

Review of regulated retail prices and charges for electricity

From 1 July 2013 to 30 June 2016

Electricity — Final Report
June 2013

Review of Regulated Retail Prices for Electricity

From 1 July 2013 to 30 June 2016

Electricity — Final Report
June 2013

© Independent Pricing and Regulatory Tribunal of New South Wales 2013

This work is copyright. The *Copyright Act 1968* permits fair dealing for study, research, news reporting, criticism and review. Selected passages, tables or diagrams may be reproduced for such purposes provided acknowledgement of the source is included.

ISBN 978-1-925032-18-5

The Tribunal members for this review are:

Dr Peter J Boxall AO, Chairman

Mr James Cox PSM, Chief Executive Officer and Full Time Member

Mr Simon Draper, Part Time Member

Inquiries regarding this document should be directed to a staff member:

Anna Brakey (02) 9290 8438

Alexus van der Weyden (02) 9290 8460

John Smith (02) 9113 7742

Independent Pricing and Regulatory Tribunal of New South Wales

PO Box Q290, QVB Post Office NSW 1230

Level 8, 1 Market Street, Sydney NSW 2000

T (02) 9290 8400 F (02) 9290 2061

www.ipart.nsw.gov.au

Contents

1	Executive summary	1
1.1	Regulated prices will change modestly on 1 July 2013	1
1.2	The final report incorporates updated information	4
1.3	Modest changes to average annual household bills	5
1.4	How we met and balanced the requirements for this determination	6
1.5	What does the rest of this report cover?	12
2	Terms of reference and context	13
2.1	Terms of reference	13
2.2	Market developments	15
2.3	Trend in electricity prices over past 6 years	17
2.4	Policy and regulatory developments	19
3	Our process and analytical approach for this review	23
3.1	Overview of analytical approach for 2013 determination	23
3.2	Why and how this approach differs from the 2010 determination	24
4	Effectiveness of retail competition	28
4.1	Overview of final findings and their implications	28
4.2	Developments in NSW retail electricity market structure	30
4.3	Developments in retailer conduct	33
4.4	Developments in customer conduct and outcomes	35
4.5	Whether regulated prices or other factors are impeding competition	38
4.6	Action required to promote further competition in the market	40
5	The form of regulation	43
5.1	Overview of final decisions on the form of regulation	43
5.2	Which prices will be regulated	45
5.3	Main form of regulation	47
5.4	Additional constraints	50
5.5	Key dates for adjusting regulated retail prices during the determination period	52
6	Total energy cost allowance	55
6.1	Overview of final decisions on the total energy cost allowance	56
6.2	Energy purchase cost allowance	57
6.3	Green energy cost allowances	75
6.4	Market fees and ancillary fees	85

6.5	Energy losses	87
7	Retail margin allowance	88
7.1	Overview of final decisions on retail margin	89
7.2	Approach for setting the retail margin	89
7.3	Estimated range provided by the expected returns approach	90
7.4	Estimated range provided by the benchmarking approach	92
7.5	Estimated range provided by the bottom-up approach	92
7.6	Cost of capital assumptions used in the expected returns and bottom-up approaches	93
7.7	Selecting an appropriate margin within the feasible range	94
7.8	Setting the retail margin as a fixed percentage amount	96
8	Retail operating cost allowance	97
8.1	Overview of final decision on retail operating cost allowance	98
8.2	Defining a Standard Retailer	99
8.3	Bottom-up analysis on retail operating costs	99
8.4	Cost information of publicly listed companies	102
8.5	Other regulators' decisions on ROC	104
8.6	Deciding on the ROC allowance	105
8.7	Adjusting the ROC allowance within the determination period to account for productivity improvements	105
9	Customer acquisition and retention cost allowance	108
9.1	Overview of final decision on CARC allowance	110
9.2	Forming a view on the margin above efficient cost of supply required to promote competition	112
9.3	Estimating the extent to which the other cost allowances already provide a margin above efficient costs	120
9.4	Considering the extent to which other non-price measures are likely to promote competition	121
9.5	Deciding on an appropriate CARC allowance for each Standard Retailer	122
10	Regulated retail price controls	124
10.1	Overview of final decision on the R values	124
10.2	How we set the R values for the final determination	125
10.3	Using the R values in the WAPC	125
10.4	Network component (N values) in the WAPC	126
11	Annual reviews and cost pass-through mechanism	128
11.1	Overview of final decisions on annual reviews and cost-pass-through mechanism	129
11.2	Annual cost reviews	131
11.3	Cost pass-through mechanism	136

12	Impact of price increases on customers	141
12.1	Overview of key findings on the impact of the price increases on customers	142
12.2	Impact of final determination on typical customer bills in each supply area	143
12.3	Changes in household electricity bills and incomes since 2002/03	144
12.4	Impact of electricity price increases on energy bills as a proportion of disposable income	146
12.5	Household types most likely to be having difficulty paying their bills	154
13	Regulated non-tariff charges	157
13.1	Overview of final decisions on regulated retail charges	158
13.2	Security deposit	159
13.3	Late payment fee	160
13.4	Dishonoured cheque fee	163
14	Recommended action to improve energy policy and competition in the long-term interest of customers	164
14.1	Overview of recommended actions	164
14.2	Action to complete current reforms to energy policy	165
14.3	Action to improve retailer and customer engagement in the market	166
14.4	Action to improve outcomes for specific groups of customers	166
	Appendices	169
A	Terms of Reference	171
B	Weighted Average Cost of Capital (WACC)	177
C	Information on cost allowances for load profiles for customers consuming less than 40MWh annually	212
D	Cost pass-through applications	215
E	Other regulatory decisions on retail operating costs	220

1 Executive summary

The Independent Pricing and Regulatory Tribunal (IPART) is responsible for regulating retail electricity prices for around 40% of all residential and small business customers in NSW. These are the prices the state's Standard Retailers – EnergyAustralia and Origin Energy¹ – charge customers who have not signed a market contract with them or another retailer.²

We have been asked to make a determination on these prices for the period starting on 1 July 2013, and ending on 30 June 2016 (or earlier as directed by the Minister for Resources and Energy). The *Electricity Supply Act 1995* (the Act) and our terms of reference require that this determination:

1. results in prices that recover the efficient costs of supplying residential and small business customers
2. supports the continued development of competition in the retail market, and
3. supports the long-term interest of customers.

This report sets out our final decisions, and explains how we reached these decisions and balanced the requirements of the Act and terms of reference. It specifies the average price increases for the first year of the determination period. It provides an indication of the average price increases for the second and third years, and explains how we will set those prices closer to the time.

1.1 Regulated prices will change modestly on 1 July 2013

Our final decisions mean that regulated retail electricity prices in NSW will increase by an average of 1.7% across the state on 1 July 2013. The price changes range from a reduction of 0.7% to an increase of 3.2%, depending on the Standard Retailer (Table 1.1).

¹ On 1 March 2011, the state-owned Standard Retailers – EnergyAustralia, Integral Energy and Country Energy – were sold to private companies. TRUenergy bought EnergyAustralia and subsequently changed its name to EnergyAustralia. Origin Energy bought both Integral Energy and Country Energy. For the purpose of this report, we refer to the previous Integral Energy as Origin Energy (Endeavour Energy) and the previous Country Energy as Origin Energy (Essential Energy). The names in brackets refer to the corresponding network supply areas.

² We set regulated retail prices paid by customers who have not signed a contract with an electricity retailer or who have chosen to return to the regulated price.

Table 1.1 IPART's final decisions on regulated retail electricity price increases, 2013/14 (nominal, %)

	Final report
EnergyAustralia	3.2
Origin Energy (Endeavour Energy)	1.3
Origin Energy (Essential Energy)	-0.7
NSW average	1.7

Note: The changes in regulated retail electricity prices are based on approved network price information provided by the network businesses.

The average regulated price increases in 2013/14 are substantially lower than those in recent years. This is due to:

- ▼ **Much lower changes to network costs** in this year, following 4 years of large network price increases. Network costs (excluding the climate change fund levy) in 2013/14 will decrease in real terms in the Ausgrid³ and Endeavour Energy area, and decrease in nominal terms in the Essential Energy area.⁴ We expect that revised policy and governance arrangements will result in moderate network cost changes over the medium term.
- ▼ **Relatively stable green scheme costs**, following the one-off effect of the introduction of the carbon pricing mechanism last year. Costs associated with the carbon pricing mechanism and the Renewable Energy Target are broadly stable in this year. We expect the costs associated with the small-scale scheme under the Renewable Energy Target will fall over the coming years as the impact of generous solar subsidies in the past declines. However, the costs associated with the large-scale renewable generation under the Renewable Energy Target are likely to continue to rise.

As Figure 1.1 shows, the main drivers of the average price changes for 2013/14 are higher retail costs (including the costs of customer service⁵ and the costs of acquiring and retaining customers in the competitive market) and lower generation costs. However, this partly reflects a reallocation of costs from the generation to the retail cost categories.

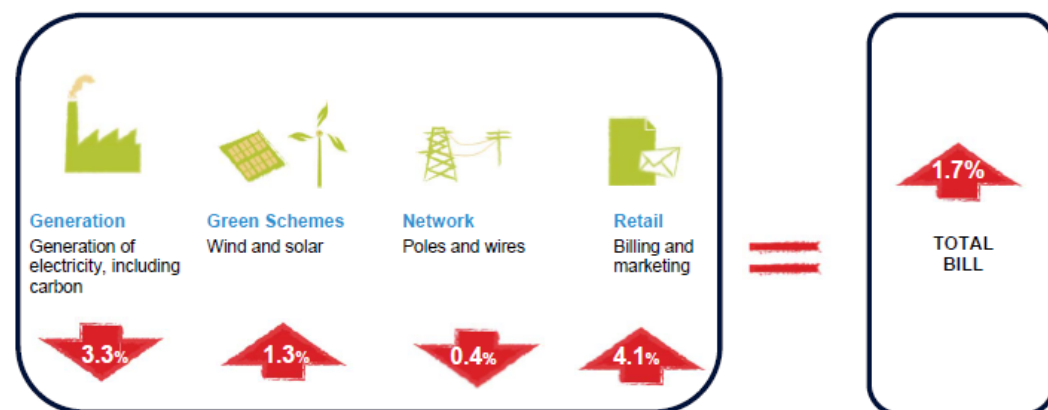
The result of these changes in costs will add around 1.7% to average prices across NSW.

³ EnergyAustralia is the Standard Retailer in the Ausgrid network supply area.

⁴ Including the climate change fund levy, the Ausgrid and Endeavour Energy network charges will increase in nominal terms by 2.5% and 0.86% respectively, and the Essential Energy network charges will fall by 2.95%.

⁵ For example, this includes the costs of billing and handling customer inquiries.

Figure 1.1 Drivers of increase in average regulated retail electricity prices on 1 July 2013, across NSW (nominal, %)



Note: 'Green Schemes' include all of the Commonwealth and NSW Government schemes designed to reduce greenhouse emissions except for the Commonwealth Government's carbon pricing mechanism. The costs of complying with the carbon pricing mechanism are included in the costs of generation.

There are too many uncertainties for us to make decisions on the average price changes for 2014/15 and 2015/16 at this stage. However, we have calculated indicative price changes (Table 1.2). We will make our decisions on these price changes through our annual reviews in early 2014 and 2015.

Table 1.2 Indicative changes in regulated retail electricity prices, 2014/15 and 2015/16 (nominal, %)

	2014/15	2015/16
EnergyAustralia	1.8	-6.6
Origin Energy (Endeavour Energy)	1.6	-7.9
Origin Energy (Essential Energy)	1.8	-6.2
NSW average	1.8	-6.9

Note: In calculating these indicative prices we have assumed that network prices increase by CPI in each year. These prices will be updated as part of our annual reviews.

As the table shows, we expect regulated electricity prices to increase by less than inflation in 2014/15, and to fall in 2015/16. This expected fall in prices reflects the reduced costs of the carbon price as the mechanism moves from a fixed price to a market price linked to international carbon markets. The current cost of European carbon permits is significantly lower than the current fixed carbon price. Further, this cost has fallen since our draft report, resulting in a larger indicative price decrease in 2015/16 – we now expect prices to fall by around 6.9%, which is 1% more than our draft estimates. However, there is significant uncertainty in relation to the future costs of supply and we will update our indicative price change for 2015/16 in early 2014.

1.2 The final report incorporates updated information

Our final decisions mean that regulated retail electricity prices in NSW increase by 1.7% across the state, rather than 3% as proposed in our draft report (Table 1.3).

Table 1.3 IPART's draft and final decisions on regulated retail electricity price increases, 2013/14 (nominal, %)

	Draft report	Final report
EnergyAustralia	4.3	3.2
Origin Energy (Endeavour Energy)	3.1	1.3
Origin Energy (Essential Energy)	0.5	-0.7
NSW average	3.0	1.7

Note: The changes in regulated retail electricity prices under our final decision are based approved network price information provided by the network businesses.

