Major Energy Users Inc.

Australian Energy Market Commission

Comments on the

AEMC Directions Paper

National Electricity Amendment (Potential Generator Market Power in the NEM) Rule 2011

by

The Major Energy Users Inc

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CONTENTS Page

Executive Summary

The Major Energy Users Inc (MEU) rule change proposal reflected concerns that dominant generators in the NEM have the ability and the incentive to exercise market power. These generators have undertaken these activities in Victoria, New South Wales, Tasmania and in South Australia. More recently, the dominant generator in South Australia has frequently and regularly exercised market power during the summer months in the last four years – these activities have occurred at high demand levels (even though there was more than sufficient generation capacity to meet demand) as the dominant generator is able to set prices because there is no countervailing competitive pressure from other generators.

This ability to exercise unilateral market power has seen retail prices – regulated and unregulated – in South Australia rise substantially after each bout of price spiking. In particular, consumers with retail price contracts – which apply for up to three years or more – have been adversely affected and continue to be so for a number of years beyond the time of the price spikes.

In South Australia, the acquisition of Torrens Island power Station by AGL in 2008 resulted in a vertically integrated business with dominance in both generation and retail. This means an enhanced ability to shift rents across the business, such as from generation to retail.

The AEMC's approach (the definition of substantial market power) does not capture, let alone recognize the ability of a dominant vertically integrated business to exercise strategic behaviour, such as rent shifting downstream, or to recognize the long term impact on retail contracts subsequent to any exercise of market power. The MEU considers that any definition of Market Power used by the AEMC must include a clause relating to the ability of dominant generators to readily, and on a consistent basis, cause high prices at both generator AND retail points in a NEM region.

The MEU and the AEMC's peer reviewers offer reasons why the AEMC's approach oversimplifies rather than addresses the issues of the exercise of market power.

The MEU submission follows the structure of the AEMC's Directions Paper.

1. Introductory comments

In the early part of the NEM operations, especially in the summer of 2000/01 in Victoria and in New South Wales in 2002-05, there were exercises of generator market power to increase the spot price and (hopefully in the case of some generators) hedge contract prices to retailers who would pass this price increase on to consumers. However, this exercise of market power was short lived in Victoria (because of increased competition) and progressively reduced in NSW (as the Electricity Tariff Equalization Fund slowly wound down).

It is generally accepted that the more capacity a generator contracts, the less incentive it has to exercise its market power. Equally, the less well contracted a generator is, the more likely it is to exercise its market power when it can and the conditions for it are propitious. A generator will only exercise its market power if, by doing so, it will increase its profitability – it is not concerned with the impact on efficiency of the wholesale market, nor is it concerned with the costs incurred by consumers purchasing from the wholesale/retail markets.

It is also generally recognized that the South Australian (SA) regional market in the NEM, often provides an early indicator of the emerging problems in the NEM and the issue of generator market power is no exception.

In 2008, after the acquisition of Torrens Island Power Station (TIPS) by AGL, AGL inherited a power station that had low levels of contracting[1]. With that acquisition, AGL in SA became a vertically integrated energy supplier business, with dominance in both generation and retail (see MEU rule change proposal). As TIPS is the largest generator in the SA region, AGL was able to use TIPS to drive the spot price to very high levels during the summer months of 2008, 2009 and 2010. With these high spot prices, AGL was able to substantially increase its retail prices to SA electricity consumers and this occurred in the years subsequent to the 2008 price spikes. Effectively, what AGL achieved was recovery of some of its costs of acquisition of TIPS in 2008 and 2009 from the spot market, but set the scene for gaining significant additional benefits through its retail dominance because the retail contract and futures markets prices in 2009, 2010 and onwards increased dramatically.

This would not have occurred but for **strategic behaviour** on the part of a vertically-integrated dominant generator and dominant retailer able to exercise unilateral market power[2],[3]. This is commercial reality!

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[1] This observation was made by the AER to MEU in early 2008, when the issue of market power was raised by the MEU with the AER.

[2] Professor Wolak points out that the ability of a generator to influence price is particularly high in cases in which the supplier is pivotal, i.e. when some of its supply is necessary to serve demand regardless of the offer price. (See Frank A Wolak, An Assessment of the Performance of the New Zealand Wholesale Electricity Market. 19 May 2009.)

1.1 What is the problem?

The AEMC Directions Paper posits that whilst there probably has been the exercise of market power by generators in the NEM, its concern is that this exercise of market power may have had little impact on the market and therefore, any reaction to address this exercise may not be warranted. Essentially, the AEMC is seeking to identify if there has been sufficient harm done in the NEM to warrant addressing the problem. If there is a problem of significance (and this degree of significance has not been quantified), then ways of mitigating its impact will be examined.

To overcome this concern, the AEMC has sought assistance from a consultant, NERA, to identify some parameters around which the issue of market power can be assessed as being sufficiently a concern, to warrant further action, perhaps along the lines proposed by the MEU. This has led to the development of the AEMC definitions of 'substantial market power' and 'the exercise of substantial market power'.

What the AEMC has failed to do in its precursor activities is to identify why there might be a problem in the first place. Unilateral market power arises at times when there is no competition. If there is competition, then no one party can exercise market power (or at worse, the ability to exercise some market power is not sustainable). Competition will always be present if there is the ability to supply more than there is demand, if the capacities of all the suppliers are of the same size and there are a large number of suppliers for the product. As the structure of the market moves away from this condition the greater the ability to exercise market power by one or more parties. This move could be because there are too few suppliers, not enough capacity or, as is the case in certain NEM regions, where one or more of the suppliers is so big that it has to be dispatched at some levels in order for the market to be fully supplied (see footnotes 2 and 3). The MEU refers to this as the 'dominant generation'.

In its report to the CoAG, the Energy Reform Implementation Group (ERIG) identified that the electricity market was susceptible to the exercise of generator market power due to the issue of the structure of the NEM. The MEU reiterates the following excerpt from the ERIG report to COAG (which was included in the MEU proposal document) as ERIG recognised that transient market power can cause significant economic damage:

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[3] It is worth noting Nils-Henrik M. von der Fehr's statement, in his peer review of Professor Wolak's Report, that, "However, while a pivotal supplier will be able to drive the price to the absolute maximum, he may not have an incentive to do so, depending on the extent of forward contracting. In the case when net residual demand is positive for all prices, there is effectively no bound on the market power of the supplier". Peer Review of Professor Wolak Report, May 18, 2009, page 3.

> "Market power may be a sustained phenomenon, which points to market structure problems manifested in barriers to market entry. Alternatively, it may be a transient problem, occurring only when demand is at or above certain levels. **However, even transient market power can impose significant economic harm even though it occurs for a short period of time** (Willet 2005, Wolak 2006).
>
> **Both sustained and transient market power can be problems.** The former points to removal of entry barriers as the solution. The latter may point to similar solutions, if it results in significant deviations from average efficient prices, even if it lasts for only a short proportion of time. The smaller the economic impact of transient market power the less it is a problem. **Dealing with short-period market power may point more to examining rules governing participant behaviour than to market entry problems.**" (emphases added)

The MEU added a comment that:

> "ERIG certainly considers that the exercise of generator market power can cause considerable harm, that it needs to be addressed, and that a rule change is the most appropriate way to address it."

There is no doubt that there is a structural problem in the NEM, in that in certain regions, at least one specific generator (the dominant generator) is of such a size that it has to be dispatched, regardless of the price it offers, to ensure there is sufficient supply.

These generators are the result of the disaggregation process that occurred in the development of the NEM, whereby the large base load generators (eg Hydro Tasmania, Macquarie Generation, Delta Electricity and Torrens Island Power Station) all have to be dispatched regardless of price at regional demands that are frequently exceeded. In contrast, regions where the structure is closer to a competitive condition (such as occurs now in Victoria) there is little exercise of generator market power. The fact that exercise of generator market power does not occur to any extent in Victoria, yet there have been significant additions to the fleet of dispatchable generation in the region, indicates that the ability to exercise market power is not an essential element of the rules, as has been alleged.

As ERIG indicated, where transient exercises of market power occur, they can "…impose significant economic harm even though it occurs for short periods of time" and that "…examining the rules governing participant behaviour…" may be a better solution than addressing market entry problems.

The MEU approach is in close accord with the ERIG approach to addressing the issue of generator market power through a rule change.

However, the problem addressed by the AEMC is its Directions Paper looks only at the price outcomes from a generator exercising its market power, and by doing so, is over simplifying the issues raised by the MEU rule change. The problem is in fact much wider than that assessed by the AEMC. As the MEU noted in its rule change proposal, the impact of the exercise of generator market power is much wider and longer term than the pricing impacts in the year where the exercise occurred.

