1 March 2009

Australian Energy Market Commission
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Dear Sir /Madam

Response to First Interim Report on AEMC Review of the impact of climate change policies on energy market frameworks

Thank you for the opportunity to respond to the First Interim Report.

We commend the AEMC on this first interim report, which has covered a wide scope in a short time.

In the attached submission we have responded to relevant issues, setting out our agreement or disagreement where applicable. By way of general comment, we note that the report has identified many issues of long standing. In several cases we believe that changes likely to result from emission prices and the renewable energy growth could well exacerbate these problems.

We believe that this is a good opportunity to undertake a thorough review of market design issues and we encourage the AEMC to persevere in wholistically addressing some of the complex and long standing problems, rather than seeking fixes through potentially adhoc adjustment to existing mechanisms.

We would be pleased to discuss the contents of this submission with you if you wish.

Yours faithfully

Roman Domanski
Executive Director

Energy Users Association submission to the AEMC First Interim Report on Review of impact of climate change policies on energy market frameworks

Assistance in preparing this submission was provided by Carbon Market Economics. Funding support was provided by the Consumer Advocacy Panel. Their support is gratefully acknowledged, however, the views herein are those of the EUAA

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Introduction

This document is the Energy Users Association of Australia (EUAA) submission to the AEMC's First Interim Report in its Review of impact of climate change policies on energy market frameworks.

The EUAA is a non-profit organisation funded by membership fees, internally generated revenue and external funds. It is focused entirely on energy issues and was formed in 1996. The Association members are business users of energy with activities across all states and many sectors of the economy. The EUAA has over 100 members and this includes most of the nation's largest energy users.

Pricing emissions and the expanded Renewable Energy Target (RET) will have a significant impact on energy prices and reliability. These will impact our members' commercial operations in Australia, and in some cases could also have an impact on their continued viability. If energy markets do not function well and are not well placed to respond to the challenges of Australia's climate change response, the resultant higher prices and inefficiencies will impose even higher costs on energy users. Our members are heavily involved in energy markets in Australia – both electricity and gas – as major energy users and major purchasers of energy.

The impact of the CPRS and expanded RET on energy markets is therefore important to EUAA members. We are particularly focussed on the efficient operation of these markets, ensuring access to competitively priced energy and also continued reliable supply.

The format of our submission repeats the chapter heading and relevant questions in the First Interim Report, after which we set out our response.

Issue 1: Convergence of gas and electricity markets

Question A1.1 Is the convergence of gas and electricity markets an insignificant issue?

We do not agree that this is an insignificant issue, as the AEMC has concluded. Our main concern is about upstream gas market arrangements, access to gas pipelines, and the potential for developments in the coal seam methane industry in Queensland, including the prospective LNG export developments to impede the transition to lower emission electricity generation. This is relevant to the review since it affects the ability of the existing energy frameworks to respond efficiently to climate change policies. The EUAA has commissioned Carbon Market Economics to investigate the implications for energy users of the rise of gas fired generation. Their report on this covers the issues set out in our response to this question, in more detail. The report will be publicly released soon.

Upstream gas market arrangements
The first interim report concluded that this was not an issue on the basis of the conclusion by the Ministerial Council on Energy (MCE) and Ministerial Council on Mineral and Petroleum Resource's (MCMPR) joint working group report, which recommended no action be taken, noting instead that:

> *" … market structure and operation barriers will be largely addressed by policies and projects that are currently being developed by the MCE, including the development of a gas Bulletin Board and a STTM, the establishment of an Australian Energy Market Operator (AEMO) and the introduction of economic and non-economic legislative packages through the National Gas Law (NGL) and National Gas Rules (NGR)"*

We do not agree with the MCE and MCMPR's conclusion and accordingly we do not think it justifies leaving the gas market issues to one side.

Relevant issues in this area were last examined in some detail by the Council of Australian Government's Energy Market Review in 2002.[1]. VENCorp's submission to that review captures clearly our view that it is not appropriate to place reliance on the Bulletin Board, STTM or AEMO to deal with the fundamental structural problem, of highly concentrated upstream supply:

> "*in gas, the issue of limited upstream competition has been widely acknowledged and been the subject of much consideration by industry, regulators and Governments over a long period of time. It is not an issue that is caused by nor is it solvable by implementation of, or changes to, spot market or pipeline access arrangements*".

