



Independent Pricing and Regulatory Tribunal

Market-based electricity purchase cost allowance – 2008 review

**Regulated electricity retail tariffs and charges for
small customers 2007 to 2010**

Electricity — Final Report
May 2008

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1 Overview

The Independent Pricing and Regulatory Tribunal of NSW (IPART) is responsible for setting the regulated retail electricity tariffs charged by the Standard Retailers in NSW – Country Energy, EnergyAustralia and Integral Energy – to small retail customers on standard form customer contracts.¹

On 14 June 2007, IPART released its determination on regulated electricity retail tariffs and charges for small customers from 2007 to 2010 (the 2007 determination). IPART included an annual review of the market-based electricity purchase cost allowance (the review), to factor into the determination material step-changes in this allowance, if required. The annual review is a mechanical review in the sense that it does not involve any policy decisions and applies the pre-determined methodology that is set out in the 2007 determination.

This report presents IPART's final decision for its first annual review of the market-based electricity purchase cost allowance. It follows a draft report released in March 2008 and the consideration of public submissions on that draft report.

Consistent with the draft report, IPART's final decision is that the 10 per cent threshold has not been met in 2008/09 or 2009/10 and there is, therefore, no change to the electricity cost purchase allowance from that set out in the 2007 determination. Therefore, IPART's determination of the retail component of prices remains unchanged from the 2007 determination. However, the total retail price includes both retail and network components. The network component is effectively passed through into the retail price. Network charges for 2008/09 are not yet finalised and, therefore, it is not possible to calculate the average total price increase for each Standard Retailer. IPART will advise of the average price increases prior to the price change date of 1 July 2008.

In deciding not to change the market-based electricity purchase cost allowance from that provided in the 2007 determination, IPART considered submissions made by stakeholders and expert advice from Frontier Economics. The advice from Frontier Economics is available on IPART's website, including supplementary advice provided in response to issues raised in submissions. IPART based the allowance on

¹ Customers consuming less than 160 MWh per annum of electricity can be supplied under a standard form customer contract and, therefore, be subject to a regulated tariff or can enter into a negotiated contract.

Frontier Economics' models rather than market data (for example, as provided by d-cypha). IPART has accepted Frontier Economics' advice because:

- ▼ IPART used the market-based electricity purchase costs calculated using Frontier Economics' models for the 2007 determination and regulatory consistency suggests the same approach should be used this year;
- ▼ While recognising that the amount of trade captured in the d-cypha data has increased, those prices reflect trades for small quantities of electricity, which are only part of the hedging cover used by retailers, who also enter into large bilateral trades with generators. Further, based on Frontier's advice, the d-cypha prices may not be representative of the prices that the market expects will occur in the future; and
- ▼ On 12 February 2008 the Queensland Minister for Mines and Energy announced the easing of water restrictions on Tarong North and Swanbank power station. This and other evidence indicates that the short-term supply shortages that have occurred in the electricity market are easing.

2 Background and process

2.1 2007 determination

In June 2007 IPART released its determination on regulated electricity retail tariffs and charges for small customers from 2007 to 2010.² In undertaking its review and making its determination, IPART was guided by the terms of reference provided by the Minister for Energy. These terms of reference required IPART to, among other things:

- ▼ Assess the costs of a hypothetical retailer, including the electricity purchase costs for the regulated load in each Standard Retailer's supply district, and the retail costs and retail margin for a mass market new entrant.
- ▼ Recognise retailers' hedging, risk management and transaction costs, particularly given that the ETEF³ will be phased out during the determination period.

For 2010, IPART set the regulated control on the retail component of prices – the R values (in \$2006/07) that reflect the following factors:

- ▼ The market-based electricity purchase costs, based on the Frontier Economics' conservative point estimate for each business.
- ▼ The volatility allowance.
- ▼ Costs associated with greenhouse reduction and renewable energy requirements.
- ▼ Retail operating costs (including customer acquisition costs) and retail margin.
- ▼ NEM fees, and
- ▼ Energy losses.

IPART decided to set the R values for 2007/08 and 2008/09 to reflect a transition to the calculated hypothetical retailer costs in 2009/10.

² IPART, *Promoting retail competition and investment in the NSW electricity industry, Regulated electricity retail tariffs and charges for small customers 2007 to 2010, Electricity – Final Report and Final Determination*, June 2007.

