

13 February 2014

Australian Energy Market Commission
PO Box A2449
SYDNEY SOUTH NSW 1235

Lodged electronically via: <http://www.aemc.gov.au>
Reference: ERC0166

Dear Mr Pierce

Stanwell Corporation Limited (Stanwell) welcomes the opportunity to comment on the Bidding in Good Faith Options paper (Options Paper). Stanwell welcome the Commission's approach to the current rule change request in that if an Options Paper is to be issued we support it occurring at an early stage of the consultation. We also welcome the provision of the five (5) consultant reports which have contributed to the development of the Options Paper although we note that the ROAM report is the summary of a larger body of work which does not appear to be available to participants.

Stanwell support requirements that participants indicate their genuine intention when providing information to the market. In particular we support measures that prevent participants using a strategy based on deception.

We do not support the original rule change proposal as it would not be beneficial to the National Electricity Objective (NEO) because it's two primary components are based on rationale that does not withstand scrutiny – namely excluding consideration of subjective expectations and more onerous information provision rules resulting from an inaccurate and incomplete reading of the judgement in the 2011 AER vs Stanwell rebidding court case.

Stanwell support the continued use of a behavioural statement of conduct, such as the good faith provisions in relation to rebidding. An alternative behavioural statement of conduct relating to rebidding may address the so called "problem" identified by the rule change request and prove beneficial to the NEO, however Stanwell has not seen any specific proposal that is likely to produce any measurable benefit, despite a significant investment of participant and regulator resources over a number of iterations. Therefore while Stanwell supports consideration of possible alternative behavioural provisions, it reserve it's position on individual examples until they can be properly studied and assessed. We also consider that the resources dedicated to such consideration should be proportional to the scale of the issues being addressed.

In relation to altering the design of the market and the bidding process, Stanwell consider that the proposed actions are inconsistent with the issues identified by the original rule change proposal. Stanwell strongly opposes the mooted changes to earlier "gate closure" both in respect of this Rule change request and as a general proposition, as such a change would be contrary to the long term interests of consumers and participants.

While the good faith provisions apply to all generation offers, it is normally accepted that a participant intends to honour the final offer or rebid it submits to the market operator¹. Accordingly, a rule change restricting late rebids is unlikely to address the "problem" identified in the original rule change proposal. Proposals for 'gate closure' may simply move the rebidding activity (which the proponent finds problematic) forward in time. Such changes do not respond to the rule change proposal and should not, in Stanwell's submission, be progressed as a MPRC.

Stanwell agrees that measures to encourage and enable more non scheduled generation and demand side response to become registered and transparent would improve market efficiency²; however we do not consider that such efforts should form part of a MPRC for the current rule change request.

Regarding high prices correlated with late rebidding, a sensible market design, producing the necessary signals to participants, will deliver efficient solutions to this perceived problem without the need for further regulatory intervention. If no participant was prepared to respond in such conditions, it would be a strong indication that the issue was not material. The current NEM design has already delivered such a low cost response³.

The concept of restricting a participant's rebidding flexibility, based on the responsiveness of a competitor, is flawed on multiple levels and should be rejected. First, as indicated in Yarrow, knowledge of a competitor's responsiveness will be partial and subjective. Second, that competitor's response capability is driven by investment decisions, and it is inappropriate to penalise one party for another's commercial decisions. Third, even limiting the restrictions to those relating to fast start (semi-) scheduled generating units, under the current rules, fast start plant can take up to 30 minutes to synchronise, so restrictions on competitors could be significant.

We welcome the opportunity to discuss the matters raised in this response. Please contact me on (07) 3228 4529 should you wish to discuss this submission.

Yours sincerely



Luke Van Boeckel
Manager Regulatory Strategy

¹ There are separate provisions in Chapter 4 to address a situation where a market participant cannot or does not comply with the final offer presented to the market.

² *Bidding in energy-only wholesale electricity markets*, Professor George Yarrow, assisted by Dr Chris Decker, November 2014 ("Yarrow"), page 7. "If there is demand-side participation in the bidding process, competition also tends to promote allocative efficiency: output will be supplied when buyers are willing to pay for it, but not otherwise."

³ Based on observed AEMO data, Oakey Power Station has reduced its synchronisation and ramp up time significantly since the start of 2015. The Oakley Greenwood report also references a fast start participant having altered their plant, although it is not clear whether this is a reference to Oakey Power Station.



Good Faith Bidding
RESPONSE TO AEMC OPTION PAPER
FEBRUARY 2015

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1. Executive Summary.....	5
2. Addressing the Rule Change request	6
Subjective expectations.....	6
Information provisions relating to establishing genuine intentions.....	6
Accuracy of, and reliance on, Pre-dispatch.....	7
Revision of definitions.....	7
Summary.....	7
3. Addressing the Options Paper.....	8
Commission option 1: the design of a behavioural statement of conduct.....	8
Commission option 2: the design of the market and the bidding process	9
Late rebidding: Is there a material issue to be resolved?	9
Correlation of high prices with supply-demand conditions.....	13
Timing of high prices within a Trading Interval.....	14
Impact of volatility on Demand Response and peaking generation.....	16
Impact of volatility on baseload portfolios.....	18
Summary.....	19
Appendix A.....	20

1. Executive Summary

While the Options Paper says little about the original rule change proposal, Stanwell does, for the sake of completeness, comment on the original proposal in this submission.

The consultant reports confirm that the Rule change request is baseless. Yarrow dispels the proponent's views regarding the consideration of subjective expectation, while a proper examination of the judgment of the Federal Court in *AER v Stanwell* contradicts the statements used by the proponent in calling for reform to the information gathering provisions of the NER. In the absence of these substantial elements of the rule change request, Stanwell consider that the request becomes one of semantics, none of which contribute to the achievement of the NEO.

The Commission's Options Paper identifies late rebidding as a "problem" to be addressed, however Yarrow's and the AEMC's qualitative consideration notes that there are *benefits* associated with late rebidding⁴ while quantitative analysis confirms that current outcomes are consistent with historical norms. There appears to be no basis for the "gut feel" concern that late rebidding creates a material market distortion, other than the complaints of participants who have experienced adverse outcomes on their hedging decisions.

While the five-thirty market design gives rise to some distortions, these are negligible over rational timeframes. Indeed, some five-thirty distortions are seen as beneficial according to the Options Paper and consultant reports⁵. While the five-thirty market design remains, such distortions will remain inherent in the NEM and Stanwell is not aware of any evidence that the cost-benefit investigation performed in 2002 in relation to market reform in this area has significantly changed. However, while that cost-benefit analysis remains valid, and no clearly superior alternative is available, we consider that the distortions remain within acceptable and manageable levels.

Further, to the extent that short duration, high price events are considered undesirable or damaging - despite being a necessary feature of an energy only market- we note that the market has already delivered a countervailing response. The provision of significant additional fast start ramping capability by one participant⁶ can be expected to significantly reduce the frequency of dispatch intervals where price is set at high levels due to limitations on the physical response capability of generators within the dispatch window - regardless of whether late rebidding is present. Such action shows that the market is working, and working well, without the need for onerous regulatory intervention.

The Options Paper further develops a disappointing trend towards regulation of "good" volatility and "bad" volatility based on outcomes to certain participant classes. Stanwell encourage the Commission to identify and dismiss such approaches as being inconsistent with the design of a sustainable energy only market.

Stanwell support measures that prevent participants using "a strategy based on deception". We believe that the current good faith provisions strike a reasonable balance between accountability and regulatory burden, unlike the rule change request. We accept that there may be alternative approaches which provide equal or superior outcomes, but are not aware of any at this stage. This is despite a large amount of industry and regulator effort and expertise being expended on this issue over an extended period of time. Accordingly, while we do not oppose the concept of a redesign for the behavioural statement of conduct, we cannot reasonably support such an approach without significantly more specific information.

⁴ Yarrow, page 11 "*the role of re-bidding in efficient price discovery is easy to see: circumstances can change and significant new, relevant information about costs and demand can become available, even over short periods.*"

⁵ For example, peakers and demand response responding to transient high prices occurring early in a Trading Interval

⁶ Based on observed AEMO data, Oakey Power Station has reduced its synchronisation and ramp up time significantly since the start of 2015. The Oakley Greenwood report also references a fast start participant having altered their plant, although it is not clear whether this is a reference to Oakey Power Station.

