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T e V o i c e o E n e r g y C o n s u m e r s

RESPONSE TO
ENERGY REFORM IMPLEMENTATION
GROUP

ISSUES PAPER
July 2006

by

The Major Energy Users Inc

And

Major Employers Group Tasmania

August 2006

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Executive Summary

The ERIG has been established to review three elements of the national electricity market (the NEM). These elements are transmission, market structure and financial structure. The MEU believes that these can only be examined in the light of the observations and experiences of consumers that have actually occurred. The MEU has provided a summary of these observations of the NEM since its inception, drawing on the report prepared by Bardak and completed in the middle of 2005, but also drawing extensively on the experiences of MEU member companies.

The MEU considers that many of the developments in the NEM have been detrimental to consumers. We have experienced:-

- Extreme price volatility, which has increased risks to participants (and therefore costs to consumers) and which creates a negative and highly risky environment for new entrant generators, especially those not affiliated with incumbent retailers and generators.
- There is more frequent use of Reserve Trader activity, implying a lack of investment in new generation to provide the requisite reliability. What generation has been built has been mainly by retailers seeking a physical hedge to the risks they face in the NEM.
- A strong trend towards vertical and horizontal re-aggregation in retail and generation, reducing competition and creating barriers to entry of new players.
- The price for electricity increasing substantially, and just as concerning, there has been a continuing increase in the costs of risk management.
- The NEM is not truly a national market; rather it is a series of regions with relatively weak interconnection. The results of this have been infrequent but severe price spikes which alone added some 25% to the average pool price of electricity in 2005.
- No real trade across interconnectors has occurred due to the potential excessive financial risks involved should there be a price uncoupling between regions.
- The absence of the emergence of a strong secondary market which, at best, is still some distance away, despite the view that it is required to ensure a viable primary market in the trading of electricity
- We have not seen significant investment in new interconnection other than that built initially on a market basis and, using the Rules to advantage, subsequently converted to a regulated basis

Against this backdrop of dysfunction in the NEM, the MEU considers that there are a number of actions that are required to deliver the promises made when the NEM was first mooted.

Transmission

1. There is a need for a national planning body which will identify, and require, new interconnection infrastructure to form a real national market.
2. The Regulatory Test needs to be modified to allow the benefits of increased competition resulting from increased interconnection to be included in the net benefit criteria – this is currently excluded as such it considered to be merely a transfer of wealth.
3. The new national planning body must be provided with powers to require the construction of new interconnection, even if an incumbent TNSP does not wish to be involved.
4. There must be an incentive on TNSPs to make the transmission available when it is most needed.
5. Interconnections need to be augmented to the stage where there it is possible to securely trade across regions without the excessive risks currently experienced.

Market Structures

1. The continued loss of competitive drivers resulting from the lack of legislative powers available to prevent excessive reaggregation needs to be addressed immediately.
2. The reasons behind the driving the need for reaggregation need to be addressed, especially the high and cumulative risks caused by the separation of functions (especially the separation of retail and generation). To overcome this, vertical reaggregation has become a risk management tool, as some of these risks are cancelled when retailer and generator re-aggregate.
3. There is little comparability between the transparent pool prices and the contract prices offered, yet the difference between the two is of such a significant size that there is effectively little transparency of contract pricing.
4. The signals for new investment are ineffective as the volatility inherent in the signals currently provided do not provided the necessary fundamentals needed for investment, which should provide an adequate return and certainty of receiving return, but fail to do so.
5. The signals that are available are extremely short term and do not provide sufficient time to build the new facilities be they new generation or augmentation of the network. The signals tend to reflect a need in the coming 12 months yet the development of new infrastructure takes at least 3-4 years.

6. The structure of the NEM needs to be modified, as the current arrangements permit generators to withdraw capacity already offered (rebidding), thereby permitting price changes. Whilst the number of price withdrawals resulting in price increases might be a small percentage of all price changes, the impact of these is major.

Financial Markets

1. The secondary market is weak and at best is modest. What there is, is primarily provided by generators.
2. There is limited trade across interconnectors - retailers are not willing to offer the output of a generator in one region into another region. Effectively the contract price in a region is attributed entirely to the pricing offered by generators in that region.
3. The costs of risk mitigation are very high. The costs of managing these risks are not transparent and ultimately are passed onto consumers.
4. Retailers are being driven to provide physical hedges (building their own generation - especially peaking generation) rather than use the small and non-transparent secondary market.
5. Because of the lack of a significant secondary market retailers are aggregating with generators, effectively replicating the much criticised ETEF and BPA (LEP) schemes.

The MEU sees that many of these challenges facing the three work streams are very much inter-related, and each must seek the solution for the challenges faced from within another work stream.

Fundamentally, the MEU sees that many of the challenges faced by all work streams result from the extreme price volatility in the NEM.

Reducing this volatility and its major impact will result in clearer signals for investment, and will encourage more secondary market activity.

Reducing the volatility will come from addressing the fundamentals of the market structure and increasing interconnection between regions.

The recent work carried out by the AEMC Reliability Panel and the submissions made to it, provides an excellent insight to the operation of the NEM, and potential solutions to the challenges faced by the ERIG. We strongly recommend that the ERIG and its reference groups review the submissions made to the Reliability Panel.

1. Introduction

The Major Energy Users (MEU) and the Major Employers Group Tasmania (MEG) welcome the opportunity to provide comments on the Energy Reform Implementation Group (ERIG) Issues Paper. The key tasks assigned by COAG to ERIG are very fundamental to achieving the policy objectives of energy reform viz. competitively price and reliable energy.

The review of the three key elements noted in the Issues Paper raise some challenging matters.

1. The issue of **transmission**, as well as being the form of transport of energy to consumers, provides consumers with a tool to reduce the impact of generator/producer market power. Least cost transmission allows the consumer the lowest possible cost of access to the various points of supply and the greater the extent of interconnection, the greater the potential reduction of supplier market power. As transmission is paid for by consumers (via their retailers) it is in their interest to ensure there is a balance between the costs of increasing transport through augmentations and an overall reduction in the cost of energy delivered.
2. The review of **market structures** equally raises important matters - in particular, does the market structure proposed provide the most efficient cost to consumers, but at the same time provide the maximum long term availability of the energy whilst maintaining a high degree of reliability. ERIG must recognise that these objectives can be mutually exclusive but it must hold to the view that it must address these from the view point of consumers and not from any other standpoint, such that as from third parties - investors, operators and asset owners.
3. The review of the **financial markets** must equally address the requirements of consumers. One fact consistently overlooked by those examining the issues concerning financial markets and the inter-relationships with energy supply parties, is that any market risk has a cost, and the more risks there are the higher the cost to manage these risks. That is, transactions costs are higher. Ultimately consumers bear the costs of these risk management tools and financial instruments, so the issue should not address just how the financial market might operate, but to also consider how the financial elements interface with, and impact on, the costs to consumers.

2. The MEU and MEG

The Major Energy Users (MEU) (comprising the Energy Markets Reform Forum (NSW), Energy Consumers Coalition of South Australia and the Energy Users Coalition of Victoria) with Major Employers Group Tasmania between them represent some 30 major energy using companies in NSW, Victoria, SA, Tasmania and Queensland. We welcome the opportunity to provide comments on the Reliability Review

Analysis of the electricity usage by the members of MEU and MEG shows that between them they consume about 7% of the electricity generated in the NEM; gas usage is slightly less than this. Many of the members are located in regional parts of Australia, some distance from the major centres. They are highly dependent on the transmission network to deliver the electricity essential to their operations. Being regionally located, the members have an obligation to represent the views of their local suppliers and of the regionally based workforce on which the companies are dependent. With this in mind, the members require their views to not only represent the views of large energy users but also those of smaller power consumers located near to their regional operations.

The companies represented by the MEU and MEG (and their suppliers) have identified that they have an interest in the **cost** of the energy network services as this comprise a large cost element in their electricity and gas bills.

The businesses all operate in the open competitive market for their products. In order for them to ensure that they will be profitable into the future they must have a high degree of certainty of their future costs. They are not interested in prices that fluctuate excessively as this creates uncertainty. The excessive volatility in the NEM has been of great concern, and as a result most businesses "lay off" the risks inherent in the NEM to electricity retailers, but at a cost. This demonstrates that **stability** and certainty are much preferred over volatility. Businesses need to have stability in their input costs, as this is needed to ensure forecast costs for the products made are within the expected price range for sale.

Although electricity and gas supply is an essential source of energy required by each member company in order to maintain operations, a failure in the supply of electricity or gas effectively will cause every business affected to cease production, and members' experiences are no different. Thus the **reliable supply** of electricity and gas is an essential element of each member's business operations.

With the introduction of highly sensitive and sophisticated equipment required to maintain operations at the highest level of productivity, the **quality** of energy supplies has become increasingly important with the focus on the performance of the distribution businesses because of the central role they play in terms of the control over the quality of electricity and gas delivered. Variation of electricity voltage (especially voltage sags, momentary interruptions, and transients) and gas pressure by even small amounts now has the ability to shut down critical elements of many production processes. Thus member companies have become increasingly more exposed to the quality of electricity and gas services supplied.

Each of the businesses represented here has invested considerable capital in establishing their operations and in order that they can recover the capital costs invested, long-term **sustainability** of energy supplies is required. If sustainable supplies of energy are not available into the future these investments will have little value.

The MEU and MEG, therefore, share with policy makers the *raison d'être* for national energy reforms as stated in the NEL and draft NGL objective, viz.:-

“The national electricity/gas market objective is to promote efficient investment in, and efficient use of, electricity **for the long-term interests of consumers of electricity** with respect to price, quality, reliability and security of supply of electricity and the reliability, safety and securing of the national electricity system.” (emphasis added)

Accordingly, we would suggest that ERIG must take as a starting point for addressing all of the issues under its remit, the view point of consumers. It is the experience of MEU and many regulators that by addressing the interests of consumers as the start point, much of the complexity faced in seeking resolution of an issue can be avoided and the appropriate outcome becomes so much easier to identify.

3. A Helicopter View and Producing the Facts

The ERIG review is but one of numerous energy reviews undertaken on aspects of the National Electricity Market (NEM) in recent years. Almost invariably, all of these reviews have reported on aspects of the NEM largely in isolation from each other. This is unfortunate.

The ERIG review provides a golden opportunity – because of the inter-related nature of the 3 key aspects of the tasks assigned to ERIG – to take a helicopter view of the NEM and to state, authoritatively, its position on the performance and the operations of the NEM against the policy benchmarks assigned by the Ministerial Council on Energy and COAG.

In undertaking this task, ERIG should take the opportunity to state the facts on key aspects of NEM performance. There remain many fundamental issues where different stakeholders have arrived at different views on the performance and outcomes of the NEM. A key issue, for example, is that concerning the adequacy of the rewards derived by generators and network service providers.

On the one hand, some stakeholders (such as generators, network providers and financial interests) lament the inadequacy of returns to owners of assets (and hence see that as the explanatory factor for the perceived lack of new investments) whilst on the other, some stakeholders (such as the MEU) point to excessive rewards earned by asset owners (resulting from the lack of competition and competitive drivers in the NEM).

Good public policies are the result of good analysis based on factual observations and evidence. ERIG has the opportunity to state its views on many of the issues that have been inconclusively debated over many years, or asserted by different stakeholders with competing agendas.

Most, if not all, recent energy reviews have been almost entirely conceptually based. This is a deficiency which needs to be corrected. ERIG's review must, therefore, assume a leadership role by raising the standard of its reviews. Its analytical work must be based on empirical analysis and evidence, and not rely only on conceptual or theoretical posturing.

The MEU and MEG recommends that the ERIG review include as a starting point:

- **a clear articulation of the performance and operations of the NEM, recognising the inter-related nature of key aspects of the NEM;**
- **take the opportunity to present the facts and a considered view of those key issues concerning the NEM which have been inconclusively debated or asserted by stakeholders; and**
- **undertake fresh research and analysis and to present empirical analysis and evidence, to underpin its recommendations rather than relying only on conceptual analysis and theoretical posturing.**

4. How Do Consumers See The Operation Of The National Electricity Market?

4.1 The Bardak report

Consistent with the sentiments expressed in Section 3, above, about the need for an objective appreciation of the performance and operation of the NEM, the MEU (together with a number of other consumer organisations) recently commissioned a report¹ on the NEM, which covered the following issues. This report:-

“

- examines the characteristics of the NEM; the general behaviour expected in well-functioning electricity markets, and the legal concept of market power.
- examines the history of wholesale prices in the NEM, both in terms of pool prices, and the effective revenue able to be earned by generators.
- examines the way the generators in the NEM operate both in general and when price spikes occur.
- assesses the performance of the NEM by comparison with Long Run Marginal Costs (LRMC), the FERC criteria for well-functioning electricity markets, price volatility levels and the effect on end user retail tariffs.
- examines the impact of industry structure in the NEM and the likely results of the trend towards both vertical and horizontal integration.
- looks at the experience in overseas electricity markets and the lessons which have been learnt in those markets.
- looks at possible steps which could be taken to control or mitigate the harmful effects of market power on end consumer tariffs and security of supply, including the need to ensure that the generation sector has the opportunity to remain financially viable and to be able to invest in new facilities.”²

The conclusions of the Report, which are endorsed by the MEU member organizations, included the following:-

“

- the characteristics of the NEM — a small number of independently-owned generators, limited interconnection capacity, a compulsory energy-only market, a high bid cap, lack of effective demand-side response, and the

¹ The Effect of Industry Structure on Generation Competition and End-User Prices in the National Electricity Market, May 2005.

