Major Energy Users Inc.

21 June 2013

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

Lodged online @ www.aemc.gov.au

Dear Mr Henderson

**MEU Comments on Issues Paper: Reliability standard and settings review**

AEMC reference: REL0051

The MEU welcomes the opportunity to provide its views on the Reliability Panel (RP) Issues Paper regarding the reliability standards and settings. As the RP is aware, the MEU (and its affiliates) has been a consistent contributor to the assessment of the market reliability standard and settings by the RP.

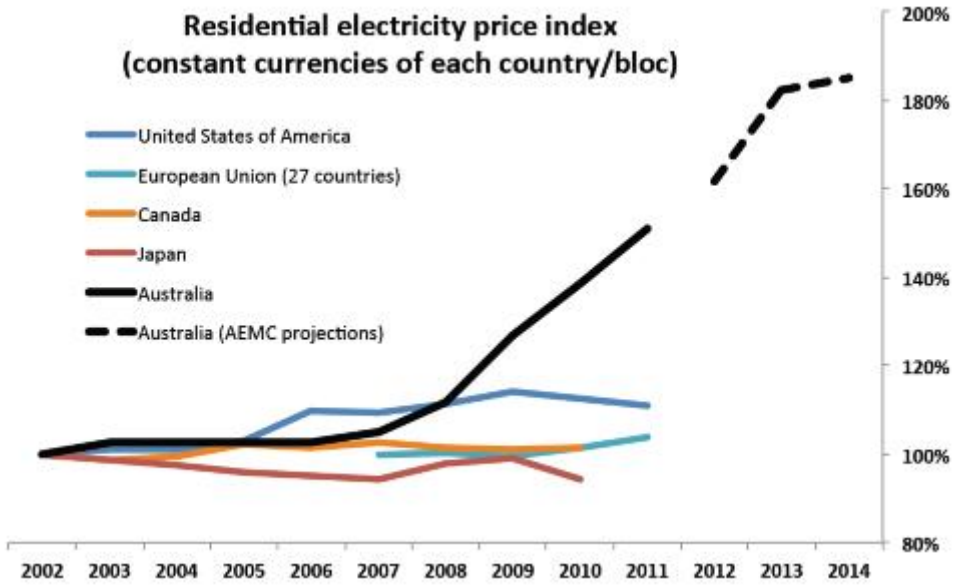
In particular, the MEU was a major consumer contributor during the Comprehensive Reliability Review (CRR) conducted in 2010.

The MEU represents a number of the larger consumers of electricity, and amongst the MEU members are a number of large electricity users who operate in the spot market, reducing demand when the spot price is high as their primary approach to managing the risk of high electricity prices. There are other members who operate through retailers, taking advantage of the retailers' ability to manage the price variances observed in the spot market. The experiences of members were used in the development of responses to the Comprehensive Reliability Review and have again been used has been utilised in the development of this response to the Issues Paper.

The views of the MEU have not changed since that review and it requests that the RP incorporate the MEU views provided during that review process into the current review.

As a general observation, the MEU points out that the costs for electricity delivered to consumers has seen massive rises in recent years, with more forecast to come, such that the cost of electricity in the NEM exceeds the costs of electricity in similar developed economies, despite Australia being blessed with low cost sources of energy to generate electricity.

The following chart highlights this massive increase compared to other countries:




**Source: Carbon Market Economics**

The MEU considers the RP has to take into consideration the massive change seen in electricity prices over recent years as part of its assessment of the reliability standard and market settings.

## 1. Reasons for change

The MEU notes that there has been only a relatively short time since the completion of the Comprehensive Reliability Review and there has been little change in the market since that time which warrants a need to revise the reliability standard or settings from those developed since that review.

The MEU also notes that actual performance in the market shows the reliability of the market has been well maintained below the Reliability Standard for over a decade. This is clearly depicted in Table 2.1 on the Issues Paper which shows the Reliability Standard has been regularly below the target over the long term. At the same time, under the current settings (and indeed under the earlier settings) there has been no lack of investment in generation except for base load dispatchable generation. In contrast there has been considerable peaking

generation and renewable energy generation added to the NEM generation fleet over the time the reliability Standard has been outperformed.

On this basis alone, the MEU considers that the current standard and settings should remain unchanged and, if change was warranted, the evidence shows that probably the settings are too extreme and could be eased.

