

Annual energy cost review

RESPONSE TO SUBMISSIONS FROM STAKEHOLDERS – MAY 2008

Following the public release of Frontier Economics' report to IPART on the first annual energy cost review,¹ a number of stakeholders have provided submissions commenting on Frontier Economics' annual review report. This note provides Frontier Economics' responses to the key issues raised by stakeholders.

D-CYPHA DATA

Stakeholders commented on the use of d-cypha data for the purposes of the annual energy cost review. Key issues raised by stakeholders include:

- whether d-cypha data is used in Frontier Economics' modelling;
- the d-cypha prices reported by Frontier Economics; and
- the use of d-cypha prices as a point of comparison.

Each of these issues is addressed below.

Frontier Economics' modelling

Stakeholders raised concerns with the use of d-cypha prices in Frontier Economics' modelling. In particular, stakeholders compared d-cypha prices reported by Frontier in March 2007 and March 2008 as evidence that wholesale energy costs had increased by more than 10 per cent, or suggested that alternative d-cypha prices (such as average d-cypha prices over a period of time) should be used in Frontier Economics' modelling.

Frontier Economics does *not* use d-cypha prices as an input at any stage of its modelling approach. Frontier Economics models price outcomes in the NEM using its energy market model, *SPARK*.² D-cypha prices are presented in Frontier Economics' annual review report merely for the purposes of comparison. The d-cypha prices have no impact on the outcomes of Frontier Economics' modelling.

d-cypha prices reported by Frontier Economics

Stakeholders raised concerns about the accuracy of d-cypha prices reported by Frontier Economics.

All cost estimates reported by Frontier Economics are reported in real terms. For the purposes of comparison, d-cypha prices have also been adjusted into real terms in Frontier Economics' annual review report.

¹ Frontier Economics, *Annual energy cost review*, Final Report, March 2008.

² For a detailed explanation of Frontier Economics' methodology see: Frontier Economics, *Draft methodology for energy costs consultancy and retail costs/margin consultancy*, October 2006.

Using d-cypha prices as a point of comparison

Stakeholders commented that they consider that Frontier Economics' use of d-cypha data as a point of comparison is selective. In particular, some stakeholders raised concerns about Frontier Economics' discounting of the relevance of d-cypha prices for 2009/10.

In the annual review report, Frontier Economics commented that the d-cypha prices reported for 2009/10 reflected a relatively small quantity of trading. Some stakeholders commented on the high volume of trade that is typically achieved for financial electricity contracts. Frontier Economics does not dispute this point, but merely notes that, at this point, trading volumes for 2009/10 are relatively low, and certainly are much lower than trading volumes for the remainder of 2007/08 and for 2008/09.

The relevance of this is that trading volumes give some indication of the financial commitment of generators and retailers to trade at a particular price. Low trading volumes imply a lower degree of financial commitment to a particular price, and are likely to reflect uncertainty about future prices. In fact, one reason for the currently low trading volumes for 2009/10 is likely to be the uncertainty in regard to IPART's decision in regard to this annual review. As some stakeholders noted, markets do not like uncertainty, and the existing uncertainty as to regulated tariffs for 2009/10 is likely to deter trading to some extent.

What this highlights is the difficulty in relying on d-cypha or any other market source of traded contract prices at a particular point in time for the purposes of setting annual energy costs for regulated customers. For example, if IPART set prices in a mechanical way using, say, d-cypha prices in April 2007 for 2008/09, prices would be set at levels far in excess of what would be an efficient price now, which would mean that IPART would not comply with the requirements of their Terms of Reference to ensure prices reflect efficient levels. Also, if regulated tariffs were based on d-cypha or other external sources in a mechanical way, market participants would have an incentive to trade low volumes at high prices leading up to an annual energy cost review. Following the review, market participants could then trade at higher volumes at prices that are more reflective of market dynamics.

HYDROLOGY ASSUMPTIONS

Stakeholders commented that they consider that low hydrology will continue to impact on wholesale energy costs. Frontier Economics agrees with this view and, for this reason, Frontier Economics' modelling for the annual energy cost review adopts the same hydrology assumptions adopted for the low hydrology modelling undertaken for the purposes of the original determination. That is, it is assumed that:

- Snowy produces at 80 per cent of the long-term average and there is significantly more pumping in off-peak times; and
- Dartmouth and Eildon power stations do not run at all.