The final average price increases are lower than our draft decisions because between making our draft and final decisions we updated a number of inputs, including:

- ▼ The publicly available forward prices for wholesale electricity in 2013/14 from d-cypha fell. We use these prices in modelling the market-based purchase price of electricity, so this meant our final decision on the total energy cost allowance was lower than our draft decision.
- ▼ Forecast inflation for 2013/14 fell from 2.8% to 2.5%.
- ▼ Estimated network costs fell.⁶

However, the reduction in wholesale electricity prices was partly offset by an increase in the transmission loss factors in the Essential Energy network supply area, which increases the cost of purchasing energy.

In its submission, EnergyAustralia proposed to increase its regulated prices by between 4% and 4.5% in 2013/14.⁷ In our draft report, we indicated we could accept this proposal as our draft price increase for EnergyAustralia (4.3%) fell within this range. However, our final price increase for EnergyAustralia (3.2%) is below the range, due to lower forecast inflation and market based energy costs. Origin Energy did not provide us with a proposed price change.

⁶ Our draft decision was based on forecast network prices. Our final decision is based on approved network price information provided by the network businesses.

⁷ This range is subject to the forecast cost components included in EnergyAustralia's presentation at IPART's public hearing on 3 December 2012, available at http://www.ipart.nsw.gov.au/Home/Industries/Electricity/Webcast_-_Electricity_and_Gas_Public_Forum_3_Dec_2012.

1.3 Modest changes to average annual household bills

We cannot calculate how our final decisions on average increases in regulated prices will affect individual customers' annual electricity bills, as this depends on how much electricity they use, which of their retailer's regulated prices they are on, and how the retailer changes these individual prices.⁸

However, to illustrate the potential impact, we have calculated an indicative annual electricity bill for residential customers with average electricity consumption. This suggests that regulated residential customers will face a range of outcomes from a \$17 decrease in the Essential area to a \$63 increase in the EnergyAustralia area (Table 1.4). Customers with larger than average electricity usage will experience larger increases or reductions in bills.

We note that since we made our 2010 determination, average residential electricity consumption in NSW has decreased from around 7,000 kWh per annum to around 6,500 kWh. The decrease in average consumption means that the increase or decrease in bills is lower than would otherwise be the case.

Table 1.4 Indicative annual bill for residential customers with average electricity usage in each standard supply area (\$ nominal)

	2012/13 (current)	2013/14	Change
EnergyAustralia	1,950	2,012	63
Origin Energy (Endeavour Energy)	1,856	1,880	24
Origin Energy (Essential Energy)	2,432	2,416	-17

Note: Bills include GST and forecast inflation of 2.5%. Bills calculated using 6,500 kWh of consumption per year and, for each business, an indicative price based on the average cost per kWh of supplying all regulated customers. Figures may not add due to rounding.

We also calculated an indicative annual electricity bill for typical small business customers consuming 10 MWh per year in each supply area (Table 1.5). This suggests these customers will experience annual bill changes ranging from a \$23 reduction to an \$88 increase in 2013/14.

⁸ Electricity prices vary considerably across NSW, primarily reflecting differences in the cost of transporting electricity to customers. However there are also differences within locations as a result of price structures (for example, some customers in the EnergyAustralia supply area pay higher prices as their electricity use increases).

Table 1.5 Indicative annual bill for business customers with 10 MWh electricity usage in each standard supply area (\$ nominal)

	2012/13 (current)	2013/14	Change
EnergyAustralia	2,727	2,815	88
Origin Energy (Endeavour Energy)	2,596	2,630	34
Origin Energy (Essential Energy)	3,402	3,378	-23

Note: Bills exclude GST and include forecast inflation of 2.5%. Bills calculated using 10,000 kWh of consumption and, for each business, an indicative price based on the average cost per kWh of supplying all regulated customers. Figures may not add due to rounding.

1.4 How we met and balanced the requirements for this determination

As noted above, for this determination we had to meet and balance a number of requirements. These include that the determination results in prices that recover the efficient costs of supplying residential and small business customers, promotes the continued development of competition in the retail market, and supports the long-term interest of customers.

In our view, we have met and balanced these requirements in a transparent and systematic manner. In particular, we have:

- ▼ Evolved our regulatory package to promote the development of competition and support the long-term interest of customers.
- ▼ Determined prices based on efficient costs **plus** continued to include an additional incentive for retailers to enter the market and compete for customers, and for customers to actively engage in the market. This balances the need for prices to reflect the efficient costs of supply in the short-term with the needs to promote further competition and support the long-term interest of customers.
- ▼ Made recommendations to improve policy settings, retailer and customer engagement and outcomes for specific groups of customers, to promote efficient prices and support the long-term interest of customers.

This approach reflects our view that effective competition best protects customers from higher than efficient prices in the short-term and provides better 'value for money' in the long-term through reduced costs and/or innovation. Thus, promoting the development of competition is in customers' best long-term interest.

This approach recognises that the level of regulated prices – particularly the extent to which it provides an incentive for participation and competition in the market – has a significant effect on the development of competition. It recognises the limited ability of regulators to discover ‘efficient costs’. Therefore, getting this level ‘right’ should balance the recovery of efficient costs and lead to a vibrant, competitive market where strong rivalry between retailers delivers products that customers value.

This approach also recognises that many regulatory and policy settings affect the price customers pay for electricity, and many of these are outside the scope of our pricing determination. Therefore, we can help promote efficient prices and support the long-term interest of customers by participating in policy debates and recommending changes to policy settings.

1.4.1 Evolving the regulatory package to promote competition and support the long-term interest of customers

Since we made our last determination in 2010, the competitiveness of the retail electricity market in NSW has increased. In undertaking the analysis for this report, we formed a view that competition in the market is now effective enough to protect customers from higher than efficient prices, and offers more choices and better price and service outcomes.

We note that the Australian Energy Market Commission (AEMC) is currently reviewing the competitiveness of the NSW market, and based on its findings the NSW Government will decide whether or not to remove price regulation. The AEMC will deliver its final advice in September this year, after finding in its draft report that ‘competition in the electricity and natural gas markets for small customers in NSW is delivering benefits to customers’.⁹ In the meantime, we have evolved our regulatory package for the 2013 determination to reflect our own finding on the increased competitiveness of the market and to facilitate further competition.

⁹ Australian Energy Market Commission, *Review of Competition in the Retail Electricity and Natural Gas markets in New South Wales, Draft Report*, 23 May 2013, p i.

We have maintained a weighted average price cap (WAPC) approach, which means the Standard Retailers can set their own regulated prices provided that the average change in these prices is no more than the percentage we determine. But we have removed the additional limits on price movements that applied to Origin Energy (in the Essential Energy supply area)¹⁰ in previous determinations. We have also added a provision inviting Origin Energy to submit a plan setting out how it will rationalise its obsolete prices in that area. We consider these changes will further encourage competition by leading to more streamlined, cost-reflective regulated prices across all customers in the Origin Energy (Essential Energy) supply area.

We have also maintained our basic approach to price setting. However, we have used a new approach to estimate the level of incentives, and the extent to which the costs associated with customer acquisition and retention, are included in regulated prices to promote competition. This is discussed in section 1.4.2 below.

In addition, we have maintained an annual review process and a cost pass-through mechanism as part of the regulatory package. The annual review process sets out how we will set prices on 1 July 2014 and 2015. It addresses key risks associated with the determination, including the risk that retailers' costs in purchasing electricity will be more or less than forecast. Our approach to the annual review will include inviting the Standard Retailers to submit pricing proposals to IPART. The cost pass-through mechanism addresses other key risks and uncertainties associated with potential changes to legislation and taxation.

We consider that our regulatory package and price setting approach are in the long-term interests of customers and balance the requirements in our terms of reference. They allow efficient retailers to engage in the competitive market to profitably attract customers.

1.4.2 Setting prices on efficient costs plus an incentive to promote competition and support the long-term interest of customers

In making our determination, we have sought to strike a balance between efficient prices in the short-term and the promotion of competition in the market. To this end, we have decided to set regulated prices to:

- ▼ recover the estimated efficient costs incurred by Standard Retailers in supplying customers on these prices in the short term, **and**
- ▼ continue to provide an incentive for retailers to compete and customers to engage in the competitive market that reflects our estimate of the efficient costs of acquiring and retaining customers in the market (such as sales costs, and discounts or other incentives to entice customers onto market contracts).

¹⁰ As previously noted, Origin Energy purchased Integral Energy and Country Energy in 2011. Both these Standard Retailers now trade under the name Origin Energy.

Current regulated prices already include an incentive that supports competition. Many stakeholders commented on the inclusion and level of this incentive both at the public hearing and in submissions on our draft report. After carefully considering stakeholder views, we maintain our view that including the incentive is an appropriate and effective way to balance the requirements for this determination.

As noted above, we consider that an effective competitive market best protects customers from higher than efficient prices and is in their long-term interest. We recognise that not all customers will necessarily receive the lowest available price when engaging in a competitive market – customers need to make their own choice of offers based on prices, incentives and terms and conditions. However, compared to the alternative of a regulated market with a limited number of retailers competing for customers, a competitive market will better allocate resources, and lead to lower prices and improved product offerings.¹¹

Without a competitive market, there would be little discipline on retailers to innovate and to seek efficiencies. As is the case with natural monopolies, such as electricity networks, customers would in effect rely on the regulator to counter retailers' inevitable market power and drive efficiency improvements. Ultimately, this would lead to higher prices because regulation is less effective than competitive forces in driving efficiency.¹² In our view, the focus for regulators, consumer groups and governments in this context should be on promoting competitive market conditions rather than determining market outcomes.

The notion that competitive markets work to the benefit of customers is embedded in the Act and our terms of reference for this determination:

- ▼ The Act requires us to have regard to the effect of our determination on competition. In the Second Reading speech to the *Electricity Supply Amendment Bill* on 16 November 2000, the then Minister for Energy said that:

This [regulatory] scheme has been carefully designed to balance the interests of customers and investors in retailing systems. It is important for a competitive retail market that investors do not face a risk that price determinations for regulated tariffs, designed to provide a safety net for customers, have the effect of undermining customer incentives to seek competitive supply. If such a risk were present this may undermine retailers' incentives to invest in the systems necessary to make the competitive market work to the benefit of customers.¹³

¹¹ Journal of Antitrust Enforcement (2013), *Is competition always good?* 4 February 2013, p 2, doi:10.1093/jaenfo/jns008.

¹² We consider that recent network cost increases, which are responsible for most of the recent retail price increases, may be higher than necessary due to aspects of the regulatory framework which are contributing to inefficient outcomes. As discussed in Chapter 14, we recommend action be taken to ensure future network prices more closely reflect efficient costs.

¹³ NSW, Hansard, Legislative Assembly, 16 November 2000, 10183 (Kim Yeadon, second reading).

- ▼ The terms of reference require us to include an allowance for customer acquisition and retention costs (CARC) in determining regulated prices to support the competitiveness of the market.

As with any price regulation there is also the risk that given the imperfect information available, attempting to discover the 'efficient costs and prices' that would emerge in a competitive market may not be feasible. The dynamic nature of retail energy markets only makes this more difficult, creating the potential for price regulation to distort the competitive market.

Including this CARC allowance in regulated prices at a level that creates an incentive for retailers to compete in the market and for customers to seek out a better market offer is the 'price' of promoting further competition and driving efficiency improvements in the longer term. Without this, there would be little incentive for retailers to enter the market and compete for customers. It also provides incentive for customers to engage in the market and seek out a product that best suits them.

Our approach necessarily means that the regulated price in a supply area is unlikely to be the lowest price in the market. Rather, it is a price for customers who have not taken up a competitive, unregulated market offer. It is important to note that the inclusion of an additional incentive in prices **does not** provide a subsidy from regulated customers to market customers. Customers can avoid this cost by taking up a better market offer. IPART operates an independent, free comparator website, [myenergyoffers](#),¹⁴ to help customers identify and compare the offers available in their supply area.

It is also important to note that current prices already include an incentive that is supporting competition, although this incentive is less transparent and explicit. Our calculations indicate the level of incentive included in our final decision is broadly consistent with that included in current regulated prices.¹⁵ The incentive included in current prices is \$24.30 and the allowance under our new determination will be \$22, as illustrated in Table 1.6.

Table 1.6 Incentives included in regulated prices to promote competition, 2007/08 to 2013/14, (\$/MWh, \$2012/13)

	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14
Incentives in regulated prices	5.1	5.1	5.1	29.0	25.3	24.3	22.0

Source: IPART.

¹⁴ From 1 July 2013, the free independent price comparator service will be operated by the Australian Energy Regulator, available at: www.energymadeeasy.gov.au.

¹⁵ Our calculations assume that there are only 2 sources of 'additional incentives' in regulated prices – the energy purchase cost allowance (the extent to which prices are above efficient short-term costs) and CARC – and all other cost allowances are set at efficient levels. Given the imperfect information we have in setting efficient cost allowances, there may be additional or reduced incentives in some of the other cost allowances.

Providing stability between IPART determinations in terms of the incentives built into regulated prices, manages the risk that volatility in these incentives discourages retailers from entering and competing in the NSW market.

