

20 December 2018

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By online submission

Dear Mr Pierce

Rule Change Request – Short Term Forward Market

The Australian Energy Market Operator (AEMO) requests that the Australian Energy Market Commission (AEMC) consider a short term forward market (STFM) for the National Electricity Market.

A STFM would provide a platform to allow participant to participant electricity contract trading in the week leading up to dispatch. The AEMC's Reliability Frameworks Review Final Report requested AEMO develop this rule change, as it identified that a STFM might, together with other measures, enable greater levels of demand side response.

The AEMC also identified that a STFM might address potential barriers faced by smaller participants due to the costs of negotiating over-the-counter contracts and credit arrangements. A liquid short term forward market may also provide price signals for dispatchable generation as it would assist them in managing short term input fuel contracts, which could enable them to offer additional generation to the spot market. These potential benefits suggest that the STFM may be in the long term interest of consumers and promote the National Electricity Objective.

The rule change proposal, attached, provides a high level framework for an AEMO-operated STFM. The framework involves a voluntary, participant to participant, electricity contract exchange platform for products traded up to one week ahead of real time. It is proposed that Trayport be used as the trading platform and AEMO could provide settlement, prudential and clearing systems.

We look forward to working with the AEMC to progress this rule change proposal.

For further information, please do not hesitate to contact myself or Kirsten Hall, Principal Analyst, Markets on (03) 9609 8857.

Yours sincerely



Peter Geers
Chief Strategy and Markets Officer

Attachment: Rule Change Proposal: NEM Short Term Forward Market

ELECTRICITY RULE CHANGE PROPOSAL

SHORT TERM FORWARD MARKET

December 2018





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1. SUMMARY

In response to a recommendation in the AEMC's Reliability Frameworks Review Final Report (RFR Final Report), AEMO has developed a rule change proposal for a National Electricity Market (NEM) short term forward market (STFM).¹

A liquid STFM and the formation of a short-term price signal would support efficient market operation. Over operational timeframes (up to a week ahead) price signals help participants make decisions about whether to secure short term fuel contracts and offer additional generation into the spot market, or engage in demand side response:

- in the RFR Final Report, the AEMC outlined that a STFM, considered as part of a package of demand side response initiatives including a wholesale demand response mechanism² and multiple trading relationships may facilitate higher levels of demand side response. A STFM may give demand side participants confidence to commit resources in the wholesale market by providing them with price certainty ahead of the trading day;
- while a STFM would not directly solve issues associated with a lack of available system services in real time, it could provide complementary value by providing greater certainty for dispatchable generation. For example, it could provide gas powered generators (GPG) with a contracting option which gives them confidence to lock in gas contract positions, which in turn would be expected to promote unit commitment in the electricity spot market; and
- higher levels of electricity contracting in the NEM is generally expected to lead to more orderly bidding in the spot market. Participants are incentivised to offer generation in a manner which ensures they are dispatched and earn revenue that enables them to honour, and possibly profit from, their side of a contract.

AEMO considers that a NEM STFM would promote the National Electricity Objective (NEO). Wholesale prices are likely to become more volatile as the NEM continues to transition to a generation mix with high levels of intermittent generation. A short term forward market could provide a complementary trading tool during the timeframes over which intermittent generators gain more forecasting certainty and provide a way for all participants to fine-tune longer term contract positions. Additional forms of electricity contracting provide more tools for participants to manage wholesale prices on behalf of their customers, or as an end user. Wholesale electricity prices make up approximately 35 per cent of a customer's electricity bill. The ability to contract confidently in the wholesale market leads to better investment and operational decision making, which ultimately would be expected to lead to lower wholesale and customer prices, all other things being equal.

AEMO considers it is well placed to run a NEM STFM because it has experience operating other wholesale energy markets such as the NEM spot market and the Gas Supply Hub (GSH). The GSH uses a trading interface, Trayport, which could be used for the STFM. A single platform for electricity and gas contracts could assist GPG to simultaneously lock in fuel and electricity contracts. AEMO also performs prudential, settlement and clearing functions for the NEM spot electricity market, which could be examined for use in the STFM.

This rule change proposal outlines a high-level market design for a STFM that involves participant to participant contracts, traded over an anonymous trading screen, up to one week out from the relevant trading day, on a rolling basis. The market could offer different contract tenors such as weekly, daily, hourly, half hourly products and peak products.

AEMO looks forward to assisting the AEMC with this process.

¹ AEMC. *Reliability Frameworks Review, Final Report*, July 2018. Page 48. Available at https://www.aemc.gov.au/sites/default/files/2018-07/Final%20report_0.pdf

² Three rule change requests have been submitted to the AEMC on demand response mechanisms. <https://www.aemc.gov.au/news-centre/media-releases/have-your-say-introducing-mechanism-wholesale-demand-response-national>



2. PURPOSE

The purpose of this submission is to request that the AEMC consider an AEMO-operated STFM for the NEM.