² Op. Cit. Page 9

freedom afforded to generators, makes the NEM vulnerable to the exercise of market power (Sections 2.3, 6.1));

- well-functioning competitive markets have characteristics which can and have been defined, but the NEM as presently structured does not satisfy the requirements to be regarded as well-functioning (Sections 2.4, 5.5);
- regional pool prices in the NEM have varied over the five years of its operation, and showed signs of converging to similar levels in 2002 and 2003, but recent trends have widened the gap between highest and lowest regional pool prices (Section 3.1);
- the pool prices show evidence of extreme volatility — well beyond that needed to signal times of shortage or of excess capacity — due to a small number of very large price spikes occurring each year, and not necessarily at the times of peak load or when the supply/demand balance is tight. As much as 30% of the annual average pool price can be due to such spikes (Section 3.1);
- pool prices are showing an upward trend in 2004 and 2005 (Section 3.1);
- generators publishing Annual Reports are comfortably profitable at average annual revenues of around \$34-35/MWh in 2003/04, and generally achieve a mark up of at least \$5/MWh above pool prices each year. This figure is close to the Long Run Marginal Cost of new generation based on the latest independent estimates (Section 3.2);
- the design of the NEM trading system is such that generators must bid above their marginal costs and cause price spikes to occur when conditions are conducive to them, in order to achieve a satisfactory level of annual revenue. Bidding on a fully competitive basis, on Short Run Marginal Costs (SRMC), will not produce sufficient revenues for existing or new generators. The difficulty is — how much non-competitive activity is tolerable and how is this to be measured? (Section 4.1);
- generators achieve price spikes by withholding capacity — both physically and economically — by their bidding and rebidding practices and by exploiting limited interconnection capacities. The practice of “parking” large amounts of capacity at prices close to the maximum allowed is prevalent (Sections 4.1, 5.1);
- the change of VoLL from \$5,000/MWh to \$10,000/MWh in 2002 led to generators roughly halving the number of price spikes but doubling the value of them, achieving about the same level of annual revenue. This increased the level of price volatility and risk significantly (Section 5.1); generators appear to have succeeded in achieving annual revenue significantly above Long Run Marginal Costs in four of the five years of NEM operation. Based on the analysis in this report, the average mark up above LRMC is estimated to have been 21%. This is significant both in magnitude and duration (Section 5.4);

- end-customers pay higher tariffs because of generator behaviour — through pool and hedge contract prices that are higher than necessary; through less efficient operation of generation, and through the additional costs associated with covering the risk of pool price volatility (Section 5.6);
- the NEM depends on vigorous competition at the wholesale level to restrain the use of market power, and any reduction in the number of participants should be a cause for concern by end-users (Section 6.1);
- horizontal merger activity is of particular concern in Victoria and South Australia, where concentration of ownership has increased in recent times, and concentration of ownership remains a difficult problem given common Government ownership of companies in New South Wales and Queensland (Section 6.2);
- vertical integration is also of concern as it inevitably reduces competition in both wholesale and retail markets. The risk of operating in the NEM is such that vertical integration is a natural risk management strategy (Section 6.3);
- market concentration in generation and retail in the NEM is a problem, where, on the basis of ultimate ownership, the NEM would be regarded as being “highly concentrated” by normal measures. Concentration levels equivalent to those in well-functioning overseas markets could only be obtained if all major power stations were placed in separate independent ownership and a strong, essentially constraint free, transmission system were to be put into place (Section 6.1);
- existing ACCC merger guidelines are not appropriate for the electricity sector, where participants with a very small market share can exercise market power and significantly affect pool prices (Section 6.1);
- overseas markets provide useful examples of competitive markets which function well and those where industry concentration is a problem. Lessons learnt from the overseas markets are valuable in understanding the problems of the NEM and what needs to be done to improve performance. Extensive market monitoring and market power mitigation measures — to a degree not seen in Australia — are a feature of well-functioning competitive electricity markets overseas (Section 8);
- the experience in England and Wales is particularly relevant to Australia, where an initially unsatisfactory market structure and pooling system has been replaced by a competitive structure (at least in horizontal terms) and a better pooling and trading system. However, the degree of vertical integration and declining reserve plant margins have emerged as problems (Section 8.4);
- measures routinely used to assess market power in overseas markets do not find ready application in Australia. This is because most of them measure performance against a base-line of perfectly competitive behaviour by participants.

- A comparison of generator revenues with LRMC is a useful measure. Herfindahl-Hirshmann Indices provide a useful screening system, and Price Cost Mark up Indices are useful also, if interpreted carefully (Section 7);
- overseas experience shows the value of strongly integrated transmission systems in minimising the opportunity to exercise market power both in general terms and in specific regions (Section 8);
- the increasing penetration of wind generation, with its inherent variability, has the potential to increase the market power of generators able to vary output in a short time frame. This factor will need to be watched carefully. (Section 4.1)
- measures available to improve the industry structure and to control market power more effectively include increased structural separation of the generation sector; increased interconnection capacity between the States; the introduction of capacity payments and reduced bid price caps; and changes to the design of the NEM trading system to bring it into line with latest overseas practices (Section 10).”

4.2 The Outcomes of the Bardak Report

On the basis of the Report and based on observations and experiences of MEU and MEG members in operating in the NEM, the MEU and MEG would especially point to the following key concerns with the existing market:-

1. The potential for the exercise of market power in the NEM is increasing as evidenced by the increasing concentration of the electricity supply industry through vertical and horizontal integration and facilitated by increased constraints (including those engendered by generator bidding strategies) applying to interconnections between regions.
2. Objective indicators – such as statistical measures (HHI indices) and FERC tests – show the NEM as “highly concentrated” and not a “well functioning competitive market”. The competitive drivers in the NEM have been considerably weakened.
3. There is ample evidence of the increased exercise of market power in the NEM through
 - Physical and economic withholding of generation capacity
 - Use of complex bidding strategies to maximize returns by parking capacity in high priced bidding bands, and to create congestion in the interconnectors to constrain inter-state trade

and electricity flows (as have been demonstrated through Snowy Hydro's bidding strategies involving Murray and Tumut.³)

4. Electricity users have been penalized by:-
 - higher electricity prices as generators deliver returns in excess of LRMC or through excess profits (the Bardak report estimates that over the five years of NEM operations, average generation revenues have been at levels approximately 21% above LRMC)
 - higher electricity prices as a result of generator operational practices that draw on higher cost plants in preference to lower cost plants (there are also social costs arising from operating less efficient plants)
 - higher electricity prices as a result of substantially increased levels of price volatility and risks following the increase of VoLL in 2002 from \$5,000/MWh to \$10,000/MWh
 - the increase in VoLL in 2002 not delivering the sought after increase in investment in generation capacity, as identified by the increased requirement of necessary Reserve Trader activity by NEMMCo
5. There is limited ability to engender a more competitive industry structure caused in part by the continued existence of State Government-owned corporations, coupled with inadequate statutory teeth provided to the ACCC on mergers and acquisitions. The outcome of this has been a significant trend towards increased vertical and horizontal integration of the industry, with a resultant increase in market power and significant reduction in competition.
6. A fundamental change in the design of the trading system (for example as happened in England/Wales) is overdue but whilst there is resistance to changing the basic design of the trading system, there needs to be alternative solutions to limit the opportunities for generators to undertake predatory bidding strategies and other anti-competitive market practices. An evaluation of the introduction of capacity payments associated with a lower price cap is one such approach that should be undertaken and this matter is referred to in more detail later in this submission).
7. It is quite apparent from the current Comprehensive Reliability Review by the Reliability panel of AEMC, that the increase of VoLL from \$5,000/MWh to \$10,000/MWh has not delivered the outcomes hoped for, in that there has been an increased need for Reserve Trader activities due to the lack of investment in new generation, particularly in the "peaking" range of generation. This has been exacerbated by the limited involvement by consumers in limiting demand at high demand

³Energy Markets Reform Forum, Confidential Submission to the AEMC, June 2006

times and at other times when the pool price has spiked to excessive levels. Thus the key driver (that of allowing very high prices in the NEM) to create an environment for new investment has not achieved the desired result.

8. At the same time, the increase in VoLL has further increased NEM risks which are clearly very high and the costs of managing these risks are reflected in contract prices which are substantially higher than pool prices and the availability of competitive contract pricing is limited to the short term, generally not exceeding 2-3 years.
9. Excessive price volatility (0.2% of pool price periods generating 25% of average pool price in 2005) means that the cost of risk management tools is very high and this in turn drives re-aggregation of the industry and increases the market power of the industry.
10. There is an observable use of transmission constraints in the NEM (particularly on interconnectors) being used by supply side parties to increase profitability, yet the Regulatory Test as currently applying refuses to accept that the benefits to consumers of augmenting interconnection may well be a lower cost to consumers than the continued ability of generators to increase prices excessively when such constraints occur.
11. The very fact that trade in the secondary market in the NEM is modest and what there is, is almost entirely controlled by generators (such as Snowy Hydro) signals a major problem with the NEM, its structure and lack of incentive to invest. The bulk of new investment in generation has been made by retailers seeking a physical hedge to the financial risks faced by them in the NEM. The costs of the risks and their management are, of course, passed onto consumers. This issue was identified in the Parer Report published in 2002, and since then nothing has changed.
12. The fundamental requirements for investment are that there is a reasonable return commensurate with the risk, and a high degree of certainty that the return will be achieved. The NEM provides neither of these requirements for the competitive sector, and what signals are provided, do not give adequate time to implement the needed investment in sufficient time for the investment to address the needs.
13. The jurisdictional ownership structure of the electricity transmission network particularly where the governments either own (as in NSW, Queensland and Tasmania) or effectively control (as in Victoria through VENCORP) the transmission assets, militates against a national planning approach as the driver for investment is that the limited

capex will be more focused on intra regional requirements than what maybe in the national interests.

14. Jurisdictional ownership of NEM assets permits the owning government to use the GTEs as a source of revenue, which constrains the ability of finance raising by a GTE, impacting on the ability of the GTE to carryout appropriate investment. This matter is more fully detailed in the recent Productivity Commission research paper “Financial Performance of Government Trading Enterprises 2000-01 to 2004-05” released July 2006. This research paper highlights that jurisdictional owners withdrew, in addition to the notional tax payments and dividends, equity requiring the entity to raise more debt to maintain a proper financial balance – but this was at a time when more investment was needed and claimed by the GTEs from regulators. This approach by government owners transferred increased costs and risks to customers of the utilities affected.

4.3 The Regulatory Test

The Regulatory Test (RT) is intended to provide discipline on the expenditure of funds in the NEM. The RT requires that capital expended by a regulated entity must be able to prove that the expenditure is demonstrably prudent and efficient, and can therefore be rolled into the regulated asset base and hence receive a regulated return in perpetuity.

There has been continuing debate as to whether the price impact on the pool (and the result increase in NEM reliability) from augmenting an inter-regional connection should be included in the RT or not. To date, the regulator has opined that the pool price impact of augmentation is not a “public benefit” but merely a transfer of wealth between consumers and generators.

Rather than restate the MEU view on this issue, included in the appendix there is the recent submission by the MEU to AEMC providing the argument as to why the RT should specifically include this benefit as part of the “Net Benefit” leg of the RT.

