15th June 2016

Australian Energy Market Commission
PO Box A2449
Sydney South NSW 1235

Submission lodged online at: www.aemc.gov.au

Project Number: ERC0201

Dear Mr Pierce

Five Minute Settlement – Consultation Paper

Snowy Hydro Limited appreciates the opportunity to make a submission to this Consultation Paper.

Snowy Hydro does not support the Rule change proposal on the following basis:

- There is no material problem that warrants the major costs and disruption that would result from the proposed Rule.
- The premise of the Rule change was largely predicated on removing strategic late rebidding. It would be wise to assess the effectiveness of the Good Faith Rebidding rule change before even considering this Rule change which purports to address the same problems.
- Implementation costs would be very high with questionable and negligible benefits.
- The Rule has the potential to disrupt the current functioning Contracts market.

Snowy Hydro notes that any support for 5 minute settlement in the 1999-2003 period is irrelevant and cannot be extrapolated as support for the current proposal. In this earlier period, the forward contract markets were immature and played a less pivotal role in managing electricity pricing and volume risk. In the present NEM, we will show that the forward contract market is the primary market for managing electricity pricing and volume risk. Due to this fact, the 5 minute proposal is likely to negatively impact on the efficiency and liquidity of the Contracts market which would have net negative consequences for the achievement of the National Electricity Objective.

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Issue 1 – Is there a problem

Snowy Hydro believes there is no material problem associated with the current 30 minute settlement. On the contrary, we believe the current arrangements provide a means for the managing risk exposures which would not be available under 5 minute settlement.

By way of example the following tables show that the mismatch between dispatch and pricing can materially help a large consumer manage their exposure to the Spot Price on the assumption this consumer has no wholesale contracts in place.

30 Minute Settlement

Dispatch Period	Demand (MW)	Price ($/MWh)	Cost ($)
1	100	12,000	
2	100	100	
3	100	100	
4	100	100	
5	100	100	
6	100	100	
	300	**2083**	**625,000**

Table 1.

5 Minute Settlement

Dispatch Period	Demand (MW)	Price ($/MWh)	Cost ($)
1	100	12,000	600,000
2	100	100	5,000
3	100	100	5,000
4	100	100	5,000
5	100	100	5,000
6	100	100	5,000
	300		**625,000**

Table 2.

From Table 1 and 2 if the price spikes occurs at the beginning of the Trading Interval[1] and the Consumer decides not to reduce consumption for the rest of the Trading Interval (ie. the remaining 5 minute dispatch periods) the settlement under the current 30 minute settlement market design is identical to settlement under the 5 minute proposal.

Now we refer to Table 3 where the Consumer decides to reduce consumption due to the high Spot price early in the Trading Interval.

30 Minute Settlement with a change in Consumption

Dispatch Period	Demand (MW)	Price ($/MWh)	Cost ($)
1	100	12,000	
2	0	100	
3	0	100	
4	0	100	
5	0	100	
6	0	100	
	50	**2083**	**104,167**

Table 3.

[1] A Trading Interval is 30 minutes.

For Loads, under the current 30 minute settlement, if the Price Spike occurs early in the Trading Interval they have the choice and option to reduce consumption to lower the overall Trading Interval cost. This option is not available to the Load under 5 minute settlement as the majority of the cost has been incurred in the first 5 minutes. It is acknowledged that Loads would reduce output if their production/consumption process was flexible enough to do so and the economic utility obtained from the consumption of electricity was LESS than the cost of the electricity.

If the Price Spike occurred at the end of the Trading interval unless the Load can anticipate that it was going to happen then both 5 minute and 30 minute settlement will result in the same cost outcome.

Snowy Hydro has the largest peaking generation portfolio in the NEM. This portfolio consists of hydro, open cycle gas turbines, diesel generators and price sensitive demand response. We believe from experience operating in the NEM that the current 5 minute dispatch and 30 minute settlement does not hinder the ability of Participants to operate their plant in the most efficient manner which is consistent with each generator owners overall strategy and risk management policies.

