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24 November 2011

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National Electricity Amendment (Potential Market Power in the NEM) Rule 2011: Directions Paper

The Energy Supply Association of Australia (esaa) welcomes the opportunity to make a submission to the Australian Energy Market Commission's (AEMC) Directions Paper for the Potential Market Power in the National Electricity Market (NEM) Rule change proposal.

esaa is the peak industry body for the stationary energy sector in Australia and represents the policy positions of the Chief Executives of over 40 electricity and downstream natural gas businesses. These businesses own and operate some $120 billion in assets, employ over 61,000 people and contribute $19.3 billion directly to the nation's Gross Domestic Product.

Introduction

esaa does not support the making of this proposed Rule, or indeed any similarly constructed 'more preferable' Rule. It considers the proposed Rule change an excessive and unwarranted intervention in the NEM that would distort the market and deter future investment. Our views on the Rule change proposal can be found in our submission to the AEMC's Consultation Paper.

Notwithstanding this, the Association welcomes the rigour in the Directions Paper and notes that a number of the matters raised in our initial submission have been addressed. In particular, we support the AEMC's thorough approach to the issue and its focus on longer term market outcomes rather than short term pricing events.

We understand that the Commission intends to use its proposed test for the exercise of substantial market power as a screening measure for the exercise of substantial market power and would also undertake a wider assessment of the competitive condition of the market.

Nevertheless, the existence of the test and the associated definitions represent a risk to market participants that they could in the future be used as a *de facto* indicator of substantial market power. In turn this may be used as a basis for distortionary regulatory intervention such as proposed in the Rule change. Accordingly, we consider it imperative to understand both the general pitfalls of relying on such a test

as an indicator of substantial market power and the specific issues with the key definitions that underpin the test. We outline these problems below. We also examine the market and its outcomes from a more holistic perspective, which we consider demonstrate that there is no evidence of generators having sustained market power.

The Commission's approach in the Directions Paper

The Commission proposes a three step approach to the Rule change. The first step (the subject of the Directions Paper) is articulating the 'problem' the Rule change is trying to address. The Commission proposes to define this as "substantial market power":

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

Having defined the problem, the AEMC proposes to use the following empirical test of the exercise of substantial market power:

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

In the next phase of the Rule change the Commission will use this test to assess if there is evidence of a problem and if so, will examine potential solutions, subject to cost benefit analysis. If it does not find evidence of a problem, the AEMC states it will likely move to make a draft determination of no Rule change.

We support the AEMC moving quickly to conclude the process if it finds no evidence of the exercise of substantial market power. At a time when the electricity market faces unprecedented levels of uncertainty from carbon policy and other influences, this Rule change is an additional unhelpful factor clouding the outlook for the generation sector. The market would benefit from a quick resolution of this process.

The AEMC then seeks to make the important distinction between "transient pricing power" and "substantial market power"

We support the AEMC's approach of focusing on longer term market outcomes rather than short term pricing events. As set out in our Consultation Paper submission, occasional price spikes are an intentional part of an energy-only market. They are essential to support sufficient generation capacity at the extreme peaks of demand and to enable more regularly dispatched generators to earn sufficient revenue to cover their fixed costs, which can be a significant proportion of their total costs. Prima facie, price spikes are evidence of the market working as intended rather than evidence of a problem. We note in this regard that the AEMC and Reliability Panel have increased the market price cap from $5,000/WMh to $12,500 (increasing by inflation), in response to the need for the wholesale market to provide sufficient signals for new investment to support reliability.

We also agree that workable competition, not perfect competition, is a more relevant benchmark for assessing the Rule change. By design, the energy-only NEM is not expected to produce prices consistent with theoretical perfect competition. We support the AEMC distinguishing between “transient pricing power” and “substantial market power” and focusing on the latter.

The logic behind the AEMC’s test

We understand that the logic behind the AEMC’s test is as follows: if a generator is able to raise prices to make economic rents, those elevated prices should signal to other businesses that there is an opportunity to profitably invest to capture some of those rents. New investment should therefore occur. This will increase supply and prices will fall as the original generator loses its ability to keep prices high. However, despite prices signalling that new entry is profitable, if new investment is not forthcoming due to barriers to entry, then the generator can continue to keep prices high. The AEMC’s test would then diagnose this as evidence of the generator exercising substantial market power.

