



Benchmark Retail Cost Index 2009/10
Comments on CRA Supplementary
Material



AGL submission to the Queensland Competition Authority
Date: 21 October 2008



AGL welcomes the opportunity to comment on the supplementary material published by CRA. AGL understands that the publication of this material is intended to seek further comment on issues raised in CRA's First Draft report and discussed at the Workshop on 27 August 2008 (*First Workshop*).

AGL notes that a number of issues raised at the Workshop have not been addressed in these interim papers. AGL trusts that these issues, which are detailed below in the body of the submission, will be comprehensively addressed in CRA's 2nd Draft Report.

1. Cost of energy

1.1. Load Data

Load Forecast Method

AGL, consistent with its submission on the Draft CRA Report, sought clarification on the method used to forecast load, and the seemingly different outcomes of that method that were present in the data provided.

CRA responded to the satisfaction of AGL that the forecasts of Queensland Load were consistent with NEMMCO's forecast of a 50POE, medium energy scenario. The 90POE forecast for Queensland load had only been used by CRA in forecasting the remainder of Calendar year 2008. This combination of actual and forecast demand was then used as a basis for forecasting forward nine years of demand from 1 July 2009, each year of which is consistent with the NEMMCO 50POE, medium energy scenario, for the relevant year.

It was noted that the need to forecast demand for the remainder of calendar year 2008 has been removed by the extended timeframe afforded by the Minister's amended delegation. Thus the demand used for the forecasting of demand from 1 July 2009 will be based on actual demand data for the calendar 2008 year.

AGL notes that the data on the QCA website currently shows CRA forecasting demand to a 90 POE for the forecast for 2008 demand. AGL assumes from statements made by CRA at the First Workshop that the actual demand for calendar 2008 will be used by CRA in its Final Report. AGL would invite CRA to indicate whether this is in fact correct. For the avoidance of doubt, AGL reiterates the points it made in its submission to the First Draft Report objecting to a forecast based on the 90 POE.

CRA indicated in the First Workshop, and have confirmed in the supplementary material that the load forecast has been reduced from the NEMMCO forecast to take account of different measurement points for the load. CRA use a factor of 1.0638 to arrive at this difference. CRA use the load on a sent out basis, whilst NEMMCO's forecasts are measured at the generator terminal. AGL is satisfied with this approach.

Reserve Margin

AGL also noted that the method of load forecasting for calculation of the LRMC did not account for the reserve margin required by NEMMCO to maintain system security. CRA accepted that no rationale has been provided regarding the lack of inclusion for reserve margin.



AGL notes that this matter has not been addressed further in the supplementary material.

1.2. Long Run Marginal Cost

1.2.1. Input Assumptions

AGL and other stakeholders again discussed the clear evidence that has been provided to the QCA and CRA in respect of the LRMC input assumptions, which do not recognise the obvious increase in the Weighted Average Cost of Capital (**WACC**) or the incontrovertible step change that has occurred in:

- generation capital costs; and
- input fuel costs.

CRA indicated that the source of input assumption in relation to at least these three matters was at the discretion of the QCA and they were not sought for their expert opinion in relation to the source of these input assumptions.

Further evidence was presented to the QCA in respect of an irrefutable step change relating to capital and fuel costs for new generation plant. In addition, increases in the cost of debt arising from higher interest rates and debt margins were also presented. The QCA indicated that it would seek further expert opinion (potentially external to CRA) to determine, the extent to which these input assumptions ought to be reviewed in the CRA analysis. It was indicated by the QCA that the newly extended timeframe would now allow for this additional analysis to be conducted. Many stakeholders expressed concerns about the terms of reference for this engagement, however, the QCA indicated that the terms of reference would not be made available to stakeholders.

It was agreed that the QCA would seek to engage further consultants to offer expert opinion as to what the input assumptions for the LRMC calculation in the CRA modelling should be. AGL understands that the QCA has in fact engaged ACIL Tasman to complete this work. AGL trusts that this report will be published in full for review and comment by stakeholders.

1.2.2. Inclusion of Carbon Pollution Reduction Scheme (CPRS)

AGL fundamentally disagrees with the conclusions reached by CRA in respect of the impact of CPRS, and cannot accept any methodology whereby the effects of the CPRS on the costs incurred by retailers are not passed onto end use consumers in full. Any attempt by the QCA to diminish the impact of the CPRS on consumers AGL considers to be contrary to the policy objective of the Federal Government in implementing the CPRS, an observation developed subsequent to consultation with relevant Federal Government departments.¹

Whilst AGL does not profess to have an acceptable methodology for estimating the impacts of the CPRS on the costs that will be incurred by retailers (due to the significant

¹ This is a different issue to carbon cost pass through within the wholesale market. Generators are arguing for compensation related to their inability to recover their specific additional costs associated with purchasing permits. Retailers will need to pass through the increase in wholesale prices associated with the average generator's increase in carbon costs to fully recover their additional costs.



uncertainty in relation to the ultimate design of the scheme), the current methodology employed by CRA is manifestly inadequate.