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Frontier Economics' modelling for the annual energy cost review assumes that Tarong power station is fully available, reflecting the Queensland Government's announcement that water restrictions have been lifted.

In short, while the wholesale energy costs modelled by Frontier Economics for 2008/09 and 2009/10 are not as high as they were for 2007/08, when generation from Swanbank and Tarong was assumed to be restricted due to water availability, the wholesale energy costs modelled by Frontier Economics for the purposes of this annual energy cost review do continue to reflect broader hydrological issues.

INPUT COST ASSUMPTIONS

Stakeholders raised the issue of input cost assumptions for generation plant used for the purposes of Frontier Economics' modelling.

Input cost assumptions for generation plant – including capital costs, fuel costs and other operating costs – can be an important input into energy cost modelling in two circumstances.

First, input cost assumptions are an important input into the determination of the LRMC of generation plant, and were used by Frontier Economics for modelling LRMC for the purposes of the original determination. However, the wholesale energy cost estimated for the purposes of the annual energy cost reviews is explicitly required to be a market-based estimate of energy costs, not an estimate based on LRMC. Therefore, the wholesale energy costs reported by Frontier Economics are based on price outcomes modelled using *SPARK*. These outcomes are based on patterns of optimal bidding behaviour by generators, given the existing market structure (and new entrant generation plant). These outcomes are not based on costs.

Second, input cost assumptions are relevant to modelling patterns of investment in new generation plant, which can, in turn, be incorporated into market-based modelling. In particular, patterns of new investment can lead to changes in the market structure and, therefore, changes in optimal bidding behaviour and price outcomes. However, over the determination period, new entrant generation plant is already committed. Frontier Economics' modelling incorporates the commissioning of Uranquinty, Tallawarra and Colongra power stations over the determination period, as discussed in more detail below.

NEW GENERATION PLANT

Stakeholders commented that there will continue to be an increase in new generation requirements and that the costs of building new generation plant have increased.

As discussed in Frontier Economics' report, modelling assumptions have been updated to reflect the latest demand forecasts in NEMMCO's 2007 Statement of

Opportunities.³ This is the most recent source for these input assumptions, and we consider this the most reliable source for these input assumptions.

In regard to the requirement for new generation plant, Frontier Economics' modelling takes into account committed investments in new generation plant – in NSW this includes the commissioning of Uranquinty power station in 2008/09, Tallawarra power station in 2008/09 and Colongra power station in 2009/10. This amounts to over 1,600 MW of additional generation in NSW during the period of the determination. As this additional generation is commissioned, owners will seek to contract for the output of these plants, which will have an impact on wholesale prices.

THE AVAILABILITY OF CONTRACTS

Stakeholders raised concerns about the availability of contracts in the market. Stakeholders commented that Frontier Economics' modelling implicitly assumes that sufficient contracts are available for retailers to hedge their load to the conservative point on the efficient frontier.

It is certainly the case that Frontier Economics' modelling assumes that sufficient contracts are available. If retailers are, in fact, unable to contract to the level implied by the conservative point on the efficient frontier, an efficient retailer would operate at some other point on the efficient frontier – a point that involves less contract cover and greater spot exposure. As set out in Frontier Economics' annual review report, the conservative point on the efficient frontier is the highest cost and lowest risk point on the frontier. Any other point on the efficient frontier (including any point that involves greater spot exposure) will have lower costs but greater risks. The implication would be that, for given spot and contract price forecasts, a lack of liquidity would involve a lower wholesale energy cost, but would likely imply a greater volatility allowance (due to the greater risk associated with spot market exposure). The volatility allowance is not subject to change as part of the annual energy cost review.

It is also worth considering the likelihood of a continued shortage of contracts in the market. As discussed, one reason for a shortage of contracts may be the continued uncertainty about outcomes in 2009/10, including about IPART's decision for this review. The availability of contracts for 2009/10 may therefore increase with time.

