21 June 2013

Mr Neville Henderson
Chair, Reliability Panel
Australian Energy Market Commission
PO Box A2449
SYDNEY SOUTH NSW 1235

Submitted via www.aemc.gov.au

Dear Mr Henderson

**Reliability Standard and Settings Review 2014 – Issues Paper**

Alinta Energy welcomes the opportunity to make a submission in response to the Reliability Standard and Settings Review 2014 (the Review) conducted by the Reliability Panel (the Panel). Alinta Energy believes it is an appropriate time to review the reliability standard and settings given the rapid developments that have occurred in recent years.

Alinta Energy is an active investor in the energy retail, wholesale and generation markets across Australia. Alinta Energy has around 2500 megawatts of generation capacity in Australia (and New Zealand) and a growing retail customer base of approximately 700,000.

**Reliability and the reliability standard**

The Panel has previously concluded through extensive analysis that 0.002 per cent unserved energy measure should be retained. This was on the basis that the benefit of tightening the reliability standard would outweigh any costs and it was already comparable to other jurisdictions internationally despite the less meshed nature of the National Electricity Market (NEM).

Alinta Energy does not intend to revisit this analysis. While a series of alternatives are available, and are likely to have their own advantages, there does not appear to be any compelling arguments to suggest replacing or amending the existing reliability standard will be beneficial to the NEM at this time.

Therefore, Alinta Energy comments focus on the reliability settings needed to ensure the reliability standard continues to be met in an evolving market.

**Reliability settings in context**

Having a significant generation asset base and strong retail growth aspiration, Alinta Energy is conscious that perspectives on reliability settings are very much determined for some parties by their existing commercial positions. While tempting to examine the debate as between retailers, wanting a lower Market Price Cap (MPC) for example, and generators, seeking to increase the MPC, the debate is likely to be more complex than this.

Additionally, Alinta Energy expects opponents of change to note transmission congestion, strategic bidding and power station reliability as factors that need to be taken into account. However, in Alinta Energy's view issues like this, differing incentives for vertically integrated participants, issues around market design and how participants respond to this design, and suggestions that generation build arises for reasons other than peak pricing are in some respects irrelevant.

The purpose of the reliability settings, as indicated by the Panel are to:

- establish the parameters governing the price envelope within which energy supply and demand is balanced in the wholesale market;
- provide important price signals to market participants in relation to the delivery of sufficient generation capacity and/or demand side response to meet the reliability standard; and
- at the same time, provide a mechanism to limit financial risk for market participants.

As a consequence, issues regarding market risk, transmission risk, market structure, and climate change policies should only be considered relevant to the extent they impede the ability of the NEM to balance supply and demand and provide the required price signals. Not to the extent they lead to some participants being less supportive of changes to reliability settings than they otherwise would be.

This is a critical, but nuanced point. This is because company expectations around market risk and reasons for increasing, decreasing or otherwise not changing reliability settings will differ largely as a reflection of each company's market position and ability to take on further risk or manage risk. These considerations are ultimately irrelevant unless they have implications for supply and demand balance more generally.

For instance, if a large incumbent vertically integrated participant does not support a change in reliability settings it needs to be clear that this is not driven by a view that their costs of retaining customers and managing market risk will be higher than a new entrant or competitor in the market who is better able to absorb or manage those risks.

This does not mean those risks do not require assessment and management, possibly through market reform, in their own right. But that they are only relevant to the extent they undermine investment and meeting the supply and demand balance in this Review.

This is important as there is a view that the 2010 Reliability Standard and Settings Review (2010 Review) was overtaken by concerns about the implementation of the carbon tax, and the unknown impacts of climate change policies more generally, which supported outcomes favourable to one group of participants and which in hindsight are likely to have been sub-optimal.

Alinta Energy was one of the few respondents to 2010 Review to support the final iteration of modelling by ROAM and the recommendation that the MPC be raised to $16,000/MWh. Analysis undertaken by Alinta Energy at the time indicated that a price in the range of $14,000/MWh to $20,000/MWh would be required to provide sufficient revenue to support an investment in an open cycle gas turbine to ensure the reliability standard continued to be met.

However, the weight of submissions did not share Alinta Energy's perspectives and the Panel ultimately recommended against the increase in the MPC. Respondents largely relied on a view that investment was already occurring under the existing MPC and contract market outcomes, not spot outcomes, were the primary drivers of investment decisions.

This approach should not continue in this Review. The purpose of the MPC is to ensure the reliability standard is met and thus setting the MPC below the amount needed to meet the standard is less than ideal. Notably, prior to the 2010 Review, Vencorp had already determined a value of customer reliability measure which translated to $57,290 per megawatt hour by 2010, and jurisdictional planning

bodies were certainly building transmission to a standard in excess of the MPC and potentially in excess of the Vencorp value of customer reliability. As customers do not exhibit a preference for reliability to be provided by generation or transmission, only that it is least cost, this suggests and continues to suggest the MPC is inadequate and favours transmission over generation for non-economic reasons.

The Panel's reasoning for its deviation from the expected approach was based around two specific conclusions.

(1) The ability of the current reliability settings to achieve its objectives may be limited given the way the NEM is developing.

(2) Concern that increases in the MPC may reach a tipping point beyond which the benefits of increasing the MPC and Cumulative Price Threshold (CPT) do not offset the costs in terms of market risks.

Alinta Energy understands these views but does not ultimately reach the same conclusion as the Panel. Further, Alinta Energy suggests that each setting's ability to influence the market and support the reliability standard is likely to differ and thus each should be analysed independently.

In this regard, the MPC operates as the market clearing mechanism whilst the CPT's primary function is risk management and preserving market integrity. Additionally, the role of the market floor price (MFP) needs to be formally clarified; Alinta Energy has a clear view as to its purpose.

For this reason it is possible, and desirable, to examine each of these mechanisms individually as Alinta Energy believes each can have a notably different impact on the market before drawing conclusions on net impacts. When scrutinised independently first, it is possible to reach conclusions which are more nuanced than those which have previously been put forward.