As system operator, AEMO now operates the NEM in the context of:

- a generation mix that has high and growing levels of intermittent generation; and
- a growing role for flexible generation.

The RFR Final Report also identified that a STFM may help address potential barriers regarding:

- demand side participation; and
- creditworthiness and collateral requirements for smaller NEM participants.

A short term forward market has the potential to assist with the NEM operating environment and address the identified barriers by:

- providing intermittent generators with an additional option to manage risk close to the trading day, which may better align with their forecasting certainty and reduce their risk in contracting over longer time periods;
- allow gas powered generators to trade both gas and electricity a week ahead on the same trading platform, which may help them coordinate gas and electricity supply, which could contribute to reliability;
- give demand side response providers a price signal and hedging tool to make trade-offs between reducing consumption and managing high electricity prices, in concert with other potential reforms being considered by the AEMC such as the wholesale demand response mechanism and multiple trading relationships;
- integrating settlement and clearing systems across the STFM and spot markets, potentially leading to fewer barriers to market participation;
- complementing the existing suite of NEM hedging options by adding a short-term exchange traded option to manage spot price risk in the NEM and support management of longer term contract positions—with financial contracting being an important component of providing investment signals and managing risk in an energy-only gross pool electricity market.

In this context and in response to the AEMC RFR Final Report recommendation that AEMO undertake work to submit a rule change request³, AEMO proposes the AEMC consider a short term forward market.

2.1 AEMO Proposal

In response to the AEMC's request that AEMO develop a rule change proposal, AEMO has developed a model consistent with previous iterations of the STFM developed in conjunction with the AEMC in 2016 and more recently outlined in the AEMC's RFR Final Report.

The idea for a STFM arose in the context of the development of week ahead trading on the gas supply hub and a suggestion that electricity trading over the same time horizon may be beneficial. Given AEMO's role in providing a platform for gas trading and providing clearing, settlement and prudential arrangements for gas supply hub participants, AEMO is proposing a similar model for the NEM STFM. Namely, an AEMO-operated STFM that uses the Trayport⁴ platform and where AEMO provides settlement, prudential and clearing processes.

³ AEMC. *Reliability Frameworks Review, Final Report*, July 2018. Page 48. Available at https://www.aemc.gov.au/sites/default/files/2018-07/Final%20report_0.pdf

⁴ Trayport GlobalVision™ Exchange Trading System.



Consistent with the market design parameters outlined in the RFR Final Report, AEMO proposes the STFM:

- be operated by AEMO using the existing exchange trading system (Trayport); and
- make use of NEM settlement, clearing and prudential frameworks where practicable.

The key characteristics of the market would include:

- voluntary participation by market participants;
- exchange trading of standardised short term electricity contracts;
- daily contracts traded on a rolling basis for the following day and up to seven days in advance (D+1 to D+8);
- contract specifications developed with industry with the potential for contracts over daily, hourly, peak or shoulder block contract durations; and
- separate contracts linked to each regional reference price in \$/MWh;
- bids and offers matched continuously throughout the day based on price;
- anonymous trading; and
- transaction prices and quantities published on the AEMO website.

On a preliminary basis, there appear to be efficiencies from AEMO operating the STFM given many participants may already have Trayport in place and have access to NEM systems. Efficiencies may arise if STFM and NEM spot positions can be combined for the purposes of settlement and clearing—further analysis of NEM systems would be required to confirm this capability. More information on settlement and prudential processes is provided in section 5.2.2.

2.2 Rule proposal

The RFR Final Report highlights that the model put forward in the RFR and restated here is one such design of a short-term forward market, but there may be others. The AEMC considered that a rule change should be submitted to the Commission to implement a short-term forward market, this will allow further consideration.

As well as possible regulatory changes, financial licencing will require consideration. Financial licencing issues are detailed in the section below.

2.2.1 Financial licence and markets issues

Depending on the eventual design of the market and its products, if STFM products are considered to be financial products rather than physical electricity products then AEMO, the market, its products and participants would need financial services licences and market and clearing and settlement licences under the *Corporations Act 2001 (Cth)* or an exemption from those requirements.

AEMO may need the following financial licences or exemptions under Chapter 7 of the *Corporations Act 2001 (Cth)* to operate the STFM:

- the business of providing financial services; which includes dealing in financial products, providing financial product advice or making markets in financial products (section 911A);
- operating a financial market (section 791A); and
- operating a clearing and settlement facility (section 820A) ⁵.

⁵ AEMO was granted a Clearing and Settlement (CS) Facility Exemption under the *Corporations Act 2001 (Cth)*. The CS Facility Exemption allows AEMO to apply reallocations under the Reallocation Procedure: Swap and Option Offset Reallocations. <http://www.aemo.com.au/Stakeholder->



Unless the STFM and its products obtain an exemption from Australian financial licencing, buyers and sellers on the STFM may need an AFSL because in entering into a STFM contract they may be considered to be dealing in a financial product. The following section of the *Corporations Act 2001* (Cth) is likely to be relevant to participants:

- a business of providing financial services; which includes dealing in financial products, providing financial product advice or making markets in financial products (section 911A).