The fact that to now there have been only a very minimal amount of inter-regional augmentations carried out under the RT shows that either the RT is incorrect or that augmentation of the NEM has not been necessary. The Ministerial Council on Energy (MCE) has expressed concerns about the lack of inter-regional augmentation and identified that the RT construct is at fault when it advised the AEMC in a letter⁴ that:-

⁴ See MCE letter to AEMC published 16 Jan 2006

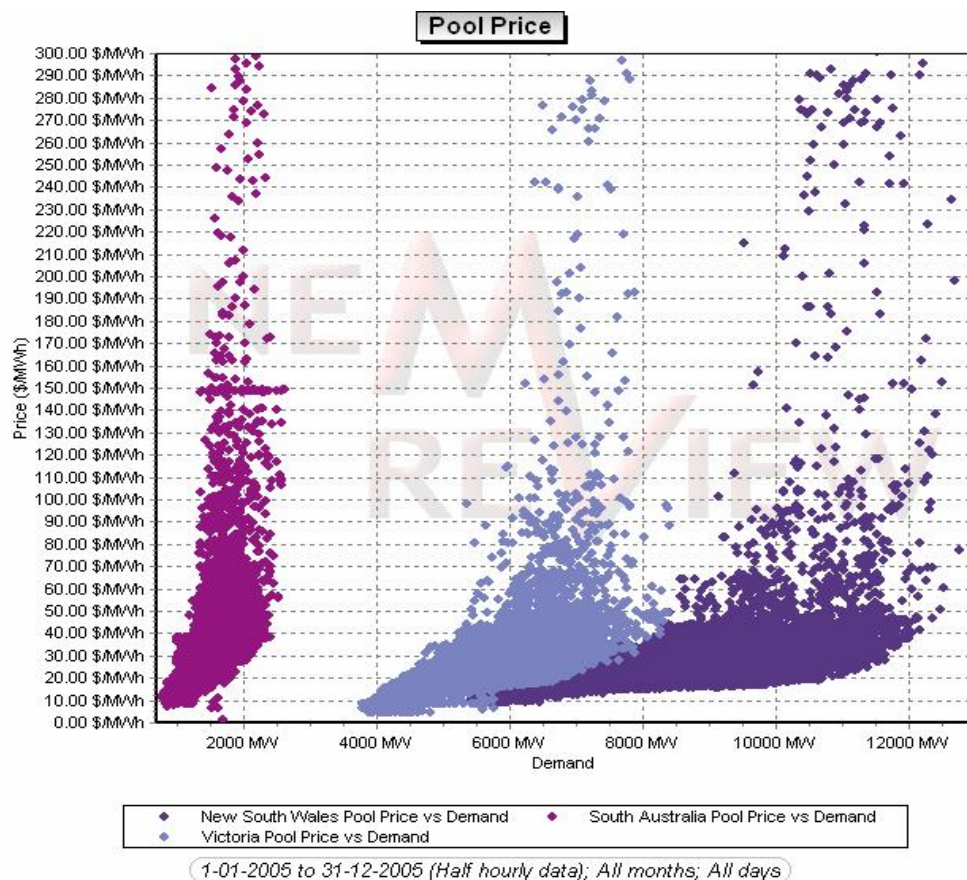
“The regulatory framework should maximise the economic value of transmission, including through the efficient removal of regional price differences in the operation of the NEM.”

The MEU counsels the ERIG to examine the issue of the RT and the “Net Benefits Test” leg of the RT as part of this review.

5. The NEM Is Too Risky

The MEU and MEG, in a recent submission to the Reliability Panel⁵ demonstrated the extent of the exercise of generator market power and the impacts on reliability and prices:-

“A review of the normal operation of the NEM shows that the relationship between price and demand demonstrates a reasonable degree of correlation (as would be expected from economic drivers), but only up to a price point which appears to be at about 3-4 times the average price of supply (i.e. about \$100/MWh). The following graph shows that the price/demand scatter is certainly consistent and reasonably predictable up to a price level of \$100/MWh, but beyond this point the correlation between price and demand is much less, and as the price increases, the degree of correlation continues to reduce.



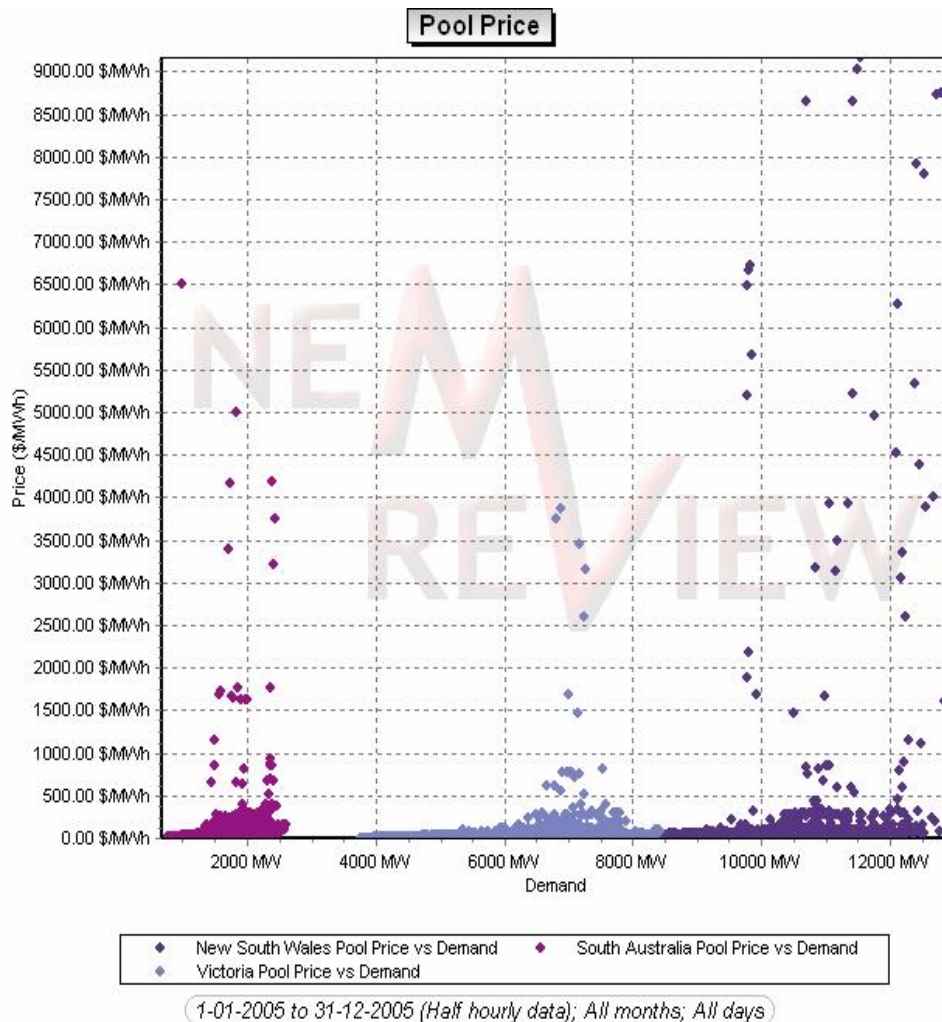
Source: NEM Review

Selecting a benchmark price of \$300/MWh as a reasonable expectation of maximum regional pool prices⁶, represents about 10 times the average pool

⁵ MEU Inc. and MEG Comments on the RP Issues Paper 11 May 2006, Pg 15 to Pg 22

price and a premium at which most buyers would not normally enter into a purchase. An expectation of a price premium is essential in the NEM, as electricity prices are not seen until ex-post.

It would appear that using a \$300/MWh cap for a price/demand indication shows a reasonable relationship between price and demand than does capping the price at \$10,000/MWh as the following graph shows.



Source: NEM Review

Analysing pool prices for 2005 shows that the pool price exceeded the amount of \$300/MWh for only 128 half hourly periods in the four regions of Queensland, NSW, Victoria and SA. These 128 half hour periods represent less than 0.2% of all half hourly periods in the four regions. The following chart shows the price impact of these 128 spikes as a proportion of the average annual price for each region. Snowy data is excluded as it has little demand and Tasmania data was excluded as it did not operate in the NEM for the full year.

⁶ This is the point up to which many retailers take “pool risk” and thereafter seek price caps from peaking generators

States	Qld	NSW	Vic	SA	NEM (excl Tas and Snowy)
% of average annual volume weighted price caused by >\$300 price spikes	19.6%	36.6%	7.6%	10.1%	24.6%
Av annual time weighted regional price \$/MWh	25.17	35.83	26.29	33.60	30.22
Av annual volume weighted regional price \$/MWh	27.12	40.84	27.83	36.76	33.44
# price spikes >\$300/MWh in 2005	26	67	24	35	128

Source data: NEMMCo and NEM Review

In 2002, the impact of price spikes above \$300/MWh was to inflate the average pool price in the NEM by 28%⁷.

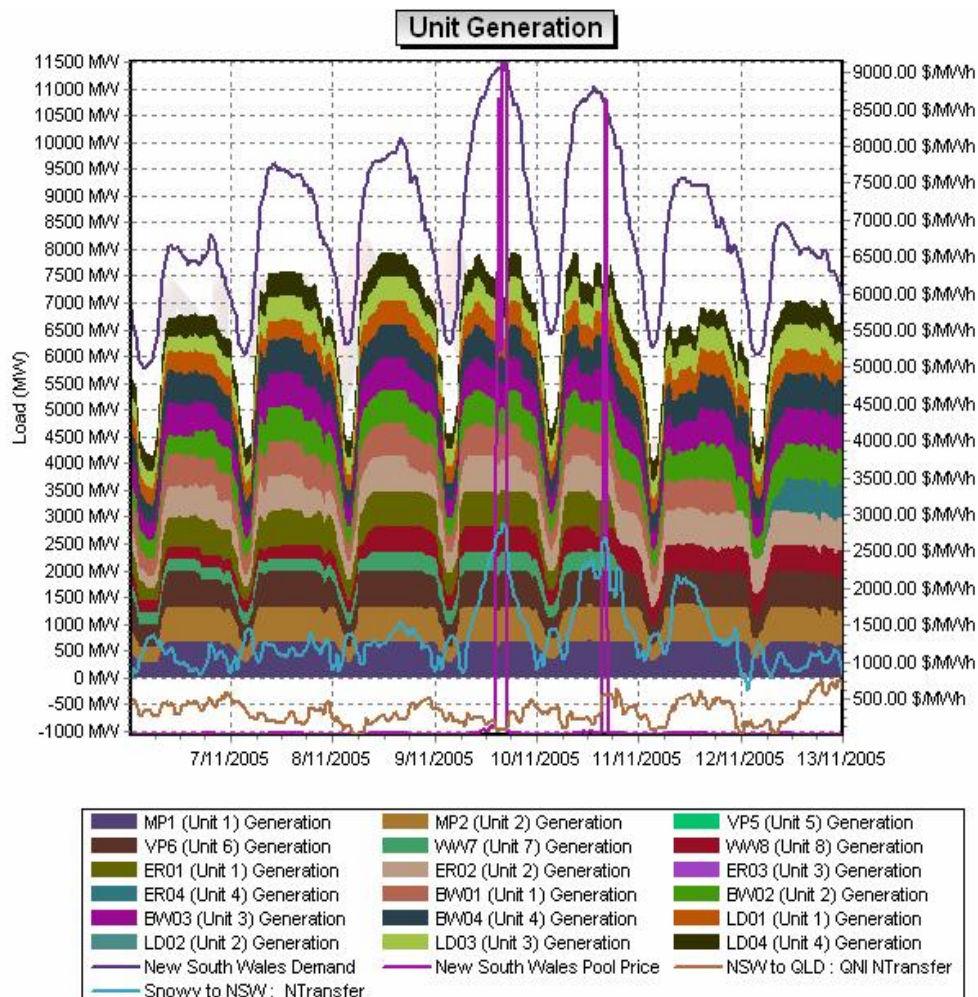
In 2005, the impact of these price spikes above \$300/MWh added over \$8/MWh to the average annual volume weighted NEM pool price. Because of the severity of these relatively few price spikes, retailers must add significant premiums to accommodate the risks they face should such a spike occur. The very randomness of the price spikes prevents reasonable attempts to mitigate the impact of the price spike other than to buy expensive “insurance”. Additionally, generators add a risk premium to manage the risks they face from these price spikes when they contract with retailers.

These price spikes tend to occur when generators are aware that the interconnections between regions are constrained and so allow the regional generators to set prices. This is often achieved by the dispatched generators withdrawing capacity (effectively achieved by reallocating already bid generation into a higher price range) in an increasing demand period. The common ownership of the three large generation groups in NSW allows this practice to regularly occur in NSW.

Thus it is clear that when generators use their market power, they do have a significant impact on regional pricing levels.