Our concern is that with rapidly escalating demand for gas in CCGT applications, the upstream concentration could result in the exercise of market power which could result in a slower entry of base load gas generation, and at higher gas prices than would otherwise be the case.

We believe the AEMC needs to undertake further work in this area to explore this important issue and how it should be resolved.

[1] Council of Australian Governments Energy Market Review, Report, "Towards a truly national and efficient energy market", November 2002. The review is also sometimes referred to as the "Parer Review".

Pipeline access arrangements

We also suggest that the gas pipeline access arrangements merits further consideration by the AEMC.

The commercial and regulatory arrangements for gas pipeline access have changed significantly over the last seven years. Recent significant developments include:

- The hurdle to satisfy full coverage was raised in the Rules so that a recommendation by the National Competition Council for coverage would need to satisfy the additional requirement that this would result in a "*material*" increase in competition;
- A "light regulation" option has been included in the National Gas Law, for approval by the National Competition Council. The light regulation option enables pipelines to avoid full access regulation in exchange for publishing terms and conditions for access, and reporting to the AER on the progress of access negotiations. Binding arbitration will be used to resolve disputes.
- Fifteen year exemption from coverage is available to all greenfields gas pipelines.

Many of our members are critical of the current regime and suggest that the changes that had been made are excessively favourable to pipeline owners. EUAA members maintain a strong view that the previous regime did not discourage investment in pipelines (as argued by the pipeline industry) and, in fact, coincided with a period of significant investment in new transmission pipelines.

While the Energy Markets Review (EMR) made several recommendations to increase certainty to investors, the EMR's recommendations on the protection of energy users' interests in respect of uncovered pipelines have not been implemented. Specifically, the EMR noted that:

> "*Currently no effective mechanisms exists to ensure that pipelines not subject to the Code are operated in a way that will facilitate effective competition – for example maintaining appropriate ring fencing of pipeline operations from upstream or downstream interests, provision of relevant information to the market and offering tradeable capacity. Without these mechanisms the benefits to the wider market and especially users of greater flexibility of supply and transportation options, may not be fully realised.*"

For these reasons, the EMR suggested that:

> "*… the ring fencing provisions in the Gas Code are critical to ensure that companies do not have commercial incentives to operate pipelines in a way that distorts competition in upstream or downstream markets. For markets to function properly, participants need access to sufficient information. The Panel believes the provision of information to the market regarding the nature and pricing of pipeline services (similar to that required by the Gas Code) is an important mechanism to address the information asymmetry between pipeline companies and users and to enable the market to function properly*".

The EMR also recommended that a "code of conduct" for non-covered pipelines be introduced to provide "enforceable minimum requirements". The EMR suggested that minimum requirements should include "*tradeable capacity, ring fencing and the requirement to post prices*".

Finally, while the EMR recommended 15 year exemptions from coverage, it attached several conditions to this including that the relevant pipeline must:

- *"have sufficient vertical separation of ownership (i.e. no upstream or downstream firm has sufficient ownership to exert control over the pipeline in a way that might lessen competition in upstream or downstream markets)'*
- *publish tariffs for access to the pipeline;*
- *provide for all capacity to be fully tradeable."*

While the option for 15 years' exemption of coverage is now available to all new gas pipelines, none of these conditions have been attached to the granting of such exemptions.

The EMR's recommendations on uncovered pipelines in respect of mandatory capacity trading, ring fencing and the requirement to post prices, do not appear to have been implemented.

These arrangements are important and will become increasingly so, as the volume of gas piped around south and east Australia is likely to increase very significantly in response to investment in base load CCGT capacity. If gas pipeline operators and owners are able to monopolise or otherwise impede the competitiveness of gas shipping, this will have a detrimental impact on the rate and efficiency of development of gas generation capacity.