Similar to the above example with Loads, we believe the current 30 minute settlement aids generators in managing Spot pricing risks. That is, if a spike occurs early in the Trading interval then the generator has the option of increasing its generation output to minimise contract for difference exposures on sold Futures/OTC Contracts. This market design feature aids Suppliers of electricity to sell forward contracts. Under the proposed 5 minute settlement we are concerned contract prices must go up to reflect additional risks, and the volume and liquidity of contracts available would reduce as Suppliers face increased risks in underwriting these contracts.

The Consultation Paper implies that under 5 minute settlement there may be more incentive for generators to respond to the price signal. As a peaking generator our decision making process to schedule generation plant is not made on the basis of a 5 minute high dispatch price. The primary considerations for scheduling peaking generation are:

- The accuracy of the pre-dispatch prices;
- The costs associated with managing resources required for the generator unit to operate ie. availability of fuel, and operational resources; and
- The contact exposure at different anticipated Spot price levels.

Issue 2 – SCADA

SCADA data is not an appropriate alternative to replacing revenue metering data. Key issues with this proposal were well documented by the AEMC and include:

1. The accuracy of the SCADA data. Typically 2-4%;
2. Inconsistency of SCADA data across different power stations due to the fact SCADA systems are installed at different locations within each power station; and
3. Concerns with AEMO modifying metered data before it is used in the 5 minute settlement process.

Issue 3 – Five minute metering and other options

There are significant complexities in a Retailer's business processes and Information Technology (IT) systems are critical for risk management and strategically important in

remaining competitive. Settling customers which opt for 5 minute settlement will require a duplication of systems and processes which all means additional costs.

For Retailers there must be major modifications to IT systems to accommodate 5 minute settlement, including mass market systems such as billing and settlement systems for a large number of customers. These systems are highly automated and integrated IT systems. Hence suggestions of simple stand alone or ad-hoc systems add-ons that could be used to manage the implementation of the 5 minute settlement are uninformed.

The major information technology and system changes that would be required to support the Rule Proponents proposal are based on the following reasons:

- Retailers would need to utilise 5 minute profiled data for the purposes of settlements reconciliation and billing.

- Modifying supporting processes for forecasting and quoting for 5 minute settled customers;

- Identifying separate 5 minute and 30 minute settled customers in databases and systems to enable retailers to manage and report pool exposures; and

- Forecasting and hedging pool exposures for 5 minute and 30 minute settled customers.

Finally, because 5 minute settlement is "optional" for Consumers there is the risk of an additional uplift payment Retailers may be required to make to balance settlement amounts. If this occurs there will be increased risks and therefore costs to appropriately hedge exposures. In a small margin business such as Retailing electricity this may be an unacceptable risk.

Issue 4 - Settlement Residues

A mechanism to manage intra-regional Settlement Residues would add complexity to the market design. On this basis we believe if the proposal is to implemented that all demand side participants be compulsory required to have five minute settlement.

Issue 5 – Contracting

Optional 5 minute settlement would inevitably lead to some Participants opting to remain on 30 minute settlement. This means:

- These respective groups of market participants (5 versuss 30 minute settlement) would be exposed to different reference prices and, hence different risks; and

- Where contractual arrangements through OTCs and/or Futures already exist, a change to the reference price may constitute a market disruption event under these contracts. A market disruption event under the AFMA ISDA master agreements framework can provide grounds to renegotiate the contract and/or terminate the contract. This is a major risk for all Market Participants which can cause major disruption and uncertainty for hedging electricity price and volume exposures.

Snowy Hydro highlights that Contracts market is the key market for managing electricity risk exposures. The importance of the Contracts markets have grown significantly since the National Electricity Market began operation on the 13th December 1998. This fact is clearly highlighted by Figure 1 below.