Given the complexities of the electricity market, defining “substantial market power” and developing and applying an empirical test of its exercise is inherently difficult to do. Despite the obvious rigour that underpins the AEMC’s proposed test, we have a number of concerns with it and how it would be applied.

It is difficult for regulators to second guess business in judging when investment should occur

We agree with the principle underlying the AEMC’s proposed test that liberalised NEM businesses invest in response to commercial drivers (as they do in the broader, market-based Australian economy). We also agree that prices have an important role in signalling new investment and provide an indication of the competitive condition of any market.

However, we do not consider that the test’s proposed comparison between a measure of annual average wholesale prices and a measure of LRMC is an appropriate way to diagnose the competitive condition of the electricity market.

In essence the AEMC’s proposed test requires a regulator to form an opinion on when new investment **should** occur i.e. based on prices being greater than LRMC for the requisite period. However, irrespective of a regulator’s judgement that new investment is viable, what matters is the opinion of the potential project proponent (and their financiers) that actually makes the investment. Before a business invests, it needs to be confident that the proposed project is viable over its life. A single dimensional test that compares LRMC with average prices will not pick up all factors germane to an investor’s decision-making and as such, the test could easily misdiagnose the state of competition in the market.

Acceptance that bureaucrats should not be determining optimal investments was a rationale behind the cessation of industry planning from Australia’s economic policy frameworks and indeed, the liberalisation of the electricity market in the first place. As a general rule, outside observers second guessing the commercial world as proposed in this test is fraught with risks (both in electricity markets and the wider

economy) and does not, in our view, provide an appropriate basis for distortionary regulatory intervention.

Future prices are more relevant than historical prices

We also have concerns with the practical application of the test.

The Commission's test primarily relies on historical prices as evidence of the signal for new entry and the potential symptom of the exercise of substantial market power. However, it also implicitly requires analysis of future prices given that it includes the forward looking clause: "…*and the generator is able (or is likely to be able) to sustain prices at that level…*"

Further, a business's assessment of the commerciality of a new investment depends on prices over the life of the investment, including the effect of its own entry into the market. As prices could be expected to fall following new entry (indeed, a fall in prices post investment is a premise of the Commission's proposed test), this means that a commercial investor would need to be confident that prices after it entered would be sufficient to support the viability of its investment over its life. As such, a meaningful application of the proposed test requires a forward-looking assessment of electricity prices.

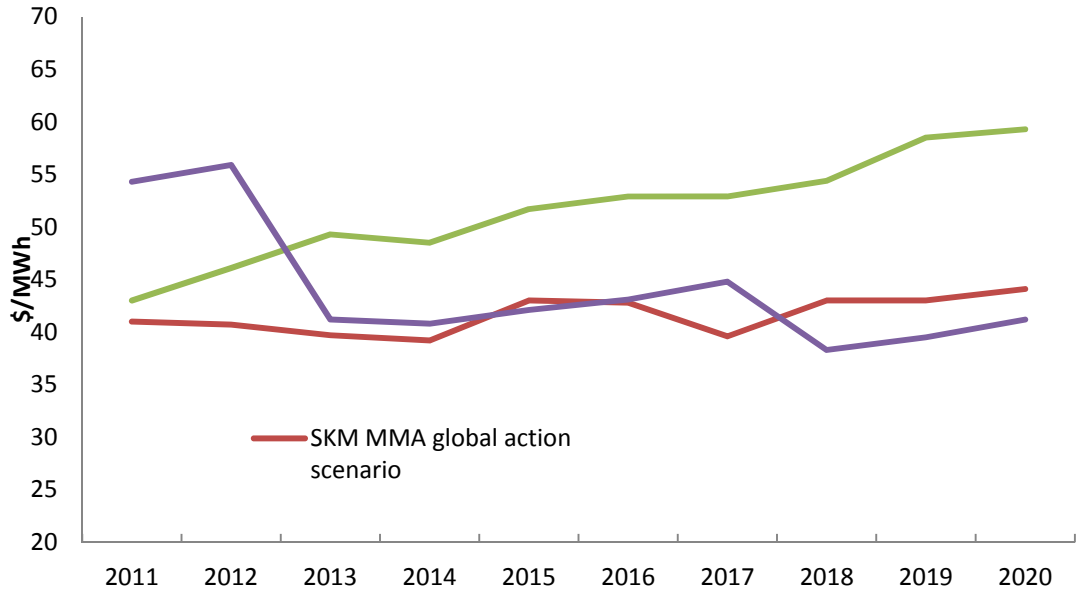
Projecting future prices is notoriously difficult to do

