Major Energy Users Inc.

Australian Energy Markets Commission

Reliability Panel

Comprehensive Reliability Review

Comments to the CRR Interim Report

by

The Major Energy Users Inc

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There were high expectations amongst consumers that the ERIG report would analyse a number of significant problems in the NEM, including reliability and the sustainability of supply of electricity for consumers.

But to misquote Winston Churchill in his comment about Clement Atlee, unfortunately

[the ERIG report] is a modest [report which] has a good deal to be modest about.

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Executive Summary

This submission expands on the Major Energy User's earlier submissions by detailing concerns that the signals provided by the NEM to drive adequate investment in generation capacity to meet the future needs of consumers, are basically flawed, and have not achieved the outcomes expected.

There is an implication in the Reliability Panel's Interim report that by maintaining the current market structure, the only option available to the Reliability Panel is to increase VoLL, despite a stated reluctance to do so. The clear evidence from the decision to increase VoLL in 2002 is that there has not been a flood of new generation, which raises serious questions about the effectiveness of VoLL as an effective tool.

MEU observations of the NSW electricity market, demonstrate that there is a fundamental flaw in the NEM structure. That the normative signals supporting new investment in NSW have been present for over 5 years is obvious, yet the only outcome has been the 400 MW proposal for Tallawarra, due to come on-stream in summer 08/09..

The Interim report contains a conclusion that NEMMCo is poor at forecasting demand in each region, as the actuality of the perceived exceedance of forecast demand (and therefore utilizing reserves) did not eventuate. However, MEU notes that consumers would by far prefer to have NEMMCo act conservatively and make provision for potential exceedance of forecasts..

The MEU has devoted considerable effort in seeking overseas expertise and experience in providing input to the RP review. Unfortunately, it continues to be the case that decision makers and local "experts" are by and large so wedded to the energy only market that they will not see the risks faced by consumers from the continuation of such a market model. Eminent overseas experts have pointed to the shortfalls in the energy only market, yet their views have been totally disregarded by ERIG (and to a lesser extent in the RP's Interim report) with scant evidence provided for doing so.

The recent ERIG Report actually demonstrated there are problems with the market structure, yet points to a response which whilst we consider it to be, "too little too late", concludes that to be evidence "proving" the efficacy of the NEM. A deeper investigation carried out in this submission, puts the lie to the ERIG conclusion that the NEM is providing adequate signals for new generation.

Consumers are also concerned that there is too much focus on the needs of the NEM and its participants with little (if any) assessment of the impact on consumers if decisions about the NEM turn out to be wrong. The MEU observes that the rest of the world seems to be moving away from energy only markets arising from concerns that an energy only market will not be sustainable.

The RP has the opportunity to make some far reaching recommendations as part of its CRR. It must assess the performance of the NEM and not just 'hope' that increasing VoLL is the only viable solution available to it.

It is accepted that the implementation timetable of the preferred option will be dependent on the option selected. The MEU is of the view that the right option must be the basis of its recommendation and that the implementation timetable should not impact on the decision in the slightest.

The RP provides a number of options for examination and grouped these into three groups. The MEU considers that status quo is not acceptable for the reasons provided in the body of this submission. Of the options in group 1 and 2, the MEU is more supportive of standing reserve than any of the other options discussed.

Overall the MEU supports the RO approach in group 3 and considers that with the inclusion of the benefits not currently included in modeling, this approach will result in an overall reduction in costs to consumers. At worst, the MEU considers the costs of the RO approach will match the costs of maintaining status quo when all aspects are considered, but result in improved reliability and certainty over the medium term.

1. Introduction

1.1 The Deficiencies in the Interim Report

The Interim Report fails to consider, in the depth necessary, the very clear shortcomings in the current market structure, and yet proposes that the energy only market provides the correct signals for new investment. Despite this the MEU recognizes that the report does suggest recommended changes to the current arrangements

The MEU refers the RP to the NEL requirement of the RP to address the issue of reliability in terms of ensuring "…**the long term interests of consumers …" and that this will be the focus of their deliberations.** As the MEU membership represents exclusively electricity consumers and not consultants, supply side entities or government entities, the views expressed in the earlier submissions and again in this supplementary submission are those of energy consumers only.

Subsequent to the submission made by MEU to the AEMC Reliability Panel (RP) responding to the invitation to comment on the RP Issue Paper as part of the Comprehensive Reliability Review and to the presentation made to the RP Forum on 27 July 2006, the RP expressed a desire for MEU to provide a supplementary report to the RP expanding on the concepts of Reliability Options and Forward Capacity Markets , and identify, in terms of consumer interests, how these concepts might be integrated into the NEM with maximum benefit to consumers. This supplementary report was provided.

In its Interim Report (page 6) the RP states unequivocally:-

> "The reliability settings, comprising a reliability standard and market mechanisms to ensure the standard is met, are crucial for sending appropriate signals for generation investment and end-use consumption."

The implication of this statement (which MEU supports) is that the settings have to be evaluated in terms of the outcomes that will result from them.

The MEU, therefore, is of the view that changes (or indeed the maintenance of existing reliability settings) must be based on expert and deep evaluation of the NEM as technical and policy changes are adopted. The MEU is of the view that the RP has not carried out such a detailed examination of the NEM as it impacts consumers, or how it has reacted to the signals which have been provided.

1.2 The purpose of a price cap and VoLL

VoLL in the electricity market has a two part role.

The **first** part is to reflect the notion that at this price, a consumer will not elect to purchase the service because the price is too high.

The economist's view of a competitive market is that there is a price at which a consumer will elect not to purchase a good or service. It is accepted that this price will vary depending on the product itself and the circumstances of the purchaser. Normally an election such as this is made "ex ante", in that the decision not to purchase or use is made in full knowledge of the cost before the decision is made. The NEM is an "ex post" market, in that the decision to use the product is made **before** the price is known. Thus the market must have a built in price cap (called Value of Lost Load) which is intended to provide a single price at which it is assumed that a consumer would not purchase electricity if it knew prior to the use of the electricity, what the price will be during the time the electricity is being used.

Most consumers make a decision to use electricity over a period of time (eg the cooking of a meal, the manufacture of a product, to operate an office) and once the decision is made, it is difficult to stop that process in the short term. Electricity prices are determined on a half hour basis. Thus with any process which extends beyond this price period, once the consumer is committed to a course of action, it is difficult to change, even if the price were known in advance[1].

Thus the market design itself precludes an informed response to market pricing.

The **second** part of VoLL in the market is to provide a signal for new investment in generation. The view espoused by the then Reliability Panel in 1999, was that VoLL at $5000/MWh was too low to signal new generation investment, that the prices in the NEM needed to be able to go higher than $5000/MWh in order to provide an adequate reward for new generation. The outcome of that decision was that VoLL was increased to $10,000/MWh in 2002.

The supporters for increasing VoLL point to the amount of peaking generation built since the time of that decision. The detractors, however, cite it was the

[1] Appendix 1 is an example of using the data available from NEMMCo published ex ante. NEMMCo's forecasts of pricing are emphatically inaccurate

increase in risk to retailers that caused much of this new peaking generation, as the bulk of it was in fact built by retailers and not "new entrant" generation.

In its Interim report the RP cites a view that the only tool available to it in the current market structure to increase incentive to invest in generation is the level of VoLL, as the levers it has available to it are the levels of USE, VoLL and CPT, and a recommendation for NEMMCo to continue to exercise its reserve trader role. The RP has the ability to set a floor price for electricity, but this is more a tool to maintain financial viability of existing generators.

To fulfill its task, The RP must assess if there is adequate:

1. forecasting of future electricity demand
2. current generation in the NEM to provide adequate reserve generation against the short term forecast
3. signaling to ensure that new generation will be committed in time to meet the longer term forecasts, or that any short falls can be met by demand side responses

Forecasting of demand is satisfied by the RP setting USE and ensuring that NEMMCo carries out its forecasting role in a sound but conservative manner. Forecasts must be conservative as there is a strong asymmetric impact on consumers from forecasts. An optimistic approach could lead to consumers suffering extended loss of load, and the costs of this are much greater than the provision of additional supply which is not used.

Short term responses to a shortage of existing generation will be from small generators and demand side responses, scheduling generator maintenance in quiet periods, and reactivating aged generation for limited periods. NEMMCo has the tools available to it under its reserve trader powers, to reasonably manage any short term risks of inadequate reserves.

It is the issue of medium to long term signaling that is causing the most concern, as it is the stated goal of the NEM that the historic approach of government control of reserves needed to be reversed and for decisions to be made on a competitive basis so as to provide the lowest cost to consumers. The only tool available to the RP **under the current structure** for this purpose, is the setting of VoLL.

This then is the core of the matter. Is VoLL in an energy only market adequate for the purpose, or should there be additional levers provided, with a move away from an energy only market?

It is accepted that the lead time for building new generation is between 1½-4 years dependent on the type of generation built. Low capital cost, high running cost generation such as a gas fired OCGT can be built in less time than a high fixed cost but low running cost brown coal fired power station.

It has been seen that the 1999 decision to increase in VoLL in 2002 has occurred concurrently with an increase in some new peaking generation built over the period 2000 to 2004. Over the same period, there has been a retirement of base load plant particularly in NSW, and extended maintenance of base load plant in 2006 and 2007. There has been no new base or intermediate generation plant built over this period.

During 2006 and 2007, we have seen significant loss of base load and peaking hydro plant in Snowy, Victoria and Tasmania due to a decade of drought. The building of hydro power has been constrained over the past twenty years by the "no new dams" policy of governments, and hydro will be just as effectively constrained into the future by the impacts of global warming. Yet, neither of these impacts has resulted in a major building program of new base load thermal power stations, except in Queensland where there is an abundance of easily won black coal – and even in Queensland government intervention was required to increase generation.

The supporters of "VoLL providing an adequate signal" consider that the NEM has adequate base load generation, yet this is not true across each and every region of the NEM. SA has been the recipient of base load power from Victoria for nearly 20 years; Tasmania built Basslink to get base load power from the mainland. NSW has been importing base load power from Queensland since QNI was built. Tallawarra is a 400 MW base load combined cycle plant for NSW that has been touted for nearly five years, and is still another two years away ("too little and too late").

In the light of experience over the past 5 years, consumers in the NEM are wary that sufficient new base load plant will be built in time to meet consumers' needs.

Consumers are also concerned that there is too much focus on the needs of the NEM and its participants with little (if any) assessment of the impact on consumers if decisions about the NEM are wrong. The MEU sees the rest of the world moving away from energy only markets due to concerns that an energy only market will not work, yet the Interim report seems focused on maintaining this element of status quo.

The RP must take the opportunity to make some far reaching recommendations as part of its CRR. It must assess the performance of the NEM and not just hope that by increasing VoLL **only** will provide the answer.

1.3 The derivation of VoLL

The Value of Lost Load (VoLL) is intended as a surrogate figure at which consumers would by preference cease consumption of power. There is no such single figure, as was discussed in the MEU previous submission, as VoLL varies considerably, dependent on what the consumer is using power for at the time, the duration of the loss of power, and many other impacts.

There have been many attempts to identify a single figure for VoLL, but these have all failed for the reasons pointed out above and in the previous submission.

In the NEM, VoLL is not a value for lost load – it is a price cap, pure and simple.

The value of the price cap (erroneously called VoLL) is derived from the amount of revenue an open cycle gas turbine (OCGT, the lowest capital cost generator available), would require to return its investment (capital and running cost) in a limited number of hours each year.

There is no science involved in setting this price cap – it is based on an assessed number of operating hours at the price cap to cover the annual cost of this simple generator. The outcome can be changed quite arbitrarily. Assume a capital cost for an OCGT of (say) $600,000/MW, assume a nominal return on capital of (say) 10%, and assume a number of hour's operation at the price cap of (say) 6 hours per annum. The outcome is a price cap of $10,000/MWh. Change the assumed hours to 12 hours per annum, and the price cap falls to $5,000/MWh. Increase the return to 15% nominal, and the price cap increases to $15,000/MWh.

This simple exercise is predicated on the unrealistic assumption that the only revenue from the OCGT plant will be from generating at the price cap. This assumption is very much flawed. In fact these peaking plants provide a service in addition to operating for the assumed limited number of hours. They provide as their primary source of revenue **insurance** against the pool price exceeding a much lower figure than VoLL; most commonly in the NEM, they provide insurance against the pool price exceeding $300/MWh.

In the MEU submission to the ERIG Issues Paper, we provided a useful insight into this issue:-

> "There is a noteworthy comment[2] made by Alan Kohler during the time when Snowy was being readied for sale.
>
> > "…yet last financial year [Snowy generated power at] 13.5% of its capacity. … Snowy Hydro is not really a power company … it is an insurance company. …Snowy makes revenue in three ways: power generation (the least of the three), insurance contracts with power retailers, including guaranteed price caps and swaps, and, third, settlement residue auctions, which involve collecting on the difference between price across a particular interconnect – say between NSW and Victoria …"
>
> This accurately describes the operations of Snowy, which uses its assets to increase the value of its "insurance products".

The implications of this provision of insurance products, is that it provides a source of revenue to peaking power plants.

Members of MEU have sought and been offered pricing for such price caps when deciding to take "pool risk" rather than using the conventional retailer approach of having a fixed supply price.

A review of the futures market shows that over the long haul, providing a $300/MWh price cap costs about $10/MWh for every MWh for which the cap is provided. Thus a peaking generator would offer a 12 month $300/MWh price cap over every hour of the year. Therefore to insure against the pool price exceeding $300/MWh at any time during the year, the consumer would pay $10/MWh for every hour in the year – the revenue to the peaking power plant would be nearly $90,000 for every MW of insurance cap provided. This (risk) insurance revenue exceeds the base revenue assumed to apply to deliver the revenue from operating as a peaker in the example cited above.

Thus the setting of the high level of the price cap (VoLL) enables the peak energy provider to recover more than the revenue assumed in the simple exercise used to develop the level of VoLL.

Increasing VoLL would have to be based on an assumption of fewer hours of generation per year at the price cap level. As the risk would increase, the peaking generator would be able to charge an even higher rate for the $300/MWh price cap, increasing the revenue it will get from their insurance products, yet not incurring any higher costs and therefore increasing

[2] The Age, 24 May 2006

profitability of peaking generation without necessarily driving new generating capacity to be built.

It is small wonder that retailers have built their own peaking plants as this would provide a lower cost to them than paying the high prices for sourcing external price caps.

1.4 Signals in the NEM

Unfortunately the RP (as did ERIG in its examination of the NEM) has failed to examine the fundamentals of the NEM, and the ability of the signals provided to achieve the desired outcomes, with the rigour necessary to support its views conclusively.

As a matter of principle, the MEU is concerned that market signals provided by the current NEM design are too late and then too severe, to provide adequate time to provide for the inevitable lead time necessary to allow the provision of generation needed to provide long term reliability of supply. The direct experience of MEU members who make regular investments in order to maintain their position in the market, is that early identification of future needs is essential, so that sufficient investments can be put in place early enough to maintain the market position of the investor. Investors in new generation have exactly the same view.

Throughout its submissions, MEU has maintained that consumers (whether small or large) have made investments of their own which are totally dependent on a long term reliable supply of electricity. Whilst to most consumers (industrial, commercial and residential) the cost of electricity supplies is a relatively small element of the total cost of utilizing their investment, the loss of supply, even for relatively short periods, will impact on their ability to achieve the maximum benefit from their investment.

The clear requirement of consumers is that there must be adequate signals in the NEM to ensure that new generation can be brought on line *before* there are shortages in the NEM. Unfortunately, due to the experience in the NEM to date, consumers are not convinced that the current approaches used in the NEM will achieve this basic and timely outcome. Of even greater concern to consumers, is that the RP seems to have accepted that the current signaling approach (based on an energy only market) must be maintained regardless of this concern.

Despite there being significant investigation into the market structure over the past 18 months, there has been little indepth analysis by any party (including

the ERIG and RP) to consider whether a different market structure will better provide for timely investment in new generation. The excuse all too frequently cited is apparently a lack of time!

The MEU had high hopes that a detailed evaluation of the NEM by the Energy Reform Implementation Group (ERIG) would have sufficient independence and rigour to be able to take a holistic view of the NEM and its performance over the past eight years. Unfortunately, ERIG applied little in-depth analysis to the issues raised by consumers, and relied on the apparent high level view that as there have been no significant shortcomings experienced in the NEM to date, this proves the NEM structure requires no changes. The clear implication seems to be that we need to see a disaster before anyone with the ability to make change considers a need to identify a future risk.

Those tasked with the duty to recommend change seem to see that the risks associated with change now is higher than a potential future disaster. Unfortunately, it will not be the groups such as ERIG that will bear the responsibility if they are wrong – it will be consumers who will incur the penalties resulting from the "lights going out". This view is in total contradiction to the concept of the National Electricity Law (NEL) Objective which is clearly written that the electricity market is to be seen and assessed **and only seen and assessed** in terms of the long term interests of consumers of electricity.

In its Discussion Paper[3] on Market Structures (pages 21-24) ERIG comments:-

> "The average value of the aggregate price spike gives a measure of the contribution towards fixed costs on a megawatt-hour basis. This can be compared against estimates of the capital costs of new entry plant expressed in energy equivalent terms, to assess market signals for new investment. If the average return from the aggregate price spike is expected to exceed entry cost for a new plant of a given technology for a period sufficiently far into the future to fund investment in that type of technology, this is the market signal that investment in new capacity is required.
>
> To examine recent spot market signals for investments in different technologies, the average aggregate price spike revenue from the spot market for base load and gas peaking plants for the past seven years in the NEM is presented in tables 1 and 2 respectively.

[3] ERIG discussion paper, Market Structures: Efficiency via Competition, November 2006

The figures in black (bold) represent values exceeding estimated new entrant costs. Figures in grey represent values below estimated new entrant costs.

1 Average aggregate price spike revenue for base load plants[a,b,c] ('99 to '05)

	South Australia	**Victoria**	**New South Wales**	**Queensland**
1999	$44.18	$15.63	$12.93	$32.79
2000	$44.51	$31.60	$26.12	$41.90
2001	$38.58	$29.12	$23.31	$25.97
2002	$27.69	$26.42	$29.88	$38.85
2003	$28.27	$16.36	$16.91	$13.70
2004	$31.86	$23.69	$35.24	$25.57
2005	$22.32	$19.35	$25.89	$16.20

a for South Australia, the base load technology is taken to be a gas plant, whilst for the other jurisdictions, it is taken to be a coal plant. **b**. New entrant capital and fixed costs are sourced from ACIL-Tasman 2006. **c**.At an assumed 91 per cent capacity factor

In a competitive market, average prices over the long term (the period which equates with investment decisions for generation) will be at the level that just covers both fixed and variable costs of all technologies when the level of installed capacity is 'just right' to meet expected demand. In an energy only market, prices exceeding new entrant costs will occur from time to time, in order to compensate for those years where prices have been below new entrant costs. This reflects the uncertainty about future consumption levels, leading to periods where, due to variations in demand associated with unexpected weather outcomes, or variations in supply due to overall plant availability being lower than normal due to coincident outages, prices will exceed new entrant costs for several years in a row. Conversely, the opposite may occur. For this reason, care must be taken in assessing the information in spot markets. Only if high prices are *expected* to be sustained, are they a signal for new entry.