³ ETEF is the Electricity Tariff Equalisation Fund, put in place by the NSW Government. Standard Retailers contributed to and/or withdraw from the fund based on differences between the actual price they pay for electricity and the cost of electricity assumed in setting regulated retail tariffs.

2.1.1 Electricity purchase cost allowance

IPART engaged Frontier Economics to provide expert advice on the electricity purchase cost allowance included in its determination by specifically addressing the relevant matters set out in the terms of reference. Frontier Economics provided advice to IPART on:

- ▼ The long-run marginal cost of electricity generation.
- ▼ Market-based electricity purchase costs, based on analysis of the efficient mix of electricity purchasing instruments for each level of risk, derived using its portfolio optimisation models (STRIKE). The results of this analysis formed an efficient frontier with the expected cost of the electricity portfolio on the vertical axis and the associated risk on the horizontal axis. Frontier Economics identified two points on each frontier – a conservative point, representing the lowest risk, highest cost point on the frontier, and an elbow point, representing a lower cost but higher risk portfolio.

In its determination IPART adopted Frontier Economics' conservative point estimate of the market-based electricity purchase costs for calculating the R values.

Around the time that IPART released its draft report in April 2007 there were substantial increases in reported spot and contract wholesale electricity prices. These increases highlighted the relationship between critical inputs (such as water), plant availability and the market price of electricity.

IPART determined the market-based cost of electricity purchases, as set out in Table 2.1 and addressed the risk of a step-change in future wholesale electricity prices by conducting the annual reviews of this cost allowance.

Table 2.1 IPART’s 2007 market-based cost of electricity purchase – Conservative point by time-of-use (2006/07 \$/MWh)

| Description | 2007/08 | 2008/09 | 2009/10 |
|------------------------|-------------|-------------|-------------|
| Country Energy | | | |
| Peak | 70.0 | 67.9 | 58.9 |
| Shoulder | 76.0 | 73.8 | 64.6 |
| Off-peak | 28.1 | 28.0 | 28.1 |
| All periods | 48.7 | 47.7 | 43.7 |
| EnergyAustralia | | | |
| Peak | 106.7 | 103.6 | 91.0 |
| Shoulder | 50.8 | 49.8 | 45.7 |
| Off-peak | 29.6 | 29.6 | 30.1 |
| All periods | 55.6 | 54.4 | 49.8 |
| Integral Energy | | | |
| Peak | 116.9 | 113.3 | 99.0 |
| Shoulder | 49.6 | 48.9 | 45.1 |
| Off-peak | 31.5 | 31.5 | 31.9 |
| All periods | 57.8 | 56.7 | 52.2 |

Source: IPART, *Promoting retail competition and investment in the NSW electricity industry, Regulated electricity retail tariffs and charges for small customers 2007 to 2010, Electricity – Final Report and Final Determination*, June 2007, p 84.

2.1.2 The annual review of market-based electricity purchase cost allowance and R values

After considering submissions to the draft determination and the supplementary advice provided by Frontier, IPART decided to include annual price reviews of the market-based electricity purchase cost component. IPART’s intention was to provide for updated information on electricity purchase cost allowances to be incorporated into the prices as if it was known at the time of making the 2007 determination. Therefore, IPART limited the extent of these reviews, stating in its report:

- ▼ The review will examine the market-based electricity purchase cost allowance only – it will NOT consider long-run marginal cost of electricity generation, the volatility allowance, green energy costs, NEM fees, retail operating costs, customer acquisition costs or the retail margin.
- ▼ IPART will engage an expert to advise it on the appropriate future market-based electricity purchase cost allowance.
- ▼ IPART will adopt a conservative approach to estimating the market-based electricity purchase cost and focus on changes to the spot and contract prices for electricity.
- ▼ IPART will use the same load profiles as it used in the 2007 determination – it will not update the load profiles.

- ▼ These reviews will commence by 1 March 2008 and 1 March 2009. IPART will release a draft report and consult with stakeholders prior to issuing its final decision by 20 May in each year.

If, in any year, the market-based electricity purchase cost allowance is at least 10 per cent higher or lower than IPART's determined market-based electricity purchase cost allowance, then IPART will reconsider the transition path (to 2010 prices) and recalculate the R values.⁴ In doing so, it will consider:

- ▼ the revised market-based electricity purchase cost allowance and
- ▼ the transitioning of the tariffs to full cost reflectivity by 2009/10.

