



ICRC

independent competition and regulatory commission

Retail prices for franchise electricity
customers 2013–14

Energy purchase cost information paper

Report 3 of 2013

April 2013

The Independent Competition and Regulatory Commission (the Commission) was established by the *Independent Competition and Regulatory Commission Act 1997* (ICRC Act) to determine prices for regulated industries, advise government about industry matters, advise on access to infrastructure, and determine access disputes. The Commission also has responsibilities under the ICRC Act for determining competitive neutrality complaints and providing advice about other government-regulated activities. Under the *Utilities Act 2000*, the Commission has responsibility for licensing utility services and ensuring compliance with licence conditions.

Correspondence or other inquiries may be directed to the Commission at the addresses below:

Independent Competition and Regulatory Commission
PO Box 161
Civic Square ACT 2608

Level 8
221 London Circuit
Canberra ACT 2601

The Commission may be contacted at the above addresses, by telephone on (02) 6205 0799, or by fax on (02) 6207 5887. The Commission's website is at www.icrc.act.gov.au and its email address is icrc@act.gov.au.

Contents

1	Introduction	1
2	Commission’s approach in the 2012–14 Final Report	1
3	What the Commission proposed in the 2012–14 Final Report	3
4	Market review 2012–13	4
5	EPC data analysis	4
6	Proposed Approach	6
	Abbreviations and acronyms	9
	References	11

1 Introduction

In the Final Report for the review of retail prices for franchise electricity customers for 2012–14 (ICRC 2012b), the Commission undertook to examine the energy purchase cost (EPC) data sources before completing the 2013-14 price reset. This undertaking resulted from the uncertainty in the wholesale electricity market generated by the Australian Government’s price on carbon legislation, which took effect on 1 July 2012.

This information paper first outlines the Commission’s undertaking. The next section outlines the Commission’s EPC decision in the 2012–14 final price direction. The paper then presents an examination and analysis of the forward and futures markets for electricity. A proposal on how to proceed with the EPC methodology and whether a review is required is presented in the final section.

2 Commission’s approach in the 2012–14 Final Report

Prior to the 2012–14 price direction, the Commission used Australian Securities Exchange (ASX) data while acknowledging that electricity retailers in fact enter into over the counter (OTC) contracts. The Commission assumed and empirical evidence demonstrated that arbitrage between the ASX futures market and OTC forward markets ensured ASX futures prices were reflective of OTC forward prices.¹ Based on this assumption, the Commission’s preference was to use the exchange-traded ASX data instead of OTC contract data due to the lack of transparency inherent in the OTC contract market. However, the uncertainty in recent years regarding the introduction of a price on carbon fundamentally changed the nature of the electricity contracting market. Therefore, the Commission reconsidered its underlying assumption.

Confronted by the price-on-carbon uncertainty and the associated drop in energy-contracting liquidity, the Commission identified two options for estimating energy purchase costs for the 2012–14 price direction. The first was to retain exchange-traded ASX data and alter the period over which data was collected to capture prices when the market was operating with sufficient liquidity. The second option was to alter the data source to reflect the forward OTC contracts entered into by electricity retailers.

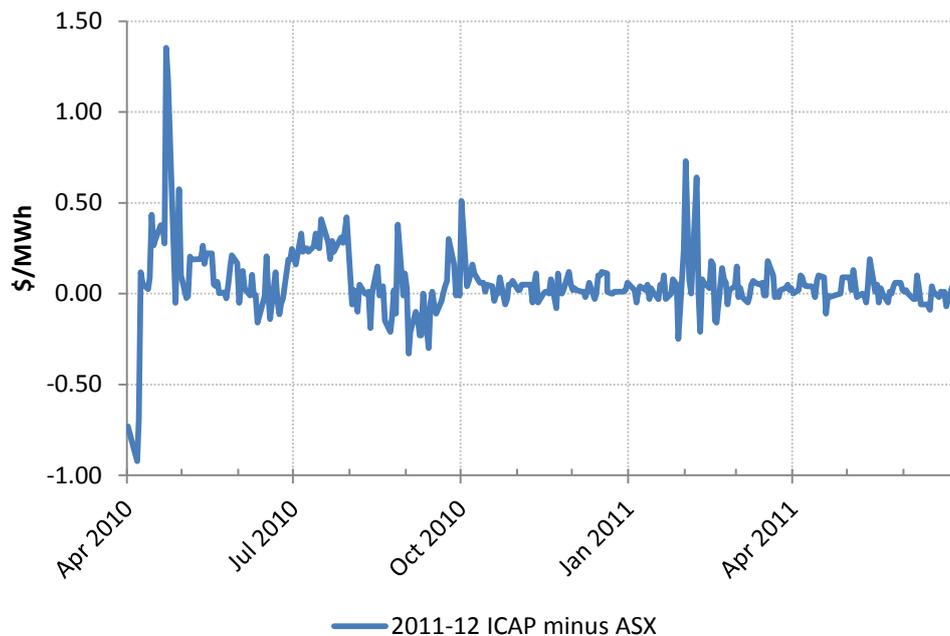
The Commission chose the latter option as ASX prices were no longer an accurate representation of OTC contracts. Moreover, the use of ASX data would likely underestimate the energy purchase costs of a retailer. The Commission identified this