The MEU also points out that causes of the shortages of supply to consumers lie predominantly within the distribution networks and reliability of delivery in distribution networks is significantly less (by a factor of 100 times or more) than in the bulk supply arrangements impacted by the Reliability Standard. This means that any attempt to further improve the Reliability Standard will result in additional costs but will have minimal impact on the overall reliability of supply as seen by the vast majority of electricity consumers. The Reliability Panel needs to recognise that as the Reliability Standard and Settings are already at the point where further improvement will come at a great cost but where any improvement will have little (if any) impact at the points of supply to consumers, increasing costs for no discernable benefit.

## 2. Reliability Standard and level

There have been other reliability standards proposed for the NEM yet the approach and its setting have been in operation for the entire life of the NEM and has served consumers well.

The MEU does not consider there needs to be a change to the form of the standard nor to the value currently assigned. The MEU recognises that there might be times when the standard is exceeded for a short period of time in one NEM region, but the actual level of reliability achieved, intended to be the same for all consumers and averaged over time, has been consistently below the target set.

The Standard can be averaged in two ways – across the NEM in any one period of time, or in each NEM region over longer periods of time. Either way some averaging is required to ensure that inefficient outcomes do not arise from averaging over too small a control. In the CRR process, the RP questioned whether the value for unserved energy (USE) should be averaged over a longer period than 1 year. The MEU agreed that such a longer averaging period was appropriate. The decade long results of actual USE support a view that a target setting of 0.002% in any one region averaged over a 1 year period, results in much lower levels of USE when averaged across the NEM for a 10 year averaging period.

In relation to the level of USE, the MEU commented in its response to the CRR draft report[1]:

> "… based on trends, and its own analysis, the MEU [considers] there is no support for the level of USE to be reduced from the current level of 0.002%, as the costs to do so are likely to be very large, and the benefits at the consumer end of the supply chain will be extremely modest at best.
>
> ... intuitively the MEU considers that an increase in USE would have a marginal impact on reliability seen at the consumer end of the supply chain, and that the financial benefits could be significant as measured in terms of reductions in cost and risk.
>
> Therefore the MEU considers that the Reliability Standard should be no less than 0.002% and could well be higher."

The MEU sees no reason to change from this view.

In response to the questions raised by the RP, the MEU therefore considers, based on the evidence, that:

- The current approach to setting reliability based on unserved energy is seen as appropriate
- The current level of USE set for the market is considered to be appropriate.

## 3. Market Price Cap (MPC)

As discussed at length during the CRR, it was recognised that the higher the MPC, the higher the costs to consumers for the supply of electricity. Some others noted that a high MPC also introduced perverse outcomes such as increased volatility in a market (which is already seen as the most volatile in the world) and that increased volatility causes increased risk management costs which costs are then passed onto consumers.

It was recognised that there is a point where increasing the MPC will not result in increased generation investment and that the evidence from the market needs to be assessed to identify if this point has been reached – that further increases in MPC will not result in increased generation investment. The fact

[1] Available at: http://www.aemc.gov.au/Media/docs/Major%20Energy%20Users-26fbbb4c-1d63-414c-8ba8-d227a74ce4e4-0.pdf

that the market evidence (as, for example, that in table 2.1[2]) shows that USE has been consistently well below the Reliability Standard for a decade (and longer) indicates that there is no justification in increasing the MPC.

As the table 2.1 in the Issues Paper shows, across the NEM for a decade (and probably longer) the demand for energy in every region of every year has overwhelmingly been met with the 10 year averages well below the reliability target setting.

This indicates that the MPC has probably been set too high to achieve the reliability standard and more than sufficient generation has been provided to meet the needs of the NEM.

In its response to the CRR draft report the MEU commented:

- "There is a value for MPC where it will not incentivise more investment in generation and risks will be too great for retailers and generators, reducing competition
- The current market settings appear to be delivering the necessary investment in generation
- Increasing the MPC will have detrimental impacts on the market as a whole such as increasing volatility and generators reducing the amount of generation contracted
- The risks of operating in the market, whether as a retailer and a generator, will increase as the MPC increases
- The contract market and/or demand drives investment in generation, not MPC, as new investment in a generator needs to have a "bankable" revenue stream.
- A contract with a "bankable" counterparty provides this certainty but relying on revenue from the spot market alone is insufficient for being "bankable"
- There are many other aspects that need to be addressed such as transmission congestion and prudential impacts"

The MEU is still of these views and the performance of the market over the period since the CRR has not shown that any of these observations are less valid than they were in 2010.

In response to the questions raised by the RP, the MEU therefore considers, based on the evidence, that:

[2] This highlights there has been no time in any region where the Standard has been exceeded when averaged over 10 years, and only once in two regions where it exceeded the target has been exceeded and even then only by a factor of 2.

