



21 June 2016

Ben Noone
Project Leader
Australian Energy Market Commission
Submitted via website
AEMC reference - ERC0201

Dear Ben,

Thank you for the opportunity to provide comment on the Australian Energy Market Commission's (AEMC's) consultation paper on the proposed five minute settlement arrangements for the National Electricity Market (consultation paper). We note the proposal by SunMetals is based on analysis undertaken between 1999 and 2002 which showed no net benefit to such a proposal, but that many aspects of the market have changed since that analysis was performed.

Stanwell is a registered generator, market customer, intermediary and small generator aggregator in the NEM, operating both scheduled and non-scheduled generation sites.

Stanwell supports an investigation into whether alternative dispatch and settlement arrangements would be beneficial, however considers the specific rule change proposal unlikely to meet this criteria. We consider this rule change proposal is critically linked to a number of concurrent processes and encourage the AEMC to ensure that these processes appropriately inform, and benefit from, each other.

If you would like to discuss any aspect of this submission, please contact me on 07 3228 4529.

Regards

A handwritten signature in black ink, appearing to read "Luke Van Boeckel", with a long horizontal flourish extending to the right.

Luke Van Boeckel
Manager Regulatory Strategy
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Issue 1 Is there a problem?

Q1. To what extent does the mismatch between the dispatch and settlement intervals create risks for market participants? What is the materiality of these risks and under what circumstances are they most acute?

Any market design will result in trade-offs, for example between theoretically ideal design and cost/complexity, or between dynamic and allocative efficiency. Stanwell acknowledges that the current market design gives rise to an anomaly in relation to a disconnect between dispatch and settlement incentives.

The rule change proposal identifies that the disconnect between dispatch and settlement affects

- investment (dynamic) efficiency
- dispatch (allocative) efficiency
- financial market efficiency

Investment efficiency

Investment incentives appear largely unaffected by the 5/30 anomaly, with a significant proportion of historical and projected investment being driven by ex-market processes such as the Renewable Energy Target and the historical QLD 13% gas scheme. Since the previous 5/30 review significant investment in intermediate and peaking capacity has occurred and more recently investment in generation from renewable sources has been the dominant contributor to oversupply. This trend appears likely to continue with AEMO forecasting that “no new thermal baseload electricity generation is required over the next decade to maintain system reliability”¹.

The recent and near-term projected investments are often one or more of

- behind the meter,
- non registered,
- non scheduled, and/or
- intermittent.

Much of the investment is reliant on both government ex-market subsidies and whole of meter offtake agreements – typically Feed in Tariffs (FiTs) or Power Purchase Agreements (PPAs). Stanwell can see no evidence that the 5/30 anomaly is significantly affecting investment incentives or efficiency.

Stanwell also notes that all investment requires a value proposition and in the case of peaking generation or demand side abatement this is typically linked to the frequency and magnitude of high price events. The rule change proposal² and consultation paper³ both refer to a shorter settlement timeframe “moderating” or “reducing” prices. Stanwell considers that it is important that these two aspects of market design are considered together – reducing average prices or moderating volatility is only efficient if appropriate investment signals are retained.

Dispatch efficiency

Stanwell considers that the 5/30 anomaly is broadly accepted as having an effect on dispatch efficiency under certain conditions, however whether this is material is unclear. The Rule change request indicated that in a month with both volatile and high average prices⁴, a move to compulsory five minute settlement for generators would affect payments by 0.3%⁵.

¹ AEMO media release, Friday 8 August 2014. 2016 NEFR exhibits similar conditions.

² “The flow-on effect may be a moderation in prices and additional liquidity in the electricity market, if more fast-response generators are ready to dispatch, as they wait for a price spike where they could be remunerated many times more than they have in the past, thus competition is strengthened.” Rule change request page 3

³ “These responses have the potential to reduce price spikes and average prices.” Consultation paper page 10

⁴ Queensland January 2015: Time weighted average price \$117.34/MWh, \$300 cap payout \$64.80/MWh.