This review is a forward-looking review and does not look at the actual costs of hedging incurred by the Standard Retailers.

2.2 Process for 2008 review of market-based electricity purchase costs

In March 2008 the Tribunal released its draft report on assessing market-based electricity purchase costs for 2008/09 and 2009/10 and called for submissions. Additionally, IPART engaged Frontier Economics to prepare a report outlining its expert opinion of the market-based electricity purchase cost allowance for 2008/09 and 2009/10, which is available on the IPART website. On 17 March 2008 IPART held a stakeholder information session on the draft report and the consultant's report.

After considering stakeholder input from submissions and the public forum and further advice from Frontier Economics, the Tribunal has made its final decision, as set out in this report.

⁴ The R values are set out in sections 7.3 and 7.4 of the 2007 determination.

3 2008 review of market-based electricity purchase cost allowance

3.1 Expert report

Frontier Economics has provided expert advice to IPART on its current views on the market-based electricity purchase cost allowance. Consistent with the approach taken in providing advice to IPART for the 2007 determination, Frontier Economics used its models – WHIRLYGIG, STRIKE and SPARK - to estimate the market-based electricity purchase costs.⁵

In its March 2008 report, Frontier Economic noted that since IPART made its determination in June 2007, rainfall has been above average across South-East Australia. This resulted in the Queensland Minister for Mines and Energy announcing in February 2008 the easing of water-use restrictions on Tarong North and Swanbank power stations. Frontier Economics considered that this easing of restrictions will put downward pressure on prices over the remainder of 2008. Frontier Economics concluded:

Based on Frontier Economics' modelling work, and the recent drop in d-cypha prices to levels seen prior to the introduction of water restrictions to Tarong North and Swanbank, Frontier Economics considers that the market-based electricity purchase cost allowance for 2008/09 does not differ by 10 per cent or more from the allowance incorporated in IPART's Final Determination.⁶

Frontier Economics calculated the market-based electricity purchase costs, set out in its report and reproduced in Table 3.1, based on the same modelling approach as used in the 2007 determination.

After considering stakeholder input to IPART's draft report, Frontier Economics provided supplementary advice to IPART in April 2008, stating:

Following 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 it was 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.⁷

⁵ Frontier Economics, *Draft methodology for energy cost consultancy and retail costs/margin consultancy – Frontier Economics*, October 2006, available on the IPART website.

⁶ Frontier Economics, *Annual energy cost review, Final Report*, March 2008, p 21.

⁷ Frontier Economics, *Response to submissions from Stakeholders*, April 2008, p 7.

3.2 Responses to IPART's draft report

In March 2008 IPART released its draft report, calling for submissions, and held a public forum. IPART's draft decision was that the 10 per cent threshold had not been met and there would be no change to the electricity cost purchase allowance from that set out in the 2007 determination.

IPART received submissions from the Standard Retailers, two second tier retailers and d-cypha. While a number of issues were raised in submissions, there were four common issues raised:

1. the difference between the Frontier Economics recommendations and the d-cypha prices in 2009/10;
2. the liquidity of the contract market;
3. the impact of the level of the regulated tariffs on the competitiveness of the market in 2007/08; and
4. the input cost assumptions used by Frontier Economics in its modelling.

3.2.1 The difference between the Frontier Economics estimates and d-cypha prices

Submissions noted that if d-cypha prices were used, the 10 per cent threshold test would be met in 2009/10 and the R values would need to be recalculated. However, in its 2007 determination the Tribunal stated:

The Tribunal also considered whether, in undertaking these annual reviews, it would assess significant movements in market-based electricity purchase costs using publicly available sources of price information or expert advice. One source of information is the AFMA Curve. However, the AFMA Curve is an industry price survey, and therefore represents each participant's view of where the future market lies (as opposed to actual trading prices). This means it is open to manipulation.

Another source of information is d-Cypha, which represents eight futures products based on both base-load and peak-period electricity bought and sold over a calendar quarter in the NEM in NSW, Victoria, South Australia and Queensland. However, while trade has increased significantly in recent months, in absolute terms d-Cypha trade is relatively small and, therefore, at this time does not adequately represent the contract market.