Although prices exceeded new entrant cost frequently in the early days of the NEM, in both base load and peaking capacity, investments in those technologies in South Australia, Victoria and (more recently for base load plants) in Queensland, combined with Queensland becoming connected to the NEM, and upgrades to the interconnectors into South Australia, resulted in prices falling post-2001. That increase in capacity and availability of inter-state exports removed any spot market signals for new investment in most jurisdictions.

2 Average aggregate price spike revenue for peaking plants[a,b]

	South Australia	Victoria	New South Wales	Queensland
1999	$1175.07	$69.57	$28.95	$1005.58
2000	$1381.44	$576.40	$411.12	$1180.58
2001	$1116.06	$751.14	$349.96	$399.37
2002	$568.70	$538.48	$995.49	$1684.90
2003	$218.33	$248.18	$635.44	$435.38
2004	$825.36	$270.78	$1589.97	$768.84
2005	$413.95	$220.12	$1174.85	$449.93

a. The aggregate price spike is considered for only 1 per cent of the year to assess signals for investment in peaking plant. **b**. New entrant capital and fixed costs are sourced from ACIL-Tasman 2006

In contrast, spot market outcomes in New South Wales seem to have signalled that a new base load plant would have covered its investment costs in three out of the last four years. Further, it would seem that new peaking capacity would also have earned a sufficient return on investment to have justified increased capacity both in NSW and in Queensland – albeit only over a relatively short period given the lifetime of the assets.

It has been suggested that some of the capacity within New South Wales, particularly at Liddell and Munmorrah, is maintained in a 'semi-reserve' status and is not fully available at least for some of the year. Further, the Snowy region, the largest peaking capacity available in Australia, is a neighbouring NEM region to New South Wales. It is difficult to reconcile the observed market outcomes indicating potential signals for both peaking and base-load capacity with the capacities available to support consumption in New South Wales. One possible explanation is that by being kept in reserve, this 'reserve' capacity may also act to support price levels for suppliers in that region – that is, effectively operate as practical barriers to entry to new entrants – despite relatively high price signals driven by consumers through market demand.

ERIG notes that in response to price signals, TRUenergy has committed to building a 400 MW gas fired power station at Tallawarra in NSW. ERIG also notes that in addition to market signals, the NSW government has provided certainty to TRUenergy by clarifying the arrangements that apply to greenhouse gas emissions, and by agreeing that publicly owned generators in NSW would not be investing in new generation capacity at the same time.

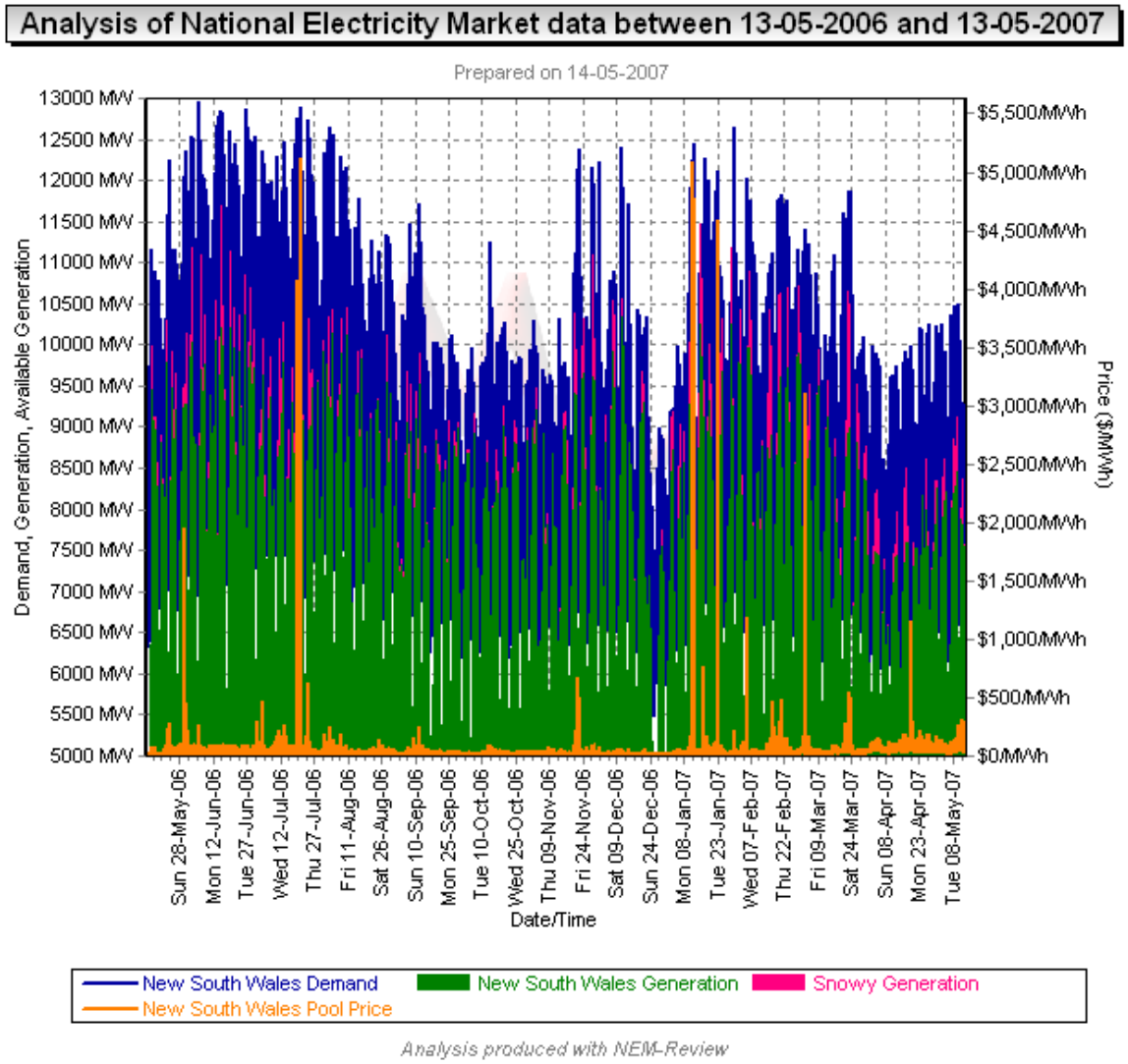
The above review represents a backward looking assessment of the investment signals in the market, looking only at prices with respect to investment grade plant. However, it is not an assessment of the efficiency of the market, which would have to take account of the level of installed capacity and market outcomes.

> Moreover, for long-term investments such as generation, it will be *expected* prices, inclusive of required risk margins, that will drive new investment."

The clear import of the ERIG analysis is that everything is fine, and there is no need to make changes. In particular, ERIG points out that there are signals that the *expected* prices will drive new investment. It notes an apparent contradiction in NSW and then attempts to rationalize away the obvious failure of the market signals in NSW. It does not countenance that there might be a real problem in NSW that has not been addressed by the market signals ERIG says are essential.

It is of extreme concern that where there seems to be a problem, the starting assumption is that the energy only market is correct. Then if the signals don't achieve the desired outcomes there must be reasons other than the market design causing the failure. This is a "head in the sand" approach. When overseas economists provide a view that is contrary to the Australian view, then again there are new reasons proffered to protect the energy only market proponents; reasons have included different usage patterns, more/less meshed network, larger/smaller geographical area, larger/smaller population, larger/smaller consumption, government ownership and lack of government action on greenhouse and carbon emissions..

ERIG observes that the identified lack of base load generation in NSW is being addressed by the Tallawarra plant and that this demonstrates that the market is operating correctly. Examination of the NSW demand and its indigenous generation (including the NSW share of Snowy) output puts the lie to the ERIG conclusion that the NEM is operating effectively. The following chart shows NSW demand for the previous 12 months, all Snowy and NSW generation and NSW prices, all on a half hourly basis.



The chart shows that there is currently a distinct shortage of generation in NSW. Our analysis shows that this shortage has applied in ever increasing amounts for over the past five years, with NSW consistently increasing its import of power.

Over the past 5 years the average spot price (on which decisions are supposed to be made for investment) in NSW was about $45/MWh. Bearing in mind that the last coal fired power station built (Milmerran in Queensland) operates at less than $30/MWh, an average spot price of $45/MWh would be more than adequate to incentivise the building of new base load generation plant in NSW. The ERIG observation that the decision (as yet not consummated) to build a 400 MW gas fired plant at Tallawarra "proves" that the NEM works, is a patently absurd deduction, as there has been an obvious shortage for a number of years with average prices in excess of the "new entrant price", with the shortage being much larger than the 400 MW (only) being provided by Tallawarra. .

1.5 Demand side responses

There is a generally held view amongst the Rule Makers of the NEM, that the widespread introduction of Interval Metering will solve many problems in the NEM – particularly providing all consumers the ability to manage their demand better, and so achieve a better demand/supply balance.

Members of MEU have been connected to the NEM via Interval Meters for over a decade. There are a very few members who, due to the unique relationship between products and power needs, can operate in a way that allows them to benefit from market pricing. Unfortunately, most MEU members do not have the ability to quickly vary their demand to respond to short term (half hourly) pricing signals.

Of those few businesses able to adjust their demand to benefit from price signals, there are a number of preconditions that apply before they can carry out this flexible usage of power. Comments they make are:-

- It is a full time role to continuously monitor power prices in the region
- The manufacturing process must be operational, so that a demand reduction can be achieved (a major problem for those prepared to offer demand side responses is that there is no long term guarantee that the process is operating at the time a reduction is required, so that the reduction can be provided)
- The process must be amenable to being shut down quickly and just as quickly restarted without impacting the quality of the product.
- There is a limit as to how long a process can be shut down without incurring product quality loss, loss of product or expensive start up costs. Thermal inertia is the most common feature for an ability of a process to allow demand side responses, but there is a limit as to the duration thermal inertia can carry a process through without a major impact on costs.
- There is a need to balance the costs of lost production with the savings from ceasing production. As the electricity market price is unpredictable, there is little ability to mitigate normal operating costs (eg production labour costs) , and therefore the power price savings must be able to offset all other operating costs which are essentially fixed.

Those businesses which do not have processes which allow them to shut down elements of their production processes, advise that interval metering provides only a marginal benefit to manage electricity costs – usually related to efficiency improvements and to better management of power demand level.

The typical growth in power demand averages some 3% per annum, which, with a NEM demand of some 22 GW (excluding Tasmania), implies a need to increase generation capacity by some 660 MW per annum. This is equivalent to building one of:-

- A new Mount Piper power station in NSW every 2 years,
- A new Tarong power station in Queensland every year
- A new Loy Yang B power station in Victoria every 18 months, or
- Building a new Northern Power station in SA every year.

With this size of demand growth it is not considered that demand side management can ever increase sufficiently to match the NEM growth in demand.

This means that inevitably new generation must be built, and built in time to match this expected growth scenario. The burning question is where are the signals which will provide the indication that this growth will be built to match the need.

1.6 Other concepts on reliability

The RP report provides a view of the spectrum of reliability options on page 24.

This is a fair representation of the various options available for reliability. What is not shown is that the NEM sits at the far left with only one or two other jurisdictions in the world. In the MEU submission to the RP Issues Paper, MEU pointed out that the bulk of the world's electricity when provided on a competitive basis, sits well to right of where the NEM is on this continuum line.

There is a view in Australia that the NEM is best practice electricity supply, but the actuality of supply arrangements in other overseas jurisdictions puts the lie to this view, as do the openly espoused views of eminent international economists. Other overseas jurisdictions have tried the energy only model and

resiled from it citing significant concerns. For energy only market proponents (including members of the RP) to persistently hold onto a view that the NEM is right and the rest of the world is wrong, is a major concern to the MEU.

The MEU provided a view that there is no one reliability setting which reflects the needs of all consumers all of the time[4], yet this is what the RP is required to identify in order to ensure that reliability in the NEM is achieved. When the structure against which this standard is set might be flawed, the outcome will be flawed following the well known principle of GIGO (garbage in gives garbage out)

1.7 Modeling by CRA

As part of its Interim report, the RP provided an assessment by CRA of the impacts of four options for reliability – status quo with adjustments to VoLL (option A), adding reliability ancillary service (option B), providing a contracted standing reserve (option C) and Reliability Options for all capacity (option D).

In its report (pages 1 and 2) CRA comments

> "Modelled results can be no better than the assumptions and data that support them. The model described here takes into account the technical and commercial characteristics of the NEM. It does not incorporate the possible impacts of introducing significant new features to the market, such as emission trading arrangements, or of material investments made for reasons other than in response to electricity market prices. We also assume that spot and contract arrangements work sufficiently to enable market participants to manage volatility of market outcomes. …
>
> …Our assessment of alternative designs and settings assumed that the level of VoLL remained at the current level in real terms, and the changes in the design introduce additional revenue or the same revenue with less variability.
>
> In order to provide a basis for comparison, the alternatives were analysed assuming that the additional revenue was equivalent to the additional revenue for reserve plant from raising VoLL to $12,50O/MWh in the status quo. Where appropriate, investment profitability was used as an indicator of commercial viability and used as the benchmark to which modelling of each alternative was managed. For example, where a new source of revenue was added to the market, it was assumed that investors would invest until the same level of profitability was achieved as in the status quo. In this way, the

[4] The MEU suggested that the RP assess the concept of "VoLL on the margin", rather than trying to set one price fits all

> modelling was able to assess the *relative* impact of different designs. In practice, reduced variability of revenue would also imply that investors would apply lower discount rates, and for this reason variability of revenue has been resorted for each case but no change in profitability ratio has been assumed. Changes in revenue streams can also be thought of as compensating for other more qualitative impediments that were identified in the report."

The MEU has some concerns with the approach to this modeling as it does not consider the impact of Government policies such as greenhouse measures (eg carbon pricing or taxes), renewables requirements (eg at State level) or the impact of increased wind power on reliability.

In particular the MEU notes that whilst the modeling does note that the issue of risk management practices by investors could affect the outcomes of the modeling (CRA report page 41), there is no reference to the impact that a reduction in market volatility would result from the market design mechanisms. One of the key points made by MEU in its previous submissions is that having a high level of VoLL has resulted in significant risk premiums being added to the prices paid by consumers. The CRA modeling needs to incorporate the reduction in prices paid by consumers resulting from the lower risks of managing reduced volatility.

The MEU has also noted that in overseas jurisdictions, the less volatility in the market, the more long term contracting that is undertaken. This is a rational outcome when considered and reflects the actual experiences of consumers. Consumers see that the prices offered for longer than 3 years in the NEM show a marked increase compared to those for shorter periods. Less volatility provides greater certainty that longer term prices reflect market fundamentals rather than include premiums for future risks. Longer term contracting provides generators and new entrants with longer term certainty about their revenue reducing their risks.

The CRA modeling should incorporate the impacts of reduced volatility in the market from the options examined, as a benefit to both consumers and investors.

In addition to the points noted above in relation to external impacts, we expect that the modeling should address the likely impact on costs as seen by consumers resulting from the reduction in price volatility as a result of the market design mechanism changes. Consumers have no doubt that an increase in VoLL will result in higher risk premiums being added to the prices they pay.

The MEU notes that the CRA modeling outcomes show only a modest difference in outcomes ranging from an increase of $0.13/MWh for a 25% increase in VoLL above status quo to an increase of $0.085/MWh above status quo for providing standing reserve.

CRA states that each of the options has the same base reliability for the cost premiums calculated and it assumes that there will be an increase in investment in generation under each scenario necessary to provide the reliability level used to create the comparison.

In reality the certainty of there being increased generation provided where the market design mechanisms change is greater than CRA assumed. The paying of the small premium calculated by CRA for the market design mechanisms provides greater certainty of the new generation being provided, compared to the assumption it might occur using VoLL only as the driver of investment.

As a result there needs to be sensitivity analysis undertaken between the options to incorporate the degree of certainty that the required additional generation will occur under each option.

1.8 Summary of the MEU earlier submission

In its initial submission, MEU pointed to the outcomes of the existing reliability approach which has demonstrated a number of negative aspects. MEU has updated this to recognise more recent changes in the NEM.

- The market shows an excessive degree of volatility, with as much as 25% of the average pool price in 2005 being caused from a very few (0.2%) half hourly time periods. The MEU points out that this same observation applies for 2006, showing a consistent pattern for much of the NEM's life.

- The fact that the reserve trader provisions have been used more frequently in recent times implies that the rise in VoLL in 2002 has not resulted in sufficient new generation. It is noted that the Reserve Trader although planned for use in summer 06/07 was not used. The continuing drought has resulted in hydro generation is now operating at less than usual output due to very low water levels, such that there has been a need to dispatch plant normally under maintenance in what is usually the "off season". There is a real risk that there may be shortages in winter of 2007 and the summer of 07/08.

- The NEM is in fact a series of regions with modest interconnection, and the mix of generation in each of the regions is not necessarily optimal.

Thus examination of the NEM as a whole is not appropriate, and analysis of each of the mix of the regions is essential to identify shortcomings. Recent developments are that SA has been exporting to Victoria where the reverse is the norm, Tasmania is expected to have inflows from Victoria to equate to the outflows to Victoria, yet the reality has been a nett import into Tasmania

- There has been little demand side response, yet the RP and others continue to believe that this is essential to optimize the utilization of the NEM assets. In fact, the suggestion that consumers **should be required to** shed load detracts from the NEL objective, and totally misses the point that consumers have made significantly more investment than has the NEM, and has made this investment based on the expectation that there will be power available to allow the investment to be continuously viable over the long term. To expect consumers to shed load implicitly assumes that the investment made by consumers have less worth than the investment made by those operating in the NEM.

  This matter continues to be overlooked by those experts touting the view that the NEM is operating well.

- The energy only market is assessed as not supplying adequate recompense for generation. Despite the views of eminent overseas economists (such as Jaskow and Tirole), Australian economists persist in alleging their solution is better.