- The MPC is currently probably too high and could be reduced to provide an outcome that better reflects the outcomes of the Reliability Standard
- The market evidence supports that the previous setting for MPC of $10,000/MWh was sufficient to ensure the Reliability Standard would be achieved
- As costs do increase with time, the MPC should be indexed but only if the MPC is to be set for a long period. If there are to be regular reviews of the value for MPC (say on a three year cycle), there is little benefit in indexing the value, as there is no degree of exactness of the setting of the value in the first place
- There are many different methods and indices that can be used for indexing but the most commonly used in the NEM is CPI. The MEU considers that CPI is just as appropriate to use for this purpose as any other index.

## 4. Cumulative Price Threshold (CPT)

CPT is a risk management tool and was initially introduced to the market in order to offset the increased risk to market participants when the MPC was increased to $10,000/MWh. There was no detailed analysis used to derive the value of CPT and there was no theoretical basis behind its setting. Subsequent Reliability Panels have merely retained the assumed coupling to the MPC with subsequent adjustments of the MPC.

If the CPT is breached, then it is assumed that there has been market failure and the Market Operator is required to take action to address the cause of the market failure. In the interim, the market is required to operate at no more than the Administered Price Cap (APC) currently set at $300/MWh, which is designed to reflect the maximum cost any generator in the NEM would incur if operating.

The current arrangement is that the CPT is coupled to the MPC by a factor of 15. The implication is that if the market operates for 15 consecutive hours at MPC, then the market has failed. There is no justification for such a relationship of 15 hours of failure.

The CPT could just as readily be coupled to the APC which is a more realistic basis on which to establish a risk mitigation process.

The MEU is of the view that the current setting of the CPT is probably too high and imposes costs on consumers that are not warranted.

The MEU considers that the RP should identify a more theoretically sensible basis for the setting of the CPT which should be based on an assessment of the

risks faced by market participants rather than be slavishly related to the MPC by some arbitrary multiple.

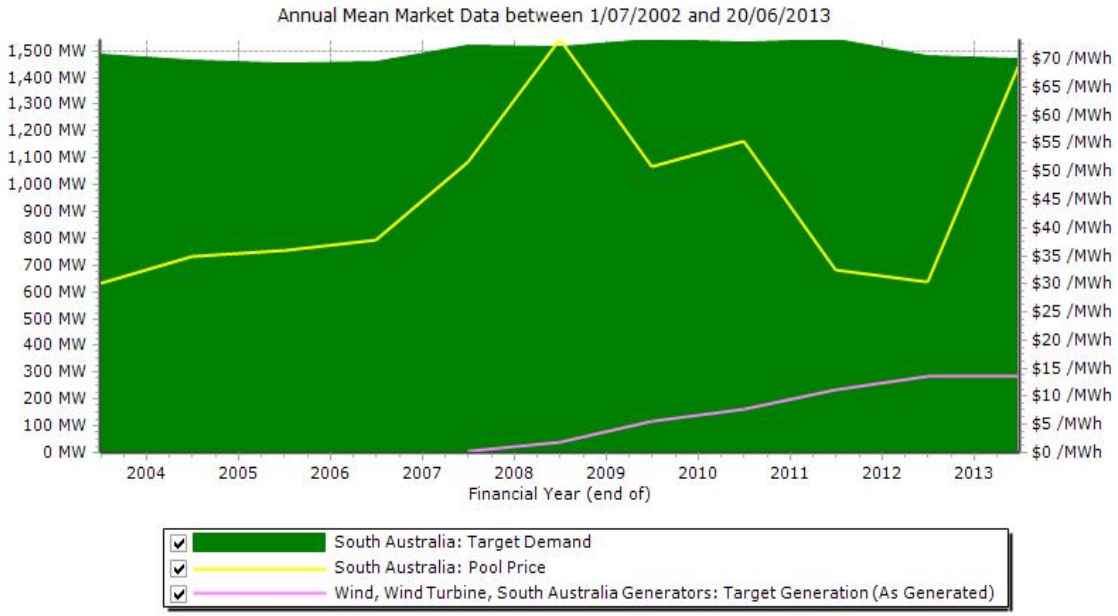
In response to the questions raised by the RP, the MEU therefore considers, based on the evidence, that:

- The CPT does not impact the setting of the reliability standard in any way; it is merely a risk mitigation process and does not impact the level of unserved energy in the market
- The value of CPT is probably too high and needs to have a theoretical basis for development of its setting rather than the current arbitrary multiple used against the MPC.
- As costs do increase with time, the CPT should be indexed but only if the CPT is to be set for a long period. If there are to be regular reviews of the value for CPT(say on a three year cycle), there is little benefit in indexing the value, as there is no degree of exactness of the setting of the value in the first place
- A more theoretical basis is required to establish the setting for CPT as, being a risk mitigation process only, it has little or no relation to the MPC.