Not all participants in the NEM have an AFSL. The requirement for the STFM participants to have a AFSL will depend on the eventual design of the market and its products. If STFM products are considered to be financial products rather than physical electricity products then the market, its products and participants would need financial licences or an exemption from those requirements. For all NEM participants to trade on the STFM it will require:

- participants without an AFSL to obtain an AFSL—this may not be possible or overly costly and may limit participation for these (generally smaller) participants;
- the STFM to obtain an AFSL exemption—this may require COAG EC support to raise the profile of the STFM with ASIC and Commonwealth Treasury to enable discussions;
- designing the market so that it is part of the physical market, which may mean the market and its products are not considered financial products and would not require either a financial services licence or exemption—this may then exclude participants that are not market generators or market customers such as some financial intermediaries, which may impact on liquidity.

The market design and approach to licencing may have ramifications for the number and type of participants trading on the STFM and ultimately liquidity of the market. It will be important to ensure legal and regulatory certainty is achieved for the chosen path.

To include the maximum number of participants and to provide regulatory certainty, it seems worthwhile to consider the path in which a market wide exemption is obtained for AEMO, the market, the products and participants. That way, those without an AFSL can participate as well as those with an AFSL that are not also registered as NEM generators or market customers.

It may be practical to engage COAG EC to gauge their support as part of considering market design choices. COAG EC support is likely to be important in having a broad financial exemption considered by the Commonwealth.

3. BACKGROUND

The STFM outline provided in the RFR Final Report has become the basis for the design presented in this rule change proposal.

The RFR Report published in July 2018 requested that AEMO submit a rule change proposal. Specifically, the RFR Report recommended that:

- there may be benefits in a voluntary, contracts-based short-term forward market that would allow participant-to-participant trading of financial contracts closer to the trading day;
- a STFM that provides the demand side with more opportunities to lock in price certainty, making it easier for large demand side customers to engage in the wholesale market and demand respond in response to expected wholesale prices; and

Consultation/Consultations/2016-NEM-Reallocation-Procedures-Consultation. This may also be relevant to the operation of a STFM and ASIC would need to be consulted on any necessary variations to accommodate a STFM.



- AEMO should undertake work to submit a rule change request to the Commission by the end of 2018 to implement a short-term forward market.⁶

The RFR Report outlined that a market that facilitates shorter-term trading of hedging products in the NEM would serve several useful purposes that could lead to increased demand side participation in the wholesale market. These include:

- providing market participants with greater confidence in the price signal, by enabling them to lock in a price for consumption ahead of time, which would provide price certainty;
- the potential for greater demand-side participation due to increased price certainty;
- providing greater opportunities for participants to manage wholesale price risk;
- concentrating liquidity in hedging products at a certain point in time closer to dispatch;
- increased flexibility by allowing market participants to fine tune previous traded positions;
- providing more information to participants regarding the state of the market ahead of real-time;
- potentially allowing for greater participation of gas, wind and solar generators:
 - it could allow greater certainty for gas generators to source short-term gas on the gas supply hubs; and
 - it might more closely align with the time frames over which a wind or solar generators could forecast with more certainty.

As per paragraph 29 of the RFR Final Report, the Commission outlines that it sees the STFM as part of a package required to facilitate increased demand response in the wholesale market, alongside consideration of a demand response mechanism and multiple trading relationships.

4. CURRENT ARRANGEMENTS

Electricity contracting in the NEM generally takes the form of financial contracts settled against the relevant regional reference price (RRP). Generators and market customers enter into financial contracts to manage spot price risk, where volatility is exchanged for a certain outcome. The contract market provides important signals for generator investment and retirement decisions and helps retailers to manage price on behalf of their customers. The most common types of derivative contracts used to manage spot price risk in the NEM are bilateral over-the counter (OTC) derivatives and exchange-traded derivatives. Buyers and sellers of these products are mostly generators, retailers and financial firms.

4.1 Bilateral OTC derivatives

Common OTC derivatives traded in the NEM include but are not limited to:

- swaps—a contract for a fixed amount of electricity for a certain price for a set period of time;
- options—a contract that gives the holder the option to buy/sell a given amount of electricity at an agreed price, in exchange for a fee; and
- load-following hedges—swaps that follow the volume of electricity usage of a participant’s customers over an agreed period.

Because OTC contracts are bilaterally negotiated, any form of derivative structure can be negotiated between counterparties. While the terms of these contracts are confidential, they generally utilise a standard form based around the Australian Financial Markets Association Electricity Addendum to the International Swap and Derivatives Association Master Agreement.