2. Addressing the Rule Change request

The proponent specifically addressed the rule change request to section 3.8.22A of the rules in response to the interpretation taken by Justice Dowsett during the 2011 AER v Stanwell court case⁷. The proponent has been transparent that their intent is to alter the possible interpretations of clause 3.8.22A to exclude that taken by the court.

Subjective expectations

The 2011 court case related to instances of multiple rebids which occurred within relatively short timeframes, including during the Trading Interval to which the rebids applied. A key element of the case, and the rule change request, was whether the non-fulfilment of the trader's subjective expectations could be considered a change in the material conditions and circumstances for the purposes of rebidding. Justice Dowsett determined that subjective expectations formed part of the material conditions and circumstances on which a rebid is based, and Yarrow⁸ confirms that this is consistent with market theory. We note that the Commission appears to accept this view in section 5.2.1 of the Options Paper.

Accordingly, while Stanwell considers that the current rules sufficiently address the issue identified by the proponent, if the proponent and regulator maintain that clause 3.8.22A is insufficiently clear as to the applicability of subjective expectations with respect to rebidding, we believe that the rules could be altered to explicitly include such considerations within the boundaries of conduct permitted by the Rules.

We consider that the recognition that such expectations are relevant and acceptable should significantly alter the proponent's and the regulator's view of both the Stanwell case and rebidding more generally.

Information provisions relating to establishing genuine intentions

The proposed rule change also contains changes related to evidence provision based on statements which Stanwell utterly reject such as "*However, the judge also placed particular weight on the trader's testimony in court, which was not consistent with the previous information provided to the AER*"⁹. Such a statement is neither justified nor accurate, having been directly addressed in Justice Dowsett's judgment. Stanwell has previously taken the Commission to the relevant passages from Justice Dowsett's decision in its submission dated 22 May 2014.

It should be concluded that none of the proposed changes regarding the provision of information to the regulator require alteration in response to the Stanwell case, or in general.

The Competition Economists Group (CEG) report confirms that comparable energy only markets "... *rely on behavioural rules against market manipulation to ensure that bids reflect demand and supply conditions and/or are made in good faith (such as those in Alberta and Texas). For energy-only markets that have uniform prices, such as the NEM, this appears to be the norm.*" Stanwell believe this supports the retention of a behavioural statement of conduct, such as the

⁷ *Rule Change Request: Bidding in Good Faith Provisions*, Government of South Australia, November 2013.

Page 2 "The South Australian Government considers that the Federal Court decision has introduced uncertainty around the operation of the bidding in good faith provisions and highlighted issues in relation to the implementation of the policy intent."

⁸ *Bidding in energy-only wholesale electricity markets*, Professor George Yarrow, assisted by Dr Chris Decker, November 2014 ("Yarrow"). References to subjective expectations include Page 12 "*Bids, offers and prices can therefore change in the absence of an immediately obvious, 'objective' correlate*" and page 9 "*Competitive bidding processes, then, are characterised by a continual updating of information as (always incomplete) new information becomes available and expectations are adjusted. To repeat, such updating of expectations will depend on new information about rivals' cost positions and rivals' expectations, including rivals' expectations of others' expectations, and so on in a potentially infinite regress.*"

⁹ *Rule Change Request: Bidding in Good Faith Provisions*, Government of South Australia, November 2013.

Page 9

good faith provisions, as an appropriate approach to regulation in the NEM. This position does not preclude changes to the current wording, if such changes are shown to be beneficial.

Accuracy of, and reliance on, Pre-dispatch

Stanwell supports the good faith provisions, in so far as they are designed to encourage the provision of relatively stable information to the market regarding the intended behaviour of the participants subject to the provisions. We agree that dispatch regularly departs from Predispatch¹⁰ (both 30 minute PD and 5 minute PD) for a wide variety of reasons, only a small subset of which relate to rebidding by registered market generators.

While the rule change request and Options Paper highlight the increasing desire for demand side participants¹¹ to affect dispatch outcomes, there are also significant distortions relating to non scheduled generation and load as well as natural variation in demand forecasts. Each of these sources of non-transparent variation become aggregated into the single “demand” value which is presented to scheduled generators and market analysts making it difficult to evaluate the relative impact¹². Further, actions by the market operator and network service providers can materially affect conditions with extremely low or no visibility¹³.

Stanwell also consider that the rule change request fails to account for the information and technology changes which have occurred since the good faith rebidding provisions were incorporated into the Rules. The publication of 5 minute Pre-dispatch and near-real time generation information by the Market Operator largely overcomes the problem of the “information shadow” which existed in 2002. Similarly, the increase in processing and information transmission speed has improved the reliability of bid processing times as well as improved both the transparency of market outcomes and response times for all participants.

Revision of definitions

The rule change request contained a number of proposed changes to the specific wording of clause 3.8.22A in relation to phrases such as “material conditions and circumstances” and “significant and quantifiable”. Stanwell supports the NGF submission to the consultation paper that questions the value of the proposed changes within the context of the broader rule change request.

We consider that the disproof of the elements above (subjective expectation, information provision) further weakens the rationale for such changes.

Summary

With the confirmation that significant elements of the proponent’s rule change request lack a basis, the remaining elements are likely to become obsolete or even more marginal in their application. Stanwell believes that the rule change should be rejected by the Commission.

¹⁰ Yarrow, page 9. *“even over short periods, forecasts in energy spot markets are only rarely 100% accurate.”*

¹¹ In this paper, when referring to Demand Response, Demand Side Participation or similar, Stanwell refers to price responsive demand side participation unless specifically stated otherwise. We believe this is consistent with the approach taken by the Commission and their consultants.

¹² We note that some non-scheduled generators have agreed to publish their generation levels via AEMO, but that there remains no incorporation of their “intent” into pre-dispatch.

¹³ For example on 15 January 2015 AEMO switched in an additional SVC in Northern NSW with no notice. This resulted in an increase in the limit of the binding QNI constraint by approximately 25% until the SVC was taken out of service, again with no notice.

3. Addressing the Options Paper

The Commission states that the Options Paper “...will assist the Commission in determining the best way to address the issues raised by the rule change request...”, however Stanwell considers that the options paper is focussed on the potential inefficiencies related to late rebidding, while the rule change request was in relation to whether offers were being made, and were able to be confirmed as having been made, in good faith.

While Stanwell's response will henceforth address the former (late rebidding) it should not be considered endorsement of the Commission's association of the two topics.

In this paper Stanwell has adopted the ROAM consulting framework of analysing outcomes since 2007, with particular focus on Queensland and South Australia since 2012.

We note that all prices referenced in this paper are in nominal terms.

Commission option 1: the design of a behavioural statement of conduct

The Options Paper identifies three alternatives to the Rule change proposal relating to a behavioural statement of conduct. These are:

1. Leaving the good faith provisions unchanged.
2. Removing the part of the good faith provisions that refers to a change in material conditions and circumstances.
3. Replacing the good faith provisions with another behavioural statement of conduct that prohibits a market participant from making offers, bids or rebids which are misrepresentative of its capability to achieve if dispatched, or which mislead other participants and exploit the limited opportunity of other participants to respond.

Stanwell acknowledge the difficulty in prescribing and enforcing a behavioural rule¹⁴, but believe that such an approach remains appropriate for the NEM. In the absence of a specific beneficial alternative, Stanwell supports the retention of the current good faith provisions (option 1).

Stanwell does not consider that option 2 provides a significant improvement to the status quo. We agree with the Commission that the central concern raised by the proponent – the ability to determine intent – is unaffected¹⁵.

Stanwell agrees that “*The exact structure of the statement of conduct will play a key role in determining the enforceability of the provisions in preventing the specific adverse behaviour*”¹⁶, and note that any consideration of an alternative must be performed in the knowledge of that “exact structure”.

We urge caution in relation to the use of phrases such as “*which undermines the efficient operation of the market*”¹⁷ in an alternative statement of conduct, as there appears significant agreement that the market is never fully efficient¹⁸, and that trade offs between dynamic, productive and allocative efficiencies are necessary¹⁹ but extremely difficult to quantify.