We therefore think that the AEMC should examine this issue in more detail, and specifically that it should focus on the EMR recommendations for mandatory capacity trading, ring fencing and the requirement to post prices on uncovered pipelines, which have not been implemented.

Queensland coal seam methane upstream issues

The Queensland coal seam methane resource has grown very rapidly so that 2P reserves are now well above the total 2P reserves of natural gas in south and east Australia, and 3P and contingent reserves indicate that the Queensland CSM resource is likely to be very much more significant than the east cost natural gas reserves.

The upstream issues in Queensland CSM are quite different to those in the natural gas. There have been acreage management issues – particularly in relation to the ranking of CSM exploration and production rights - compared to alternative uses of the same hydro-carbon resource for underground coal gasification or mined coal. However, we are not aware of argument that the acreage management arrangements are constraining the exploration and production of CSM.

Similarly, joint marketing is generally not an issue in Queensland CSM where joint equity interests in CSM fields is generally marketed separately.

The critical upstream issue in Queensland CSM is ensuring domestic supply from the CSM resource in competition with a potentially more lucrative export market. Over the course of 2008 there were four significant transactions between global LNG businesses and Australian energy resource companies that together account for more than 90% of Queensland reserves[2]. The outcome of this is that Queensland's four largest CSM companies, are now very focussed

[2] Arrow Energy and Shell, Queensland Gas Company and BG, Santos and Petronas, and Origin and ConoccoPhillips

on rapidly progressing their LNG export options. Recent proposals to develop several LNG trains have changed upstream economics. Whereas previously the market was focussed on domestic demand – particularly serving the established industrial and nascent gas generation sectors – gas resource companies are likely to be pre-occupied for the next few years on proving sufficient resources to the 2P level, to be eligible to make a decision to develop an LNG train. This has significantly reduced the willingness of any of the major suppliers to enter into additional long-term gas sales to domestic users.

These developments have created the risk that gas prices in Queensland may rise to the "netback price" (the price that producers will receive from their customers abroad net of the cost of cost of delivering the gas to the customers).

Access to the export market will create a reference price for the sale of gas in Australia. The issue that we believe the AEMC should explore is the extent to which the continued rationalisation of the Queensland CSM sector will result in the levels of concentration that have historically thwarted the development of actively competitive gas markets in Australia.

With highly capital-intensive and risky LNG assets currently the main focus of the industry, there are substantial incentives to secure a dominant position in the control of gas resources, and in LNG infrastructure. This will have substantial rewards in terms of economies of scale and risk diversification. If companies are restricted from obtaining dominance through ownership there is nevertheless considerable incentive to seek co-operative and collusive outcomes through joint asset development and joint developments.

We think this issue should be explored further by the AEMC. The implications of developments in this area for the ability of the domestic electricity industry to efficiently respond to emission prices, should be understood.

Issue A2: Generation capacity in the short term

Questions A2.2 Do you agree that the ability for NEMMCO to manage actual or anticipated transitory shortfalls of capacity is a significant issue that should be progressed further under this Review?

We don't think that it is appropriate to distinguish between generation capacity short falls in the short term (issue 2), from investment adequacy in the long term (Issue A3). The question that both Issues 2 and 3 are asking is whether the market design – which includes administrative mechanisms (such as Reserve Trader/RERT) - is likely to achieve efficient outcomes. The efficiency and effectiveness of administrative mechanisms should not be considered in isolation of the other elements of the market mechanisms.

In the rest of this section, we set out our reservation about the current focus on the Reserve Trader/RERT as a solution to short-term reliability concerns.

The significant unserved energy in Victoria and South Australia at the end of January suggest that current arrangements are failing to deliver reliable and secure electricity supply to consumers. While it may make a difference to the reliability statistics, whether the unserved energy arose from a security event or a reliability event does not matter to consumers. We are however concerned that security events in particular may become more frequent and so suggest that the AEMC directs attention to these particularly. We look forward to digesting the outcome of the various reviews established to understand the causes of this failure.

The Reserve Trader was originally introduced as a form of insurance in case an energy only market did not deliver sufficient generation capacity to ensure reliable supply. It was also intended as a temporary instrument - as the energy-only market became established – that would sunset several years ago. However it has been continually extended and developed.