⁶ AEMC. *Reliability Frameworks Review, Final Report*, July 2018. Page 137. Available at https://www.aemc.gov.au/sites/default/files/2018-07/Final%20report_0.pdf



Parties to OTC transactions take on each other's credit risk, which is a key point of negotiation between counterparties. Entities that do not have a credible credit rating (i.e. Moody, S&P) are usually required to provide a credit support facility to their counterpart. This would include most small retailers and some generators, adding to the cost of transacting in the OTC market. OTC contracts can be traded over any conceivable tenor or term, although the most common is quarterly and calendar contracts.

Specific brokered products such as the AGL wind firming product and the ERM solar firming product are examples of standardised OTC products that are seeking to adapt to changing NEM physical market conditions.

4.2 Exchange-traded derivatives

In addition to OTC contracts, participants in the NEM can buy and sell exchange-traded derivatives on the Australian Securities Exchange. The key difference to OTC contracts is that exchange-traded derivatives are anonymous, standardised and the counterparty is the ASX.

Before trades take place, participants buying and selling exchange-traded contracts post collateral with their clearing bank to meet the ASX prudential requirements. This is known as the initial margin and is dependent on the type and number of contracts. During the life of the contract, participants may need to post additional collateral to their clearing bank depending on the daily change in the price of the contract, which is known as margining.

4.3 Other forms of risk management

Participants also vertically and horizontally integrate to diversify spot market risk such as: co-locating with a battery; incorporating renewables within a portfolio of firm generation; and offsetting risk between retail and generation businesses.

5. PROPOSAL FOR A SHORT TERM FORWARD MARKET

5.1 How the proposal will address the issues

A short term forward market will provide an exchange platform to trade anonymous, standardised electricity contracts up to one week ahead of the trading day. This complements the existing suite of hedging options because:

- the ASX provides calendar, quarterly and monthly exchange traded contracts; and
- brokers and participants can facilitate bilateral electricity contracts of any duration; however,
- there is currently not an exchange traded market for short term (weekly, daily, hourly, half hourly) electricity contracts.

Providing a platform to trade week to day ahead electricity contracts which are standardised and anonymous is likely to benefit participants who currently find that:

- the current suite of contracts is too far from real time to confidently trade because of the intermittency and forecasting uncertainty of their generation;
- there is evolution of brokered products that address intermittent generation firming, but trading is not anonymous or standardised;
- as a result of being known to their counterparty, relative differences in counterparty credit risk becomes a barrier to trading (a counterparty may be sufficiently credit-worthy for the volume of trade



it wishes to execute but still present a risk to the other party given relative size and the internal risk metrics of the larger counterparty).

By adding an additional contracting option that fills a gap in the current market, STFM may assist participants to contract in a way that suits physical requirements. Further information on how a STFM might be used by specific participant types is provided in the following sections.

5.1.1 Wind and other intermittent generators

Currently, wind generators in the NEM do not generally offer a large volume of conventional derivative contracts in the same manner as gas, coal and hydro plant. Wind investment to date has mostly been underwritten by power purchase agreements with market customers. Recently, some wind and solar farm developments have been financed without a purchase power agreement. Their status as a merchant generator may mean they need to access a wide variety of contracting options, including short term.

Wind generators in the NEM can forecast expected output relatively accurately on a short-term basis, as shown in Figure 1. As such, wind and solar generators may be more willing to contract on a short-term basis (e.g. a day or a few days ahead) than on a longer-term basis, as short-term contracting more closely aligns with the horizon over which they can accurately forecast their generation. A liquid STFM might also allow wind generators to offer longer term traditional hedge contracts and manage this position closer to dispatch by buying or selling short term contracts.

Below is an example of how a wind generator could use a STFM.

Wind generator STFM example

A 100 MW wind farm sells a 50 MWh quarterly base ASX Futures contract for \$35/MWh.

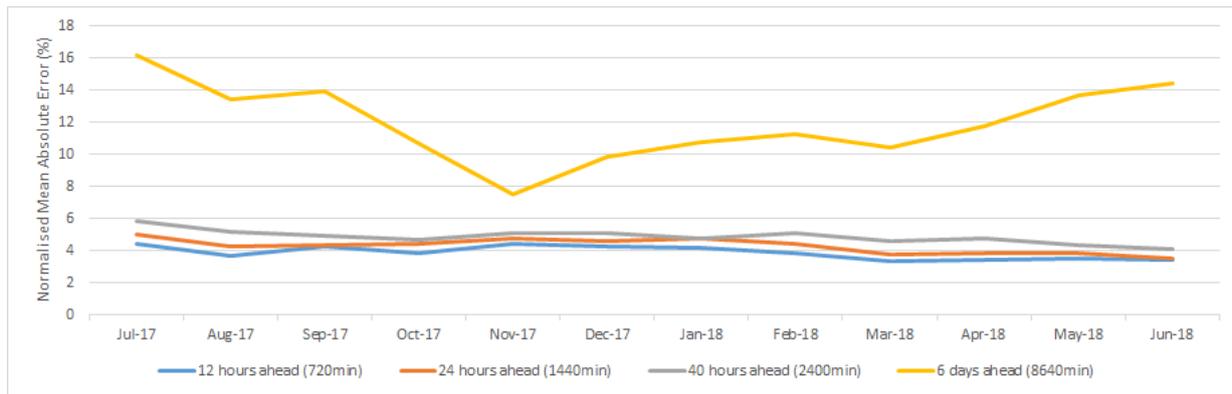
Four days ahead of dispatch (D+4) the wind farm is forecasting a period of reduced output and is concerned that it may not be able to meet its 50 MWh ASX Futures contract.