While obtaining information on historical spot prices is straightforward, robustly forecasting future prices is not. Projecting prices inevitably requires detailed economic modelling and results cannot be considered definitive. While modelling is a useful tool, its results depend on numerous assumptions about inherently difficult things to predict, including: bidding patterns, new entry costs, discount rates, load and economic forecasts. Results from modelling are notoriously contestable and would be a contentious basis for regulatory intervention.

This can be demonstrated by the divergence in results from different modelling houses, even where the same set of inputs and scenarios have been used. For example, Chart 1 shows the divergence in wholesale electricity price projections between the two modelling houses used by the Federal Treasury this year during development of the Clean Energy Future package. It shows that within the first year of the projection period, there is a divergence in modelled wholesale prices of 13 per cent (the blue and green lines). This divergence rises to 24 per cent within two years and is 34 per cent by 2020. Note that these results are without the destabilising effects of a carbon price, which would further increase the uncertainty about the future.[1]

[1] A similar divergence in results can be found in exercises that have used multiple consultants to model identical scenarios, for instance: the two modelling houses used scenarios for the Australian Energy Market Operator and the Department of Resources, Energy and Tourism for the Energy White Paper in 2009 and 2010; and the modelling undertaken for the Department of Climate Change by three modelling houses for the Carbon Pollution Reduction Scheme White Paper in 2009.

Chart 1: Wholesale price projections for Treasury



Source: Federal Treasury, *Strong Growth, Low Pollution* report, Chart 4.16.

Forecasts made at different times can vary considerably. For example, in Chart 1, the yellow line shows the forecast of the Treasury's modelling only three years previously. This forecast is as much as 50 per cent different to forecasts made this year.

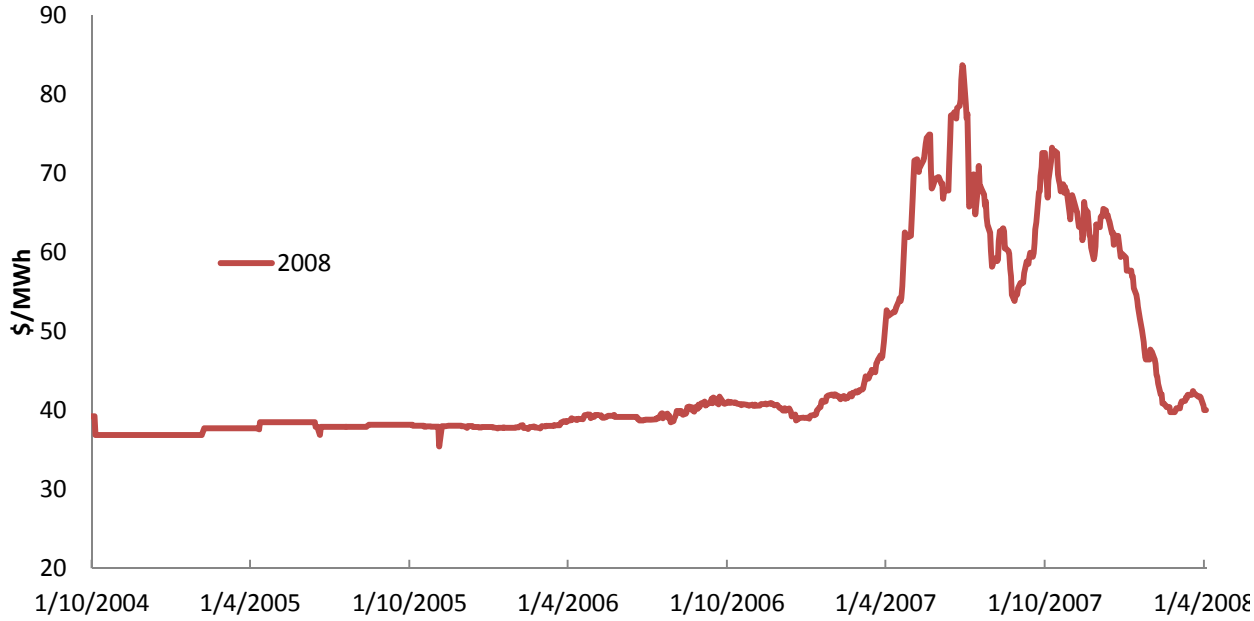
The variability of forecasts over time can also be demonstrated by contract market data. Chart 2 shows the daily closing prices for implied calendar year base load futures for New South Wales for 2008. It shows that the future price of electricity fluctuated considerably in the three years heading up to spot trade.