The most recent modifications in mid 2008 were intended to improve flexibility, and the Reserve Trade became the RERT and is in place until 2012. NEMMCO used the RERT in its August 2008 process for the 2008/9 summer period and decided to not intervene in the market.

We are concerned that unlikely events – sometimes referred to as "one in 100 year events" may become more frequent and that the RERT scheme may not efficiently prevent unacceptable levels of unserved energy.

We are aware of discussions on further modifications to RERT to allow NEMMCO to source reserves at relatively short notice in emergency situations. We are concerned about adhoc modification to administrative mechanisms to attempt to address the pressing issues of the day. The damage from adhoc changes often only becomes clear later.

The First Interim Report (page 21) noted that:

> *"The RERT mechanism was not designed for either large amounts of capacity or relatively frequent use. It can only be involved up to nine months ahead of time, and it therefore limits the pool of potential offers that can be made available within those timeframes…There would appear to be a limit to how much capacity can be uncovered through this process. There is also the risk of large costs, if volumes required under the RERT are such that highly uneconomic sources of capacity are being called on (or if there is market power)."*

We share these concerns, especially since it is energy users that bear these "large costs". The Reliability Panel noted in their Comprehensive Reliability Review Final Report in December 2007 (page xiii) that continued reliance on the existing reliability mechanisms could lead to "unpredictable consequences".

For these reasons we call on the AEMC to develop a more comprehensive response to concerns about the reliability of supply, rather than focussing only on adjustment of the RERT. Issue A3 should remain on the agenda for continued investigation to develop a comprehensive response to these concerns.

Issue A3: Investing to meet reliability standards with increased use of renewables

Question A3.1 Do you agree that the existing framework based on an energy-only market design with supporting financial contracting is capable of delivering efficient and timely new investment, including fast response capacity to manage fluctuations in outputs resulting from larger volumes of intermittent wind generation? If not, what are your reasons for reconsidering this position?

We are concerned that an energy-only market may not deliver efficient and timely new investment. We attribute this to two factors:

- As climate change policies begin to induce renewable generation with significantly different cost structures than existing base load fossil fuel capacity, spot price volatility is likely to increase;
- Increasing the cap on spot prices (VOLL/Market Price Limit) may be neither effective nor efficient in delivering investment.

While we have seen evidence for both the pros and cons of an energy-only market, we note that this matter has been debated more-or-less since the market started and is yet to be satisfactorily assessed. However, as argued above, the application of a range of climate change policies to the NEM does raise the issue again and it needs to be resolved. We therefore think the issue of the efficiency and effectiveness of an energy-only market should continue to be analysed and debated, and that the AEMC has not justified dropping this issue at this point. The rest of this section provides detail to substantiate these views.

Expansion of renewable generation is likely to lead to greater spot price volatility

Renewable generation has very low operating costs (renewable resources are abundant and free). While less than 20% of the present cost of a renewable generator is variable, for fossil fuelled generation the proportion is typically greater than 50% and this will increase further when emissions are priced.

As the proportion of renewable generation expands, this plant will increasingly set spot prices. These prices will be too low to provide sufficient income to remunerate fixed costs and deliver required returns on investment. The result of this will be to defer investment until demand exceeds supply, at which point prices will rise to capped levels to choke demand. These higher prices will attract investment which in turn will lead to a price collapse.

This price cycle is typical of many commodity markets. We are not convinced that such cyclical volatility is appropriate for an essential service such as electricity supply, and considering the very high economic cost of unserved demand.

This outcome may be avoided if derivate hedges are entered into to smooth volatile spot prices. However a comparison of contract prices and average spot prices over those contract periods, suggests that the contract market has had difficulty in predicting future spot prices particularly over the last three years in the NEM. A few periods of extreme prices can have a significant impact on average prices over a year and lead to substantial differences between average spot prices and contract prices. Such mispricing can be expected to arise more

frequently and to a greater extent as spot markets become more volatile with increasing renewable generation entry.