¹ The Commission calculates energy purchases costs using a model populated with futures price information. A futures contract commits the seller to provide and the buyer to purchase a commodity at the agreed price at a designated time in the future. The contract itself is a standardised contract in which all terms have been defined and agreed to, leaving price as the only remaining point of negotiation.

as a possibility given the different ways in which the two contracts price the cost of carbon.² The cost of carbon is implicitly included in the ASX contract price, whereas the OTC market developed carbon exclusive contracts through the AFMA Carbon Benchmark addendum (AFMA 2010; 2012). The addendum explicitly addresses the manner in which costs associated with the carbon pricing mechanism are passed-through. Therefore, to estimate costs for 2012–13 the Commission adopted the OTC carbon-exclusive data provided by ICAP with an adjustment for the price of carbon based on the AFMA Carbon Benchmark addendum.

In reaching this conclusion, the Commission was satisfied that ICAP OTC data provided a reasonable estimation of the underlying contract prices incurred by electricity retailers. This was based on the analysis of ICAP and ASX data during 2011–12 before the introduction of the price on carbon, as presented in Figure 1.

Figure 1 Difference between ICAP and ASX for 2011–12 futures prices



The figure (ICRC 2012b, p. 9):

shows the difference in \$/MWh between the ICAP and ASX data for 2011 12 contract prices ... the difference is generally less than \$0.20 on an average contract price of approximately \$40/MWh. In comparing the contracts it is important to note that both

² The Commission makes a distinction between the ‘price on carbon’ and the ‘cost of carbon’. The price on carbon is that legislated by the Australian Government through the Clean Energy Legislative Package. The price has been fixed for the first three years of the scheme; it is \$23 a tonne of carbon pollution in 2012–13 (CER 2013). The cost of carbon is the cost associated with carbon dioxide equivalent emissions due to electricity generation. For carbon-inclusive contracts, it is implicitly included in the settlement price. For carbon-exclusive contracts, it is defined through the AFMA Carbon Benchmark addendum (2010), where it is represented as the product of the price on carbon and the CO₂EII for the NEM published by AEMO.

types of contract for settlement during 2011-12 were carbon-exclusive. Hence the ASX and OTC contracts are able to be considered on like-with-like terms prior to the introduction of the carbon-exclusive contracts for 2012/13 settlement and beyond.

The analysis demonstrates equivalence between the contracts, thus supporting the view that ICAP OTC data was a reasonable estimation of contract prices faced by retailers.

3 What the Commission proposed in the 2012–14 Final Report

The final report (ICRC 2012b, p. 33) stated that:

the Commission will undertake a review of the energy purchase cost methodology where it believes that market developments in relation to energy purchasing arrangements have changed such that the current methodology of determining energy purchase costs is no longer appropriate. Should a review be deemed necessary, the Commission will undertake a public process based on the release of an issues paper and/or technical working paper, and draft and final reports. The development of any revised methodology would take place within the confines of the existing energy purchase cost model.

The proposal to include the option of a review of the EPC methodology was to allow sufficient flexibility to address further uncertainty regarding the price on carbon and its impacts on the wholesale electricity market. The Commission limited the scope of any review to the most appropriate data source: either market data (i.e. ASX from d-cyphaTrade) or over-the-counter data (i.e. OTC from ICAP) within the Commission's model. It is important to note that the Commission committed to retaining the existing EPC model for the 2013–14 price reset as part of the two-year price direction.

The Commission stated the following position with regard to the forward price source (ICRC 2012b, pp. 11-12):

[while it] is comfortable with the use of the ICAP data for 2012–13, it retains its preference to use exchange-traded data where possible. The Commission will monitor the ASX and ICAP futures prices and will consider returning to the use of exchange-traded data in the future.