For instance, the closing price of the 2008 swap fluctuated within a $48/MWh range between $35/MWh and $83/MWh over 2005 to 2008. While these fluctuations reflect the market's response to conditions and available information, if this data had been used at any point in time in a regulatory test for exercise of substantial market power to form a view of future prices, it could have given a misleading impression of actual prices. The average NSW spot price for 2008 turned out to be $39/MWh.[2]

Regarding, contract data, we support the Commission's intent to examine both spot and contract price data. However, while data on exchange traded contract prices is obtainable, over-the-counter data is not. We would be interested in understanding how the Commission proposes to address this data gap and note that it could require the use of spot prices as a surrogate for contract prices.

[2] It is noted that contract prices would be expected to include a risk premium.

Chart 2: Daily closing price for NSW 2008 base load futures (implied calendar year)



Source: D-Cypha trade.

Forecasting future prices will be complicated further by climate change policy

A particularly prominent complicating factor on electricity prices is the impact of carbon policy. There are a number of dimensions to the possible impact of carbon policy on electricity prices that would need to be accounted for in determining whether past and projected future prices displayed evidence of the exercise of substantial market power by a generator.

Firstly, the direct cost of carbon will increase costs for emitting generation and change merit orders. This will increase prices[3] and given Australia's electricity market has no experience with major carbon pricing, these impacts will be difficult to predict. This will be complicated when the carbon price floats from 2015-16, especially given the expected relationship between the Australian price and uncertain world carbon prices. Predicting merit order impacts and wholesale prices will also be complicated by the mandated entry of significant volumes of capacity with zero marginal cost.

Secondly, climate change policy may have impacts on bidding behaviour. For instance, as discussed in ACIL Tasman modelling[4] commissioned by esaa, the Clean Energy Future package could precipitate a fall in the level of contracting in the electricity market. The modelling showed that even a 5 per cent reduction in contracting in the NEM could increase the level of volatility in the market and cause average wholesale prices to rise up to 20 per cent in a single year. It is important to note that the reduction in contracting in the analysis was unrelated to questions of

[3] Recently released Treasury modelling of the impacts of carbon pricing on electricity prices suggests that, compared to current levels, average Australian wholesale prices could be 68 per cent higher by 2020 and 173 per cent higher by 2030 in real terms. See chart 5.27 in the *Strong Growth, Low Pollution* report.

[4] Report available here: http://www.esaa.com.au/content/detail/national_electricity_market_modelling_ACILTasman

market power, but rather the response to a number of regulatory, policy and commercial drivers.