There is already early evidence of this increased volatility in South Australia where prices have collapsed or even become negative when wind generation displaces fossil capacity from the merit order during some low demand periods.

Increased volatility results in more expenditure in risk management. Such costs could take the form of disproportionately high contracting (to hedge risks financially), the inefficient construction of very rarely used peak capacity (to hedge risks physically) or ever-increasing vertical integration which deters new entrants and thereby diminishes the competitiveness of the market.

We don't think it is appropriate to assume, as the AEMC appears to have done, that an energy only market will provide signals for efficient and timely investment in future. These issues were actively debated before and shortly after the start of the NEM. For the reasons set out above, we think that the issue should be revisited in light of the changes that are likely to come about following the increasing entry of renewable generation.

Increasing VOLL may be neither effective nor efficient in delivering investment

The power system failures in Victoria and South Australia in late January/early February have raised concerns that the existing reliability mechanisms, particularly the Market Price Limit, will incentivise efficient investment even in the absence of CPRS/RET. Include CPRS/RET and the task could become even more difficult.

The First Interim Report has asserted, with reference to modelling by CRA for the Reliability Panel, that raising the Market Price Limit will ensure efficient investment. We have two concerns in this regard:

1. Given CRA's report contained extensive qualifications concerning the difficulties of modelling such a complex situation, eg assumptions of "perfect foresight" by market participants, we believe that their results should be interpreted with great caution;
2. We disagree with some important assumptions that CRA has made, and which significantly affect the conclusions they reached.

The fundamental conclusion of the CRA study is that in the medium to long term the reliability objective can be achieved through continual upward adjustment of price caps. Our concerns about their modelling assumptions are that the:

1. capital cost assumptions for low carbon power are widely seen by many who are directly involved in researching these technologies (which includes some of our members) to be significantly under-estimated;
2. assumptions on the penetration of low carbon thermal energy are far too optimistic given more realistic capital costs and the issues associated with the need to funding demonstration plants. The effect of this is likely to be that low carbon thermal is unlikely to be commercially available by 2020;
3. assumptions on the penetration of geothermal energy (i.e. commercially viable by 2015 with 2,200MW installed by 2020) – are provided by the Australian Geothermal

Energy Association rather than from an independent analysis. We are sceptical that commercial viability will be reach by 2015 and 2,200 MW added by 2020.

Increasing the cost of low emission gas/coal generation, and delaying the entry of geothermal generation is likely to lead to significant reliability concerns by around 2015-2020.

Furthermore, even if it can be argued that raising the cap on prices will induce sufficient investment to ensure reliability, there is no reason *a priori* to believe that this is an efficient way to achieve reliable supply, which is required under the NEM objective. In its work for the Reliability Panel, CRA modelling shows levels of unserved energy post 2015 even with VOLL at levels above $15,000 or $17,500 prior to the incorporation of CPRS/RET.

For these reasons we call for a much more comprehensive analysis of the scope of adjustments in the existing reliability mechanisms. This should include consideration of different mechanisms – including capacity payments – which could possibly better deliver the NEM objective. We believe that what would be most useful here is a first-principles analysis of electricity market design, rather than quantitative modelling.

Issue A5 Connecting new generators to energy networks

Question A5.1 Do you agree that the connection of new generators to energy networks is a significant issue that should be further progressed under this Review? If not, what are your reasons for reconsidering this position?

We agree that connection of remotely located renewable generators is likely to be a significant issue. However, there is doubt about the timing and magnitude of this problem.

Australia's renewable energy subsidy arrangements are still highly under-developed. Recent changes in subsidy arrangements for photovoltaics and solar water heaters could significantly expand REC creation, particularly in the period to 2015. This could depress REC prices and result in the deferral of large amounts of wind generation entry. This would, in-turn, reduce pressure to connect large amounts of wind generation capacity.

Question A5.2 Would any of the models identified in this chapter ensure the more efficient delivery of network connection services?

We are unable to answer this question definitively until we have a clearer picture of the extent of the need for network connection. This, in-turn, will depend to some extent on renewable generation expansion planning. We would encourage the AEMC to work with NEMMCO and others to ensure that a much more comprehensive analysis of the economics of renewable generation is brought to bear to inform this question.