Stanwell supports measures which deter participants from “*submitting a previous bid or rebid that the [participant] does not intend to honour under any circumstances or is misrepresentative of its*

¹⁴ AEMC Options Paper, page 48 “*The CCA provides a useful example of how difficult it is to prescribe and enforce a behavioural rule, either expressed by reference to a person's intention, or by reference to the effects of a person's activities. The CCA is subject to a large body of jurisprudence, yet is still ambiguous and subject to argument*”

¹⁵ AEMC Options Paper, page 59.

¹⁶ AEMC Options Paper, page 42.

¹⁷ AEMC Options Paper, page 59.

¹⁸ AEMC Options Paper, page 15.

¹⁹ Yarrow, page 8 “*Efficiency effects from these various sources are entangled and there are highly significant trade-offs amongst them. For example, pursuit of short-term allocative efficiency gains can, in some contexts, be harmful for dynamic efficiency...*”

*capability to comply with if dispatched*²⁰. We agree that such deliberately misleading behaviour would be detrimental to the market and we consider that the existing provisions allow for enforcement against such behaviour.

Stanwell also supports measures which deter participants from ‘*Engaging in a pattern of behaviour of submitting bids and rebids that have the potential to be honoured but which create false expectations among market participants as to the intentions of the generator at dispatch*’. We agree that such deliberately misleading behaviour would be detrimental to the market and we consider that the existing provisions allow for enforcement against such behaviour. Specifically, cl3.8.22A c) allows intent to be ascertained from the conduct of the relevant Market Participant and others, but does not limit consideration of conduct to specific impugned bids. The AER v Stanwell judgement confirmed that intent need only be proven on the balance of probabilities²¹.

Commission option 2: the design of the market and the bidding process

Stanwell are extremely disappointed to see the Commission revisit a market design philosophy which has previously been investigated and discarded in the NEM. The “Queensland 90 minute Rule” was a version of early gate closure which is acknowledged to have led to poor outcomes²². In addition the ACCC²³ and latterly the AEMC²⁴ have canvassed models for restricting rebids close to dispatch but have both found fundamental flaws in the proposal.

We also consider that changes to gate closure would be unrelated to the issues identified in the rule change request as it is the *previous* bid, rather than the *final* (late) rebid which is typically impugned under good faith provisions²⁵.

Further, Stanwell considers that it is inappropriate for the Commission to be considering a change to market design which is intended to provide a *regulated* competitive disadvantage to certain market participants. Compared to other market participants, scheduled and semi scheduled generators already provide the greatest level of transparency to the market.

There appears to be no quantitative analysis which supports altering the rebidding rules to mitigate late rebidding. In fact the analysis that has been performed indicates that late rebidding is extremely marginal and even somewhat biased towards *decreasing* overall prices in the wholesale market. This is examined further in the next section.

Late rebidding: Is there a material issue to be resolved?

All output metrics confirm that the impact of late rebidding is marginal and varies depending on a number of parameters.

AEMO analysis indicates that variances between dispatch and trading interval prices which are correlated to late rebidding have a <1% impact on average wholesale prices and can act to either increase or decrease prices overall. While the specific values are disputable (both in relation to AEMO’s acknowledged limitations and the issues identified in Yarrow²⁶), the order of magnitude is consistent with Stanwell’s understanding of the materiality of the issue.

²⁰ AEMC Options paper, page 41.

²¹ AER v Stanwell, Federal Court of Australia, [354] “*In my view, it does not matter whether, for present purposes, cl 3.8.22A(b) exhaustively defines good faith. The applicant must demonstrate, on the balance of probabilities, that the relevant trader did not have an intention that a rebid be honoured for the Dispatch Intervals to which it related, at the time at which he made it. I accept that it may be possible to infer, from the conduct of a trader, that the requisite intention was absent.*”

²² See NGF response to AEMC Consultation Paper: Bidding in Good Faith, 22 May 2014, page 7.

²³ ACCC, *Amendments to the National Electricity Code – Changes to bidding and rebidding rules*, 4 Dec. 2002

²⁴ AEMC consultation paper on Good Faith Rebidding

²⁵ While the good faith provisions apply to all offers, there are separate provisions in Chapter 4 to address a situation where a market participant cannot or does not comply with the final offer presented to the market.

²⁶ Yarrow, page 14 “*...the observed change in the market price may not be a good measure of any inefficiency that is caused by the conduct. It may be the case, for example, that the efficient price is significantly higher than the price that would have prevailed in the absence of the re-bid...*”

Stanwell does not consider that the ROAM analysis presented supports the Commission's statement that *"the more widespread occurrence of late rebidding, and rebidding towards the end of trading intervals, has been a recent phenomenon, occurring within the last two years and predominantly in Queensland and to some extent South Australia"*²⁷. ROAM analysis indicates that there has been no material increase in the frequency of late rebidding²⁸ (with the possible exception of South Australia if 2007 is excluded from the comparison²⁹). Further, section 7.4 of the ROAM report states that *"the [relationship between price and] frequency of all rebids is as strong, or often stronger, than the relationship [of price] with late rebids."*

It also highlights that the frequency of late rebidding is strongly correlated with the presence of an unusual market condition – high demand, low import headroom, constraints and unit failure are investigated with generally consistent results³⁰. That is, late rebidding is likely to reflect the presence of an unexpected or changed set of material conditions and circumstances.

When investigating the relationship between the "type"³¹ of late rebidding and spot prices, ROAM found that *"the relationship between the type of late rebidding and pool price outcomes is highly variable and not consistently significant."* The majority of results show inverse or insignificant correlation between late rebidding to higher price bands and either high or average prices³².

ROAM also addresses the timing of price spikes within Trading Intervals, which will be discussed in the next section.

Of the remaining consultant reports provided with the options paper, CEG and Yarrow do not directly address NEM outcomes while Oakley Greenwood contains qualitative statements which will be addressed in the next section.

More direct analysis of market data also indicates that recent outcomes are broadly consistent with prior periods. The average swap and cap outcomes in recent years are well within the bounds of historical norms. Figures 1 to 5 below show calendar year time weighted average outcomes for each state³³.

²⁷ Figure 4.1 and Figure 4.2 of the Options paper appear to directly contradict the Commission's statement.

²⁸ *Analysis of rebidding activity in the NEM*, ROAM Consulting, 17 October 2014. Tables 6.2 and 6.3 show that the correlation between DI in a TI and late rebidding has been insignificant for all years in Queensland except 2014 when it was measured as "moderately significant". Multiple states have exhibited equally significant correlations as far back as 2007, and "highly significant" relationships have been observed since 2010. By far the strongest recent trend is exhibited in Tasmania where there has been a "highly significant" correlation between late rebids from prices above to below \$300/MWh and DI within a TI.

Late rebidding in this context is defined by ROAM as occurring within 30 minutes of dispatch.

ROAM also confirmed the key point that the analysis performed reflected correlations rather than causality.

²⁹ *Analysis of rebidding activity in the NEM*, ROAM Consulting, 17 October 2014, page 41 Figure 7.1

³⁰ The effect of unit failure is relatively more mixed, however this section of the ROAM report only investigates one unit per NEM region, limiting its usefulness for establishing a trend. As would be expected, late rebidding frequency for the affected portfolio tends to be more strongly correlated than for other portfolios.

³¹ ROAM split rebids into those which move volume from above to below \$300/MWh or vice versa. Bids with no net change are excluded from much of the analysis.

³² *Analysis of rebidding activity in the NEM*, ROAM Consulting, 17 October 2014, page 42 Tables 7.3 and 7.4.

³³ Note that the estimated impact on swap prices of the Carbon Tax is based on the AFMA Carbon pass-through clause which uses NEM averages. There is no Carbon impact assumed in relation to cap outcomes.