Thirdly, there is a cost of climate change policy uncertainty that could manifest in prices. While the legislation to introduce the carbon pricing mechanism has passed the Parliament, with no bipartisan support for a carbon price, uncertainty remains. Carbon policy uncertainty can impact the choices investors make, including the timing and type of investment. This is discussed in the Investment Reference Group[5] (IRG) report, which stated:

> *In practice, however, the scale of the issue* [of carbon price uncertainty] *means that investors either defer their investment decision until there is greater policy certainty, or invest in projects which minimise the capital outlay and are more adaptable to future changes (i.e. OCGT plants), even though these investments may otherwise be sub-optimal from a longer term perspective.*[6]

Parallel analysis by Deloitte found that the cost of policy uncertainty could be $1-2 billion per year in the short to medium term and $5 billion per year in the longer term.[7]

Electricity prices are the result of many factors

The test refers to "a generator" that "engages in conduct that has the effect of increasing annual average wholesale prices to a level that exceeds LRMC." This suggests that all factors influencing wholesale electricity prices must be stripped out to isolate the price effects of the conduct of the particular generator. By implication, the conduct of all other generators must also be discounted.

As the Commission is aware, electricity prices reflect the end result of the decentralised decision-making of multiple actors responding to a myriad of commercial, climatic, policy, regulatory and network factors through the market mechanism. Electricity prices are the end result of the workings of a complex system and isolating the effect in practice from a single generator's conduct is difficult to do for historical prices and would be even more difficult to do prospectively. Any findings would be unavoidably contentious.

To summarise, price outcomes are an important indication of the competitive condition of the market. However, we do not consider that the way the proposed test would use electricity prices to find evidence of market power could be practically implemented with sufficient robustness to form the basis of the type of regulatory intervention in the Rule change.

There are many ways to measure LRMC

In addition to the practical concerns outlined above regarding determining electricity prices, we have concerns regarding the proposed use of LRMC.

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[5] The IRG included the Chair of the AEMC and the heads of AEMO, the AER, government energy departments and senior executives from the energy and finance industries.

[6] See page 44 of the IRG report.

[7] Deloitte, Electricity Generation Investment Analysis, 14 April 2011.

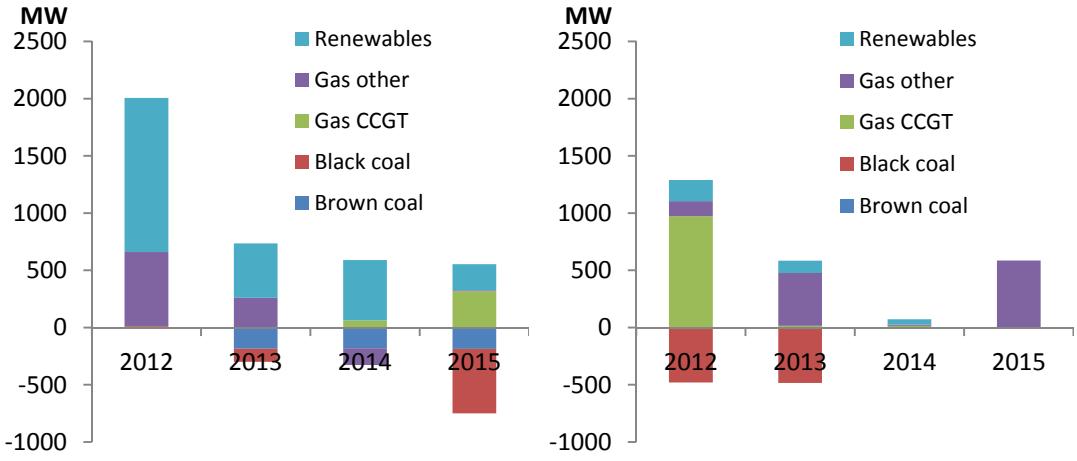
There is a range of different methods for measuring LRMC, as can be seen in the different measures used by jurisdictional regulators in the context of retail price determinations. Given the range of methods subjectivity is required in the choice of technique. Furthermore, in addition to deciding upon the general method, regulatory decisions must then be made about the data inputs to be used in the LRMC calculation. This is an inherently contentious exercise as there is 'no right answer' for many of the required assumptions.

The Turvey approach to LRMC set out in the AEMC's Direction Paper is based on the net present value of the costs (operating and capital) to bring forward a future capacity expansion to meet an incremental increase in demand. The LRMC estimate would be "for the market", based on the "optimal investment profile to meet the increment in demand."[8]

This approach requires forecasts about when future investment should optimally occur to establish the reference point for bringing forward the capacity expansion. Estimating the optimal investment profile for capacity expansion is difficult to do and the concerns raised above about projecting future electricity prices are relevant regarding capacity projections.