⁷ Bardak P/L, “The Effect of Industry Structure on Generation Competition and End-User Prices in the National Electricity Market”, May 2005

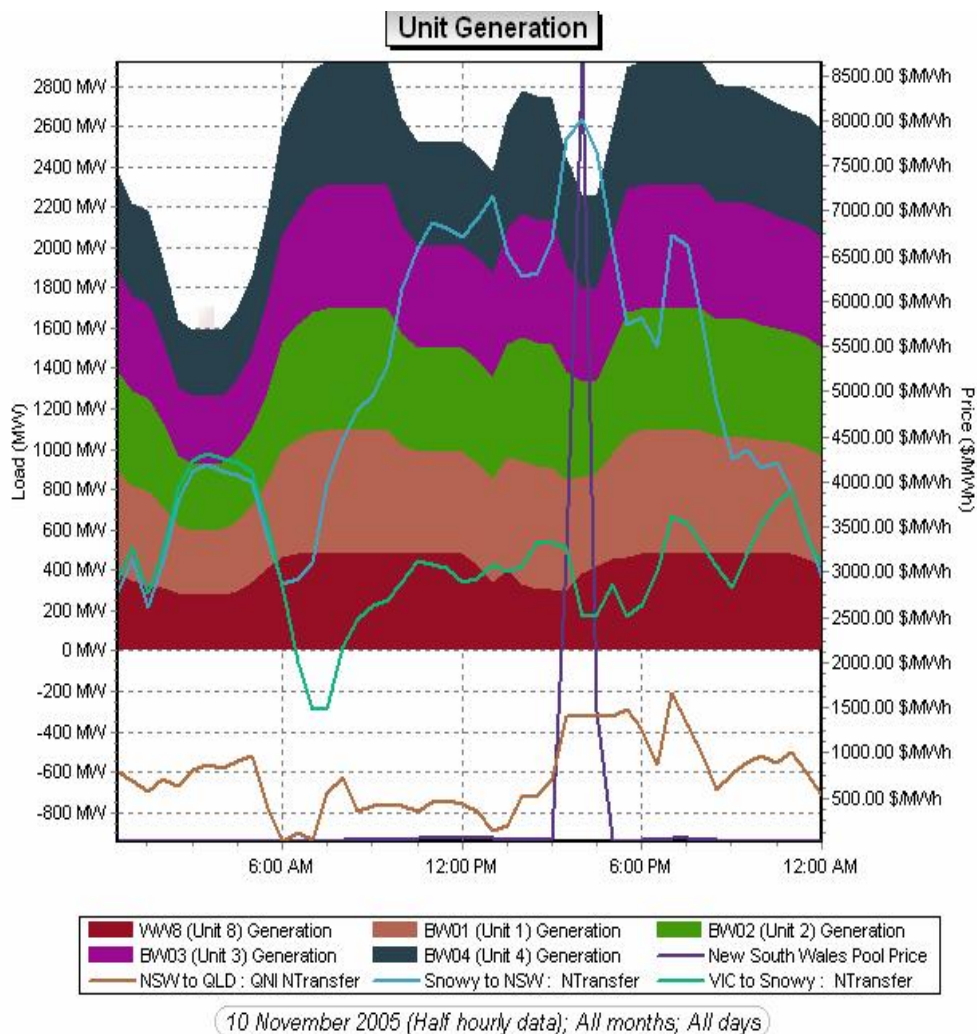
It is clear how the generators can easily exercise their market power. The basic concept is that when the generators see an opportunity of certain high demand and constrained inter-connectors, the generators withdraw capacity from a lower price band and rebid this at a higher price band. A review of the AER weekly report for week commencing 7 November 2005 shows this quite clearly. The price for power reached over \$9000/MWh on 10 November 2005, caused by a significant withdrawal of power by base load generators from levels of dispatch they easily achieved the day before and did so later in the day examined and again on the following day. Why the price spiked was due to the constraint on the interconnectors, which when the base load generators withdrew capacity, forced higher priced generation to be dispatched.



6-11-2005 to 12-11-2005 (Half hourly data); All months; All days

Source: NEM Review

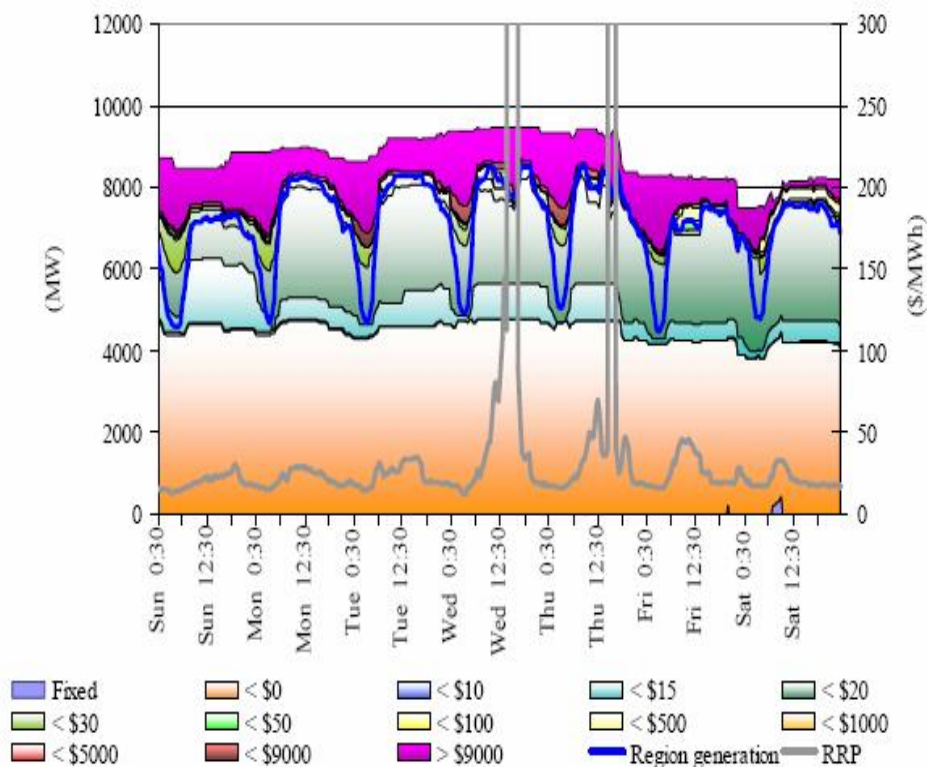
Examining the issue in more detail shows that demand peaked on two consecutive days, but on the first day (10 November 2005) there was a significant reduction in supply from certain base load power stations, totalling about 700 MW. At this same time the price spiked to nearly \$9,000 and stayed high for an hour. Looking closer at that day we see who did what at this critical time.



Source: NEM Review

There was a reduction of output from five power station units, requiring Snowy to make up the difference. From the AER weekly report we see that Snowy “parks” much of its output at >\$9000/MWh which the base load generators knew. Note in the following charts (courtesy of AER weekly reports) that the introduction of the >\$9000/MWh (purple) band on 10 and 11 November occurs at a much lower afternoon demand level than on the other days which had a similar high demand. By marginally reducing output, requiring Snowy to generate, the five generators included in the above chart made more money than by being dispatched. We also note that at this time Snowy increased output of its Murray power stations, reducing power transfer on the interconnection between Victoria and Snowy, preventing lower priced generators in Victoria being dispatched.

Figure 52: New South Wales closing bid prices, dispatched generation and spot price



Source: AER Weekly report 6 Nov 05 – 12 Nov 05

The actions of five NSW based power stations, knowledgeable of Snowy practices, provided the perfect conditions for spiking the power price in NSW, uncoupling prices from those in the other states.

There is a noteworthy comment⁸ 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 purpose in describing this easy ability of generators to use regional market power is to highlight that any action taken by the Reliability Panel must be

⁸ The Age, 24 May 2006

seen in the context that generators will **always** seek ways to maximize their revenue irrespective of any Reliability Panel Review recommendations.

The very structure of the NEM permits, even encourages, generators to use their market power to create the price spikes seen in the NEM. **The primary tool used to encourage reliability in the NEM (particularly that of increasing VoLL) provides the mechanism for generators to further use their market power to maximize revenue and profits.** If reliability can be achieved or enhanced at the same time as **by reducing market volatility** this must be seen as a preferable decision when compared to the less palatable alternative of maintaining or increasing volatility.

Thus there should be an incentive for the Panel to ensure that its decisions lead to a reduction in the market power of regional generators, with the likely outcome of volatility being reduced.”

This extract demonstrates the ability of incumbent generators to use the market as currently structured to enhance their profitability which results in an excessively price volatile market. This volatility is the direct outcome of the way incumbent generators must operate in order to achieve their profitability, but at the expense of providing a more risky operating environment.

However, this outcome is directly at odds with the needs of independent investors in new generation for a reasonable and predictable return, as certainty is a key element to investment. Thus the needs of the incumbent generator are clearly at odds with the needs of a new generator. There is an essential need to overcome this incompatibility.

6. **The NEM is a series of Interconnected Regions, causing a number of other issues**

When addressing issues which impact the NEM there is a fundamental matter which underpins many of the problems confronting the ERIG review. This is that the NEM is not a national electricity grid, but a series of jurisdictional grids lightly interconnected.

As a result there are a number of inter related issues that result such as the impact of this on reliability, congestion, price impacts on consumers, generator market power, the reasons for the NEM not to have significantly increased interconnection, and the need for national planning.

6.1 Interconnection of Regions

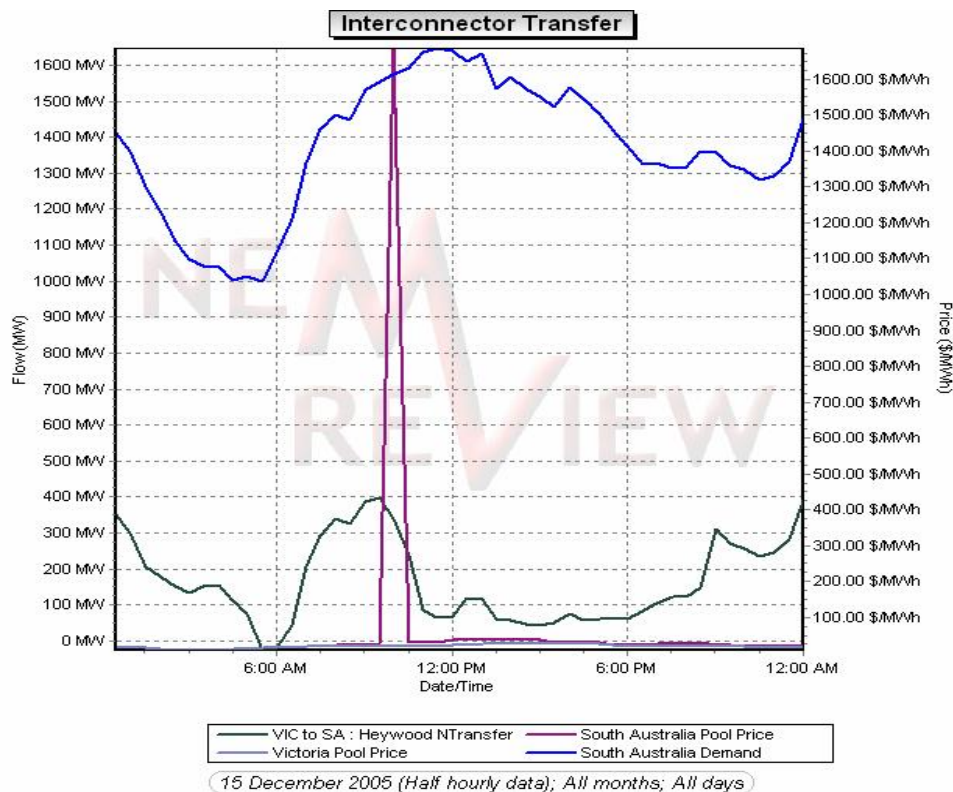
Transmission provides the essential link between generators and consumers. However, the current NEM is a series of interconnected regions rather than a national system. Inter-State transmission interconnections are not especially strong, even without taking into account of NSW-Vic congestion created by strategic bidding by Snowy Hydro.

In its recent submission (section 2.7) to the Reliability Panel⁹, the MEU and MEG stated that:-

“The so called national electricity market is in fact a series of interconnected regions, with the interconnections not especially strong. The strongest interconnection delivers no more than 30% of the regional demand, with the others being much smaller. This effectively allows the generators in each region to frequently set the price for each region. Thus the national market allows generators in each region the ability to use their market power to set prices.

That this happens is readily identified by the following analysis of regional pricing. When a small increase in demand in a region cannot be accommodated by increased transfer between regions, we see the regional prices “uncouple” with one spiking as the interconnector is insufficient to permit the increased flow and the regional generators use market power to increase prices. This can be seen in the following graph.