Nevertheless, we consider this level reflects an appropriate balance between the requirements for this determination, and is high enough to continue to support competition and the long-term interest of customers. We note it is also consistent with the Public Interest Advocacy Centre's (PIAC's) argument that:

IPART should ... simply ensure that it does not reduce CARC costs below current levels in a manner that would jeopardise competition.¹⁶

1.4.3 Making recommendations to promote efficient prices and support the long-term interest of customers

As noted above, there are many regulatory and policy settings that affect the price customers pay for electricity, many of which are outside the scope of our pricing determination. However, as the economic regulator of electricity prices for small customers in NSW, we are well-placed to comment on these policy settings and identify how they can be improved to better serve the long-term interests of customers. We are recommending that in the coming year, action be taken to:

- ▼ Ensure regulatory and policy settings promote an efficient energy supply chain. This includes the current reforms to energy policy related to network regulation. Full implementation of these reforms will help ensure that networks are more efficient. Further, the Renewable Energy Target should be closed or at a minimum overhauled because it is not complementary to the carbon price. This will benefit all electricity customers by reducing the potential for higher than necessary price rises in the future.
- ▼ Improve retailers' engagement with customers – for example, so they make their offers more accessible and easier to understand and compare – and encourage customers to actively engage in the competitive market through education campaigns. This will also benefit all electricity customers, by increasing the competitiveness of the market and better enabling small customers to benefit from this competition.
- ▼ Improve outcomes for specific groups of customers who need additional, targeted assistance or support in the current policy and market environment. In particular, we consider there is a need to:
 - Review arrangements for customers who cannot readily access the competitive market – including residents of caravan parks – to ensure they reflect developments in the competitiveness of the market.

¹⁶ PIAC submission, May 2013, p 3.

- Review customer assistance measures to ensure that the current budget targets the most vulnerable customers in a comprehensive, complementary and cost-effective manner.

Our specific recommendations are set out in Chapter 14.

1.5 What does the rest of this report cover?

The rest of this report discusses our review and determination in detail. It is structured as follows:

- ▼ Chapter 2 discusses the terms of reference and other context for the review
- ▼ Chapter 3 sets out our process for the review and the approach we used to make our decisions
- ▼ Chapters 4 to 11 discuss our key decisions, analysis and considerations in each step of our approach, including those on:
 - the effectiveness of competition in the NSW retail electricity market
 - the appropriate form of regulation for the 2013 determination period
 - an efficient allowance for each of the costs recovered through regulated retail prices
 - the total cost allowances for each Standard Retailer and the resulting regulated retail price controls (R values)
 - the scope, frequency and other characteristics of the annual reviews and the cost pass-through mechanism
- ▼ Chapter 12 analyses the impacts of our determination on customers
- ▼ Chapter 13 sets out our decisions on regulated non-tariff charges
- ▼ Chapter 14 discusses our recommended actions to improve policy settings and retailer and customer engagement.

2 Terms of reference and context

The NSW Minister for Resources and Energy asked IPART to review and determine regulated retail electricity tariffs and charges for the period 1 July 2013 to 30 June 2016, in accordance with section 43EB of the *Electricity Supply Act 1995* (the Act). This section of the Act states that in determining these tariffs and charges, we must have regard to:

- ▼ the matters our terms of reference require us to consider, and
- ▼ the effect of the determination on competition in the retail electricity market.

We also considered the range of other factors that form the context for this review. These factors include market developments, the trend in electricity prices over the past 5 years, and a range of policy and regulatory developments that have occurred since we made the 2010 determination or are currently underway.

2.1 Terms of reference

The terms of reference for this determination (see Appendix A) indicate that the Government's primary reasons for continuing electricity retail price regulation beyond the end of the current determination period are to:

- ▼ protect customers from retailers exerting market power where competition is ineffective or yet to be assessed, and
- ▼ facilitate competition in the retail electricity market.

They also indicate that the determination may be terminated before 30 June 2016 if directed by the Minister.

The terms of reference are similar to those for the 2010 determination. In particular, they require us to determine regulated prices that recover the efficient costs a Standard Retailer is likely to incur in supplying small retail customers on regulated prices. In estimating these costs, we must determine 3 distinct cost allowances:

- ▼ energy costs, including those of purchasing energy from the National Electricity Market (NEM) and complying with greenhouse and renewable energy schemes (green schemes), plus NEM fees and energy losses
- ▼ retail costs, including those associated with customer service, customer acquisition and retention (to support competition), finance, IT systems and regulation
- ▼ a retail margin that reflects the material risks arising from supplying small customers that are not compensated for elsewhere.

However, there are also some important differences between the 2010 and 2013 terms of reference. The first and perhaps most significant difference is that the 2013 terms of reference also require us to determine regulated prices that **support the long-term interests of consumers** of electricity and the stability of the electricity market. In our view, this provides some discretion to set regulated prices above the efficient *short run* cost-recovery level to support competition, which will ultimately deliver benefits to customers. However, this discretion is limited by other requirements in the terms of reference.

The second most significant difference relates to how we set the electricity purchase cost allowance (the largest component of energy costs). In 2010, we were required to set this allowance no lower than the long run marginal cost (LRMC) of generation. However, this time we are required to set the allowance no lower than the weighted average of the LRMC of generation (75%) and the market-based purchase cost (25%). The terms of reference indicate that this is intended to place downward pressure on regulated retail prices.

The other important differences between the 2010 and 2013 terms of reference relate to:

- ▼ **How small retail customers are defined**, and thus who is eligible to be supplied on regulated prices. In 2010, these customers were defined as those using less than 160 MWh per year. However, this time they are defined as customers using less than 100 MWh per annum. We have also been asked to construct a profile for customers using less than 40 MWh per year during the determination period. The terms of reference indicate that this difference is intended to assist the transition of customers from regulated prices to market prices.

- ▼ **How we report on green scheme costs included in regulated prices.** The 2013 terms of reference specifically require us to analyse and report on the total price impact of the Standard Retailers' obligations to comply with green schemes. We must express this impact as a specific amount based on a typical electricity bill for a residential customer in NSW.

2.2 Market developments

The NSW retail electricity market has continued to evolve since we made the 2010 determination. A range of developments have affected the competitiveness of the market. We have examined these developments as part of our assessment of the effectiveness of competition in the market. This assessment and its implications for price regulation and the 2013 determination are discussed in detail in Chapter 4.

A range of other developments are likely to affect the market during the 2013 determination period. These include:

- ▼ improved competition in the retail market
- ▼ the reduction in expected demand across the National Electricity Market, including in NSW
- ▼ the increasing internationalisation of domestic coal and gas prices, and
- ▼ the NSW Government's asset sale program in relation to its remaining energy generation assets.

2.2.1 Improving competition in the retail market

We have undertaken our own assessment of competition and its implications for price regulation from 1 July 2013. Since we made our last determination in 2010, the competitiveness of the retail electricity market in NSW has increased. Currently only around 40% of small customers remain on regulated prices in NSW.¹⁷ Competition in the market has developed and is now effective enough to provide protection to customers, offering more choices and better price and service outcomes. Improvements in retail competition provide greater scope for light-handed regulation and may provide the basis for the Government to reconsider price regulation in the future.

¹⁷ Based on information provided by the Standard Retailers in June 2013.

The Standing Council on Energy and Resources (SCER) has asked the AEMC to review the retail electricity market in NSW, and provide advice on the effectiveness of competition in the market, and whether or not price regulation should be removed. The AEMC is currently conducting its review, using a similar analytical framework to the one we have used to assess the effectiveness of competition. In its draft report the AEMC concluded the competition was effective in the electricity and gas markets and recommended the removal of price caps.¹⁸ The AEMC is undertaking further consultation and is expected to deliver its final report in September 2013.

However, ultimately, the NSW Government will decide whether or not to adopt any recommendation to remove price regulation, and if so the timeframe for its removal.

2.2.2 Reduction in demand

In recent years overall demand (throughput) in the National Electricity Market has fallen. The Australian Energy Market Operator (AEMO) has substantially revised downwards its forecasts of demand over the medium term.

A number of factors have contributed to lower demand, including:

- ▼ Increasing penetration of solar photovoltaic units.
- ▼ Decreasing use of electricity by the industrial sector, including the winding back of aluminium smelters.
- ▼ Lower residential demand, including a reduction in the amount of energy used to heat off-peak hot water systems. Since making our determination in 2010, average consumption for regulated households has decreased from 7 MWh to 6.5 MWh per year.

As a result of falling demand, wholesale energy prices are lower than they would otherwise be. In response to these lower prices, a number of generators have withdrawn capacity from the market.

The levels of supply and demand influence our energy purchase cost allowance (see Chapter 6).

2.2.3 Increasing uncertainty in the gas and coal markets

Increasingly, Australian domestic coal and gas markets are being influenced by the international market. The international market, and in particular, international demand for coal and gas is changing the incentives faced by domestic producers and consumers of fossil fuels.

¹⁸ AEMC, *Review of Competition in the Retail Electricity and Natural Gas Markets in New South Wales, Draft Report*, 23 May 2013, p iii.

The extent to which domestic prices for fossil fuel will be influenced by international prices is not clear at this stage, as there is significant uncertainty in relation to the supply and demand dynamics in the Eastern Australian coal and gas markets in the medium term. For example, the higher international prices for gas have altered the expectations of some gas producers, which in turn, have provided incentives for further development of gas supplies. However, the limited LNG export capacity in the medium term may mean that there is limited scope for some producers to access these international prices.

In the longer term, we expect domestic coal and gas prices to rise towards international levels, increasing the costs of thermal electricity generation. This will make purchasing electricity more expensive for retailers. This is discussed in Chapter 6.

2.2.4 NSW energy asset sale program

In March 2011, the NSW Government sold its Standard Retailers (EnergyAustralia, Integral Energy and Country Energy) and the trading rights to the Delta West and Eraring power stations.

The Government has announced that it intends to sell its remaining generation assets, including the Macquarie Generation power stations, the Delta Coast power stations and the underlying physical assets for the Delta West and Eraring power stations (which have Gentrader agreements attached to them).

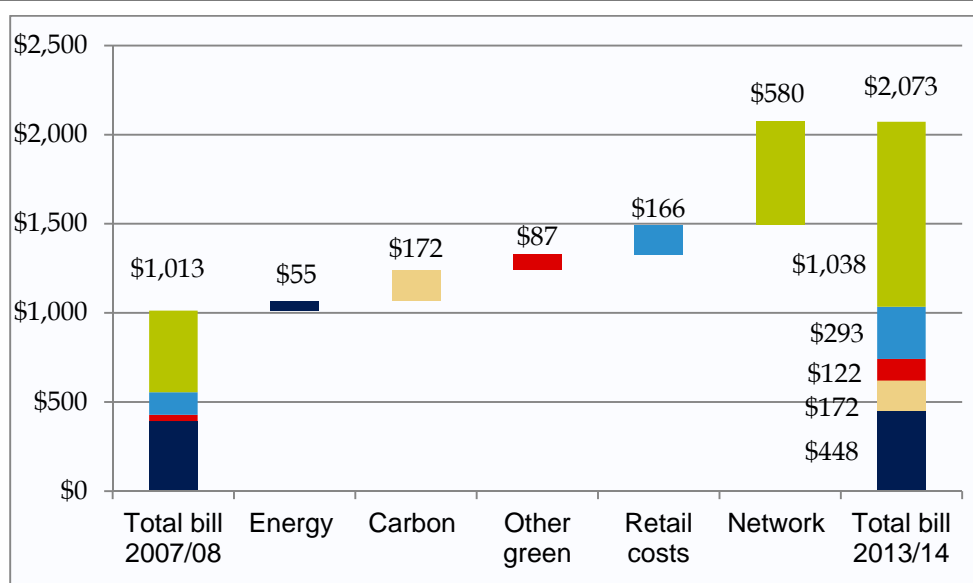
2.3 Trend in electricity prices over past 6 years

Over the past 6 years, regulated retail electricity prices in NSW have more than doubled in nominal terms. Two main factors drove this increase.

The main driver was the rise in network costs – that is, the charges electricity retailers incur to use the transmission and distribution networks to transport electricity to their customers' premises. Over the past 6 years, these charges have added around \$580 to this annual bill. As Figure 2.1 indicates, they comprise around half a typical residential customer's annual electricity bill. After years of large network price increases, the 1 July 2013 network price changes are moderate.

The second main driver was the increase in green scheme costs, arising from changes to existing schemes and the introduction of new schemes. For example, the carbon price adds around \$172 to a typical regulated residential customer's annual bill.¹⁹ Increases to the costs of complying with other green schemes, including the RET and the NSW Energy Saving Scheme have added another \$87 to regulated retail bills since 2007/08.

Figure 2.1 Change in the annual electricity bill of a typical residential customer in NSW on regulated retail prices, 2007/08 to 2013/14 (\$nominal)



Note: Network charges include contributions towards the Climate Change Fund. The energy, carbon and green costs include losses. Typical bills calculated assuming consumption of 6.5MWh per year.

The energy cost component, which increased by \$55 over the past 6 years (which is less than inflation), reflects a weighted average of 75% LRMC and 25% market based costs, consistent with this determination.

There has been a policy response to increased electricity prices, particularly in relation to network costs.