The MEU has observed that as well as seeing higher spot prices at the times the exercises of market power occur, there are a number of longer term strategic impacts on the market that have also occurred and which the AEMC has not examined at all as an outcome through its concentration on generator pricing. These strategic impacts include:

- The impacts stemming from the unnecessarily increased volatility and associated uncertainty caused by the frequent and persistent price spikes on the wholesale market which adversely affect the hedging, retail contract and the futures markets through substantial price increases
- The loss of competition at the retail level as second tier retailers exit the market due to an inability to acquire competitive hedge contract offers
- The greater but unnecessary need for high priced hedging products to manage the potential impacts from the exercise of market power.
- The damage that could occur by the bringing forward of unnecessary new generation by competitors as a result of the incorrect signaling from the spot market. Such new generation would include capacity provided to deliver physical hedges against the exercise of market power
- The deterrence to potential generator investment by new investors
- The increasing trend of market re-aggregation of generation and retail to counter the impact of exercise of market power as a defensive measure against excessive market volatility
- The distortions in the futures markets
- The long term impact on retail contract prices offered.

The peer review by Professors Gans and King on the NERA report highlights one (but not all) of these strategic issues and the AEMC refers to this on page 13 of the Directions Paper:

> "The peer review report notes that 'strategic barriers to entry' will be an important consideration. Strategic entry barriers can be important in electricity markets where significant sunk costs will be incurred by a new entrant and as a result potential entrants require reasonable confidence that they will be able to recover those costs once they have entered the market. For example, an incumbent generator could engage in conduct that is intended to signal to a potential new generator that it has substantial market

> power and that it will exercise that power if the generator enters the market. Such behaviour would be intended to deter entry by reducing the potential new entrant's confidence that it will be able to operate profitably once it has incurred the significant sunk costs that are necessary to enter the market. "

But because the AEMC has narrowed its focus to purely the pricing impacts at the point of generation and assessing the impact purely on an increase in a notional annual "wholesale price comprising [hedge] contract and spot prices", it has failed to recognize (and therefore incorporate in its assessment) many of the other detriments included in the MEU rule change proposal and the other longer term strategic impacts (such as those arising from strategic behaviour of vertically integrated dominant generator and dominant retailer businesses).

1.2 The responses to the MEU proposal

There are some major concerns the MEU has with regard to the AEMC Directions Paper and of many of the submissions made to the AEMC Issues Paper.

There has been a major mis-representation made that the MEU proposal caps the spot market price at the APC level. The Directions Paper seems to imply this and there was a comment made at the AEMC forum along the same lines. This is not the case. The MEU proposal **only** caps the price of a dominant generator to APC and **only** when it has the ability to exercise its market power under normal conditions. The MEU proposal does not constrain the pricing of any generator that is not a dominant generator.

The Directions Paper makes reference to the "missing money" that is supposed to occur when there is a competitive environment and all generators bid at short run marginal cost (SRMC) in order to be dispatched. On page 40 of the Directions Paper, reference is made to the comments of Professor Hogan, where he notes that the "missing money" is recovered by high prices occurring at times of scarcity – that in an energy-only market, very high prices are required to signal scarcity. The MEU proposal accepts that this is the case for energy-only markets, but not in all circumstances. When there is economic withdrawal of capacity, and there is no problem of scarcity, there is no need to artificially signal scarcity (and hence cause all the accompanying distortions to the efficiency of the wholesale market) when no scarcity exists.

If a generator is subject to competition, it will bid at SRMC. The MEU proposal imposes a constraint only on a (dominant) generator able to exercise market power because there is no countervailing competitive pressure that replicates the imposition of competition.

The design of the MEU proposal does not limit the spot price reaching high levels when there is scarcity of supply. It only limits a dominant generator from profiting from its ability to exercise market power at certain high demand

levels and where there is no countervailing competitive pressure constraining it to prices it would offer to the market as if there was competition.

1.3 "Market power" or "substantial market power"

The MEU notes the AEMC's Directions Paper and its emphasis in, and the approach of, distinguishing between substantial market power and transient market power in assessing the MEU's rule change proposal.

The MEU's proposal is basically directed at addressing a **structural** problem in the NEM. This **structural** problem provides the ability and the incentive for a few dominant generators, above certain demand levels, to unilaterally set the wholesale pool price without any countervailing competitive pressure from other generators. These few dominant generators have the ability to undertake persistent and intermittent economic withdrawal of capacity (as the Rules permit), as they know they must be dispatched to supply the region. Profitability is increased at the expense of consumers and deadweight losses to the national economy are a wider consequence. And, as observed by Professor Nils-Henrik M. von der Fehr (see footnote 3), "in the case when net residual demand is positive for all prices, there is effectively no bound on the market power of the supplier".

A generator 'economically withdrawing' capacity forces the market to be dispatched out of merit order (i.e. higher cost before lower cost generators) and, therefore, the dispatch is not efficient, nor is the market outcome. The National Electricity Objective requires the NEM to be operated such that it is efficient as efficiency should deliver a long term benefit to consumers. Allowing a large low cost generator to be dispatched out of merit order because it has the ability to force this outcome, does not result in an efficient market.

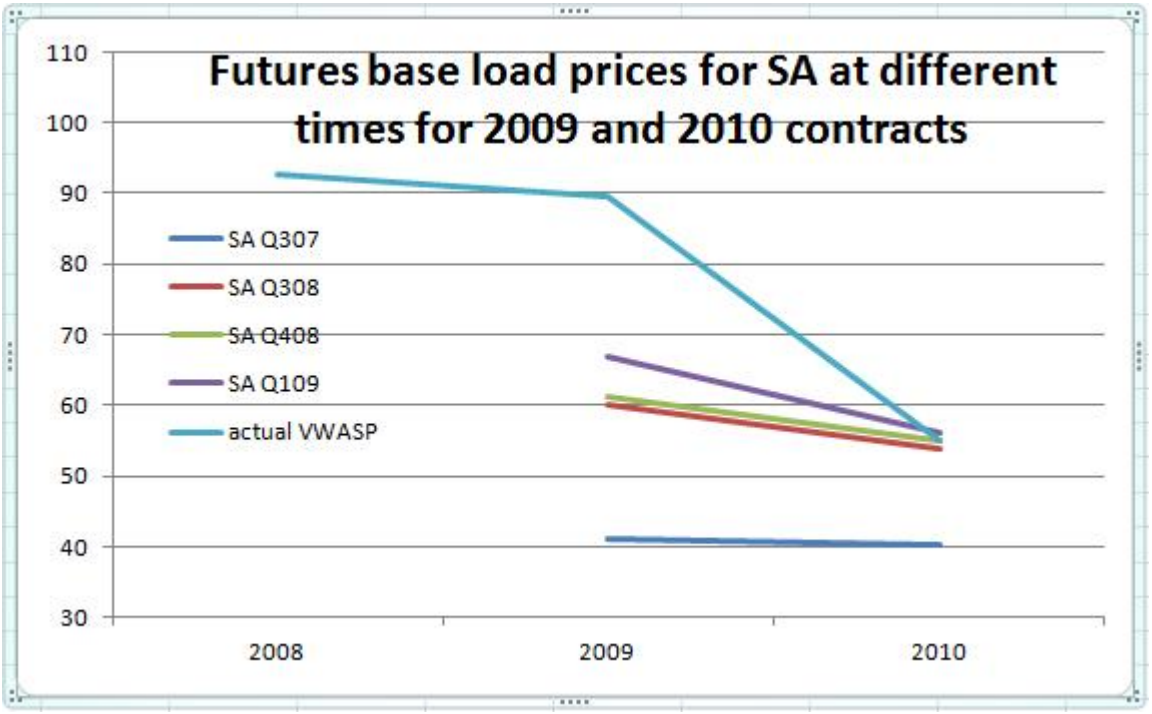
Further, as the dominant generators can set the price levels without countervailing competitive pressure, perversely, all other generators (such as high cost diesel powered generators) are able to participate and benefit from the higher price levels and hence cause higher costs generally in the NEM. These costs must be recovered and this is achieved by generators seeking higher prices from retailers, who in turn seek higher prices from consumers in both regulated and unregulated retail markets.

The wholesale (spot) market is intended to provide a signal for new generation investment but exercise of market power (whether it be transient or sustained) distorts this signal, leading to inefficient investments, or deterrence of competing investments. Again, the market outcome is compromised through such distortions.

In the MEU's view, the AEMC must address the above issues as part of its assessment of the impact on the market as a whole. It is insufficient to address this issue as one only affecting generation, as such an approach is

far too narrow. The AEMC must look to downstream impacts as well, arising, as pointed out by Gans and King, from the strategic behaviour of (dominant) firms.

For example, as the spot market prices increased in 2008, retail price offerings in 2009 and onwards also increased. This can be seen clearly in the movements of the futures market. The following chart shows the spot prices in each year and the futures prices for 2009 and 2010 published at different times.