AGL has suggested a method that will be significantly more appropriate than that engaged by CRA. This method would involve the determination of the optimal plant mix prior to the inclusion of a cost for carbon permits. The cost of carbon permits would then be allocated to this plant mix. This method would reflect the requirement to transition to a carbon constraint imposed by the CPRS. The CRA method allows the cost of carbon to be a determinant of the optimal plant mix, even though the carbon price used in the modelling is reflective of a carbon price that has been modelled on the basis of today's actual plant price used in no way reflects that which would be necessary to produce the optimal plant mix that CRA has derived in its modelling. This is fundamentally flawed as a methodology and cannot be defended even in the context of the theoretical framework that underpins the LRMC calculation.

It should be noted that the Commonwealth Government does not intend to finalise all the targets and gateways under the CPRS until 2010. As banking will be permitted under the CPRS, no entity will be able to forecast the carbon price until this point in time.

At the First Workshop, CRA agreed to consider the AGL proposed method and to seek to determine alternate methods that better reflect the expected outcome of the CPRS and its impact. AGL anticipates that CRA will address this issue comprehensively in its Second Draft.

1.2.3. Input Assumptions relating to Renewable Generation

AGL noted that the input assumptions in relation to costs for renewable generation reflect data sourced by CRA as costs for renewable generation are not included in the ACIL 2007 LRMC analysis. AGL challenged these costs as either not effectively reflecting appropriate costs or as not being relevant for Australian specific conditions.

The latter is particularly relevant in the case of the applicability of cost assumptions for geothermal generation, which are not relevant to the type of technology being investigated for use in Australia, nor do they reflect the timing at which this technology may be deployed on a commercial basis. AGL is unaware of any other modelling undertaken that assumes geothermal will be available for commercial deployment in July 2009. AGL notes in this context that a report prepared by MMA, commissioned by The Climate Institute (*TCI*)², states that the capital costs for geothermal hot dry rocks as being \$4153/KW, and geothermal hydrothermal as \$2987/KW. AGL notes that all the capital costs in the MMA report are very conservative in comparison to other assessments of generation capital costs, and AGL would consider the capital costs as being too low to be considered realistic. Similarly, AGL suggests that the capital costs attributed to geothermal generation are understated.

1.3. Energy purchase costs

AGL has a number of concerns with the manner in which CRA appear to have calculated the energy purchase costs and the data they have used in doing so.

² McLennan, Magasanik Associates Pty Ltd, 'A comparison of emission pathways and policy mixes to achieve major reductions in Australia's electricity sector greenhouse emissions', 8 September 2008. AGL is happy to provide a copy of this report on request.



CRA indicated in the workshop that the analysis that had been undertaken and provided by stakeholders had highlighted a number of issues associated with the modelling of energy purchase costs. These issues would require review by CRA and in some instances would require the CRA model to be adjusted to take such matters into account.

In seeking clarification on the method employed by CRA, AGL requested CRA to respond to matters raised in AGL's submission to the QCA on the Draft CRA Report.

Prudent retailer hedging strategy

At the First Workshop, CRA acknowledged that establishing the hedging strategy of a retailer was a matter that did not have a single answer, and invited submissions from stakeholders on what might be considered a more appropriate strategy to assume. Retailer stakeholders noted that the main issue was the extent of correlation of the input data used in the modelling. Concern was expressed over the apparent lack of correlation in the data assumptions employed by CRA. Stakeholders noted that data used in the modelling is based on information from disparate sources and little or no consideration is given to the impact of one set of assumptions on another.

In addition, AGL noted that the hedging strategy assumed by CRA in modelling the pool price did not reflect generators' being contracted to 105% of their capacity, as is the case with the hedging strategy of the prudent retailer. In the pool price modelling, generators are assumed to be contracted to only 80% of their capacity.

Stakeholders observed that this 25% gap in contract capacity between generators and retailers would be likely to result in modelling outcomes where retailers would be over contracted (long) to high pool price outcomes, thus reducing the energy purchase cost attributed to retailers. This is not a practical outcomes, as in instances where generators are highly contracted (and one must assume that if retailers are highly contracted, generators will be contracted to almost the same extent) they are likely to moderate their bidding behaviour to reflect this position.

Whilst CRA acknowledged that this gap between supply side and demand side hedging strategies was too wide, they also indicated that perfect correlation in such models was not possible. This point was acknowledged by stakeholders, but it was considered a gap of 25% was too wide to be plausible. CRA agreed to consider this matter further.