¹⁹ IPART, *Fact Sheet - The impact of green schemes on a typical residential electricity retail bill from 1 July 2013*, June 2013.

2.4 Policy and regulatory developments

In response to the large price increases discussed above, governments are currently focusing on identifying and addressing inappropriate energy policy and regulatory settings to ameliorate future price increases. While progress has been made in many areas, more action is required to implement some of the proposed reforms.

Several policy and regulatory reviews and other developments may affect the electricity market and retail electricity prices over the 2013 determination period. These include:

- ▼ The Federal Government's response to the review of the RET and uncertainty about other green schemes, including the Carbon Pricing Mechanism.
- ▼ Changes to network regulation and governance.
- ▼ The move to the National Energy Customer Framework and the NSW Government's intention to ban electricity retailers from charging vulnerable customers²⁰ on market contracts early termination or exit fees. The Government has also indicated that it will ask IPART to calculate the amount of early termination fees for small customers.²¹

2.4.1 Review of RET and uncertainty about other green schemes

Over the 2010 determination period, significant changes occurred to green schemes. At the national level, the RET was split into a large-scale scheme and an uncapped small-scale scheme in 2011.²² In addition, the Carbon Pricing Mechanism was introduced on 1 July 2012. In NSW, the state-based Greenhouse Gas Reduction Scheme (GGAS) was closed when the carbon price was introduced, and the NSW Solar Bonus Scheme was closed to new participants in July 2011.²³

In the 2013 determination period, uncertainty about green schemes and their impact on electricity prices continues. Further changes to the RET and changes to the Carbon Pricing Mechanism are possible, and a new national energy savings scheme may be introduced. We have developed a regulatory package that accounts for these uncertainties to ensure that regulated retail prices continue to promote the long-term interests of customers. This issue is discussed in Chapter 11.

²⁰ Vulnerable customers refers to hardship customers, customers who received the Low income Household Rebate and/or Medical Energy Rebate at the time of the customer's last bill prior to termination; or customers who paid their last bill prior to termination by an Energy Accounts Payment Assistance voucher.

²¹ Draft National Energy Retail Law (Adoption) Amendment (Early Termination Charges and Site Specific Conditions) Regulation 2013 (NSW), May 2013.

²² <http://ret.cleanenergyregulator.gov.au/About-the-Schemes/Small-scale-Renewable-Energy-Scheme--SRES-/about-sres>.

²³ The scheme was suspended in April 2011 and closed on 1 July 2011.

The Renewable Energy Target

The Climate Change Authority provided a report on its review of the national RET in December 2012. In March 2013, the Commonwealth Government outlined its response to the report, in large agreeing with the Climate Change Authority's recommendations. However, uncertainty arises relating to the timing and passage of any legislative amendments that arise from the Government's response.

IPART considers that the RET should be closed because it is not complementary to the carbon pricing mechanism, distorts investment in the energy market and continues to add significantly to electricity prices, particularly those paid by households and small businesses. As the target for large-scale renewable generation continues to rise and the current surplus of certificates will be depleted in coming years, the impact on electricity prices in future years is likely to be material. At a minimum, we consider that the RET requires substantial change, as outlined in our submission to the Climate Change Authority.²⁴

If changes are made to the RET, this could affect the cost that electricity retailers incur in complying with the scheme – and thus the costs that get passed on to customers in electricity prices.

Carbon Pricing Mechanism

The current carbon pricing mechanism does not have bipartisan support. We will need to manage the risk of changes to the mechanism in making the determination. In the 2010 determination, we managed risks arising from the carbon price by including a cost pass-through mechanism and an annual review.

We will also need to take account of the fact that under the current Carbon Pricing Mechanism, the fixed price for carbon price is due to end on 30 June 2015. After this time, the price will be determined by the market. Given that Australia's carbon pricing mechanism will be linked to international carbon markets from the commencement of the flexible pricing period, the carbon price will reflect the international price of carbon, which adds to the uncertainty. This issue is discussed in Chapter 11.

National Energy Savings Initiative

The Federal Government considered introducing a National Energy Savings Initiative, which would replace the existing state-based schemes, including NSW's Energy Savings Scheme. If changes are made, this could affect the cost that electricity retailers incur in complying with the scheme – and thus the costs that get passed on to customers in electricity prices.

²⁴ IPART's submission is available at http://www.ipart.nsw.gov.au/Home/Quicklinks/IPART_Submissions_to_External_Reviews.

2.4.2 Changes to network regulation and governance

Electricity transmission and distribution network charges are passed through to customers in electricity bills. Over the past 5 years, they have increased significantly, and this has been the single biggest contributor to the increase in regulated retail electricity bills.²⁵

Over the 2010 determination period, IPART (along with other parties) raised concerns that, due to certain aspects of the regulatory and governance frameworks, network price increases may have been higher than necessary.²⁶ Significant improvements have been made to the National Electricity Rules, which will allow network prices to more closely reflect efficient costs. These new Rules will apply for the next network determination from 1 July 2014. Networks NSW has indicated it expects network price increases to be broadly in line with inflation over the next 6 years.²⁷

However, further reforms in other areas are under review but not yet complete. Full implementation of the following reforms will ameliorate future price increases:

- ▼ **Merits review arrangements.** SCER commissioned an expert panel to review the merits review framework under the National Electricity Law. This panel recommended significant changes to improve the current arrangements. However, these changes are yet to be made with SCER currently undertaking consultation. We strongly support changing the merits review framework, as outlined in our submissions to the expert panel and SCER.²⁸
- ▼ **Reliability standards.** SCER also asked the AEMC to review distribution reliability standards nationally. The AEMC has recommended changes, but these are yet to be implemented. Again, we support full implementation of the recommended changes.

Implementing changes in these areas has the potential to reduce upward pressure on network prices and thus on regulated retail prices.

²⁵ IPART, *The challenges of balancing electricity retail prices - A speech for the Australian Energy & Utility Summit conference*, 29 June 2012, p 7. Available at: <http://www.ipart.nsw.gov.au/Home/Publications/Speeches>.

²⁶ For example, see IPART, *Changes in regulated electricity retail prices from 1 July 2012 – Final Report*, June 2012, p 83. Available at: http://www.ipart.nsw.gov.au/files/a73eff3a-91ba-4150-b90d-a06f00a603a2/Final_Report_-_Changes_in_regulated_electricity_retail_prices_from_1_July_2012.pdf.

²⁷ Letter from Networks NSW to IPART, dated 12 October 2012.

²⁸ http://www.ipart.nsw.gov.au/Home/Quicklinks/IPART_Submissions_to_External_Reviews.

In September 2012, IPART lodged a Rule change proposal with the AEMC.²⁹ We propose that the network charges are set earlier and with greater consultation with retailers and customers. We consider that our Rule change proposal will improve the competitiveness in the retail market by allowing retailers more time to develop their retail offerings following the approval of network prices. On 6 June 2013, the AEMC initiated the Rule change proposal and we expect that it will be concluded in late 2013.

2.4.3 Move to the National Energy Customer Framework

The new National Energy Customer Framework (National Framework)³⁰ was established to transfer the various state-based retail regulations to a single national framework. Once the Retail Law and Rules commence in NSW, the AER will be responsible for the compliance and enforcement activities IPART currently undertakes.

The National Framework will commence in NSW on 1 July 2013.³¹ We consider that this will facilitate more efficient operation of the retail market, and may have a positive impact on competition in the market by allowing retailers to operate more efficiently in multiple jurisdictions.

2.4.4 Ban on early termination fees

The NSW Government intends to prohibit electricity retailers from charging an early termination fee to:

- ▼ customers who are hardship customers, or
- ▼ customers who received the Low Income Household Rebate and/or Medical Energy Rebate at the time of the customer's last bill prior to termination, or
- ▼ customers who paid their last bill prior to termination (in part or in full) by an Energy Accounts Payment Assistance (EAPA) voucher.³²

The Government has also announced that it intends to issue IPART with a terms of reference requiring it to set a cap on early termination fees for all other small customers. Once we receive the terms of reference, we intend to undertake public consultation on the level of the termination fees.

²⁹ IPART's rule change proposal is available at http://www.ipart.nsw.gov.au/Home/Quicklinks/IPART_Submissions_to_External_Reviews

³⁰ The Framework includes National Energy Retail Law and National Energy Retail Rules, which passed in the South Australian Parliament on 9 March 2011 and received Royal Assent on 17 March 2011.

³¹ Commencement Proclamation for the *National Energy Retail (Adoption) Act 2012* (NSW) published L W 26 April 2013; Commencement Proclamation for the *Energy Legislation Amendment (National Energy Retail Law) Act 2012*, published L W 26 April 2013; *National Energy Retail (Adoption) Regulation 2013*, clause 2.

³² NSW Trade & Investment, *Early termination fees Consultation Paper*, 27 May 2013, p 1.

3 Our process and analytical approach for this review

In conducting our review, we followed a process that includes public consultation and detailed analysis (see Box 3.1). In making our determination, we used an analytical approach designed to ensure that we consider all the matters we were required to consider and make decisions that are consistent with our terms of reference, having regard to relevant submissions made and stakeholder input to the review.

This analytical approach is similar to the one we used in making our 2010 determination. However, it includes some important changes to reflect the differences in the terms of reference for the 2013 determination (discussed in Chapter 2). In particular, we modified our previous approach to:

- ▼ systematically balance the requirements that we set prices to both recover efficient costs and support the long-term interests of consumers, and
- ▼ transparently apply our discretion to set prices to balance these (and other) requirements in the terms of reference.

The sections below provide an overview of our approach, and discuss how and why it varies from our previous approach.

3.1 Overview of analytical approach for 2013 determination

In broad terms, the approach we used to make the final determination includes the following steps, having regard to comments made by stakeholders during our process:

1. Carefully consider the requirements of the Act, our terms of reference and other contextual factors to ensure we understand the matters we must take into account and the objectives we must aim to achieve through the determination.
2. Assess the level of competition in the retail electricity market to understand the degree of regulation necessary to protect customers from prices being materially above the efficient cost of supply while also facilitating effective competition.
3. Take account of the above considerations and assessment to decide on the appropriate form of regulation for the 2013 determination period.

4. Estimate the level of short-term efficient costs a Standard Retailer is likely to incur in supplying small retail customers on regulated prices over the determination period – including energy costs, retail operating costs and a retail margin. Then, for each Standard Retailer, set an allowance for each of these costs that reflects the efficient level, taking into account of the risks and challenges associated with forecasting these costs for this period, having regard to the terms of reference.
5. Consider the level of costs that an efficient retailer is likely to incur in acquiring and retaining customers in the competitive market. Then, for each Standard Retailer, set an allowance for customer acquisition and retention costs that reflects our view of the incentive required to promote competition, and the extent to which the energy purchase cost allowance already provides incentives for competition.
6. Include these cost components in the R values.
7. Calculate the average change in regulated retail prices for each Standard Retailer taking account of the above considerations and likely changes in network charges.
8. Review and make decisions on the level of each regulated retail non-tariff fee and charge the Standard Retailers can levy.
9. Provide information on the impact of our decisions on customers.
10. Check that our determination had regard to the effect of the determination on competition in the retail market, as required under the Act and balances the requirements of the terms of reference, including supporting the long-term interests of electricity consumers and the stability of the electricity market.

Early in our process we invited both Origin Energy and EnergyAustralia to propose regulated retail prices. EnergyAustralia provided proposed prices, while Origin Energy did not. We compared our analysis against the price proposal submitted by EnergyAustralia to determine whether we could agree with the proposal.

3.2 Why and how this approach differs from the 2010 determination

3.2.1 Balancing shorter and longer term objectives

As Chapter 2 discussed, perhaps the most important difference between our terms of reference for the 2010 and 2013 determinations is that for this determination, we are required to set regulated prices that recover the efficient costs of supplying customers on regulated prices, **and** support the long-term interests of all consumers of electricity and the stability of the electricity market. This requirement gives us some discretion to set prices to best balance these requirements.

In our view, the best way to support the long-term interests of consumers is by facilitating increased competition in the market. We consider an effectively functioning competitive market offers customers the best protection from higher than efficient prices in the short term. It can also deliver better customer outcomes in the long term, including better ‘value for money’ service through reduced costs and/or innovation.

Without a competitive market, there would be little discipline on retailers to offer cost reflective prices or improve their performance. As is the case with natural monopolies, such as electricity distribution networks, customers would in effect rely on the regulator to counter the inevitable market power and to drive these efficiency improvements. It is important to recognise that regulation is likely to be an inferior way of driving these improvements compared to competition.³³ In our view, the focus for regulators, consumer groups and Governments in this context should be on promoting competitive market conditions rather than determining market outcomes.³⁴

However, for such a competitive market to develop while regulation exists, regulated prices must be high enough to create incentives for retailers to enter the market and compete for customers, and for customers to seek out better offers in the competitive market. If regulated prices are set too low – for example, to recover the short-term efficient costs of supply only – the incentives may not be sufficient for retailers to contest customers and for customers to enter into the market.