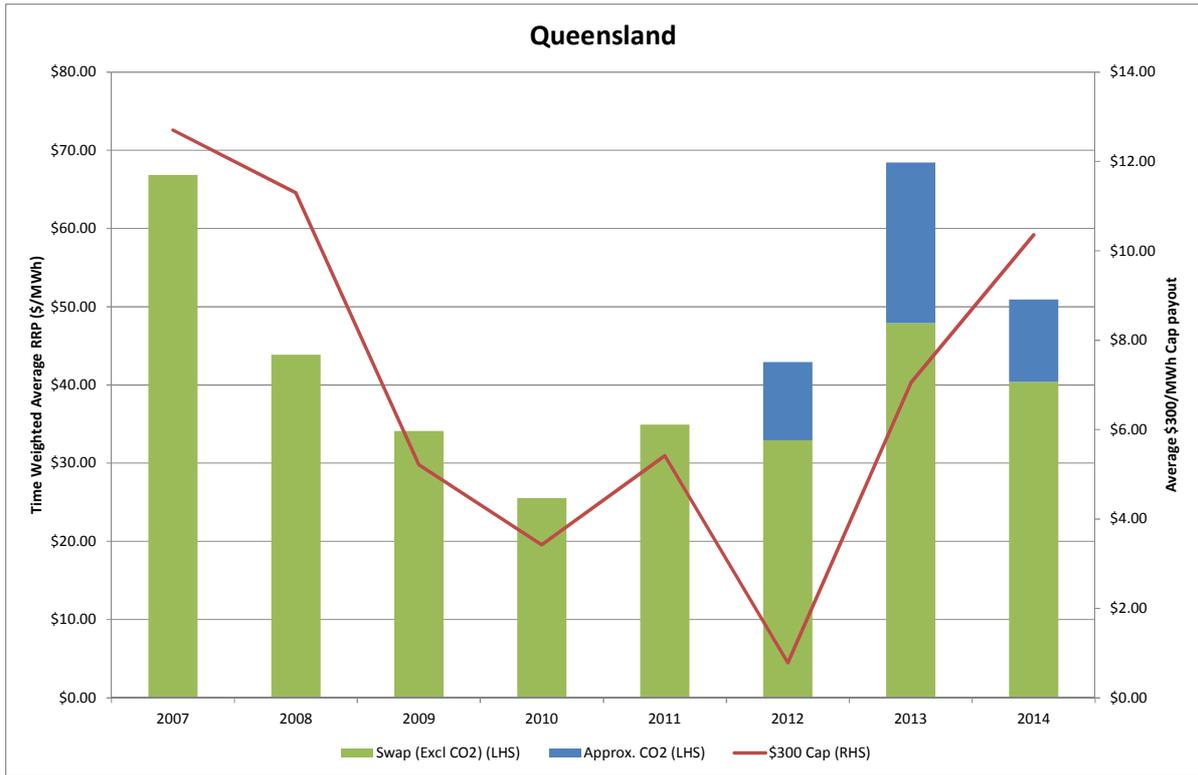


Figure 1 Queensland swap and \$300 Cap outcomes

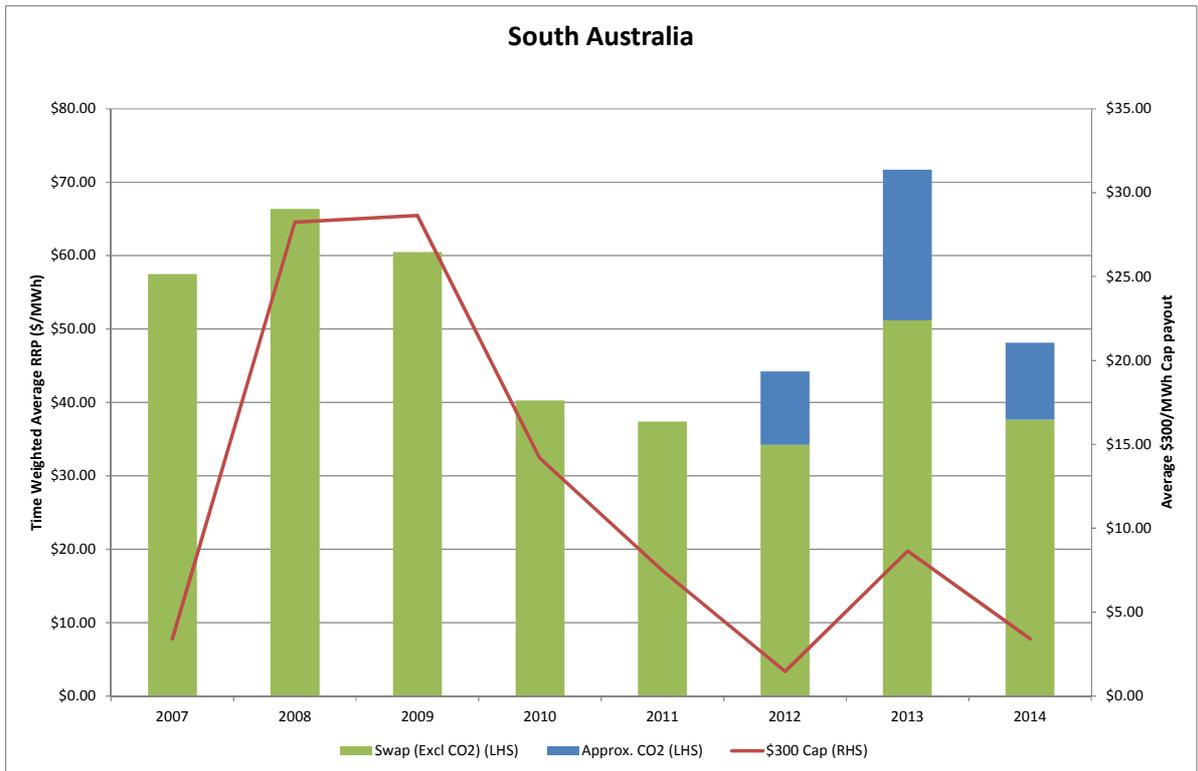


Figure 2 South Australian swap and \$300 Cap outcomes

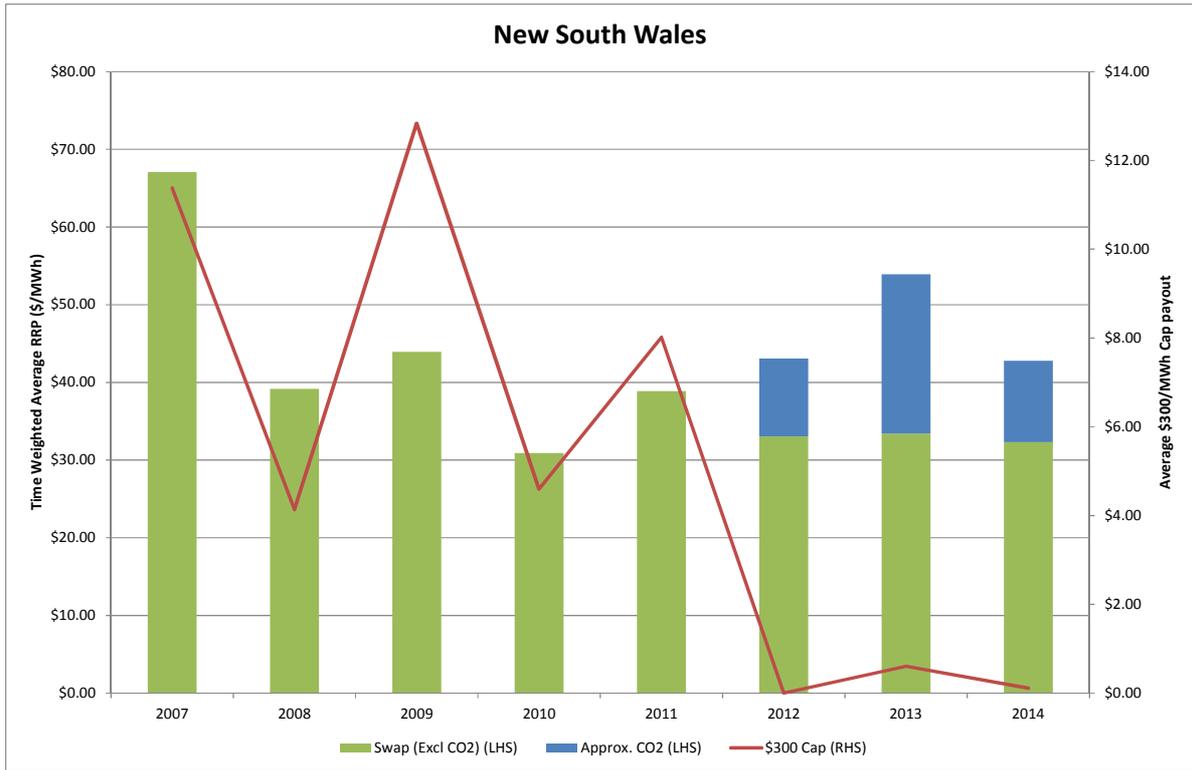


Figure 3 NSW swap and \$300 Cap outcomes

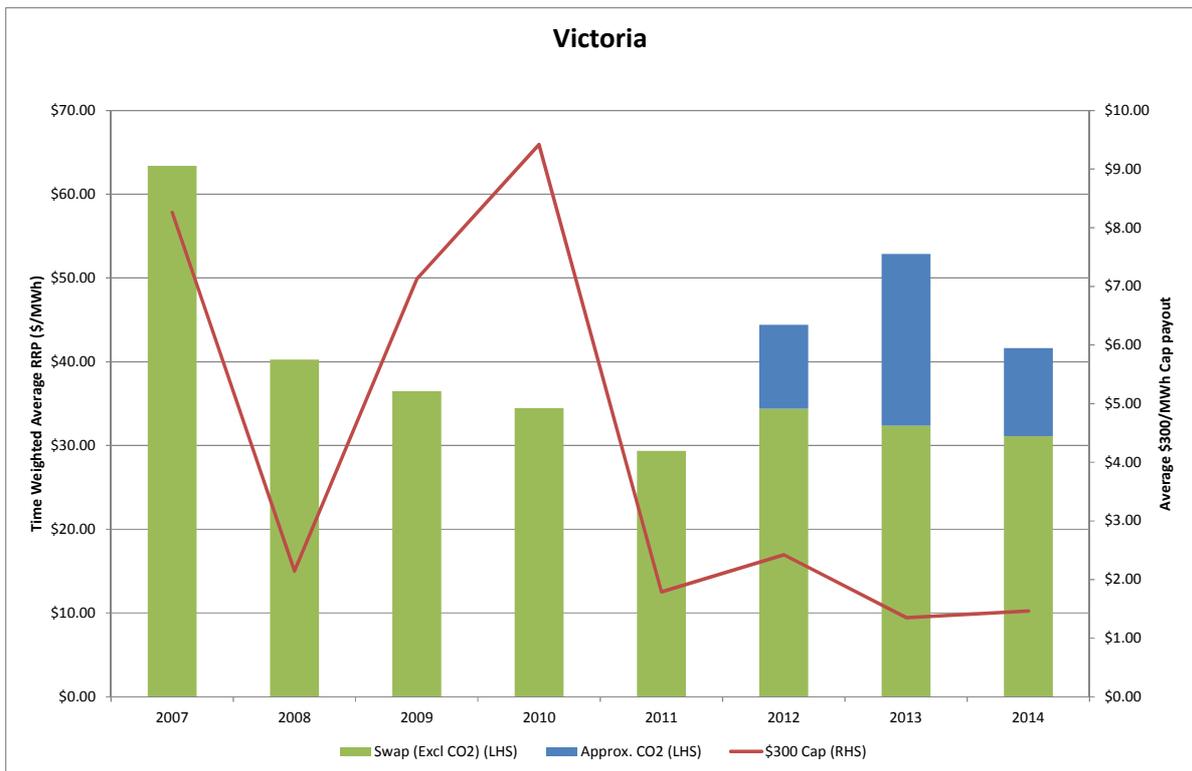


Figure 4 Victorian swap and \$300 Cap outcomes

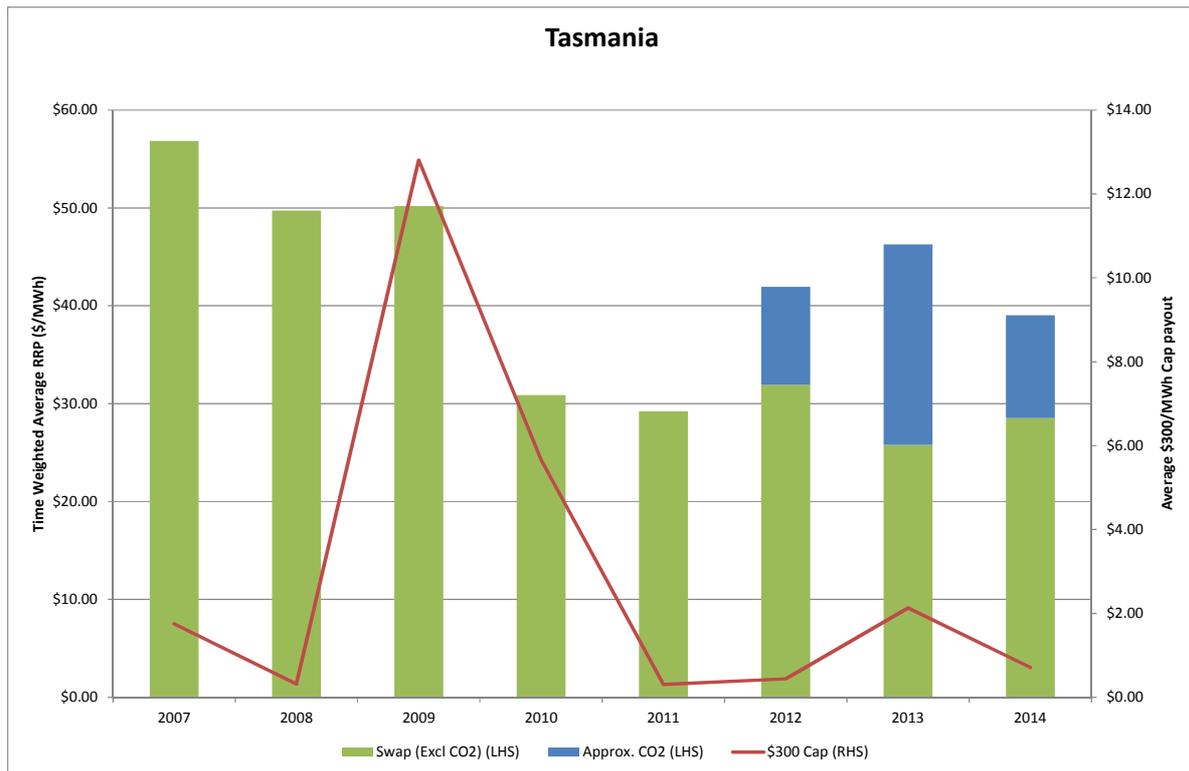


Figure 5 Tasmanian swap and \$300 Cap outcomes

Further, the Commission recently addressed the issue of generator market power³⁴, including a consideration of spot, contract and Long Run Marginal Cost (LRMC) estimates. While this analysis has not been extended to cover the period since 2011, Stanwell considers that the observed spot outcomes remain below LRMC in the majority of states and years.

Correlation of high prices with supply-demand conditions.

There are a number of references in the consultant reports to high price periods not being correlated with “genuine” or “general” supply-demand conditions³⁵. Stanwell believes that AEMO’s Dispatch Engine (NEMDE) produces results which are representative of the supply-demand conditions within the relevant timeframe – namely the 5 minute dispatch window – and that such commentary reflects either confusion regarding how NEM pricing works or inherent bias.

Regardless, Stanwell has investigated the correlation between demand and price since 2007³⁶.

Starting with the Queensland region, for most years the correlation would be best described as extremely weak. Table 1 shows that in general there are very few prices above \$300/MWh during the top demand periods in most calendar years.

³⁴ AEMC Completed Rule Change: Potential Generator Market Power in the NEM.

³⁵ For example, Oakley Greenwood page 1 “Significantly less correlation between supply/demand conditions and price than characterised the market previously” and page 2 “...these short durations of high spot price, which occur at times that would not be expected given general supply/demand conditions...”

³⁶ Demand has been used as it is a transparent reference dataset. “Supply” would need to be availability reduced to account for constraints such as ramp rates, fast start profiles, FCAS co-optimisation, trapping and stranding, and as such is more likely to be contentious.

