Major Energy Users Inc.

AEMC review

Generator Market Power Rule Change Proposal

Analysis of the impact of GMP on standing retail prices for small consumers as developed by ESCoSA for the SA region

Prepared by

The Major Energy Users Inc

February 2012

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

The content and conclusions reached are the work of the MEU and its consultants

1. The purpose of this document

It is asserted by some that the ESCoSA review of the standing retail electricity price has been set independently of the increase and volatility seen in the SA regional spot market and that, as a result, there is no resultant impact of the effects of generator market power on the retail standing price.

To verify this assertion (or counter it) it is important to assess the processes used by ESCoSA in the development over the years of the retail standing electricity price.

This analysis by the Major Energy Users Inc, (MEU) provides an assessment as to the legitimacy of the assertion looks at the way ESCoSA used to develop its standing retail price, the way other regulators currently develop their standing retail prices and the way ESCoSA developed its standing retail price after the apparent exercise of generator market power by the SAGL owned Torrens Island Power Station (TIPS) in the years of 2008, 2009 and 2010.

2. The history of the development of the SA standing retail price

In the 2005 Review of Retail Electricity Price Path, the Wholesale Electricity Cost (WEC) used in the development of the standing Retail Price contract was based on the prices quoted in the futures market. Therefore the retail standing price directly reflected the outcomes from the market.

This approach was changed in the 2007 review. As well as receiving a proposal for assessing WEC from AGL, ESCoSA requested Allen Consulting to develop a WEC.

The Allen Consulting Group (ACG) model for estimating the wholesale electricity purchase costs by calculating the cost of a portfolio of spot purchases and contracts that minimises the risk across various scenarios for pool prices and customer load; this approach directly includes the impacts of the exercise of market power.

The AGL SA approach, which uses an estimate of the long run marginal cost (LRMC) to supply standing contract demand as the basis for its cost estimate for long term contract purchases; the blend of base-load and peaking generation used for LRMC as a proxy for the optimal blend of swap and cap contracts that would be purchased in the shorter term for less certain standing contract demand; and the cost of call options to manage the risk of customers returning to the standing contract from market contracts.

In its 2007 Final Decision, ESCoSA commented (page A37) that:

> “The Minister for Energy supported the ACG approach on the basis that it was integral to, and achieved a close fit with actual outcomes during, the 2005-2007 price path. The Minister submitted that the 2005-2007 price path decision had delivered “more than adequate” returns from the standing contract tariffs.”

In its final determination, ESCoSA agreed that the AGL approach was acceptable (subject to some modification) but ESCoSA did caveat its view with the comment (page A50):

> "As this approach is new, its robustness has not been established, and AGL SA's application of it has delivered some upwards bias in cost estimates."

What is of importance is that the LRMC element of the assessment is heavily weighted to the price forecasted for gas, the blend of base and peak generation used and other elements of the AGL model which include the effects of the futures market.

In setting the point pricing of the retail standing contract, ESCoSA effectively used the average of the outcomes of the AGC and AGL approaches. Therefore the standing contract development of WEC in 2007 implicitly included some effects of the electricity spot market in its calculation, both explicitly through the futures market and implicitly through the price of gas used.

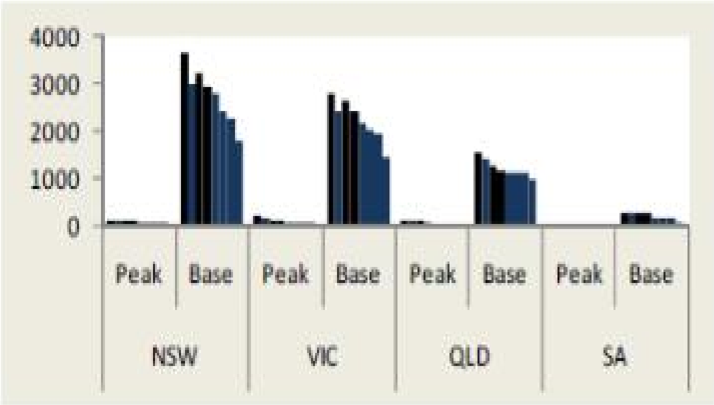
By the time of the 2010 standing contract price review, AGL/TIPS had created considerable volatility in the electricity market and caused the electricity spot market to exhibit some massive increases in the volume weighted average annual spot prices in years 2008, 2009 and 2010 as well as extreme volatility.