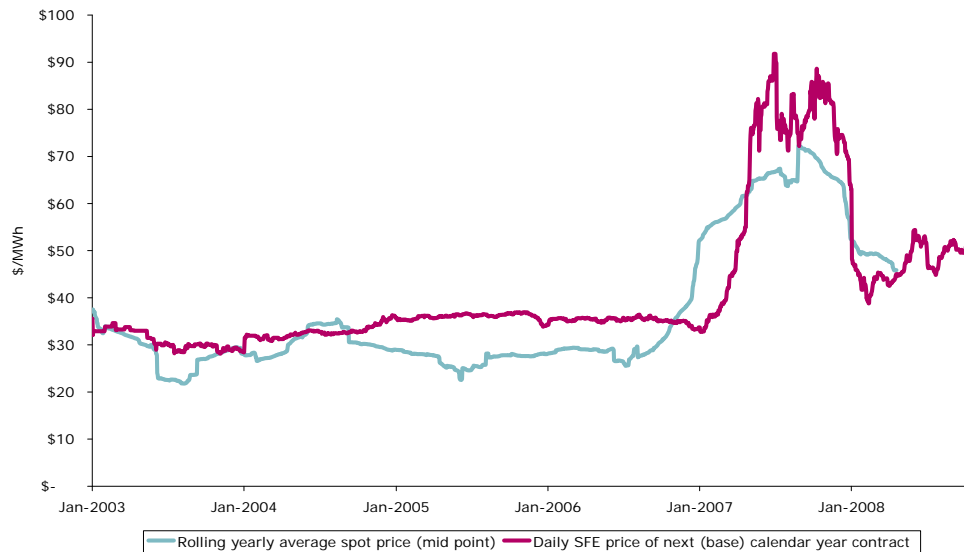
AGL notes that this issue has not been discussed in the supplementary material. AGL expects that CRA will ensure that the modelling done for the purpose of the Second Draft will better reflect the correlation between demand, price and hedging strategies and observable outcomes. AGL notes that CRA implied at the First Workshop that the generators were hedged to 80%.

1.3.1. Contract Price Assumptions

Contract prices have been determined with reference to d-Cypha prices. Stakeholders again expressed concerns as to the relevance of such data given the poor liquidity in trading futures contracts, but also acknowledged the need for transparency provided by this data source.

CRA have forecast contract prices for the period where no data is available based, given the newly extended timeframe, this is expected to be approximately 4.5 months. In the Draft Report, CRA have simply estimated future contract prices by using the average of the last available two months of contract data. These forward contract prices have no relationship to the CRA pool price forecast for either 2008/09 or 2009/10. AGL argued that there is a clear and indisputable relationship between forward contract prices and pool prices. This is demonstrated by the graph below. To ignore this relationship would produce modelling results that lack relevance to estimating the actual costs incurred by retailers.

QLD Yearly Rolling Spot Prices and SFE contract prices



In addition, CRA acknowledged that no consideration had been given to the potential for seasonal factors affecting contract prices in using the last available two months of data to forecast future contract prices. Retailer stakeholders indicated sources of such seasonal factors may include the likely time during the year when pool price volatility will occur, and the effect of demand for contracts that occurs during those times of the year when large customers seek to renew electricity procurement contracts. It was further noted by retailers that the last two months of data that would be available (being December and January) would be unlikely to occur at a time of year when these seasonal factors would be reflected in forward contract prices.

CRA agreed to take submissions on how future contract prices should be forecast and any evidence available to substantiate the seasonal factors described by retailer stakeholders.

AGL agrees with CRA's statement that forecasting future contract prices is difficult. AGL would note however, that if future contract prices are determined to be the average of the past 'x' months, then this must be applied consistently going forward. Further, there can be no substitution of 'actual outcomes' for these forecast prices.

1.3.2. Load Assumptions

CRA confirmed that in determining the load forecast, the day of week had not been properly aligned when scaling the load data, which has resulted in weekday demand occurring on weekends and vice versa.

CRA agreed the issue of day alignment needed to be addressed. AGL notes that CRA have stated in the supplementary material that this has been corrected in the modelling for the Second Draft.



1.3.3. Pool Price Forecast

It was highlighted by stakeholders that there are a number of issues associated with CRA's modelled pool price.

Base Year

CRA have used as a base year for its forward forecast of pool prices the 2006/07 financial year. Stakeholders questioned why this year was used as a basis, as this represented a period pre-drought. CRA indicated this was the reason the 2006/07 year had been used. Given, CRA's preference for using recent history as a forecasting tool, retailer stakeholders felt it would be more appropriate to use the 2007/08 year as this represented the most recent full year data set available.

