC’s REPI and in the ESB’s consultation paper on Market Making Requirements in the NEM.

3.1.1 Issues with the diagnosis of the problem of liquidity and market failure

While accepting that some retailers may have difficulty obtaining contracts of the duration, granularity or price they would prefer, the proponent suggests that some generators and hedge providers may also have difficulty finding purchasers for contracts on the terms they desire. Neither of these factors, in the view of the proponent, is necessarily grounds for concluding there has been market failure.

The proponent suggests that the case has not been sufficiently made that vertical integration is the primary, or even a significant contributor to the problems faced by both sides of the market in South Australia. The proponent does not feel that the South Australia market

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11 ESB consultation paper: Market Making Requirements in the NEM, September 2018
12 ACCC Retail Electricity pricing Inquiry Final Report July 2018
conditions have been effectively diagnosed, particularly compared to other states, or that an adequate link has been demonstrated to conclude market making as proposed will solve those problems.

Hedging in the South Australia market, it is claimed, should be analysed based on its own unique characteristics. This is a small market with a high penetration of renewables, reliant on gas generation to provide firm capacity and with important interconnection with the Victorian market. The proponent suggests a conclusion seems to have been reached in relation to South Australia that vertical integration in providing internalised risk management across vertically integrated entities has led to those entities withholding hedge products from competing retailers. And yet, the proponent argues, there is no evidence of integrated companies withholding hedge products, particularly in an environment of rising prices. It is also pointed out that the ACCC REPI acknowledged the prices for trades of bigger and smaller participants in South Australia were largely the same.

The importance of gas generation in the context of the South Australia market and the particular challenges it faces in relation to fuel supply is addressed. It is maintained that the lack of gas market liquidity in terms of the ability to enter and exit positions, the granularity of contracts, the tenure of contracts and the lack of standardisation of contracts has a direct bearing on the liquidity of electricity contracts. The proponent concludes that expecting a gas generator to provide the same level of liquidity as coal fired generators in the larger regions, is mistaken. This issue, it is claimed, was not adequately addressed in either the ACCC REPI or in the ESB consultation paper on market making requirements in the NEM.

The experience of firm generators in South Australia, according to the proponent, contrasts with the conclusions of the ACCC REPI, in that it highlights the difficulty some firm generators have had in securing contracts. Significant effort was made by the last operating, now closed, coal-fired generator to contract before closing and the absence of parties willing to contract was also noted prior to a unit of Pelican Point being withdrawn from the market in 2015 (the unit subsequently returned in 2017). The proponent notes that one of the key drivers of the National Energy Guarantee (NEG) was to encourage large customers to contract to avoid the retirement of firm generators. The proponent suggests the theory has now been turned on its head, with arguments of contract withholding by vertically integrated retailers taken as justification for market making.

The rule change request points out that during the current deliberations on the future of the UK scheme, Ofgem has acknowledged the findings by the Competition and Markets Authority that they "have not identified any areas in which vertical integration is likely to have a detrimental impact on competition for independent suppliers and generators".13

In further drawing attention to the idea that small retailers unable to obtain contracts is not evidence of market failure, the proponent suggests that in the UK an alternative policy was developed for small market participants, not market making.

The request calls on the AEMC for a more detailed analysis of these issues in South Australia and more broadly across the NEM.

13  Rule change request p.5
3.1.2 Issues with a compulsory obligation

The proponent identifies a number of issues with a compulsory obligation. Introducing a requirement that will force specific market participants with physical generation to buy and sell contracts they would be unwilling to trade freely, due to a lack of financial incentives and additional risk exposure is, in the view of the proponent, a significant change in the operation of the NEM.

Where terms may be unfavourable for either party, it is not appropriate for one party to be obliged to accept those terms of conditions. Requiring a party to take on additional risk or offer hedges below cost will undermine asset viability and work to further destabilise the market, in South Australia and more broadly. A forced obligation fails to examine the impacts on disadvantaged parties and to appreciate the long term effects on the market.

