

19 May 2017

John Pierce, Commissioner
Australian Energy Market Commission
Lodged Electronically

Dear John,

RE: AEMC Consultation on Five Minute Settlement Rule Change Directions Paper

The Clean Energy Council (CEC) is the peak body for the clean energy industry in Australia. We represent and work with hundreds of leading businesses operating in solar, wind, energy efficiency, hydro, bioenergy, energy storage, geothermal and marine along with more than 4,000 solar installers. We are committed to accelerating the transformation of Australia's energy system to one that is smarter and cleaner.

The NEM's generation mix is changing, with around 3.5 GW of new large-scale renewable energy generators under construction or committed to start construction this year. These major investments are occurring at the same time as the NEM's fleet of inflexible thermal coal generators are reaching the end of their life. Concurrently, major investments have occurred in the demand side of the market, with around 1.6 million homes and businesses now facilitating rooftop solar PV. Energy storage options are also increasing with major interest growing in large-scale battery storage technologies and aggregated small-scale energy storage. Metering and data processing capability has also developed significantly since the commencement of the NEM.

This future contrasts to the historic NEM design where large, less flexible coal, gas and hydro generators have dominated the market to provide supply for a passive, predictable and sometimes planned demand-side, and where less capable data management systems predominate.

It is in this context that the CEC welcomes the opportunity to provide a submission in support of the proposed transition to a five minute financial settlement regime, as described by the Australian Energy Market Commission (Commission). The alignment of the dispatch and settlement timeframes will encourage efficient bidding behaviour and responses from all

market participants, and encourage participation from fast-acting participants, such as battery storage, demand response and pumped hydro generation. This alignment should be viewed as a natural evolution of a NEM towards a more efficient, diverse and flexible market.

Further, a market operated in this way would better support the widely recognised move away from a reliance on conventional generation plant. It would promote a diversified energy mix that will be necessary to build a robust and resilient NEM in the decades to come.

Although difficult to estimate, the long-term benefits of this rule change will outweigh the transitional costs. However, these benefits are contingent on a planned transition and implementation of the rule change. Careful planning will be essential to ensure current and new retailers and market participants are able to understand and prepare for the new arrangements.

We consider there to be four primary elements of the proposed rule change that the AEMC should focus on:

- Changed assumptions behind NEM design
- Competition from new market participants
- Competition for contract products
- The importance of a planned transition.

We present a discussion on these key points below, within the context of the technological transformation that is already underway, and to which the market must adapt.

The underlying assumptions have changed

At the time of its inception, the NEM's technological systems did not have the capability to support short settlement periods or the fast-acting generation needed to respond in the 5-10 minute timeframe. The 30 minute settlement period was an artefact of the need of traditional generators for price certainty, and was not selected because it presented the most efficient market design.

With the emerging presence of fast-acting generation and demand technologies, as well as current technological capabilities, there is an opportunity to deliver more efficient market outcomes. Improved metering and processing power could also now manage settlement on a five minute basis.

The existing market was designed to suit the generation mix of the time of its creation, largely coal, gas and hydro generators, when the 30 minute settlement regime was considered necessary to provide price certainty. However, new competition from the fast-response capability of new market participants, such as energy storage and demand

response, removes the emphasis on this arrangement. This historic element of the NEM's design benefits old forms of fast-response participants at the expense of new forms of fast-response participants.

Historically, there have been cases where load profiles have been shaped to meet the generation capabilities of large inflexible thermal generators (hot water switching is one example of this). However, a competitive energy market must move away from incumbency privileges, with the 30 minute settlement an example of these privileges. The Commission has provided clear evidence that those same generators are now abusing the market with strategic bidding that inflates spot prices and ultimately consumer costs.

Reform in this space will deliver a double benefit of positive outcomes for economic efficiency with the close alignment of actions and rewards. This would lower the incentive to bid strategically and increase competition across a more diverse range of market participants.

Competition from new market participants will benefit consumers

The alignment of the settlement and dispatch periods will clarify price signals for responsive technologies, thus removing potential barriers to entry and increasing the competitiveness of energy supply in the NEM, which presents an overall benefit for consumers.

The NEM will face a major transformation in the coming decade, and is moving away from a reliance on traditional generation technologies as the thermal generation fleet ages. It is widely acknowledged that new coal plant is currently un-investable in Australia, and the current state of the gas market has led to significant energy and electricity price increases. If careful planning is not carried out, the rapid closure of major coal power stations can have immediate implications for the power system and market, as shown by the recent events in South Australia. The removal of potential barriers to efficient participation for prospective competitors will be an important step to ensure competition can prevail in the long-term.

Additionally, investors in electricity infrastructure are clearly moving towards assets that do not present carbon risks over the coming decades. The South Australian example also shows the outcomes of a lack of diversity across energy sources where major gas price increases, driven by gas shortages last winter, flowed through into major wholesale electricity price spikes as competition from wind and solar PV reduced. This emphasises the importance of ensuring competition in the market.