To mitigate this risk, the wind farm buys 10 MWh of STFM contracts at \$37/MWh. In this way the wind farm has capped its risk to the spot price in the event it is unable to generate 50 MWh to meet the ASX contract and is exposed to spot price risk.

Result: The wind farm is able to use the STFM to complement its ASX Futures contract and can participate in the contract market with reduced risk.

Figure 1 below shows the normalised mean absolute error of the Australian Energy Wind Forecasting System percentage. Wind forecasts are around 95 per cent accurate 24 hours ahead of dispatch, with this decreasing to around 80-90 per cent six days out from dispatch. It may be that the STFM suits the forecasting horizon of wind energy operators and allows them to be more active in the electricity contracting market.

Figure 1 Australian wind energy forecast accuracy



Similar reasoning would apply to other forms of intermittent generation, such as solar.

5.1.2 Gas-powered generators

GPG in the NEM offer swap and cap contracts via OTC and exchange-traded platforms. The availability of a STFM could allow gas peaking generators to more easily offer shorter-term swap contracts and could provide an alternative to traditional high price risk management using cap contracts.

A STFM could make it easier for these generators to lock-in electricity market revenue alongside the purchase of gas on a facilitated gas market and nomination of pipeline capacity. The result could be better coordination of gas and electricity supply.

For example, a GPG could purchase a weekly gas contract on the GSH and then sell short term contracts on a STFM seven days out. In this way, a GPG could potentially use the STFM to offer additional contracts above its OTC/ASX/vertically integrated position if it had the spare capacity and the ability to take advantage of short term gas.

Gas-powered generator STFM example

A GPG is considering whether to offer an additional 50 MWh into the NEM spot market. To do so, it would need to buy extra gas at short notice. Short term gas prices are trading at \$15/Gj. As it gets closer to trading day and forward prices become evident on the STFM, it becomes easier for the GPG to make decisions about whether to buy gas and offer additional capacity into the NEM spot market, as spot market outcomes are hedged via the contract on the STFM.

The NEM STFM is showing prices of \$300/MWh, which is enough to cover the cost of buying gas and run the gas-fired power station. Instead of relying on forecast spot prices and waiting until the last minute to make a decision about buying short term gas, the GPG is able to lock in a STFM contract four days ahead to sell an electricity contract at a price which covers the cost of buy gas and operating the GPG.

While pre-dispatch prices might be high, they are still uncertain and as such the GPG may not have purchased high priced gas to make additional electricity available. With the STFM contract locked in, the GPG then offers electricity to the spot market at a lower price than the contract strike price to defend its side of the contract. The ability to contract for gas and electricity in the days leading into the trading day and offer additional capacity to the spot market provides the GPG with an alternative revenue stream which supports its long-term viability in the NEM.

Now that the GPG has secured the fuel and offtake contract it is able to notify the market of the additional capacity availability in ST PASA and Pre-dispatch schedules. This makes



information known to the market and facilitates greater coordination between market participants and the system operator. Better quality information in ST PASA gives the SO a better view of regional generation so they are more able to system strength for a particular location.

5.1.3 Demand side response

Some large customers in the NEM, such as aluminium smelters, are able to respond to high price events through demand side response and utilise this flexibility to secure favourably priced electricity contracts. Similarly, large users may have arrangements with their retailers where they receive payments for reducing load at certain times.

Large customers can also enter into forward contracts to manage any spot price risk exposure. If large customers directly participate in the NEM and retain spot exposure they can obtain a financial benefit by reducing load in anticipation of spikes in spot prices.

The RFR Report outlined that a STFM could serve several useful purposes that could lead to increased demand side participation in the wholesale market such as concentrating liquidity in hedging products at particular points in time closer to dispatch to provide greater price certainty, which could increase participant ability to lock in prices at which they are willing to reduce demand for.

Below is an example of how a demand response provider could use a STFM.

Demand response STFM example

An energy customer is participating in the STFM and the real-time wholesale electricity market.

The customer is able to change their level of consumption. However, the customer will incur costs of \$5,000 to undertake demand response and given factory operational constraints, they have to commit to this demand response ahead of in the days leading up to the trading day.

In addition, the customer will now have some unhedged load in the short term.