**Cumulative Price Threshold (CPT)**

The original purpose of the CPT was to replicate a force majeure clause to limit the exposure of participants to major events[1] In fact, the Panel, in an earlier review envisaged that the CPT would operate as the primary risk management mechanism for extreme events[2] and has indicated the CPT is an 'explicit risk management mechanism'[3].

Alinta Energy supports this perspective and suggests that as the NEM has been slow to respond to participants concerns over non-credible risks and congestion the CPT remains the primary mechanism for dealing with low probability, high impact events that jeopardise a participant's cash flow. This is not to suggest the cash flow risks to participants of events below the CPT are insignificant i.e. one event at $193,900/MWh can have the same cash flow effect as ten events at $19,390/MWh in short succession.

Nevertheless, the benefit of the CPT is management of extreme events over a protracted period of time without impeding voluntary market clearing within shorter peaks. If a CPT of $193,900 has not provided significant time to allow the market to respond after successive periods at or near the MPC then it is appropriate to suggest the situation may not be remedied by the market without intervention and that such intervention is needed to maintain the viability of market participants.

The issue is what the appropriate threshold is for the CPT. On one hand, the CPT takes revenues away from generators who otherwise may not be able to recover capital costs within an acceptable

[1] Reliability Panel, VoLL and the cumulative price threshold, Issues paper, December 2003, p.40, indicates that the original FM threshold was $2100/MWh average price over 72 hours
[2] Reliability Panel, Review of VoLL in the National Electricity Market, Report and Recommendation, July 1999, p.3
[3] Reliability Panel, National Electricity Market Reliability Settings: VoLL, CPT and the Future Reliability Review Rule Change Proposal, December 2008, p.2

period of time. Conversely, these same generators may be constrained off and therefore exposed to prices to which they cannot respond and hence market intervention would be extremely desirable.

From Alinta Energy's perspective, there are a number of key questions when considering the CPT.

(1) How is the CPT taken into consideration by merchant investors?

(2) Does the CPT impede price signals?

(3) What level of CPT can the market accept before overall market risks increase without any offsetting benefits?

*CPT and merchant investment*

A key question is: would an investor in a merchant gas turbine, not a vertically integrated participant looking to cover its load position, consider when the CPT is invoked in making its investment?

In Alinta Energy's view, invoking the CPT at or above the existing level is likely to signify market outcomes which support capital cost recovery by a merchant gas turbine. This is because MPC events occur more readily than CPT events and are thereby more relevant to open cycle gas turbine investment decisions were an investor to invest primarily on the basis of spot price outcomes. The issue is to what extent to CPT events limit spot revenue beyond that which can be recovered through MPC events outside of the CPT.

*CPT and price signals*

In earlier work commissioned by the Panel, Concept Economics examined the relationship between CPT and MPC as it pertains to generator profitability and generator bidding[4]. Concept Economics indicated that changes to CPT are likely to change generator behaviour and drew on relevant market events to reach these conclusions.

However, it was determined that a higher MPC and CPT in tandem would result in a notable increase in price outcomes but overall increasing MPC without changing the CPT has a minimal impact on generator earnings while reducing price impacts[5]. Alinta Energy suggests this implies the link between CPT and MPC is not symmetrical. In other words, an increase in MPC is more relevant to incentivising merchant investment than an increase in the CPT.

This is intuitive, on the basis reaching the CPT is a rare event and participants are more likely to note an increase in the MPC than the CPT as a higher MPC is relevant for the more common and shorter periods where prices are at or near the MPC. Also, it is arguable that price events under the CPT and up to the MPC should be enough to sustain required generation in the absence of excess capacity where the MPC is set high enough.

For example, if the CPT remained the same but the MPC was increased, the additional revenue available to the incremental generator would be the difference between the current MPC and the new MPC during events that already would have not been captured by the CPT; however those events would not arise if there was excess capacity in any case. Where the CPT is invoked with or without excess capacity, additional revenue will not be received, barring an earlier period of the Administered Price Cap, and the circumstance is likely to be one where market participants are thankful that the CPT has been breached to manage risk.

Hence, the CPT could only impede price signals, in a sustainable market, if the CPT was set so low as to capture the bulk of high priced events which occurred in the absence of non-credible contingencies. Where the CPT captures events that occur once the threshold has been breached this

[4] Concept Economics, Risk Assessment of Raising VoLL and the CPT, 13 October 2008, p.7-18.
[5] Concept Economics, Risk Assessment of Raising VoLL and the CPT, 13 October 2008, p.15-18.

is likely to be the circumstance where the value of the CPT managing risk exceeds the cost of missed revenue to market participants.

This implies that the Panel's preference of linking the CPT and the MPC, by making the CPT a factor of the MPC, should not necessarily continue and that the CPT's primary purpose is to ensure risk is appropriately managed not cost recovery. Therefore, an increase in the MPC does not necessarily require significant changes to the CPT.

*Appropriateness of the current CPT*

Quite simply it is probable that the current CPT level is not appropriate; however, it is not clear that a more appropriate threshold has been previously put forward. Alinta Energy would expect that while a lower number would not be appropriate, it is likely that a slightly higher CPT would be viable, but before concluding on such a number more detailed analysis is required.

Alinta Energy suggests a more detailed analysis from the perspective of identifying the level of risk the market can bear in the event of extreme prices. This is likely to require modelling for purpose of assessing price risk that should be captured by the CPT and that which should remain in the market.

In a sense, the use of the CPT should be analysed like other tools within a risk management framework. This is to identify the role it plays in ensuring no systemic failure would arise if participants were exposed to price risks they were unable to manage beyond a certain point. In this way the purpose of the CPT is to ensure participants, who are prudently hedged and managed, can absorb the effects of extreme prices using available products, like hedges and insurance, to a point where market efficiency is not undermined.

This is unlikely to be perfectly correlated with the MPC. In fact, it is more likely to draw on views of the value of other risk management products, like financial hedges, in managing these risks. The corollary being that the level of the CPT needs to ensure enough MPC events could occur in the absence of non-credible contingencies to allow recovery of capital costs for a new entrant merchant gas-fired generator recovering costs from the spot market alone.