Number of DIs with price >\$300/MWh	Calendar Year							
	2007	2008	2009	2010	2011	2012	2013	2014
Highest demand periods (Dispatch Interval) 10	1	0	0	10	0	0	6	10
20	1	0	0	18	0	0	10	19
50	6	1	0	28	0	0	18	27
100	12	1	0	34	0	2	23	40
1000	60	98	8	42	106	15	266	84
All DIs	861	192	149	49	166	125	615	165

Table 1 Correlation of high demand with high price in Queensland, by calendar year

Notably, 2014 has the greatest number of high demand periods with a corresponding high dispatch price with 19 of the top 20 and 40 of the top 100 demand intervals exceeding \$300/MWh – a direct contradiction to the view expressed in the Oakley Greenwood paper. 2010 also exhibited a strong correlation between high demand and high price despite an overall lack of volatility. This appears to be related to 2010 being the peak demand year in Queensland as shown in figure 6 (that is, had QLD not had a record demand there may have been fewer high prices).

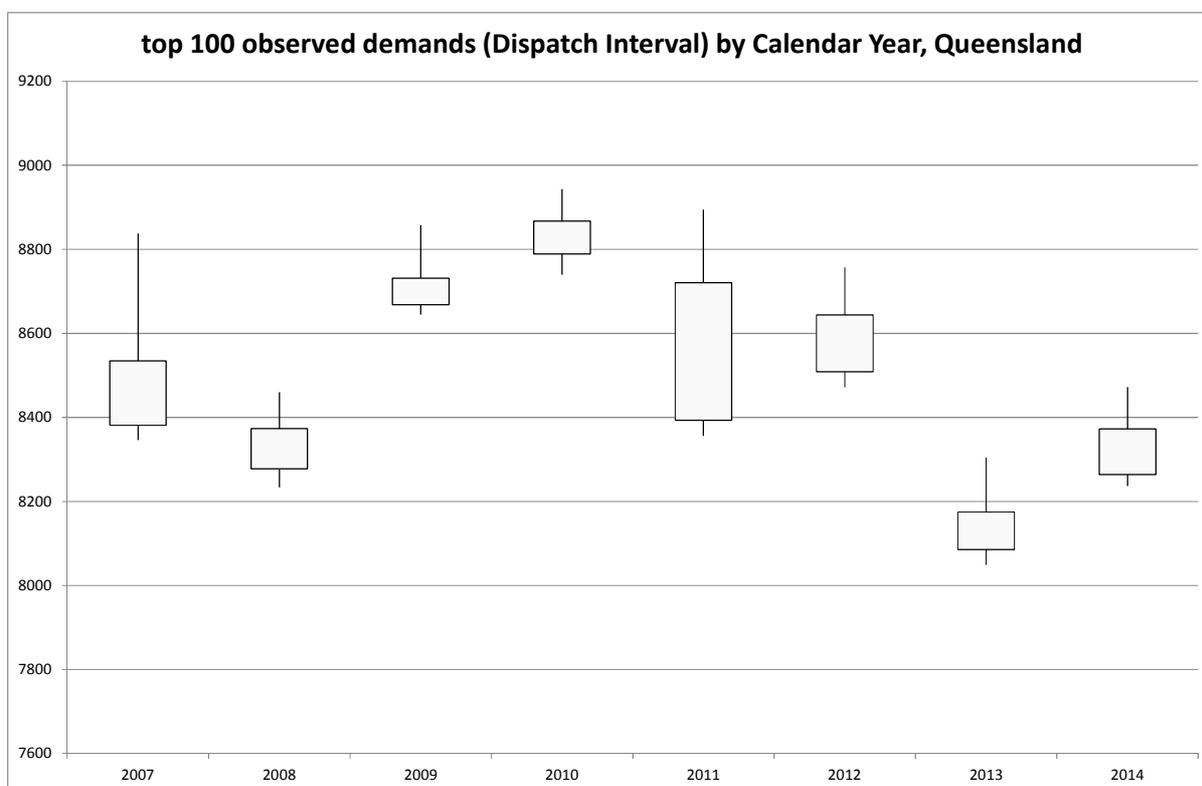


Figure 6 Top 100 demand intervals in Queensland, by calendar year

The results of the analysis vary significantly by state. Equivalent results for South Australia, NSW, Victoria and Tasmania are presented in Appendix A.

Timing of high prices within a Trading Interval

The Commission and consultants also considered the relative timing of high price events within a trading interval in order to quantify the possible effects of late rebidding. Stanwell believes that this focus confirms industry concerns that regulators are only interested in whether prices are high or low, rather than efficient. Regardless, this section addresses the issue of the timing of price spikes within a trading interval.

The existence of this discussion is purely an artefact of 5 minute dispatch and 30 minute settlement market design (“five-thirty”). This design contributes to a number of distortions in the

market which participants “live with” and that broadly offset each other over months, quarters or years. While the five-thirty design remains part of the market, Stanwell believes that such distortions are inevitable. To our knowledge the last comprehensive review of the five-thirty issue in 2002 showed that the costs of moving to an alternative model outweighed the benefits, and we expect that a similar result would be found if a review were to be held now.

ROAM provide a comparison of part year results for Queensland 2014 with Queensland 2007-2011 as evidence that “*the bidding behaviour which is contributing to price spikes in the last DI of a TI in Queensland is a relatively recent trend.*”³⁷ The data shows a DI6 high price frequency of 0.35% in 2014 compared to 0.26% over 2007-2011 while other DIs had recorded significantly lower frequency of high prices.

Both ROAM and Oakley Greenwood make particular reference to recent years in South Australia and Queensland - accordingly this provided the initial focus for Stanwell’s analysis³⁸.

- In 4 of the last 8 years, Queensland experienced more >\$300/MWh prices in the 6th DI than any other DI. Rather than being a trend to having occurred only recent years, relatively frequent high 6th DI prices have occurred every second year since 2007. The 6th DI has also experienced the second most high price events on two occasions.
- In only 2 of the last 8 years has South Australia experienced more >\$300/MWh prices in the 6th DI than any other DI, these occurring in 2008 and 2009. In 2014 the 6th and 5th DI had the least and second least price events respectively. In 2013 the 6th and 5th DI had the second most and least price events respectively.

It appears likely that the qualitative statements are either incorrect, or refer only to outcomes in Queensland for 2014 – notably occurring after the rule change request was submitted. While the distribution of high prices within trading intervals in 2014 was unusually skewed towards the 5th and 6th DIs, the charts used by ROAM and the Commission only tell a small part of the story:

1. In 2014 44% of observed high prices in Queensland occurred in the last Dispatch Interval of a Trading Interval. This is clearly above the “average share” which appears to have focussed attention.
2. However 2014 was a relatively non-volatile year in Queensland with 165 dispatch intervals exhibiting a price greater than \$300/MWh - putting it below the median for the last 8 years.
3. This relative lack of high price events means that the 73 observed DI6 high prices is well within historical ranges (2013 had 112 and 2007 had 124). It may be that the lack of volatility in other DIs and regions exacerbated focus on the high prices which *did* occur.
4. As indicated earlier, 2014 exhibited greater correlation between high demand and high price than most years. Hence while high prices *have* occurred at times not generally observed previously, they have largely been at the times when you would *expect* higher prices to occur.
5. A 4.5 hour period on 17 December accounts for approximately 40% of the cap payout observed in Queensland during 2014 as high demand drove consistent high price outcomes.

While these results are unusual - and are likely to have resulted in opportunity costs in relation to some participant’s hedging approaches – Stanwell does not believe that the results reflect a lack of good faith on behalf of Queensland generators, nor that they demonstrate a “problem” with the NEM Rules.

³⁷ *Analysis of rebidding activity in the NEM*, ROAM Consulting, 17 October 2014, page 44

³⁸ Stanwell’s analysis includes the full 2014 year.

Impact of volatility on Demand Response and peaking generation

Following on from an assumed but undemonstrated problem in relation to the timing of volatility, the Commission and consultants discuss the adverse impacts on Demand Response (DR) and peaking generation. Specifically, Oakley Greenwood and Yarrow address five-thirty issues and their impact on peaking generation and demand response, with different focus. Both reports lead to the consideration of “good” volatility and “bad” volatility, a terrible concept which nevertheless continues to pervade much consideration of the NEM.