³ NEMMCO released an update to the 2007 Statement of Opportunities in November 2007. This update principally deals with changes to existing and committed plant since the release of the 2007 Statement of Opportunities. Relevantly to Frontier Economics' modelling, the update includes additions to committed plant within the NEM. Most of these new committed plants are scheduled for commissioning beyond the end of the determination period and will not have an impact on the energy cost during the determination period. Of those new committed plant that are scheduled for commissioning during the determination period, Frontier Economics' modelling includes all but QGC's 135 MW CCGT plant, scheduled for commissioning at Condamine in Queensland in August 2009. Generally, an increase in committed generation has the effect of bringing down energy costs. However, the inclusion of an additional 135 MW in Queensland would not have a material impact on wholesale energy costs for the purposes of this review.

THE ROLL-OFF OF THE ETEF

Stakeholders raised concerns about the treatment of the roll-off of the ETEF in Frontier Economics' modelling. Two particular concerns were raised: that Frontier Economics' portfolio optimisation modelling assumes that retailers are covered by the ETEF, and need only contract for that portion of load not covered by the ETEF; and that Frontier Economics' modelling does not take into account the additional risks that standard retailers now face as a result of the roll-off of the ETEF.

Frontier Economics' modelling of spot prices and contract prices does take into account the impact of the roll-off of the ETEF. As discussed in Frontier's draft methodology report,⁴ as the ETEF progressively rolls off, the standard retailers will, almost inevitably, hedge the risks associated with volatile spot prices by entering into contracts. The roll-off of the ETEF is therefore expected to have an effect on the spot market price and these spot price changes may also have an effect on the price and quantity of contracts. This is taken into account in Frontier Economics' *SPARK* modelling. However, Frontier Economics' modelling of the costs of an efficient portfolio does not incorporate the impact of the ETEF on retailers' contracting. The efficient frontiers are determined as the cost of hedging the total regulated load, including that part of the load that is, in fact, covered by the ETEF. That is, the existence of the ETEF is not taken into account in Frontier Economics' *STRIKE* modelling.

In short, the efficient frontiers modelling by Frontier Economics do not incorporate the impact of the ETEF on retailers' contracting positions, but do incorporate the impact of the roll-off of the ETEF on market prices used to formulate the efficient portfolio mix and costs. Frontier Economics considers that this approach is appropriate, given the Terms of Reference requires a focus on new entrant costs, and achieving cost-reflectivity by 2009/10.

The second concern raised by stakeholders is that Frontier Economics' modelling of the wholesale energy cost does not reflect the additional risk to which standard retailers are exposed as a result of the roll-off of the ETEF. Frontier Economics considers that IPART's original determination addresses these risks through a series of related measures, including basing energy costs on the most conservative point on the efficient frontier. These measures are outlined in Frontier Economics' report to IPART for this first annual energy cost review, and discussed in detail in IPART's original determination. These additional measures remain in place and, in Frontier Economics' view, provide appropriate compensation for the additional risk to which standard retailers are exposed as a result of the roll-off of the ETEF.

⁴ Frontier Economics, *Draft methodology for energy costs consultancy and retail costs/margin consultancy*, October 2006.

GLIDE PATH

Stakeholders commented that the glide-path used in determining regulated tariffs has the effect of exposing retailers to losses. In a related point, stakeholders also commented that wholesale energy costs have been high during the first year of the determination, and that retailers have been unable to contract at the level of wholesale energy costs incorporated into regulated tariffs. Stakeholders point to lower levels of customer churn over the first year of the determination as evidence of this.

These issues are really related to the form of tariff regulation, rather than the level of the wholesale energy cost per se. As such these issues are beyond the scope of this annual energy cost review. However, it is worth noting that these issues were raised during the original determination, and that IPART set out the reasons for adopting a glide path in its determination.⁵ Briefly, IPART considered that a number of factors support a straight line glide path, including:

- the hypothetical retailer costs are expected to overstate the costs of the Standard Retailers as their regulated load is at least partly supported by the ETEF until 27 June 2010;
- the Terms of Reference require the Tribunal to ensure that tariffs recover costs by 30 June 2010, and a straight line glide path meets this requirement while recognising that there are benefits for customers in providing a stable and smooth tariff path; and
- it is a simple, understandable, practical and pragmatic approach, whereas tariffs that followed costs each year would result in substantial increases in tariffs in the first two years of the determination period followed by tariff reductions in the final year.