The proponent identifies a number of problems with a compulsory obligation:

- a compulsory obligation is unlikely to increase the overall risk capacity in the market, with participants having to adjust their risk position for additional hedges they are required to offer under the obligation
- credit quality should not be ignored, obliging some participants to trade with lower credit quality parties will likely increase costs for consumers
- an obligation may not benefit the small retailers it is intended to help. Trade sizes are unlikely to be small enough. Standard futures contracts are also relatively blunt instruments for a small retailer without scale. Smaller retailers, according to the proponent, tend to set up more tailored arrangements that match the needs of their portfolio. The larger participants who provide these products will have to adjust their risk exposure to allow for an obligation
- physical players have operating and physical constraints. An obligation will not increase their overall capacity to manage risk
- the proponent suggests an obligation to provide hedges outside an integrated portfolio may actually reduce the overall level of risk products available in the market given integrated participants have more of a natural hedge when they trade with themselves and so may be willing to offer more capacity when trading on this basis
- operating constraints such as generator outages and fuel supply constraints, for example a lack of liquidity in gas contracts, may constrain a generator below the full extent of their capacity
- it is not appropriate for obligated parties to take on unnecessary costs. Obligated parties may find it difficult to move prices during periods of high volatility, thereby resulting in significant and unexpected costs. A market making obligation may also involve significant IT costs
- current Australian Financial Services Licence arrangements prohibit participants in a market from being a market maker unless they are licensed to do so
- a compulsory obligation may also undermine the business case for the voluntary market making incentive scheme currently being developed by the ASX.
3.2 Proposed solution

3.2.1 Proposed rule

The rule change request proposes that a tender be run by the AER for voluntary market making services in the National Electricity Market (NEM).\textsuperscript{14} The proponent maintains this is the most appropriate method for identifying parties who have the sophistication and appetite to take on the risk associated with a market making service.

The proponent suggests the tender have the following properties:

- be conducted every three to five years
- cover all regions in the National Energy Market (NEM)
- the market making arrangement remain in place on an ongoing basis with no trigger mechanism
- specify parcel sizes, required cumulative exposure, required spreads and period of offer for each region that will remain in place for the full duration of the tender period
- the successful tenderer be required to manage the risk of default of market making positions of those participants it engages
- open to financial or other providers
- successful tenderer permitted to sub-contract directly with physical and financial market participants in order to provide the market making service
- provide flexibility in relation to both ASX and OTC products
- the costs of the tender should be recovered from customers
- penalties for non-performance to be a feature of the arrangement
- market monitoring should depend on the type of product. OTC products for example may need additional monitoring and reporting requirements versus their ASX equivalent
- the AEMC should review the operation of the arrangements in advance of each tender

The tender would be independent of the NEG reliability obligation, and therefore any market making obligations previously proposed by the NEG should be considered unwarranted.

The rule change proposal also refers to the ASX Market Making Incentive Scheme and suggests complimenting this scheme based on voluntary participation is an important consideration.

3.2.2 Contribution to the NEO

The proponent argues that any conclusion that forced market making in South Australia would be in the long-term interests of consumers and meet the National Electricity Objective (NEO), has failed to examine the impacts on disadvantaged parties and failed to appreciate the long-term effects. This would include increased risk of loss given default and a disincentive for investors, as well as potential early retirements.

\textsuperscript{14} Rule change request p.8.
A tender for voluntary market making services would not create these additional risks for existing market participants and would provide a new service in the market with parties willing to take on the additional risk for a price.

The proponent concludes the proposed rule change is in the long term interests of customers and promotes a number of beneficial outcomes consistent with the NEO that would not be provided by a compulsory market making arrangement, these are listed in the section that follows.

### 3.2.3 Benefits and Costs

**Benefits**

*An economically efficient allocation of risk in the NEM:* the allocation of risk would be managed by sophisticated financial intermediaries that are effective at handling and pricing financial risk. This would also facilitate the management of new entrants retailers without placing unmanageable risks on selected physical participants.

*Commercial drivers left unhindered:* the commercial drivers underpinning participants hedge positions and trade in risk management products are not distorted.

*Transparency and cost recovery:* services that are provided outside the normal course of market conditions are provided in a transparent manner with appropriate cost recovery.

*Investor confidence in the market:* shareholder and investor expectations are not undermined by compulsory market making obligations. This would avoid placing additional risk premiums on investment in some or all regions of the NEM to account for unmanageable risks and unrecoverable costs.

*Encourages participation of specialist providers:* the proposed rule may encourage the entrance of specialist providers who may be better placed to support market making services.

*Contracting consistent with capability:* It should minimise the potential for entities to provide financial risk management services beyond their capability to do so, or to provide hedges beyond the financial capability of the underlying generation asset.

*Obligatory mechanism unwarranted:* A market making obligation as proposed under the NEG would be unwarranted. The proposal minimises the need for market intervention and centralised decision-making.

*Certainty provided by an ongoing mechanism:* an ongoing mechanism, within which the terms of market making are set for each three to five year period, removes the problem of uncertainty that would be created by a trigger mechanism.