- At a recent conference (13 March 2007) sponsored by the ACCC/AER, there was a presentation by eminent economist Jean Tirole[5]. He observed that:-

  - There was a need for short term pricing to ensure allocative efficiency (provides orderly rationing)
  - Price signals must provide adequate time to implement a response for future investment
  - Ex ante reliability needs future capacity provision obligations

[5] Scientific Director, Institut d'Economie Industrielle (IDEI), a research center in economics located in Toulouse within the University Toulouse; Director, Fondation Jean-Jacques Laffont / Toulouse Sciences Economiques; Visiting Professor, Department of Economics, Massachusetts Institute of Technology; Directeur d'Etudes Cumulant, Ecole des Hautes Etudes en Sciences Sociales.

- To contemplate an option where "the lights go out" makes economic logic, but which is politically unacceptable. Thus electricity markets cannot operate exclusively on economic signals
- A capacity market provides the security that is implicit with the "need to keep the lights on" which an energy only market does not.

❖ The WA market approach to reliability sees that capacity payments are essential, and the US Electric Energy Market Competition Task Force implies the same. Paul Jaskow of MIT in his paper "Competitive electricity markets and investment in new generating capacity" (April 2006) is convinced that energy only markets cannot provide the reliability that consumers expect.

❖ The MEU provided the RP with a number of overseas studies indicating that there is a world wide trend away from energy only markets following an earlier view that this market system might be the best approach. Australia seems to be the only player in attempting to hold the line that this is the best solution.

❖ Overall, the research provided by MEU to the RP casts significant doubt on whether an energy only market can provide sufficiently early and adequate signals that are required to maintain long term reliability.

In its Interim report, the RP has addressed the matter of reliability purely in economic terms. As Tirole pointed out at the ACCC conference mentioned above, electricity cannot be addressed in terms of economics alone – the political imperative of "keeping the lights on" requires the RP to go beyond economic based decisions.

There is a fundamental assumption in economics that there is a price at which consumers will not buy. This is true, providing that:-

- the consumer knows what the price is before buying,
- the decision not to use can be made before the price goes too high
- can afford not to buy (that is that the savings from not buying exceed the costs of not using)

In the NEM these preconditions do not apply, therefore the basis of using economics exclusively as the basis to make decisions is flawed.

As against this, consumers see electricity supply as an essential service, and therefore the economics behind making a decision not to provide electricity (ie

not to be reliable as is implied by the setting of USE at 0.02%) are also flawed, as the failure of supply is seen by consumers in political terms rather than economic terms, as noted by Tirole.

1.9 The desired outcome

In an emergency, consumers are prepared to reduce demand, as evidenced by the widespread response given to the Victorian gas market after the fire at Longford. What they do not want is for these events to be frequent. Consistently being requested to cut back in demand for electricity does not sit well with consumers as they want simplicity and the freedom to proceed with their normal activities.

Consumers want in their electricity supply:-

- simplicity – there is enough complexity in their own business
- prices to reflect the cost of the provision of the commodity – getting value for money
- prices to be consistent and stable – to allow sensible budgeting
- sufficient electricity to be available to match their own growth and to be reliable – to allow them to get a return on their investment

2. Reliability Performance

2.1 Forecasting has been conservative

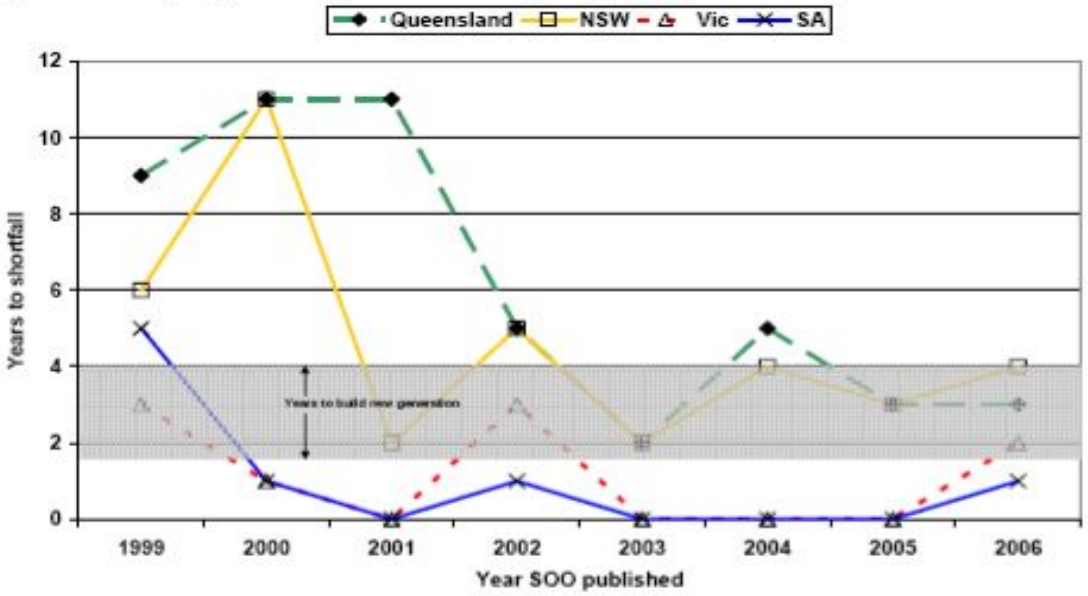
The RP has identified that, during the past seven years, the amount of unserved energy (USE) has exceeded or been less than the benchmark of 0.002% due to lack of generation in each region. On page 25, the RP observes that:-

> "… for the period since market start in 1998, the long-term averages for unserved energy due to supply shortfall are as follows:
>
> - New South Wales, 0.0001%;
> - Queensland, 0%;
> - South Australia, 0.0025%; and
> - Victoria, 0.0101%.
>
> South Australia and Victoria fell outside the reliability standard in the year 2000, when there was a coincidence of industrial action, high demand, and temporary loss of generating units in Victoria during January and February. In every year since then, both states have met the reliability standard. It is due to the 2000 event alone that their long-term averages remain outside the standard."

Based on this the RP is of the view that longer periods are needed to set long-term averages, and that historical outcomes are not an appropriate tool for assessing the more important needs into the future.

The RP has examined the ability of NEMMCo to forecast the needs of the market into the future. The RP considers this to be necessary to define whether the market signals are timely. Against this the RP concluded that NEMMCo forecasts of a potential shortfall did not eventuate. It provides the following figure:-

Figure 3 SOO projections of time until capacity shortfall



The RP concludes that effectively NEMMCo forecasts have been on the conservative side, and (page 28-29) that the:-

> "Market design therefore needs to find the right balance with regard to ensuring incentives are presented neither too early nor too late.
>
> The recent forecasts for Victoria and South Australia requiring new capacity within the year for four of the last six years, and the fact that NEMMCO has contracted for, but not needed to dispatch AEMC Reliability Panel Page 29 30/03/2007 reserve capacity for those two states, would suggest that capacity in those states has been delivered in a literally 'just in time' manner. This raises the question of whether this situation has been too tight.
>
> Similarly, over the last 5 years NSW and Queensland have not shown a forecast need for new capacity sooner than 2 years out. This raises the question of whether achievement of supply reliability is as efficient as for Victoria and South Australia. Of course the difference between these two groups of states could be the difference in the involvement of state governments in the provision of generating plant."

The RP goes on to state that the risk to consumers for being too conservative (ie that more cost will be involved) is a better outcome than being too optimistic and as a result, supply fails (ie that consumers incur the loss of power with significant attendant detriments. The MEU would concur that it is in consumer interests for NEMMCo to be conservative, as the costs to consumers for

unplanned loss of supply can be catastrophic, as Victorian consumers learned to their cost on 16 January 2007.

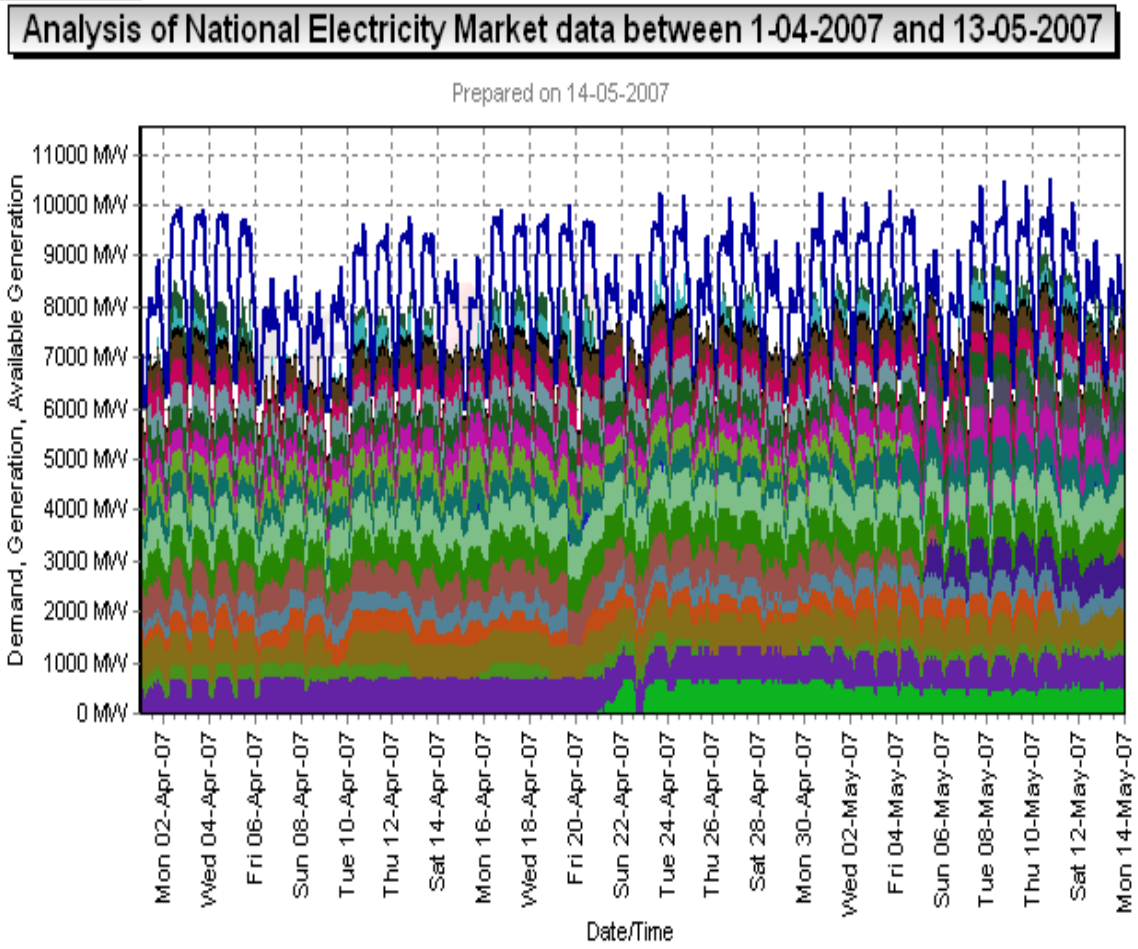
2.2 The NSW experience

What the RP has failed to do in its Interim report, is to identify (as ERIG also failed to do) that there is a significant problem in NSW generation. ERIG concluded that the decision to build Tallawarra PS is an outcome of market signals, but to hedge its bets, ERIG also blamed the lack of disaggregation of NSW generation and its government ownership on there being insufficient market signals.

In section 1 we presented a graph showing that for the past 12 months, NSW has consistently had insufficient generation and is reliant on imported power. With the drought, the ability to supply imports has been greatly reduced, creating greater stresses on indigenous generation.

Over the past three months, the MEU has been tracking the ability of NSW generation to match the needs of NSW consumers. It has been apparent that whilst demand has been increasing over previous years there has been less indigenous generation available to supply the demand.

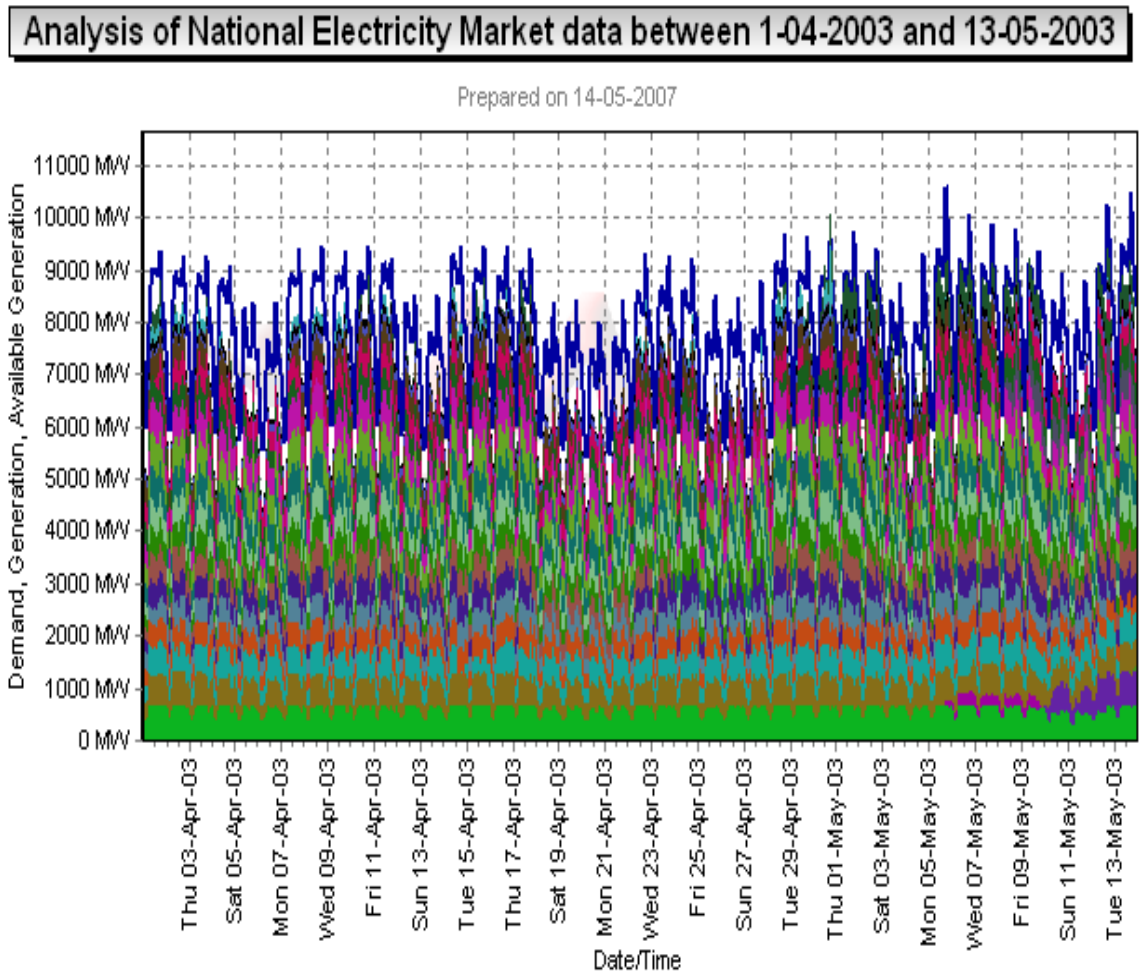
To exemplify this concern, the following two charts show the demand in NSW for the period 1 April to 13 May in 2001 and 2007. As NSW is a beneficiary of some 60% of Snowy output, the charts include Snowy generation for NSW.



Source: NEM Review

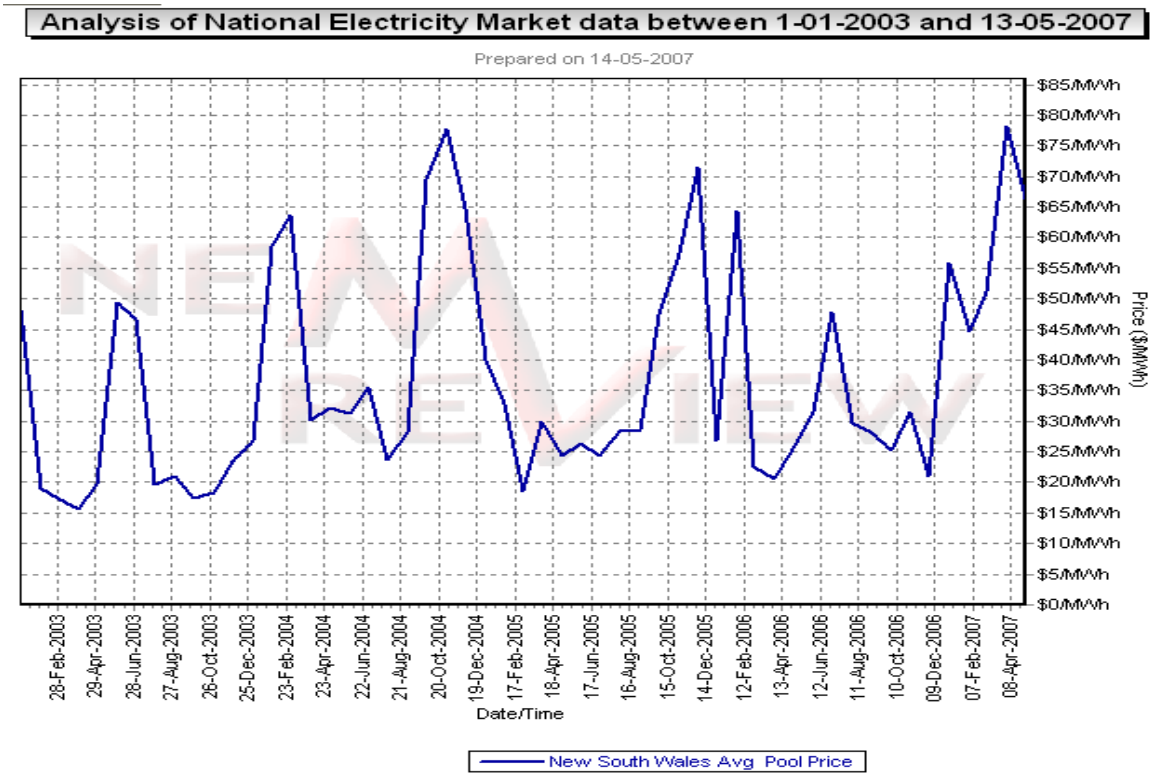
In 2007, there is a clearly a consistent under supply of NSW power supply needs by some 2000 MW.

In 2003, a period which would be expected to provide signals to have in place generation for 2007, indigenous generation plus the same share of Snowy generation, there was somewhere between 500 and 1000 MW undersupply of generation for NSW consumers.



Source: NEM REview

If the ERIG and RP are correct, there would have been signals in 2003 indicating that there was a need for more generation. In fact the average monthly prices in 2003 seem to indicate there was the potential for full recovery for new generation. In fact prices in 2004 continued to give these same strong signals.