An example of this can be seen in Charts 3 below, which is from the Treasury modelling of carbon pricing. They show the change in generation capacity each year by fuel type under carbon pricing as modelled by the two modelling houses engaged by Treasury. Despite modelling the same scenario with common assumptions, there is clearly a wide variation in the two modellers' projections of both the optimal amount and type of capacity expansion (and retirements) each year. Determining optimal investment profiles could be further complicated by any contracts for closure negotiated by the federal Government under the Clean Energy Future package.

Chart 3: Annual change in capacity (MW) - SKM-MMA (LHS), ROAM Consulting (RHS)



Source: Federal Treasury.

[8] AEMC presentation at the Public Forum, 12 October 2011.

We also note that the Turvey method measures system-wide cost. Given the underlying logic underpinning the Commission's proposed test i.e. judging the conditions under which a new investment should be incentivised, it would appear to be more relevant to use the LRMC of a specific technology/plant rather than system LRMC. This is because this is a more relevant threshold from the perspective of an investor contemplating new entry.

Caution should be used in any application of LRMC. We understand that the Commission will likely release a technical paper on LRMC (and other technical matters dealt with in the Rule change) and this will provide further opportunity to examine these issues.

The relevant time period

As noted above, we support the Commission's view that individual price spikes are not relevant and that it is more appropriate to look at outcomes over a period of time. However, we do not agree with the Commission that a one to three year price timeframe is appropriate.

The IRG report discusses the investment time frames in the electricity industry and sets out the stages and timelines for power stations. It shows that the period from conception to operation is typically four to six years for CCGT, three to five years for OCGT and more than five years for coal.[9] As such, we suggest a period of at least five years would be more appropriate to assess the competitive condition of the electricity market.

Barriers to entry

The second part of the AEMC's test is that: "the generator is able (or is likely to be able) to sustain prices at that level due to the presence of significant barriers to entry." The Commission states that it will define and identify barriers to entry in later stages of this process. Given the integral part barriers to entry play in the AEMC's proposed test, we look forward to the Commission's views on this issue.

However, as an initial comment, we note that to the extent that new investment was economically viable but was being prevented due to significant barriers to entry, good regulatory practice would suggest that in the first instance those barriers to entry should be the target of any regulatory intervention. This would be preferable to introducing a new distortion into the competitive market, particularly one that is a barrier to entry in its own right.

This approach was used by the AEMC in its review of retail price competition in the Australia Capital Territory, which found that the barrier to entry of price regulation contributed to a low level of competition in the retail electricity market. The Commission's recommendation, which esaa strongly supported, was to directly address the barrier to entry by removing price regulation. We consider a similar philosophy should apply regarding the wholesale market. For example, to the extent that there are barriers to new entry due to transmission frameworks, it makes more

[9] Investment Reference Group Report, *A Report to the Commonwealth Minister for Resources and Energy*, April 2011, page 26.

sense to address these directly (such as through the Transmission Frameworks Review). We note, however, that not all possible barriers to entry in the generation sector will be within the AEMC's sphere of influence.

Market definition

As set out in our Consultation Paper submission, we consider that the interconnected NEM should be regarded as a single market for the purposes of this analysis. One of the rationales for physical integration of the NEM was to enable trade of energy between regions and as shown in Chart 4, the pattern of import and export of energy between regions has varied over time. In this regard, new entry into a NEM region can effectively be achieved not just through new generation investment but also through new transmission investment that enhances the capability of inter-regional power flows i.e. generation and transmission infrastructure can be substitutes.

Chart 4: Interregional trade as percentage of regional energy consumption

Sources: AEMO; AER.