Source: d-cyphatrade

What the chart highlights is that the forecast base load contract for SA for 2009, offered in late 2007 (before the exercise of market power by TIPS in Q1 2008) was just over $40/MWh. The futures price subsequent to the 2008 high Volume Weighted Annual Spot Price (VWASP) shows a large step increase to over $60 and nearly reached $67/MWh for a contract in early 2009. This information supports anecdotal advice from the few retailers still active in the SA regional market at that time that contract offerings rose by nearly 70%. Futures prices for 2010 were lower than in 2009 but still were more than 30% over the expectation before the exercise of market power by TIPS in 2008 and 2009.

What this shows is that the high spot prices in 2008 and 2009 had a massive impact on the futures prices and consumers and retailers know that this flowed into retail contract prices. Anecdotally, consumers have reported that they saw increases in contract prices of 50% and more above prices in 2007 and 2008 when negotiating prices for 2009 and 2010.

So the AEMC assessment of whether there is a "real issue" needs to recognise the significant increase in the retail contract market prices subsequent to the exercise of the market power. This raises the MEU concern that the AEMC approach to assessing "significant market power" does not address the longer term temporal impacts and over-simplifies the issue of the impacts of the exercise of market power.

1.4 Perfect competition and workable competition.

The MEU notes that the AEMC states that:

> :… a longer term perspective is required when defining and assessing market power." (p.9).

We ask that the AEMC bear in mind the following observations made by the MEU in its response to the submission made by the NEM Generators with its attached report from Frontier Economics. In that response[4] the MEU commented:

> "The MEU has a different construct as to what is implied by the term "*enduring*", and the MEU construct is one used by regulators worldwide. If, under a certain set of conditions, the same party exercises its market power in the same way and does this on many occasions, then the exercise is seen as systemic. A systemic issue is enduring in that it can occur repeatedly. Thus, *enduring* does not mean exclusively what occurs continuously over a long period of time, as Frontier seems to imply, but one which can occur repeatedly by one or more parties in one or more locations. A systemic issue is also *enduring* and this is what is being seen in the NEM.
>
> In support of the MEU construct of *enduring*, a paper entitled "A review of the Monitoring of Market Power: The Possible Roles of TSOs in Monitoring for Market Power Issues in Congested Transmission Systems"[5] (Twomey) provides useful definitions about what is market power in the electricity industry. These support the MEU contention rather than that of Frontier which throughout its dissertation uses general market competition definitions.
>
> On page 6 Twomey comments:

[4] Available at http://www.aemc.gov.au/Media/docs/MEU%20-%20Response%20to%20NEM%20Generators%20Group%20submission%20and%20Frontier%20report-b5c3ba08-af5c-40fc-ae3c-81543e32f520-0.PDF

[5] Paul Twomey, Richard Green, Karsten Neuhoff and David Newbery 05-002WP March 2005 for the Centre for Energy and Environmental Policy Research (CEEPR), available at http://dspace.mit.edu/handle/1721.1/45032

> "Some definitions of market power include the provision that the ability to alter prices away from the competitive level be maintained for a 'significant period of time'. In the view of the U.S Department of Justice (DOJ) and Federal Trade Commission (FTC), for example, this period is measured in years (e.g. one or two years). However, experience with electricity markets has shown that huge transfers of wealth can occur in the period of months rather than years. A short-lived but dramatic price increase can injure consumers and competition as much as a longer-lived but more modest price increase. As such, market power definitions for electricity markets, such as with FERC's definition in the Standard Market Design (SMD), do not include a specific time limitation."
>
> Twomey's approach recognises the unique features of electricity markets and highlights that exercise of market power is an issue that has been identified as one that needs to be addressed, as does FERC."

In his report to the New Zealand Commerce Commission regarding the exercise of generator market power in New Zealand in May 2009, Professor Frank Wolak observed[6]:

> 5. All of these features of wholesale electricity markets imply that even when a small number of suppliers have the ability and incentive to exercise unilateral market power in the short-term wholesale market, their unilateral actions can produce market outcomes that differ substantially from those predicted by perfectly competitive behavior for sustained periods of time. There is evidence from virtually every wholesale electricity market operating around the world consistent with some or all of the suppliers having the ability to exercise unilateral market power and raise prices significantly above levels that would be predicted by perfectly competitive behavior for sustained periods of time under certain system conditions.
>
> 6. Borenstein, Bushnell, and Wolak (2002), Joskow and Kahn (2002) , and Wolak (2003) present evidence that the large fossil fuel suppliers in the California electricity market exercised substantial unilateral market power during the period June 2000 to October 2000. Mansur (2001) presents evidence that suppliers in the PJM electricity market exercised unilateral market power during the first summer of market-based bidding in the PJM market. Hortascu and Puller (2008) present evidence in support of the hypothesis that suppliers in the Texas wholesale electricity market exercise unilateral market power. Bushnell and Saravia (2002) present evidence consistent with the view that suppliers in the New England

[6] Frank A Wolak "An Assessment of the Performance of the New Zealand Wholesale Electricity Market" 19 May 2009

wholesale electricity market exercise unilateral market power. Sweeting (2007), Wolfram (1999) , and Wolak and Patrick (1997) , all present evidence that the large suppliers in the England and Wales electricity pool exercised substantial unilateral market power. Garcia-Diaz and Marin (2003), Kuhn and Machado (2004), and Fabra and Toro (2005) all present evidence that large suppliers in the Spanish electricity market exercise market power. Brennan and Melanie (1998) present evidence that several large suppliers in the Australian electricity market have a substantial ability to exercise unilateral market power, and Gans and Wolak (2007) present evidence that several large suppliers in the Australian electricity market have the ability and incentive to exercise unilateral market power. Garcia and Arbelaez (2002) and Stachetti (1999) present evidence that large suppliers in the Colombian electricity market have a substantial ability to exercise unilateral market power. Arellano (2002) presents evidence that large suppliers in the Chilean electricity market have the ability to exercise unilateral market power. Halseth (1999) presents evidence that the large suppliers in the Nordic electricity market have the ability to exercise unilateral market power. Johnsen, Verma, and Wolfram (1999) present evidence supporting the view that suppliers in the Norwegian electricity market exercise unilateral market power. Kauppi and Liski (2008) develop a hydro storage model and calibrate it to the Nordic electricity market and find that a market structure where a significant portion of the storage capacity is managed strategically provides a significantly better fit to actual Nordic market outcomes relative to a model that assumes no firms have the ability to exercise unilateral market power.

7. The fact that firms in these wholesale electricity markets have the ability and incentive to exercise unilateral market power, and as a result, have raised wholesale electricity prices substantially by doing so, is hardly surprising given their fiduciary responsibility to their shareholders to maximize profits and therefore exercise all available unilateral market power. The experiences of many of these wholesale electricity markets are also directly relevant to New Zealand because several features of the New Zealand market are similar to features of the wholesale electricity markets in countries where the ability or incentive to exercise unilateral market power has been identified and substantial wholesale price increases have been documented as a result of the exercise of unilateral market power.

It is quite clear that the rest of the world of competitive electricity markets see that the exercise of market power – at any time and for even limited periods – is not acceptable practice and needs to be addressed. It is clear that the approaches used by these reports on the exercise of market power should inform the AEMC's proposed approach. The fact that Directions Paper so

lightly dismisses this extensive body of knowledge on the spurious grounds that, as it applies to capacity markets, this experience has little relevance to the energy only market used in the NEM, is of great concern[7].

In particular, for the NZ Commerce Commission, Wolak carries out all of his assessments into market power and its outcomes, in terms of the spot market and in terms of the damage done to consumers. The Wolak approach is in stark contrast to the NERA/AEMC approach. In this regard, it is worth bearing in mind that Professor Nils Henrik M. von der Fehr's peer review of Wolak's report concludes that Wolak's approach is "...fundamentally sound, well founded on accepted economic methods and practices. As such, the conclusions of the report are reasonable". (page 13).

1.5 Price Spikes

The MEU notes the AEMC statements in the Directions Paper (page 9) that:

> "A transitory price spike that causes wholesale spot or contract prices to exceed SRMC or LRMC in the short term does not in itself indicate the existence of a market power problem that justifies regulatory intervention.
>
> The Commission considers that occasional price spikes are an inherent feature of a wholesale electricity market and that it would be inappropriate to seek to prevent them by introducing a Rule that sought to remove transient pricing power."

The MEU does not necessarily disagree with the above statements, but notes that if occasional price spikes are permitted in one region because there is the ability to exercise market power frequently and persistently because there is a structural problem, then why is this acceptable when, in another region where there is no such structural problem, the ability to exercise of market power is limited. This implies that the AEMC accepts that less competition in one region compared to another, is acceptable, despite the principle that competition underpins the NEM market design.