**Market Price Cap (MPC)**

There are a number of issues regarding the MPC that Alinta Energy wishes to raise with the Panel. Each contributes to Alinta Energy's view that the existing MPC has been set to low. These issues are listed below and discussed in greater detail thereafter.

- Need for additional capacity given the current market outlook.
- The role of the MPC in allowing for sufficient returns to build an open cycle gas turbine to supply the last increment of supply at times of high demand or otherwise.
- The role of the MPC is managing risk where the CPT has been appropriately calculated, which is currently unlikely to be the case.
- The relationship between spot prices and contract prices and how retailer costs and generator revenues are derived from contract prices.
- The benefit to consumers of incentivising existing generators at a time the market remains strained as a result of the mix of new build and government policy; the role of the MPC in valuing capacity and energy hedge offers.

**Energy market outlook**

There is always the potential for the Review to become a debate around individual perspectives as to whether the market requires further capacity at this time or not.

On the one hand, it can be noted that the amount of total energy demand in the NEM has been declining at a rate of approximately -1.3 per cent a year and consumption patterns remain fluid. This is largely in the context of weak global economic growth, gradual decline of manufacturing in Australia, penetration of rooftop photo-voltaic generation, and consumer responses to rising electricity costs through efficiency measures[6].

An alternative case could note that while annual maximum demand projections have largely been revised down expectations around summer high demand periods are still likely to give rise to tight supply and demand balance. In this context, additional expected capacity needed over the near term is low; however, required capacity at peak times of unmet load or unserved energy is still significant.

High demand during peaking periods is also an issue in the event of unforeseen circumstances, such as generator outages, severe weather events, prolonging the duration of a potential unserved energy event or a non-credible event. Furthermore, the potential for generator retirements, mothballing or industry consolidation in the face of financial stresses has not been fully recognised.

However, as the Panel is aware there is little benefit in basing the Review's findings on developments or outlooks which may or may not eventuate. Individual biases are not reflective of the NEM's decentralised investment model but a tendency for individuals to favour one view of 'what's needed' over others and to rely on favoured expert predictions as opposed to market dynamics.

Hence, supressing the MPC in a belief that capacity isn't needed until demand recovers is likely to be problematic either at times of peak demand or in response to any unknown future rapid change in demand dynamics. On this basis, the Panel needs to ensure that the spot market can provide enough revenue to compensate a hypothetical marginal merchant generation unit. Hence, other considerations should be given secondary status.

**Role of MPC in providing a return to investors meeting the supply and demand balance**

The key purpose of adjusting the MPC is to endow the market with incentive for generation investment, which in turn ensures that the reliability standard will be met. In this context the Panel focuses on setting a "balanced" MPC having regard to:

- forecast capital costs of the marginal generation - that being an open cycle gas turbine; and
- the anticipated rate of return on capital – as this represents the key market consideration for potential investment.

In order to ensure that new entrant peaking generation capacity can indeed enter the market the marginal generator, which in this case is assumed to be a gas turbine has to be adequately profitable at a known level of reliability standard. Such a generator has to be profitable functioning for no more than the limited hours meeting the marginal increment of demand. This means that the MPC must be set at a level which will provide ample revenue, derived purely from the spot market as the last dispatched generator, to recover:

- capital costs;
- operating costs – fixed and variable; and
- sufficient investor rate of return.

For the purposes of meeting the reliability standard, the Panel is under obligation to assume that the new entrant derives all their income from high priced events, rather than providing energy during shoulder periods. Other variables which could potentially influence investment decisions are for this purpose defunct even where it can be illustrated that existing market participants have elected to

[6] Electricity Statement of Opportunities (2012), Australian Energy Market Operator, pg 2-10

derive income from sources other than the spot market and make investment decisions based on their existing business practices.

Previously, three main arguments were acknowledged by the Panel as justifiable evidence in which to review the MPC. These are:

- the increased capital costs for new entrant open cycle gas turbines;
- increased peak demand forecasts; and
- more detailed representation of interconnector capacity assumptions, resulting in reduced inter-regional capabilities at times of high demand.

*The increased capital costs for new entrant open cycle gas turbines*

There has been noted movement in input costs which are relevant to the determination of the MPC. These inputs are those that were previously determined by ACIL Tasman, which have previously been cited by the Panel to be relevant to the consideration of the MPC.

**Table: Change assumptions relevant to calculating new entrant costs**[7]

| Assumption | 2009 | 2013 | Comments |
|---|---|---|---|
| Inflation CPI | 2.50% | 2.20% | Weak domestic activity |
| Exchange rate (USD/AUD) | $0.75 | .93 - 1.05+ | Sustained parity with recent softening |
| International Oil Price (US$/bbl) | $80 | $105 | Short to medium term subdued. |
| International thermal coal price (A$/tonne) | $80 | $95.53 | Short to medium term subdued. |
| Average east coast gas price (A$/GJ) | $3-4 GJ | ~$5 GJ | Significant price rises expected in short term. Projected to hit $8-$10/GJ by 2016. |
| East Coast Gas Demand + LNG export demand (PJ) | ~650 PJ | ~650 PJ | AEMO estimation of ~2,800 PJ demanded by 2018. A increase of ~430% |
| Carbon Price (A$) | $0 | $23 per tonne | Potential amendment post September election. |
| National Gas Developments | Domestic reservations guaranteed. No LNG exports. | LNG export markets coming online in near future. | Significant demand forecast to increase prices and reduce willingness to burn |

Preliminary analysis undertaken by Alinta Energy, based on ACIL Tasman and Australian Energy Market Operator data, shows that capital costs for a new entrant open cycle gas turbine plant, without carbon capture and storage, has increased over the period of 2010-2013.

[7] Source: ACTIL Tasman, GSOO, and Alinta Energy Analysis

**Table: New OCGT costs 2010 to 2013**

| New OCGT costs | MW | Capital Costs in 2010 | Capital Cost in 2013 | Difference |
|---|---|---|---|---|
| Small Turbine | 20 | $ 14,000,000 | $ 14,960,000 | $ 960,000 |
| Medium Turbine | 50 | $ 35,000,000 | $ 37,400,000 | $ 2,400,000 |
| Large Turbine | 100 | $ 70,000,000 | $ 74,800,000 | $ 4,800,000 |

These price changes of themselves suggest a material increase in the MPC is appropriate. Given ROAM's modelling for the 2010 Review, an updated the MPC within the range of $16,000 and $25,000 would seem appropriate; however, more detailed modelling is required to determine a definitive figure.