3. The 2010 standing price

In its final decision ESCoSA comments (pages A66 and A67):

> "During the current review, the Commission has considered whether or not an LRMC approach is superior to a market-based approach, given the lack of liquidity in the wholesale market. While the [relative price movement] methodology places greater emphasis on forecasting WEC costs for the period January to June 2011, the Commission is aware that **forward contracting, even within the short-term, has reduced significantly, particularly in SA**.
>
> Saha's advice to the Commission concluded that an LRMC based methodology for determining WEC is acceptable and that, in general terms, no other methodology is likely to deliver a materially better outcome, **given current wholesale electricity market conditions in South Australia**.
>
> **Saha found that the illiquid nature of the contract market meant that an approach based on contract prices was unacceptable**. Saha's analysis of d-cypha Trade data on traded volumes suggested that a lack of liquidity for futures contracts in South Australia is particularly pronounced for peak products, which are required to manage peak and volatility risk. This is illustrated in Figure 5.1.

Figure 5.1: Open interest in NEM regions for Q3 2010, monthly data from Oct 09 to May 10



Source: d-cypha Trade, Saha analysis

> In addition to a contract price methodology, Saha considered an approach based on forecasting pool prices, but found this approach to be **unreliable given spot market volatility.**" (emphasis added)

On page A68 ESCoSA goes on to state:

> "In relation to the [energy purchase cost (EPC)] methodology proposed by AGL SA, the Commission notes that AGL SA only put forward this alternative for use if there is a significant improvement in wholesale market liquidity, which could trigger a "special circumstances" review. For the purposes of establishing an initial standing contract price, AGL SA supports an LRMC approach. The EPC methodology therefore has no impact on the WEC proposed by AGL SA."

Because of the extreme volatility of the open market and the lack of liquidity in the SA futures market, it is quite clear that ESCoSA decided that there was no alternative but to base its WEC calculation on prices related to a mix of combined and open cycle gas turbine technology. This is a further change from earlier methods used to set the WEC and in contrast to the approaches used by other regulators which have continued the practice of using a hybrid of a LRMC[1] and a market cost approach to setting the energy cost element of the standing retail price (eg QA) or the higher of the LRMC and a market assessment (eg IPART).

The very fact that ESCoSA had to change its methodology for setting the retail standing price because the SA market was exhibiting such extreme behaviour, is an outward sign that the SA market was seen to be dysfunctional. This is in contrast to the decisions of other regulators

A 2009 review by the QCA[2] highlights (page 38) concludes that:

[1] QCA and IPART use a model for identifying the least cost mix of new generation (from a variety of technology, fuels and sources) whereas ESCoSA used a mix of gas fired CCGT and OCGT technology alone

[2] Final Report: Review of Electricity Pricing and Tariff Structures - Stage 1 September 2009, available at http://www.qca.org.au/files/ER-RevEPandTS-QCA-Final-0909.pdf

> “The Authority believes that the risk to development of competition and the need to reflect retailer’s actual cost of supply are sufficient reasons to move away from a hybrid LRMC and energy purchase cost BRCI approach to a completely market based energy purchase cost approach.”

This review implies that rather than moving away from market based approaches as ESCoSA has had to do, there is a strong view that the market provides a better indicator for developing the standing retial price than using the LRMC approach.

In theory, using a new entrant LRMC implies that the retail contract price is set independently of the market. In practice, what it means is that the market volatility seen in SA caused the WEC to be based on the cost of new entrant generation rather than recognising the benefit of the mix of generation already operating in the market which includes part depreciated generation plant, lower cost fuels and the impact of the large amount of wind generation available in the region, all of which impact the actual costs of generation and therefore the contract prices that might be available. As the current market mix of generation is supposed to bid at SRMC, there is an expectation that the market, as it actually is, will deliver a lower price for power than the LRMC of a new entrant when there is sufficient generation in the region.

The wholesale price used in the 2010 ESCoSA decision was $93.93/MWh. This compares to ACIL Tasman 2009/10 estimates for LRMC for Adelaide based CCGT of $61/MWh and Adelaide OCGT of $101/MWh. This means that essentially ESCoSA is allowing a wholesale price for power where 95% of the power is generated from OCGT as the basis for its retail standing price, but in practice much of the power would be provided from CCGT plant.

It is interesting to note that the equivalent values for energy resulting from the QCA approach for setting the energy cost for the standing retail price provides a cost base of less than $60/MWh for 2010, some 65% of the value that ESCoSA used for the same year, confirming the view that the ESCoSA setting for energy cost is considerably higher than needed for the SA region.

IPART’s outcomes for its review covering the same period show similar LRMC outcomes as the QCA but significantly lower market based outcomes

Explicitly, due to the excessive market volatility and high prices seen, ESCoSA had to use an inflated value for WEC that could be independently substantiated. As such, the implication is that such an approach will provide even greater “headroom” for competition between retailers to occur as the market should have been able to provide lower cost options for sourcing hedges by retailers.