Because of this the MEU considers that the AEMC needs to note that:

- In the South Australian region, TIPS has been a persistent spiker of the spot price during high demand periods in 2008, 2009 and 2010.
- As the NEM has possibly the highest MPC in the world of competitive electricity markets, short durations of price spikes cause major monetary transfers and adverse downstream effects e.g. TIPS drove the volume weighted 2008 average spot price of

[7] It is pointed out that a capacity market is essentially an energy only market with a small payment made for providing capacity to overcome barriers to entry and, according to many experts, to provide the "missing money" considered to exist in energy only markets.

power in SA to double in just 30 hours of operation (or 0.3% of the time).

- Victoria has had considerably fewer price spikes than SA, reflecting the fact that in Victoria, the largest generator can provide only 21% of the peak demand and there is little economic withdrawal, but in SA, TIPS can provide some 37% of the peak demand and economic withdrawal occurs frequently, and it is notable that Victoria has also seen significant new generation investment.

1.6 Commission's definition of 'substantial market power'

The MEU notes the Commission's proposed definition of "substantial market power' viz

> **"Substantial market power** in the context of the NEM is the ability of a generator to increase annual average wholesale prices to a level that exceeds LRMC, and sustain prices at that level due to the presence of significant barriers to entry". (p.12)

As discussed earlier, this definition does not capture the issues raised in the MEU proposal, and is an over-simplified approach that does not capture the commercially realistic strategic behaviour of dominant firms.

Despite this difference in view on what is market power, the MEU agrees in principle but only partially with the following AEMC observation:

> "The Commission's proposed definition does not require wholesale spot or contract prices to be *continuously* above LRMC. If a generator is able to cause price spikes, for example by withholding capacity, that may be evidence of substantial market power if those price spikes occur to such an extent and with sufficient frequency that they cause annual average spot prices to exceed LRMC (with flow on consequences for contract prices)". (p. 12)

The MEU agrees with the AEMC proposal that the approach of using annually calculated values are the appropriate measure of prices for the purposes of the definition of substantial market power, but only if they are based on a volume weighting and not a time weighting. We see that if the annual average volume weighted price has been significantly increased by the action of economic withholding, then this is a strong indication that there has been harm done to the market as a whole.

The AEMC indicates that perhaps a longer term might provide a better reflection of the existence of substantial market power and this is supported by many (generator) submissions to the AEMC Issues paper that the market power needs to be enduring. With this in mind, the AEMC suggests that longer terms (perhaps 2-3 years) might be more appropriate.

Overseas experts do not assess market power in temporal terms at all. They see that there is either the potential for exercise of market power or not and they assess this in terms of other tools such as market share, capacity/peak demand, Herfindahl, Pivotal Supplier and Residual Supply Indices, Residual Demand Analysis, Lerner and Price Cost Margin indices and net revenue and competitive benchmark analyses. The issue of time durations is not involved with any of these approaches.

The MEU considers that as the AEMC intends to use the assessment of substantial market power as a tool just to determine if there is a problem that needs to be addressed then, at most, a duration of 12 months is as long as is needed to arrive at a conclusion[8]. In this regard, it must be accepted that the longer the duration for assessment, the less the impact each exercise of market power has, and there is an increasing diluting effect as the generator exercising market power is able to contract its capacity at high prices. As noted in the introduction to section 1 above, the more fully contracted a generator is, the less likely it will exercise its market power. With this in mind, to average the impact of the relative few price spikes resulting from the exercise of market power over a term any longer than 12 months has the potential to (statistically) dilute the problem away.

1.7 Issues the AEMC does not address

In its examination of its approach to determining whether there has or has not been the exercise of market power, the AEMC does not address the fundamental requirement that the National Electricity Objective requires that the market is to operate in the long term interests of consumers.

The second reading speech clearly details that the long term interests of consumers will be achieved if the market is efficient in an economic sense. The exercise of market power causes the market to be less efficient. It is this premise that overseas experts have not addressed this issue in competitive electricity markets the way the AEMC and NERA have. They have addressed the market requirement that it be efficient, whereas the AEMC approach is more along the lines of “the market can be a bit inefficient as long as the outcome isn’t too bad for consumers”.

The exercise of market power allows certain generators (but not all) to change the dispatch pattern from the most efficient manner based on ascending order of SRMC, to one where less efficient generators are dispatched, at a higher price, than generators with a lower SRMC. Further, the exercise of market power distorts the market pricing signals from demonstrating a true need for new investment.

[8] In this regard, it is interesting to note that in 2007 ERCOT, in Texas, calculated the impact of TXU’s exercise of market power over a three month period.

The overseas experts on electricity markets have an approach which identifies in a dispatch interval whether market power has been exercised and in most cases, that it is more efficient to prevent the exercise of market power than to address the problem after it has occurred.

It is intriguing that the AEMC has placed more faith in NERA than in such recognised experts on electricity markets as Professors Joskow, Newbery, Stoft, Wolak and Tirole in relation to this issue. The AEMC may be diverting attention away from the approaches used by these recognised experts on the grounds that their views only apply to capacity type electricity markets and not to energy only markets. This view is not examined by the AEMC in any depth but is effectively taken as read.

The AEMC approach, therefore, has the possibility of diluting the effect of market power to such an extent that the problem becomes so small as to be insignificant.

Another aspect of pricing that is not addressed by the AEMC and nor would it be captured by the AEMC proposed approach to identifying and quantifying the impact of the exercise of generator market power is the element of risk premiums retailers and generators add to their price offerings.

When a retailer develops its price offer to an end user, the offer for the power includes a range of inputs to reflect the load profile of the end user. A retailer uses its portfolio of hedge contract arrangements with various generators to cost the expected usage and may even include an element of spot price exposure in the assessment. Whilst retailers accept that the usage profile provided by an end user is an indication of expected usage, it is not an exact forecast and retailers take some risk on the actual usage. For a retailer to take this risk, it must add a risk premium to its offer to be able to manage the risk. Any usage above that forecast is either covered by the retailer's reserves of unused generator hedge contacts (which entails a cost) or is sourced from the spot market. This means that the more volatile and unpredictable the spot is, the greater the risk premium a retailer must add to manage its exposure to the spot market.

Generators also face a risk from the spot market. A generator will contact a proportion of its output to retailers, but a generator also faces the risk that, should it incur an unplanned outage of some of its generation there is the potential that it will have to source some or all of its lost generation from the spot market. A generator adds a risk premium to its hedge contract prices to retailers to manage this risk. As with retailers, the greater the volatility and unpredictability in the spot market, the greater the generator risk premium has to be.

The exercise of generator market power introduces much greater volatility and unpredictability into the spot market than applies when there is effective competition over most of the regional demand. Therefore, the risk premiums

that are added by generators and retailers are greater when there is the potential for the exercise of market power. The AEMC approach does not provide any recognition or allowance for the impact of this risk management cost, which is not inconsiderable and is ultimately reflected in retail contracts, both regulated and non-regulated.

1.8 Some other downstream effects not addressed by the AEMC

In addition to the downstream effects that the MEU discusses elsewhere in this submission (such as the impact on generator and retail prices in later years), there are other less tangible capabilities available to a generator with market power which it can use to ultimately engender a long term better outcome for itself and the costs of which would not be included in the AEMC approach to identifying if there is a problem that needs to be addressed.

The exercise of market power is not necessarily just related to increasing prices. A generator with market power, because of its size, can also reduce prices. Such a decision is likely to be a short term strategic action, possibly aimed at a competing generator facing a renewal of its debt facility. As the ability to renew a debt facility is related to the ability to cover the debt, forcing a competing generator to either contract at low prices and/or face a low spot market, could remove a competitor from the market and ultimately increase the dominant generator prices in the longer term.

A critical impact of spiking the spot price is the increase in volatility. This results in other generators and retailers facing a need to acquire hedging products to protect against the effects of the increased volatility. The dominant generator is well placed to provide such hedging as it would otherwise use its uncontracted capacity to spike the spot price. This effectively means that the dominant generator, which has the ability to spike the price, is providing insurance (at a price) to others against the price spike it is itself causing.

Whilst the MEU does not allege that these have been used by any generator in the NEM, it must be recognised that the structural problem that was allowed to develop in the NEM and is exhibited from time to time, is the root cause of many effects that occur each time after the actual exercise of market power occurs.

The MEU proposal is not about attempting to address the cause, but an attempt to address the most pervasive of the symptoms that the structural problem causes.

2. Development of the AEMC definition of substantial market power

Because the AEMC approach concentrates purely on the price of generation of electricity rather than just the spot market, the AEMC losses sight of the longer term impact of the spot market movements on the downstream elements of the NEM. Its approach avoids identifying the consequential temporal effects of exercise of market power which lead to subsequent retail contract price movements.