*Cost of Finance*

Compounding the aforementioned developments, recent climate change policies and regulatory uncertainty has meant there are less financial institutions willing to invest in new power stations, significantly raising the cost of acquiring capital. Notably, these refinancing costs have also negatively impacted existing asset holders and may lead to earlier or unexpected retirements or withdrawal decisions in the face of loss of revenue.

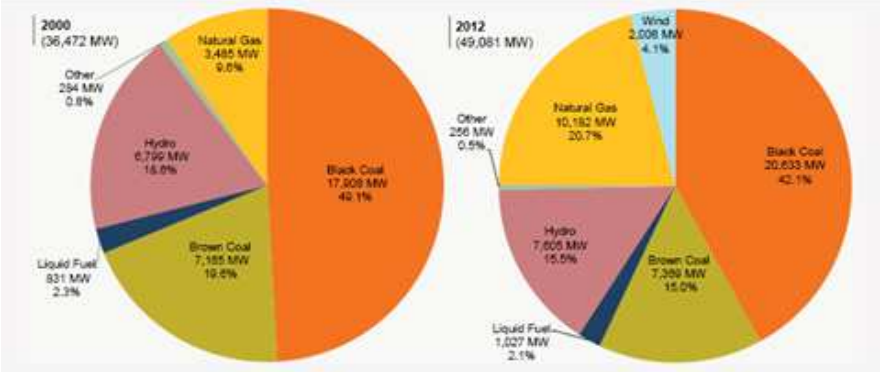
Recent analysis undertaken by Bloomberg New Energy Finance illustrates that new generation financing costs have increased considerably, especially in regards to fossil fuel generators whom are now charged considerable risk premiums. As such, the cost of securing finance has increased dramatically acting as a large deterrent to potential new market entrants and leading to significantly above consumer price index increases across operating costs, key input commodities and infrastructure depreciation. These costs are likely to rapidly increase even further in the near future when rising natural gas prices are fully incorporated.

As an aside, it is becoming apparent that funding for new generation capacity is now geared toward intermittent renewable generation, having significant reliability standard implications. This increase in infrastructure and operating costs suggests that peaking generators need higher revenues to recover their necessary return on investment.

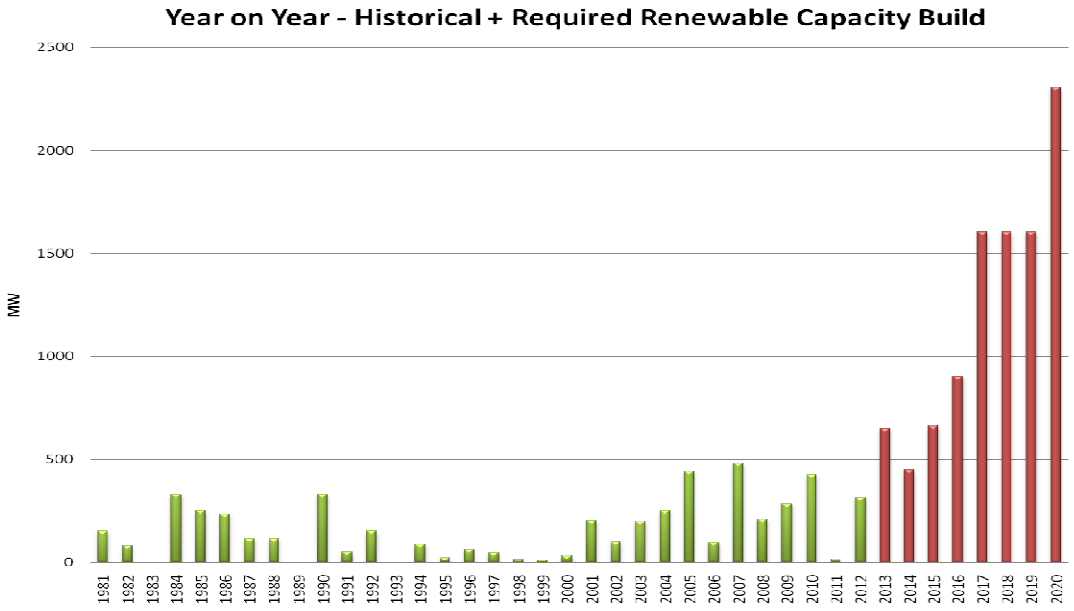
*Peakier demand*

According to Electricity Statement of Opportunities data, energy demand is likely to become 'peakier' over the next 10 years. This reflects the nature of consumption, rooftop solar photovoltaic penetration, and significant subsidised renewable generation, mostly wind, and significant reduction in industrial demand.

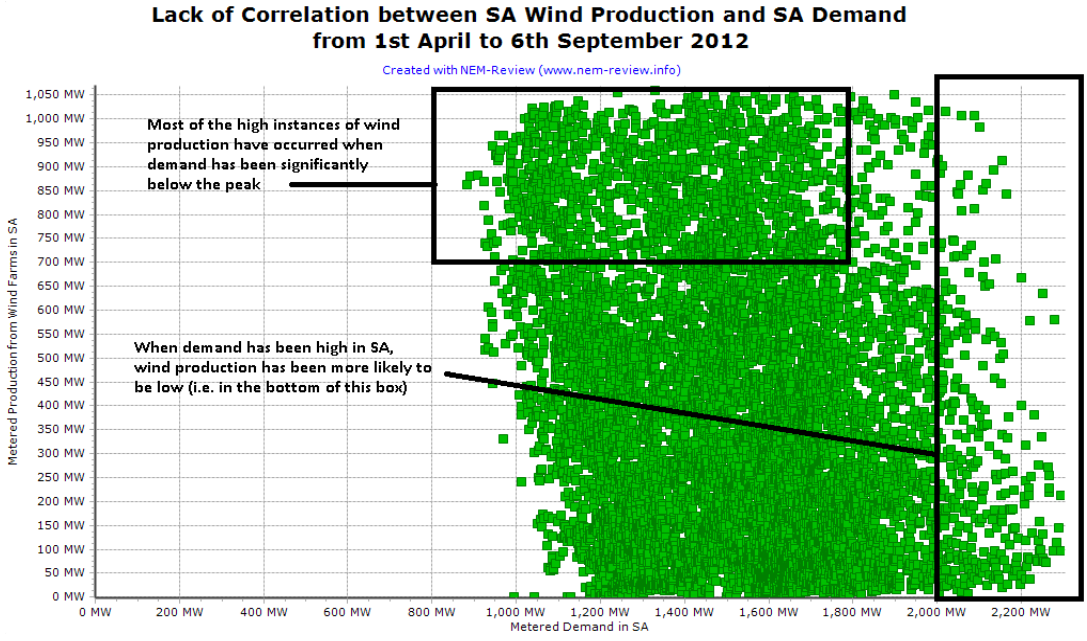
**AEMO - NEM generation capacity by fuel source, 2000 and 2012**