⁵ Rule change request page 8

The proponent has previously published examples comparing dispatch outcomes under the current market design with outcomes that might be observed under aligned 5 minute dispatch and settlement, assuming no change in behaviour⁶. In particular the proponent focusses on peaking generation and demand side abatement stating that “*the capability of these technologies is not appropriately recompensed in the NEM*”⁷. The proponent’s analysis applies only to trading intervals containing a short duration high price.

The proponent’s analysis indicates that in such a Trading Interval (TI) peaking generation will either:

- be dispatched less than desired, where the half hour price is *above* the unit’s offer price. This may occur as the peaking generator receives and responds to only one target to increase generation compared to five targets to maintain or lower generation - the unit would be “under dispatched”, or
- be dispatched more than desired where the half hour price is *below* the unit’s offer price. This may occur as the peaking generator is receives and responds to a single target to increase generation, however the price in that dispatch interval is insufficient to raise the trading interval price to an economic level for the generator – the unit would be “under compensated”.

A customer with demand response capability may have an equal but opposite exposure. Such impacts may also spill over into adjacent TIs due to both the technical characteristics of the response and the uncertainty for participants during volatile periods.

Stanwell considers that it is equally material that non-ideal outcomes can occur during TIs with very low (or negative) prices. Non-ideal outcomes also occur where a high price occurs early within the TI and expensive resources rebid in order to be dispatched out of merit order.

Whether these “risks” are inefficient is unclear. The smoothing which exists under the current design provides revenue opportunities for participants with limited response over a dispatch interval but potentially greater response over a trading interval. There are a number of peaking generators which require more than a dispatch interval to synchronise⁸ and ramp up. These participants receive more compensation than would be received under five minute settlement due to the smoothing effects of the 5/30 design. In part this is designed to compensate for the cost incurred and effort involved in providing a response which may subdue prices to uneconomic levels in subsequent dispatch intervals.

Five minute settlement would incentivise responses which could be delivered within the dispatch interval timeframe ahead of responses with longer lead times as the ability to alter generation or consumption levels within a dispatch interval would become crucial in determining whether a response could be appropriately compensated.

When considering incentives under this paradigm Stanwell considers that the crude examples contained in the proponent’s analysis are unhelpful and potentially misleading. NEM revenue is derived on the basis of energy delivered, not the target reached at the end of a dispatch interval as used in the examples. AEMO’s dispatch engine assumes linear response within the dispatch interval (which may or may not correspond to the energy actually delivered and compensated for). The examples assume instantaneous response, sustained across the dispatch interval and therefore significantly exaggerate the benefit claimed.

Faster or slower responses than AEMO’s assumed linear response give rise to increased Frequency Control Ancillary Services (FCAS) requirements and typically to higher “causer pays” factors for the contributors. Such faster or slower response would also lead to greater or lesser revenue than modelled both for the generator in question and other generators forced to compensate, potentially affecting dispatch efficiency. Accordingly any “extra” revenue derivable must be considered in light of the potential broader inefficiencies caused.

⁶ SunMetals response to Draft Rule Determination – National Electricity Amendment (Bidding in Good Faith) Rule 2015

⁷ Rule change request page 2

⁸ Under normal conditions most peaking plant require time to “spin up” and synchronise to the grid – for example Mt Stuart Units are typically offered with a requirement for 18-21 minutes between the receipt of a start signal and first energy being exported. Some peaking generators are kept “spinning” but not exporting in order to provide fast response, such as Kareeya Power Station. Such a regime is typically not costless and is a commercial decision by the provider.

Financial Market efficiency

While the rule change proposal claims that aligning dispatch and settlement would increase the ability and desire for peaking plant and demand response to sell cap contracts, Stanwell considers that this would apply only to a subset of providers.