The regulatory approach must also recognise the limited ability of regulators to discover ‘efficient costs’.³⁵ As with any price regulation there is the risk that given the imperfect information available, setting prices to reflect the outcomes that may emerge in a competitive market may not be feasible. The dynamic nature of retail energy markets only makes this more challenging, creating the potential for price regulation to distort the competitive market.

³³ We consider that recent network cost increases, which are responsible for most of the recent retail price increases, may be higher than necessary due to aspects of the regulatory framework which are contributing to inefficient outcomes. As discussed in Chapter 14, we recommend action be taken to ensure future network prices more closely reflect efficient costs.

³⁴ For example, by removing barriers to retail entry, and assisting customers engage in the competitive market. Implicit in this is the recognition that “Regulation...is not a substitute for competition. It is a means of ‘holding the fort’ until competition comes.” Littlechild, S, Regulation of British Telecommunications’ Profitability, Report to the Secretary of State, London: Department of Industry, 1983 (The Littlechild Report).

³⁵ The challenge facing regulators in trying to discover ‘efficient costs’ is well documented. For example, see Yarrow, G., Report on the impact of maintaining price regulation, Regulatory Policy Institute Oxford, UK, 2008, p 21. Yarrow notes that the determination of a competitive price is something that is discovered by a competitive process, and implicitly makes use of huge amounts of information. The ability of a regulator to forecast the outcomes of this process is highly limited.

Given the above, we consider that our determination needs to balance 2 potentially conflicting objectives:

- ▼ to encourage efficiency among retailers and protect customers from prices that are higher than efficient levels in the short-term by setting regulated prices that reflect the efficient costs of supply, and
- ▼ to support the interests of consumers in the long-term by setting regulated prices that create sufficient incentives for retailers to compete and customers to participate in the market.

As part of our approach for making the determination, we have used a systematic approach to balance these objectives and apply our discretion in setting prices in a transparent way. In particular:

- ▼ In step 4, we set the allowances for energy costs, retail operating costs and a retail margin in line with our estimates of the short-term efficient level of these costs (subject to the constraints in the terms of reference).
- ▼ In step 5, we set the allowance for efficient customer and acquisition costs (CARC) considering the incentive required to promote further competition in the market, including the costs of acquiring and retaining customers which a prudent retail business would incur, and the extent to which the energy purchase cost allowance (EPCA) already provides incentives for competition.³⁶ Our approach for determining the level of the CARC allowance is explained in Chapter 9.

In other words, we have explicitly used the CARC allowance as the mechanism for ensuring that the regulated prices for the 2013 period promote competition and support the long-term interests of consumers.

This approach means that the regulated prices under our final decision are unlikely to be the lowest price in the market. Rather, it is a price for customers who have not taken up a competitive, unregulated market offer.

³⁶ As Chapter 2 discussed, we are required to set the electricity purchase cost allowance no lower than the weighted average of the LRMC of generation (75%) and the market-based purchase cost (25%). This effectively creates a floor for this allowance. Since the market-based cost reflects the short-term efficient cost of purchasing electricity, the difference between this floor and the market-based cost provides incentive for competition. We have taken this into account, to ensure that the CARC allowance is set at a level which reflects the incentive for competition already included in the energy purchase costs.

Box 3.1 Process for this review

The process we followed in conducting this review included public consultation and detailed analysis. As part of this process, we:

- ▼ Released an issues paper in November 2012. This paper explained the terms of reference for the determination, outlined our proposed approach for making the determination, and discussed the key issues we would consider. It also invited all interested parties to make a submission in response to this paper.
 - ▼ Released several papers outlining our draft methodologies for determining key inputs to our cost analysis available in November 2012.
 - ▼ Sought information from the Standard Retailers, and invited them to submit a pricing proposal consistent with the terms of reference. To assist them in making their proposal, we made a copy of our retail pricing model available on our website.
 - ▼ Engaged consultants, Frontier Economics, to provide expert advice on energy purchase cost allowances, including the input assumptions required to develop those allowances, and SFG to provide expert advice on the retail margin.
 - ▼ Held a public forum to provide stakeholders with a further opportunity to comment on our issues paper and draft methodology papers.
 - ▼ Formed a working group of industry and community representatives to consider regulated non-tariff charges.
 - ▼ Made a draft decision, considering all relevant material available.
 - ▼ Held a public hearing on the draft report to provide stakeholders with the opportunity to comment on our draft decision.
 - ▼ Considered all submissions and stakeholder comments in making our final decision.
-

4 Effectiveness of retail competition

The second step in our approach for making our final determination was to assess the effectiveness of competition in the NSW retail electricity market. This assessment has important implications for our decision on the appropriate form of regulation for the 2013 determination period. For example, if competition is effective, the Standard Retailers are less likely to be able to set their regulated prices significantly above cost-reflective levels. This means that regulation can be more light-handed, as competition will provide customers with choices and limit regulated prices to efficient levels.

The section below provides an overview of our findings and their implications for the removal of retail price regulation, and for the appropriate form of regulation if it continues. The subsequent sections discuss our findings in more detail, including on:

- ▼ what developments have occurred in the NSW retail electricity market's structure, retailer conduct in this market, and customer conduct and outcomes
- ▼ whether the level of regulated prices or other barriers are impeding further competition in this market, and
- ▼ what is required to promote further competition in the market.

4.1 Overview of final findings and their implications

We found that competition in the NSW retail electricity market has continued to improve, and is more effective than it was when we made the 2010 determination. In particular:

- ▼ The Standard Retailers have continued to lose market share within their supply areas.
- ▼ Small retail customers have continued to move off regulated prices, and around 60% are now on market-based prices (up from 35% in 2009/10). They are also switching between retailers at a higher rate than ever before (although still not as high a rate as in Victoria).

- ▼ Most customers who participate in the competitive market are experiencing positive outcomes (as noted by the AEMC in their draft report on the competitiveness of the retail electricity and gas markets in NSW).³⁷

Importantly, competition in the Essential Energy supply area (formerly the Country Energy supply area) – which has historically been lower than in 2 metropolitan supply areas – has improved since 2010. Origin Energy’s market share in the Essential area has continued to fall in this area, and the proportion of small customers on regulated prices has dropped from 80% to 66% in the 12 months to June 2012 (see Figure 4.3). The level of residential customer awareness of retailer choice in this area is now similar to that in the metropolitan areas (86% compared to 91%).³⁸ The AEMC also found there was substantial evidence that competitive conditions were similar across all 3 network supply areas.³⁹

We found that there are no significant impediments to competition continuing to develop over the 2013 determination period. In particular, there is no evidence that the average level of regulated prices is impeding competition in the short term. Nevertheless, some stakeholders suggested there should be more ‘headroom’ in regulated prices to stimulate more competition.⁴⁰

We found that there may be some non-price factors constraining competition in NSW. These include the number of regulated prices, including some obsolete regulated prices, available in some parts of Origin Energy’s Essential Energy supply area, and the still significant number of customers not engaging in the competitive market. We think retailers can take steps to address some of these factors over the determination period, and that this would be in their own interests as well as consumers’. However, we don’t consider them significant enough to prevent competition from continuing to evolve over the 2013 determination period.

Our final findings are consistent with those in our draft report. While a number of stakeholders supported our findings⁴¹, others considered there are still some issues preventing the development of competition. These are discussed further below.

³⁷ AEMC 2013, *Review of Competition in the Retail Electricity and Natural Gas Markets in New South Wales, Draft Report*, May 2013, p 29.

³⁸ Roy Morgan Research, *Survey of Residential Customers of Electricity and Natural Gas in New South Wales: Effectiveness of Retail Competition*, February 2013, p 9.

³⁹ AEMC 2013, *Review of Competition in the Retail Electricity and Natural Gas Markets in New South Wales, Draft Report*, May 2013, p 27.

⁴⁰ For example, see submission from Alinta Energy, December 2012, p 3.

⁴¹ For example, see submissions from EnergyAustralia, May 2013, p 3; Origin Energy, May 2013, p 3; AGL, May 2013, p 3; Australian Power and Gas, May 2013, p 1.

4.1.1 Retail price regulation in NSW

Based on our findings, IPART has formed the view that competition in the NSW retail electricity market now protects customers against market power by offering more choices and better price and service outcomes. We consider an effectively functioning competitive market offers customers the best protection from higher than efficient prices in the short term. It can also deliver better customer outcomes in the long term, including better 'value for money' service through reduced costs and/or innovation.

Recent draft findings from the AEMC are consistent with IPART's view. The AEMC's draft decision was that price caps should be removed and some additional customer protections put in place.⁴² However, whether or not to remove price regulation is a matter for the NSW Government to decide.

4.1.2 Implications for the form of regulation

The developments in the retail electricity market support a more light-handed regulatory package. This places more reliance on the competitiveness of the market to protect consumers and provide them with better outcomes.

We consider it appropriate to use a form of regulation that is similar to the one used for the 2010 determination (for example, the continued use of a weighted average price cap). However, in light of the developments in competition, we have removed some additional constraints relating to Origin Energy's regulated prices in the Essential Energy supply area.

4.2 Developments in NSW retail electricity market structure

The structure of the market affects the scope for competition and the potential for retailers to exert market power within the market. To assess developments in the NSW retail electricity market structure, we used information in the public domain and provided by retailers and other stakeholders. We focused on developments related to the market definition, the number of retailers contesting the market, market share, and barriers to market entry.

⁴² AEMC 2013, *Review of Competition in the Retail Electricity and Natural Gas Markets in New South Wales, Draft Report*, May 2013, p iii.

4.2.1 Market definition

There has been no change in the market definition since our 2010 determination. There are still 3 separate markets for retail electricity in NSW, based on the Standard Retailers' supply areas. Each of these markets has different network prices and a different regulated load shape (that produce different energy costs). As such, there is little likelihood that competition in one market alters the competitive conditions in the other market.⁴³

There is no evidence to suggest that separate markets or sub-markets based on customer characteristics – such as consumption levels – have emerged. For example, we examined whether customers with low consumption are less likely to be engaged in the competitive market. We found no evidence that a customer's consumption level made them significantly more or less likely to be on market contract relative to a regulated price. This indicates there are no separate markets on this basis.

4.2.2 Number of retailers contesting the market

The number of retailers active in the NSW electricity market has increased since our 2010 determination. There are currently 38 licenced electricity retailers⁴⁴ in NSW (compared to 26 in 2009,⁴⁵ when we began the 2010 price review).⁴⁶

4.2.3 Market share

The sale of the Standard Retailers to Origin Energy and TRUenergy in March 2011 increased the concentration of the NSW market as a whole. However, for the purpose of our assessment, it is more relevant to consider the concentration of each of the 3 separate markets based on the Standard Retailers' supply areas (see section 4.2.1).

Each of the Standard Retailers has lost market share within its own supply area since the 2010 determination. This is consistent with the long-term trend from 2002/03, when the transition from monopoly supply to a competitive market began (Figure 4.1).

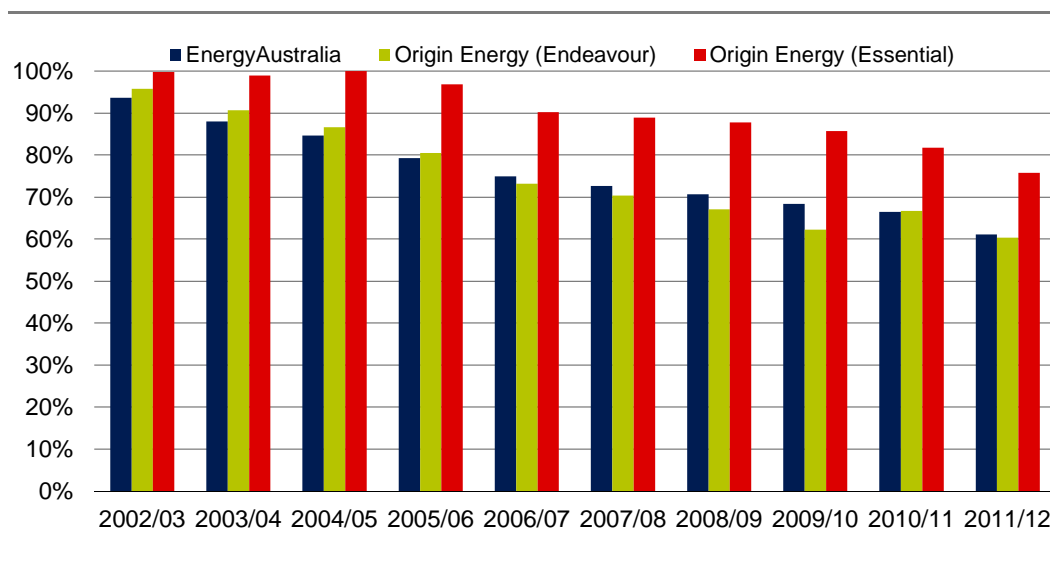
⁴³ That is, there is limited demand-side substitution (ie, of customers) and/or supply-side substitution (ie, of retailers) between the markets.

⁴⁴ Some of these retailers only supply large customers, and others are licenced but are not yet active in the market.

⁴⁵ IPART, *Review of regulated retail tariffs and charges for electricity 2010 to 2013 – Final Report*, March 2010, p 36.