Source: NEM Rview

Yet no generation was built other than an indication that Tallawarra was being considered. In fact even in 2007, Tallawarra is still not constructed.

There were a number of clear signals available to trigger new generation for NSW.

- In 2000, the Milmerran power project commenced based on an anticipated cost of production of less than $30/MWh. It came on line in 2002.
- Milmerran set an expectation that new entrant base load generation can be profitable at less than $30/MWh
- The average pool price for NSW between 2001 and 2006 has been $35/MWh and rising
- The development of WEPI[6] to provide an indication of the actual prices paid to generators for electricity has consistently exceeded the spot price since its introduction, averaging some $6/MWh premium over the spot price. This provides an indication that the spot price understates

[6] For more detail about WEPI refer to www.d-cyphatrade.com.au/products/wepi This index was developed in conjunction with DITR.

considerably the revenue a generator receives. Basing an investment case on WEPI significantly adds to the viability of the investment

- In 2002, there was an increase in VoLL from $5000/MWh to $10,000/MWh.
- There was a clear indication in 2003 that new NSW generation was needed to manage a clear shortfall.
- Price signals continued into 2004 and 2005 supporting a view that new generation in NSW would be economic.
- There has been only 400MW committed to increase in NSW generation and this will be in service for summer 08/09

The clear import of the history of new generation in NSW is that it is needed, and would be viable. The only generation project of size proposed for NSW is the Tallawarra project which has still to be built, although construction was to commence in June 2006 and be completed for summer of 08/09.

Based on this "too little too late" outcome for NSW consumers, there is a real concern that the supposed signals provided by the NEM for new generation are inadequate on which to provide certainty for consumers to base their investments.

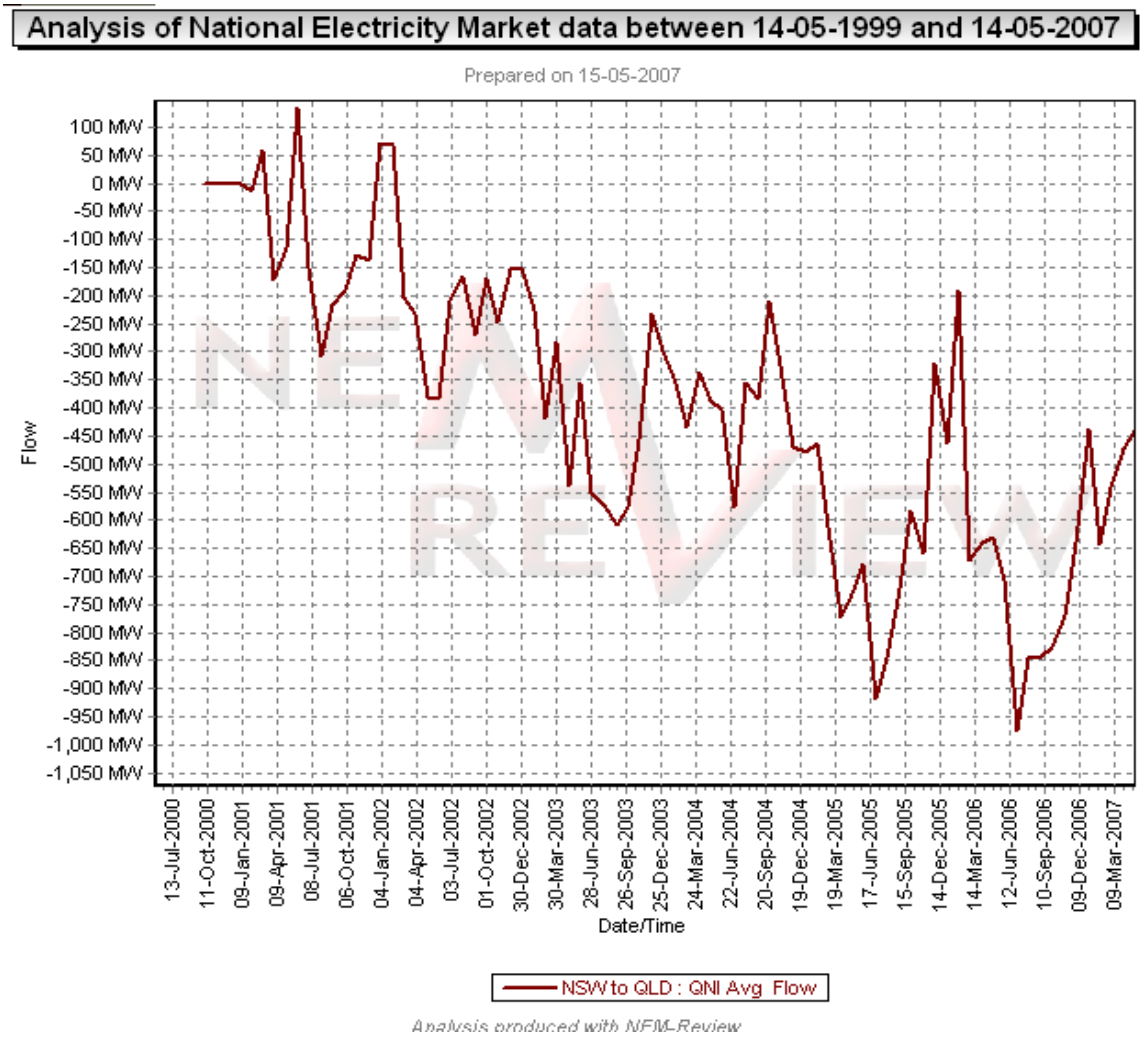
Despite being urged to do so, ERIG failed to carryout sufficient investigation in the NEM to identify that there is a potential problem in the market signals being provided, and disregarded overseas experience and sound economic advice that the NEM does not (even cannot) provide signals for new generation in sufficient time for the investment to be implemented.

The RP is adjured to address this issue on a holistic basis, and not just assume that the energy only market will provide the needed signals. Consumers consider that their investments are at risk due to an inability of decision makers to recognise that the actual history of power generation for NSW is a clear example of a NEM failure.

2.3 But the RP sees that reliability has not been a problem

Unfortunately for consumers, the Interim report opines that that reliability in the NEM since commencement demonstrates that the fundamentals of the NEM are sound. It does not consider that the (initial) reliability of the NEM might be the result of an over supply of generation to start with, augmented by considerable investment in Queensland of generation and in QNI (itself a pre-NEM policy decision). If these investments made in Queensland had not occurred, NSW would have had the "lights out".

This investment in Queensland was not a result of market signals, as on completion of this generation there was a major over supply of generation in that region. This oversupply was augmented by QNI which in its early years showed some flow north, but predominantly has flowed south.



This chart indicates an over supply of generation in Queensland, and to match the observed shortage of generation in NSW.

What is now being only just raised as an issue is the effect of the drought on the eastern seaboard. Queensland generation is being constrained due to a lack of cooling water. Hydro generation in Snowy, Victoria and Tasmania is being constrained due to a lack of rain. Coal fired generators in Victoria face constraints due a lack of cooling water.

This lack of water will impact on NSW consumers most of all as it, of all the regions, is most reliant on imported power and has the largest demand of all.

NEMMCo's conservatism in forecast reserve margins perhaps has some justification when this unplanned for, but ultimately inevitable, occurrence builds up to its maximum impact.

2.4 Conclusions

Despite the evidence to the contrary, the RP has espoused a view that the NEM fundamentals are sound and that therefore the signals have been adequate. With this in mind the RP has to conclude that there is no reason to provide any view that a significant change is needed to the NEM.

Yet despite this the RP has identified three basic options –

Group 1 Do nothing to the structure, increase VoLL, mandate long term contracting

Group 2 Change the Rules and allow reliability as an ancillary service or implement a standing reserve

Group 3 Change the NEM structure to allow payments for reserves in capacity and/or availability

The RP considers that group three options may be outside its remit. The MEU therefore asks if the RP is convinced that group three options are in the long term interests of consumers, how does it intend to implement its responsibilities, and its stated aim that this review is intended to be comprehensive. If it fails to act then the review has been wasted effort and the RP may have failed in its duty to act appropriately.

3. Reliability standard

The RP provides an extended dissertation of the current reliability standard USE currently used in the NEM.

In principle, the MEU has supported the continued use of USE as the basic measure. Setting USE provides NEMMCo with a starting point in the preparation of forecasting and the development of reserves required to "keep the lights on".

3.1 USE and other measures

The RP suggests that the use of USE is appropriate for an energy only market. It then goes on to state that because the NEM is energy only, then to have a hybrid reliability setting (such as USE with LOLP or LOLE) is wrong.

The implication of the RP comment is that regardless of the decision to review the entire spectrum of issues surrounding reliability, we will have an energy only market and therefore we will only have USE as the reliability measure.

The MEU sees that both LOLE and LOLP have a role to play in setting reliability. Indeed the MEU agrees with the RP that frequency of loss of supply and the duration of each loss is just as important to consumers as is the cumulative loss of supply over an extended period. The RP suggests that USE should be backed up by measures to define the nature of USE events.

The MEU accepts that only one measure can be used as the basis of the reliability setting, but is of the view that if there is a change to the NEM so that there is a move away from a pure energy only market (eg to incorporate elements from group options 2 or 3), then there is a need to examine whether another measure might be more appropriate, or that a hybrid measure incorporating USE should be established.

The RP then implies that a single value for USE might not be appropriate for every region, as each region has a different load profile and generation mix. To reflect these regional changes there might need to be a modified approach, such as a set amount of reserve or a limit of duration for an incident.

The MEU considers that all consumers in the NEM should be entitled to the same level of supply security as set by the reliability standard. If there is a

regional need to implement action to ensure the standard is achieved, then this is not a reliability setting, but an action to ensure the standard is reached[7].

USE cannot be a cap, as it is impossible to guarantee an outcome – this means that it is a target. Equally USE is an average measure – that it will be achieved over a period of time. The RP suggests that this time frame be 10 years, with each incident of exceedance being examined qualitatively to identify the reasons behind the incident.

The RP approach fails in a most fundamental way. Consumers accept that over a period of time the USE will be 0.002% due to supply issues. To allow a variation away from this standard, denies the principle behind setting a standard and the expectation.

The MEU believes that USE of 0.002% is a standard that must be achieved over a period of time. This means that if USE has been exceeded, there must be positive action to ensure that actual USE is brought back under the target. To do this USE must be assessed on a rolling average basis over the agreed 10 year period. It is unacceptable to allow USE to continually above the target without taking positive action to bring the rolling average back to the standard.

It is simply unacceptable that if USE is exceeded in one year that this exceedance be forgotten, with measurement starting again the following year. Positive action must proceed from the target being exceeded, with the aim of bringing the long term average back under the target point.

3.2 USE and VoLL

The RP notes that although there should be the same expectation of reliability for all consumers in the NEM, fixing values for USE and for VoLL is effectively contradictory when considering that each region is different. It avers that for a given value of VoLL, actual USE would vary between regions due to differing factors including interconnection, generator bidding behaviour, generation costs, the impact of the secondary market, etc.

Thus for a given VoLL all consumers are not equal in the absence of other actions to bring USE to the base standard. If VoLL is an average surrogate for the price consumers would not pay given adequate forecasts of the future

[7] In section 6 the MEU comments that NEMMCo forecasts must be conservative. Thus for a jurisdictional decision to increase the amount of reserve in its region due to a concern that LOLE levels may for unacceptable, does not run counter to the views of MEU. To provide a regional increase in reserves (providing that such has a sound basis is not unacceptable to MEU.

electricity prices, why should the actions of others lead to consumers in different regions having the same reliability standard? It is the responsibility of the Law and Rules to ensure that actions by market participants (taken to ensure their own improved profitability) are constrained so that the market does not result in inequality for consumers.

For example, why should the lack of interconnection between regions result in a different reliability performance for consumers in that region? The Regulatory Test (RT) is supposed to provide an outcome that allows a degree of commonality between consumers in different regions through investment in transmission. The Rules preclude this occurring because the RT will not recognise that a transfer of wealth from consumers to generators is sufficient reason for an interconnector to be augmented.

The RP notes that a different bidding pattern by generators might be the cause of a difference in reliability. The generators' bidding pattern is to maximise their profitability, so why should consumers have different reliability because generators want to increase their profitability?

Consumers note that there is a connection between USE and VoLL, yet it is the actions of others that is the unacceptable outworking of there being differentiation between consumers in different regions. This is unacceptable and the RP should seek to get equality between consumers regardless of regions.

3.3 Reliability and Security

The Interim report notes there is a difference in reliability and in maintaining security. This is hair splitting! Consumers expect that there will be adequate transmission and generation available to provide the USE agreed to.

It is accepted that in 16 January 2007 there was a security issue in Victoria. The MEU has already advised that they consider this was a fault of NEMMCo. Regardless, there was an outage of a transmission element that prevented generation being available for use in large parts of Victoria. The "bulk supply" arrangements are equally dependent on available transmission and available generation – the two cannot be separated.

From a consumer view point it is the delivery of the power that is critical, how it arrives is not. NEMMCo was forced to shut down part of the transmission system for a credible event - an adjacent bush fire about which it was aware. There was adequate generation available in other parts of the region if NEMMCo had scheduled better. It was the fact that there was a fast shut down of the transmission element rather than inadequate supplies of generation that

caused the extensive outage. There were blackouts due to generation not being scheduled on in time to prevent the loss of security.

The MEU disagrees with the RP that the Victorian loss of power should not be included in USE. The only time loss of supply should be excluded from USE, is when there is a truly unexpected event (eg a terrorism event where a substation or powerline is forced out of service without any fore knowledge by the operator). If there is any foreknowledge as was the case in Victoria, then the outage must be included in the USE.

The MEU would recommend that all incidents of the loss of supply should be included in the USE. The only exceptions to the inclusions of outages should be where there has been no indication of foreknowledge by the operator, or if foreknowledge of the incident could not have prevented the loss of supply.

For example, if the Victorian outage was due to a fire started under the powerline and caused the shut down due to immediate ionizing before firefighters arrived, then this would be excluded. If the Victorian outage was due to the shut down of the transmission element, and that there was insufficient generation built south of the transmission element to provide for the full demand, then the amount of power that could not be provided through proper scheduling would be excluded from the USE calculation. Exclusions should be permitted only to the extent that the loss of supply was that part that could never have been fulfilled given sufficient fore knowledge.

Thus for the purposes of calculating USE, it should not be a description of the apparent cause, but an assessment of the issue as seen by consumers that should be the basis of inclusion or exclusion in the USE calculation.

3.4 Conclusions

The MEU is concerned that permitting the exclusion of some outages from the calculation of USE, has the potential to reduce the impact of this measure as a tool for management of reliability in the NEM. Outages that could have been prevented by better management should not be excluded just because they appear to fall into a certain category identified as being an acceptable reason.

Once a standard is set it should be available to all consumers regardless of their location. Alternatively the RP should advise what the standard is in different regions so that consumers can make an informed choice of location. There should not be a statement that USE is to be 0.002% in all regions, but with an unstated acceptance that it will be different in different regions. While this

might be acceptable for those regions where the USE is better than the standard, it is unacceptable for regions to have a worse performance.

The USE is seen on a long term assessment basis and as a target. This is does jot provide “carte blanche” that previous poor performance is ignored. Consumers expect that over the long term the USE level will be achieved or bettered.

4. Outlook for Reliability

4.1 Investment for new generation

The RP quite rightly points out that investors in generation need to see a reasonable return on their investment, and the MEU wholeheartedly agrees that this is necessary. However, the RP (page 45) states it is not convinced that generators do receive this reasonable return.

> "Submissions to the Panel by some privately-owned generators claimed that they have not achieved sufficient revenue to make a commercial return in recent years. On the other hand, consumer representative groups claimed that generators have been exercising their market power in order to achieve inflated profits, and presented an assessment based on analysis of annual reports of government-owned generators. The Panel has reviewed the available information concerning the revenue available to privately owned generators but does not have access to confidential cost data and has consequently not provided an assessment of revenue sufficiency."

In its discussion on this matter, the RP cites the work of Crampton and Stoft. The MEU points to a missing element in this analysis as provided by the RP, and which applies to any investment made for commercial benefit. It is not only that a return of a certain amount be the result of the investment, it is also the degree of certainty that the return will be made that impacts on the investment decision.

In section 1.7 above, the MEU notes that a missing aspect of the CRA report, is the certainty of the investment being made. The MEU has consistently pointed to the excessive volatility in the NEM which militates against investment in new generation based on return[8]. As discussed in section 1.4 there would appear to be adequate return on new generation investment based on average prices in the pool, especially in NSW, yet there has been a dearth of investment. The base reason is that so much of the average regional prices in the NEM results from a few very high prices (some 25% of the average price comes from some 160 half hour events) that for an investor to assume this degree of volatility will continue after its new generator enters the market is an extremely "courageous" decision – so courageous that the investment does not happen.

[8] The MEU notes that new generation has been built, and that most of this is a result of retailer investment. The MEU points out that this investment can be attributed to a need to provide protection against volatility rather than on the merits of earning a return from an investment by a new investor.

If the market was less volatile, then long term contracting between consumers and retailers or directly with generators is a more likely outcome, providing a generator with a long term secure revenue for its investment. The RP avers that this volatility is managed by the market, although it does concede that this volatility management operates only up to about three years, which is insufficient for investors in new generation. This is a circular problem as the investment can't happen because there is no long term commitment, and there is no certainty because there is no long term commitment.

The RP adds that long term certainty in revenue can be provided by a vertically integrated participant (eg a "gentailer") which has the ability to support a generation investment decision against it own demand. The MEU points out that this assumption is not correct. A retailer can only contract on the basis of consumers contracting with it. If consumers only contract for a short term, then the retailer faces a risk that it might lose that consumer at the end of the term and be left holding contracts with generators but no counterparty. This risk is too high for a retailer. If the RP was correct in its assertion then it means that new entrant retailers cannot access generation to on sell, and new entrant generators have no retailer with whom to contract for the on selling of its product. Neither of these options is palatable to new investors.

The RP rightly points to the issue being one of long term contracting by consumers large enough to underwrite a significant portion of the new investment. If reliability is to be achieved then long term contracting has to be facilitated. Yet the NEM largely provides only 1 to 3 years pricing contracts under the present structure!

4.2 Policy and Generation

The MEU agrees with the RP that a number of policy directions and incentives addressing greenhouse issues are impacting on reliability in the NEM. The MEU is particularly concerned with the reliability impacts of some of the "greenhouse" friendly approaches being incentivised in isolation of the impact on the NEM and its operation. The uncertainty resulting from the "States versus the Commonwealth" with regard to carbon abatement measures, is one such policy issue, just as much as the incentives given to wind generation.