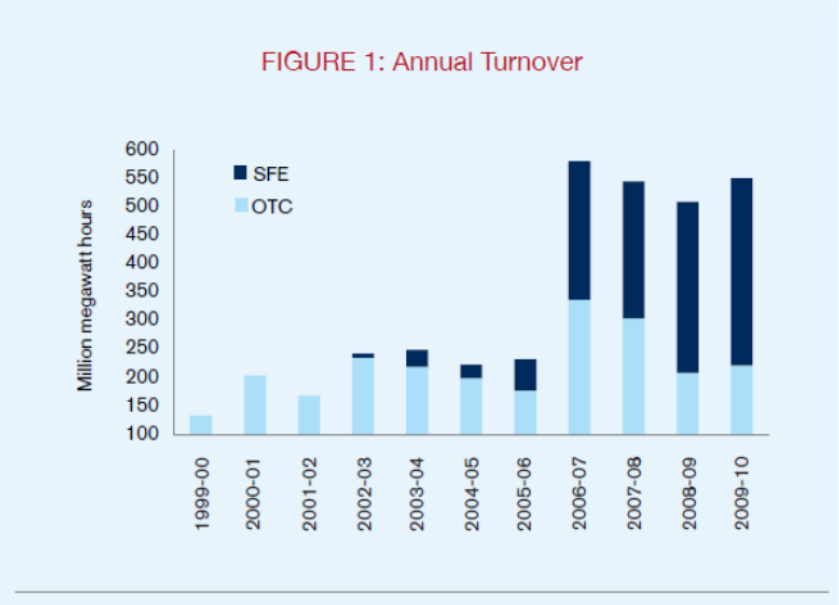

Figure 1: Electricity Futures Contracts and Electricity Over The Counter Contracts annual turnover[2].

From Figure 1, annual financial contracts turnover for the 1999-2000 year was only approximately 125,000,000 MWh. In stark comparison in the latest 2015 Australian Financial Markets Report the annual financial contracts turnover[3] is 533,690,683 MWh. This represents in excess of a 4 times increase in turnover compared to the 1999-2000 year. This analysis highlights the importance of the Contracts market to manage electricity risk. The Rule has the potential to significantly disrupt the current functioning Contracts market to the detriment of Market Participants and Consumers.

Issue 6 – Other Solutions

Both 15 minute and 30 minute dispatch would be very problematic with the level of likely disruption caused by distributed generation. This means there would be a higher reliance of Ancillary Services. Other forms of ancillary services would need to be developed – this would add to the overall complexity of operating in the NEM.

5 minute dispatch with 15 minute settlement would have the same dis-benefits as 5 minute settlement. That is, the shorter the number of dispatch periods used in the settlement price calculation the less optionality both Loads and Generators have to change their consumption and supply intentions. If the optionality for Consumers is retained to choose between 15 minute and the current 30 minute settlement, there would be adverse contracting volume and liquidity risks.

[2] AFMA, 2010 Australian Financial Markets Report, page 50.
[3] AFMA, 2015 Australian Financial Markets Report, page 50.

Summary

The NEM is very competitive, there's new bidding rules which may reduce even further any transient market power that generators possess. We also note that Participant behaviour is not static, that is, it would change if the proposed rule is implemented. Hence implementing change of this magnitude is a very risky proposition.

There are no material problems in the current NEM design with the mismatch between dispatch and settlement. In fact we have shown that the current market design aids effective risk management for both Loads and Generators. These arrangements have underpinned a deep, liquid, and competitive Contracts market. The rule change proposal threatens to erode this efficiency and should be rejected.

Because the proposal is "optional" there will be a miss match in settlement amounts due to partial participation. This creates the potential need to define an additional ancillary service or uplift payment, which may be difficult to forecast and hedge. This would increase risks and therefore costs to appropriately hedge exposures.

Other complexities will arise such as, additional Rules will be needed to cover the use of SCADA for profiling the 30 minute generation and (optionally) loads, and to make adjustments for the settlement imbalance arising because the 5 minute settlements process is not settled to all loads.

There are significant complexities in Retailer business processes and IT systems are critical for risk management and strategically important in remaining competitive. Settling customers which opt for 5 minute settlement will require a duplication of systems and processes which all means additional costs. In a small margin business such as Retailing this is an unacceptable risk.

Snowy Hydro appreciates the opportunity to respond to the Consultation Paper. I can be contacted on 0407224439 if you would like to discuss any issue associated with this submission.

Yours sincerely,

Kevin Ly
Head of Wholesale Regulation