⁹ AEMC Reliability Panel Comprehensive Reliability Review, Comments on the RP Issues Paper by MEU 11 May 2006



Source: NEM Review

This shows the impact of a constraint on V-SA (Heywood) where the capacity of Heywood (normally 460MW to SA) was reduced to 275MW for a short period. The five minute price in the SA region was \$9999.99/MWh for the period 9.55 am to 10.00 am on 15 December 2005. Both before and after this 5 minute period the SA price was less than \$30.MWh. It was the short term impact of this 5 minute that spiked the half hourly price by nearly 60 times.

Analysis of the regional pool prices shows that these spikes are relatively infrequent. However, the severity of them when they occur is enormous.”

6.2 Interconnection and Reliability

In the same submission (section 3.6) the MEU provided a commentary on the inter-relationship between interconnection and reliability in the NEM

“Appendix 3 of the RP Issues paper, reviews a number of examples of failure to provide service. The appendix points to the fact that inter-regional transmission capability impacts heavily on the provision of service. In particular, the appendix highlights that a regional generation failure might not have resulted in the loss of supply if the interconnectors to other regions had a greater carrying capacity.

Because of this weakness in inter-regional connections, it is appropriate for the RP to examine why this is so. If inter-regional connections were much

stronger, then the challenges facing the RP with regard to reliability might not be as pressing – certainly there would be significantly more competition in the market, with regional generators having much less ability to exercise market power than they do.

Although the attention in the RP Issues Paper is being focused on generation adequacy, the Issues Paper does include information relating to network reliability, and which body is responsible for its assessment.

It is recognized that most causes for failure to supply lie within the distribution networks, but it is also recognized that transmission networks generally provide adequate capacity for intra-regional needs. This is not unexpected as each of the regional transmission networks were developed by the various jurisdictional vertically integrated generation and transmission entities. Under the jurisdictional controls the transmission system had to be adequate to deliver the generation supplied by the same entity. Thus intra-regional generation and transmission were developed in concert to ensure that there was certainty of supply at the various bulk load supply points.

Where the transmission system has failed is in the area of **inter-regional** transfer. That this is the case is again not unexpected as each jurisdiction tended to focus its attention on local issues. The single exception is the decision to use Snowy resources to provide back up to the NSW and Victorian markets, but even this is really a hang over from the earlier jurisdictional controls. NSW owns some 58% of the Snowy scheme with Victoria having 29%. This meant that these two states treated their entitlements from Snowy output as part of the portfolios of generation. Notwithstanding this relatively strong connection of NSW and Victoria to Snowy, most inter-regional connection is still very weak.

The following table shows that the strength of interconnection between regions (compared to peak demands) is at best modest, supporting the views made above. These calculations assume that the full capacity of the interconnections will be available to suit the peak demands in each of the regions, and there is sufficient capacity in the adjoining region to provide the full capacity.

Region	Qld	NSW	Vic	SA	Tas
Recorded peak demand MW	8295	13096	8680	2872	1718
Max Interconnection from east	0	0	0	460 + 220*	0
Max Interconnection from west	0	0	288 + 112*	0	0
Max Interconnection from north	0	1050 + 175	1725	0	300
Max Interconnection from south	817 + 180	3200	600	0	0
Interconnection as % of peak demand	12%	34%	31%	24%	17%

* assumes that Murraylink operates at full capacity which due to constraints in SA and Victoria it cannot at critical times.

In section 2.6 above, it is clearly stated that the NEM is a series of interconnected regions, rather than a national market. From our perspective, the RP should not approach this review as if there is a national market until there is significant strengthening of the inter-regional connections.

With this in mind the RP should consider recommending to the AEMC (and the MCE) that the Regulatory Test (RT) be examined to identify if it prevents strengthening interconnection between regions. Currently the RT excludes the benefits to consumers that would come from reducing the power of regional generators to set regional prices when interconnection between regions is constrained. If this benefit is added to the RT then there would be much more opportunity by the transmission companies to get approval for strengthening interconnection.

Stronger interconnection will allow greater generator competition, and allow better use of existing generators to supply into markets where there are non-coincident high demands. For example demand peaks in NSW and Victoria tend to be non-coincident. With a high demand in NSW, stronger interconnection between the two regions would allow a greater ability for Victorian generators to provide into the NSW market. Currently, once the interconnection between Victoria and NSW (via Snowy) is constrained, the two regional prices uncouple with NSW price tending to soar, despite there being surplus generation in Victoria willing and available to be dispatched.

The following series of charts shows this feature. On 2 February 2006, the interconnection between Snowy and NSW was constrained. The NSW regional price spiked to over \$8000/MEh for 2½ hours in mid afternoon.

Capacity was withdrawn at lower prices at the time of the spike, and rebid at higher prices.

Queensland prices also rose, tracking the NSW prices, but not to the same extent.

In Victoria prices rose to just under \$400/MWh for one half hour

South Australian prices matched Victoria and in Tasmania they did not rise at all.

As can be seen from the various prices and capacities offered in the other states (sourced from AER weekly report 29 Jan- 4 Feb), there was over 1500 MW of generation available in Queensland, over 2000 MW of generation available in the SA-Vic region and some 1000 MW available in Tasmania.

Stronger interconnection would have prevented the NSW and Qld spikes occurring, saving some \$400 million from the NEM costs. To put this into context, QNI reportedly cost less than \$400 million to build¹⁰. Certainly stronger interconnection increases the ability of generation in one region being used to support a forecast shortage of generation in another region, with the overall benefit being the increase in reliability.”

6.3 Congestion, transmission costs and the RT

In another submission in relation to congestion and its management in the NEM, MEU provided the following insight¹¹ into the inter-relationship between congestion, allocation of transmission costs and the Regulatory test

“The Regulatory Test (RT) as determined by the ACCC in August 2004 prevents the economic benefit of reducing market power of generators by the augmentation of transmission from being seen as an element of the RT. The reason for this is the view that the public benefit of increased augmentation

¹⁰ Robert R Booth “An assessment of the first six months of operation of the QNI Interconnection” (see www.bardak.com.au)

¹¹ AEMC Congestion Management Review, comments on the Issues Paper by MEU April 2006

should not include for the transfer of wealth between one sector of the electricity market (in this case from consumers) to another (the generators). The ACCC sees that the costs to augment the transmission network should be neutral with regard to the parties to the NEM.

The only way to reduce congestion is to:-

1. locate generators to be closer to consumers (this is prevented by the Rules as discussed by MEU in its submission to the AEMC on the Chapter 6 proposed draft Rules),
2. move consumers closer to generation (this view is seen as inappropriate as the costs of electricity to most consumers does not commercially warrant such a radical step for a relatively low input cost)
3. require consumers to reduce demand when congestion occurs (this will reduce national wealth creation and so is seen as inappropriate), or
4. augment the transmission network (this is constrained by the RT).

The approach of options 1 & 2 is impacted by commercial considerations. The major cost input to generation (other than capital) is the cost of fuel, implying the lowest cost option for generation is to be close to the fuel source. Except in a very few instances, the cost of electricity for major energy consumers is not the driving cost, whereas raw material inputs, labour or transport are usually much higher cost inputs, implying that location with respect to electricity will not be the determining driver for location.

Option 3 changes the whole balance of electricity from being a service input to being a controlling input. Electricity supply is only a service to consumers (albeit an essential service) and does not provide any national wealth creation in its own right. It is the use that others put electricity to that creates national wealth. Without consumers there is no electricity supply industry, yet consumers can exist without an electricity supply, although not as effectively. Electricity supply allows consumers to maximize the national wealth creation. Thus to observe the electricity supply industry in isolation is to create an artificial barrier which can result in a short sighted view which will lead to a reduction in Australia's national wealth.

To expect industry to reduce its output because there is an increase in electricity costs is short sighted in the extreme and fails to address the central problem, by focusing on the wrong issue.

Option 4 is the optimum solution to reducing constraints, yet the absurd proposition that augmentation of the transmission network must be constrained because of an incorrect and narrow sighted economic principle must be addressed as a key element of the review of constraint management.

The RT precludes the inclusion of the cost benefit from reducing regional prices by network augmentation as this is seen (in the exclusive context of the

electricity market) as a transfer of wealth. This principle is flawed at its very basis.

The ACCC refers to the public benefit as not being enhanced by the inclusion of the regional price reduction. Almost every member of the public is a consumer of electricity and those that aren't are indirect beneficiaries of the consumption of electricity. To all intents and purposes there can be little doubt that the term "public" and "electricity consumers" can be considered as the same. Even generators are consumers of electricity as most need supply of electricity to provide the service, even if only to start up their facilities.

Electricity consumers (the public) pay directly for the provision of the transmission network. The costs of the transmission network are "passed through" to all distribution networks and added to the cost of delivering electricity. This cost is clearly shown on a typical bill from a retailer which show that the costs for electricity supply comprises a cost element for each of the following charges:-

- Energy consumption
 - Peak electricity
 - Off peak electricity
 - Data forwarding
 - Ancillary services
 - Pool fees
 - Account management fees
- Network usage
 - Peak
 - Off peak
 - Contract demand
 - Supply charge
 - TUoS supply charge

A review of the cost allocation by TNSPs following on from a regulatory review shows that the bulk of all transmission charges are levied on consumers. Generators are required only to pay directly for identifiable connection costs which are related to the assets needed to connect the generator to the shared services network.

Thus it is quite clear that the overwhelming share of the costs of electricity transmission is paid by consumers (the public). Therefore, that the cash benefit of network augmentation which reduces the regional price for power should be excluded, is clearly flawed logic. If the costs of the network augmentation were equally shared by consumers and generators then the RT logic has validity, as the benefit would then be a transfer of wealth based on a sharing of the costs of its provision. However this is not the case, as consumers pay over 90% (as estimated by TransGrid) of all transmission network costs.

If consumers want to pay for less congestion and the augmentation results in the regional price for power falling, then this benefit that must be balanced against the cost of the augmentation. A failure to do so prevents consumers from being able to use one of the tools available to them to control the exercise of market power by generators.

The MEU considers that the RT must include for the regional price benefits which results from the reduction of congestion when assessing the cost/benefit of augmentation under the RT.

Concluding comments in the submission on this issue are:-

1. There is no doubt that congestion causes an increase in the cost of electricity to consumers, both directly by adding to the average annual price and indirectly by the addition of risk premiums by retailers and generators to accommodate the infrequent but severe price spikes.
2. The fact that congestion is a relatively infrequent belies that fact that the impact of congestion can be extremely severe, and the infrequency should not be used as the basis to ignore the congestion that does occur.
3. Generators use congestion as a tool to increase regional prices, and so increase profitability. The fact that average annual electricity prices (including the impacts of congestion) might appear to be reasonable outcomes for electricity pricing should not be seen as an excuse not to address the impacts of congestion.
4. Some generators are better able to use the constraints in the transmission network to their advantage than others, even though this ability might be a locational hang over from the day's pre-NEM. This is inequitable for fair competition in the NEM and must be addressed. The result of inter-regional congestion is a barrier to inter-state trade.”

The Regulatory Test as currently structured will prevent much of the augmentation needed to minimize congestion. The RT needs to be expanded to include for the benefits arising from reduction in regional prices resulting from the augmentation. Failure to do so will lead to the continuation of the market power exerted by generators to the detriment of consumers. In this regard the “consumer benefit” and “public benefit” must be seen as coincident. “

Since 2002, the only new interconnector of magnitude built has been Basslink and this was developed effectively under a guarantee from Hydro Tasmania. The two market based interconnectors (Murraylink and Directlink) have both reverted to regulated status as they were not commercially viable as market interconnections. There has been minimal other increase in interconnection capacity. This has meant that effective inter-regional trade has not occurred, as evidenced by the impact of price decouplings between regions being such a high proportion of annual average regional prices.

Interconnection enhancements have been constrained by the Regulatory Test. Included in the appendix to this submission is the MEU submission to AEMC on this issue. This details the elements which constrain the current regulatory test and the reasons why it needs to be changed.

6.4 The need for national planning

The MEU and MEG consider that increased transmission capability between regions **reduces generator market power** and **increases system reliability**.

As previously mentioned, whilst network constraints occur infrequently, when they do the impact on consumers could be considerable e.g. 0.2% of half hour periods in 2005 contributed over 25% of average annual NEM revenues. In addition, constraints impact on the NEM as they are part of the cause of market volatility, and hence increasing risk management costs (which are eventually paid by consumers).

But regulatory issues are not the only ones affecting the interests of consumers. There are increased concerns for improved performance of transmission, in terms of both cost and reliability and this supports the clear need for national planning of transmission.