Source: AER, State of the Energy Market, 2010

It should also be noted that the Regulatory Investment Test for Transmission (RIT-T) includes market benefits in its assessment of the viability of a proposed investment. This would suggest that to the extent there is concern that prices in a region are higher due to the exercise of substantial market power, it would be appropriate to first utilise existing NEM regulatory mechanisms such as the RIT-T rather than introduce new distortions into the competitive part of the market. In this regard, we note that the AEMC has power under the Rules to direct a TNSP to undertake a RIT-T if it is concerned about inter-regional planning (the Last Resort Planning Power) and that in November this year the AEMC decided not to exercise its powers on the basis that there was appropriate action being taken by planning authorities regarding augmentation of inter-regional network capabilities.

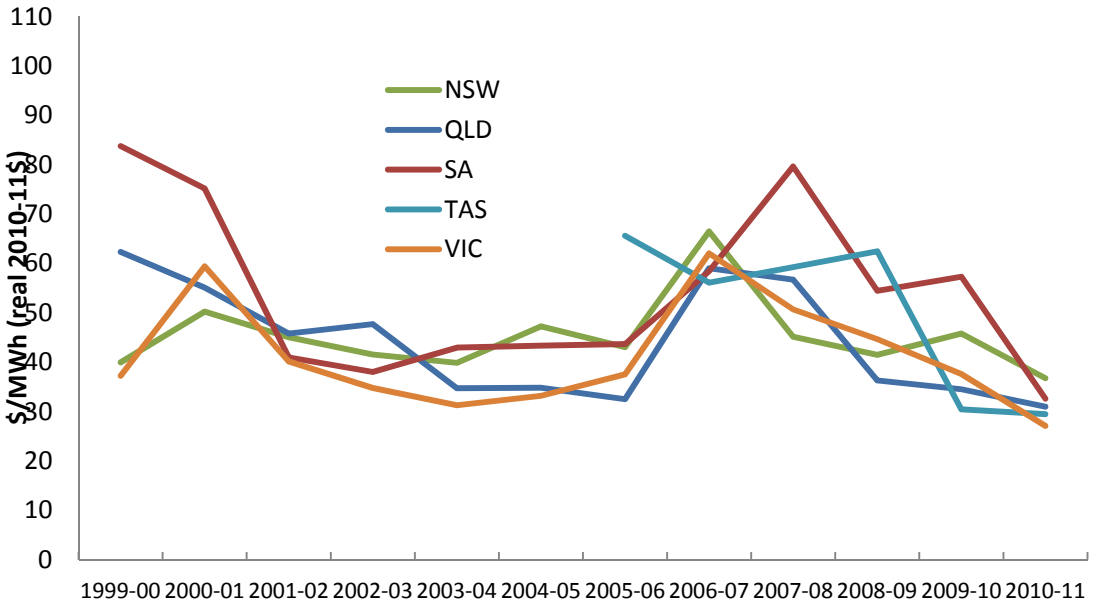
Evidence on the competitive condition of the market

We note that the next stage of the Rule change will focus on assessing if there is evidence of the 'problem' of the exercise of substantial market power. We consider that this assessment of the competitive condition of the market should be holistic rather than rely solely on a single-dimensional test.

We agree that prices are an important indicator of the competitive condition of the market and consider a balanced perspective is required. We support the AEMC giving regard to both high price periods and instances of low and negative prices.[10]

Chart 5 shows annual average NEM spot prices, weighted by time and adjusted for inflation. Chart 6 shows average volume weighted prices. These show that despite some fluctuations, notably due to drought in 2006-07, prices have been relatively low and stable. In fact, in 2010-11, on a time weighted basis, average real spot prices for all regions of the NEM were at their lowest level since market start. On a volume weighted basis, average real spot prices for Tasmania, Victoria and Queensland were also at their lowest level since market start in 2010-11. For New South Wales and South Australia, 2010-11 average prices were around 50 cents per MWh from their lowest levels since market start.