More generally, we are keen to see network connection arrangements that provide appropriate incentives for new entrants and TNSPs. We would like to avoid network connection arrangements that simply transfer risk to energy users. The arrangements currently being explored in Britain, which provide network service providers with the ability to earn higher returns if they accept some asset stranding risk, may merit further investigation.

Issue A6: Augmenting networks and managing congestion

Do you agree that the issue of network congestion and related costs requires further examination in this Review to determine its materiality? This includes considering whether the existing frameworks provide signals that are clear enough and strong enough in the new environment where congestion may be more material. If not, what are your reasons for reconsidering this position?

We agree that network congestion may increase significantly in response to changed power flows that may occur following substantial renewable and base load generation entry.

The EUAA has long contended that the current organisation of transmission in the NEM does not promote the efficient development and operation of transmission assets, particularly in respect of investments that increase inter-regional power transfers. The cost allocation, operational co-ordination and investment decision-making issues identified in the First Interim Report are manifestations of NEM-wide co-ordination challenges that arise as a result of state-based transmission network service providers.

Further examination of this issue and the development of more responsive congestion alleviation and management incentives would be valuable.

Issue A7: Retailing

A7.1 Do you agree that the current inflexibility in the retail price regulatory arrangements is a significant issue that should be progressed further under this Review? If not, what are your reasons for this position? A7.2 Do you agree that the limitations with current RoLR arrangements are a significant issue that should be progressed further under this Review? If not,what are your reasons for this position?

We agree that the current inflexibility in retail price regulatory arrangements could potentially place retailers under significant financial pressure if they are not able to pass on to customers the higher input prices they have to bear. Our members are particularly concerned that retailers that are not able to recover the cost of supplying residential customers, will seek to recover shortfalls from their larger users. An unviable retail sector serves no-one's interest.

Regarding the RoLR arrangements, EUAA members are concerned that higher and more volatile prices may make them more susceptible to these arrangements. It is therefore important that the AEMC review them to ensure their effectiveness and efficiency. We note also that the application of RoLR arrangement inevitably imposes additional costs on end users. Moreover, differences in RoLR arrangements from one state to another for both electricity and gas, but apparently more pronounced in gas, ought to be considered.

Issue A8: Financing new energy investment

A8.1 Do you agree that the current energy market frameworks do not impede the efficient financing of the significant increase in investment implied by CPRS and expanded national RET? If not, what are your reasons for this position?

Our main concern in this area is based on arguments that some generators, the Electricity Supply Association of Australia, and the National Generators' Forum have been making about price volatility that would arise if generators are unable to contract their production. Higher volatility could affect the availability and cost of capital to finance new investment. It could also affect the ability of some participants to finance existing assets.

The essence of the arguments of some generators, the ESAA and National Generator's Forum is that the compensation provided under the Government's Electricity Supply Adjustment Scheme, as part of the CPRS, will not be sufficient to ensure that affected generators are able to finance their assets. This will result in counter-party credit risks which will affect their ability to enter into hedge contracts. This will, in turn, lead to unhedged sales in the spot market, and hence higher price volatility. They have also raised concerns about their ability to finance emission permit purchases.

An alternative view is that any loss in asset value attributable to the introduction of the CPRS should not affect operating decisions – they will compete to produce as long as revenues exceed costs. If they are no longer viable, then existing owners will see the assets to new owners who will continue to run the plants until they are supplanted by new, lower emission technology. In addition, the inference that the failure to hedge will result in higher spot price volatility is far from certain. Analysis of this needs to consider the term of contract, the precise specification of hedges, portfolio effects and the extent of vertical integration: almost all base load capacity in the NEM is part of a generation or retail-generation portfolio.

We think the generator's arguments can not be accepted uncritically and that the AEMC should continue to carefully investigate this issue. The AEMC's views on the generators' claims should be part of the public debate on this important issue. The AEMC's view should be based on outcomes that are consistent with the Market Objective and not based on what is merely in the interests of existing owners of these assets.