*Greater confidence in the NEM and related markets:* a voluntary market making arrangement will promote confidence in the NEM and closely related markets, for example gas and LGCs.

**Costs**

The costs of the tender and the costs of participants taking part in the tender and meeting those obligations over a three to five year timeframe are not set out in the rule change.
proposal. However, the proposal suggests that the costs of the tender be recovered from customers.
4 ASSESSMENT FRAMEWORK

The Commission’s assessment of this Rule change request must consider whether the proposed Rule promotes the National Electricity Objective (NEO).

4.1 Rule making test

4.1.1 Achieving the NEO

Under the NEL, the Commission may only make a rule if it is satisfied that the rule will, or is likely to, contribute to the achievement of the national electricity objective (NEO). This is the decision-making framework that the Commission must apply.

The NEO is:

To promote efficient investment in, and efficient operation and use of, electricity services for the longer term interests of consumers of electricity with respect to -

(a) price, quality, safety, reliability and security of supply of electricity; and
(b) the reliability, safety and security of the national electricity system.

Based on preliminary assessment of this rule change request, the commission considers that the relevant aspects of the NEO are:

- “efficient investment in ... electricity services”
- “price, ... reliability, and security of supply of electricity” and
- “reliability ... and security of the national electricity system”.

4.1.2 Relevant assessment criteria

To determine whether the proposed rule would be likely to promote the NEO, the Commission will assess the rule change request against specific assessment criteria, which may be refined during the rule change process.

In particular, it proposes to consider the following criteria:

- **Enhance transparency and predictability**: The transparency of information is a key feature of the efficient operation of the NEM. Market participants need access to clear, timely and accurate information in order to allow them to make efficient commercial and operational decisions. The Commission will consider the degree to which a market making service could make market participants more confident in contract prices

- **Enhance wholesale and retail market competition**: The greater ability to trade in electricity futures contracts at prices that are visible to all market participants helps to lower barriers to entry and competition both in the wholesale and retail market. The Commission will consider the degree to which this will help to improve price outcomes for consumers

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15 Section 88 of the NEL.
16 Section 7 of the NEL.
• **Efficiency of investment in and retirement of generation capacity and demand response**: Improving the provision of information, transparency and predictability of information in the NEM can assist in promoting efficiency of investment in, and operation of generation capacity and demand response decisions. By improving the provision of information, this can potentially help energy market participants to make more efficient decisions. The Commission will consider the degree to which a market making service could assist market participants to make more efficient investment and operational decisions.

• **Administrative costs**: Market making arrangements could impose new costs on both participants and the party or parties administering the arrangements.

4.2 Making a more preferable rule

Under s. 91A of the NEL, the Commission may make a rule that is different (including materially different) to a proposed rule (a more preferable rule) if it is satisfied that, having regard to the issue or issues raised in the rule change request, the more preferable rule will or is likely to better contribute to the achievement of the NEO.

4.3 Northern Territory

From 1 July 2016, the NER, as amended from time to time, apply in the Northern Territory, subject to derogations set out in Regulations made under the Northern Territory legislation adopting the National Electricity Law (NEL).17 Under those Regulations, only certain parts of the NER have been adopted in the Northern Territory.18 As the proposed rule would relate to parts of the NER that currently do not apply in the Northern Territory (i.e. Chapter 3 of the NER), the Commission does not consider that the proposed rule needs to be assessed against additional elements required by the Northern Territory legislation.19

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17 National Electricity (Northern Territory) (National Uniform Legislation) (Modifications) Regulations.
5 ISSUES FOR CONSULTATION

Taking into consideration the assessment framework, a number of issues have been identified for initial consultation. Stakeholders are encouraged to comment on these issues as well as any other aspect of the rule change request or this paper, including the proposed assessment framework.

This chapter outlines:

- defining the problem of market failure and identifying the solution
- the range of market making options
- the solution proposed in the rule change request
- the range and specification of products to be included
- jurisdictional specific issues
- commencement dates

5.1 Problem definition

The ability of new entrant and smaller retailers to obtain supply and manage the risks associated with supply is important for the effective functioning of a competitive retail market. In markets where new entrants or second and third tier retailers find it difficult to manage risk, there is likely to be less retail competition and less beneficial outcomes for consumers as a result.

A liquid market in energy futures contracts is a critical component in ensuring both large and small retailers have access to the full range of energy risk management products they need.