AGL notes that CRA have now suggested that the appropriate 'base year' data should be based on a normalisation of price duration curves from the last 10 years, to find a price duration curve for a 'typical' year. CRA states that it does not believe it appropriate to use the 2007/08 year, as this was a drought year, and 'no drought restrictions are expected to apply in 2009/10'.

AGL does not accept that the price cycles are properly considered 'pre-drought' conditions, with the Queensland forward market trading at levels that clearly suggest that drought is still being factored into the price.

Notwithstanding this, AGL could accept that using historical price duration curves in the calibration process would achieve a better balance between underlying (under-\$300) and volatile prices (above-\$300) than was observed in CRA's draft report. However, AGL is firmly of the view that historical data prior to 2003 can be appropriately used, as the Queensland market would be fundamentally different because:

- The QNI interconnector commenced operation in 2001 but with very restrictive limits on flow in this year.
- VoLL was increased from \$5,000 to \$10,000 in 2002.

Correlation between Demand and Price

AGL noted that there was a considerable lack of correlation between demand and pool prices, to such an extent that it did not appear that the forecast of demand for the relevant BRCI year, ie 2009/10, had been an input in determining pool prices for this period. CRA confirmed that this indeed was the case, and that a different demand trace had been used to determine the pool price forecast.

AGL and other stakeholders noted that such an analysis was fundamentally flawed and would lead to CRA modelling a prudent retailer that was significantly over contracted (by hundreds of MWs) at periods of high price, thus artificially reducing the Energy Purchase Cost.

The point was made, and AGL have provided substantial evidence, of a very high correlation between demand and pool price.



CRA agreed there was a need to ensure such correlation did exist and committed to using the 2009/10 demand forecast as the input into their pool price forecast. However, AGL notes that CRA have not reiterated this commitment in the supplementary material, and seeks clarification from CRA that they will in fact use this load when modelling spot price outcomes.

Calibration of pool price outcomes

AGL's analysis, contained within its submission on the Draft CRA Report, was used as a basis to discuss the level of volatility in the CRA modelled pool price. Given the extreme volatility in this forecast compared to historical pool prices, it was generally considered such a level of volatility was inappropriate, particularly given CRA's forecast of forward contract prices make no reference to this implied volatility. This results in a position where a retailer is significantly 'in-the-money' on its contract position compared to this pool price forecast. In particular, when combined with a lack of correlation with demand, this results in substantial windfall gains being modelled, again artificially reducing the Energy Purchase Cost.

The level of volatility in the CRA modelled pool price is so extreme that it would breach the Cumulative Price Threshold, which is the price at which NEMMCO would be required to set administered prices if such volatility did occur. As such, this price volatility is not even practically possible.

Although, not confirmed by CRA, it was felt by many stakeholders that the pool price forecast had been calibrated to achieve a weighted average price, but an adjustment in the number of incidences of high prices, rather than by reference to underlying prices.

AGL notes that CRA has not in fact answered the question as to how spot prices are calibrated. CRA has stated that they 'do not use an arbitrary accuracy test of the calibration in the form that seems to be suggested by the question that was raised. AGL is concerned that the inability to reference a specific metric used to calibrate the model suggests that there is no such specific metric, and that the model is in fact 'calibrated' by a simple 'visual' observation of the shape of the price duration curve.

In AGL's view, in order for the spot price simulation to be credible, it must deliver:

- A similar level of correlation between price and demand as is observed historically, especially for half hours with high prices;
- Cap payouts similar to, or slightly less than, current cap premiums (ie less than \$14 for FY 2009/10);
- Underlying prices (ie under-\$300) similar to the current swap price minus the current cap prices (ie around \$39 for 2009/10)

1.3.4. Settlement of hedge position against pool price outcomes

CRA have accepted that the current modelling assume a 'perfect foresight', whereby the retailer's level of cover exactly matches the half-hourly demand. This falsely suppresses the purchasing costs incurred by the theoretical retailer – the retailer has not expended any extra expense in acquiring additional redundant cover, nor has the retailer had any period where it has incurred the costs associated with not having sufficient cover.



CRA have suggested that this can be addressed by applying a 'Monte Carlo' simulation to the forecast demands to provide various sensitivities around half-hourly demand forecasts. AGL believes this could present an acceptable resolution, but makes clear that there must be transparency over this simulation and its results. AGL therefore suggests that:

- All data created by the simulation is provided to stakeholders. AGL does not accept that summary information will be sufficient to enable proper analysis;
- Only 10 or fewer simulations should be run, so as to enable proper analysis of the results; and
- Each simulation should be run with a different pool price associated with the demand trace, so as to preserve the price/demand correlation – ie a low demand trace has an associated pool price trace with fewer high price incidents.

2. Network Costs

Stakeholders requested a session to fully understand the QCA's treatment of network costs over the three year period. The QCA indicated they would consider this.