As shown above, wind generation increased dramatically between 2000 and 2012. Installed wind capacity in the NEM is over 2000 megawatts and climbing. While required build to meet the Renewable Energy Target, as shown below, equates to wind capacity of around 9155 megawatts by 2020, with around 8000 megawatts of hydro and 2700 megawatts of biogas.




Nevertheless, at a time of regional maximum peak demand, there is no guarantee total maximum wind capacity will be able to be meet demand due to its intermittent nature. This raises a number of problems: subsidised wind generation reduces the total revenue a marginal generator can capture to recover its capital costs; and base load generators will struggle to run during periods of high wind penetration even if desirable from a system security perspective. A sample period, showing wind production and demand, is shown below.



Peakier demand means that the hours a new entrant can run and recover its capital cost are likely to be reduced. In order to cover operating costs over a peakier profile the level of MPC is likely to need to be higher to guarantee generation at times of high demand. The fact some generators may be needed to run for a greater periods of time at or below short-run marginal cost will be balanced against the potential to recover fixed costs and any variable cost shortfall during higher peak (as the MPC would have been raised).

*Inter-connector assumptions*

Inter-connector capacity determines the level at which generation can be shared between regions when attempting to meet the demand during periods of scarcity. AEMO has developed an inter-regional transmission network constraints "workbook" which models a realistic limit on the amount of reserve sharing that can occur between regions during times of peak demand.

By incorporating AEMO's constraint assumptions a set level of demand must be satisfied by local generation capacity from each region, rather than reliance on neighbouring generation. ROAM previously suggested this indicated a higher level of MPC was needed in order to meet the reliability standard.

As an aside, there has been an absence of analysis to determine why it is in consumers' interests to build high cost publicly funded inter-connectors as opposed to relying on localised generation. As inter-connectors act as a compliment and substitute for generation it is critical that inter-connector build isn't relied upon, at a greater cost to consumers, to justify not increasing the MPC and building additional generation within a region.

Interestingly, in South Australia the most significant investment decision of late has been the commitment to upgrade the Heywood inter-connector at significant cost to consumers as opposed to building additional gas-fired generation or investing in upgrading existing plant flexibility in the context of wind capacity.

**Do we need a MPC if the CPT has been set correctly?**

Unfortunately, the perspectives raised in the 2010 Review could lead to a view that any increase in prudential risk, on physical delivery, or increases in probability could act as a brake on any needed increases to the MPC. However, by separating the CPT and MPC it is possible to reach a conclusion other than the "tipping point" conclusions previously reached by the Panel.[8] Additionally, this leads to the possibility of more critically appraising the value and role of the MPC.

The MPC is not a physical threshold that is needed to ensure effective operation of the market but a reflection of general unease with the idea of not having an upper bound on prices. If there is a belief that the MPC does not play a dominant role in determining new entry decisions, as is a view likely to be put forward by a number of vertically integrated entities, then with an appropriate CPT in place to manage total financial exposure to high prices the need for any MPC should be questioned.

For instance, whether market prices hit $10,000, $15,000 or $25,000, should be an aside if total market exposure over the defined 7-day period is capped via the CPT. No cap allows for the market to determine what price is needed to reward additional supply or incentivise additional demand response at any point in time. This will incentivise generators to contract further and generate for additional periods to capture rare and difficult to predict MPC events. It is also likely to efficiently incentivise demand response and increase rewards offered by retailers for demand response, more so than any concocted scheme which would undermine market dynamics.

[8] Reliability Panel, Reliability Standard and Settings Review 2010, p.43

**Role of MPC in placing a value on capacity**

It is clear that existing coal-fired generation assets are needed to avoid potential security of supply issues and this will continue to be the case over a sustained period of time. However, for these plant to stay on they need to the capture value of their capacity otherwise there is an increased risk of load curtailment which will lead to questions of market sustainability.

Alinta Energy believes recent developments where prices have been flat in the spot market and minimal value has been derived from the contract market illustrate this point. In short, the introduction of significant amounts of renewable energy undermines the financial viability of non-renewable generation sources and introduces distortions into the market which will have to be accounted for through large scale price increases, business failure or supply shortages.

Alinta Energy's view is that in order to return to the market and for investors to build additional non-subsidised generation, requires better valuation of capacity. Any outcome otherwise can lead to potential business failure as actual costs cannot be recovered. Evidence of business failure will also lead to an investment drought. It would be expected, should the situation for non-subsidised non-renewable generation continue to deteriorate, prices would undergo a 'jump' at some stage to enable the market to recover and the market would be undermined at great cost to consumers.

As an example, after summer 2012 Alinta Energy elected to place Playford B Power Station in extended shut-down until such time as prices recover and Northern Power Stations 1 and 2 generation output has been scaled back. This is a direct consequence of an inability to secure sustainable wholesale prices, both spot prices and contracts. All three plants operated in first quarter 2012 and Northern 1 and Northern 2 previously operated all year round.