⁴⁶ IPART, *Current Licence Holders*, accessed May 2013, http://www.ipart.nsw.gov.au/Home/Industries/Electricity/Licensing/Current_Licence_Holders.

Figure 4.1 Standard Retailers' market share within their own supply area has continued to decline



Data source: Information provided by the Standard Retailers.

4.2.4 Barriers to market entry

In past reviews, we found that barriers to entry in the NSW retail electricity market were relatively low. The most significant barriers were the costs associated with prudential requirements, licensing and IT systems. The number of new retailers entering the market since the 2010 determination suggests that these barriers continue to be low.

In our 2010 review, we found the high number of legacy regulated prices in the Essential Energy supply area had the potential to act as a barrier to entry in this market, particularly when some legacy regulated prices were set below the cost-reflective level. However, we noted that Country Energy (now Origin Energy) had significantly reduced the number of regulated prices and moved more than half to cost-reflective levels. In light of the Standard Retailer's plans to continue this process over the 2010 determination period, we concluded that this was not likely to be a major barrier.⁴⁷

Since then, the number of regulated tariffs in Origin Energy's Essential Energy supply area has further reduced. Some stakeholders have suggested that legacy obsolete regulated prices still act as a barrier to competition in this area (particularly in the far-west).⁴⁸ However, others have put the view that this is no longer the case.⁴⁹ Origin Energy has submitted that switching rates in parts of its supply area with legacy obsolete regulated prices are similar to those in other

⁴⁷ IPART, *Review of regulated retail tariffs and charges for electricity 2010 to 2013 – Final Report*, March 2010, p 39.

⁴⁸ EnergyAustralia submission, January 2013, p 17.

⁴⁹ AGL submission, December 2012, p 10.

parts of this area, which suggests that obsolete prices are not affecting competition.⁵⁰

We consider that as Origin Energy's remaining obsolete regulated prices affect only a small number of customers in some regions (mostly in far west NSW) they do not constitute a barrier to entering the market based on its Essential Energy supply area as a whole. However, they are not conducive to a well-functioning competitive market. In addition, they reduce the likelihood that retailers will compete. We note that Origin Energy plans to continue rationalising obsolete regulated prices in the Essential Energy area and moving them to cost-reflective levels.⁵¹ This issue is discussed further in Chapter 5.

4.3 Developments in retailer conduct

An effective retail market requires retailers to actively market their products and services, and to provide information to the market so customers can make informed choices. To assess developments in retailers' conduct in the NSW retail electricity market, we used information from the public domain, stakeholder submissions and the AEMC's recent surveys of NSW energy customers.⁵² We considered developments in marketing activity, retail offers and market information.

4.3.1 Marketing activity

As a number noted in their submissions,⁵³ retailers are currently conducting widespread marketing campaigns in NSW. This is reflected in the results of the AEMC's residential customer survey in NSW conducted in late 2012. This survey found that almost 70% of all respondents said they had been contacted by an energy company with a market offer (72% in metropolitan areas and 58% in non-metro areas).⁵⁴ Of these respondents, 72% said they had been contacted between 1 and 5 times in the past 12 months, while 15% said they had been contacted more times.⁵⁵

⁵⁰ Origin Energy submission to the AEMC review, p 9, available at <http://www.aemc.gov.au/Media/docs/Origin-Energy-a59ad150-6f56-4379-aa7e-571d54075a6d-0.PDF>.

⁵¹ Origin Energy submission, December 2012, pp 8, 10.

⁵² See <http://www.aemc.gov.au/Market-Reviews/Open/nsw-retail-competition-review.html>.

⁵³ Origin Energy submission, December 2012, p 5; EnergyAustralia submission, January 2013, p 11.

⁵⁴ Roy Morgan Research, *Survey of Residential Customers of Electricity and Natural Gas in New South Wales: Effectiveness of Retail Competition*, February 2013, p 12.

⁵⁵ *Ibid*, p 13.

We note that EnergyAustralia has stopped using door-to-door marketing effective from April 2013.⁵⁶ AGL subsequently ceased door-to-door sales to residential customers. However, this does not necessarily mean marketing activity will decline, as they will continue to use other sales channels. The AEMC noted that it appears retailers are increasingly utilising web-based marketing which has the advantage of not discriminating on the basis of geography.⁵⁷

4.3.2 Retail offers

Retailers largely compete for customers on the basis of price. There are currently significant discounts available on market contracts relative to regulated prices. A review of offers on www.myenergyoffers.nsw.gov.au shows some offers in excess of 15% off regulated usage rates can be obtained on a market contract (depending on factors such as the contract term, up-front rebates etc).⁵⁸

The level of price discounting has increased since we made the 2010 determination, when we observed discounts in the range of 5% to 8%.⁵⁹

The AEMC examined retailer profit margins as part of their review of competition in retail electricity and gas markets in NSW. The AEMC found that retail margins are generally consistent with outcomes that might be expected in an effectively competitive market because they are supporting price-based competition.⁶⁰

4.3.3 Market information

An effective retail market requires that customers have sufficient information to make an informed choice. In our 2010 review, we found that a lack of readily available transparent price information was a major impediment to effective competition. For example, at that time there was no requirement in NSW that retailers publish individual prices being offered to customers.⁶¹

There have been significant improvements in this area. Most customers can now access information on electricity prices relatively easily. However, many still don't find it easy to distil information on other aspects of retailers' offers (eg, contract terms and conditions) to effectively compare them and make informed choices.

⁵⁶ EnergyAustralia media release, 25 February 2013.

⁵⁷ AEMC 2013, *Review of Competition in the Retail Electricity and Natural Gas Markets in New South Wales, Draft Report*, May 2013, p 26.

⁵⁸ Based on a review in May 2013.

⁵⁹ IPART, *Review of regulated retail tariffs and charges for electricity – Final Report*, March 2010, p 43.

⁶⁰ AEMC 2013, *Review of Competition in the Retail Electricity and Natural Gas Markets in New South Wales, Draft Report*, May 2013, p 59.

⁶¹ IPART, *Review of regulated retail tariffs and charges for electricity – Final Report*, March 2010, p 44.

The AEMC's recent small business and residential energy customer surveys found that of those respondents who had looked for information on electricity prices in the last 12 months, most had used internet searches and internet price comparator services (such as *myenergyoffers*). Almost 60% agreed to a statement that information was easy to obtain, and around 20% neither agreed nor disagreed.⁶² Looking at residential customers only, just under half of those respondents said they found the information easy to understand, and 43% said that the information made it easy to compare offers.⁶³ The responses of small business customers were similar.⁶⁴

One of the reasons customers may still find it difficult to assess and compare electricity offers is that price discounts and price changes over the contract term are expressed in a variety of ways. For example, some electricity offers are expressed as a discount off the regulated price, while others are a discount off a different reference price set by the retailer making the offer. As a result over the contract term, some prices may move in line with regulated prices, others may not. In addition, some discounts are off the entire customer bill, some are just discounts on usage rates and terms and conditions can vary.

4.4 Developments in customer conduct and outcomes

In a well-functioning competitive market, most customers would be aware of their options, actively participate in the market by exercising choice, and generally experience positive outcomes (in terms of price and service) from this participation.

4.4.1 Customer awareness

The AEMC's surveys of energy customers found that around 90% to 92% of small business and residential respondents indicated they knew they could choose their electricity retailer.⁶⁵ Importantly, it found that the rate of awareness in non-metropolitan areas was similar to that in metropolitan areas (86% compared 91%).⁶⁶

⁶² Roy Morgan Research, *Survey of Residential Customers of Electricity and Natural Gas in New South Wales: Effectiveness of Retail Competition*, February 2013, p 42, Roy Morgan Research, *Survey of Business Customers of Electricity and Natural Gas in New South Wales: Effectiveness of Retail Competition*, February 2013, p 43.

⁶³ Roy Morgan Research, *Survey of Residential Customers of Electricity and Natural Gas in New South Wales: Effectiveness of Retail Competition*, February 2013, p 42.

⁶⁴ Roy Morgan Research, *Survey of Business Customers of Electricity and Natural Gas in New South Wales: Effectiveness of Retail Competition*, February 2013, p 43.

⁶⁵ Roy Morgan Research, *Survey of Residential Customers of Electricity and Natural Gas in New South Wales: Effectiveness of Retail Competition*, February 2013, p 9; Roy Morgan Research, *Survey of Business Customers of Electricity and Natural Gas in New South Wales: Effectiveness of Retail Competition*, February 2013, p 9.

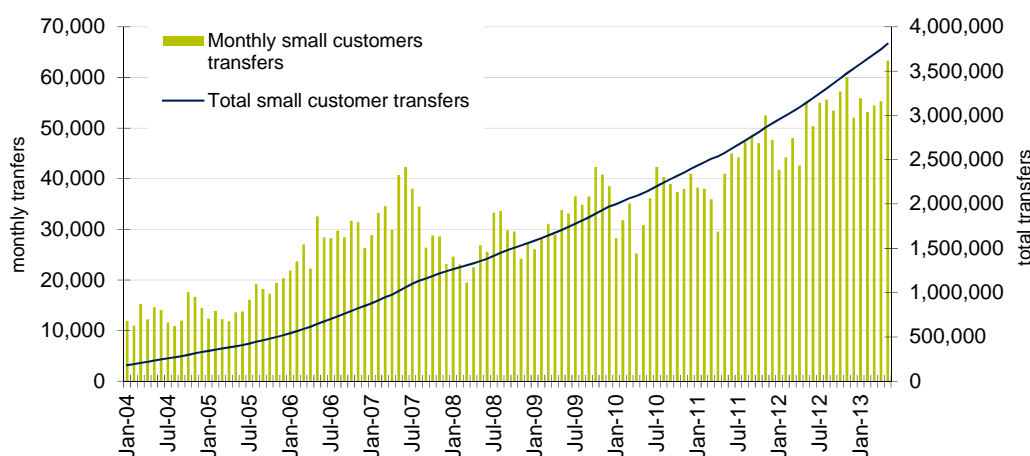
⁶⁶ Roy Morgan Research, *Survey of Residential Customers of Electricity and Natural Gas in New South Wales: Effectiveness of Retail Competition*, February 2013, p 9.

However, while customers' awareness of retailer choice is relatively high, their awareness about regulated prices versus market prices is still relatively low. The AEMC's surveys found that only 23% to 26% of respondents knew if they were on a regulated or market price.⁶⁷ This suggests there is widespread lack of understanding about the difference between regulated and market prices, which potentially influences effective customer engagement in the market.

4.4.2 Exercising choice

One indicator of the extent to which customers are exercising choice is the rate at which they are switching between retailers. The latest data from the Australian Energy Market Operator shows that NSW customers are currently switching retailers at historically high rates (Figure 4.2). Since May 2012, there have been in excess of 50,000 switches a month, and the current annualised transfer rate is over 20%. However, this transfer rate is still below the rate in Victoria (currently over 30%).⁶⁸

Figure 4.2 Retail customer transfers are at record highs in NSW



Data source: AEMO.

The AEMC also noted high rates of customer switching in their draft report, and that this activity is similar between network supply areas.⁶⁹ This suggests that switching activity is occurring in both rural and metropolitan areas.

⁶⁷ Roy Morgan Research, *Survey of Residential Customers of Electricity and Natural Gas in New South Wales: Effectiveness of Retail Competition*, February 2013, p 53; Roy Morgan Research, *Survey of Business Customers of Electricity and Natural Gas in New South Wales: Effectiveness of Retail Competition*, February 2013, p 54.

⁶⁸ Retail transfer statistics as at May 2013, available at: <http://www.aemo.com.au/Electricity/Data/Metering/Retail-Transfer-Statistical-Data>

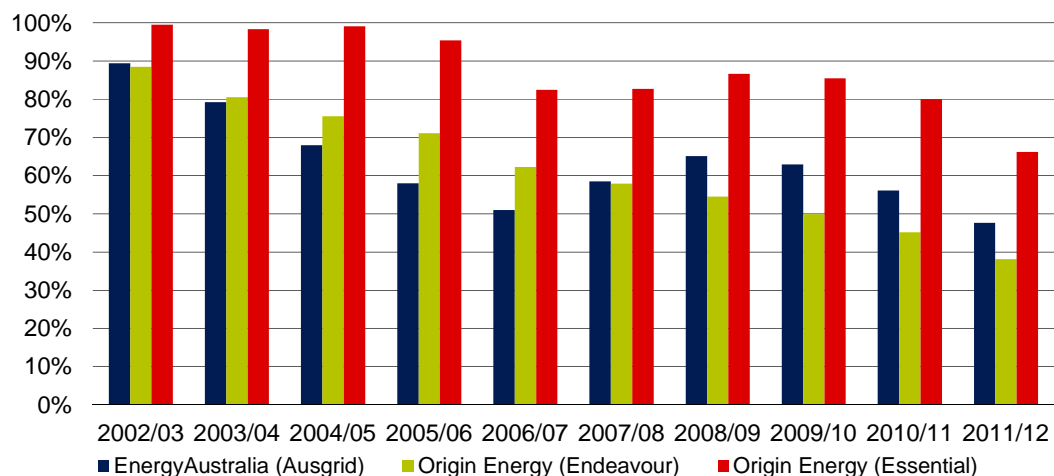
⁶⁹ AEMC 2013, *Review of Competition in the Retail Electricity and Natural Gas Markets in New South Wales, Draft Report*, May 2013, p 26.