While the alignment of dispatch and settlement timeframes would address the specific issues highlighted in these reports, it would introduce a number of other commercial risks for all participants. In particular, while peaking generation and demand response would no longer be exposed to the risks associated with high prices late in a Trading Interval, they would lose the ability to “free ride” on high prices early in the TI which their delayed participation does nothing to address³⁹.

Yarrow notes that the five-thirty design could lead to “under-remuneration” for plant which generates during a short duration spike at the start of a trading interval but then turns off (or down) in response to following depressed prices in the same half hour. In practice, Stanwell consider that there is very little evidence that when a price spike occurs early in the Trading Interval any peaking generation plant would turn off, or even significantly reduce output. Rather generators which were offline at the time of the price spike are likely to rebid to come online - and DR is likely to switch off – in order to profit from the high half hourly average price. This is likely to occur regardless of whether further high prices are forecast or likely – and this leads to its own inefficiencies⁴⁰.

Oakley Greenwood focus on the “lost opportunity” for fast start plant (or DR) which is offline (consuming in the case of DR) and unable to physically respond to a price spike late in a trading interval⁴¹.

The paper confirms that a reduction in volatility has reduced the potential value of DR in recent years, but then go on to claim that (late) “*rebidding adds a new risk to DR*” which is reducing its provision.

DR derives its value to the provider (or retailer/aggregator) from the ability to avoid or prevent instances of high price exposure to unhedged “short” positions (or less frequently to create a “long” exposure on a hedged position). The absence of high prices therefore logically decreases the potential value of DR while the presence of high prices may or may not increase the potential value of DR due to it being non firm and often unable to respond immediately. DR is typically linked to forward cap prices which provide a measure of the amount of high price events which are expected to occur in a given period with the potential value of DR equal to or less than the cap price for the equivalent period⁴².

Accordingly, while observed high price events are likely to feed into elevated expectations of future high price events – and hence increased cap premiums – this may or may not increase the potential value of DR. There does not however appear to be any rationale to support the position that an *increase* in observed high prices (whether related to rebidding or not) will *decrease* the potential value of DR. Further, assuming the unproven causal link between late rebidding and high prices, restricting late rebidding would restrict the associated high prices and possibly decrease the value of DR.

³⁹ Fast start plant with short synchronisation and ramp up times would be an exception to this statement.

⁴⁰ For example on 9 December 2014 a DI1 MPC price was followed by 5 DIs close to MPF as multiple supply and demand side participants responded.

⁴¹ OGW page 31. In this context, “unable to physically respond” includes the inability of DR providers to curtail prior to the price spike which occurs late in a trading interval.

⁴² This assumes the DR “trigger price” is the same as the cap strike price, and excludes under-cap revenue/profit. Stanwell believe this approach is consistent with the focus on >\$300/MWh price events in the options paper and associated reports. This analysis also ignores portfolio benefits that a retailer may accrue through the avoidance of high prices on a larger short position.

The equivalent rationale holds for a non-vertically integrated peaking plant, however for peaking plant with sold caps Oakley Greenwood⁴³ fails to account for the premium received for selling the cap contract. If the contract is correctly priced, the seller will break even on the contract for the period without needing spot revenue during high prices to cover the cap pay out. This strategy however will provide no revenue to cover fixed costs. Such costs are covered from a combination of cap contract mis-pricing and physical operation.

Using 2014 in Queensland as an example, cap contracts entered the year priced at \$7.26/MWh⁴⁴ but payed out an equivalent of \$10.36/MWh creating a loss on an uncovered sold cap position. However peaking plant appears to have captured a significant portion of the cap value available, being online⁴⁵ for the majority of trading intervals in which dispatch price exceeded the cap. Table 3 presents results for two such peakers⁴⁶ and shows that even if Oakey and Mt Stuart Power Stations were to sell firm caps equivalent to their installed capacity⁴⁷ (ignoring auxillaries, loss factors and dispatch risk), each site would have earned sufficient above-cap pool revenue to cover the mispricing of the sold caps. The table also highlights that these sites typically generated harder during periods of higher price, as would be expected in a rational market.

	Oakey Power Station	Mt Stuart Power Station
Generation Targets (MWh)	69,294	21,419
Average Target when online	113	106
Time Weighted Average Price (when on)	\$215.23	\$403.17
Target Weighted Average Price	\$374.49	\$888.93
TIs on and price >\$300	70	42
TIs off and price >\$300	7	35
Assumed sold caps (MW)	282	424
Equivalent above cap revenue (\$/MWh)	\$8.06	\$4.45

Cap contracts for calendar year 2015 entered the period priced at \$10.40/MWh, indicating that such peakers could expect higher contract revenues during 2015, increasing the chance that contract mispricing in this period is favourable to the seller.

During 2014, Oakey typically had a fast start profile which provides a target of 0MW in the first dispatch interval following a dispatch price above its offer cost, while Mt Stuart receives 0MW targets for 3-4 DIs before synchronising. It appears to be such restrictions which lead to the Commission's (and more recently the Regulator's) references to units being unable to physically respond to price spikes.

Stanwell notes that the fast start profile offered to the market by peaking plant reflects a commercial decision by the provider. While the profile will generally reflect a technical or operating license limitation (or the avoidance of a prohibitive cost to respond more rapidly), the only formal restriction is that it cannot be longer than 30 minutes⁴⁸. Oakley Greenwood note that at least one participant has made the recent decision to invest in shortening it's response time. Stanwell does not believe that the economic decision of other providers *not* to do so provides a significant rationale for market redesign.

⁴³ "Peakers need to be generating at the times when the caps they sell will be called on, as it is the spot revenue that provides the funds for payments against the cap."

⁴⁴ ASX24 daily settlement price for 31 December 2013.

⁴⁵ Stanwell has filtered generation targets so that units which do not complete the (T1+T2) component of their fast start profile within the half hour are considered to be offline despite receiving dispatch targets.

⁴⁶ For simplicity, Oakey and Mt Stuart Power Stations are considered peakers due to their low capacity factors (average generation <5% of capacity), and will be assumed to have sold cap contracts despite actually residing within larger retail portfolios.

⁴⁷ AEMO scheduled generator data, 10 December 2014. Oakey installed capacity 281.8MW, Mt Stuart installed capacity 423.5MW, rounded up.

⁴⁸ NER Clause 3.8.19 states that fast start units must be able to reach minimum load (T1 + T2) within 30 minutes or less, and that the time from synchronisation to minimum load (T2) can be zero.

Impact of volatility on baseload portfolios

While the options paper and consultant reports reflect on peaking plant and Demand Response, all participants are affected by the amount and timing of high price events, just as we are all affected by their absence.

Yarrow is the only report which directly, albeit briefly, addresses the issue of incentives for rebidding, particularly with reference to financial market positions and recovery of fixed costs. It should be recognised that anyone referring to or “relying on” the price forecast component of pre-dispatch for decision making will be doing so in respect of a strategic position which has been taken as an (at least theoretically) informed participant. This encompasses market scheduled and semi-scheduled generators (baseload, intermediate, peaking), non-scheduled generators, retailers, customers with demand response and their representatives – be it an aggregator or a retailer - and even financial traders. We do not consider it appropriate for the commission to be pursuing “solutions” to the negative outcomes of strategic positions taken by some sections of the market.

Like the previously addressed peaking plant and Demand Response, Stanwell was “short” to a number of high price events during 2014. This was due to a number of factors including the physical responsiveness of our plant and our trading strategy and we do not consider that a Rule change is the appropriate form of mitigation for these adverse exposures. We were also “long” to a large number of prices well below our Long Run Average Cost, and while we would obviously *like* a solution to this problem, we do not consider that a Rule change is the appropriate measure to address this market feature either.

The Commission has previously accepted that high price events are necessary to allow not only peaking generation, but baseload and intermediate generation to recover their fixed costs. While a number of market reports refer to “wealth transfers” relating to such high price events⁴⁹, we are not aware of any consideration having been given as to whether such transfers are actually efficient over sensible timeframes.