However, at the start of the past two winters, the market has seen price volatility that is likely to have led to a supply shortage scenario and load shedding had Alinta Energy not changed its generation profile and returned to service / extended service against plan.

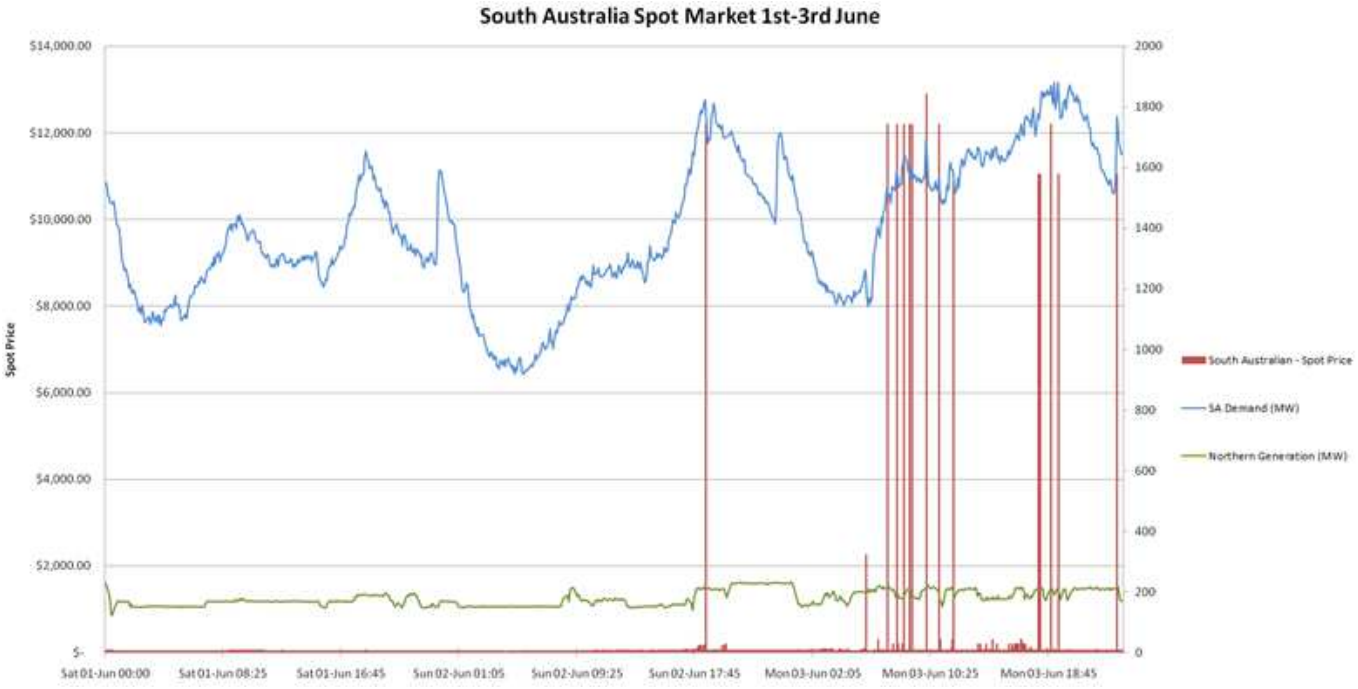
In the final business days of the June 2012 a decision was made that Northern Power Station 2's operation would be extended by two weeks to 13 July 2012. This was due to a change in price expectations and uncertainty around the impact of the introduction of carbon pricing, low wind expectations, reasonably high demand due to cold winter conditions and a number of outage issues in Victoria and New South Wales. This proved to be fortuitous from an energy security perspective.

On Monday 2 July 2012, prices at times reached the MPC well above expectations for the first week of carbon pricing. Had Northern Power Station 2 turned off at the end of the financial year, as was intended, it is Alinta Energy's view that an energy supply shortage scenario would have been probable given the tight supply and demand balance.

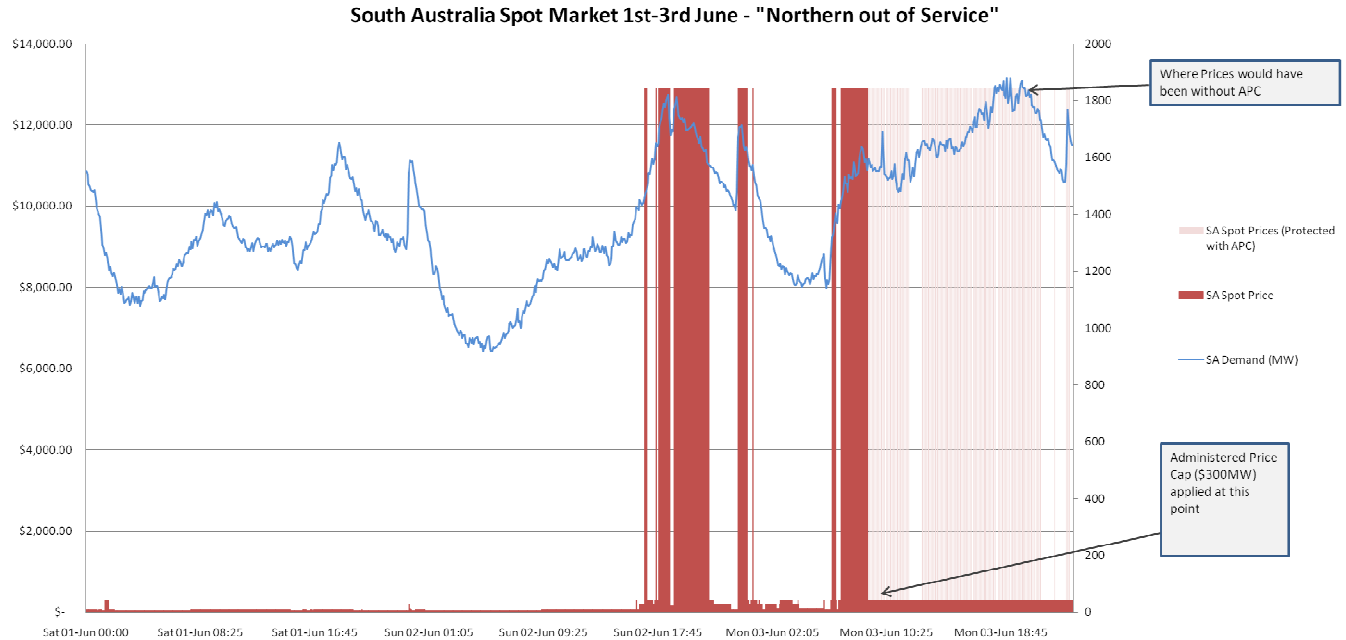
While it could be argued that this reflects the market responding to evolving conditions, a more prudent analysis is that luck prevailed. Large-scale thermal coal plants are not dynamic in nature and once turned off they cannot readily respond to changing conditions. Further, attempting to do so involves significant costs, and wear and tear of parts that is unlikely to be recouped during benign market conditions. In other words, large-scale coal plant is unlikely to come on 'just in case' without a big incentive.