Both the NEM and the electricity futures market operate through cycles. Periods of low prices and the over supply of electricity can be followed by periods of high prices and a tighter supply demand balance between available generation and demand. These cycles are driven by a number of factors both within and outside the electricity market. At different points in the cycle, the availability of contracts to enable retailers to manage their positions may be different.

In some jurisdictions, for example South Australia, the risk management products that are most effective and lowest cost in addressing the risks of a portfolio, may differ to other larger markets where baseload power generation is a higher proportion of the energy generated. In such markets, there may be some risk management products that are not traded openly on an exchange, for example weather products, interregional hedging through SRA’s, OTC firming products or load following hedges, and as a consequence the liquidity and pricing of such products may not be easily measured. Diagnosing a problem of low liquidity in such a market based only on exchange traded contracts and in turn introducing a market making requirement based on these products risks forcing market participants to offer products that may be limited both in supply and demand.

To solve the liquidity or market failure problem in relation to hedge contracts, it is important not only to understand the right measure of liquidity in each region and what the main
drivers behind the lack of liquidity are, but also to identify the best tools to address risk in each region and the practical steps that can be taken to solve the problem with the greatest benefit and lowest cost for consumers both in the short and longer term.

**BOX 1: DIAGNOSING THE PROBLEM**

1. **Is there an issue with liquidity**
   a. *What is the issue with liquidity in the contract market.* What problems have there been obtaining or selling risk management products through the contract market. How has this differed by region. What trends are observable in liquidity over time?
   b. *How is liquidity best measured.* What is the right market to consider, the right products to include, and the right threshold to consider a market liquid. To what extent are products outside the contract market used. How does this differ by region?
   c. *Why does liquidity matter.* Does greater liquidity benefit consumers, retailers and generators. Is it likely to enhance competition and lower the cost of electricity to end users. Is poor liquidity a temporary problem?

2. **What are the causes of low liquidity**
   a. To what extent is vertical integration and the withholding of capacity by market participants to blame for poor liquidity. How does this differ by region. How has this changed over time?
   b. To what extent are problems contracting for fuel supply, in particular gas, to blame for a lack of liquidity in electricity contracts. How does this differ between regions. How might these issues be resolved?
   c. What other factors are to blame for a lack of liquidity in the contract market?

3. **What are the solutions to low liquidity**
   a. What different solutions are there to a lack of liquidity in the contract market. What are the costs and benefits of these solutions. Is market making the best solution?
   b. How does this differ between regions?

**5.2 Range of market making options**

The Commission may decide not to make a rule in the event it is found there is no issue to address. In the event that market making is identified as the best mechanism to increase market liquidity, there is a range of options to be considered to put this solution into effect. These options range from the more voluntary, market driven solutions to more prescriptive obligations.

The options can range from no rule being made and the market being left to find a solution itself (if an issue needs to be addressed), for example through processes currently initiated by the ASX into a voluntary market making scheme, to a mandatory requirement that directs specific physical participants in particular jurisdictions to make contracts available within certain contract periods and on specific terms.
The costs of each option may vary according to the level of prescription in the arrangement. The costs may include, but not be limited to, administrative costs, the cost of the bid offer spread or other incentives required to ensure market making is provided over all contract periods.

A range of options is listed below as an illustration of the broad categories of arrangements or obligations that could be implemented to address the issues raised in the rule change request. These are shown in order from the more voluntary market based mechanisms to the more prescriptive:

1. Do nothing - “the market provides”
   In this example, the ASX voluntary market making arrangement would be trusted to solve issues with market liquidity and market failure. The rule could make provision for ongoing analysis and reporting of market liquidity following the introduction of the ASX scheme.

2. Centralised tender process (AER) - “Voluntary market making”
   The option put forward by the proponent. While the tender may operate alongside the voluntary ASX scheme, the provisions of the tender allow for the specification of the products and terms to be included and for compliance and monitoring by the AER on an ongoing basis.

3. Trigger driven obligation - “Triggered obligation, with incentives and sub contracting”
   A trigger driven obligation with accompanying incentives, may ensure liquidity is provided in all periods, including the most volatile and challenging trading intervals experienced by the market. While this option may contain key elements of the first two, it adds provisions for an obligation, with potentially an accompanying incentive fee, for market making in specific periods. It could also allow for the sub contracting of the obligation by the physical participant to another participant or a financial counterparty. This would allow for any concerns that a voluntary scheme may not always guarantee liquidity in the very periods where it is needed most.