Despite ESCoSA determining that a LRMC based on new entrant gas fired CCGT/OCGT mix should set the WEC, it provides an “out” for itself (page A68)

> “The Commission acknowledges that should an event occur during the next regulatory period that leads to a material change in wholesale electricity costs, a special circumstances review may be triggered. In this event, the Commission would be required to make a new standing contract price determination, albeit that the determination could be limited to the remainder of the regulatory period, rather than for another period of at least 3 years”

Further, ESCoSA (at AGL’s request) recognises that the value for LRMC based on new entrant generation is not fixed and varies with a number of variables (eg gas cost, generation mix, load forecasts, etc). Whilst ESCoSA notes that the target point for LRMC was $93.93/MWh, it set a tolerance band of -7.2%/+8.2% (ie a total range of 15.4%) on which the LRMC element can vary.

ESCoSA has determined that the standing price can vary (even outside the tolerance band as it states (page A109) that the standing price can vary by use of:

> “... the relative price movement (RPM) index calculation [which] will allow standing contract prices to vary in accordance with movements in market contract prices, subject to the standing contract price falling within the floor and ceiling of the tolerance band. In the event that the RPM index produces a standing contract price that would breach the floor or ceiling, the Commission will set standing contract prices at the floor or ceiling, whichever is relevant. The possibility for standing contract prices to move outside the tolerance band could be brought about through a “special circumstances” review. While the Commission has set a tolerance band such that it expects the floor or ceiling would only be breached in exceptional circumstances, the possibility of this occurring remains, and the potential for a “special circumstances” review exists. Such a review could reset the price and tolerance band for the remainder of the regulatory period.”

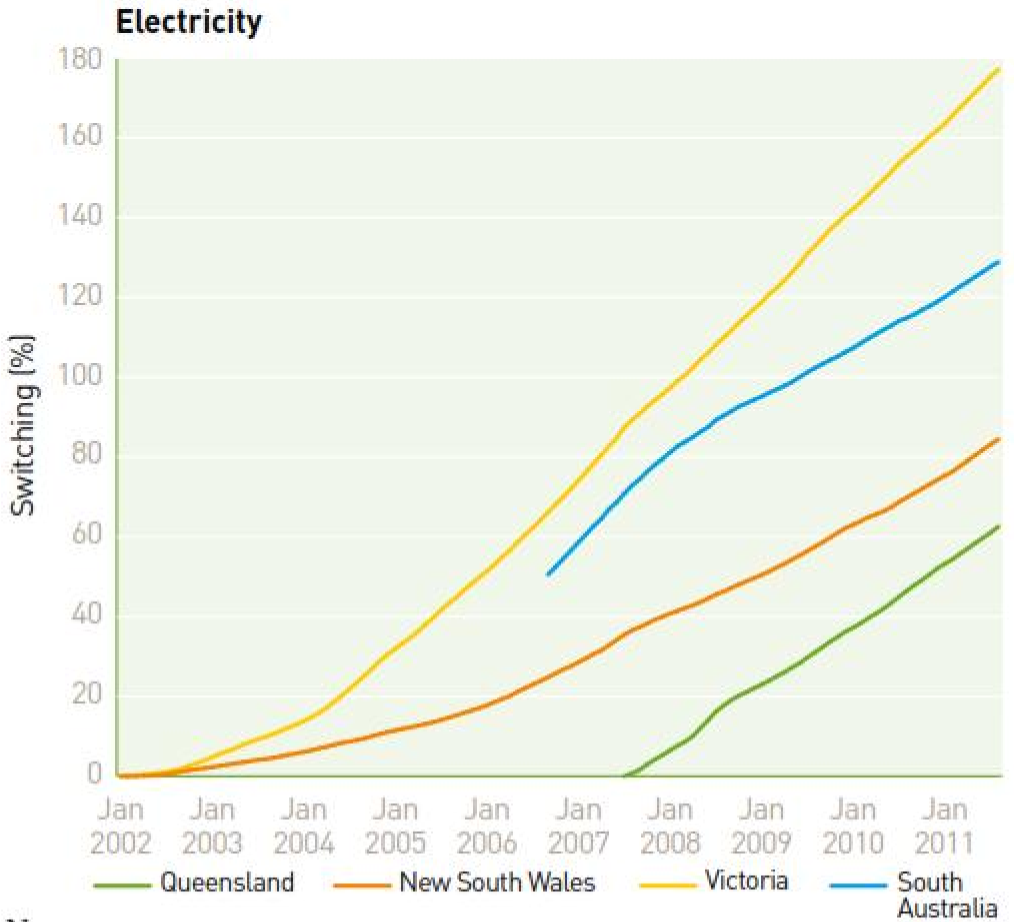
The fact that the retail standing price can be adjusted (even outside the tolerance band) because of <u>market contract</u> price movements, implies that even though the base energy price is fixed by apparently exogenous input (albeit a high price), the market still can impact the retail standing price. Therefore the impact of generator market power is still an issue for the retail standing price.