A more telling example is the situation of early June 2013 where Alinta Energy decided to restart Northern Power Station 1. Leading up to the period 1-3 June a number of outages were already underway and on 31 May four major units tripped in South Australia. It takes a number of days to restart Northern Power Station 1 and restarts can be complicated by failures, as such Alinta Energy has a restart window between 30 May and 1 June and arrived on 31 May. Had there been a trip during restart Alinta Energy would have missed the period in question and Alinta Energy is convinced this would have led to a supply shortage event. As is now known, during the 31 May to 4 June period there were 22 price events in excess of $10,000 in South Australia, including 13 events in excess of

$10,000 on Monday 3 June. The chart below shows price outcomes experienced with Alinta Energy's Northern Power Station 1 in service.




The second chart, below, models price outcomes as they would have been in the absence of Northern Power Station 1 using available bid and demand data. Alinta Energy believes outcomes without Northern Power Station 1 would have been of concern to consumers and government.



This event and similar events are likely to become more pronounced as base load generation turns down operations, retires and is not replaced. Over the longer term a transition may be expected to some degree to ensure the optimal mix of generation portfolio, noting the view of some that the existing generation mix has excessive amounts of base load generation. But such a transition implies additional gas-fired generation, which requires an incentive to build gas plant, and gas may not arrive for a number of reasons.

Instead, it may be necessary to ensure the reliability settings rewards thermal generation to a greater extent so as that capacity remains in the market or is capable of being brought into service at short notice by recognising stand-by arrangements. As such, the most desirable outcome is to ensure plants run where demand is present or when demand arises. Some participants are starting to lean to the view that capacity payments or some major revision to the NEM needs to occur in order to contend with the changing nature of the energy market.

Alinta Energy does not presently subscribe to this view. Alinta Energy believes there is little economic benefit to consumers of disincentivising the running of sunk assets which can meet demand at lowest cost in favour of unpredictable pricing events and probable system security issues. This means ensuring the value of capacity is recognised. That does not require a change to the NEM but a change to the reliability settings so that payment for capacity is better recovered through the spot market and in turn the contract market. This will ensure contracted generators are more likely to run in order to meet demand under a wider range of circumstances.

The current propensity for some large consumers to “ride the spot” with little real demand side response capability and then claim the market has failed when prices rises momentarily or for longer periods suggests that the value of capacity and the need for that capacity to run for longer periods of time is often not recognised. Given the structure of the market, an increase to the MPC is required to ensure existing and new generation is incentivised to meet the supply and demand balance and to incentivise demand side response, including fair reward for demand response by retailers, contracted generators and active demand response participants.

**Market Floor Price (MFP)**

From time to time there has been some commentary on the appropriateness of maintaining the MFP at the existing level of -$1000/MWh. Some suggestions are to have a symmetrical alignment between the MPC and the MFP and others suggest a change in level whilst maintaining asymmetry. To determine whether any change is warranted the purpose of the MFP needs to be clarified including how it assists the market and meeting the supply and demand balance in the interests of consumers.

In Alinta Energy’s view the MFP is unrelated to the MPC and therefore arguments of symmetry are largely irrelevant. The purpose of the MFP is to provide a turn-off signal for physical generation and act as a contracting incentive for generation, especially base load, as it encourages some exposure to negative prices to be managed through contract sales which may not otherwise be the case if the market could never settle below a generator’s short-run marginal cost.

During the period when the market commenced the NEM was dominated by coal-fired generation, hydro generation and gas-fired generation and the prevailing thought was that providing a signal to turn off gas while enabling coal-fired generators and hydro generators to pay to stay on for technical reasons was required.

Under this scenario, at times of low demand a generator that could not technically ramp down rapidly would bid its minimum technically allowable load at -$1000 to ensure it could run. This is a technical feature of such plant that cannot turn off quickly regardless of demand changes. Thus the risk of being turned off and the cost to the plant of a trip is worth paying to stay on in limited circumstances.

The corollary of this approach is that there is limited technical or financial advantage to be gained by a gas generator in staying on once the price falls below its short-run marginal cost. Effectively, a gas

fired generator would have little spot price incentive to stay on as prices decline. For gas, $0/MWh is likely to provide the same turn-off signal; however, having the MFP at -$1000/MWh provides the threat of loss of revenue that then ensures those units will turn off more rapidly.

Unfortunately, the -$1000/MWh has effects other than providing a turn-off signal and allowing generation to stay on when it is technically not feasible to turn off. These secondary effects are strategic bidding in the face of constraints, engaged in by all generators, and ensuring subsidised "zero" fuel cost generation can be dispatched by bidding negatively in the expectation that thermal generators with a higher short-run marginal cost must continue to generate.

Strategic bidding in the face of constraints leads to a host of issues that in many respects are beyond the scope of this Review. Nevertheless, while these matters may be resolved pursuant to the out workings of the Transmission Frameworks Review, the effects of strategic bidding would likely be muted if the floor price was raised, for instance to -$100.

The impact would be: to reduce the amount of negative settlement residues that accrue across the inter-connector at times of intra-regional transmission, something currently being reviewed by the Australian Energy Market Commission; and, to reduce the costs of congestion on generators or retailers physically caught or contracted on the "wrong side" of a constraint. This is not to suggest that a congestion management regime, like the Optional Firm Access model, wouldn't remain desirable, but a lower MFP would be a measured proposal which could be implemented rapidly.