The willingness of generators or demand response providers to sell financial products is linked to their ability to “cover” the price exposure. As many peaking generators and loads cannot respond within five minutes, these providers are less likely to offer caps compared to the current design. Of those sub set of providers who can provide a quick response, as explained above, the revenue derived is based on the actual energy delivered, not the end of dispatch interval target. For a linear response (which is not necessarily accurate) this means a provider receives half the revenue implied by the end of dispatch interval target. This fact alone reduces by half the ability for this small subset of peaking generators to offer cap contracts.

Even for this small subset of peaking generators that can respond within five minutes, thirty minute settlement may still be preferable as the cap risk is mitigated by the reduced average price and the potential to secure a greater share of generator revenue when a high price occurs early in a TI.

As discussed in Issue 5, the 5/30 anomaly is significantly less distortionary to financial markets than the proposed design which fragments the settlement processes by participant type.

Q2. What types of supply and demand side participants are capable of responding within a five minute period? Under what circumstances can these responses occur?

The Rule change request notes a number of types of participants who are likely to be capable of responding within a dispatch interval

“...such as batteries, loads with fast control systems set up to respond to market prices, and some flexible alternating current transmission systems (FACTS) and direct current transmission systems. As solar systems with battery storage become less expensive, these systems could potentially participate in the market as energy-limited fast response generators.”⁹

Surprisingly, this list does not include the dominant providers of historical dispatch interval response, namely

- generators which are online (baseload, intermediate) and which are not at a capability limit (e.g. min or max load), and
- available but offline generators which are spinning or designed for fast synchronisation – eg Wivenhoe, Kareeya, Oakey

Indeed such providers are required under the Rules to offer a minimum capability¹⁰ to the market.

The proponent has indicated that the responsiveness of industrial processes can be highly conditional, although observed market data indicates that large levels of industrial response can have high levels of availability. If concurrent rule changes¹¹ progress, price responsive demand side participation from industrial processes may be treated increasingly like generation with increased transparency and compliance. In addition, the recent redefinition of “generator” allows AEMO to consider batteries as generators. Such consistency would provide a basis for evaluating which participants are “capable of responding”.

Q3. Would the wholesale market operate more or less efficiently if supply side participants were settled on a five minute basis?

Stanwell considers this outcome highly uncertain. Previous analysis has suggested increased dispatch efficiency, however this analysis has been highly contested – including from the modelled beneficiaries. For

⁹ Rule change request page 2

¹⁰ NER clause 3.8.3A specifies the minimum ramp rates which must be provided by scheduled and semi scheduled generators

¹¹ ERC0186 *Demand Response Mechanism and Ancillary Services Unbundling*, ERC0203 *Non-scheduled generation and load in central dispatch*.

example analysis by MMA for NEMMCO (AEMO) in 2002¹² indicated that all generator groupings would receive increased revenue under five minute settlement. The submissions from the National Generators Forum and a number of generation companies indicated dissatisfaction with the forecasts used and therefore the benefits derived.

The proponent has calculated a minor change to settlement outcomes based on unchanged behaviour during one historical month. However the rule change appears intended to alter behaviour which limits the usefulness of the proponent's analysis.

Overall, Stanwell considers the impact of 5/30 on the physical market to be manageable. It's probably not how a market would be designed with the technical capabilities available in 2016, but it is expensive to change and the impact is less material than a number of other distortions. Concurrent processes to increase the number of participants contributing to central dispatch and improve the quality of intermittent generator forecasts are likely to produce a much more significant improvement in market efficiency. Indeed, progressing a change to 5/30 without those concurrent processes may further distort dispatch by incentivising non-transparent, potentially sub-dispatch interval response.

The proposal for some participants to be settled on a five minute basis and some participants to be settled on a thirty minute basis will lead to two different forward market contracts. This will split forward market liquidity with dire consequences. The impact could be likened to the introduction and removal of the "AFMA carbon pass through" clause on forward contracts. The clause split market liquidity. Some periods were characterised by crippling illiquidity while others saw active arbitrage/facilitation activities by financial intermediaries and active traders. Two years after the removal of the Carbon Tax the market continues to spend resources dealing with the alternative contract definitions.