However, another issue is related to the matter of transmission. The RP notes that transmission just as much as generations is fundamental to reliability in the NEM, yet there are policy decisions (such as by the AEMC) which do not give full value to the benefits of transmission augmentation (including reliability) due to the crafting of the Regulatory Test. The current approach in the RT is that

a transfer of wealth between consumer and generator is not to be included in the RT and this exclusion reduces the benefits of the augmentation which would give value to both consumers and generators external to the region being assessed.

The RP notes that the presence of government owned generators in the NEM applies uncertainty for new entrant generators. Whilst the MEU supports the break up of government owned generation into specific generator operations rather than there being a portfolio of generators within one organisation, providing the government owned generators have costs applied to them as if they were privately owned, then this should not be an issue to new entrants. The MEU believes that it is the portfolio approach which gives government owned generators a power they should not have.

There is considerable disquiet that government owned generators have retailing schemes awarded to them, such as ETEF and LEP and that this reduces incentives on new generation, and therefore reliability. The MEU agrees that the ETEF and LEP should be eliminated, but recognises that this is only a larger example of the "gentailer" approach resulting from vertical integration which the RP seems to support in its comments on the issue of long term contracting being supportive of reliability through long term contracting.

The MEU is of the view that many of the issues raised as providing disincentives to new generation investment are of a lesser problem than the lack of certainty on future rewards due to excessive volatility. The MEU notes that it was particularly referred to in the ERIG report for suggesting excessive volatility be reduced. The MEU accepts that volatility is necessary in a market but there must be a point at which volatility becomes counter productive. The MEU considers the NEM is well past this limit, and long term reliability is at risk.

The Interim report (page 52) notes that reliability can be maintained or even improved by increasing VoLL providing that:-

1. "Investments are made consistent with expected returns from spot prices (even though spot prices are expected to be highly volatile and revenue from peak generators especially can be expected to vary significantly from year to year); or hedge contracts of sufficient size and duration are agreed between generators and consumers that will provide a more certain revenue stream with which to underwrite investments; and
2. Energy market prices must not be subject to distortion by external factors such as investments that are not undertaken in response to market price signals, but are undertaken through intervention."

The second point is accepted, yet MEU has pointed out that the first assumption is indeed a "big call" based on the experience of consumers. The MEU echoes the concern stated by the RP that:-

> "… the Panel considers there is a genuine risk that investments may not be made early enough to sustain the reliability standard in the long term and achieve it every year."

The **MEU would point to it differently – the current approach has resulted in "too little too late".**

5. Options for change

5.1 General observations

The MEU notes that the RP has identified there are three basis options which can be addressed as part of the review. The report (page 56) also notes that

> "…a fundamental change to the NEM design is not part of the terms of reference of this Review and is a matter for policy makers. This Review has considered options which are generally based on the existing energy-only market design."

The MEU is extremely disappointed in this statement. The review by the RP was to be a comprehensive review, with the clear understanding that, if to achieve reliability in the NEM a fundamental change was required, the RP would recommend such a change.

The MEU considers this approach totally unacceptable, as the RP cannot be required to accept responsibility for maintaining reliability in the NEM if it is required to operate only within the confines of a structure which may be incompatible with achieving the goals of the RP.

The three basic options identified for change by the RP are:-

Group 1 Status quo with adjustments (VoLL, mandate long term contracting

Group 2 Provide reliability as an ancillary service

Group 3 Capacity payments, availability payments

The RP should have noted that the time frame to introduce each group option would be different, with Rule changes requiring an extended period time frame (perhaps up to 12 months), administrative options requiring less time.

The MEU notes that a structural change probably would require even longer than a Rule change, but the MEU is of the view that it would be better overall for consumers, that the correct answer is implemented now in preference to implementing a solution requiring less time.

Fortunately, despite the already tight market and expected shortfalls in supply if the drought does not break, there would appear to be time available to get matters right at this stage, than deferring implementation of a solution when

matters might well have become much worse and therefore require a major change in short order.

5.2 Group 1 options

The RP suggests that increasing VoLL and mandating long term contracting fall into this category.

Increasing VoLL as a solution to improve/maintain reliability is addressed throughout this submission as an unproven option, providing little certainty that it will achieve the goals required. The previous increase would appear to have done little to increase generation or demand side responsiveness, but has created a driver for retailers to increase risk premiums and build generation as their own hedge against volatility.

VoLL is already over 250 times the average price for supply of electricity in the NEM, and even more than this multiple for the costs of production. Direct exposure to price rises in other markets at Markets would point out that to see a change of 200 times in a matter of hours is unique in a commodity market, yet this is a frequent occurrence in the NEM. This is demonstrated in Appendix 1

The RP makes reference to the UK as an energy only market, having similar characteristics to the NEM (although the UK NETA market is, unlike Australia, a net pool trading system). Since the market in the UK was revised and commenced operations in January 2003, the average time weighted price of power is about £35/MWh. The price has peaked at £600/MWh (ie at 18 times the average) and there have been only 79 half hour periods in the past 4.3 years (or 18 times per year) where the price has exceeded £350/MWh (or 10 times the average price).

Compare this to the NEM where

- **the half hour prices exceed 10 times the average pool price at a rate of over 8 times the frequency in the UK, and**
- **the highest recorded price in the NEM is $9909.03/MWh (NSW 1 December 2004) which is over 280 times the NSW average** price for 2002-2006

Another comparison is the ASX which has seen a major reversal (based on the ASX All ordinaries) by a factor of 2 in 1987 where this was referred to as a disaster and a market crash. Over 27 years the ASX market has seen a growth of a mere 13 times in the all ordinaries. These changes are totally benign when seen

in context of the electricity market. If a stock varies in price by more than a few times, the ASX issues a "please explain".

It is accepted that volatility is a feature of a competitive market but the NEM volatility is excessive by any other measure. Already there are significant costs added to the pool pricing to manage the risks extant in the NEM, and consumers carry these costs.

An increase in VoLL will only exacerbate this volatility, and due to the increased risks on participants, there will be increased costs incurred to manage these risks.

Mandating long term contracts appears to provide an attractive solution on paper but there are two fundamental questions that arise.

First is, how can this be mandated? – retailers already have no certainty whether they will hold their consumers in the short term let alone the long term. Mandating long term contracts will only increase risks for retailers which will be passed onto consumers. How will such a mandate impact on new entrant retailers who are seeking to increase their market share?

The second question is – why is it necessary? If the market structure is sound, and long term contracts are sought by both large consumers and generators, what is preventing this from occurring? The MEU points to the market structure as the prime cause preventing this from occurring now and mandating it will not address the major problem.

Even a brief overview of the market indicates that mandating long term contracting is bound to fail.

5.3 Group 2 options

Group 2 options are to give NEMMCo the power to contract with generators to provide reserves as either an ancillary service – RAS - (short term supply) or as a standing reserve (long term supply).

Both of the options require NEMMCo to develop a view of the future reserves available and available to meet the expected future demand. The RP has already commented on their view of the success NEMMCo has in forecasting demand and this view would necessarily have to be built into the detail surrounding the group 2 options

An RAS will impact most on those generators already offering FCAS and energy to the market. It only operates in a short term mode (to be available within a short time measured in hours). An RAS payment provides an incentive to generators to withhold dispatch under normal operations with the aim of getting a higher price as an RAS.

It effectively maintains the current lack of incentive to build new generation, and therefore will not necessarily result in additional generation being built, which fundamentally is what maintaining the reliability level requires.

The MEU considers that this option has the potential to increase the ability of generators to game the market, even more than they do now, but not to provide a strong signal to build new capacity.

A Standing reserve is similar to the reserve trader approach, but permitting NEMMCo to contract out for longer periods; currently NEMMCo is only permitted to contract for the next summer period, and no further.

This approach has some appeal, as by contracting out for longer periods a new entrant has the potential for recovering a significant portion of its capital investment. The key drawback is the view that the reserve capacity would only

be available to be dispatched when the NEM regional price reached VoLL. The major concern is that generators in the market will still use VoLL as a market cap, and continue the current processes of gaming the market, such as deliberately withdrawing capacity to increase the regional price.

Having the required capacity in the market plus reserves needed for exceptional circumstances is a benefit, but more could be done by having the reserve (or some of it) to limit the excesses of generator gaming.

The detail of developing the standing reserve approach needs to be carefully examined to ensure that competitive processes are used to ensure the minimum costs. Additionally there must be a requirement for the reserve plant to be available when needed such that if the reserve is called and does not deliver, then its reserve capacity payment is not paid.

Of the options in groups 1 and 2, the MEU is more supportive of standing reserve than any of the other options discussed, but does not consider any of the other options are certain to deliver additional generation.

5.4 Group 3 options

This group of options provides a predetermined amount of capacity plus reserves, based on NEMMCo's view of future demand and reserves needed to provide for the determined level of USE. A reduction in volatility results causing lower costs for risk management, and generators have certainty for receiving a portion of their fixed costs enabling them to have greater confidence in gaining a return on their investments. Effectively a greater level of certainty for all parties concerned is the outcome from these approaches

The MEU provided the RP with the suggested Reliability Options approach, as the MEU considered this meets the long term needs of its members and matches the investment profiles of MEU members.

We note that the RP modeling does not include for penalty payments to be made in the event that contracted availability is not provided when called. The MEU believes that this is an essential element of the RO approach, and that it should be incorporated.

The MEU concurs with the RP statement that

> "Group 3 options are founded on a view that, providing the costs of production are met separately, there is no difference between plant that is used to produce energy and plant that is in reserve in the contribution to

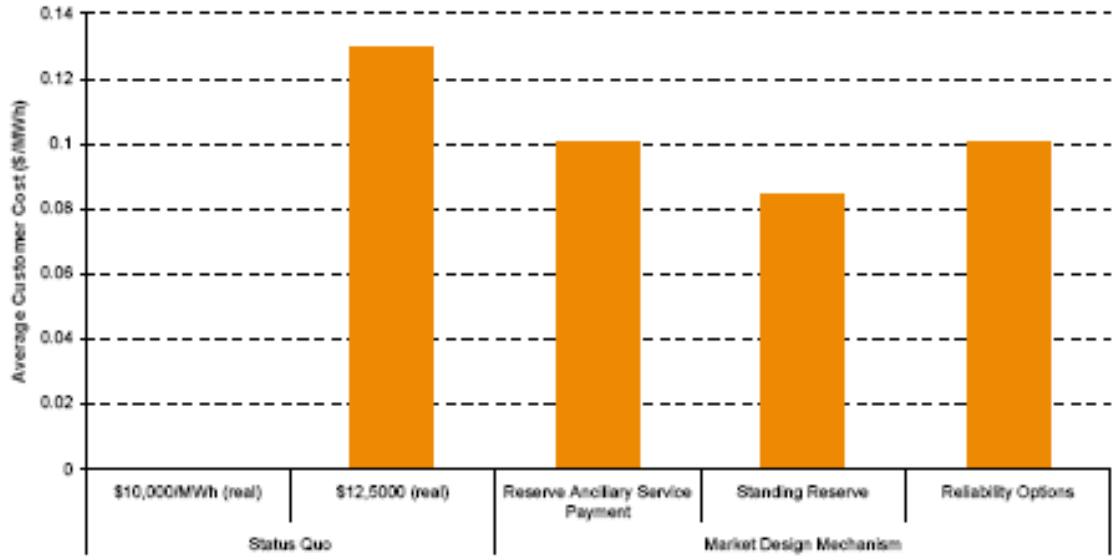
reliably meeting total demand. Therefore they should be remunerated equally."

The MEU would add that the benefits of less volatility and greater certainty for generators should further reduce costs to consumers by reducing risk and the premiuns needed to manage the risk. The approach would demonstrably increase reliability. It is noted that these benefits of greater certainty and reduced volatility were not included in the CRA and RP assessments of the costs resulting from the introduction of the RO approach.

The MEU supports the RO approach incorporating penalty payments for non provision of capacity when called. The MEU also considers that the benefits from reduced volatility and greater certainty for generators will provide a benefit at the point where consumers see their costs. The RP should require CRA to include these benefits in the modeling.

5.5 Assessment of the options

The clearest portrayal of the relative costs of the options is provided by CRA on page 41 of appendix 5 to the Interim report.



Note: Customer cost calculated relative to the status quo $10,000/MWh scenario, and spread across all NEM load MWh.

CRA indicates that a premium to consumers for implementing the four basic approaches would range between a premium of 8.5 cents/MWh to 13 cents/MWh. This premium should be seen in light of the current level of a WEPI which has ranged over $35-40/MWh until very recently. These premiuns

can be seen as a n increase of less than 1%. Against this consumers would see the same or improved reliability.

However, the MEU is concerned that the CRA report does not include all extraneous impacts on the price premiums it develops.

For example:

- increasing VoLL is likely to increase the risk premiums for volatility in costs to consumers, whereas the RO approach would reduce this volatility potentially reducing the premiums for risk management.
- From a generator viewpoint, reducing volatility reduces the risk to a generator should it be unable to provide against a contracted supply (either direct supply or a hedged supply) and therefore have to source supply in the market to meet its contract arrangement.
- Reducing volatility is likely to reduce the risks for longer term contracting, and so provide greater certainty to an investor in generation, so the benefits of longer term contracting likely to result need to be assessed.

Overall the MEU supports the RO approach and considers that with the inclusion of the benefits not included in modeling, this approach will result in an overall reduction in costs to consumers. At worst, the MEU considers the costs of the RO approach will match the costs of status quo when all aspects are considered.

6. Other issues

The RP takes the opportunity to address some myths, misconceptions and other matters impacting NEM reliability.

6.1 Price mechanisms

The RP concedes that the NEM pool price is highly visible and shows considerable volatility, whereas the actual market is based on contract based prices which are much less visible (perhaps invisible). The MEU concurs but does point to the work undertaken by DITR and the SFE in developing a notional wholesale electricity price index (WEPI) which is intended to provide an indication of the contracted prices. WEPI is available on the SFE website and is quoted in the AER weekly performance reports.

WEPI is consistently higher than the pool price and does show less volatility

In 2005	Qld	NSW	Vic	SA
Av Spot NEM Review $/MWh	25.2	35.9	26.3	33.6
Av WEPI AER weekly reports $/MWh	37.5	40.2	32.2	40.6
Average Premium WEPI/SPOT $/MWh	12.3	4.3	5.9	7
Typical base SRMC ACIL $/MWh	11	15	3	30
New entrant LRMC ACIL $/MWh	31	32.7	35	45.6

However WEPI is a daily set price index and does not recognise prices set for long term contracts. Providing information on longer term contracts would be beneficial as consumers would benefit from seeing these.

What is important to consumers as well as knowing the spot price and its movements, is knowing the risk premium they pay as a result of a counterparty taking the spot price risk. It is accepted that the spot price does not apply to all electricity sales – indeed MEU notes that the National Generators Forum claims that more than 80% of the trades in the NEM are effectively based on hedge contracts between retailers and generators. The elements not covered by contracts have some either physical or financial cap to protect against excessive movements in the pool pricing.

Notwithstanding this extensive contracting and derivatives application, some consumers, retailers and generators do have exposure to the spot price in the short term but over the long term, the spot prices drive the expectation of future contracts and derivatives. This linkage can be seen in the futures markets.

So the MEU whilst agreeing with the RP on the visibility aspect of the spot pricing, does not concur fully with the conclusions drawn by the RP about the impact of spot prices.

CPT is a financial tool to protect the financial position of (particularly) retailers during a sustained period of high pool prices where they might be exposed.

It is also an indication that the NEM is in crisis and it is not intended to be a market signal other than to indicate a crisis. To attempt to integrate CPT with anything other than for what it is intended could easily result in unintended consequences.

The MEU sees that CPT should only be used for financial protection of counterparties in the NEM and for no other reason. It should not be related to reliability of supply in anyway.

6.2 Intervention

The need for Reserve Trader is a direct result of the market not providing appropriate signals for new investment or demand side responsiveness. In fact one of the options in group 2 is effectively the formalization of reserve trader on a longer term basis (renamed standby reserve).

The MEU considers that the frequency of use by NEMMCo of the reserve trader since the NEM commenced is a clear statement that in the absence of any better mechanism, it would be foolhardy to remove this tool for ensuring security of supply for critical summer demands.

The MEU supports retaining the reserve trader until it is clear that other mechanisms have removed the need for it.

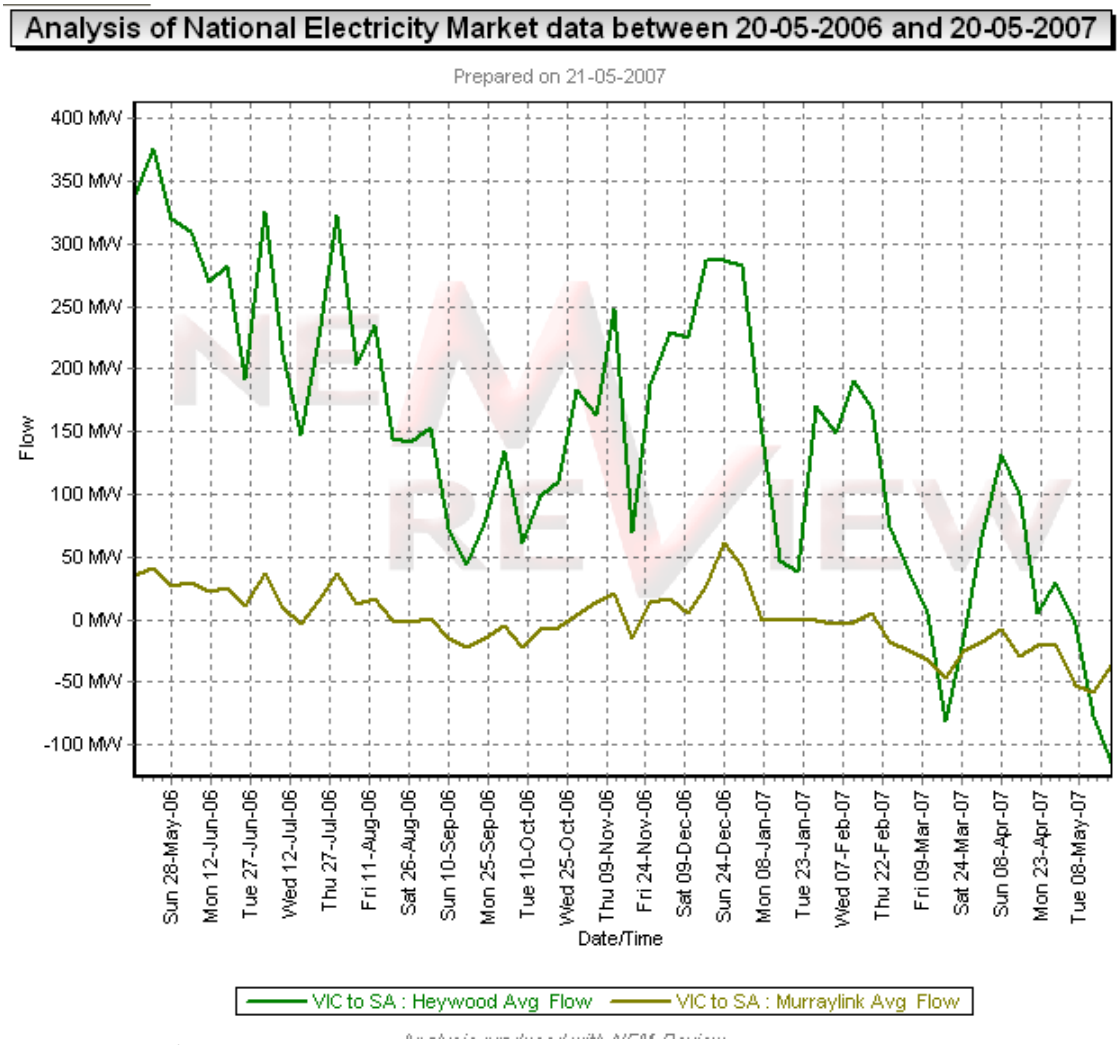
Reserve margins define the amount of power that is considered to be needed to maintain system security. There must be some level of reserve defined as the minimum needed in the NEM. Despite criticisms of NEMMCo being too conservative, the MEU considers that NEMMCo must err in this direction. If MEU has a concern, it is that NEMMCo set reserves may well be too optimistic.