The Tribunal concluded that, for the purpose of setting the market-based electricity purchase cost allowance, the use of expert advice is superior to relying on the publicly available information. Therefore, for each annual review of this allowance, the Tribunal will engage an expert to advise it on the appropriate future market-based electricity purchase cost allowance.⁸

Submissions also noted the increasing trade captured in the d-cypha price. While the Tribunal notes that the d-cypha price reflects an increasing amount of trade, it

⁸ IPART, *Promoting retail competition and investment in the NSW electricity industry, Regulated electricity retail tariffs and charges for small customers 2007 to 2010, Electricity – Final Report and Final Determination*, June 2007, p 86.

considers that retailers would not rely solely on the futures market to construct their hedging position but would also rely on bilateral trades with generators. Further, the d-cypha prices represent small parcels of electricity, typically 1 MW.

In its supplementary report, Frontier Economics stated:⁹

... the d-cypha prices reported for 2009/10 reflected a relatively small quantity of trading. Some stakeholders commented at length 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.

Further, the Tribunal established in its 2007 determination that it would rely on the advice of an expert. In providing its advice, Frontier Economics included point-in-time d-cypha prices for comparative purposes. However, in deriving its own estimates, Frontier Economics modelled the market, consistent with the approach that it took in its advice to the Tribunal for the 2007 determination. The Frontier Economics methodology was generally accepted in the 2007 determination process.

3.2.2 The liquidity of the contract market

Retailers commented on the difficulty in obtaining economic hedge cover for the period until 2009/10, arguing that it is difficult to secure sufficient cover at the prices included in the 2007 determination.

Frontier Economics responded by saying that the modelling does assume that the contracts are available and that increasing spot exposure would increase the calculated amount of the volatility allowance. The volatility allowance of less than \$1/MWh included in the 2007 determination is not being examined as part of this review. Further, Frontier Economics noted that the availability of contracts might increase as certainty increases within the market.¹⁰

The NSW Government is moving the retail lists and functions of EnergyAustralia, Integral Energy and Country Energy to private operators, and leasing the existing state-owned generators to private operators. Uncertainty surrounding this sale process is asserted to be contributing to the illiquidity in the contract market.

⁹ Frontier Economics, *Annual energy cost review – Response to submissions from stakeholders*, April 2008, p 2.

¹⁰ Frontier Economics, *Annual energy cost review – Response to submissions from stakeholders*, April 2008, p 4.

3.2.3 The competitiveness of the market in 2007/08

Stakeholders noted the impact of the increased 2007 wholesale prices on the competitiveness of the NSW market, arguing that over the past 12 months the wholesale energy allowance included in the regulated tariff has been too low. It has been argued that customers in NSW have returned to the regulated tariff over the past 12 months.

IPART is concerned by anecdotal evidence of increasing reliance on regulated tariffs. However, this trend is in response to short term events in the market, which are expected to be reversed. Objectives of the 2007 determination included facilitating the development of effective retail competition for small retail customers and reducing customer's reliance on regulated prices.

As set out in Section 1, this review is a prospective review. Therefore, IPART is not considering the actual outcomes over 2007/08 but is looking at appropriate prices for 2008/09 and 2009/10. The 2007 determination targeted full cost recovery in 2010, as required by the terms of reference. The years prior to 2010 form part of the transition path that IPART determined and the Tribunal recognises that tariffs remain below that of the hypothetical retailer in 2007/08 and 2008/09.¹¹

IPART considers that once tariffs are at fully cost reflective levels from 2010, it will have facilitated the development of effective competition. The annual review process is an important element of achieving cost reflective tariffs in 2010.

3.2.4 Input cost assumptions

Stakeholders commented on the input cost assumptions used by Frontier Economics in its modelling. Under the Frontier Economics modelling approach, input cost assumptions, including capital and operating costs, including fuel costs, factor into the market based prices by changing the market structure and, therefore, optimal bidding strategies and price outcomes. However, over the period until 2010, plant had already been committed and Frontier Economics' modelling incorporates the commissioning of Uranquinty, Tallawarra and Colongra power stations.

Further, consistent with the assumptions used in the 2007 determination process Frontier Economics has relied on information from NEMMCO. It has, however, updated the demand assumptions to reflect to 2007 Statement of Opportunities, which is NEMMCO's most recent information. Frontier Economics has used the most recent information in its modelling.