The shift to create a more competitive NEM through implementing five minute settlement will be an important part of the long-term planning needed to manage a transitioning generation fleet and ensuring a competitive electricity market in the decades to come.

Competition for contract products will benefit consumers

The effectiveness of any settlement regime will hinge on the ability of market participants to manage their risk and exposure to the pool price. This is largely determined by the liquidity of the contract market, which is an outcome of the wholesale market. It is not a driver *for* the wholesale market. The Commission should therefore expect that retailers and generators will be able to utilise the transition period to adapt their contracts to the products they are seeking within a new settlement environment.

The Commission has highlighted that a key unknown in relation to a change to five minute settlement is the potential reduction in the volume of cap contracts by 625 MW, largely because existing peaking plant may face lower price certainty if the thirty minute price signal is removed.

The rationale that the volume of cap contracts will reduce with a five minute settlement regime is based on an assumption that the current value of the contracted cap price will remain fixed and unchanged by retailers and their negotiating parties. However, this assumption overlooks the fact that retailers and generators have the ability to shape contracts to the demands of the market.

Cap contracts are a product currently designed to fit the thirty minute settlement model. Accordingly, it should be expected that the future shape of the wholesale market will shape the future shape of products offered through the contracts market. Market forces will place incentives on retailers to demand contract products that suit their needs – in the context of the thirty minute settlement or a five minute settlement. For example, should a retailer prefer to procure a cap from a gas peaking generator, the parties could negotiate for an averaging effect, like the 30 minute settlement regime currently provides, to be included in the contract.

Removal of dulled market signals for new entrants will increase the scale and diversity of market participants that might offer cap contracts. New technologies such as storage have the technical capability to offer cap contracts, as they have the ability to supply into the market during periods of high demand, given charging cycles are managed to permit this. Energy storage could also assist existing peaking generators in managing cap contracts, as a battery could be dispatched very quickly to avoid a shortfall of generation in the dispatch intervals while the peaking generator ramps up to rated output.

This being said the transition process will remain important to allow the market to explore the opportunities and risks associated with the five minute settlement model.

But will the competition come to the party?

The NEM has already grappled with the successful operation of a thirty minute settlement regime. However, it is clear that this not perfectly suited to all generation technologies but

strikes a balance for efficient market outcomes and operating capability. Competition appears to be largely healthy in most regions. The premise that a change to five minute settlement will potentially create shortfalls in supply due to the closure of gas generators appears to be flawed. Deployment timeframes for new generation and storage solutions are already short and are becoming increasingly shorter. Costs are low for demand response to enter the market and the costs of large-scale battery storage are reducing rapidly.

If there is a shortfall in the products needed to meet the needs of retailers, the value of these products will increase, thus bringing new products to market to fill any shortfall. Concurrently, the change to five minute settlement will encourage retailers to seek products that have evolved to fit with the five minute settlement arrangements.

Conversely, proposals to link dispatch of renewable energy or energy storage technologies with synchronous generation are unlikely to increase competition and would ultimately place upwards pressure on wholesale prices.

The transition will be important

The evolution to the new arrangements will require a transitional period to deliver immediately following implementation. The transition period will be crucial to allow participants to be prepared to respond to new market signals, implement changed/new systems and manage contractual changes.

In addition to information technology and settlement system changes, retailers will need time to explore and understand the potential new market before implementation. Similarly, the transition period should allow competitive new entrants to prepare to enter the market with the capability to operate under a five minute regime.

Three years is an appropriate timeframe. However, the transition should incorporate two key elements:

- 1) The creation of a test environment or model that can allow market participants to explore the characteristics of the new settlement regime and how they may interact with the new market in the coming years. This should be an open source format developed by an appropriate independent party (such as a university) and made freely available.
- 2) The Commission should undertake an industry readiness review on an annual basis leading up to implementation. The Energy Edge report should form the basis for the initial review, with subsequent reviews looking at the deployed and registered fast acting technologies and the evolution of the contract environment leading up to implementation.

Summary

The implementation of a five minute settlement regime will provide long-term benefits to consumers by creating significant scope for increased competition in the wholesale electricity and contract markets. While there may be some uncertainty about the ability of new competitors to enter the market at present, the NEM has transitioned previously and demonstrated a resilient outcome. A transition period of three years along with the appropriate market monitoring and creation of a test environment would be sufficient to allow the market to understand and adapt to these new conditions and to design products to ensure a liquid contract market in the future.

We trust that this submission assists the Commission in its deliberations and welcome continued discussion of important issue. Please contact the undersigned or Emma White (03 9919 4107) for any queries regarding this submission.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Tom Butler', with a long horizontal flourish extending to the right.

Tom Butler, Director Energy Transformation

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