The MEU notes that the AEMC is proposing to apply both spot and hedge contract prices in assessing a generator's ability to affect wholesale prices. The MEU also notes the Commission's concerns with gathering information regarding contract prices and the extent of reliable information available.

The MEU has difficulty in accepting the use of both spot and contract prices for the simple and important reason that the latter are not likely to be openly available and therefore not transparent as a key benchmark, but whatever information that may be gleaned, e.g. from secondary sources or surveys, is likely to be unreliable for making decisions on a rule change. This issue has been addressed by others examining the exercise of market power by a decision to only use the transparent data available for the spot market.

The MEU therefore raises the question why the Commission is seeking to depart from standard assessments by experts around the world who use spot/wholesale prices, in view of the well-known difficulty in obtaining contract price information. The MEU further notes:

- When Prof Frank Wolak was commissioned to look in 2009 at the exercise of market power in the NZ market, his assessments were focussed on spot pricing. The NZ Commerce Commission commissioned Nils-Henrik von der Fehr, of Universitetet i Oslo to peer review the Wolak report and he strongly supported the Wolak approach which is based on identifying the impact of market power exercise just using spot pricing.
- No one knows what the mix of contract pricing and spot pricing is so trying to get a "wholesale price" based on a mix of spot and contract pricing is challenging, especially as the proportions change every five minutes. When the demand is high (and when the economic withholding begins) the mix is likely to be less contract pricing and more spot pricing.
- It will be extremely difficult to accurately access the contract prices because these are confidential to each retailer, its generators and its customers and as there are a number of retailers in each market, getting the proportions right is made more difficult
- There is a time lag between contract prices and spot prices. Contract prices are usually negotiated some years ahead, so the contract prices

applying in 2008 would be those negotiated and set in (say) 2005, 2006 and 2007. So the contract prices applying in 2008 have no relationship to the 2008 spot price, other than showing that a retailer would be paying a mix of prices from all four years in 2008 but in unknown proportions.

- There is a way in which an indication of contract prices can be transparently seen to be impacted by high spot prices from an earlier time, and this is to use the futures market (see section 1.2 above). But using the futures market is fraught because the market is quite thin and therefore is unlikely to be representative. What we do know from the futures market can be seen from the chart in section 1.2 which shows the spot price in each year and the futures prices for 2009 and 2010 published at different times. It is also important to note that retailers often provide contract prices well in excess of futures prices.
- The chart shows that the forecast base load contract for SA for 2009 in late 2007 (before the price spikes began) was just over $40/MWh. The futures price subsequent to the 2008 spikes shows an increase to over $60 and nearly reached $67/MWh for a contract in early 2009. This information supports anecdotal advice that contract offerings (if you could get an offer) rose by nearly 70%. Futures prices for 2010 are lower than 2009 but still are more than 30% over the expectation before the spikes began.
- Noting that the spot market is intended to provide a signal to new entrants there is a further concern regarding the AEMC approach, and this is the information that a new entrant would use to determine whether or not to enter the market. Unless the *true new entrant*[9] obtains a contract with a retailer, it has no contract price information as this information is held by the retailers.
- In the 2009 ESoO AEMO predicted that new capacity would be required in SA in 2013/14, some five years ahead. So, regardless of the spot price, new generation would be needed in SA in 2013. The cost premium to bring forward this new entrant generation to 2009 ie by five years (assuming a discount rate of 10%) would be $29/MWh[10]
- There is the question as to which long run marginal cost is used. The cause of the supposed need for the additional generation signalled by the high spot price is the decision to make unavailable generation capacity already provided. Therefore, the LRMC could be calculated on a number of different scenarios – should it be a new entrant cost, the cost for the unused capacity of TIPS (which withheld the capacity), the LRMC cost of the lowest LRMC of existing base load generators in the

[9] The term “a true new entrant” is used to differentiate a new entrant which is already in the market as a retailer or a generator. Gentailers would have contract prices from their retail arms so they would have an idea of what their contract prices are but not those of other retailers.

[10] This is the 2013 price used by ACIL Tasman in its report to AEMO for the 2009 ESoO. This cost has been increased to reflect the cost of bringing forward the new generator (using a discount rate of 10%) which gives a price of $91/MWh in 2009, giving a premium of $91 minus $62 = $29/MWh

SA region or the LRMC of the SA region generation mix. Other options for assessing the LRMC is whether it should be based on depreciated plant[11], OCGT, gas or coal fired plant. This indicates that the development of the notional LRMC is so beset by assumptions that it starts to lose credibility.

- Providing new generation is not the only solution for addressing a shortage of supply. Transmission augmentation (especially strengthening interconnection) increases competition to generators in a region, by providing the ability for generators in an adjacent region to deliver their output to the region[12]. Whilst the AEMC Directions Paper concentrates on the cost of LRMC of generation, the cost for new transmission interconnection should also be examined. The Krongart-Heywood option for increasing interconnection between SA and Victoria would cost about $3/MWh[13] providing 2000 MW of interconnection capacity, implying a new entrant price in SA of the Victorian spot price plus $3/MWh

In the analysis of the AEMC approach to assessment of whether market power has been exercised, the Directions Paper (page 14) makes an important and pertinent observation which is then effectively omitted in any further AEMC discussion:

> "However, NERA explains that a complication is that if a generator has entered into contracts at a high price for a significant proportion of its capacity, that may reduce its incentive to exercise substantial market power in the spot market during the term of those contracts. Accordingly, there may be periods where substantial market power has been exercised by a generator (by entering into above-LRMC priced contracts) but that market power is not manifested in the average spot price over the contract period. Gathering information regarding contract prices, to the extent that reliable information is available, will therefore assist in identifying substantial market power."

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[11] In this regard it has to be recognised that most of the generation plant likely to be classified as "dominant" is plant that has been in operation for over 20 years, and will be significantly depreciated, reducing the LRMC of this plant

[12] Unfortunately, the RIT-T for transmission interconnection does not allow for the spot price differential between adjacent regions to be used as a factor in the calculation of the net benefit, and so this source of "new entrant" competition is not permitted as a justification for interconnection augmentation. If this was permitted, the "new entrant cost" might be even lower than providing new generation. The impact of this cannot be overstated

For example in 2008 the SA spot market exhibited a price premium of some $700m compared to the spot market in previous years.

[13] The cost of building a new 500 kV connector between Krongart and Heywood, providing an additional 2000 MW capacity at a cost of $530m (see –South Australian Interconnector Feasibility Study by ElectraNet and AEMO,

The MEU has seen retail contract prices rising above LRMC following a period of price spiking by a dominant generator over a number of years. Once the retail contract prices have risen and the dominant generator has contracted itself at these higher prices, it no longer has the need to exercise its market power during the term of those contracts. In fact, MEU members have seen retail price offerings from AGL (owner of TIPS which did exercise its market power in 2008, 2009 and 2010) which demonstrate this effect[14].

As a result of the way the exercise of market power is manifested, the high spot prices precede higher retail contract prices and the subsequent higher retail contract prices will coincide with lower spot prices because the generator with market power no longer needs to spike the spot price because it is well contracted. This aspect is addressed in section 1.1 as one of the strategic impacts of the exercise of market power.

The outcome of this is a muting of the AEMC calculation of the AEMC "substantial market power" measure as the effect is spread over a number of years.

These issues of transparency and reliability of contract information are absolutely critical to the usefulness of the AEMC approach but such information will not only be difficult to acquire but cannot be considered reliable due to the lack of transparency in its acquisition.

The MEU is of the view that the approaches used by overseas experts in identifying market power provide a more robust approach to that proposed by NERA and AEMC. In their report, the peer reviewers (Gans and King) highlight that the NERA approach has some significant failings which are addressed in the MEU comments above. They note that the:

- Timing and nature of generation investment needs to be addressed
- LRMC values vary between generation types
- The relevance of strategic barriers to new entrants needs to be noted (this aspect is also addressed in section 1.1 above)

Once the challenges of calculating the elements of the AEMC equation are overcome, the AEMC needs to determine what margin applies to the equation it proposes to use. Implicit in the AEMC definition is that if the "wholesale" price exceeds the LRMC (even by a little), then there is substantial market power.

The MEU does not consider that the AEMC definition of substantial market power is capable of being implemented for the reasons noted. Further, the AEMC definition is too narrow and excludes the longer term strategic impacts that exercise of market power can impose on the market, including where rents are shifted from generation to retail by dominant vertically integrated

[14] The MEU believes this is what AGL and TIPS accomplished in recent years in SA

firms, and the temporal effects on linger term retail price offerings to consumers.

If the AEMC persists in using its approach to identifying if there is a problem then to overcome the shortcomings of the NERA approach, the MEU considers that a better solution is to use the average annual volume weighted spot price and the change in LRMC to bring forward new entrant pricing as the basis of the assessment. Such an approach removes the lingering effects of lower priced historical contracts in the year of the exercise of the market power but also excludes the effects of contracts which apply in years subsequent to the year when the exercise of market power occurred.