As discussed in Chapter 2, the NSW Government intends to prohibit electricity retailers from charging an early termination fee to certain disadvantaged customers and will ask IPART to set a cap on termination fees for all other customers.⁷⁰ While termination fees may affect a customer's decision to switch retailers, it is unclear at this stage how this might affect overall levels of switching in the market over our determination period.

Another indicator of customers exercising choice is the percentage that remains on regulated prices. Currently around 40% of small customers remain on a regulated price.⁷¹ This has decreased from around two-thirds when we made our 2010 determination.⁷²

As Figure 4.3 shows, the proportion of small customers on regulated prices is not the same across supply areas. This proportion has historically been higher in the Essential Energy supply area. However, there was a significant reduction in the proportion of customers on regulated prices in this area over the 12 months to June 2012 (from 80% to 66%). This suggests many customers in this area have recently engaged in the competitive market.

Figure 4.3 Percentage of small customers on regulated prices varies by supply area



Data source: Information provided by Standard Retailers.

PIAC submit that there are some consumer groups who have difficulty participating in the competitive market. These include customers without access to the internet, those from culturally and linguistically diverse backgrounds, and those with a physical disability. In addition, residents of some retirement

⁷⁰ Draft National Energy Retail Law (Adoption) Amendment (Early Termination Charges and Site Specific Conditions) Regulation 2013 (NSW), May 2013.

⁷¹ This compares to around 34% of small gas customers who remain on regulated prices. See IPART, *Changes in regulated gas prices from 1 July 2013 – Fact Sheet*, April 2013.

⁷² IPART, *Review of regulated retail tariffs and charges for electricity – Final Report*, March 2010, p 50.

villages and residential parks have no choice other than to purchase their electricity from the management of their village or park and hence do not have access to the competitive market.⁷³

We agree that it is important that customers are able to effectively participate in the market. Because those groups who have difficulty participating are relatively small in terms of the overall market, we consider that more targeted policy or regulatory responses may be more appropriate to assist these customers. We discuss this further in Chapter 14.

4.4.3 Customer outcomes

Overall, the AEMC's recent energy customer surveys indicate that most customers who participate in the competitive market experience positive outcomes. For those 53% of residential customers who had switched electricity retailers since 2002:

- ▼ 81% said that the switching process was easy
- ▼ 74% said it took as long, or less time than expected
- ▼ 57% said they were satisfied with their new energy company (another 27% said they were 'neutral')
- ▼ 69% said the main reason they switched was because they were offered a better price/plan or some other financial incentives.⁷⁴

There were similar levels of satisfaction from customers who had not switched retailers, but had changed arrangements with their existing retailer (eg, switching from a regulated price to a market price with the same retailer).⁷⁵ 45% of these customers were satisfied with their new arrangements and another 37% were neutral.

4.5 Whether regulated prices or other factors are impeding competition

In addition to analysing the developments in the retail electricity market since our 2010 determination, we considered whether the average level of regulated prices or other (non-price) factors are acting as a barrier to competition. Overall, we found no evidence that the average regulated price is a barrier to competition. While some other factors have the potential to constrain the further development of competition, we do not consider they are significant enough to prevent competition from continuing to evolve over the 2013 to 2016 regulatory period.

⁷³ PIAC submission, May 2013, p 5.

⁷⁴ Roy Morgan Research, *Survey of Residential Customers of Electricity and Natural Gas in New South Wales: Effectiveness of Retail Competition*, February 2013, pp 21, 24, 25, 26, 28.

⁷⁵ Ibid, pp 34–35.

4.5.1 Regulated prices

Some submissions noted that regulated prices (or the limited amount of ‘headroom’ in these prices) were acting as a barrier to increased competition.⁷⁶ Other submissions indicated that the current regulatory settings have been successful in promoting competition.⁷⁷

We consider there is little evidence to support the view that average regulated prices are impeding competition in the NSW market as a whole. However, there is evidence to support the contrary view. This includes the continued entry of new retailers into the NSW market, the significant discounts relative to regulated prices available to customers through market offers, and the high levels of customer activity in the market (all discussed in the sections above). There may be some non-price factors that have supported competition, including the sale of the NSW Standard Retailers and the subsequent increase in marketing activity.

Nevertheless, it may be that providing a specific allowance to attract and retain customers in the level of regulated retail prices would help stimulate further competition, and better balance the trade-off between short-term and long-term efficiency. This issue is discussed in more detail in Chapter 9.

4.5.2 Other factors

Factors other than the level of regulated prices may also impede competition. These factors may relate to the supply-side or demand-side of the market.

On the supply side, the number of Origin Energy’s regulated prices may act as an impediment to competition in certain parts of the Essential Energy supply area. As section 4.2.4 discussed, we consider these obsolete prices – some of which are still below cost-reflective levels – are not conducive to a well-functioning competitive market. In addition, they reduce the likelihood that retailers will compete and customer choice in some of these regions. However, as they affect only a small number of customers in some regions (mostly in far west NSW) they do not constitute a significant impediment to competition overall.

On the demand-side, the AEMC’s energy customer surveys indicate that the most common reasons for non-participation among residential customers are that they:

- ▼ are happy with their current energy company
- ▼ cannot be bothered/find it too much effort to change retailers
- ▼ do not think the potential savings make it worthwhile.⁷⁸

⁷⁶ Alinta submission, December 2012, p 3.

⁷⁷ AGL submission to the AEMC review, p 5, available at: <http://www.aemc.gov.au/Media/docs/AGL-Energy---received-13-February-2013-a905d96c-0476-4e05-8451-a2a4d044f3db-0.pdf>.

⁷⁸ Roy Morgan Research, *Survey of Residential Customers of Electricity and Natural Gas in New South Wales: Effectiveness of Retail Competition*, February 2013, p 22.

These reasons may not necessarily represent structural barriers to competition. For example, they could relate to the 'behavioural biases' that consumers exhibit in a range of markets.⁷⁹ However, the AEMC's surveys also indicate that a sizeable proportion of customers who do make the effort to change retailers find the available market information difficult to understand or insufficient for their needs.⁸⁰ This suggests that the quality and suitability of market information may be a constraint to competition.

Some stakeholders agreed that information is difficult to understand. Cotton Australia submitted that retailers need to engage more with consumers to ensure information is easily available and understandable to compare offers.⁸¹ PIAC noted that the complexity of energy market offers means that customers who do switch may not end up on a better offer.⁸² Results from the AEMC's surveys indicated that the majority of customers appear satisfied with the choices available and their decisions. However, it also found that customers want more from their retailers and are demanding more transparent information, particularly regarding prices.⁸³

4.6 Action required to promote further competition in the market

Based on the above analysis, we consider competition in the retail electricity market in NSW has improved since the 2010 determination, and is largely effective.

⁷⁹ It is well documented that in making decisions in many markets, consumers have limits to taking in information, are taken in by how things are presented, may be poor at anticipating the future and may care more about losses than gains. In short, consumers may have systematic biases in the way they view both the world and markets. Office of Fair Trading, *What does Behavioural Economics mean for Competition Policy?* March 2010.

⁸⁰ Roy Morgan Research, *Survey of Residential Customers of Electricity and Natural Gas in New South Wales: Effectiveness of Retail Competition*, February 2013, p 42.

⁸¹ Cotton Australia submission, May 2013, p 8.

⁸² PIAC submission, May 2013, p 5.

⁸³ AEMC, *Review of competition in the Retail Electricity and Natural Gas Markets in New South Wales, Draft Report*, May 2013, p ii.

In order to further support competition, allowing for the removal of retail price regulation at a time that the NSW Government considers appropriate, the actions we propose to take include:

- ▼ Making the regulatory package for the 2013 determination more light-handed by discontinuing the additional limits on price movements for Origin Energy's Essential Energy supply area and invite it to publish a plan on how it will rationalise its obsolete regulated prices (see Chapter 5). This will enable it to speed up its regulated price rationalisation process.
- ▼ Continue to include a separate allowance for customer acquisition and retention costs in determining the value of the regulated retail price controls within this form of regulation (see Chapter 9). This allowance will help to ensure that regulated retail prices promote competition and support the long-term interests of customers.

However there are other actions that we consider would improve the competitiveness of the retail market. Retailers should also do what they can to improve the quality and suitability of market information, to encourage and facilitate further reduction in customer reliance on regulated prices. For example, we would like to see retailers making it easier for customers to compare market offers and to ensure that customers understand how prices will move throughout the contract.

In our view, it is in retailers' best interests to be proactive in improving customer engagement and the overall effectiveness of competition. This will ensure the Government does not need to step in and mandate specific action.⁸⁴

We consider the retailers have most likely employed strategies to attract customers that were most willing to enter into a market contract. If the Government does not remove price regulation, some other significant change may be necessary to further reduce reliance on regulated prices. For example, the Government could consider introducing an opt-in model for regulated prices (see Chapter 5).

We also think there are opportunities for network businesses to set their network charges earlier and with greater consultation with retailers and customers. This would improve the competitiveness of the retail market by allowing retailers more time to develop their retail offerings, and providing customers with greater opportunity to compare prices before they take effect. In September 2012, IPART lodged a Rule change proposal with the AEMC. We propose that the network charges are set earlier and with greater consultation with retailers and customers. The AEMC recently initiated a review in respect of our proposal.⁸⁵

⁸⁴ For example, the NSW Government has announced a ban on termination fees in certain circumstances when the retailer changes the charges.

⁸⁵ <http://www.aemc.gov.au/Electricity/Rule-changes/Open/annual-network-pricing-arrangements.html>.

More information on our recommendations for improving the development of competition is provided in Chapter 14.

5 The form of regulation

Our terms of reference require us to make a determination for the period 1 July 2013 to 30 June 2016. The third step in our approach for this determination was to decide what form of regulation to use over the determination period.

The form of regulation can be described as the rules and methodologies used to set, monitor and adjust regulated prices over a determination period. For the 2010 period, we used a regulatory package that included a weighted average price cap as the main form of regulation, plus a limited number of additional regulatory constraints. The package applies to all existing regulated prices (excluding any green premium paid by customers on those prices) and allows for these prices to be adjusted on 1 July in each year of the determination period (and at other dates if necessary).

To decide on the appropriate form of regulation for the 2013 period, we took the current regulatory package as a starting point. We assessed whether this package should change in light of our findings on the effectiveness of competition, the terms of reference for the 2013 determination and views expressed by stakeholders in submissions. Based on this assessment, we made final decisions on:

- ▼ which retail electricity prices will be regulated
- ▼ what main form of regulation will be used to set and adjust these prices
- ▼ what (if any) additional regulatory constraints will be applied
- ▼ when regulated retail prices and charges will be adjusted during the determination period.

5.1 Overview of final decisions on the form of regulation

We consider it appropriate to use a regulatory package that is consistent with the one we used for the 2010 determination but relies more heavily on the competitiveness of the market to protect customers from inefficient prices. We think that this will promote competition and is in the long-term interests of customers.

Consistent with our draft decision, we have decided to continue to regulate all existing regulated retail prices for small customers who have not entered a negotiated electricity supply contract, or who have returned from a negotiated contract to a regulated retail price. We will also continue **not** to regulate the green premium paid by customers on regulated prices who opt for a proportion of their electricity to come from renewable or 'green' energy sources.

In relation to the form of regulation, we will continue to allow the Standard Retailers to set regulated prices subject to a weighted average price cap (WAPC). We consider the WAPC provides the flexibility that retailers need to rebalance and restructure their regulated prices to set cost-reflective prices and promote competition, in line with our terms of reference.

In relation to additional price constraints, we will continue to:

- ▼ not allow the Standard Retailers to introduce new regulated prices, except where there are exceptional circumstances and they have obtained IPART approval
- ▼ allow the Standard Retailer to rationalise their regulated retail prices and to remove obsolete prices, provided they continue to offer at least one regulated price to small retail customers.

However, taking into account the improved competitiveness of the market and the requirements of the Act and terms of reference, we will remove the additional constraint that limited Origin Energy's ability to increase individual prices by more than a specified amount (in the Essential Energy supply area) and to remove the requirement for Origin Energy to obtain IPART's approval to transfer customers between prices. Instead, we will invite Origin Energy to set out how it will rationalise obsolete prices in the Essential Energy area over the determination period. This will provide improved information to customers and other retailers about how the obsolete prices (which make it more difficult for some retailers to make market offers in the Origin Energy (Essential Energy) area) will be rationalised.

In addition, we will maintain the cost-pass-through mechanism to allow Standard Retailers to pass through to customers material increases or decreases in costs associated with defined regulatory and taxation change events. We will also maintain an annual review process for specific elements of the R values (discussed in Chapter 11).