Currently, the NEM does not have any real central planning of national electricity transmission. Whilst there is the Inter-regional planning committee (IRPC) under the auspices of NEMMCo, its ambit for assessing augmentation of the interconnectors is severely constrained. The results of interconnection have, to date, been adhoc, and often undertaken by those seeking to arbitrage the price differentials between regions. Some attempts at inter-regional transfer augmentations have resulted in expenditure in one jurisdiction with the benefits of the augmentation being negated by actions of a TNSP in another region.

Planning is clearly important as it needs to reflect network connection requirements well in advance so that appropriate investments can be made in time to accommodate transfer needs. The time lags involved between identification of needs and completion of construction may be as long as 2 to 4 years.

There is a debate as to the best method for implementing a national planning role. These fall broadly into two camps - the existing approach using the IRPC attempting to coordinate the five jurisdictionally based TNSPs and any Market Network Service Providers, and a new national body with the responsibility and the ability to require the best option for inter-regional

augmentation being constructed. The Murraylink debacle¹² provides an insight into the inability of the current system to provide the best possible outcome.

There are three aspects where a national planning entity can add value over the current approach:-

1. Except for South Australia, the incumbent TNSPs are either government owned or government controlled. Thus there can be a political imperative on the jurisdictional TNSP to provide limited investment funds to intra-regional needs ahead of inter-regional needs. A national planner would have the responsibility to examine issues with a wider focus and thus recognise that investment funds held by the jurisdictional TNSPs might serve the interests of all consumers when dedicated to a national need above the needs of a single jurisdiction.
2. Unilateral decision making would not occur. An example of this unilateral decision making was the decision of the Tasmanian government (through Hydro Tasmania) to underwrite the construction of Basslink and to design it to meet the needs of Tasmanian consumers. Now that Basslink is operational (and not providing the revenue hoped for to Hydro Tas¹³) there is a thrust to have Basslink regulated. Once regulated Victorian consumers will be required to provide some of the costs of Basslink even though the Victorian government (and its electricity planning agent VENCorp) was not involved in any commitment or the design parameters of Basslink. Thus a unilateral action of the Tasmania government has the distinct potential to increase costs to Victorian consumers but without Victorian consumers having any say in the commitment or design. This observation is not intended to cast any reflection on the merits of Basslink and its move to become regulated, but only to highlight that a national planning body might well have identified an alternative solution which might have provided a different outcome that better suited the needs of both Tasmanian and Victorian consumers!
3. A nationally established planner could integrate the planning of electricity augmentations and those of gas augmentations, resulting in

¹² The experience in this area shows that the IRPC was extraordinarily ineffective in this role when the differences between Murraylink and the proponents of SNI reached the Supreme Court in Victoria. The outcome of this lack of coordination and competing interests resulted in consumers inheriting the worst possible outcome – paying full price for an interconnector that cannot operate at maximum capacity when it is most needed

¹³ See the Age 3 August 2006 “Basslink shock for Hydro Tasmania” confirming that Hydro Tas is losing money in supporting Basslink

the overall lowest cost to consumers of NEM augmentation (be it network or generation).

A key factor for establishing a new national planning body, is it that it must have the power to require the augmentation to be built. It is useless to identify a need and the most effective option for fulfilling the need, if there is no power to require the involved TNSPs to cooperate. This ability not to cooperate is easy to identify – an involved TNSP has only to advise that it does not have the funds to prevent the augmentation occurring. This is the challenge faced by the Electricity Supply Industry Planning Council of SA. Here ESIPC can identify a need and the optimum solution but it requires the active participation of the incumbent TNSP, ElectraNet, to execute the augmentation.

Because an incumbent TNSP has the power not to carryout an augmentation identified as being necessary, then it also has the power to extract monopoly rents by observing that it will carry out the work but for a higher return than under the regulated return, on the basis that it has to seek additional funds for the work and because its existing funding resources have been dedicated to other aspects of its business, it will incur additional costs and a higher WACC to provide the funds for the augmentation¹⁴.

¹⁴ This is exactly what Prime Investments (now Babcock & Brown Infrastructure) did over augmenting the Dalrymple Bay Coal Terminal in Queensland.

7. Transmission

There has been significant discussion in the earlier sections about the importance of transmission and the issues confronting the NEM.

In summary the MEU recommends that the following issues need to be addressed by the transmission reference group:

1. Increased transmission capability reduces generator market power and increases system reliability
2. Constraints in the NEM are relatively infrequent but have a massive price impact when they occur
3. There needs to be central planning for the NEM and the central planner should address electricity and gas transmission, have the power to ensure the augmentation is carried out and coordinate the implementation to be in the interests of all consumers in the NEM
4. The Regulatory Test needs to explicitly include the price impacts of inadequate interconnection
5. There must be encouragement for the TNSP to have its network available when there is the greatest need
6. There is minimal trade across interconnectors due to the risks inherent from the infrequent but costly inter-regional price uncouplings.

8. Key Questions to Consider (Transmission)

The following section provides MEU and MEG responses to the specific questions raised in ERIG's Issues Paper.

1. What is the appropriate role of transmission in the national electricity market and is that role being performed effectively today?

To facilitate competitive national electricity market outcomes (e.g. facilitate inter-regional electricity flows, reduce the exercise of market power and excessive price volatility) and benefit consumers in terms of the NEL objective.

2. Are all aspects of the role of transmission appropriately valued in the regulatory regime?

No, there needs to be a planning and regulatory regime mechanism to encourage enhanced transmission when it is required. For example, when transmission investment allows consumers to pay more competitive prices for electricity, or when reliability is enhanced.

3. Are the current planning, investment and operational processes of the regional transmission networks supporting the efficient NEM wide provision of transmission services?

No, there is no central planning arrangement to coordinate inter-regional transmission. Whilst the NEMMCo SoO and the ANTS both attempt to provide some indication of the future needs in the NEM, there is no reliable statement of network requirements or the appropriate machinery to implement augmentation. State-based transmission companies are regionally focussed, often operating within a jurisdictional-based policy framework.

- 4. To what extent are any inadequacies in the national planning regime or governance arrangements hindering efficient investment in the national grid?**

The regulatory regime for interconnectors is a major impediment to achieving the optimum role of transmission in the NEM, and undoing of the criteria under the Regulatory Test is necessary. Notwithstanding, there is no national policy or governance framework to allow for NEM-wide planning and implementation. A new institutional arrangement would be necessary, and could comprise a national grid company owned by the transmission companies operating under a legislative regulatory and governance framework. This grid company would have the sole objective of ensuring the efficient and timely augmentation of interconnection, supported by an appropriate incentive mechanism operating under a new regulatory regime.

- 5. Are there efficiency gains available from strengthening the relationship between the competitive and regulated sectors?**

Why would there be? Transmission is a natural monopoly. Strengthening the relationship between transmission and say, a generator would lessen competitive outcomes to consumers. Consumers pay for transmission, not generators.

6. Do the current arrangements create a stable framework for efficient investment in new generation and transmission capacity? What are the implications for efficient investment of having different frameworks governing investment in electricity and gas transmission?

The NEM is increasingly losing its competitive drivers through reaggregation, both vertically and horizontally. The high risk (and high cost) in the NEM is deterring new (efficient) investment in baseload and intermediate load generation and new entrants. The current 'arrangements' are not creating a stable framework (indeed, the NEM is highly volatile and uncertain) for both generation and transmission capacity. Provided the objective (and outcome) and the underlying principles are competitive, there should not be adverse consequences for having different frameworks governing investment in electricity and gas transmission. Harmonisation for its own sake is unnecessary and could be detrimental for consumers. For example, by permitting generators (gas producers) to own transmission networks (gas transmission pipelines) such as is the case in the gas industry sector (in fact the vertical integration is much wider) would dramatically reduce competitive outcomes in the NEM.

It must be recognised that a stable framework is essential for new investment but the current construct of the NEM creates an environment which is much too volatile for the certainty necessary for investment and the outcomes must provide an environment which allows reasonable certainty of getting a return on the investment made. With so much of the average pool price a result of a relative few price excursions, a new investor is unlikely to invest.

7. How can a level playing field be established and maintained between the competitive elements of the market and the regulated natural monopoly elements?

Because transmission is regarded as natural monopoly and therefore it is inefficient to duplicate the services provided, economic regulation is introduced as proxy for competition and to drive efficiency.

8. What is the role of the current regulatory test? Is it performing that role effectively? If not, what changes are appropriate?

The Regulatory Test regime is not effective and the benefits test should include consumer benefits.

This point is more clearly developed in the body of this submission

9. How can market-based incentive arrangements inform and strengthen the economic regulatory framework/regulatory test?

By recognising that consumers need a less constrained transmission system to counter the market power generators.

10. Does the MCE transmission package, including the ANTS and the last resort planning power, provide an effective mechanism to ensure a national approach to transmission planning?

No. New institutional arrangements are required. See earlier response.

11. Are current arrangements favouring intra-regional transmission investment and operation over inter-regional transmission investment and operation?

Yes. The planning authorities and transmission companies are regionally focussed and operate within a jurisdictional policy framework.

12. What institutional and governance arrangements are appropriate for the transmission sector in a fully integrated national electricity market?

There is a requirement for national planning and new institutional arrangements to reflect the needs of the NEM as a whole and to bring intra and inter regional transmission into alignment. For example, Murraylink is now regulated to increase transfer between SA and Vic, yet it cannot operate at maximum capacity due to constraints in SA and Vic, and even in NSW. See earlier response.

9. Market Structures

The MEU and MEG point to the earlier discussion concerning aspects of NEM development:-

- Highly volatile
- Price spikes that are unrelated to underlying demand conditions
- Economic withdraw of capacity and other anti-competitive market behaviour
- Highly risky, with contract power prices substantially above pool prices
- Increasing vertical and horizontal reintegration
- Dominance of a few key generators and retailers
- Lack of appropriate signals for new baseload and intermediate load generation investments
- Generator earnings substantially in excess of LRMC

These features are clear demonstration that competitive drivers in the NEM have been much blunted.

In the view of MEU and MEG, consideration of the Market Structures issues would need to bear in mind:-

- It is important to appreciate that gas and electricity do not compete very much at all and are not always direct substitutes. Most electricity is used for motive power which gas cannot provide, whereas gas is a much lower cost energy source for heating needs. It is clear that electricity and gas only compete **at the margin** (and primarily where gas is used for power generation) and the statement in the Issues Paper that they often compete is **incorrect**, and can lead to misleading conclusions.
- The separation of activities (viz. generation, transmission, distribution and retail) is supported. Consumers agree that generation and retail can be competitive elements. However, it is clear that there is concentration of these contestable sectors and this has a direct result of reducing the competitive drivers in the NEM. Dominant players can and do exert market power, as well as deter new entrants. Statistical indices of market power should be produced by ERIG to assist in analysis.
- The gross pool does provide some price discovery, but this is clouded by retailer margins and risk margins (added by generators and retailers). The actual cost of electricity and gas is significantly higher

than the price in the pools operated by NEMMCo and VENCorp. These premiums add between 30% and 80% to the pool price, thereby heavily clouding the information provided by these pools.

- The legislative framework governing the NEM has permitted major reaggregation, both vertically and horizontally, especially between generators and retailers. These 'gentailers' can reduce risks, and investors have assisted them accordingly, through premium rankings. It is worth noting that the only parties that have registered to buy Energex Retail are AGL, Origin and TRU - which will result in a reduction in the number of retailers in Queensland and another loss to competitive drivers. Ergon Retail appears to be going the same way. The purchase of Red Energy (by Snowy Hydro) and PowerDirect (by Ergon) shows that as small retailers reach a certain size they are quickly absorbed by existing players.
- Vertical reaggregation deters new entrants and unhedged or unrelated retailers when seeking hedge contracts (to manage risks) they might not receive competitive contracts. In South Australia, the only independent generator available to independent retailers is NRG Flinders (now Babcock & Brown).
- Aggregation between retail and generation allows the matching of compensating risks. The NSW ETEF and Queensland BPA schemes did precisely that. Yet, they were widely criticised (including by Parer, the ACCC and retailers) for their anti-competitive outcomes. But why is it now acceptable for private enterprise to effectively replicate the same approach?
- The ERIG Issues Paper refers to an increasing number of retailers. This is **inaccurate**. Retailers are disappearing fast: Energex and Ergon/PowerDirect are now to be sold to the 3 dominant retailers; Northpower, Great Southern, and two of the original 5 Victorian retailers are no longer in business; new startups such as PowerDirect and Red have been absorbed; and the generator-based retailers (e.g. Yallourn, Loy Yang and International Power) have been absorbed or have established strategic alliances with retailers.
- The ACCC (via the Trade Practices Act) has not been able to prevent mergers even when they consider the mergers were anti-competitive, reflecting concerns with the adequacy of competition legislation.