Q4. Compared to the current arrangements, would settlement on a five minute basis be more conducive to demand side participation? How would demand side participants respond and what impact would this have on market efficiency?

An alternative settlement period appears unlikely to increase demand side participation in central dispatch, and this is the area where significant improvements could be generated. The proponents have previously indicated that the ability to actively participate in the market but with the regulatory protection of being non-scheduled is valued by demand side participants¹³.

Five minute settlement may incentivise participation from sources of very fast response while deterring participation from slower response sources as discussed in Q1. As indicated in the rule change request there is a significant pool of potential demand response under the current market arrangements¹⁴. Whether the net provision of this demand response both within, and greater than, five minutes would increase or decrease based on a shorter settlement period is unclear.

¹² McLennan Magasanik Associates Pty , *Financial Transfer Payments for the Base Scenario modelled for the 5/30 Project*, 7 August 2002.

¹³ "There is currently no incentive and only additional cost for Sun Metals to participate as a Scheduled Load because there is no compensation for Sun Metals for allowing its potential variation in demand to be used to create a more technically efficient dispatch outcome." Sun Metals response to ERC0189 Consultation paper, page 2

¹⁴ Rule change proposal page 2

Issue 2 SCADA

Q5. Is using SCADA measurements a viable alternative to replacing existing metering equipment in order to implement five minute settlement?

Stanwell does not support the use of SCADA measurements for altering settlement outcomes. The consultation paper correctly identifies SCADA as a lower quality data source than revenue meters. We note that the NER and associated regulations specify a robust framework for the management, maintenance, and security/access of metering installations to prevent the corruption of the market and settlement systems, either by oversight or deceit. This level of assurance is not currently required for SCADA measurements.

The use of the proposed approach would require AEMO to pre-process and alter metering information for some participants prior to settlement. Other participants, such as those with five minute revenue metering or customers choosing to remain on thirty minute settlement would not have this pre-processing applied, giving rise to multiple settlement solutions for AEMO to manage.

Stanwell understands that not all market generators, few market customers and even fewer end users have SCADA feeds available. This may limit the ability to implement both compulsory generator participation and voluntary customer participation without significant cost increases. Such an approach may also increase the already significant barriers to price responsive loads becoming scheduled – assuming scheduled loads would be treated in the same manner as scheduled generators.

Stanwell also notes that a large proportion of customers retain “accumulation” style metering and are not settled on actual consumption but on a generalised profile scaled to fit their total metered energy. Whether such customers would be allowed to nominate to be five minute settled is unclear. If they were, it is unclear what mechanism would be used to simulate their individual consumption patterns.

Q6. What changes would be required so that SCADA measurements could be used for profiling energy in the settlement process?

Stanwell does not support changes to SCADA. The changes required to improve SCADA measurements to the point that they could be used for profiling energy settlements may impact negatively on the existing uses of SCADA.

Issue 3 Five minute metering and other options

Q7. What changes would be required to metering infrastructure so that five minute metering data could be used in the proposed five minute settlement regime?

The key issues are whether a meter can record data at a five minute time interval, the extent of storage available at that resolution and the establishment of an appropriate data format. The first two elements are likely to vary significantly between sites.

On most modern meters the recording time interval can be configured (typically anywhere between one minute to sixty minutes). Under NER clause 7.3.1(10) meters are required to store a minimum of 35 days data. Many meters are configured to store data in excess of this period so if the meter cannot be read (e.g. if a phone line goes down) the data is not lost. Changing to five minute resolution is not likely to be an issue for the current generation of meters but may require upgrade or replacement of older meters.

Initial enquiries have indicated that Stanwell's large sites are equipped with meters that could be reconfigured to record and store five minute metering information if a data format were defined. For Stanwell's smaller sites and non-operated sites meter replacement is more likely to be required.