The latter issue, bidding at negative prices for non-technical reasons, is prevalent where a generator has long term contracts or other revenue sources that make it less sensitive to pool prices. This is effectively the case for wind generation subsidised via the Renewable Energy Target.

For instance, what is practically occurring in South Australia, where Alinta Energy operates and notable wind exists, is that non-renewable energy generators who do not benefit from Renewable Energy Target subsidies and must continue to generate at high levels of minimum generation (as is the case for thermal generation) do not recover their costs as excess wind generation suppresses price outcomes overall.

Wind generators, through the Renewable Energy Target, are generating pool revenue and are given preference in the pool as their short-run costs are effectively zero. This, in addition to being provided with Renewable Energy Certificates and power purchase agreements with retailers who need to meet renewable obligations, is the reason wind farms often bid negatively in the pool. Wind generators continue to generate and earn revenue through Renewable Energy Certificates regardless of the spot price and even though the spot price is lower overall the wind generators are dispatched at prices that are still profitable for wind generators as it is expected that thermal generation will set a higher price, based on higher fuel costs, at which the market will settle.

For consumers, wholesale electricity costs remain relatively unchanged but there is a transfer of wealth to renewable energy generators from consumers and non-renewable generators. In the case of South Australia this means wind farms benefit from an implicit subsidy at the expense of non-renewable generators. Further, these spot prices and contract prices become insufficient to recover the total costs associated with the non-subsidised fleet of generation. This raises a number of concerns which include the ability to guarantee a supply and demand balance in a market which is being impacted by an external policy distortion.

While some participants have been tempted to suggest a revision of the NEM rules and others suggest capacity payments, a more practical within design and scope solution is to recognise the perverse effects of the existing MFP, recognise it is not fit-for-purpose, and determine that it be raised to a level which still provides a technical clearing price but doesn't introduce supply instability.

Alinta Energy does not have a definitive price to be used as an alternative, after all there is little science around the -$1000 price as it relates to peculiarities of the Victorian arrangements at the time,

but suggests as it needs to be in excess of the price of a Renewable Energy Certificate, and thus a round number like -$100 is probably about right. The next possible alternative would be -$300 to bracket the the Administered Price Cap, although this would be driven primarily by neatness and not a clear economic determinant.

**Value of customer reliability (VCR)**

The Panel has previously used the VCR as a comparison for determining the MPC as it informs a consumer's willingness to pay[9]. For instance, the existing MPC of $12 900/MWh (indexed to the consumer price index) is generally consistent with the previously determined VCR for the residential sector of $13 250/MWh.

However, this ignores the overall value of the VCR by excluding industrial, commercial and agricultural sectors across all states. Alinta Energy notes the Australian Energy Market Operator assessment of VCR provides the following breakdown by region, providing an average of $47.68 per KWh unweighted.

| **VCR by Region** | | | | | |
|---|---|---|---|---|---|
| VCR | NSW | QLD | SA | TAS | VIC |
| 2010 KWh | 41.53 | 44.31 | 44.3 | 50.97 | 57.29 |

This implies a national VCR of approximately $47,680 MWh, and whilst clearly only a simple average, this is indicative of the current inconsistency between the VCR and the MPC. Whilst the VCR is not used uniformly nationally it is indicative of the issue with investment in transmission being valued above investment in generation and demand side alternatives.

*Generation and transmission*

Presently, there exists an inconsistency between how generation and transmission is valued. Having two divergent values, which at first glance appear to favour transmission networks, is an inefficient outcome, and undervalues investment in generation.

Transmission investment is paid for by consumers and there is little opportunity for consumers to respond to transmission price signals once built. In direct contrast, new generation investment is generally funded by private enterprises that only recover their investment when the service is being used. For this reason, it is uneconomic to mandate transmission solutions, over generation solutions and demand response.

Furthermore, generation solutions provided at the local level, are likely to be far more economic and market responsive than high voltage transmission network upgrades. These generation solutions also have the added benefit of being able to be built in smaller increments in order to satisfy market needs. This is particularly relevant as smaller generation solutions provide additional flexibility in an evolving market.

This suggest a closer alignment of the VCR, as a proxy for transmission more generally, and MPC is needed to provide assurance that sufficient incentives exist for generation to be built to satisfy reliability standards and customer expectations of reliability at least cost.

**Relevance for gas markets**

As is the case with the network reliability, the market settings for gas markets should be examined in conjunction with other energy market settings. While it is difficult to address these issues jointly, Alinta Energy's notes that participants are dealing in integrated markets on a daily basis.

[9] Reliability Standard and Reliability Settings Review, Reliability Panel (2010), Australian Energy Market Operator, pg xi.

There remains an open question as to the appropriateness of the current diverging price caps across the NEM, the Declared Wholesale Gas Market and the Short-Term Trading Market hubs, while noting that each price cap operates within a differing time frame, all of day versus 5-minute prices.

This issue was previously raised by Alinta Energy and a way forward is yet to be determined.

**System security**

While in some respects tangential, Alinta Energy would like to take this opportunity to note that the availability of generation also impacts the ability of those generators to provide system restart ancillary services. This issue falls within the remit of the Panel.

The provision of system restart ancillary services is built upon a range of economic, technical considerations as well as community expectations which need to be considered by the Panel. Recent work undertaken by the Australian Energy Market Operator is likely to be inconsistent with previous positions outlined by the Panel and community expectations.

Further, market developments are likely to suggest greater need for plant to be available to manage system security risks and demand and supply balance as opposed to a view held by some that system security events are less relevant today and going forward than has been the case in the past.

**Conclusion**

Alinta Energy welcomes the Review and looks forward to the Panel's considered analysis of the matters raised within this submission.

It appears that the current reliability settings are not appropriately set and Alinta Energy looks forward to continuing engagement with the Panel as it works to resolve these matters.

Should you have any queries in relation to this submission please do not hesitate to contact me on, telephone, 02 9372 2633.

Yours sincerely

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