They decide to hedge some previously unhedged load in the short term forward market: the customer buys 100 MWh for the next day in the short term forward market at a price of \$50/MWh.

The next day, an unexpected contingency occurs and the wholesale price for electricity rises to \$500/MWh for the relevant period.

The customer decides not to consume the additional 100 MWh it hedged on the STFM and is paid the difference between the short-term forward market price and the spot price.

Result

The customer's net outcome is:

- $(100 \text{ MWh} * (\$500 - \$50)/\text{MWh}) = \$45,000$
- the customer also incurs the cost of demand response: $-\$5,000$
- the net position for the customer is: $\$40,000$

By providing greater opportunities for contracting over short time periods, a STFM could be used to expand the opportunities for large customers and other demand side response providers to hedge their spot market exposure on a more tailored basis than traditional OTC and ASX-traded swaps and caps.



5.1.4 Integration with NEM settlement and prudentials

Integrating settlement and prudential requirements between the STFM and the NEM spot market could lower transaction costs for participants through: a single invoice and net payment; the ability to offset settlement exposures between the two markets; and potentially the ability to make a single security payment that covers both markets. Collateral requirements would be expected to be lower in a centrally managed STFM compared to maintaining collateral with many potential counterparts.

5.2 Proposed changes

5.2.1 Market model

As outlined earlier in this document it is proposed that the STFM involve:

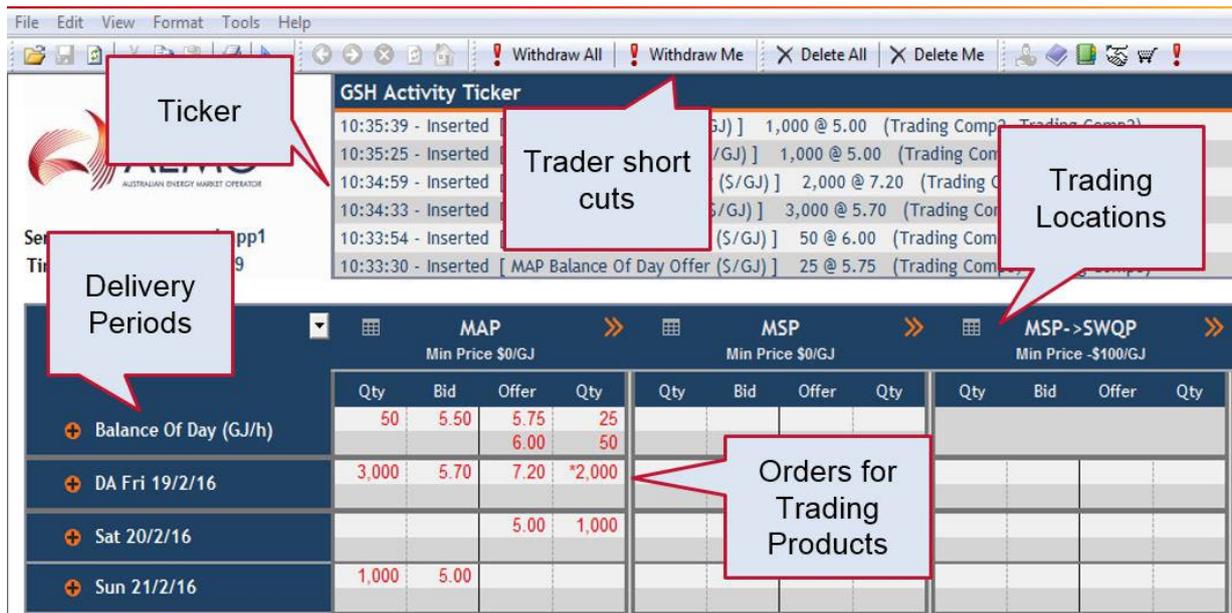
- voluntary participation by market participants;
- exchange trading of standardised short term electricity contracts;
- daily contracts traded on a rolling basis for the following day and up to seven days in advance (D+1 to D+8);
- contract specifications developed with industry with the potential for swap contracts over daily, hourly, peak or shoulder block contract durations; and
- separate contracts linked to each regional reference price in \$/MWh;
- bids and offers matched continuously throughout the day based on price;
- anonymous trading;
- transaction prices and quantities published on the AEMO website;
- be linked to AEMO's settlement and clearing processes.

AEMO proposes that the trading interface used for the GSH, Trayport, could be used as the interface for the STFM. Utilising Trayport would allow participants to trade STFM and GSH products on the one platform, potentially facilitating integration between the electricity and gas markets.

AEMO already operates short-term trading markets in gas. The most relevant example is the GSH which AEMO began operating in 2014.⁷ The GSH is an electronic trading platform and market settlement facility for the short-term trading of physical gas and related products. Participation is voluntary and designed to complement existing bilateral gas supply arrangements and gas transportation agreements. The gas supply hub uses Trayport, which provides access to the exchange, a real-time matching engine, order management and transaction reporting. It is anticipated that Trayport could be used for the NEM STFM. A screen shot of the gas supply hub Trayport screen is provided in Figure 2.