Q8. What changes to participants' systems would be required to accommodate a five minute data format?

In the absence of a specific proposal it is difficult to address this question in detail, but it appears likely that a near-total replacement of existing systems would be required. The proposed changes are likely to be orders of magnitude more complicated than those currently being considered by the AEMC in relation to gas day harmonisation.

Every tool that currently references thirty minute data would need to be investigated, and the majority would likely require alteration to handle five minute data streams. This includes

- AEMO settlement software
- In-house systems used by market participants to reconcile AEMO's settlement information with their own metering data.
- Forecasting and decision support tools (both developed in-house and at third party providers). Third party providers may be expected to develop and maintain both five minute and thirty minute tools depending on their customer base – likely without the addition of new customers to underwrite this additional cost.
- Bidding and compliance software used by generators, AEMO and the AER. Generators would need to be able to make representations and record evidence at a five minute level in order to reflect the changed incentives resulting from the proposed rule change.
- Meter Data Agents would incur cost to implement the revised format and market participants (including AEMO) would have to update their data retrieval and storage processes

Q9. Could five minute settlement be implemented without changing the existing data format?

Q10. Are there any other data sources, such as dispatch targets, that would be preferable to SCADA profiling or five minute metering?

Stanwell considers that revenue meter data is the most appropriate data source for settlement calculations. As indicated above, SCADA systems are developed at a lower level of accuracy and for a different purpose than revenue metering. Dispatch targets represent the expectations of the system operator and do not account for unexpected physical occurrences or variations in load forecasts. The use of dispatch targets would be more distortionary than using SCADA. Accordingly, more granular metering with an appropriate data format is the most appropriate methodology.

Stanwell notes that the FCAS markets are currently settled at Trading Interval resolution based on Dispatch Interval calculations. This approach results in significant approximations for many participants and the process is currently under dispute. Given the relative value at risk in the energy market compared to FCAS markets, Stanwell considers the FCAS dispute to be a timely warning of the dangers of simulated settlement arrangements.

Issue 4 Settlement residue

Q11. Should the full value of the settlement residue be recovered from demand side participants remaining on 30 minute settlement?

Should the rule change proposal progress broadly in the form proposed, Stanwell considers that recovery from *market loads* choosing to remain on thirty minute settlement would be appropriate. This would be consistent with a “cost minimisation” approach to cost recovery as those able to minimise the cost bear the burden of the residue.

For a rule change to progress the AEMC must be satisfied that it is in the long term interest of consumers (demand side participants). While the proposed allocation only affects a subset of beneficiaries – consumers remaining on thirty minute settlement – it is the choice exercised by these customers which creates the potential settlement imbalance.

It is proposed to be optional for a *Market Customer* to request five minute settlement. It is unclear, but assumed that *Market Customers* who are retailers would be able to have some *market loads* on five minute settlement and some on thirty minute settlement, reflecting the preference of individual customers. If this is correct, an attempt to levy the settlement residue based on whether a *Market Customer* has enabled five minute settlement would create cross subsidies.

Q12. Would it be feasible to merge the new residues with existing intra-regional settlement residues? Are there any alternative mechanisms that would be preferable?

The residues would apply to similar but not identical groups and therefore should not be aggregated.

Q13. Should five minute settlement instead be compulsory for all demand side participants? If so, what threshold would be appropriate for compulsory demand side participation?

If five minute settlement is not made compulsory immediately then a “sunset” date for thirty minute participation should be included, potentially in tiers based on consumption levels. Whether compulsory participation would mean meter upgrades for all customers would depend on the use of the “local retailer” estimate process. For example five minute settlement for consumers with accumulation meters could be implemented at the substation or transmission connection point level rather than the residential connection point.

Issue 5 Contracting

Q14. How would the proposed move to five minute settlement affect existing contractual arrangements?

Any change to the design of settlement arrangements in the NEM will be a major disruption to the contract market. Financial contracts can be broadly categorised as either exchange traded or over the counter (OTC).