10. Key Questions to Consider (Market Structure)

1. **To what extent do existing market structure in the energy sector facilitate or impede competition and hence economic efficiency? What changes, if any, would achieve materially greater efficiency?**

As detailed above, the existing market structure in the electricity sector has changed considerably since the NEM commenced. The electricity supply industry is now highly concentrated, with considerably fewer firms in the generation and retail sectors. A striking feature has been the extent of vertical and horizontal reintegration, with the result being the indirect erection of barriers to entry for new entrants. The trading system and the market rules accentuate economic withdrawal of generation capacity, creating volatility and price spikes that are unrelated to demand conditions, thereby raising the level of risks for market participants.

The few remaining dominant businesses are now operating in a market where competitive drivers are much diminished. A strengthening of the Trade Practices Act to prevent anti-competitive mergers and acquisitions, and sufficient powers provided to the ACCC to require divestment in the event of anti-competitive market behaviours should be enacted. Industrial users of electricity are facing the severe consequences of a lessening in competition, with rising energy prices and the inability to write long-term contracts.

2. **How are competition and efficiency affected, now and into the future, by:**
 - **Integration between monopoly and contestable sectors;**
 - **Vertical integration between contestable sectors; and**
 - **Horizontal aggregation (greater market concentration)?**

See preceding response

3. Does transmission capacity between regions and within regions effectively support competitive and efficient electricity market outcomes?

There are inter-regional constraints which limit competition between generators in adjacent regions. There are also 'contrived' constraints, for example, when Snowy Hydro undertakes strategic bidding of Tumut and Murray sub-stations which constrains the Vic-NSW interconnectors. Consumers in Victoria and NSW are unable to benefit from inter-State competition during periods of high pool price levels.

4. Is competitive neutrality between government and private businesses a significant issue influencing competitive and efficient outcomes?

There is a major issue involving competitive neutrality. In Queensland and NSW, government-based schemes operate, which insulate government-owned retailers from the vagaries of the pool. This has limited inter-State retail competition. However, privately-owned businesses are now vertically reintegrating, with the result being a more concentrated electricity supply industry.

5. Are network access arrangements an impediment, or conducive to, competitive and efficient market outcomes?

Economic regulation is essential for natural monopolies. However, the rules of the game (with respect to pricing, allocation of costs and incentives) need to reflect the NEL objective. Monopoly providers will always complain that regulators are wrong and that more evidence should have been provided to ensure new investments and for the "lights to stay on". This is natural, as the businesses are seeking to maximise returns to their shareholders. The fundamental issue is to ensure the 'rules' are not too prescriptive (a balance between 'prescription' and 'certainty') and the regulator is given some flexibility to exercise judgement. Black-letter law is unlikely to produce efficient regulation.

- 6. What, if any, are the limitations of section 50 of the TPA in providing adequate protection against energy sector mergers which may lessen competition substantially?**

Section 50 of the TPA is grossly inadequate, given the extent of concentration that has been permitted to occur in the electricity sector.

- 7. Are these limitations generally applicable, or especially relevant, where contestable and non-contestable markets are combined?**

Mergers between contestable and non-contestable sectors are especially detrimental to competition, as non-related competitors can be and have been disadvantaged.

- 8. Is the energy market sufficiently different to warrant special rules beyond those generally applicable? If so, how?**

Yes, electricity supply is the most essential of all services and the least able to be controlled as it cannot be stored. Its use is widespread and pervasive.

See the observations regarding this pervasiveness in the appendix.

11. Financial Markets

The ERIG should bear in mind the following:-

- There is limited financial trading between regions because of the high risks inherent in the NEM and the financial exposure that participants (retailers and generators) face when a price separation occurs. Transmission companies are therefore reluctant to offer firm rights as this would then expose the TNSP to unmanageable financial risks. As detailed above, where generators can control the market with such ease, there will be few participants willing to take any significant exposure (where 0.2% of trading intervals adds 25% to the average pool price)
- It must be borne in mind that financial hedges are essentially risk insurance. These transactions costs are paid by consumers. The higher the risks in the market, the higher the transaction costs paid by consumers for the management of these risks.
- There is very limited secondary market activity and what there is, is predominantly controlled by the generators – e.g. capping prices at \$300/MWh (the major secondary market activity) is only provided by peaking generators.
- Financial markets in most commodities have trading which is many times the primary market, yet the NEM has very limited secondary trading. This provides a clear indication that the market is not functioning at the optimum level.
- The result of the thin secondary market in electricity is that retailers have had to build physical hedges, hence resulting in the trend of generator/retailer mergers.
- The Bulletin Board and the Short Term Trading Market proposal for gas is a good step forward in establishing secondary trading and enhancing liquidity in the market.
- ETEF and BPA (now LEP) are being replicated by retailers and generators vertically integrating. These approaches are essentially risk management tools which cancel equal but opposing risks faced by retailing and generation.

12. Key Questions to Consider (Financial Markets)

1. **Are active financial markets relevant in promoting economically efficient energy markets? If so how?**

Yes, financial markets are relevant in facilitating economically efficient energy markets, even more so if the market is dysfunctional or highly risky. Some participants can manage these risks better than others through vertical integration. Consumers, on the other hand, have limited scope to do this (primarily through limited demand-management).

2. **Are financial markets in energy in Australia acting to support participants in managing their risks, supporting investment, promoting competition within and between fuels and providing transparency?**

This is debatable as the market is so very thin. Investments by retailers have occurred (peaking generators) to manage risks rather than using alternatives, such as financial instruments. The reaggregation in the industry shows that the absence of alternative risk instruments is a real issue, and a consequence has been a reduction in competition in retail and generation.

3. **Is the development of demand side management impacted by the effectiveness of the financial markets?**

Demand Side Response should not be seen as a solution, as this effectively requires consumers to cease or reduce their normal activities. The loss of energy reduces the efficiency of the investments made by consumers (as compared to the resultant increase in efficiency of the NEM), but as the NEM does not create wealth of itself, thereby the reduction of the wealth creating activities of these consumers reduces the national wealth creation.

- 4. Are there structures or rules or mechanisms of physical energy markets which impede the development and/or operation of effective financial markets?**

The market volatility of the NEM is the prime impediment - the unpredictability and size of the volatility prevents any ready management tools being used. Volatility results from a number of sources, such as transmission failures, but the prime cause is the ability of generators to exercise their market power to spike prices. To get a sensible secondary market requires this degree of market power to be curbed by modifying the NEM market structure and reducing inter-regional constraints.

- 5. Would changes to structures or rules or mechanisms support more effective financial markets?**

Yes.

- 6. What is the impact of the current physical electricity market arrangements on trading between and within regions? Are these arrangements optimal?**

No. There is no significant trade in electricity between regions. The risks in contracting over an interconnector (e.g. a generator to a consumer, even via a retailer) are too great for any counterparty to accept.

Appendix

Australian Energy Market Commission

The Regulatory Test

What should be included?

by

The Major Energy Users Inc

May 2006

Assistance in preparing this submission by the Major Energy Users Inc was provided by Headberry Partners Pty Ltd and Bob Lim & Co Pty Ltd.

The content and conclusions reached are entirely the work of the Major Energy Users Inc and its consultants.

1. The Background

In a reference to the AEMC on 16 January 2006, the MCE in its report to CoAG stated that, amongst other things¹⁵,

“The regulatory framework should maximize the economic value of transmission, including through the efficient removal of regional price differences in the operation of the NEM”.

Later in the same letter the MCE comments that:

“Where a particular transmission investment option is the most effective means of facilitating competition (for example, by promoting competition between generators) the *new regulatory test* arrangements will enable the identification and approval of that option. As such, competitive transmission investment options will proceed and the long term interests of consumers of electricity will be promoted **in respect to the price of the electricity they consume.**” [emphasis added]

Consumers strongly support this policy directive to the AEMC.

Consumers have over a long period consistently maintained that the Regulatory Test (RT) as developed and used by the ACCC is flawed as it does not incorporate the cash benefits to consumers arising from price differential reductions between adjacent regions by relieving a constraint between the regions. That such a reduction in price differentials will occur with relief of constraints is expected and has been amply demonstrated by augmentations, such as the SnoVic augmentation, QNI and more recently Basslink.

The directive from the MCE that there should be “efficient” removal of regional price differentials is consistent with the long-held view of major energy consumers that the economic benefit to consumers that accrue due to the relief of inter-regional constraints should be incorporated into the RT. The reference later in the letter to AEMC that investment in transmission options should have an impact on the price electricity, clearly supports the view that the price impacts on consumers should be incorporated into the regulatory test.

This submission details the Major Energy Users Inc.’s position on the RT.

¹⁵ See appendix 1 for excerpts of the letter 16 January 2006 from MCE to AEMC relating to this issue

2. The Fundamental Propositions

There are propositions with respect to how this policy directive of MCE can be examined and put into practice.

a. The economic efficiency approach

Regulators (the ACCC) consider that the reduction in electricity costs to consumers resulting from the relief of a constraint is only a “transfer of wealth” between consumers and generators and therefore this transfer of wealth does not impact on the assessment of the public interest, which is the required substantiation for inclusion of a benefit in the RT.

b. The SMO approach

The NEL single market objective is stated as:-

“The national electricity market objective is to promote efficient investment in, and efficient use of, electricity services for the long-term interests of consumers of electricity with respect to price, quality, reliability and security of supply of electricity and the reliability, safety and security of the national electricity system.”

3. The Economic Efficiency Proposition

Over 70% of all electricity produced¹⁶ is used by industry to create wealth for the nation. Industry is geographically located (ie cannot readily move) and therefore each industrial consumer is required to pay for electricity at the price set in the region in which the industry is located when the interstate connection is constrained.

Electricity has now become an essential part of every day life – from residential uses to manufacturing, for the provision of services to communications around the country. There is no part of every day life that does not depend either on the direct or indirect provision and use of electricity in some form. Food manufacture, oil refining, communication, transport, etc, are all dependent on the provision of electricity. Thus the cost of providing electricity impacts on every person in the nation, and provides the backbone for our exports and import replacement programs.

With this in mind it is in the interests of the nation at large to ensure that there is a sustainable low cost and reliable electricity system that will continue to provide services into the future. This means a clear convergence of the “public interest” and the interests of electricity consumers. To assume in the supply of electricity that the two are independent and so identified as separate entities, is obviously inappropriate and therefore should be considered one and the same.

That electricity supply is essential for day to day living (i.e. it is an essential service) means that it should be available at the lowest possible long term cost. It is incumbent upon government to ensure that suppliers of electricity services do not exercise market power and operate against the public interest.

With these basic precepts in mind, assessing the economic approach to the inclusion of benefits into the RT delivers a different view to that espoused by the ACCC when it maintained that the cash benefit accruing to consumers by relieving network constraints, is merely a “transfer of wealth” from generators to consumers and therefore should not be classed as a “public benefit”.

The validity of the ACCC assumption can be assessed under a number of different elements.

Restraint on interstate trade between generators

Economic efficiency is maximized when there is no constraint on inter-state trade. This is the underlying economic assumption behind the development of a number of Federal and State Acts of Parliament and specifically is now

¹⁶ This is assessed by AiG. However a review of the actual market demand with time would indicate that this assessment is of the correct magnitude.

enshrined in the Trade Practices Act and the legislation for the national electricity market.

A regional constraint prevents generators in one region from selling their product into another region. This is a restraint of interstate trade between generators and consumers, as the constraint prevents a lower priced generator interstate from supplying the consumer in another region. It is an antithesis to the very concept of a national electricity market, and indeed of the Trade Practices Act. Restraint of trade is a deadweight loss for the community.

If the relief of the constraint enhances the achievement of unconstrained interstate trade and that relief provides a benefit to others as well (in particular electricity consumers) then it must be considered in its full context.

Reduction in competition between generators

Economic efficiency is maximized when there is maximum competition. From a consumers' viewpoint, a constraint means that there is a reduction in competition when a lower cost generator is unable to supply, yet is willing to do so. The constraint grants the regional generators market power to set the regional price because there has been a reduction in competition to such a level that the regional generators are able to set a higher price for the commodity, despite the fact that there are other generators prepared to provide the same product at lower prices (but are physically prevented from providing the service).

If there is scarcity of electricity in one region, then enabling additional competitive suppliers to sell in the region ensures short run marginal cost pricing, which is an economic optimum.