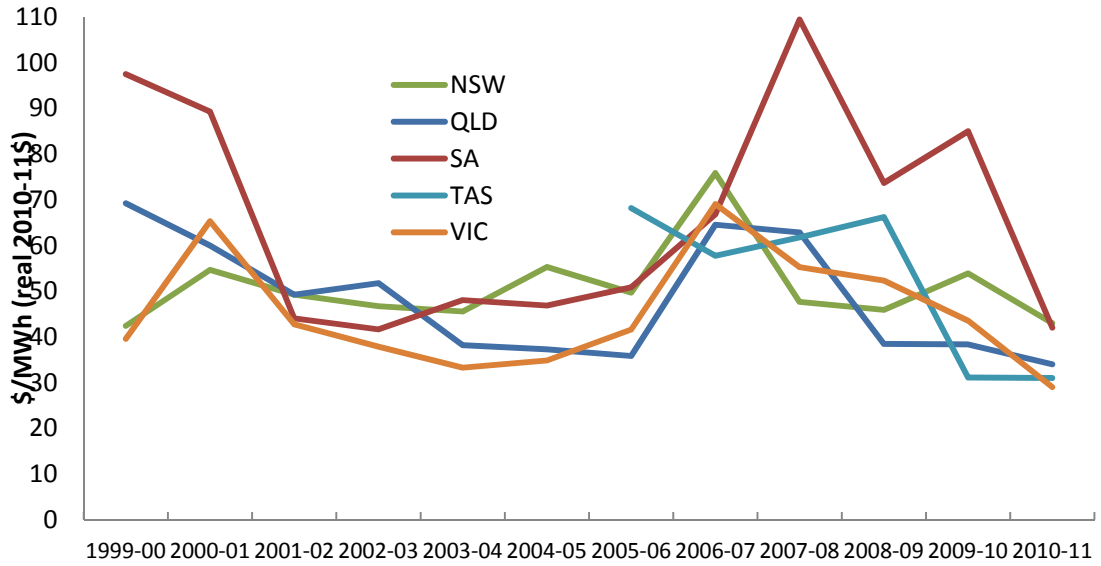
Chart 5: Annual time weighted average NEM real spot prices ($2010-11$)



Source: AEMO for average wholesale prices, CPI figures for deflation taken from the Reserve Bank of Australia. Tasmania entered the market 29 May 2005.

[10] AEMC presentation at the Public Forum, 12 October 2011.

Chart 6: Annual volume weighted average NEM real spot prices ($2010-11$)



Source: AER for average wholesale prices, CPI figures for deflation taken from the Reserve Bank of Australia.

We also note that despite the range of uncertainties facing the market, there is nonetheless a considerable pipeline of new generation investment. According to esaa's Electricity Gas Australia 2011, in the NEM there are currently more than 39 GW of generation projects either under construction, at advanced planning stage or proposed. Of these more than 10 GW are open cycle gas turbine and more than 5 GW are CCGT. While not all of these power stations will ultimately be commissioned, reflecting different commercial and policy drivers, this investment activity gives an indication of the success of the NEM in encouraging new entry and disciplining market power. Further, as noted in the AEMC's recent Last Resort Planning Power report, jurisdictional planning bodies are investigating projects relating to the QNI interconnector and power transfers between New South Wales and Victoria, as well as South Australia and Victoria.[11]

Conclusion

We do not support the Rule change and consider it to be an unwarranted and excessive distortion. While we strongly support the AEMC's decision to look beyond short term pricing outcomes to focus on the exercising of substantial market power and note the rigour underlying the development of the proposed test, we do not consider a simple comparison of average prices with LRMC is an appropriate method of assessing the competitive condition of the NEM in isolation. In this submission we have set out some of the general pitfalls of relying on such a test as an indicator of substantial market power and the specific issues with the key definitions that underpin the test.

We consider that the difficulties with practically implementing the proposed test mean it would not provide a sufficiently robust basis for distortionary regulatory intervention and that a wider assessment of the competitive condition of the market would be

[11] AEMC, *Last Resort Planning Power Review: 2011 Decision Report*, November 2011.

required. We do not consider there is evidence of generators having sustained market power or the NEM failing to deliver sound outcomes.

We appreciate the engagement of the Commission and its staff with industry in progressing this Rule change so far and look forward to engaging further in this process.

Any questions in respect of our submission should be addressed in the first instance to Temay Rigzin, by email to temay.rigzin@esaa.com.au or by telephone on (03) 9670 0188.

Yours sincerely

Clare Savage
Interim Chief Executive Officer