⁷ https://www.aemo.com.au/-/media/Files/Gas/Gas_Supply_Hubs/Settlements-and-Payments/Settlements/Settlements-Prudential-Methodology-V40.pdf p iv

Figure 2 Example of Trayport, the platform for the Gas Supply Hub



5.2.2 Prudential, settlement and clearing

AEMO currently runs the spot market for electricity and a number of gas markets.⁸ To perform this function, AEMO operates a centralised settlement and prudential service. For example, AEMO's role in NEM settlements includes:

- calculating financial liabilities of, and credits to, market participants daily;
- settling all trade in the NEM, weekly, which AEMO does by issuing statements to participants and providing a centralised settlement and prudential service for all spot market and reallocation transactions; and
- to assure Market Participants that these amounts will be paid on the due date, the rules require AEMO to undertake prudential management by monitoring market participants' liability against their prudential limits.

The RFR Final Report outlines that options for credit risk management and settlement include stand-alone arrangements or integration with NEM prudentials and settlement systems. A stand-alone arrangement involves AEMO facilitating trades by way of a trading platform combined with participants being counterparties to any eventual trade. If stand-alone arrangements are used, measures to mitigate credit risk such as those applicable to the GSH may be desirable⁹.

The integrated model for the STFM may also result in participants being counterparty to the trade but AEMO retaining its principal role, in which it provides centralised clearing and settlement. Due to the interaction between the brokerage and principal roles, potential impacts on the NEM or NEM participants will need to be considered, including impacts on credit risk and credit risk management, GST treatment of NEM transactions and the continuing application of other exemptions from which the NEM or NEM participants benefit.¹⁰ For example, if STFM transactions are settled as part of the NEM and netting arrangements are involved, this may require separate clawback provisions to ensure that any additional risk does not impact on existing NEM clawback arrangements.

⁸ National Electricity Market, Declared Victorian Wholesale Gas Market, Queensland Retail Gas Market, Short Term Trading Market, Gas Supply Hub, Settlements Residue Auction

⁹ In the case of the GSH, this includes a declaration under the Payment systems and netting act 1998 (Cth). Payment systems and netting Regulations 2001, regulation 3a.

¹⁰ Such as an exemption under chapter 22 of the anti-money laundering and Counter-terrorism Financing Rules instrument 2007 (no. 1), and the CS facility licence exemption granted to AEMO in respect of swap and offset reallocations (notice under section 820C of the Corporations Act 2001 (Cth), 23 February 2016).



The high-level design proposed in this rule change combines elements of the stand-alone and integrated model. The details arising from the interaction between these two models will be examined and managed as the STFM market design is developed further.

The following sections outline relevant elements of AEMO's settlement, clearing and prudential management role in existing markets, which could be examined for application to the STFM.

Reallocations

Currently, reallocation is used for bilateral contracts and is a financial arrangement between two market participants and AEMO to transfer settlement commitments between the market participants.¹¹ To do this, AEMO makes matching debits and credits to the position of those market participants. Typically, participants will reallocate financial positions of a swap contract struck in the OTC contract market to their spot market accounts. This usually benefits participants by reducing their credit requirements with AEMO because the financial positions of hedge contracts and the spot market are likely to offset each other. Following further direction on the preferred market design, AEMO could investigate whether the reallocation mechanism would be relevant to the STFM market design.

Settlement

It is anticipated that AEMO could use the settlement function it already provides for the NEM spot market for the STFM. Settlement would involve calculating and issuing invoices and receipts based on trading transactions on the STFM. Settlement calculations would also support the prudential function, as settlement positions would be used to monitor and calculate credit risk. The settlement statements used for the NEM could include STFM positions. This is likely to reduce circular cash flows as STFM cash positions are likely to offset against NEM spot market positions.

Clearing

AEMO could perform its existing centralised settlement and prudential service which it already provides for the NEM spot market and gas markets. The centralised role facilitates the transfer of money between AEMO and participants based on settlement statements. Payment to AEMO must always be made in cleared funds, and the responsibility for ensuring the funds have cleared is with the participant. For existing markets, cleared funds are established using the Austraclear service, provided by the Australian Securities Exchange (ASX). It is expected that AEMO's centralised settlement service could be extended to accommodate a STFM.

Prudentials

AEMO manages the prudential function for the NEM. Market participants must provide AEMO with credit support in the form of an AEMO bank guarantee from a financial institution to meet their credit limit requirements, which are set in reference to a participant's trading pattern and the regional seasonality. If a participant's outstandings exceed their trading limit, a security deposit, a reallocation or an additional bank guarantee can be provided to resolve the breach of the trading limit. Prudential requirements, the maximum credit limit, is the amount of credit support that must be lodged with AEMO by a market participant and it is the sum of two components:

- the outstandings limit, which is the payment accrual for a 35 day period which a participants trading must stay within; and
- the prudential margin, which is a buffer that must be maintained at all times between the maximum credit limit and the outstandings limit for each Market Participant. It's in place to cover the seven day period that would be needed to cover payments while managing a participant default event.