The Commission stated it will undertake a review of the EPC methodology where it believes market developments in relation to energy purchasing arrangements have changed such that the current methodology for determining energy purchase costs is no longer appropriate.

There are two steps in forming a view on whether a review is necessary. The first step is to describe any changes to the wholesale market for electricity including the associated forward and future markets that have occurred over the past year. The second step is to examine the price histories of the ASX and ICAP data over the

relevant time period and ensure there are no irregularities or anomalies to preclude using one of these data sources.

4 Market review 2012–13

There have been no significant changes in the wholesale market for electricity or significant policy announcements impacting on carbon pricing arrangements in 2013–14 since the introduction of the price on carbon. This is evident in the data available on the spot market as well as the futures market. In fact, it appears that the spot market for electricity has behaved very similarly in the current year to the market in 2011–12 except for the increase in the price of electricity due to the imposition of the price on carbon. Both years exhibit very stable prices with very few price spikes. The only interesting observation is that the wholesale price is about \$27 higher in 2012–13 than in 2011–12. This is greater than the cost of carbon and possible explanations for the increase above the cost-of-carbon effect could be changes in input or fuel prices or changes in hedging strategies.

Trading in the ASX electricity futures is more robust in 2013–14 than in 2012–13. The level of open interest for futures contracts is higher especially in the far dated futures. However, the level of trading in the futures market has not returned to the levels observed in 2009–10 through 2011–12 prior to the announcement in February 2012 of the intention to introduce a price on carbon. Again, there is little volatility observable in futures market for quarterly contracts in the financial year 2013–14.

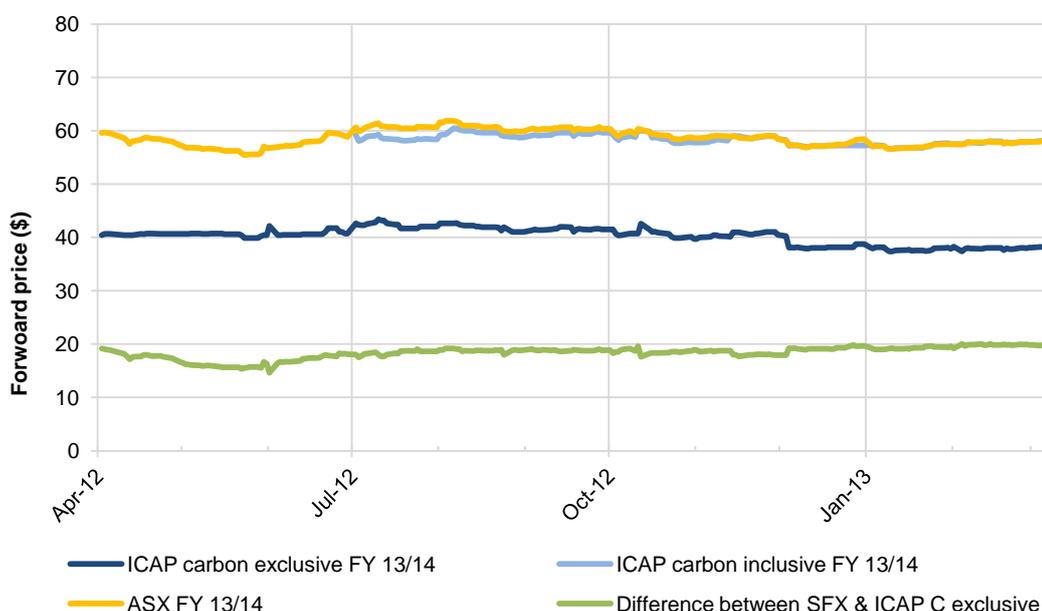
The only noteworthy change is that ICAP now reports on two sets of electricity contracts. The first is the OTC carbon-exclusive contracts under the AFMA addendum which separate the carbon legislative risk from the other risks associated with the production of the electricity being purchased. In other words, the contracts specify one cost for the physical electrons being transferred through the electricity grid, excluding the impact of the price on carbon, and another for the carbon-dioxide-equivalent emissions produced by the generation of that electricity. The latter cost is determined when the electricity is delivered and the applicable price on carbon is known whereas the former cost is set when the contract is made. This is the data the Commission used in 2012. ICAP also provides OTC carbon-inclusive contracts similar to the futures contracts traded on the ASX. These implicitly include the cost of carbon and the inherent risk associated with carbon legislation. In essence, if the carbon scheme were to end today the retailers who have purchased OTC carbon-inclusive contracts would still be responsible for the full settlement price. The price data for these contracts is examined in the next section.