The MEU considers that the work by NEMMCo in setting minimum reserves does not need change, and if change is needed, then it should be to increase the levels of reserve rather than reduce them.

A "share the pain" guideline is not considered appropriate. It is noted that SA may some times benefit from there being greater reserves in other regions and

so its USE is maintained from imports from Victoria, the entire NEM is intended to be national, not regional.

As an aside, the MEU would point to the current situation in the NEM where SA is supplying Victoria with power as shown on the following chart of average weekly flows on Heywood and Murraylink interconnectors. This demonstrates that in this case SA is providing supply to maintain Victoria's level of USE.



Source: NEM Review

The MEU considers that the NEM should be based on the concept that reserves in other regions should be available to all to ensure that all consumers can attain the same USE regardless of where they are located.

The maintenance of short term reserves has recently been an issue of major concern for MEU. MEU has noted that particularly in NSW short term reserves

have been miniscule, requiring high priced power from Snowy to make up shortfalls in available capacity.

In appendix 2 MEU provides a view of the practices of generation in NSW, using the first three weeks of February 2007 as an example. In these examples, generation taken out for maintenance has not been brought into service when it is clearly needed. Whether this was a deliberate ploy or poor scheduling, the outcome is that consumers were adversely impacted. Also, during this period, NSW generators withdrew capacity in order to increase pool prices.

MEU fully supports the RP approach to short term PASA as these examples provide significant support to the RP decision that short term PASA should be calculated on daily and even hourly basis, and made public.

6.3 Operational issues – demand forecasting

As stated above the MEU does not consider that NEMMCo forecasting is too conservative. The $2.7m contracted by NEMMCo each year of 04/05 and 05/06 to secure adequate supplies needs to be considered in light of the $6.7Bn traded through the NEM spot market for power supplies in 2006.

The MEU does not consider that NEMMCo was profligate in expending this amount to ensure that the "lights did not go out".

Notwithstanding tacit support of NEMMCo's exercise of the reserve trader in 04/05 and 05/06, the MEU agrees that reconciliation of NEMMCo forecasts to actual data are desirable and it must be a requirement for NEMMCo to keep the RP (and the market) advised of changes and improvements it makes to its forecasting.

6.4 Review of reliability settings

The MEU concurs that there should be a more frequent detailed and holistic review of all reliability settings and that this should be formalized. The RP suggests that this should be every three to five years.

The MEU considers that a review every five years at this stage of the market development is too far apart, and that for the near future a review every three years is necessary. Once there is stability in the NEM, this period might be extended to five years.

In reaching this view, the MEU points to the current concerns with the demand supply balance in the NEM, with significant quantities of generating plant being

under maintenance, being withheld from service, or having insufficient water supplies for hydro and cooling purposes. That in a period of a few months the NEM can go from having adequate reserves to potentially having to shed load in the next few months (if the drought continues) highlights that issues concerning demand supply balance can occur very quickly, and could have a disastrous impact on consumers if NEMMCo conservatism is reduced.

Further, the RP has considered that the current approach to ensuring adequate reserve capacity may not be sufficient for the needs and as a result is contemplating significant changes, adds to the concern that having too long a period between reviews would not be in the interests of the NEM and consumers.

The MEU has a concern that not formally reviewing VoLL on a regular basis has the potential to lock in unacceptable levels of VoLL for too long a period. Equally, if there is a comprehensive review each five years, and VoLL is retained for another 2 years after a decision is made to change it, then VoLL would be fixed for a minimum of seven years. The MEU considers this is too long a period.

On balance the MEU considers that a comprehensive review of reliability each three years until the NEM is stable is an optimum period. Because VoLL would then be reviewed only every three years, the MEU considers that a change in VoLL must occur within 12 months of the decision to change.

The MEU also recommends that the RP formally review the outcomes of reliability in line with the decisions made at each comprehensive review, and that this review of outcomes is carried out annually. For example, if the RP recommends the introduction of Reliability Options, then there should be an annual review to identify if the process put in place is providing the outcomes sought.

7. Matters for consultation

The MEU has retained the same structure in this summary as used by the RP. Despite this the MEU has made other recommendations and comments in each of the related preceding sections which are not necessarily included in the MEU comments against each of the RP comments. That is, we have only made comments in relation to the specific comments of the RP.

Because of this it is essential that the earlier sections are considered in full when attempting to appreciate the views of the MEU.

7.1 Reliability performance to date

The fact that by and large there has been no loss of supply as a result of insufficient generation in the NEM , indicates that the settings in the NEM may have contributed to this outcome.

The MEU remains unconvinced (despite the views clearly made in the Interim report) that the increase in 2002 of VoLL to $10,000/MWh achieved any increase in generation reserve levels despite this being a stated aim in the 1999 RP report.

At the same time the MEU is of the view that the increase in VoLL did increase costs to consumers, and this needs to be evaluated in terms of did the increased costs result in maintaining or increasing reliability?

The MEU is not convinced that the cost increases did achieve the stated goal.

7.2 Reliability settings

The RP concludes

1. The current form and level of the reliability standard, being USE of no more than 0.002%, should be retained.
2. The current scope of the reliability standard should not be changed.
3. The most economically justifiable and straightforward method of targeting 0.002% USE in the long term is simply to target 0.002% USE annually NEM-wide and within each region.
4. The form, level and scope of the reliability standard should be reconsidered within the next 3 years as part of a review of the overall package of reliability settings.
5. A hybrid form of standard should not be adopted. Instead, the Panel should regularly prepare forecasts of frequency, duration and depth of possible shortfalls that make up the 0.002% USE, to provide jurisdictions, consumers and industry with a gauge as to the possible nature of USE events.

6. The potential to add to the standard of demand or duration parameters for each jurisdictional region to provide for the fact that a single reliability standard may have different impacts for each region. The jurisdictions would then contract for additional reserve plant to meet these augmented standards.

The MEU agrees with the views 1-5 stated above. The MEU does not consider consumers in different regions should not expect the same level of reliability, but concedes that if a jurisdiction (after adequate assessment) is convinced additional reserve should be required, then this should not be prevented.

7.3 Outlook for reliability

The MEU does not agree with the RP that the current levels of reliability can be maintained in the NEM under an energy only market as currently operating. The RP comment on report page 80 is noted

> "The Panel's preliminary conclusion is that there are risks on the horizon that may impact reliability in the future by affecting the timing of generation development to match expected demand, hence it may be prudent to adjust the reliability mechanisms to provide continuing confidence that the reliability standard will be met into the future."

The MEU is convinced that in the absence of action by the RP, there will be an inevitable loss of reserve, resulting in load shedding.

7.4 Alternatives

Of the alternatives 1, 2, 3A and 3B, the MEU considers only alternative 3B has merit. MEU comments are provided in more detail in sections 5.3, 5.4 and 5.5

The MEU comments that its preference is for the Reliability Options approach, but does see that expanding reserve trader comes as a poor second best.

In both of these alternatives the MEU considers that there must be a penalty levied on non-availability when the generation is called on.

7.5 Other matters

Regional reserve levels are suggested as a means to equalize regional differences in LOLE. Providing the assessments made by the jurisdiction for the additional reserve levels are soundly based MEU supports this as an approach.

The MEU supports NEMMCo being conservative in its forecasts, and a regional increase in reserves expands on this conservatism.

Reserve trader should be retained until it is clear that the NEM is stable. In the absence of definitive evidence that reserve trader is no longer required because other mechanisms have overcome the current shortcomings requiring the continuation of reserve trader to set a sunset time frame on reserve trader is inappropriate

The review period should be no more than three years, and VoLL should be maintained for only 12 months after a decision is made to change.

NEMMCo should advise on changes to its approach and reconcile **demand forecasts** to actuals on an annual basis

Short term PASA (on a daily even hourly basis) calculation and reporting is strongly supported.

Contracting reserves as an extension of reserve trader is a bad second best option, as Reliability Options will provide a better outcome for consumers.

CPT does not need to be increased.

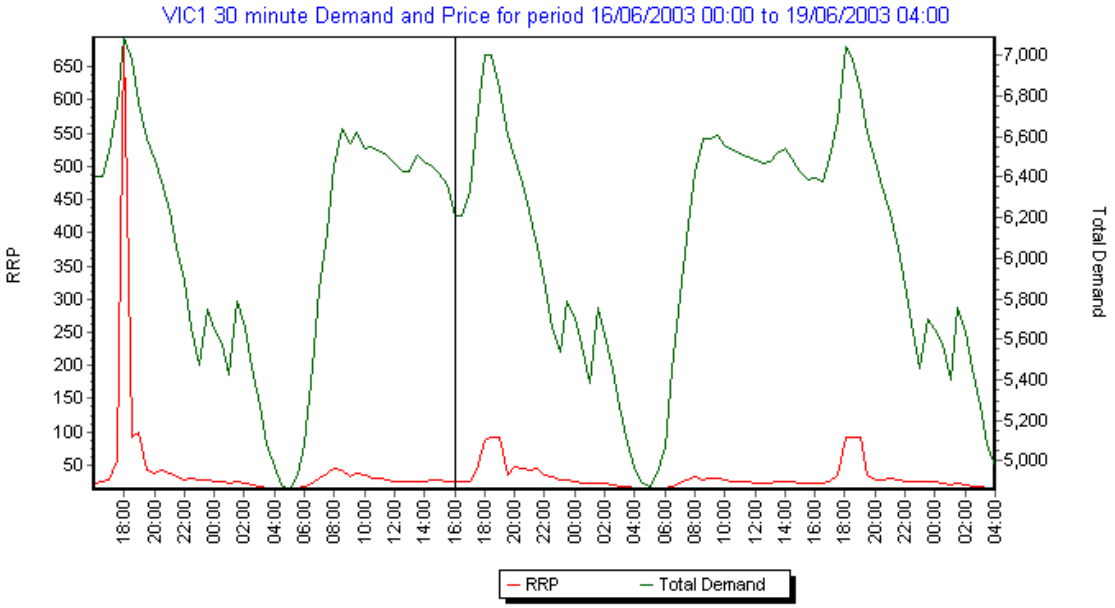
APPENDIX 1

The challenge to forecast when to arrange to load shift.

To overcome the lack of "real time data" available to consumers, the national electricity system manager (National Electricity Market Management Company NEMMCo) publishes an indication of the electricity price for the next day based on expected demand and indicative prices submitted by generators.

Unfortunately demand varies considerably with ambient temperature and generators have the right to withdraw indicative prices and rebid these at a later time, and also to withdraw capacity at any time (see appendix 2 to see the impact of capacity withdrawal). The effect of these variables is to cast some doubt as to the reliability of the forecasts and the benefit consumers may gain from using this tool in order to load shift.

Figure 1

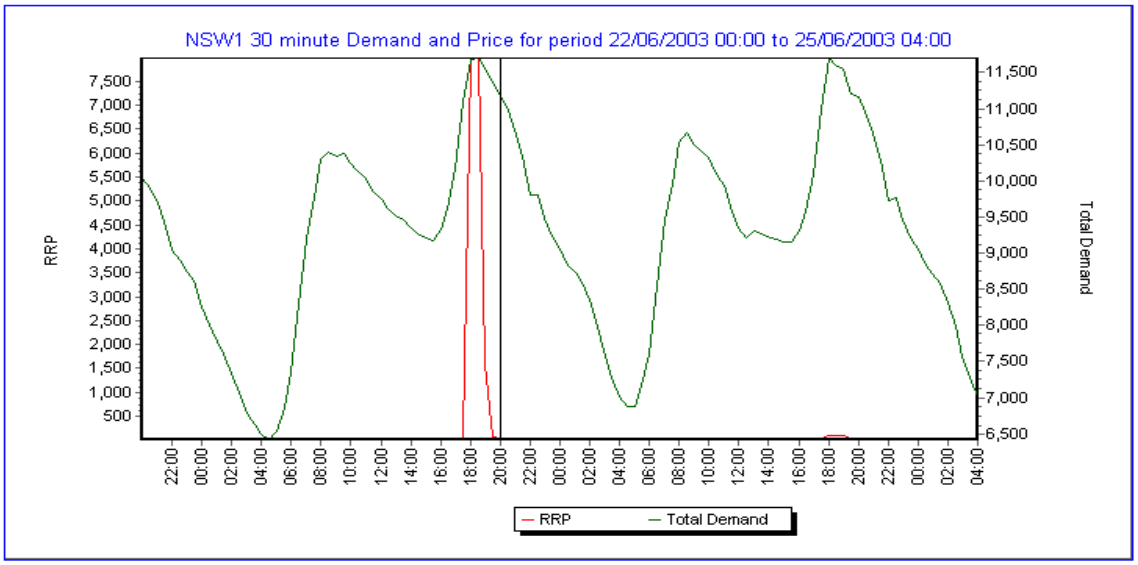


Source: NEMMCo website

When analyzing and using the NEMMCo data it should be noted that the average annual price of electricity is in the $30/MWh range, and that one half hour at the maximum price for electricity currently permitted (ie VoLL which is $10,000/MWh) adds nearly 60 cents to the annual average price of electricity – an increase of 2% to the annual average wholesale price.

Whilst such data appears to provide some indication as to future demand and price, a review of the demand and price movements in the wholesale market for NSW during 23 and 24 June 2003 provide significant concern as to the extent this data can be used by consumers for making forward decisions as to future electricity usage.

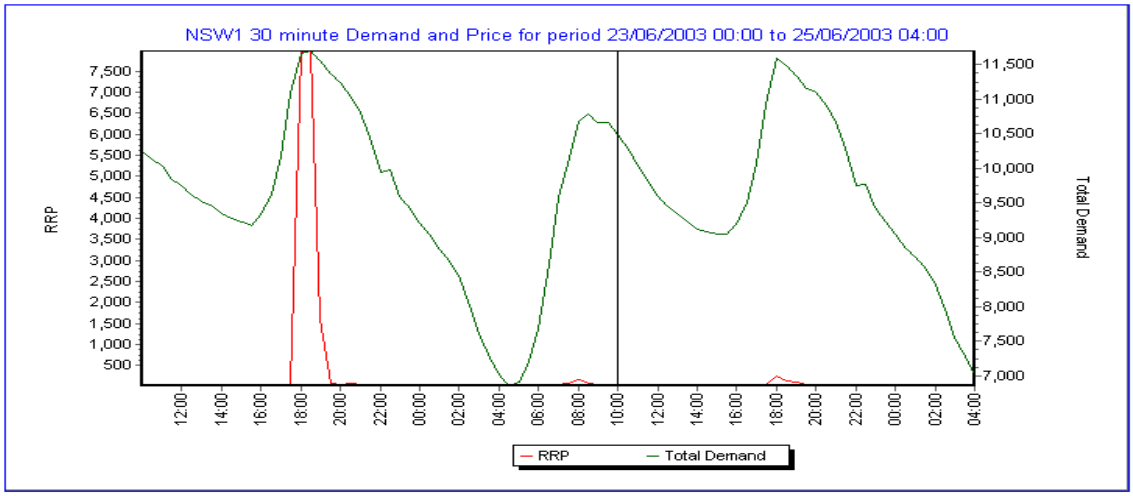
Figure 2



Source: NEMMCo website

At 6pm on the 23 June 2003, the demand in NSW reached very high levels and the price spiked to over $8000/MWh for over one hour. Note the low price forecast for the same time on the following day, some 23 hours ahead. The indicative price for power for that time is less than $100/MWh for a similar level of demand.

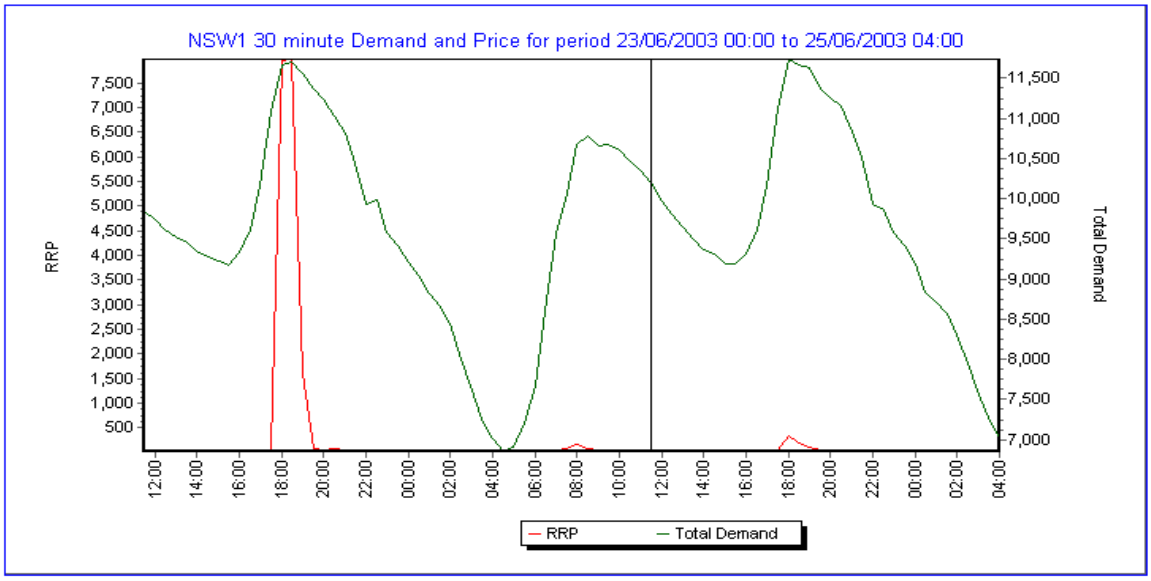
Figure 3



Source: NEMMCo website

By 10 am on 24 June 2003, the forecast demand is much the same, and the forecast price is perhaps $200/MWh, a slight increase over the expected price noted 12 hours earlier.