4. Compulsory market making - “Ongoing compulsion of physical participants”
   A compulsory liquidity obligation on physical participants would involve the compulsion of certain key participants in each jurisdiction to make additional hedge contracts available during time periods where a shortage of contracts is identified. Both the monitoring and the obligation would be ongoing.

**BOX 2: RANGE OF OPTIONS**

1. Identify your preferred option from the broad range of options listed above, and compare your preferred option to the others based on the assessment criteria summarised in chapter 4, and any other criteria or costs and benefits that should be considered.

2. What costs can be identified from the experience of other jurisdictions in relation to the different market making options listed?
In the proposed solution, the proponent has suggested a number of measures under which a tender for voluntary market making services should be conducted including the term of the tender, the type of participants that should be permitted to take part and the potential for penalties to apply in the event of non-performance.

**Proposed solution**

5.3

In the proposed solution, the proponent has suggested a number of measures under which a tender for voluntary market making services should be conducted including the term of the tender, the type of participants that should be permitted to take part and the potential for penalties to apply in the event of non-performance.

**BOX 3: PROPOSED SOLUTION**

1. How long should a tender term be?
2. Should the key provisions of a tender be fixed for the full term?
3. Should a tender operate on an ongoing basis, or under a triggering mechanism?
4. What penalties should apply for non-performance under a tender?
5. What type of participants should be allowed to take part in a tender, physical or other providers?
6. Should a successful tenderer be permitted to sub-contract the obligations it has entered into under the tender?
7. How might the cost of a tender be recovered from customers?
8. Who should run the tender process?

5.4

**Range and specification of products**

Retailers use a number of different products to manage the risks associated with a retail electricity portfolio. Baseload futures or swap products can be used to create price certainty for a set volume in MW over a set period of time in particular jurisdictions. Retailers also use cap products to insulate themselves from extremely high spot prices. Some retailers use weather based derivatives to cover their exposure to high spot prices in the event of extreme weather. Smaller retailers in particular may use more bespoke load following hedges or Power Purchase Agreements (PPAs) contracted from larger participants to cover their position.

Some participants may favour OTC products over ASX products because of the cost of trading on the exchange traded platform for smaller less creditworthy entities.

When considering measures of market liquidity and market failure and prescribing solutions to problems of liquidity, this full range of products and platforms should be taken into account.
If a market making arrangement is to be introduced, there are a number of questions around the range of products to be included.

**BOX 4: RANGE OF PRODUCTS**

1. What products should be included in a market making arrangement?
2. Which markets should be included, ASX, OTC, other?
3. Over what contract timeframe should market making be required?
4. Over what timeframe in the trading day should market making be required?
5. What maximum bid offer spread should be allowed?
6. What minimum contract size should be required?
7. What cumulative risk exposure should be required for any participant. Should this vary by region?

**5.5 Jurisdictional specific issues**

Market liquidity varies by region. Some regions, for example South Australia, may see a scarcity of contracts available in particular periods while others may see an oversupply. While the ACCC REPI made particular recommendations in regards to the South Australia market, the proponent has argued the market making arrangements should apply in all NEM regions. The increasingly interconnected nature of the market and the risk management practices of retailers across connected jurisdictions would increasingly necessitate a market wide solution to any problems identified with liquidity and access to risk management products. Limiting market making arrangements to a single jurisdiction may limit the ability of retailers to allocate and offload risk between regions.

Due to the ownership structure in Tasmania, only one obligated party is possible. Hydro Tasmania is currently required, under the Electricity Supply Industry Act 1995 (Tas) (ESI Act), to offer a range of regulated electricity contracts to authorised retailers operating in Tasmania. The ESB in the consultation paper on market making requirements in the NEM envisaged that these arrangements are sufficient to mitigate the concerns that have warranted market making proposals in other regions.\(^{20}\)

**BOX 5: JURISDICTIONAL SPECIFIC ISSUES**

1. In which regions of the NEM is there an issue with contract market liquidity?
2. Should a market making arrangement apply in all regions of the NEM?
3. Should the required suite of products in a market making arrangement or obligation differ by region. If so, how should they differ?

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5.6 **Commencement date**

The ASX voluntary incentive scheme is set to become operational on 1 April 2019. The Retailer Reliability Obligation is planned to become operational by 1 July 2019.

Market participants will need time to update systems and processes and to review their legal requirements under market making arrangements prior to being in a position to either take part in a tender or meet the requirements of an obligation.