3. The 'exercise' of substantial market power

The MEU agrees with the following AEMC observation on page 18 of the Directions Paper:

> "This issue is also related to the distinction between having the *ability* to affect the wholesale price and having the *incentive* to do so. Joshua Gans and Stephen King's peer review report explains that a generator's hedge position in particular can have a significant impact on its incentives. For example, a generator that has contracted all of its capacity in the forward market may have an ability to affect the wholesale spot price, but it will have no incentive to do so and it is therefore highly unlikely to exercise any substantial market power that it may have in the spot market. "

However, it is very unlikely (i.e. commercially unrealistic) that a generator would in normal circumstances have contracted all of its capacity in the forward market. All generators will have different hedge and spot capacity profiles, decisions on retention of back up capabilities in the event of outages and therefore they will all have different levels of incentive to affect the spot market. The example used where all capacity is contracted is unrealistic, but serves only to make the point that a heavily contracted generator has less incentive to exercise its market power should it possess this.

In this regard, Wolak in his report to the NZ Commerce Commission (page 9) provides an excellent discussion on the issue of incentives and commercial reality:

> "1. Firms serving their fiduciary responsibility to maximize the returns earned by their shareholders can be expected to undertake all unilateral profit-maximizing actions given the actions of their competitors. A firm that undertakes all unilateral profit-maximizing actions given the actions of its competitors is by definition exercising all available unilateral market power. Consequently, a firm has a fiduciary responsibility to its shareholders to exercise all available unilateral market power."

The MEU also points out that in situations where the dominant generator is vertically integrated with a dominant retailer (as seen in the SA region), the opportunities to exercise market power can also be observed at the retail level. An example of this has been seen when other retailers (especially second tier retailers) unable to obtain hedge contracts, exit the market, with the result that there is less competition at the retail level, and hence enhanced opportunities for price gouging by the vertically integrated retailers, with sustained increases in retail prices prevailing. The dominant generator may no longer need to exercise 'substantial market power' (as per the AEMC definition) but the ability and incentive to exercise that power is transferred to

the dominant retailer[15]. This is an example of the strategic impacts that the exercise of market power has that are not discussed or quantified in the AEMC discussion on developing a definition of substantial market power.

3.1 The likely exercise of substantial market power

The MEU considers that the exercise of 'substantial market power' can be periodic, i.e. it can occur for two or three years and be dormant in the following year or two – as demonstrated by Wolak in his study of the NZ wholesale market.

The consequences of the above may be an increasing trend towards concentration of the industry, as smaller players exit the market, as they assess that their profitability may easily disappear should incumbent generators decide to return to exercise its 'substantial market power'.

Thus, the AEMC needs to consider these issues in assessing likely exercise of 'substantial market power'.

In addition, the Commission needs to bear in mind the fiduciary duties of firms to maximise profits and the strategies that they may adopt in seeking to achieve them. As the AEMC is of the view that it should develop its own approach to assessing the incidence of "substantial market power" the MEU believes that the AEMC would need to examine the current and likely market structure of the energy market – electricity, gas and wind power – as part of any assessment of the exercise of market power.

3.2 The Commission's proposed definition of the exercise of market power

The MEU does not agree (as discussed above) with the Commission's proposed definition, viz:

> "A generator exercises substantial market power where it engages in conduct that has the effect of increasing annual average wholesale prices to a level that exceeds LRMC, and the generator is able (or is likely to be able) to sustain prices at that level due to the presence of significant barriers to entry". (p.20)

The reason for the disagreement is that the MEU has a deep concern that the AEMC cannot calculate the values needed to reach such a conclusion. Further, the MEU considers that the approaches used by overseas experts provide a better definition of substantial market power.

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[15] MEU members could attest to this based on their negotiations (and the outcomes) for retail contracts and the paucity of competing retail offers. Information on this had been provided to the AEMC.

The MEU also has a concern with the inclusion of the words " presence of significant barriers to entry" as they exclude the concerns raised by Gans and King regarding the "strategic barriers to entry" of new generation and highlighted by the AEMC on page 13 of the Directions Paper. Also, the MEU's concerns about strategic behaviour and rent shifting by dominant vertically integrated firms are not captured.

The MEU agrees with the Commission's approach and clarifications, such as:

> "The words 'or is likely to be able' are included to clarify that it is not necessary to wait for ex post evidence of several years of above-LRMC pricing before taking action' (p.20).

The MEU believes that there is a need to clarify the meaning and extent of "significant barriers to entry". For example, what is meant by "significant"? What is the measure? Does "significant barriers to entry" extend to the retail sector as well? As previously mentioned, there is an increased trend towards vertical integration between generators and retailers, and in the case of the SA region, there is a vertically integrated business with dominance in both generation and retail. In this case, there is evidence of second tier retailers exiting the SA market, which prima facie, suggests that there are also "significant barriers to entry" in retail.

3.3 Dimensions of the market

The MEU notes the Commission proposes to use the recommendations in the NERA report on the relevant dimensions of the market. In particular, the NERA report suggests that a **small but significant and non-transitory increase in price** (SSNIP) test be used to define the dimensions of the market. While such a test can be applied, it is well recognised that such a test has limited value in electricity markets where price elasticity (especially in the short to medium term) is very low and where infrequent but very high price increases can occur. That overseas experts do not apply such a test should provide the AEMC with a strong indication that the NERA proposal for defining the market is subject to considerable concern.

3.3.1 Product and Functional dimension

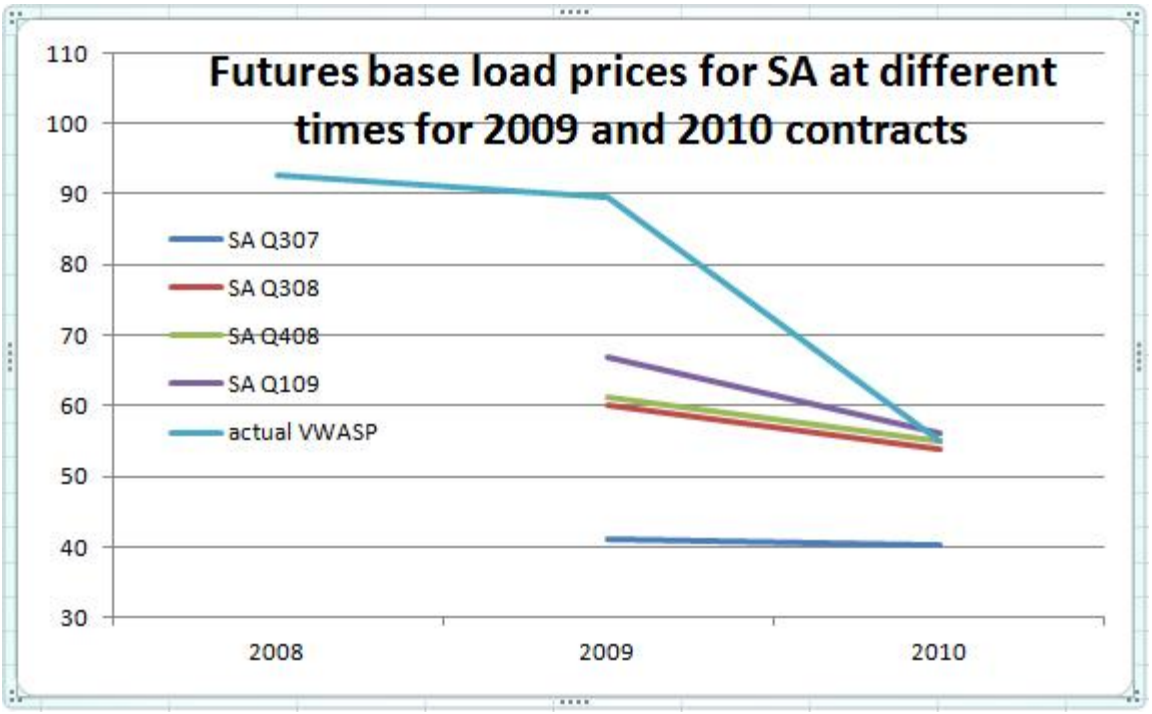
The Commission proposes to exclude retailing from the relevant functional dimension of electricity production. The MEU does not agree that the impacts on retailing can be excluded. As is observed above, the impacts of the exercise of generator market power has caused second tier retailers to exit the market, to increase contract prices to retailers, increase retail offerings to end users, to bias the futures market and cause other downstream effects.

The MEU also points to the above comment regarding the SA region and the existence of both a dominant generator and retailer integrated business. This means that within a vertically integrated generation/retailing business (a

"gentailer"), rents could be moved from generation to the retail sector thereby affecting both product and functional dimensions.