5 EPC data analysis

This section examines the relationship between ASX and ICAP OTC data for the 2013–14 financial year, from which a proposal on whether or not to pursue a review of the EPC data source can be made.

The price on carbon took effect after the Commission’s 2012–14 retail electricity price decision. The Commission has observed the impact of the carbon price on the energy contracting market for just over eight months. Figure 2 demonstrates forward prices for baseload contracts for the 2013–14 financial year. The yellow line represents ASX futures market data; the blue lines represent ICAP OTC data; and, the green line is the difference between the ASX market and ICAP carbon exclusive curves. There are two ICAP curves, as the agency introduced a carbon inclusive index after 1 July 2012.

Figure 2 Forward prices for OTC & ASX base contracts for 2013–14 financial year from 1/04/2012 to present



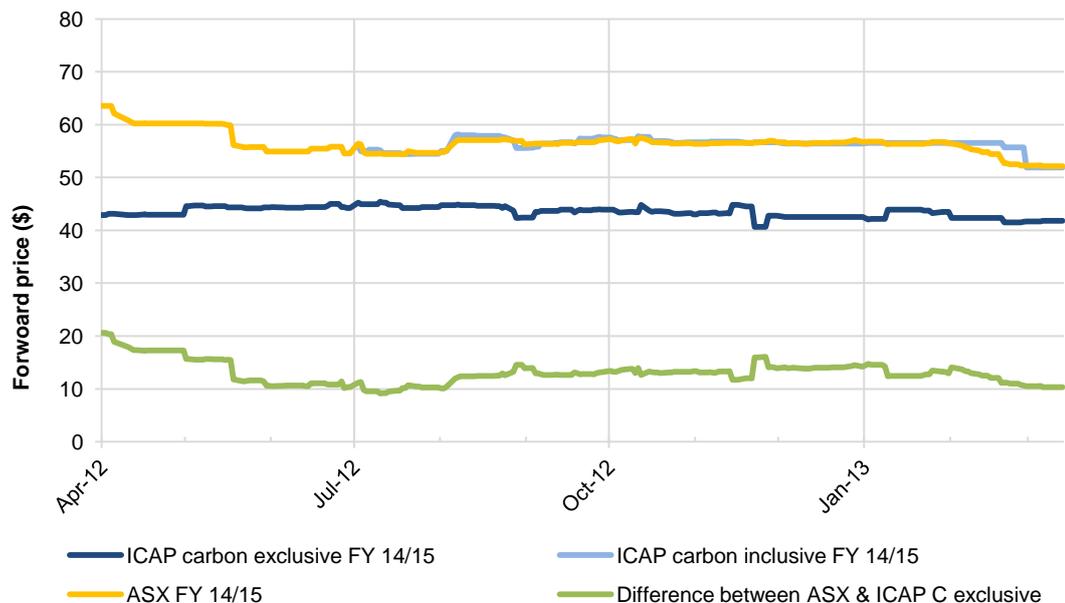
Since April 2012, there has been remarkable stability in the energy contracting market. For the past 11 months, the three curves have been essentially level. Importantly, the ASX exchange-traded data and the ICAP carbon-inclusive data appear to be good proxies for one another. The difference between ASX market and ICAP carbon-exclusive curves has been around \$20 for the entire period. This is slightly below what would be expected from the AFMA Carbon Benchmark addendum.³ In sum, ASX and ICAP sources are consistent and there is no apparent benefit of one over the other.

Based on the 2013–14 data, it appears that there is no market concern that the price on carbon will be removed before 1 July 2014. However, as shown in Figure 3, we can observe something markedly different for 2014–15. Again, there is significant overlap between the ASX and ICAP carbon inclusive curves; although the ICAP curve appears to lag the ASX due to lower liquidity. The difference between ASX futures and ICAP carbon exclusive forward contracts is around \$10, approximately half of the 2013–14 difference. It may be inferred, therefore, that the market believes there is about an

³The 2010 AFMA Australian Carbon Benchmark addendum is still in force.

equal chance of the price on carbon remaining in place or being scrapped. Clearly, there is a significant price-on-carbon uncertainty in the electricity contracting market for 2014–15.⁴

Figure 3 Forward prices for OTC & ASX base contracts for 2014–15 financial year from 1/04/2011 to present



6 Proposed Approach

Consistent with the 2012–14 final report, the Commission has examined the energy purchasing arrangements for the wholesale electricity market.