**BOX 6: COMMENCEMENT DATE**

1. Outline the activities, costs and timelines to implement the different options for market making listed.

5.7 **Ability to make a rule to implement each option**

The Commission’s preliminary view is that it may not have sufficient rule-making power under the NEL to implement certain options (or particular aspects of the options) set out in paragraph 5.2 above. For example, the Commission may be unable to make a rule that requires certain parties (such as financial intermediaries) to participate in a mandatory market making arrangement.

The Commission will consider whether there are any relevant limitations to its rule making powers as part of its broader assessment of the issues raised in the rule change request and the potential solutions available to address those issues. The Commission’s ability to confer certain additional functions or powers on market bodies as part of introducing a market making arrangement will form part of that assessment.
6 PROJECTS ADDRESSING RELATED ISSUES

The rule change proposal was developed by ENGIE in the context of the recent ACCC REPI recommendation 7, and as articulated by the Energy Security Board (ESB) in its consultation paper in September 2018: market making requirements in the NEM.

The ESB consultation paper combined streams of work in relation to both the ACCC market liquidity recommendation and the ESB’s Retailer Reliability Obligation (RRO).

In addition to the work of the ACCC and the ESB, there have been efforts to address market liquidity and market making by government bodies, financial markets and industry.

6.1 Retail Reliability Obligation

The National Energy Guarantee (NEG) was originally issued for consultation by COAG Energy Council on 15 August 2018. In general terms, the reliability obligation under the NEG required retailers to enter into qualifying contracts where there is a material gap between supply and demand. In the ESB's final design of the NEG a market liquidity obligation was proposed to promote liquidity, transparency and competition in the event the Reliability Obligation is triggered.

The draft bill for the Retailer Reliability Obligation (RRO) is an amended version of the NEG. The amended bill removed emissions reduction requirements from the obligations on retailers. At the 26th October COAG Energy Council meeting, ministers agreed that the ESB will progress development of draft NEL amendments that would give effect to the Retailer Reliability Obligation (RRO), including undertaking any further necessary stakeholder engagement.

A consultation paper was published on 8 November by COAG on the NEL amendments to enact the revised legislation. The ESB is to return to Council with a final draft Bill for decision in December. The ESB's current advice is that the RRO should commence on 1 July 2019.

6.2 ACCC Retail Electricity Pricing inquiry recommendation 7

As part of the Retail Electricity Pricing Inquiry published in July 2018, the ACCC undertook a detailed review of the hedging contract market and found that in certain regions of the NEM, particularly South Australia, the level of market liquidity and the advantages afforded by vertical integration mean that it is difficult for new entrants or smaller retailers to compete effectively in the market.

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21 National Electricity (South Australia) (National Energy Guarantee) Amendment Bill 2018
22 Qualifying contracts are, in general terms, contracts or other arrangements directly related to the purchase or sale, or price for the purchase or sale, of electricity from the wholesale exchange.
23 ESB National Energy Guarantee, Final Detailed Design, 1 August 2018
24 National Electricity (South Australia) (Retailer Reliability Obligation) Amendment Bill 2018
25 ESB Retailer Reliability Obligation, Consultation on National Electricity Law amendments, November 2018
Given the persistent low level of activity in the South Australian contracting market, the ACCC considered that market making obligations were warranted in the region. The potential benefits of market making were seen as significant, and any improvements in contract market activity would likely flow through to the retail market.

In the Inquiry’s Final Report published in June 2018, recommendation 7 requested the AEMC introduce a market making obligation in South Australia on large vertically integrated retailers to make offers to buy and sell specified hedge contracts each day to boost market liquidity.

The ACCC report recommended that the parameters of a market making obligation should have regard to:

- The size of the South Australian market
- The distribution of generation ownership in the region
- The benefits to market liquidity and efficiency of regular trading activity
- The burden of the requirements on obligated entities
- Any impact on the incentives of intermittent generators to invest in firming technology

The ACCC recommended that after an appropriate period of time (for example two years) the mechanism should be assessed for its effect on market activity, liquidity and risk to determine if it should be continued, amended or removed in South Australia and, potentially extended to other NEM regions.  

The ACCC also noted that the market making obligations in South Australia should be designed in such a way as to ensure the mechanism can work with any mechanism considered as part of the ESB’s ‘Market Liquidity Obligation’ included in the design of the National Energy Guarantee. As covered below, this liquidity obligation is still being considered as part of the RRO.