Exchange specific considerations

ASX Energy is the dominant provider of exchange traded contracts in the NEM. The ASX website states:

ASX Australian electricity futures and options are standardised and centrally cleared financial contracts. They are structured as cash-settled CFDs against the New South Wales, Victorian, Queensland and South Australian regional reference nodes in the Australian National Electricity Market (NEM).

ASX Australian electricity futures and options provide a robust mechanism for companies that have an interest in or have exposure to the Australian electricity market to anonymously manage their price and counterparty risks.

The proposed changes may undermine the ability for futures provide a robust mechanism for participants to manage their price risk. Exchange traded contracts are transacted on fixed terms. Even relatively minor changes such as revised Public Holiday schedules are rejected on the basis that parties must know in advance the precise product being traded, and that contracts must be fully fungible. The Contract Specifications¹⁵ currently available on the ASX Energy website state:

Underlying Commodity

Electrical energy bought and sold in the New South Wales, Victoria, South Australia and Queensland wholesale electricity pool markets conducted by the Australian Energy Market Operator (AEMO).

...

Cash Settlement Price

The Cash Settlement Price is calculated by taking the arithmetic average of the Wholesale Electricity Pool Market base load spot prices on a half hourly basis over the Contract Month, rounded to the nearest cent.

Compulsory five minute settlement for generators contradicts these definitions as no electricity could be sold on a half hourly basis. While we have assumed in this response that the contracts would not be terminated, the question of whether they could be terminated could be material for some parties. Even the uncertainty of whether they could be terminated could devalue the contracts.

As discussed above, contract terms are fixed so any generator with a net sold position would become exposed to basis risk as a result of the rule change. This is not a risk that is likely to have been considered by either party when entering the contract. Customers who choose to become five minute settled and have an existing net bought position would be similarly exposed. It may be possible that the definition of forward contracts not yet listed or traded may be changed but this would apply only to contracts for periods several years in the future.

OTC specific considerations

Over the Counter transactions are typically performed with confirmation documents containing only minor variations to industry agreed conditions. Counterparties typically sign a master agreement based on a template provided by the International Swaps & Derivatives Association ("an ISDA" or "an ISDA master agreement"). Additional guidelines are published by the Australian Financial Markets Association (AMFA). Typically, OTC contracts will contain wording similar to:

Commodity: Electricity
Unit: MWh
Price Source: AEMO
Specified Price: The spot price as determined under the National Electricity Rules.

Most but not all ISDA-based confirmations are likely to reference thirty minute, half hour or Trading Interval settlement periods. Depending on the specific drafting of the rule change, these references may come to refer to either

- each five minute price (the spot price for generators),
- the thirty minute price (the spot price for some customers, current definition of Trading Interval),

¹⁵ Specifications are for a baseload month contract. Equivalent specifications are available for multiple other products

- the five minute price corresponding to the first or last dispatch interval in a Trading interval (using current definition of trading interval), or
- be indeterminate.

Each outcome creates risk for one or both counterparties. Where the change in market design is a *price source disruption* all contracts may need to be renegotiated or terminated. Alternatively where counterparties are operating under different settlement periods one party would assume basis risk under the existing contract. The impact on credit exposures and ongoing management may be material. As each counterparty pair is likely to have to negotiate outcomes bilaterally, financial market operation is likely to be affected while legacy positions are redefined and/or renegotiated.

Q15. Would the proposed optionality for demand side participants affect the ability of participants to contract with each other? Would a generator settled on a five minute basis be able to contract with a consumer settled on a 30 minute basis?

Q16. What impact would a move to five minute settlement have on contract market liquidity?