The first step in this analysis (set out in section 4 of this Information Paper) found that there have not been any major changes in the wholesale electricity market. There have been no significant developments in the market since the introduction of the price on carbon. Both the spot and forward markets appear to be functioning as would be expected. The only difference since the release of the Commission’s final report has been the release of the ICAP OTC carbon-inclusive price data.

The second step in the analysis (set out in section 5 of this Information Paper) explored the relevant data sources for the EPC model. With the introduction of the new ICAP data source, there are now three options for the EPC forward price calculation:

1. ASX futures market data;
2. ICAP OTC carbon-exclusive forward market data; or

⁴This likely due to the impending Federal election in September 2013 followed by the half-senate replacement on 1 July 2014.

3. ICAP OTC carbon-inclusive forward market data.

The proposal in this paper is to keep the data source unchanged. There have been no significant changes in the market since the introduction of the price on carbon which would justify altering the data source used to assess the futures price component of the EPC model.

Considering the three data sources, the third option may be discarded for two reasons. First, the ICAP carbon-inclusive time series commenced on 1 July 2012, which would necessitate a reduction in the forward price time horizon. Second and more importantly, the Commission's EPC model is based on an indexation approach. It requires historic data to compare with future data so a rate of change may be determined. Hence, the third option is inappropriate as it is a new index and there is no historical data with which to compare.

Within the confines of the price direction, the remaining question is whether there is sufficient reason to switch back to the ASX futures data. Figure 2 above reconfirms the consistency between the ASX and ICAP data, congruent with the conclusion drawn from the 2011–12 data in the final report (ICRC 2012b, pp. 8-12). Hence, it appears that the ICAP data is consistent with the market.

The Commission's preference has been to use market data as it is more transparent than OTC indices. The 2013–14 data presented above suggests it could be possible to return to the use of ASX market data. However, there are several issues involved with such a change. First, it would necessitate a recalibration of the 2012–13 EPC index. To ensure the consistency of the index, the Commission would have to adopt a shortened data-collection period for the forward price.⁵ Second, as demonstrated in Figure 3, there is still significant political risk and uncertainty in the market after 1 July 2014. If significant changes were made to federal carbon legislation, the integrity of ASX data may again come under scrutiny and the Commission may be forced to return to ICAP OTC data. Finally, there would also have to be sufficient grounds to justify discontinuing the use of the ICAP OTC carbon exclusive contract data. At present, there does not appear to be any evidence that this ICAP data no longer represents an appropriate proxy of market futures prices.

Therefore, this paper proposes that there not be a formal review of the energy purchasing arrangements within the EPC model. That is, the ICAP carbon-exclusive data should be used for the 2013–14 price reset.

⁵ This is due to the fact that the passage of the carbon price legislation occurred in November 2011 and there are only seven months of relevant data after this date. This was described in the final report.

Abbreviations and acronyms

ACT	Australian Capital Territory
AEMO	Australian Energy Market Operator
AFMA	Australian Financial Markets Association
ASX	Australian Securities Exchange
CO ₂ -e	carbon dioxide equivalent
CO ₂ EII	Carbon Dioxide Equivalent Intensity Index
Commission	Independent Competition and Regulatory Commission
ICAP	ICAP Energy Australia
ICRC	Independent Competition and Regulatory Commission
MWh	megawatt hour
NEM	National Electricity Market
NSLP	Net System Load Profile
OTC	over the counter

References

AFMA (2010) *Australian Carbon Benchmark Addendum*, August, <http://www.afma.com.au/afmawr/_assets/main/lib90047/2010%2008%20carbon%20addendum.pdf> [accessed 18 March 2013].

AFMA (2012) *The AFMA Carbon Benchmark Addendum explained*, May, <http://www.afma.com.au/afmawr/_assets/main/lib90047/ca%20website%20note%20v4.pdf> [accessed 18 March 2013].

CER (2013) 'About the carbon price mechanism' [website], Australian Government, <<http://www.cleanenergyregulator.gov.au/Carbon-Pricing-Mechanism/About-the-Mechanism/Pages/default.aspx>> (posted 15 January 2013) [accessed 18 March 2013].

ICRC (2012a) *Draft report – Retail prices for franchise electricity customers 2012–14*, Report 2 of 2012, Independent Competition and Regulatory Commission, Canberra.

ICRC (2012b) *Final report – Retail prices for franchise electricity customers 2012–14*, Report 4 of 2012, Independent Competition and Regulatory Commission, Canberra.