

Australian Energy Market Commission
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Five Minute Settlement (ERC0201)

The Australian Energy Council (the “**Energy Council**”) welcomes the opportunity to comment on the Australian Energy Market Commission’s (“**AEMC**”) National Electricity Amendment (Five Minute Settlement) Rule 2016 Consultation Paper.

The Energy Council is the industry body representing 22 electricity and downstream natural gas businesses operating in the competitive wholesale and retail energy markets. These businesses collectively generate the overwhelming majority of electricity in Australia and sell gas and electricity to over 10 million homes and businesses.

Discussion

In an ideal world, dispatch and settlement for all wholesale market participants in the National Electricity Market (“**NEM**”) would be instantaneous, thereby ensuring that supply matches demand, and the reward for generation matches what physically occurred. However ideal conditions come at a physical, technical and economic cost, therefore compromises are made to seek the optimum balance between the benefits of a dynamic, efficient market and the costs of implementing and maintaining such a market.

The existing market, as established at the start of the NEM in 1998, dispatches at 5 minute intervals and settles on a 30 minute time-weighted average basis. Sun Metals’ proposal is for a hybrid market, with a 5 minute settlement regime compulsory for market generators, scheduled loads and market network service providers, but optional for other wholesale market participants.

As a matter of principle, the Energy Council opposes market design which places obligations on some but not all market participants. The provision of options to a subset of market participants about whether they have 5 minute or 30 minute settlement provides them with a benefit, while simultaneously placing a cost on the remainder of the market which is required to have 5 minute settlement.

Notwithstanding this opposition to the proposed market design, the Energy Council believes that the proposed changes have serious flaws which would need addressing before any changes could be contemplated.

Settling the market on 30 minute intervals based on time-weighted dispatch prices has the effect of smoothing the 5 minute dispatch price variability, and smearing a particular dispatch interval’s price volatility against the other five dispatch intervals’ prices, and the output of generators and response of loads during that half-hour. Reducing the settlement period to 5 minutes will expose the market directly to this volatility and change generators’ returns to favour those generators which are most responsive to the new price signals. However while the proponent identifies several technologies capable of responding in a single 5 minute dispatch interval, it ignores the physical limitations of all technologies, which require some finite period of time to ramp-up production and synchronise with the electricity system.

According to the National Electricity Rules, fast-start generation is plant which is able to synchronise and increase generation within 30 minutes of receiving an instruction from AEMO¹, reflecting the physical reality that while instantaneous demand spikes may occur within the electricity system, demand is better considered and responded to over longer periods to reflect the ebbs and flows of industrial, commercial and residential demand over a 24-hour period. The effect of reducing the settlement period from 30 minutes to 5 minutes will be to change the economic sustainability of some generators which provide the services necessary to support peak demand longer than 5 minutes (e.g. summer afternoon air conditioning demand). Ultimately the rule change may have unintended consequences for the market as a whole, as such generators may lose their economic incentives to generate, since their available value will have been captured by generators and loads which can meet the 5 minute instantaneous demand, but little else.

Demand side participation will be similarly affected, as particular load types will receive more favourable returns than others, thereby suppressing the willingness of other, slower load types from participating in the market and addressing the longer duration peaks characteristic of the Australian electricity market.

The major disruption will be to the contract market. Under the proposal the demand (buy) side will have both 5 minute settlement and 30 minute settlement available to it. This will create liquidity problems for the sell side, since it will have to offer matching products which will be mutually exclusive, i.e. a particular 5 minute settlement period cannot be included in the same 30 minute settlement period on offer. In addition, transitional arrangements to handle legacy contracts will need to be established by the Australian Financial Markets Association Electricity Market Committee, a process which will change the existing bargain between counterparties and therefore create a value transfer. A further problem will be how wholesale businesses and financial intermediaries will manage the risks of different settlement periods between the upstream and downstream parts of their businesses. Existing products may not adequately mitigate these risks, and new products may need to be developed. This is something which will take time, not only to create the products themselves, but also to establish the liquidity necessary for the products to be effective – if indeed they do become available.

In addition, the six-fold increase in the number of settlement periods will require significant changes in generator bidding systems, cause considerable increases in analytical and contracting workloads, and require additional processing overhead to conduct the detailed pool price modelling and forecasting necessary to support the changes. The costs to make these changes will be substantial.

The Energy Council also believes that the technical challenges to establish 5 minute settlement are unworkable. When compared with current revenue metering processes, SCADA data has less accuracy, poorer reliability, and uncertain measurement location. Using SCADA data with these shortcomings, while it will reduce implementation costs, is inappropriate and its limitations make its use impractical. Furthermore, the Energy Council does not believe that the modification of meter data prior to its use in the settlement process should be within AEMO's remit as market operator. Metering data format changes will also require system changes by market participants, an exercise which is not inconsequential, and this is another factor which casts into doubt the overall value of the proposed rule change.

Of course the hybrid nature of the market proposed also causes disparate treatment of market participants, and complexities in establishing rules and procedures which marry the two different systems, 5 minute settled and 30 minute settled. For example, semi-scheduled generation is required to respond to dispatch instructions and will therefore affect the 5 minute settlement outcome, yet it will continue to be settled on a 30 minute basis. Other complications arise when one considers the optionality being offered to retailers' customers. Should individual customers opt for 5 minute settlement, the nett system load profile for 30 minute settled customers will be affected, and additional calculation will be required by distribution network service providers. This will

¹ By deduction from *National Electricity Rules Version 80* Clause 3.8.17(a)

then flow on to the role of the Retailer of Last Resort, as that entity may be required to offer both 5 minute and 30 minute settled products, thereby complicating the transition process and increasing the costs of providing the service to customers.

There is also the issue of equitable allocation of ancillary services costs. If market participants, e.g. large loads or non-scheduled generation, vary their demand or output for short periods in response to a new 5 minute settlement interval, this will cause the frequency in those intervals to increase, and require contingency lower ancillary services to return the system to normal operating limits. The allocation of the costs incurred will be to customers' accounts, and the entity which caused the raised frequency, i.e. the load or generator, will not receive its share of the costs generated.

Besides the market design issues, the Energy Council is also concerned about the significant settlement residues which may be created in the demand side of the market due to the existence of different settlement periods, and how these settlement residues may be treated. *Prima facie*, the introduction of settlement residues introduces significant complexity to the market design. Should a settlement residue auction process be established, similar to the existing inter-regional settlement residue allocation & distribution methodology, then market participants will need to assess whether participation will be suitable for meeting their risk management needs, and the market as a whole will need to consider whether settlement residues create an opportunity for gaming – or unforeseen wealth transfers.

The proponent contends that, "the disparity between dispatch and settlement timeframes creates market distortions that lead to inefficiencies in ... the market". The Energy Council acknowledges that the wholesale market has imperfections, but argues that the settlement interval change proposed is not justified by the significant market design and technical modifications required. The alleged justification for the proposed change is also weakened by the impending introduction (from 1 July 2016) of the Bidding in Good Faith rule change (ERC0166), which the AEMC expects will "lead to more efficient wholesale price outcomes ... and create improved signals for investment that better reflect underlying supply and demand conditions".

Conclusion

In conclusion, the Energy Council opposes the rule change, as it believes that the proposal will lead to a flawed market design and additionally, it is technically unworkable. Furthermore, the significant costs of implementation are expected to exceed the uncertain benefits to be obtained, therefore the National Electricity Objective will not have been satisfied.

Any questions about this submission should be addressed to the writer, by e-mail to kieran.donoghue@energycouncil.com.au or by telephone on (03) 9205 3116.

Yours sincerely,



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