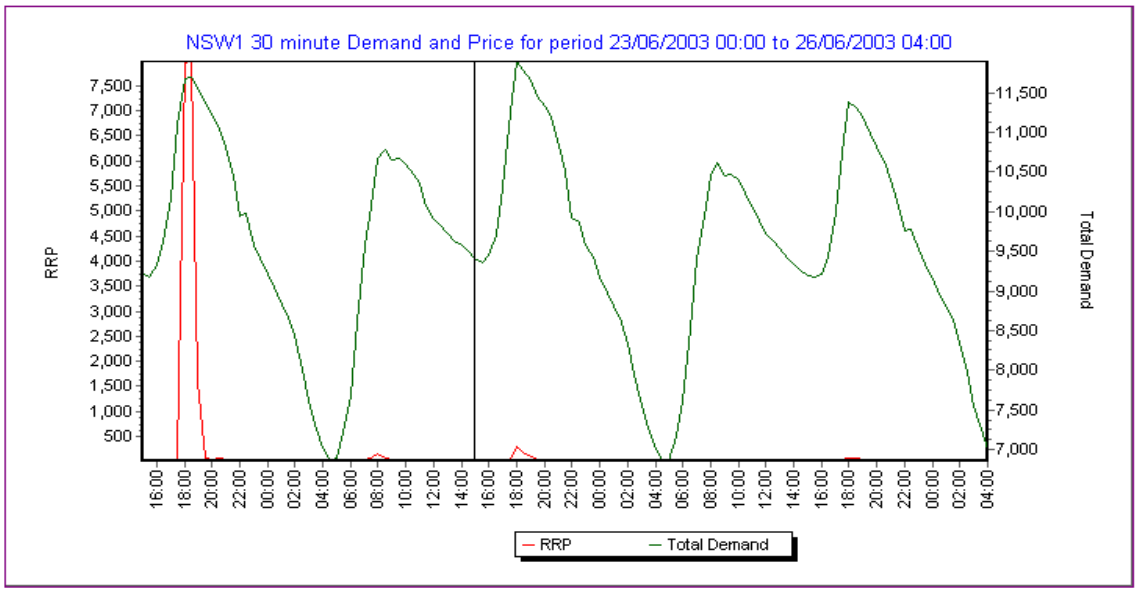
Figure 4



Source: NEMMCo website

By 11.30 am on the 24 June, the expected demand is much the same, but the forecast price has risen slightly to about $300/MWh.

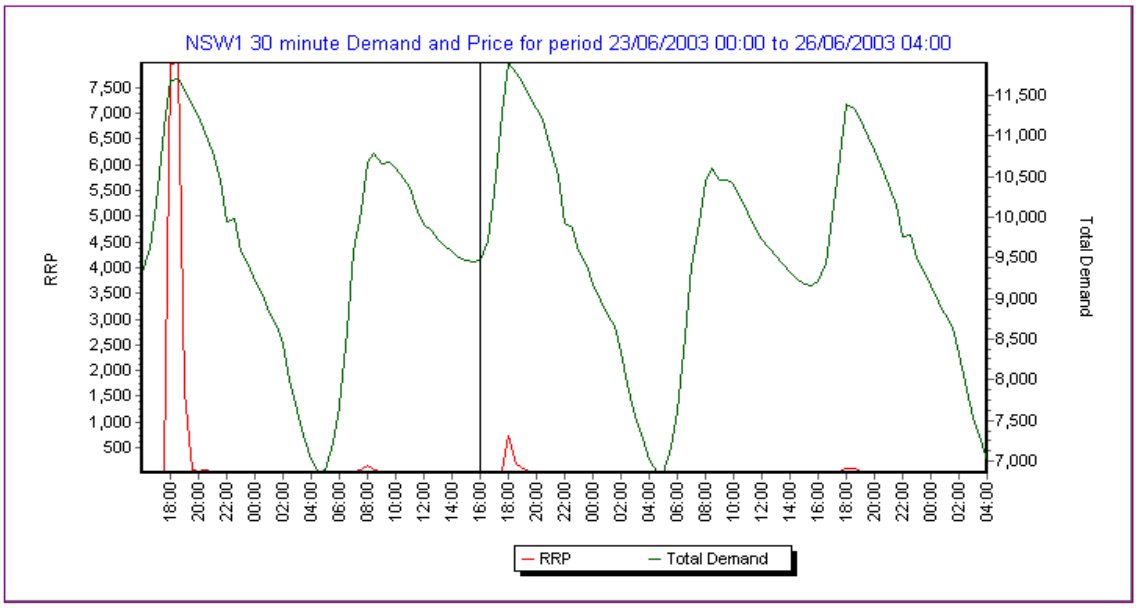
Figure 5



Source: NEMMCo website

By 3pm on 24 June the expected demand has risen slightly but if anything the forecast price has fallen slightly.

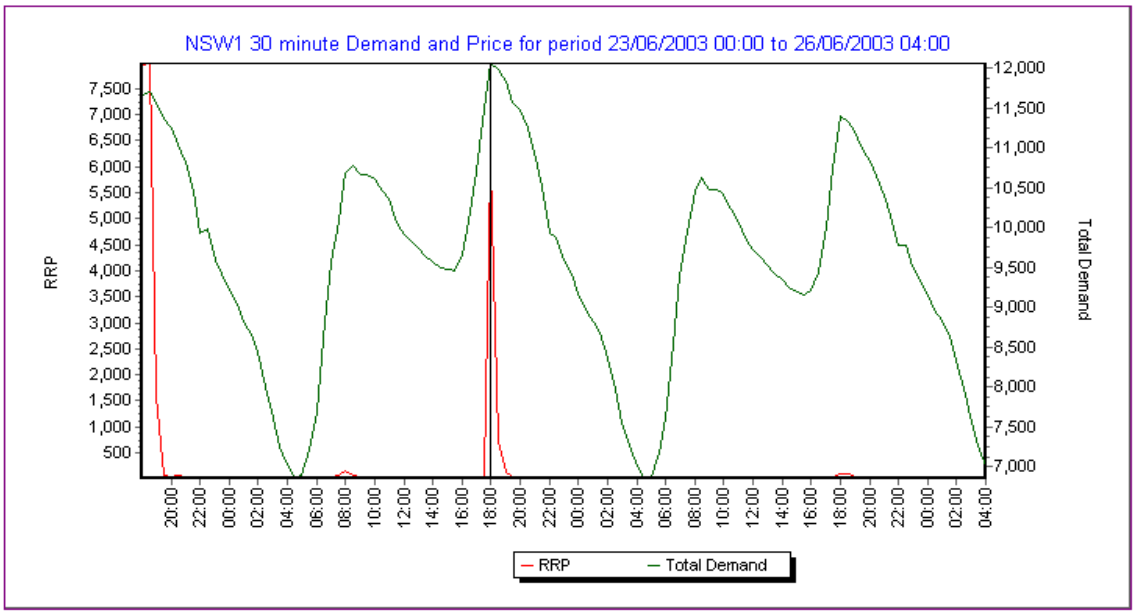
Figure 6



Source: NEMMCo website

By 4 pm the expected demand has risen and the forecast price has also risen to about $750/MWh.

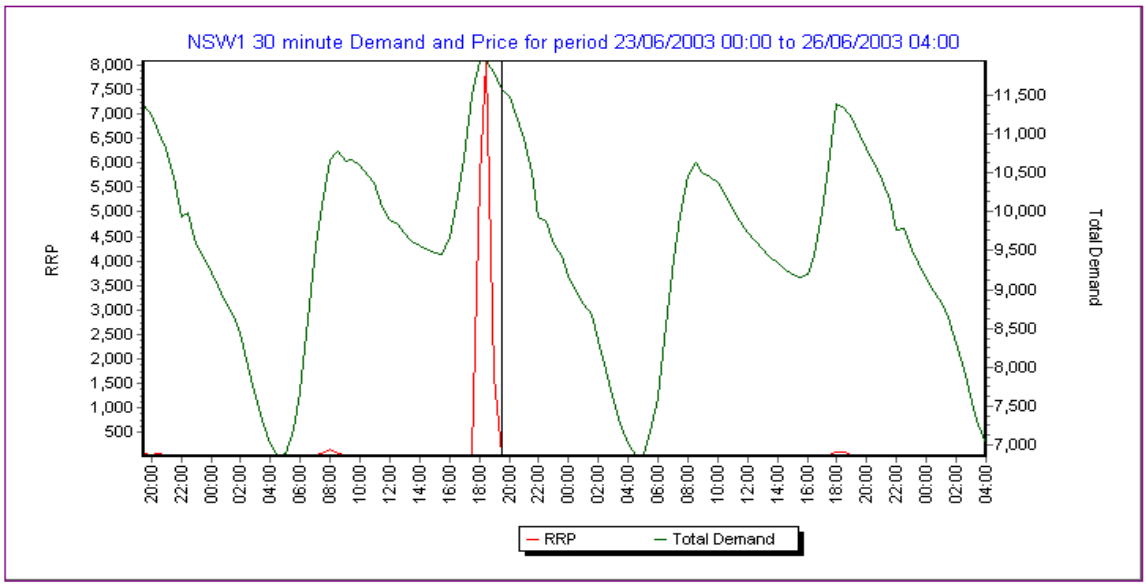
Figure 7



Source: NEMMCo website

Just at 6 pm the expected demand has risen slightly but the forecast price has spiked to $5,500/MWh.

Figure 8



Source: NEMMCo website

By 8pm the actual price is shown to have peaked at 8085, spiked to 9600 for 5 minutes and averaged 7656 for one hour. At 8 pm the price returns to the usual levels of less than $50/MWh.

This series of graphs was developed as it was suspected there was to be another price spike following the one on the 23 June 2003. For a consumer to obtain these requires foreknowledge, as the graphs are updated by NEMMCo every 5 minutes. The data is available to Market Participants but is not readily available to the wider market.

What the graphs show quite clearly is that knowledge of forecast demand is not sufficient for the domestic consumer to be able to plan electricity usage to prevent being exposed to high priced events.

Thus market signaling such as by use of these graphs provided by NEMMCo is a very imprecise method. However it must be noted that there is probably no better indicator available.

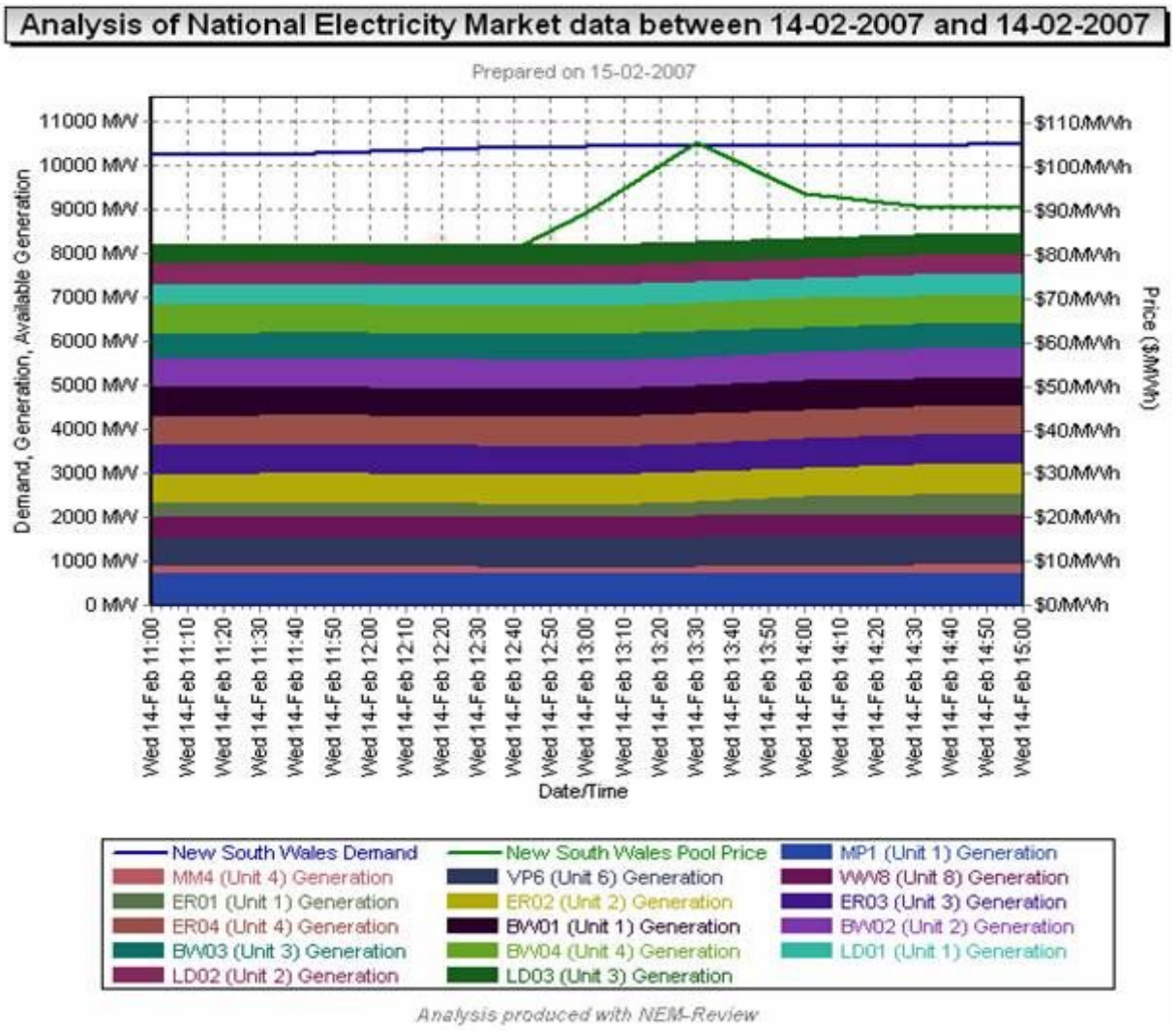
APPENDIX 2

Review of

New South Wales Electricity Market

Weeks 1, 2 and 3 February 2007

The NEM NSW demand, pricing and generation data for 14 February is shown graphically below.



Analysis shows that generators which have not been dispatched are MP2, MM3, VP5, WW7 and LD4. LD4 was last dispatched early January 2007, and WW7 in early February. MP2 was last dispatched on 10 February 2007, MM3 on 12 February and VP5 13 February. These all add to some 2600 MW capacity not in service for some reason on 14 February 2007, although LD4 and WW7 had been down for some time and they contribute ~900 MW and they could have been down for maintenance. However, it is not clear yet the reasons for the other three not being available.

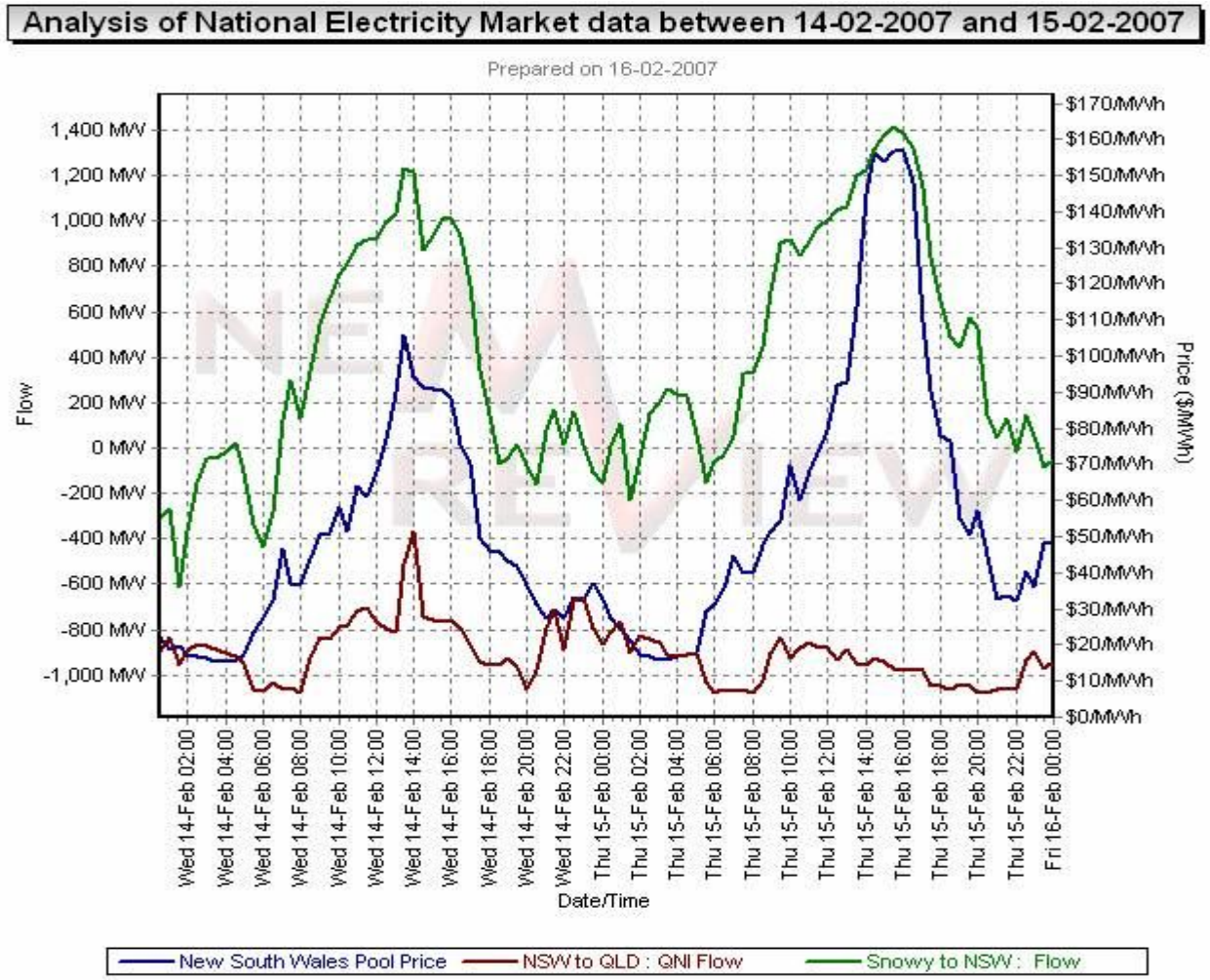
Having observed this, there arises the question as to why maintenance is occurring at a peak period of expected Demand. Four of these units are all owned by Delta and it's strange that they would take this plant out voluntarily, as

this would expose themselves to the high spot prices for any shortfalls in their contracts. The other unit, LD4, is a McQ plant.