As retail contract prices are commonly for periods greater than one year, are agreed before the start of any period, and higher contract prices occur subsequent to a series of spot price impacts, contract prices trail the spot prices and may be in force for a number of years, despite subsequent movements in the spot price.

For example, consider that an SA end user contract expired at the end of 2008. The following chart (used in section 1.3 highlights the futures market prices for one year base load contracts for the ensuing two years.



Source: d-cyphatrade

The end user would usually negotiate with its retailer for a new 2-3 year retail contract covering 2009, 2010 and possibly 2011. The contract prices for 2009 and 2010 show that the contract price for 2009 would be more than $60/MWh and for 2010 more than $55/MWh Yet in 2010, the spot price averaged $55/MWh. So the exercise of the market power in 2008 caused contract prices in later years to increase dramatically, yet this effect would be excluded by the NERA approach to exclude the impact on the retail market.

Thus, when assessing the product dimension, it is insufficient to assess the product used just in 2008, as the actions in 2008 had a continuing effect for subsequent years. So the impact on the product dimension in 2008 would have to include the effects on contract prices in the following years of 2009, 2010 and 2011 and perhaps longer.

By narrowing the product and functional dimensions to the bases proposed by the NERA report, the full impact of the exercise of market power is considerably narrowed and the 'test' somewhat underwhelming.

3.3.2 Geographic

Whilst the AEMC and NERA recognise that the likely geographical market is a region because of the constraints on interconnection, there have been arguments presented that the NEM is homogenous and should be assessed on this geographic basis. This concept was proposed in the Frontier Economics report to the NEM Generators Group and refuted in the MEU response to that report[16]. The MEU commented (pages 13 and 14):

> "Frontier seeks to have the AEMC address the NEM as an entire market rather than one constrained by congestion and for the market to be seen in temporal terms over the long-run.
>
> Such an approach is at odds with the wider view of electricity markets as they are seen to be unique, exhibit congestion and operate of necessity in short time blocks. This point is made by many well regarded observers of electricity markets. Twomey (page 2) summarises their collective view well.
>
> > "The experience of countries that have liberalized their electricity markets has shown that the assumption that markets will naturally produce a competitive result is not always justified. Part of the problem derives from the difficulty of defining the relevant market. The number of different generation companies that directly compete with each other depends on the strength of the transmission system and the capacity of interconnectors between regions and countries. ... Congestion fragments markets into smaller zones behind the congested interconnections, and within these zones, the relevant market may be very concentrated. Even within countries, a transmission system that was efficient for a centrally dispatched vertically integrated monopoly may still give rise to potential internal transmission constraints that can be exploited by companies with generation capacity located in some parts of the country. In addition, electricity is a non-storable product with low demand responsiveness, and so markets are distinguished by time – electricity at 0800 is a different product that electricity at 0900 on the same day. Congestion varies over time and space, changing the size of the relevant market and the problem of market power from place to place and moment to moment. All these special features of the nature of electricity have led to concern over the existence of market power."

[16] The MEU response to Frontier is available at http://www.aemc.gov.au/Media/docs/MEU%20-%20Response%20to%20NEM%20Generators%20Group%20submission%20and%20Frontier%20report-b5c3ba08-af5c-40fc-ae3c-81543e32f520-0.PDF

> The ACCC in its decision on not to allow co-insurance by the NSW generators being offered up for "gentrader contracts" by the NSW Government took the view that the NEM was not an entire market and that the NSW market should be treated as a separate market as there were significant periods of time where NSW was fully or partly isolated from other regions of the NEM[17]."

There is no doubt that the geographic dimension is at the boundary of each NEM region due to the way the NEM is operated.

3.3.3 Timeframe

The AEMC seems to consider that the relevant timeframe is probably one year but NERA adds that perhaps a longer timeframe is needed to allow for variations in weather which have a major impact on electricity prices. Frontier also raised this as a concern and suggests that the timeframe should be as long as that needed to build new generation assets which could be 3 -6 years or even longer.

The risk with extending the timeframe is that, taken to extremes, the outcomes of the exercise of market power will be so diluted as to disappear, yet in the intervening period such large amounts of wealth will have been transferred that it causes considerable harm to consumers and adds a deadweight loss to the community as a whole.

Overseas experts have assessed the impact of the exercise of market power over every single trading period such as Wolak did for the NZ Commerce Commission. ERCOT evaluated the exercise of market power by TXU in 2007 over a three month period.

The impact of the timeframe is considerable. For example, in the SA region when demand is near its recorded peak of 3300 MW, a single half hour period at the market price cap will add $1.12/MWh to the annual volume weighted spot price. Just the 44 such periods experienced in 2008 doubled the long term average spot price for the region for that year. This means that any assessment of the timeframe must recognise the impact that a high price cap has on the regional price as a whole.

The MEU accepts that an average price reflecting all seasons has some merit, supporting a view that the timeframe could be as long as 12 months. But such an assessment needs to recognise that the total impact of the exercise of market power in that one year period is added to by the downstream impact on subsequent years.

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[17] See http://www.accc.gov.au/content/index.phtml/itemId/929132/fromItemId/927069 "ACCC denies authorisation to proposed NSW electricity co-insurance arrangement"

Using the same example in section 3.3.1, if the timeframe is to be assessed over (say) the year 2008, then in addition to the increase in spot price, the impact of the contract prices seen in 2009, 2010 and later years, would need to be added to the total impact. To exclude the impacts from these later years fails to recognise that the actions in 2008 had a real and deep impact in subsequent years.

3.3.4 Conclusions on dimensions
The MEU considers that the AEMC must ensure that the dimensions it assesses do cover the whole extent of the impact of the exercise of market power and do not artificially reduce the dimensions to belittle the issue.

3.4 'Tacit Collusion'

The MEU notes the Commission's decision not to address 'tacit collusion' or 'coordinated market power'.

The MEU notes that the very high degree of transparency in the design of the NEM wholesale (spot) market – price signalling and signalling of bidding intentions – coupled with the ability to 'economically withhold' capacity and all generators benefiting from the last despatched generator's price bid, provides dominant generators in the NEM with substantial market power and an easy ability and incentive to exercise such market power.

Moreover, rents can be shifted from generation to retail (as experienced in SA region), as the effects of a period of price spikes (say, 3 months every year) do affect future retail contract prices (which apply for up to three years or more) substantially. Hence, the MEU's rule change proposal's emphasis on the 'dominant generator', and the 'dominant retailer' as well.

3.5 NERA's proposed definition of 'substantial market power' in the context of the NEM

The MEU considers that NERA's proposed definition misses many of the problems identified in the MEU's proposal as a consequence of the exercise of market power.

The MEU's proposal reflects concerns that frequent price spiking (through economic withdrawal of capacity) over a period of time (usually during the summer months) each year, affects retail contract prices when they are negotiated. In fact, the MEU has provided confidential retail contract price information in its proposal to show the substantial rises in retail contract prices – many applying for up to three years).

When there is a dominant generator vertically integrated with a dominant retailer, substantial rents can easily be shifted from generation to retail. In fact, the activities in SA over the summer periods of 2008, 2009, and 2010 showed that retail contract prices escalated after each bout of price spiking.

NERA's approach in focusing on the average annual spot and hedge contract prices to establish the ability to exercise 'substantial market power' will deal only with half the concerns in the MEU proposal and may, in fact, not establish 'substantial market power' when rents are shifted downstream. The fact that in SA there is a dominant generator/retailer business increases that likelihood of downstream rent shifting.

The MEU is, thus, very concerned with the second part of the following statement by NERA:

> "Periods of high prices caused by strategic bidding behaviour by generators (such as 'economic withholding' as described by the MEU) are relevant to this assessment. **However, they only constitute substantial market power if they have a sustained effect on average spot prices that is likely to cause them to exceed LRMC over the long term**" (Directions Paper p.30).

As the MEU had explained above, periods of high price spikes each summer may not necessarily result in spot and hedge contract prices exceeding the LRMC, but the effects on retail contract prices (which are not included in the NERA consideration) are immediate and can apply for periods of up to 3 years subsequent to the actual exercise of the market power. The MEU has produced information to demonstrate the price gouging effects on retail contract prices after each price spiking period and many retailers would also have experienced similar outcomes. The fact that a related party of the dominant generator can also be a dominant retailer shows that rents are able to be shifted downstream. The NERA methodology defines this problem away by not accounting for its consequences. This effect impacts on the four dimensions as follows:

3.5.1 Temporal

> After each episode of high price spikes in SA over recent years, the effect on retail contract prices is immediate with the results applying for up to three years, and perhaps more. In other words, consumers accessing new contracts at the time for the price spikes, face the upward price effects for periods up to three years, even though the high price spikes occur intermittently over a 3 or 4 month period each year.
>
> In the MEU's view, the NERA approach does not deal with the problems existing in a region (eg SA) where the exercise of market power each year over a period for 3 or 4 months can have deleterious effects on consumers over a period for up to 3 years or perhaps more.