The above analysis does not recognise the other impacts of the exercise of generator market power. As noted above, the way the standing contract is developed already has a large premium in it so there should be plenty of “fat” for retail competition. If the market is too volatile because of the exercise of generator market power, retailers will not access power from the spot market as the risk is too high. But if retailers (especially second tier retailers) can’t get competitive hedges because they have to go to AGL/TIPS (which is the largest generator in the SA region), this allows AGL/TIPS to set its own hedge prices.

It appears that the ESCoSA decisions in 2007 and 2010 have led to reduced churn in SA, implying there are other reasons for the lack of competition than the standing price is too low.

The AER State of the Energy Market 2011 (figure 4.4) shows quite clearly that the rate of churn in SA has dropped off considerably since early 2008 which occurred when AGL/TIPS commenced exercising its market power, and a lower rate of churn has since been maintained which is lower than the churns seen in the other three mainland regions[3]. Intuitively, this outcome is one that would be expected if retailers were less active or exiting the market.

Figure 4.4
Cumulative monthly customer switching of retailers, as a percentage of small customers



Notes:

Customer base as estimated at 30 June 2011.

No comparable public data are available for South Australia electricity switching before June 2006.

Sources: Customer switches: AEMO, MSATS transfer data to July 2011 and gas market reports, transfer history to July 2011; customer numbers: IPART (New South Wales), *NSW electricity information paper—electricity retail businesses' performance against customer service indicators*, various years; ESCOSA (South Australia), *09/10 Annual performance report: South Australian energy supply industry*, 2010; ESC (Victoria), *Energy retailers comparative performance report—customer service 2009-10*, 2010; QCA (Queensland), *Market and non-market customers, June quarter 2011*, 2011.

ESCoSA makes the point in its 2010 review that the hedging market in SA is almost totally illiquid. This suggests that the hedging offers are priced in such a way that effectively precludes other retailers (especially second tier retailers) from being competitive providing a reason for less activity by retailers.

The ESCoSA report shows that the allowance for the wholesale price for power is based on the LRMC of a mix of new entrant CCGT and OCGT, all fired on gas. In theory, this should provide the basis for accessing hedge prices that would be

[3] Churn in Tasmania is almost non-existent due to the market structure in that region

competitive within the retail standing price as hedges would tend to reflect the SRMC in the SA regional market and be below the LRMC of new entrants. For retailers to be competitive requires generators to offer hedges that are less than new entrant LRMC. But if the largest generator (TIPS) is also the largest retailer (AGL), why would the largest generator offer hedges at the same price (or lower) than it does to its owner? In fact, it would offer higher prices (especially if the other retailers had nowhere else to go) so that its associated retailer could gain greater market share.

The volume weighted spot price in 2008, 2009 and 2010 was $93/MWh, $89/MWh and $55/MWh. Through the period of March 08 to January 09, the futures price for base power for 2010 ranged between $60/MWh and $20/MWh. The average cost price for power included in the 2007 decision for 2008/09/10 was $83.3/MWh. On this basis having a power cost price at this level in 2010 should have allowed retailers to be active in the market but they weren't, suggesting that the hedging prices available were considerably above this level.

4. Conclusions

The assertion that basing the standing retail price on the LRMC of new entrant generators implies that the retail standing price has not been affected by the exercise of market power in the SA region is not sustainable. In fact the exercise of market power in the SA region has resulted in a number of impacts on the cost of power to small consumers in SA.

- The 2010 retail standing price in the SA region is much higher than it needs to be and therefore places a premium on the cost of electricity for those relying on it to be insulated from the extreme volatility in the market
- The new approach to the SA retail standing price has the facility within it to be adjusted to reflect market conditions, thereby being directly influenced by market movements
- Because the SA retail standing price includes a significant premium because of the use of the LRMC approach used, there is an expectation that there should be greater retail competition, but the observation of the market indicates that competition is lower than in any other region in the NEM except Tasmania
- The cause for this lower retail activity is related to the inability of retailers (especially second tier retailers) to be able to source competitively priced hedges. A cause of this must be the excessive volatility seen by ESCoSA in the spot market which has been an outcome from the exercise of market power.
- The largest retailer in the SA region is also the largest generator in the region meaning that the second tier retailers must access some of their hedging from their retail competitor.