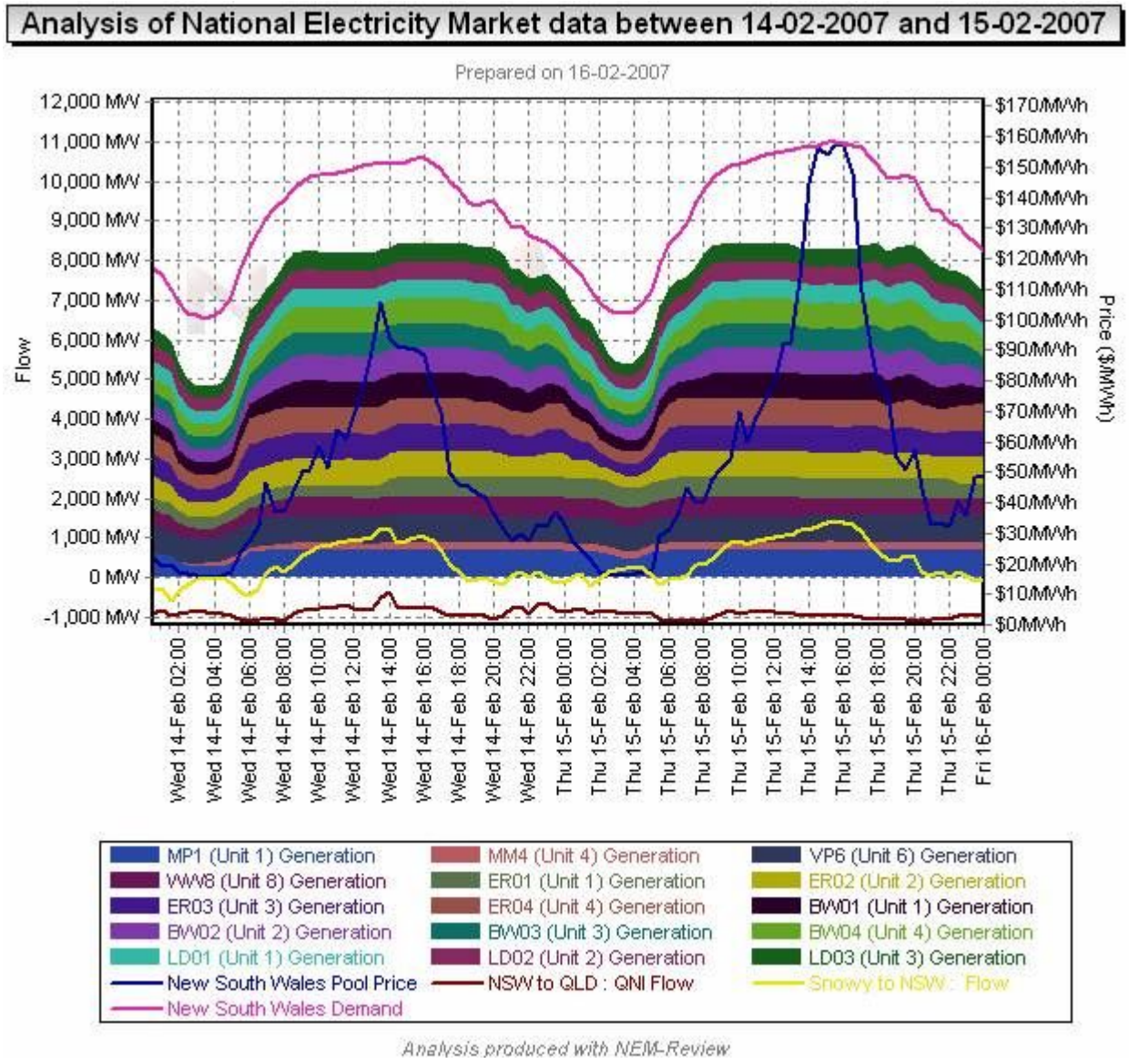
There is no clear indication of gaming by the dispatched units ***but there is a significant amount of plant not being scheduled****. We would need to better understand why these units are down.*

The NEM data for 15 February is also shown graphically below.

*As a first issue, there appears to have been a constraint on QNI flow into NSW about 2 pm on 14 Feb. This spiked the price as shown but there was no apparent withdrawal of supply. The reduction in flow from Qld was balanced by an increase in flow from Snowy. However, there is a question why Delta would have voluntarily had four units out when the price was spiking, as it would have had to balance its contracts from the pool, exposing it to the higher prices****. But the basic question is why are they out on maintenance (if this is the case) at this time of year?***

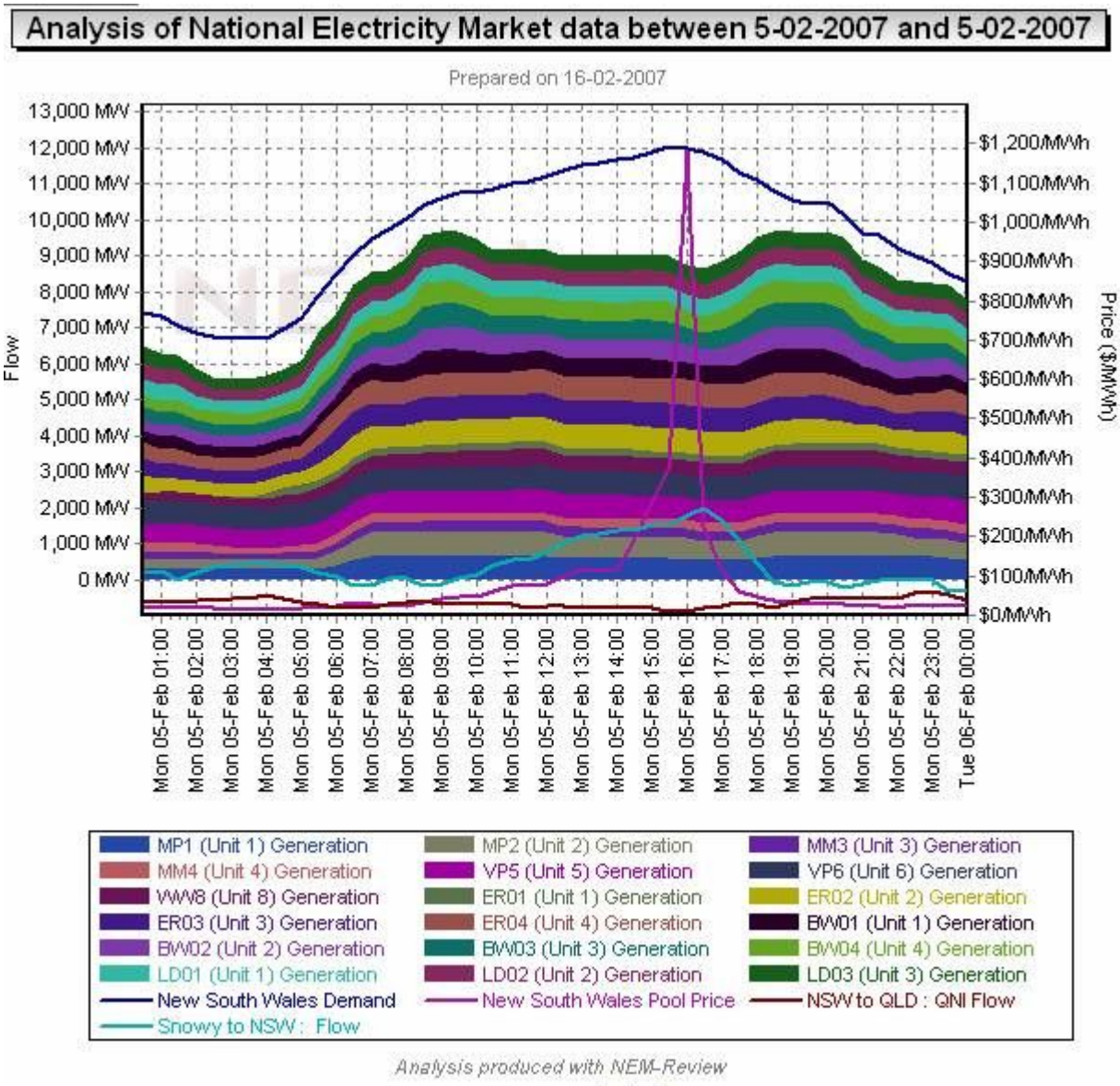


The second issue is the price spike on Thursday 15 February. QNI was working properly but there was a shortfall in generation requiring Snowy to supply more mid afternoon – Snowy always seems to sell its power at higher prices. There seems to have been a bit of market activity by McQ on Thursday by their withdrawing some 200 MW while the demand increased, but again with Delta having so many units down Delta could not have afforded to join in and Eraring didn't either.



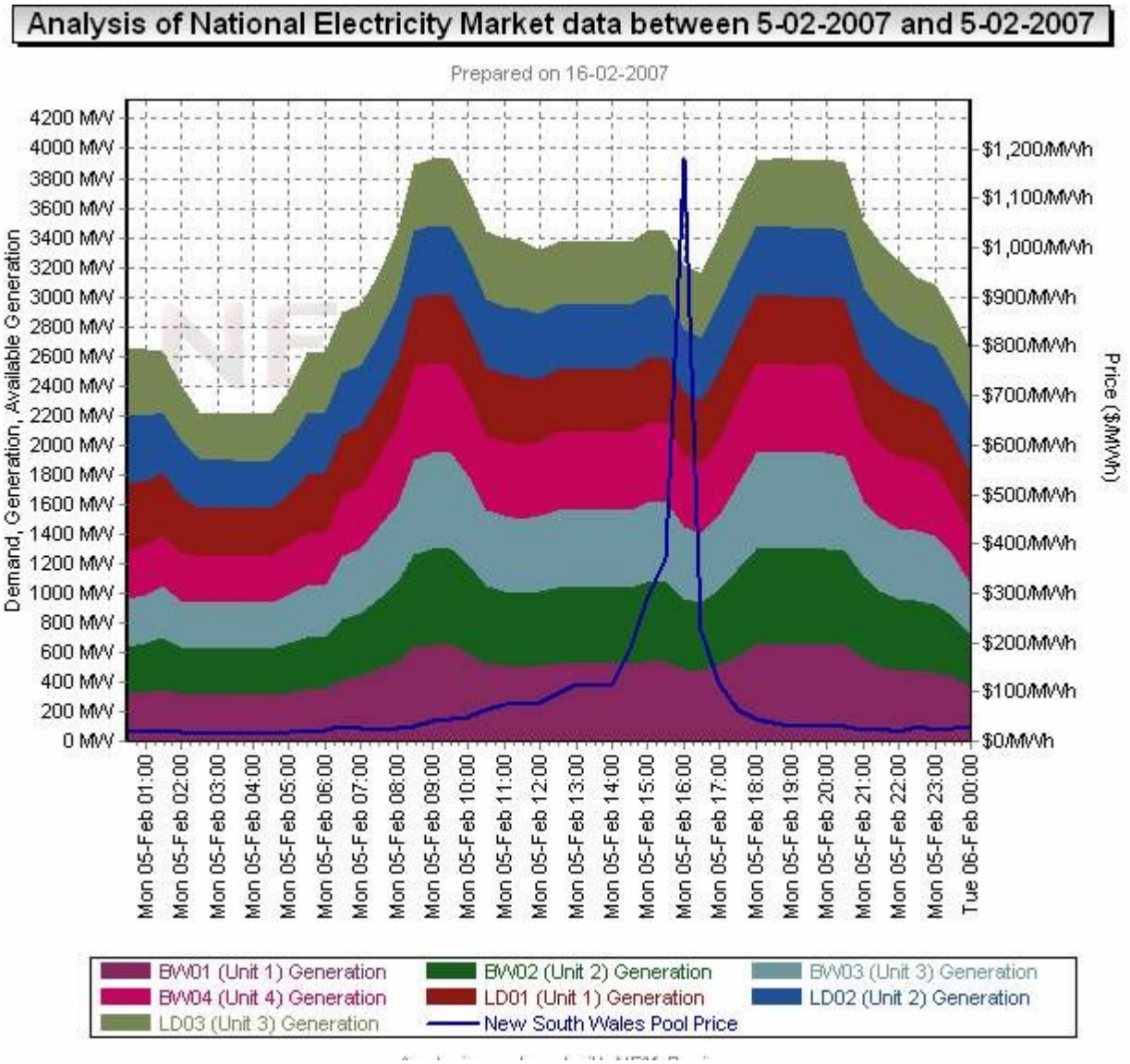
Our assessment is that on Wednesday 14 February there was a short term hiccup on flow from Qld, but this was not long lived. The core of the problem lies with having some 2600 MW not available for service, and most of this capacity was Delta's.

On Monday 5 February it was a different story, as shown pictorially below.



The above graph shows the total dispatch of Delta, Eraring and McQ main generating plants. There is clearly a reduction of supply as the demand increased. QNI was operating properly.

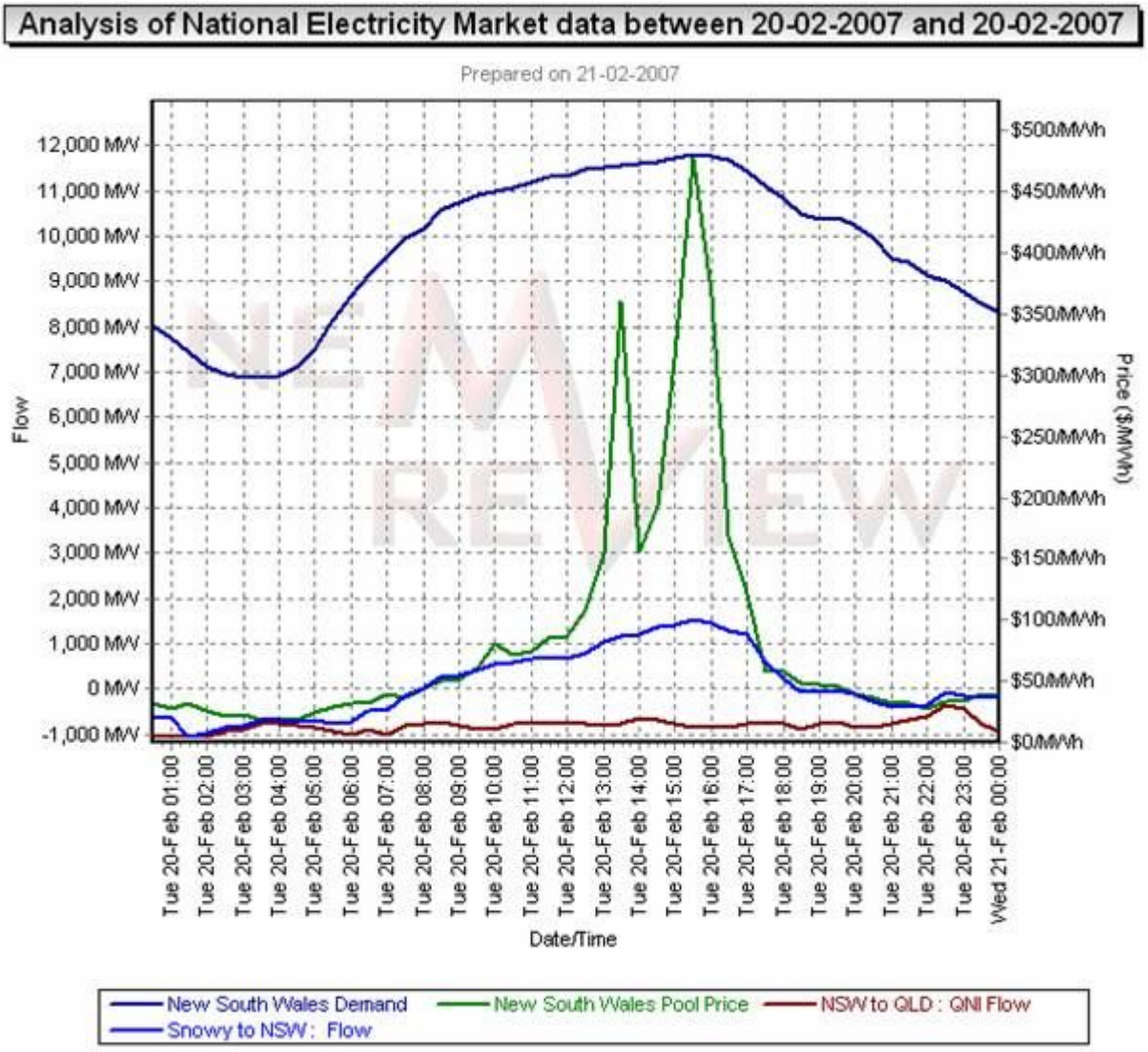
From 9 am onwards McQ reduced supply by 500 MW which drove the price upwards. In mid afternoon they dropped another 200MW and spiked the price even though they had LD4 down at the time. This is more clearly shown in the following chart.



Assessment

We have analysed the situation in weeks 1 and 2 of February and there appears little doubt that McQ generation withdrew capacity when QNI was constrained, forcing high priced Snowy generation into the NSW mix. However, that is permitted by the Rules.

As can be seen on the next chart, on 20 February Delta withdrew capacity and created the first (smaller) price spike, but McQ created the second and bigger spike. They were assisted by Delta not fully replacing the capacity withdrawn earlier. Delta had some of the plant not available the previous week back in service but it is possible that Delta did not deliberately cause the first spike, but had plant problems.



The bottom line is there is no doubt that McQ has been active in affecting spot prices with Delta being passive by not dispatching units. McQ obviously recognizes that with large amounts of capacity (Delta) not being dispatched, it can and did engage in market activity.

It is now apparent that NSW generators generally wait until QNI is constrained and then back off supply bringing Snowy into the market. Snowy invariably bids high, particularly as it is aware of the actions the coal fired NSW generators will take.

That this activity was instituted at a lower demand benchmark level for the current market activity is a direct result of the large amount of generation Delta had out of service. So McQ withdrew capacity as demand rose knowing when QNI was constrained and that Snowy must make up the shortfall.

Competition is very low in NSW for generation and installed capacity is less than demand (NSW is a net importer of base and intermediate load, much the same as SA). Even adding 400 MW from Tallawarra is not going to help much.

The real problem is with the market which has not provided sufficient confidence to sustain the financial commitment for new base load generation, and made worse by the low level of generation competition in NSW.