Reduction in inter-state competition between consumers

A differential in the regional electricity price sets a differential of costs incurred between competing businesses operating in different regions. The higher priced region levies this higher cost on its regional business consumers, increasing their costs. It is the constraint in the electricity system that has created this input cost differential between consumers, creating distortions between consumers in different regions. As regions are based on the existing jurisdictions, the constraint between regions has led to a price differential between adjacent states, creating a lower cost environment for one consumer compared to another in the higher priced region.

Thus the constraint in the network has provided a consumer in one region with lower costs than that enjoyed by another consumer in another region. This electricity constraint has created a bias in the ability of consumers to trade equitably across interstate boundaries.

If electricity is in short supply then the price of that scarcity should be determined by competitive markets/suppliers and all users/consumers should pay the scarcity price as a resource rent. The 'law of one price' should prevail.

The public benefit

The electricity network in a region is paid for by the electricity consumers in that region¹⁷. Interconnection costs are paid for by the electricity consumers in the connected regions based on a cost sharing which reflects the relative benefits the consumers in the two regions receive from the interconnection. Under the electricity market Rules, only consumers pay for this interconnection.

When there is a constraint, there is a price separation between adjacent regions; the result of the dispatch of higher priced generators in the region isolated. This is despite there being generators in the adjacent region which could have been dispatched in the absence of the constraint.

The cost outcome of the constraint devolves to all inhabitants (the public) within the isolated region, both directly as a consumer of electricity and indirectly as a consumer of locally produced goods and services¹⁸. As the constraint has allowed the price of electricity to rise in a region, so all of the goods manufactured in the region will be higher priced compared to those produced in another region. This flow-on effect impacts all consumers in the region. A constraint between regions which causes price separation impacts on all consumers in the region isolated, and therefore on the public at large in that region. Thus it can be readily inferred that the public benefit is enhanced by a reduction in electricity costs in the region.

It must be noted that the public benefit calculation can only apply to the public in the isolated regions, and perhaps the public in the adjacent region which may have contributed to the payment of the inter-connection. As electricity can flow in both directions, it is only necessary to assess the sharing of the costs between the consumers in the adjacent regions to equitably contribute for the costs of the interconnection.

On this basis it must be assumed that the relief of a constraint is to the benefit of the public in that region. As it is electricity consumers in that region who pay for the augmentation of the network, then it is easy to see that the downstream benefits of the relief of the constraint will result in a public benefit in that region.

¹⁷ This can be seen from the Rules which require generators to pay only for connection costs but end users to pay for all shared network costs and their connection costs.

¹⁸ Even the most independent of inhabitants in a region depend on electricity to some extent, whether this is just the use of electricity in delivering fuel for use in independent generators, or the manufacture and delivery of tools used in the remote outpost.

There is potential that the relief of the constraint will result in an increase in electricity price in the exporting region, and if so, then this increase in price to consumers in the exporting region should be netted off against the saving gained by the consumers in the importing region. However, examination of the outcomes of the introduction of interconnection (eg the SnoVic augmentation, QNI and Basslink) shows that the rise (if any) of the cost of electricity in the exporting region has been modest at most. In every case of interconnection or augmented interconnection, there has been a net reduction in the cost of electricity between the two regions interconnected.

Creation of national wealth

The transfer of wealth argument assumes that there is no enhanced public benefit from the transfer of lower cost electricity to a consumer when compared to the benefit a generator has by receiving higher prices.

An industrial consumer uses electricity to increase the national wealth. Electricity is a small component of the input costs, usually less than 10% of input costs, so it can be readily seen that manufacturing adds value to the electricity purchased. The generator adds no value to the electricity other than selling the same product at a higher price. Therefore the value of lower price of electricity to industry is enhanced by a multiplier effect, increasing profitability and perhaps output, a greater flow-on to the nation and a resultant increase in national wealth.

This multiplier effect works in two directions, both in increasing production (with lower costs) and decreasing production with higher costs. It is assumed that at a certain price of electricity, industry will cease production (as suggested by demand side responsiveness supporters). When this point is reached, no more electricity is generated (creating no wealth for the generator). At the same time, there is a reduction in wealth creation by industry because no product is produced. At this time the multiplier effect of the manufacturer operation also applies, reducing wealth for its employees and suppliers, as they too are impacted by the manufacturing entity reducing or ceasing production for a period.

This multiplier effect on reducing wealth of industry is eliminated if the lower cost electricity is available by reducing the constraint from a lower priced source, otherwise prevented from supplying.

Transfer of wealth

Up to now, the ACCC has rejected the consumer view based on the assumption that the benefit to consumers is purely a transfer of wealth from generators to consumers, and therefore does not increase the national wealth which is the principle behind the concept of "the public interest". It would appear that the ACCC when developing its view was considering only the concept within the narrow confines of the electricity market. This narrow view

is totally inappropriate as the provision of electricity has an all pervading effect on national security and national wealth creation. In assessing the “transfer of wealth” argument the impact on the entire national needs must be addressed, not just the impacts when tightly focused on a single industry.

The transfer of wealth argument assumes that a consumer should be prevented from paying an increased cost for electricity transport to benefit from lower priced generation. Yet at the same time the argument is supported that where a constraint requires the out-of-merit order of generation, then the generators affected should be recompensed. In other parts of the Rules the costs to generator(s) for out-of-merit order dispatch due to a constraint are addressed with the view to recompensing generators, such as at clause 5.5(f)(5) where it states that a NSP and generator must reach agreement as appropriate on the:

“compensation to be provided by the *Network Service Provider* to the *Generator* in the event that the *generating units* or group of *generating units* of the *Generator* are *constrained off* or *constrained on* during a *trading interval*.”

Rule clauses 6.2 and 6.4 allow reasonably incurred costs of NSPs to be included in the regulated revenue. Such compensation to generators could be included in the regulated revenue, and as network costs are passed through to consumers directly as charges, it is clear that consumers are in effect required to reimburse generators for the impacts of constraints.

Despite this recognition of generator rights for compensation, the higher regional cost to consumers arising from out-of-merit order dispatch caused by the constraint is excluded from the RT, and so consumers are not entitled to include for the resultant benefit of augmentation where there is an obvious benefit which is real.

4. The SMO Proposition

The SMO and generators

The SMO does not directly address the needs of generators, other than by implication in the reference to the long term needs of consumers. Thus the needs of generators are to be addressed only to the extent that their needs might impact on the long term needs of consumers.

This means that the transfer of wealth argument proposed can only apply if the needs of generators are such that any assumed transfer of wealth will impact on the long term interests of consumers.

There is no doubt that the average annual pool price for generation in each region is of the order of magnitude that is required to profitably generate electricity. That generators have to rely on the occasional high prices (spikes) for power when constraints occur is not in the interests of consumers (or the public) on two counts:-

- The fact that these occasional high prices are needed by generators to provide a reasonable return runs counter to the underlying drivers to encourage new investment in generation. It skews the entire approach to investment towards the need to provide physical hedges for these high price incidents. These infrequent yet very high price events have encouraged retailers to provide a large number of fast start gas fired generators. This trend has already been observed.

That incumbent base load generators do require these spikes in order to get a reasonable return is seen as a significant deterrent when assessing investment for new base load generation. Base load generation is capital intensive (ranging from \$1-2 million per MW installed). This amount of funding will only be provided in a private financial market if there is a high degree of certainty that the investment will provide a continuing and reasonable level of return over the life of the investment. In NSW for year 2005, 36% of the average annual price of power arose from 67 half hour periods (or 0.4% of the time)¹⁹.

An investor of \$1-2Bn in a new base load generator would identify as excessive the risk for such a large investment being so reliant on such a large part of the expected return being dependent on such a miniscule number of very high priced events. This matter was observed when the original Loy Yang A power station owners were forced to sell their asset at a significant discount to the original purchase price.

- Consumers pay a very high price for the extreme volatility that is seen in the electricity market. This volatility is caused by the incumbent

¹⁹ See appendix 2

generators which must operate in the market as they do, in order to generate sufficient funds to remain financially viable.

The cost of the risk premiums can be very large. For example, the South Australian energy regulator (ESCoSA), in its costing the benchmark retail price for electricity includes for risk management costs which effectively add a risk premium which is as much as 80% of the price for sourcing electricity²⁰.

It can be seen that the approach used by generators to recover a reasonable return on investment is not in the long term interests of consumers as

- consumers pay high retail premiums for power to manage the volatility risk, and
- investment for new base load generation is negatively impacted.

The SMO and consumers

The NEM is designed such that consumers will pay the price for the highest dispatched generator needed to meet market needs. This is stated as being economically efficient.

Where a constraint occurs, competition is reduced, and regional generators have increased market power to set the regional price. If this occurs, there is a power price separation between adjacent regions. Consumers in the isolated region pay a higher price for power even though, absent the constraint, they would pay a lower price for it.

It is therefore in the interests of consumers that they receive the lowest priced power if this is available. The constraint prevents consumers from accessing this lowest priced power. Thus the relief of the constraint will benefit consumers.

The relief of the constraint will be paid for by electricity consumers. The Rules are very explicit in that generators are not required to pay for network augmentation²¹.

“Notwithstanding any other provisions of the *Rules*, no charges will apply to *Generators* for *new network investment*.”

As it is consumers that pay for the investment, then the cash benefit they receive for this investment must be balanced and included in the cost benefit analysis (the RT) with the costs they are required to pay. It is axiomatic for a business investment that the benefits which result from the investment are balanced against the cost of the investment. It is the investment in the

²⁰ The Effect of Industry Structure on Generation Competition and End-User Prices in the National Electricity Market, Bardak P/L May 2005 Fig 5.13

²¹ Rule Schedule 6.8 - Charges to Generators for New Network Investment Point 1. Charges to Generators for New Network Investment

network paid for by consumers that directly results in the reduction in the price differential between regions which in turn benefits consumers. For the “transfer of wealth” argument to have legitimacy, then generators would have to contribute to the augmentation in equal proportion to consumers. But as generators do not pay for any augmentation, they are not entitled to any benefit which underpins the “transfer of wealth” principle.

It is suggested that relieving a constraint will only reduce the price separations for a relatively short time into the future. This is perhaps true, as there is a consistent increase in demand over time. Therefore when assessing the benefits from relief of constraints in the RT, it might be necessary to assess these benefits over a shorter time period than the economic life of the assets used. The observations made by Bardak in assessing the benefit of the interconnection between Queensland and NSW (QNI) shows that the benefits of relieving a constraint accrue to consumers very quickly. Bardak calculates that the cost of QNI can be shown to have been effectively recovered in a matter of months²². Thus using a shorter time frame might have less impact than one might assume.

There can be no doubt that the elimination of constraints is a benefit to consumers. This then requires the benefits accruing to consumers of the relief to be included in the RT.

²² An assessment of the first six months of operation of the QNI Interconnection by Robert R Booth July 26th, 2001

5. Conclusions

The import of the MCE policy direction to AEMC is that there is to be, if anything, an incentive to reduce inter-regional price differentials.

The argument that the cash benefits to consumers arising from augmentation for the transmission system (and therefore reducing the frequency and impact of price separations) can be classed merely a “transfer of wealth” and so be disregarded, has been demonstrated as not complying with a wider economic view of the issue, nor is it seen as complying with the NEL market objective.

Secondly, the suggestion²³ to allow payment of compensation to generators constrained on or off is clearly at odds with the view that higher prices and costs resulting from constraints should be paid by consumers as they are only a “transfer of wealth”. This is a contradiction to the single market objective.

Thirdly, not to include the benefits to consumers from the relief of constraints in balancing the cost for augmentation in order to reduce generator market power and allow lower priced generators to supply power, is contrary to the single market objective.

Based on these assessments the Regulatory Test must include the expected net cash benefit that is expected to arise by reducing the frequency and severity of price separations between adjacent regions, recognizing that:-

- The exporting region is potentially exposed to a small increase in regional price due to the greater export of generation output permitted by the relief of the inter-regional constraint, and
- It is consumers alone that will be providing for the payment of the improved service (but gaining the benefit of the less price separation), and that the costs of this improved service should be allocated between the consumers in proportion to the benefits and costs these consumers will incur.

The decision of the MCE in its reference letter of 16 January 2006 to the AEMC requiring the AEMC to

“... maximize the economic value of the transmission network ... through the efficient removal of regional price differences ...”

is in full accord with the outworkings above that show there is every reason to recognize the cash benefits to consumers resulting from reducing constraints between regions by investing in networks augmentation.

There should be no doubt that the Regulatory Test should include for the net cash benefit to consumers resulting from reducing price

²³ See appendix 3

separations, which in turn will result from augmentations of the transmission network between regions, causing reduced inter-regional constraints.

The Regulatory Test must be modified to incorporate this benefit.