6.3 ESB consultation paper on market making requirements in the NEM

On 28 September 2018 the ESB published a consultation paper on Market Making Requirements in the NEM. The paper sought industry submissions on a proposal to create a Market Liquidity Obligation (MLO) that combined the reliability requirement under the NEG with the liquidity requirement under the ACCC’s REPI recommendation 7. It proposed the same mechanism in the form of a Market Liquidity Obligation (MLO), but with two different triggers:

- reliability requirement trigger. When the reliability obligation is triggered, owing to a material difference between supply and demand. Likely to be triggered by quarter, for example for Q1 2020

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27 ACCC Retail Electricity Pricing Inquiry Final Report Executive Summary p.xviii
liquidity test trigger. ESB proposed that AER monitor liquidity in all regions (ASX and OTC volumes versus overall demand). Likely to be triggered for a longer period, for example 2 years.

The ESB expressed a preference for the obligation to be settled through a trading platform, and also suggested if a participant is already taking part in a market making arrangement voluntarily then this could be considered as satisfying the obligation.

The written submissions from stakeholders on the paper largely fell into two camps. Large energy users and peak industry bodies were generally supportive of a mandatory market making mechanism to support competition, while vertically integrated retailers were on the whole opposed.

Arguments against the recommendation for a mandatory mechanism highlighted the unique characteristics of the South Australia market and the difficulty in that market of assessing liquidity based on conventional futures and cap products. Submissions also drew attention to the problems associated with placing obligations largely on gas fired generators in South Australia as they are, for the most part, the only plants currently capable of providing firming products within the state. Some respondents also concluded that the establishment of the voluntary market making mechanism by the ASX offers a preferable solution and should be trialled to assess whether it can address liquidity concerns without the need for a mandatory obligation.

6.4 Commonwealth legislation

The Treasury is holding a consultation process on the Treasury Laws Amendment (Prohibiting Energy Market misconduct) Bill 2018 which was circulated on 16 November 2018. The proposed legislation would amend the Competition and Consumer Act 2010.

The legislation was developed following the recommendations of the ACCC REPI. The remedies contained in the bill are designed to allow the ACCC to respond to any misconduct identified in the ongoing Electricity Price Monitoring Inquiry across the NEM that the government has tasked the ACCC with between 2018 and 2025.

The proposed Bill sets out three kinds of prohibited conduct:

- prohibited conduct in relation to retail prices
- prohibited conduct in relation to the electricity financial contract market
- prohibited conduct in relation to the wholesale electricity market.

Under the proposed Bill, if the ACCC reasonably believes that a person has engaged in prohibited conduct in relation to the electricity contract market or wholesale electricity market, the ACCC may recommend that the Treasurer make an order that would require an
electricity company to offer electricity financial contracts to third parties. It is intended that the making of a contracting order by the Treasurer would only occur in respect of more serious contraventions.

In the event of prohibited conduct in relation to the wholesale electricity market, the Bill would allow the ACCC to recommend the Treasurer make an application to the Federal Court seeking an order for the divestiture of specific assets.

The provisions of the Bill apply nationally, including to areas that are not connected to the NEM.

Given the ACCC’s Electricity Price Monitoring Inquiry will end on 31 August 2025, these measures would also end in 2025.

On 6 December 2018, the Senate referred the provisions of the legislation to the Economics Legislation Committee for inquiry and report by 18 March 2019.

6.5 ASX market making incentive scheme

The ASX commenced a process in July 2018 to introduce voluntary market making in the Electricity futures market. The move has been supported by physical participants in the NEM. Physical participants involvement in the scheme may in part be motivated by a desire to avoid further regulatory action, including compulsory obligations for market making.

Some of the key details in relation to the scheme are as follows:

- Expressions of interest for the voluntary scheme closed in August. Market making agreements were sent out in November. The ASX plans to have the scheme in place on 1 April 2019.
- Market making participants are all physical. No banks are yet involved. There are 2 participants in SA, and 5 each in NSW, VIC and QLD.
- This is a voluntary scheme. There is no incentive fee (as there is in the Singapore market and currently being considered for NZ), but there would be rebates based on a proportion of fees received by the ASX on each contract.
- The market making term sheet proposes continuous two-way quotes with maximum spreads of AUD 4-6/MWh, minimum quantities of 2 lots in SA and 5 in other states, a minimum time period of 25 minutes during each market making session window on each day.

LODGING A SUBMISSION

Written submissions on the rule change request must be lodged with Commission by 7 February 2019 online via the Commission’s website, www.aemc.gov.au, using the “lodge a submission” function and selecting the project reference code ERC0249.

The submission must be on letterhead (if submitted on behalf of an organisation), signed and dated.