## 5. Market Floor Price

The Issues Paper comments that perhaps the floor price should be increased because of a concern that there has been an increase in the numbers of negative pricing periods in the NEM and the numbers of negative price periods might increase in the future with increasing amounts of intermittent generation.

The MEU notes that the greatest proportion of wind generation is in the SA region yet, despite this, the SA region has recently seen increased spot market prices rather than a fall as implied by the comments in the Issues Paper. This can be readily seen in the following chart.




**Source: NEM Review**

The chart shows a falling spot price which, what the Issues Paper identifies might be a result of what was seen in the early years of the increasing amounts of wind generation, has recently reversed. However the chart also highlights a number of other factors:

- The surmise that the increasing amount of wind generation was depressing the spot price is not supported by the facts. The apparently low spot price seen in financial year ending June 2011 (FY11) and FY12 reflects prices seen earlier in the decade when regional demand was at similar levels. The fall in price could well be interpreted as being reflective of a return to more traditional pricing levels after the exercise of generator market power seen over the years of 2007-2010, together with being commensurate with the fall in demand also being seen.
- The chart also shows that despite a fall in demand and flattening levels of wind generation, the spot price has risen dramatically in FY13 implying that the generator pricing has adjusted to large amounts of wind generation in the market. As a result, they have since driven the spot price up to levels last seen when there was exercise of generator market power.
- Closure of some generation output coupled with reduced amounts of generation from others has resulted in higher bid prices from those remaining dispatchable generators still in the market, reflecting the lesser amount of dispatch they are required to provide.

Thus, the surmise of the RP in the Issues Paper that spot prices will fall with increasing intermittent generation has been addressed by the market itself and

spot prices have increased rather than decrease as forecast by the Issues Paper.

Should there be further increases in wind generation, the MEU considers that wind farms will have to cease the practice of offering negative prices and offer prices more reflective of their costs of production rather than them relying on dispatchable generators setting the market price

Of concern to the MEU is that the RP appears to assessing the issue of the market floor price in terms that generators might be harmed, rather than noting that the renewable energy policies have resulted in an unexpected outcome where dispatchable generators are having to recover their fixed costs over a lesser amount of dispatch volume, with the result that some are having to close output and others to bid higher prices to remain viable.

The decision to set a negative value for the floor price was made on very sound practical reasons and there is no reason for the RP to change the setting that has worked effectively for many years, especially when the market is demonstrating that its is addressing the problems encountered.

The MEU considers that the RP should be looking more closely at the risks that the market is facing because the higher amounts of intermittent generation has resulted in the reduction in availability of dispatchable generation capacity, such as permanent retirement of Playford PS, the closure of Northern PS for 6 months each year and the halving of output from Pelican Point PS. The loss of this dispatchable generation increases the risk of loss of supply should the wind cease blowing. The frequency of SA region experiencing low reserve levels because of this loss of wind generation will not be addressed by increasing the market floor price. The problem is much wider and needs much closer attention to the fundamentals of the market and the policies being imposed on it.

In response to the questions raised by the RP, the MEU therefore considers, based on the evidence, that:

- There is no reason to change the current floor price and, based on the evidence, such interference in the market is not warranted
- The current floor price was set to reflect specific costs that a generator might face when assessing its costs of production and these costs are still applicable
- Whilst costs do increase, there is little reason to adjust the floor price using indexation as this would result in depressing the floor price lower than it already is.

## 6. Customer value for reliability

The purpose for setting a value on customer reliability (VCR) is that there has been identified a need for a surrogate for this input when assessing network investments under the regulatory regime for pricing monopoly services. The generation supply market is competitive and therefore there is no need to provide a value for customer reliability on generation supply as the market determines this through the amounts of unserved energy identified.

In this regard, it is important to note that originally the spot market was capped by what was originally referred to as the Value of Lost Load (VoLL) but this terminology was seen as inappropriate for a competitive market and the new term of Market Price Cap was implemented. The reason for the change was that the setting of the highest price that could be offered by a generator was to limit market risk rather than reflect the value customers place on the supply of energy, especially as the reliability of supply is but one element of the supply chain. As the market price is set ex post (ie costs are not known until after the electricity has been used) it is important that market participants have a limit to their exposure and imposing a cap on offers from generators is one approach to limiting the risk they face.