¹¹ CS facility licence exemption granted to AEMO in respect of swap and offset reallocations (notice under section 820C of the *Corporations Act 2001* (Cth), 23 February 2016).



Further work would be required to explore how the STFM will interact with various elements of the NEM prudential framework. This can be done once a preferred STFM market design model arises from the AEMC consultation process.

6. HOW THE PROPOSED RULE CONTRIBUTES TO THE NATIONAL ELECTRICITY OBJECTIVE

The NEO is to promote efficient investment in, and efficient operation and use of, electricity services for the long-term interests of consumers of electricity with respect to price, quality, safety, reliability, and security of supply of electricity; and the reliability, safety and security of the national electricity system.

The relevant aspects of the NEO for the STFM are the promotion of the efficient operation and use of electricity services for the long-term interests of consumers with respect to price and reliability and security of supply.

The proposed STFM is likely to contribute to the reliable and secure supply of electricity, considering the following energy market trends:

- a generation mix that is becoming more intermittent
- a growing role for flexible generation

The RFR Final Report also identified that a STFM might help address potential barriers regarding:

- demand side participation; and
- creditworthiness and collateral requirements for smaller NEM participants.

Providing additional avenues for generation and demand side response to participate in liquid contract markets is likely to lead to more efficient spot market and long-term investment decisions, which ultimately would be expected to lead to lower wholesale price and customer prices, all other things being equal.

On a short-term operational timescale, contracts provide certainty for participants and inform their decisions in the face of volatile market conditions. For instance, holding a swap contract incentivises generators to be available when needed (i.e. when demand and spot prices are high) to earn revenues in the spot market to fund payouts on their contract positions.

A liquid market for short term contracts also supports confidence in longer-term contracting, which supports the NEM as:

- it provides market participants signals of market expectations of future spot prices, which support investment and retirement decisions;
- it lowers the cost of financing of investment in generation capacity, which lowers the cost of achieving efficient levels of reliability; and
- it underwrites retailers' fixed-price offers to end-customers, such as households and small businesses.

An AEMO-operated STFM is expected to be relatively low cost for AEMO to implement and for participants to trade on. Participants that already use Trayport and are set up with NEM prudential and settlement systems may have relatively low implementation costs.



7. STAKEHOLDER ENGAGEMENT

AEMO held an industry consultation in October 2018 to provide an update and obtain initial feedback on the STFM rule change proposal. The key issues discussed were:

- A case for a STFM – participants considered the impact of the introduction of five-minute settlement and the National Energy Guarantee reliability obligation and their ability to address the issues the STFM was seeking to address, such as promotion of demand side response.
- Costs and benefits – participants queried how much it would cost and the AEMC noted it would consider the benefits in its rule change process.
- Prudential arrangements – participants noted that prudential arrangements should be developed so as not to bring about higher levels of risk which could then create costs to customers.
- Market liquidity obligation – AEMO confirmed that the STFM was intended to be voluntary and that it had not had conversations with the AEMC or other industry bodies about a market liquidity obligation for a STFM.
- Market design – participants provided support for a STFM that was similar to other aspects of the contract market, in that it was a financial product traded between participants rather than a physical product.
- AEMO noted that the formal avenue for feedback on the rule change proposal was the AEMC consultation process.



8. OTHER ISSUES TO CONSIDER

The AEMC may also like to consider the following issues when deciding on this rule change proposal.

8.1 Liquidity

The AEMC and AER may wish to consider metrics to track the liquidity of the STFM overtime to monitor whether adequate levels of liquidity are being achieved. The metrics could inform AEMC and AEMO as to whether alternative products should be listed or changes to market rules need to be made to lift barriers to liquidity.

8.2 Market manipulation

The AER, AEMC and AEMO could work together to develop a compliance framework for the STFM. There are risks of market manipulation given that the proposed STFM trading timeframe aligns with the release of important physical information such as ST PASA and pre-dispatch. An effective and well understood compliance framework would give participants confidence to trade in the STFM which would be expected to promote liquidity.

8.3 Education and training

If a rule is made to implement a STFM, it will be important that participants receive education and training. This will be particularly important if there are participants that have not previously been active in existing electricity contract markets. More generally, effective education and training could increase participation and liquidity and complement a compliance framework.

8.4 Market data reporting

Trayport and AEMO systems will have the ability to collect and aggregate data, which could be reported on publicly. AEMO would work with industry, AEMC and the AER to ensure reporting it is appropriately anonymised and aggregated so as not to inadvertently provide participants with commercially sensitive information. Data collection and reporting will support the other issues listed above such as liquidity metrics and monitoring; screening for market manipulation; and education.