With higher wholesale costs during the early part of the determination period, and a straight line glide path towards cost reflectivity by 2010, there would be expected to be some impact on levels of customer churn during the early part of the determination period. While stakeholders have pointed to lower levels of customer churn during 2007/08, customer churn has certainly continued during the early part of the determination period. As tariff levels increase in line with the glide path, and as contract prices moderate from the high levels seen during 2007, customer churn would be expected to increase again.

In any case, the Terms of Reference require that the estimate of wholesale energy costs be forward-looking. Frontier Economics' modelling indicates that wholesale energy costs will fall over the period of the determination. This is also reflected in d-cypha prices. For this reason, outcomes in the early stages of the determination period should not be taken as indicative of outcomes in the later stages of the determination period.

⁵ IPART, *Promoting retail competition and investment in the NSW electricity industry: Regulated electricity retail tariffs and charges for small customers 2007 to 2010*, Final Report and Final Determination, June 2007.

CONCLUSIONS

Following careful consideration of the submissions in response to IPART's draft report on the annual energy cost review, Frontier Economics' view on wholesale energy costs remains as set out in Frontier Economics' annual review report. That is, Frontier Economics' considered view is that wholesale energy costs for 2008/09 and 2009/10 have not changed by 10 per cent or more compared to wholesale energy costs in IPART's original determination.

Frontier Economics' view on wholesale energy costs for each standard retailer and for each of 2008/09 and 2009/10, as originally set out in Frontier Economics' annual review report, is summarised in Figure 1. The blue bars are the wholesale energy costs from IPART's original determination, including 10 per cent error bars. The yellow bars are Frontier Economics' current view on wholesale energy costs.

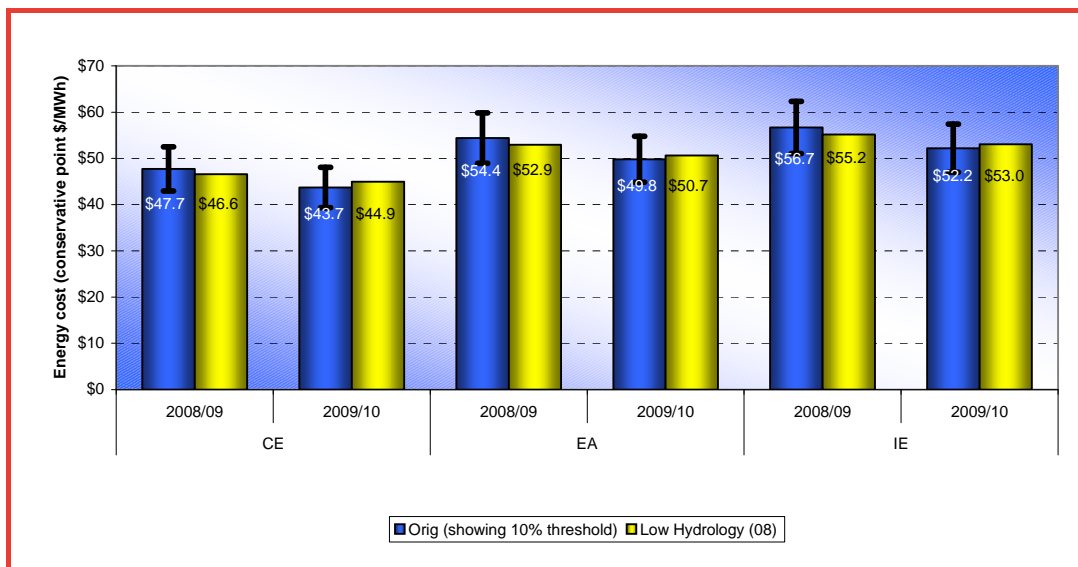


Figure 1: Wholesale energy costs compared to IPART's Final Determination (\$2006/07)