3.3 IPART's 2008 final decision on market-based electricity purchase cost allowances for 2008/09 and 2009/10

IPART's final decision is that the 10 per cent threshold has not been met and there is therefore no change to the market-based electricity purchase cost allowance from that set out in the 2007 determination. The change in the average retail price will reflect

¹¹ The hypothetical retailer, as established in the 2007 determination, reflects the retail operating costs and margin of a mass market new entrant but energy costs based on the Standard Retailers load profiles and required the Tribunal to consider the phasing out of ETEF.

the retail components as set out in the 2007 determination, combined with the network charges applicable for 2008/09. IPART will advise of the average price change for each Standard Retailer prior to the price change date of 1 July 2008.

In deciding not to change the market-based electricity purchase cost allowance IPART considered expert advice from Frontier Economics and submissions from stakeholders. This advice is available on IPART's website. IPART stated that it would base the allowance on Frontier Economics' models rather than market data (for example, as provided by d-cypha). IPART has accepted Frontier Economics' advice because:

- ▼ IPART used the market-based electricity purchase costs calculated using Frontier Economics' models for the 2007 determination and regulatory consistency suggests the same approach should be used this year;
- ▼ While recognising that the amount of trade captured in the d-cypha data has increased, those prices reflect trades for small quantities of electricity, which are only part of the hedging cover used by retailers, who also enter into large bilateral trades with generators. Further, based on Frontier's advice, the d-cypha prices may not be representative of the prices that the market expects will occur in the future; and
- ▼ On 12 February 2008 the Queensland Minister for Mines and Energy announced the easing of water restrictions on Tarong North and Swanbank power station. This and other evidence indicates that the short-term supply shortages that have occurred in the electricity market are easing.

As shown in Table 3.1, Frontier Economics' estimates for 2008/09 and 2009/10 are only slightly different from those estimated in 2007. The market-based electricity purchase cost allowance is unchanged because the 10 per cent threshold in the determination is not changed in either year.

Table 3.1 IPART's market based electricity purchase cost allowances for 2008/09 and 2009/10 (as allowed in determination) compared to the estimates provided by Frontier Economics in March 2008 (2006/07 \$/MWh)

| | IPART's 2007 determination | Frontier Economics' March 2008 estimates | Percentage change |
|-----------------|----------------------------|--|-------------------|
| 2008/09 | | | |
| Country Energy | 47.7 | 46.6 | -2.3% |
| EnergyAustralia | 54.4 | 52.9 | -2.8% |
| Integral Energy | 56.7 | 55.2 | -2.6% |
| 2009/10 | | | |
| Country Energy | 43.7 | 44.9 | 2.7% |
| EnergyAustralia | 49.8 | 50.7 | 1.8% |
| Integral Energy | 52.2 | 53.0 | 1.5% |

Source: IPART, *Promoting retail competition and investment in the NSW electricity industry, Regulated electricity retail tariffs and charges for small customers 2007 to 2010, Electricity – Final Report and Final Determination*, June 2007 p 84 and Frontier Economics *Annual energy cost review, Final Report*, March 2008, p 19.

3.4 Price increases for 1 July 2008

Table 3.2 sets out the applicable R values for 2008/09.

Table 3.2 R values in each year of the determination (\$2006/07)

| Description | 2007/08 | 2008/09 | 2009/10 |
|-----------------------------|---------|---------|---------|
| Country Energy | | | |
| Fixed R | 69.5 | 77.3 | 85.9 |
| Variable R: | | | |
| Single rate and time of use | 72.5 | 72.9 | 73.2 |
| Controlled load A | 43.9 | 44.2 | 44.5 |
| Controlled load B | 58.4 | 60.3 | 62.1 |
| EnergyAustralia | | | |
| Fixed R | 69.5 | 77.3 | 85.9 |
| Variable R: | | | |
| Single rate and time of use | 67.2 | 70.1 | 73.0 |
| Controlled load A | 42.1 | 43.1 | 44.2 |
| Controlled load B | 53.8 | 56.2 | 58.8 |
| Integral Energy | | | |
| Fixed R | 69.5 | 77.3 | 85.9 |
| Variable R: | | | |
| Single rate and time of use | 70.7 | 74.8 | 79.0 |
| Controlled load A | 43.7 | 45.6 | 47.5 |
| Controlled load B | 54.1 | 57.5 | 61.1 |

Source: IPART, *Promoting retail competition and investment in the NSW electricity industry, Regulated electricity retail tariffs and charges for small customers 2007 to 2010, Electricity - Final Report and Determination*, June 2007, p 112.