Where practicable, submissions should be prepared in accordance with the Commission’s guidelines for making written submissions on rule change requests.34 The Commission publishes all submissions on its website, subject to a claim of confidentiality.

All enquiries on this project should be addressed to Russell Pendlebury on 02 8296 0620 or russell.pendlebury@aemc.gov.au.

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34 This guideline is available on the Commission’s website www.aemc.gov.au.
## ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>ACCC</td>
<td>Australian Competition and Consumer Commission</td>
</tr>
<tr>
<td>AEMC</td>
<td>Australian Energy Market Commission</td>
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<tr>
<td>AEMO</td>
<td>Australian Energy Market Operator</td>
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<tr>
<td>AER</td>
<td>Australian Energy Regulator</td>
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<tr>
<td>Commission</td>
<td>See AEMC</td>
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<tr>
<td>LGC</td>
<td>Large-scale generation certificate</td>
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<tr>
<td>MCE</td>
<td>Ministerial Council on Energy</td>
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<td>NEG</td>
<td>National Energy Guarantee</td>
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<td>NEL</td>
<td>National Electricity Law</td>
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<td>NEM</td>
<td>National Electricity Market</td>
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<tr>
<td>NEO</td>
<td>National electricity objective</td>
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<tr>
<td>NER</td>
<td>National Electricity Rules</td>
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<tr>
<td>NERL</td>
<td>National Energy Retail Law</td>
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<td>NERO</td>
<td>National energy retail objective</td>
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<td>NGL</td>
<td>National Gas Law</td>
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<td>NGO</td>
<td>National gas objective</td>
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<td>OTC</td>
<td>Over the counter</td>
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<td>REPI</td>
<td>ACCC Retail Electricity Pricing Inquiry</td>
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<tr>
<td>RRO</td>
<td>Retailer Reliability Obligation</td>
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# COMMON ELECTRICITY DERIVATIVES IN OVER-THE-COUNTER (OTC) AND ASX ELECTRICITY FUTURES MARKETS

## Table A.1: Common electricity derivatives in over-the-counter (OTC) and ASX Electricity Futures markets

<table>
<thead>
<tr>
<th>INSTRUMENT</th>
<th>DESCRIPTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Forward Contracts</strong></td>
<td>An agreement to exchange the NEM spot price in the future for an agreed fixed price.</td>
</tr>
<tr>
<td>Swaps (OTC market)</td>
<td>Settlements are typically paid in arrears based on the difference between the spot price and the agreed fixed price.</td>
</tr>
<tr>
<td>Futures (ASX)</td>
<td>Settlements are paid or received daily based on mark-to-market valuations. Futures are finally cash settled against the average spot price of the relevant quarter.</td>
</tr>
<tr>
<td>Options</td>
<td>A right, without obligation, to enter into a transaction at an agreed price in the future (exercisable option) or a right to receive cash flow differences between an agreed price and a floating price (cash settled option).</td>
</tr>
<tr>
<td>Cap</td>
<td>A contract through which the buyer earns payments when the pool price exceeds an agreed price. Caps are typically purchased by retailers to place a ceiling on their effective pool purchase price in the future.</td>
</tr>
<tr>
<td>Floor</td>
<td>A contract through which the buyer earns payments when the pool price is less than an agreed price. Floors are typically purchased by generators to ensure a minimum effective pool sale price in the future.</td>
</tr>
<tr>
<td>Swaptions or futures options</td>
<td>An option to enter a swap or futures contract at an agreed price and time in the future.</td>
</tr>
<tr>
<td>Asian Options</td>
<td>An option through which the payoff is linked to the average value of an underlying benchmark (usually the NEM spot price) during a defined period.</td>
</tr>
<tr>
<td>Profiled volume option for sculpted load</td>
<td>A volumetric option that gives the holder the right to purchase a flexible volume in the future at a fixed price.</td>
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<tr>
<td>INSTRUMENT</td>
<td>DESCRIPTIONS</td>
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<td>----------------------------</td>
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<tr>
<td><strong>Other Derivatives</strong></td>
<td></td>
</tr>
<tr>
<td>Weather Derivatives</td>
<td>Any contract that derives its value from weather-driven variables, eg, temperature, wind output, rainfall.</td>
</tr>
<tr>
<td>Inter-regional SRD units</td>
<td>Units that entitle the holder to receive payment based on the accrued inter-regional settlement residue, ie, the difference between the price paid in an importing region and the price received in an exporting region, multiplied by the flow on the interconnector.</td>
</tr>
</tbody>
</table>