3.5.2 Product

The MEU believes that retail contract prices need to be included.

3.5.3 Functional

The MEU believes that vertical integration of generators with retailers provide, especially in the case of dominant generator/retailer businesses, opportunities for downstream rent shifting. The NEO is concerned with "… the long term interests of consumers" and the MEU examples above on the effect on consumers arising from retail price contracts of up to 3 years or perhaps more being reflective of short term exercises of market power require that retail dimensions be included in the assessment.

3.5.4 Geographic

We note with the NERA test to determine the extent of the geographic market but we note the concerns detailed in section 3.3.2 above.

3.5.5 Peer review by Professors Joshua Gans and Stephen King

The MEU agrees with Professors Gans and King that the following matters must be considered by the Commission in the next stage of the process:

- a range of potential additional indicators of market power should also be considered because "the relationship between transitory and substantial market power is more subtle in electricity markets than in many other markets";
- further consideration should be given to the existence and importance of strategic barriers to entry; and
- further investigation should be undertaken into the relationship between spot market behaviour and forward contracts, which is important to understand generators' incentives to exercise market power.
  (Directions Paper page 31)

In particular, the Professors (Gans and King) correctly 'identifies' the potential strategic behaviour of vertically integrated businesses – see the MEU concerns detailed above – and the ease at which strategic market power could be exercised so that the retail arm of the generation/retail business is able to capture economic rents and barriers to entry by new retailers raised.

In undertaking the further analyses recommended by Professors Gans and King, the Commission should also assess whether its proposed definitions of 'substantial market power' and its market definitions fully capture the issues identified, because based on the MEU assessment these aspects have been excluded from the AEMC definitions and as a result, considerably reduce the actual impacts on the market as a whole.

3.6 Other relevant electricity regulatory precedents

The MEU disagrees with the Commission that:

> "The MEU proposal and attached EEE Ltd report, and the Biggar report for the AER, refer to several other wholesale markets that adopt measures to mitigate market power, mainly in North America. However, many (but not all in the MEU's view) of the examples given are capacity markets, which the Commission considers limits their relevance for an energy-only market such as the NEM". (Directions Paper p.48).

The MEU notes that, in an energy only market, generators do write hedge contracts that do include for recovery of fixed costs. Equally, in competitive capacity markets, generators do bid for dispatch in a spot market and recover a considerable share of their costs from this source. This means that the exercise of market power is just as prevalent (and with similar outcomes) in both styles of electricity markets and is therefore quite relevant. The AEMC "throw away" line shows that there is a distinct lack of understanding of how capacity markets actually operate and the issues that confront them.

In this regard, Wolak made no attempt to create such a distinction in his report to the NZ Commerce Commission. To the contrary, he included in his report that the approaches used in capacity markets was useful when he analysed the NZ market which, like the NEM, is also an energy-only market.

Therefore, for the AEMC to exclude the learning and experiences garnered from capacity markets (on the spurious grounds that exercise of market power is different) is of considerable concern and reduces the amount of useful concepts dramatically and unnecessarily. The Commission's attempted distinction is incorrect and needs to be rectified.

On page 58, the AEMC comments

> "It will also be relevant to consider the appropriateness of a NEM-wide Rule change if substantial market power as defined in this paper is only found to exist in one NEM region as a result of how the generation sector is structured in that region."

The implication of this comment is that the AEMC may see the issue of exercise of market power as an SA regional issue alone. Whilst it is acknowledged that most of the examples the MEU has used relate to the SA region, exercise of market power has been seen in other regions. ERIG comments that it saw the problem in NSW, the AER has indentified its concerns of market power in Queensland, and there is no doubt that Hydro Tasmania has market power in Tasmania as it must be dispatched to meet even the minimum demand in that region.

For the AEMC to imply that the problem is isolated to just one region is simply wrong.

4. MEU assessments and conclusions

There is a basic misconception that the exercise of market power in the NEM is a fundamental design flaw in the NEM. This is not so. The cause of the exercise of market power is a structural issue and results from the way the owners of the vertically integrated electricity supply entities broke up these businesses. In Victoria for example, the government took great pains to minimise the market power of the large generators by significant dis-aggregation and, as a result, there is little ability in the Victorian region of any generator to exercise market power. In contrast, the Tasmanian government has essentially retained the bulk of the regional generation within the ambit of one generator which, as a result, has effectively total market power. The extent of dis-aggregation of generation in NSW, SA and Queensland has resulted in the largest generators in those regions having market power for periods of time.

The MEU proposal basically accepts that changing the current structure of ownership of generation is unlikely. Therefore, there is a need to change the rules so that these large generators cannot exercise market power. This realism is replicated in overseas competitive electricity markets, where these markets, faced with the same structural problem have either modified the rules of the markets or the laws behind the markets to minimise the harm that the exercise of market power can do in those markets.

In these other markets, the changes have not been so much the result of an assessment of the amount of harm that can be done, but more an acceptance that if there is an ability to exercise market power, then it should be prevented. These approaches recognise that the exercise of market power does result in the electricity markets operating inefficiently. These inefficiencies are exhibited by:

- Prices to end users rising above levels expected where competition is higher
- Generation being built to provide physical hedges when there is sufficient generation capacity for a region
- Overt “out-of-merit order” dispatch of generation capacity
- The market signalling a need for more generation when there is clearly sufficient generation for the needs
- Fewer retailers active in the market
- Second tier retailers exiting the market

Contrary to the approach taken by AEMC to quantify the extent of the damage caused by the exercise of market, the MEU recognises that the impact of the assessment of market power is pervasive and long lasting – and the effects apply well beyond the time that the exercise was carried out.

The MEU considers that the quantification of the impacts of the exercise of market power via the AEMC approach is an exercise that is fraught with difficulties and does not fully capture the actual transfers of wealth that will occur from it. As the MEU points out, the immediate impact of the exercise of market power is clearly seen in the spot market. The resultant effects are that the prices for future end user contracts will be inflated and to a degree this effect is obvious from the futures market.

Such downstream effects of the exercise of market power at any point in time, are numerous, and they include:

- Contracts for hedge purposes between generators and retailers in subsequent years being inflated
- Retail contracts for end users increasing in subsequent years
- Increased hedging costs and risk premiums, adding to price offerings
- Deadweight economic losses to the community through the impacts of large wealth transfers from end users to generators
- The cost of bringing forward new generation to either provide physical hedges or to fill the apparent shortage of supply
- Re-aggregation of generation and retail as a defensive measure, reducing competition
- Potential barriers to new generation entrants.

The AEMC recognised that the exercise of market power in other electricity markets has been addressed by others, but despite this wealth of knowledge and experience, has determined that this has little bearing on the experience of the NEM, based on the simple assumption that most (**but not all**) of this experience occurred in “capacity markets”. Such a conclusion displays a significant lack of understanding of how capacity markets operate and that the exercise of market power in that market design is essentially the same as in energy-only markets. Overseas experts do not differentiate between the markets designs as evidenced by Wolak in his report to the NZ Commerce Commission[18].

The AEMC makes reference to the debate about the “missing money” that many experts discuss is an outcome of an energy-only market and that an energy-only market must exhibit significant volatility to ensure that over time generators receive adequate compensation. The MEU agrees that scarcity of supply does need to be signalled with quite extreme pricing but, where there is no scarcity, the market should not be signalling such prices. The implication of the missing money argument is that exercise of market power is necessary to ensure that generators remain viable. This argument is spurious as, in regions where there is no exercise on market power occurring, there is still investment in new generation. This is demonstrated in the Victorian region

[18] See section 1.4 above, especially paragraph 6 of Wolak’s report which is quoted in full in that section

where the exercise of market power is not possible due to the significant competition in the region, but where new generation has occurred.

The opponents of the MEU proposal observe that exercise of market power needs to be "enduring" and, as a result, there is an implied assumption within the AEMC approach that the exercise of market power needs to be seen as a continuing occurrence. The concept of attempting to determine "substantial" includes connotations of large transfers of wealth occurring over an extended period of time. The AEMC consultant (NERA) opines that the exercise of market power could be measured over a number of years as this would demonstrate that the issue in not transient.

The MEU disagrees entirely with the concept that the exercise must occur over long periods of time. The fact that the exercise of generator market power in the NEM has recurred continuously over the years of the NEM (for example Justice French determined that Loy Yang had exercised market power in the summer of 2000/01), has been seen in NSW and Tasmania, as well as in South Australia, clearly shows that the issue is endemic in the NEM. On a much wider front, as Wolak explained in his report to the NZ Commerce Commission, the issue has been seen in many other competitive electricity markets. In this regard, the MEU agrees that the issue of exercise of generator market power is "enduring" and has been repeated many times over the 13 years of the NEM operation.