There is a correlation between MPC and the reliability standard (ie USE of 0.002%) because if the MPC is set too low, then the level of reliability of supply will be reduced, but once the value of MPC reaches a certain point, further increases in MPC will increase risk and cost but not increase reliability. Therefore the MPC is set in relation to the minimum value to achieve the reliability standard of supply.

There is no direct correlation between the VCR which is used for assessing whether network investment is efficient and the MPC which is set at the point where no increase will result in increased reliability of supply.

Attempts to identify what is the “correct” setting for VCR have shown that the value varies considerably with the type of customer, the time the loss of supply might occur, what the customer is and a number of other factors. The resultant output shows massive variances in VCR as the following two tables developed by AEMO for is Issues Paper on VCR (June 2011) show.

*Table 2 VCR values for Victorian electricity ($/kWh)*

| Sector | Monash 1997 | CRA 2002 | CRA 2007 | AEMO 2009 |
|---|---|---|---|---|
| **Residential** | 0.74 | 11.87 | 13.12 | 16.33 |
| **Agricultural** | 75.93 | 56.70 | 90.65 | 114.68 |
| **Commercial** | 95.75 | 55.75 | 131.00 | 134.15 |
| **Industrial** | 11.19 | 18.54 | 36.32 | 45.94 |
| **Total (weighted)** | 28.89 | 29.60 | 47.85 | 60.18 |

*Table 3 Comparative estimates of the VCR (2009 AUD/kWh)*

| Region | Sectors | Source | Original Value | Year | AUD/kWh |
|---|---|---|---|---|---|
| **Sweden** | Residential | Carlsson and Martinsson (2008) | kr 61.16 | 2004 | 13.00 |
| **Chile** | Industrial | Serra and Fierro (1997) | $US 0.22 | 1989 | 0.49 |
| **Indian States** | Industrial | TERI (2001) | Rs 24.71 | 2001 | 1.35 |
| **Thailand** | All | ERI (2001) | 60 Baht | 2000 | 3.22 |
| **France** | All | Gouni and Torrion (1988) | $US 3.60 | 1988 | 7.96 |
| **NE USA** | All | ICF Consulting (2004) | $US 4.11 | 1977 | 15.84 |
| **New Zealand** | All | Electricity Authority | $NZ 20.00 | 2008 | 17.22 |
| **Netherlands** | All | de Nooji et al. (2007) | € 8.56 | 2001 | 17.98 |
| **Great Britain** | All | Redpoint Energy and Energy Strategies (2007) | £ 10.00 | 2006 | 26.09 |
| **Ontario** | All | Bhavaraju (2004) | $US 10.00 | 1980 | 33.00 |
| **NW USA** | All | Bhavaraju (2004) | $US 16.93 | 1990 | 36.57 |
| **Ontario** | All | Wacker and Billington (1989) | $US 17.00 | 1989 | 37.58 |
| **USA** | All | Sullivan (2009) | $US 33.01[9] | 2008 | 37.63 |
| **Ireland** | All | Tol (2007) | € 40.00 | 2005 | 76.39 |

So far, no one has provided any reason why there is so much variance in the setting for VCR, whether the variance is over time or customer type (as in table 2) or variance between different markets (as in able 3).

The MEU is concerned that the use of VCR (whatever value is used) as a determinant in the development of the market settings for reliability of supply has the potential to result is a very large range of potentially credible settings. In contrast, using a different approach (based on USE and MPC) has delivered a stable outcome that has been empirically demonstrated to be workable and achieve the results intended.

To use the VCR settings identified by AEMO (and subsequently by the AEMC in its assessment of reliability and investment in NSW) would lead to an increase

in the MPC that is not necessary and would result in large increases in risks to market participants together with large increases in costs to consumers.

In response to the questions raised by the RP, the MEU therefore considers, based on the evidence, that:

- The current framework for setting the Reliability Standard for supply and the resultant setting so MPC has adequately provided a sound basis for ensuring the market delivers the necessary reliability in supply.
- The losses of supply over the past decade (see table 2.1) show that the reliability of supply has the highest reliability of the three elements of the market – supply (generation), transmission and distribution, with the distribution element being by far the lowest in reliability
- Changing the MPC to reflect the VCR calculated for network assessments would increase risk and costs unnecessarily and achieve no better outcome than is currently experienced.

Should the RP require more clarification on the points made or want to discuss the points made in more detail, please contact the undersigned at davidheadberry@bigpond.com or call on (03) 5962 3225

Yours sincerely

David Headberry
Public Officer