As discussed in Q3, the rule change proposal envisages the development of concurrent, overlapping markets – a five minute settled market for generators and some loads, and a thirty minute settled market for the remaining loads. The impact could be likened to the introduction and removal of the “AFMA carbon pass-through” clause on forward contracts. This clause split market liquidity. Some periods were characterised by crippling illiquidity while others saw active arbitrage/facilitation activities by financial intermediaries and active traders. Two years after the removal of the Carbon Tax the market continues to spend resources dealing with the alternative contract definitions.

Under the proposal, buy-side participants may be split into five minute and thirty minute pools. Some participants (retailers) may require both contract types – typically in proportion to the volume of load on each settlement arrangement. Generators would be expected to favour the sale of five minute contracts for two reasons:

1. selling thirty minute contracts against five minute settlement would introduce basis risk, and
2. thirty minute contracts may not be considered a “hedge” for generation under accounting standards.

Such misalignment between counterparty risk profiles is unlikely to improve liquidity as suggested by the proponent. Under the operation of multiple contract terms leading up to and during the Carbon Tax, some financial intermediaries facilitated risk transfer between contract terms, intending to profit by facilitating liquidity. While welcome, Stanwell considers such activity *replacement* liquidity, not *additional* liquidity. The volume of this replacement liquidity is likely to be limited to significantly less than the volume of thirty minute settled customers. In addition, the profit margin to compensate for financial intermediaries offering this service is likely to increase electricity prices for end consumers.

As discussed in response to Q1, the willingness of generators or demand response providers to sell financial products is linked to their ability to “cover” their price exposure. Assuming an immediate and linear response, a generator or demand response provider could expect to cover only about half of their ramping capability under five minute settlement. Under thirty minute settlement this risk is mitigated both by the reduced average Trading Interval price and the potential to secure additional revenue when a high price occurs early in a TI.

Retail contracts

While there are a small number of consumers registered as *market customers*, and a small number of customers on pool pass through or similar retail contracts, most customers are sold fixed price, fixed term, variable volume contracts. Such contracts typically include a “change in law” clause which may be activated by a change to wholesale market settlement arrangements. Assuming such a clause is not relevant, customers would only be affected to the extent that retailer risk management arrangements are impacted by

- overall prices change due to improvement or loss of market efficiency,
- financial contracts become more or less liquid, and
- financial contracts are traded at a higher or lower price.

Given the presence of

- a settlement residue (issue 4) where payments to generators are greater than receipts from customers, and
- the 2002 modelling by MMA showing generators earning more under five minute settlement than thirty minute settlement

it is likely that generator expectations of revenue, and therefore the price at which hedging becomes attractive relative to spot exposure, would increase, therefore increasing retail prices.

Issue 6 Other solutions

Q17. Having regard to the issues raised in the rule change request and in the event that there is a problem found to be present, do you consider there to be any alternative solutions that are preferable to the proposed solution?

Stanwell considers that where a problem is identified a proportional response should be pursued.

Overall, Stanwell considers the impact of 5/30 on the physical market to be manageable. It's probably not how a market would be designed with the technical capabilities available in 2016, but it is expensive to change and the impact is less material than a number of other distortions. Concurrent processes to increase the number of participants contributing to central dispatch and improve the quality of intermittent generator forecasts are likely to produce a much more significant improvement in market efficiency.

Indeed, progressing a change to 5/30 without those concurrent processes may further distort dispatch by incentivising non-transparent, potentially sub-dispatch interval response. If concurrent rule changes¹⁶ progress, price responsive demand side participation from industrial processes may be treated increasingly like generation with increased transparency and compliance. In addition, the recent redefinition of "generator" allows AEMO to consider batteries as generators.

Where the AEMC considers the problem to be significant, Stanwell supports the investigation of multiple alternative timings – for example 5/5, 5/15, 15/15, 15/30, 30/30 or other arrangements such as those observable in international markets. Any arrangement considered should retain the existing symmetry between supply and demand participants and if progressed, the benefits must far outweigh the costs.

¹⁶ ERC0186 *Demand Response Mechanism and Ancillary Services Unbundling*, ERC0203 *Non-scheduled generation and load in central dispatch*.