Significant focus in the options paper, consultant reports and this response has been placed on recent market outcomes in South Australia and Queensland. While it can be difficult to separate the generation activity of many participants from their broader financial reporting, in Queensland the two largest generators provide relatively straightforward data for analysis via their annual reports. CS Energy and Stanwell are predominantly generators exposed to the Queensland price with minimal up- or down-stream vertical integration with the exception of Stanwell’s export coal revenue sharing agreement. The entities have been in their current configuration since July 2011 with merger costs and Carbon Tax impairments applied to the 2010-11 financial year. Table 2 summarises financial results since 2011⁵⁰.

	Net Profit after Tax (NPAT)		
	Stanwell (ex coal)	CS Energy	Total
2013-14	54	(60)	(6)
2012-13	(104)	(48)	(152)
2011-12	(87)	(51)	(138)
Total	(136)	(159)	(296)

Table 2 CS Energy and Stanwell annual results from generation activities

While the market design does not, and should not, ensure that every participant is profitable, the market as a whole should be sustainable. The figures above represent a significant portion of

⁴⁹ AER State of the Market report 2014, page 49.

⁵⁰ The Stanwell results exclude the revenue and tax equivalent value derived from an export coal revenue sharing agreement, but include the “de-leveraging” effect that this revenue has on the business – that is, in the absence of profit from the coal agreement debt levels and financing costs would be higher, and thus NPAT lower, than the values shown.

the generation in a NEM region which has had relatively strong observed pricing in recent years, and should provide context in relation to whether prices are above efficient levels.

The Commission's recent investigation into potential generator market power confirmed that while average contract prices were similar to long run generator costs, average spot prices have generally been significantly lower⁵¹. Stanwell believe that this finding supports the observed behaviour that many buyers are buying less hedges, buying them from non-generator sources⁵² or using non-vanilla products such as insurance or weather derivatives. The resulting low generator contract levels further alter the incentives previously observed, as indicated by Yarrow.

We encourage the Commission to maintain their stance regarding the need to measure market efficiency at a reasonable level of granularity – that is at least annually and certainly not at the dispatch Interval/Trading Interval level.

Summary

There does not appear to be any basis for concern relating to rebidding or late rebidding causing significant market inefficiencies other than regarding “opportunity losses” on strategic positions within some segments of the market.

- Evidence confirms no material change to the frequency or impact of late rebidding in the NEM,
- Evidence confirms that the frequency of late rebidding is correlated to unusual or unexpected market conditions,
- AEMO and ROAM analysis suggests that the impact of late rebidding is marginal and varied,
- Analysis confirms that swap and cap outcomes remain within historical norms in nominal terms,
- Peer review confirms that high prices are a necessary and desirable feature of an energy only wholesale electricity market,
- Peer review confirms that allowing rebidding enhances information discovery in energy only wholesale electricity markets,
- Research suggests that comparable markets rely on comparable approaches to ensuring accurate provision of information both before and after dispatch,
- Analysis confirms that the frequency of high prices remains within historical norms,
- Analysis confirms that peaking plant has been able to access a significant proportion of the value contained in high price events in recent years and will benefit from increased premiums on sold caps for future periods.
- There is no evidence of excessive profitability from NEM generators, particularly in the states identified as being of concern in relation to late rebidding.

⁵¹ With the exception of the drought period in most regions.

⁵² Alternative sources would include financial traders who have minimal fixed cost compared to generators. While prices are low, such participants are able to sell contracts below generator LRAC/LRMC and achieve profits.

Appendix A

Correlation of high prices with high demand

South Australia displayed an extremely strong correlation between demand and price between 2008 and 2011 before a step change in 2012. While both volatility and correlation appear to be recovering in South Australia since the low in 2012, it is unclear what drove the changes.

Number of DIs with price >\$300/MWh	Calendar Year							
	2007	2008	2009	2010	2011	2012	2013	2014
Highest demand periods (Dispatch Interval) 10	1	9	9	8	10	0	1	0
20	1	15	19	14	20	0	1	5
50	11	26	35	36	50	0	1	16
100	21	53	61	67	80	0	7	41
1000	92	368	322	210	88	20	64	206
All DIs	337	482	524	309	120	70	220	382

Correlation between high demand and high spot price for New South Wales can be seen to be either extremely high, or extremely low, depending on the year:

Number of DIs with price >\$300/MWh	Calendar Year							
	2007	2008	2009	2010	2011	2012	2013	2014
Highest demand periods (Dispatch Interval) 10	10	0	0	10	10	0	0	0
20	20	0	0	20	20	0	0	3
50	41	0	0	48	50	3	0	5
100	60	8	7	84	86	6	0	5
1000	509	15	205	207	200	17	18	5
All DIs	1467	110	430	245	206	24	23	10

Correlation between high demand and high spot price for Victoria appears to have decreased marginally in recent years:

Number of DIs with price >\$300/MWh	Calendar Year							
	2007	2008	2009	2010	2011	2012	2013	2014
Highest demand periods (Dispatch Interval) 10	7	10	8	8	9	9	2	3
20	15	19	17	13	16	16	2	8
50	34	33	32	35	25	29	3	15
100	59	42	56	49	31	40	12	26
1000	204	60	138	131	63	58	31	75
All DIs	751	80	147	210	68	87	47	90

Correlation between high demand and high spot price for Tasmania appears non-existent:

Number of DIs with price >\$300/MWh	Calendar Year							
	2007	2008	2009	2010	2011	2012	2013	2014
Highest demand periods (Dispatch Interval) 10	1	0	0	0	0	0	0	0
20	2	0	0	0	0	0	0	0
50	7	0	0	0	0	0	0	0
100	16	0	1	0	0	0	0	0
1000	61	0	27	1	1	0	1	1
All DIs	169	9	430	121	81	8	60	34

Timing of high prices within Trading Intervals

Historical timing of >\$300/MWh pricing within Trading Intervals for Queensland indicates 2007 and 2014 as outliers:

DI	2007	2008	2009	2010	2011	2012	2013	2014
1	152	32	24	10	27	21	118	14
2	150	25	23	7	26	12	101	9
3	152	31	23	6	29	17	96	16
4	145	31	29	8	26	16	95	17
5	138	36	24	8	31	23	93	36
6	124	37	26	10	27	36	112	73
Total	861	192	149	49	166	125	615	165

Historical timing of >\$300/MWh pricing within Trading Intervals for South Australia indicates a minor bias towards volatility in the first dispatch interval in recent years, however this does not appear material:

DI	2007	2008	2009	2010	2011	2012	2013	2014
1	63	81	84	52	26	16	47	72
2	58	79	83	53	18	10	34	61
3	52	80	87	53	20	9	33	68
4	56	80	90	52	20	11	32	62
5	56	81	89	47	18	13	30	60
6	52	81	91	52	18	11	44	59
Total	337	482	524	309	120	70	220	382

Historical timing of >\$300/MWh pricing within Trading Intervals for New South Wales indicates no change other than a general decline in volatility:

DI	2007	2008	2009	2010	2011	2012	2013	2014
1	251	19	68	40	35	5	3	2
2	256	18	66	39	35	4	5	1
3	249	17	74	38	34	3	5	1
4	245	18	72	46	37	4	3	1
5	245	16	74	43	33	5	4	2
6	221	22	76	39	32	3	3	3
Total	1467	110	430	245	206	24	23	10

Historical timing of >\$300/MWh pricing within Trading Intervals for Victoria indicates no change:

DI	2007	2008	2009	2010	2011	2012	2013	2014
1	135	13	20	33	11	14	10	19
2	130	11	22	35	12	12	7	12
3	130	14	23	34	12	12	8	16
4	117	16	26	34	14	15	5	16
5	121	14	29	35	12	18	8	15
6	118	12	27	39	7	16	9	12
Total	751	80	147	210	68	87	47	90

Historical timing of >\$300/MWh pricing within Trading Intervals for Tasmania indicates no change:

DIs	2007	2008	2009	2010	2011	2012	2013	2014
1	41	3	71	24	16	1	10	8
2	36	1	69	22	14	1	10	4
3	25	1	72	17	13	4	7	5
4	23	1	67	18	13	1	13	7
5	22	0	77	17	13	1	5	3
6	22	3	74	23	12	0	15	7
Total	169	9	430	121	81	8	60	34