In relation to the date on which regulated prices will change during the regulatory period, we will maintain a 1 July price change for 'normal changes'. However, we will try to bring forward the annual price compliance process to facilitate the development of the competitive market. We will link our price compliance checks to those of the AER and to the release of our final decision to ensure that regulated prices can be set as soon as practical.

These decisions are consistent with our draft decisions and were generally supported by stakeholders in the consultation process.⁸⁶

5.2 Which prices will be regulated

IPART Final Decision

1 IPART's final decisions are to:

- Regulate all existing regulated retail prices for small customers who have not entered into a negotiated electricity supply contract, or who have returned from a negotiated contract to a regulated retail price.
- Not regulate the green premium paid by customers on regulated prices who opt for a proportion of their electricity to come from renewable or 'green' energy sources.

We have decided to continue to regulate all existing regulated prices because:

- ▼ the terms of reference require regulated prices to be set in each standard supplier's district
- ▼ it is not within our powers to unilaterally introduce an opt-in arrangement as this would require legislative change
- ▼ continuing to regulate all existing regulated tariffs provides consistency to stakeholders.

Given that the green premiums are optional, we have decided to continue not regulating them to promote retail competition and the cost-reflectivity of green premiums. In our view, it is not appropriate or necessary to regulate these premiums given their optional nature. In addition, we prefer that product diversity occur in the competitive market (while noting that a regulated customer can access an unregulated green premium). We note that stakeholders generally agreed that green premiums should remain unregulated.⁸⁷

⁸⁶ EnergyAustralia submission, May 2013, p 7; Origin Energy submission, May 2013, p 31; AGL submission, May 2013, p 8.

⁸⁷ EnergyAustralia submission, January 2013, p 17; Origin Energy submission, December 2012, p 9; AGL submission, December 2012, p 10; EnergyAustralia submission, May 2013, p 7; Origin Energy submission, May 2013, p 31; AGL submission, May 2013, p 8.

Notwithstanding the above, we consider that if regulation does continue, we encourage the Government to consider introducing an opt-in model as part of a transition to deregulation. As our issues paper discussed, under such a model the Standard Retailers would establish a limited number of new regulated prices, and all customers on existing regulated tariffs would be required to actively choose to move to the new regulated price in their area or a market contract.

We consider that moving to an opt-in arrangement would improve the ability of retailers to compete in the Origin Energy (Essential Energy) area where there are currently a large number of regulated prices (see Chapter 4), with many (obsolete) prices below cost reflective levels. Such an arrangement, together with an effective, targeted information campaign, should actively encourage customers to exercise their choice of being supplied under a market or regulated contract. This will reduce customers' reliance on regulated prices and over time reduce the need for retail price regulation, facilitating its removal at a time the NSW Government considers appropriate.

We note that the Standard Retailers support this view. For example, in its submission to the issues paper EnergyAustralia submitted:

...we are supportive of an opt-in regulated tariff approach, and believe it would be a positive interim step towards full price deregulation...it could help to create further awareness amongst customers and to lead more quickly to a reduction in the number of Country Energy regulated tariffs. We see the opt-in model having potential as a useful stepping-stone to price deregulation and we are prepared to work with IPART, government and industry to explore further, how this could be put in place.⁸⁸

Other retailers have also expressed general support, including AGL, Alinta Energy and Simply Energy. For example, Alinta Energy submitted in response to our issues paper that it:

...believes that customers' apathy is the single reason for a portion of customers remaining on the regulated rate. By engaging proactively with these customers, they will be able to make an informed choice as to the most suitable offer for them and provide for an orderly transition to price deregulation.⁸⁹

On the other hand, EWON, PIAC and Momentum Energy raised concerns about an opt-in model, particularly the potential for confusion in relation to any new arrangements.⁹⁰ Momentum Energy also expressed concern that an opt-in arrangement would not necessarily improve competition and provides an advantage to incumbent retailers.⁹¹

⁸⁸ EnergyAustralia submission, January 2013, p 16.

⁸⁹ Alinta submission, December 2012, p 4.

⁹⁰ EWON submission, December 2012, pp 1-2; PIAC submission, December 2012, p 3; Momentum Energy submission, December 2012, pp 3-4.

⁹¹ Momentum Energy submission, December 2012, p 4.

We stress that a well-planned and resourced information campaign would be required to assist customers with understanding any move to an opt-in arrangement, and how it affects them. As our issues paper noted, given the importance of this information campaign it is unlikely that such a move could occur prior to 1 July 2014 (ie, we would need to continue to regulate all existing regulated prices for at least the first year of the new determination). Stakeholders have acknowledged this point and the Standard Retailers have indicated that they are prepared to assist in identifying key stakeholders and “coming up with an effective customer awareness campaign.”⁹²

A well-functioning market requires the interaction of “well-informed and well-reasoned demand”⁹³ with competitive supply. Promoting competitive outcomes may therefore require addressing some of the ‘demand-side barriers’ through action by retailers, the Government and IPART. In our view, the opt-in arrangement needs to be seen alongside these other measures to reduce customer reliance on regulated retail prices and promote effective customer engagement.

5.3 Main form of regulation

IPART Final Decision

- 2 IPART’s final decision is to regulate retail tariffs using a weighted average price cap (WAPC) that allows the Standard Retailers to set individual regulated prices subject to this cap.

Under a WAPC approach, IPART determines the maximum average percentage by which each Standard Retailer can increase its regulated prices (weighted by the relevant quantity) in each year of the determination period. The Standard Retailer can then adjust the level and structure of individual regulated prices as it sees fit, provided that on average, these prices do not increase by more than the maximum percentage. We used this form of regulation in the 2007 and 2010 determinations.

⁹² EnergyAustralia submission, January 2013, p 16.

⁹³ Office of Fair Trading, *Consumer contracts – Economics Framework*, Appendix B, 2012, p 4, available at: http://www.oft.gov.uk/shared_offt/market-studies/consumercontracts/oft1312b.pdf

We consider that continuing to use a WAPC form of regulation is consistent with our terms of reference for the 2013 determination. In our view:

- ▼ A WAPC facilitates the setting of individual prices to reflect the underlying costs of supply by providing retailers with flexibility to adjust these prices in response to changes in their cost base. This flexibility also facilitates the rationalisation of regulated prices, which is important for encouraging the development of effective retail competition. We note that several stakeholders, including the Standard Retailers, expressed support for a WAPC on these grounds.⁹⁴
- ▼ When combined with competition and other elements of our regulatory package, a WAPC is sufficient to protect small customers from the risk that Standard Retailers will set some individual prices significantly above the efficient cost of supply.

We note that in the metropolitan areas of NSW (ie, the EnergyAustralia and the Origin Energy (Endeavour Energy) supply areas), the vast majority of regulated customers are on their Standard Retailer's main regulated residential or business price (as applicable). This means there is very little scope for these Standard Retailers to segment customers, including those customers who may be less likely to receive competitive offers, and increase individual regulated prices by significantly more than the average maximum increase allowed under the WAPC. In addition, as we have decided to maintain the existing constraints on introducing new regulated prices (see below), this will not change over the 2013 period.

We also note that competition in the Origin Energy (Essential Energy) supply area has improved since the 2010 determination. We consider that a WAPC, together with competitive disciplines, now provides sufficient protection to customers in this area.

5.3.1 Approach for calculating the WAPC

IPART Final Decision

3 IPART's final decision is to calculate the WAPC on the following basis:

- the N values (which relate to network costs) are based on actual network charges imposed by the distribution network service providers and approved by the AER
- the R values (which relate to non-network costs incurred by retailers) are based on the efficient Standard Retailer cost allowances determined by IPART

⁹⁴ AGL submission, December 2012, p 10; EnergyAustralia submission, January 2013, p 18; Origin Energy submission, December 2012, p 9; EnergyAustralia submission, May 2013, p 7; Origin Energy submission, May 2013, p 31; AGL submission, May 2013, p 8.

- the quantities used to weight prices are:
 - for fixed components, actual customer numbers as at 31 December in the previous year, and
 - for variable components, estimated consumption (in MWh) over the previous year.

This approach is consistent with the approach used in the 2007 and 2010 determinations and our draft decision, and involves the same formula for calculating the WAPC (see Box 5.1).

Box 5.1 Formula for calculating the WAPC

$$\sum_{i=1}^n \sum_{j=1}^m P_{ij}^t \cdot q_{ij}^{t-1} \leq \sum_{i=1}^n \sum_{j=1}^m C_{ij}^t \cdot q_{ij}^{t-1} + PT^t$$

where:

- ▼ $i=1,2,\dots,n$ and $j=1,2,\dots,m$ (ie, the retailer has n regulated tariffs which have up to m components, such as a fixed component and variable components)
- ▼ P_{ij}^t is the price proposed by the retailer for each component of tariff i
- ▼ q_{ij}^{t-1} is the relevant quantity (eg, customer numbers or consumption in MWh)
- ▼ $C_{ij}^t = N_{ij}^t + R_{ij}^t$, that is, the regulated price control set by IPART
- ▼ PT^t is the cost pass-through amount allowed or required by IPART.

Each year of the determination period, the WAPC will be calculated using:

1. the relevant R values determined by IPART as part of this determination
 2. the N values, which are equivalent to the actual network charges incurred by the retailer
 3. the relevant quantities, including consumption figures and customer numbers for each tariff.
-

The decision allows the Standard Retailers to fully recover the efficient costs allowed for in the 2013 determination (ie, the total energy cost, retail cost and retail margin allowances) in addition to the customer acquisition and retention cost allowance. It also allows them to fully recover the **actual** costs they incur in paying network fees and levies (as determined by the AER).

The decision also provides the Standard Retailers with flexibility in how both the retail and network costs are recovered. This is because the WAPC limits the revenue the retailers can recover (for a given demand), but allows them to set the level and structure of individual prices.

5.4 Additional constraints

IPART Final Decision

4 IPART's final decisions are to:

- not impose additional constraints on the change in the retail component of the WAPC, or in individual customer bills on any Standard Retailer
- not allow Standard Retailers to introduce new regulated retail prices unless there are exceptional circumstances and they have IPART's prior approval
- allow Standard Retailers to rationalise their regulated retail tariffs, and remove obsolete regulated tariffs, provided they continue to offer at least 1 regulated tariff to small customers and provide notice to IPART
- invite Origin Energy to publish a plan that sets out how it will rationalise its remaining obsolete prices for the Essential Energy supply area.

These final decisions are consistent with the 2010 determination, except we have decided to remove the additional constraints that determination imposed on Origin Energy (for the Essential Energy supply area) and invite it to publish how it will rationalise its remaining obsolete prices. Our final decisions are consistent with our draft decisions.

5.4.1 No additional constraints on the change in the R component of the WAPC of individual bills

We will not impose additional price constraints on any of the Standard Retailers. We consider this is consistent with the increase in competition in general, and in Origin Energy's (Essential Energy) supply area in particular. It is also consistent with the terms of reference for the 2013 determination. In particular, we note that the imposition of additional price constraints could interfere with retailers' ability to set regulated prices at cost-reflective levels in each year of the determination period, and their ability to rationalise regulated retail prices.

5.4.2 No new regulated prices except in exceptional circumstances

We decided to continue to restrict the introduction of new regulated prices to limit their proliferation, and thereby reduce customer reliance on regulated prices and facilitate the development of competition. We consider price innovation should occur among the products available in the competitive market rather than in the regulated market. The desirability of product innovation is best decided by customers, rather than regulators.⁹⁵

⁹⁵ This is in contrast to developments in the UK whereby Ofgem is limiting product diversity in the competitive market as a means to reduce a perceived barrier to customer participation.

However, as we have previously indicated, it may be appropriate to develop new regulated products in exceptional circumstances, including if new underlying network prices are developed.⁹⁶ Network prices are an uncontrollable cost to retailers, and if retail prices do not reflect underlying network prices, then the retailer faces risk. Retailers may be prepared to manage this risk, however at a cost. We consider it appropriate to allow the Standard Retailer to seek approval from IPART to introduce new regulated prices in exceptional circumstances.

This provision together with the special circumstances provision, were in place in the 2007 and 2010 determination. We note that to date, Standard Retailers have sought to introduce a new regulated price only once in response to a new transitional network price.

5.4.3 Rationalisation and removal of obsolete regulated prices allowed, and Origin Energy invited to submit plan for the Essential Energy supply area

We will continue to allow Standard Retailers to rationalise their prices, and to remove obsolete prices, subject to the determination and as long as they offer 1 regulated price and provide notice to IPART. We consider that such rationalisation supports the competitiveness of the market.

While the current determination provides for the rationalisation of regulated prices, there are questions about whether this has occurred fast enough. That is, is the current number of regulated prices still too high, and should more be done about this.

As Chapter 4 discussed, there is still a high number of regulated prices in the Origin Energy (Essential Energy) area, and this may make it more difficult for retailers to compete and lead to higher search costs for customers. EnergyAustralia submitted there should be a smaller set of cost reflective prices, particularly in the far-west of this area. It stated that it currently does not make any market offers in that region due to the higher likelihood of billing and quoting errors.⁹⁷ It considers that all obsolete regulated prices should be closed to improve competition.⁹⁸ It also proposed that Origin Energy develop a formal plan to rationalise its remaining obsolete prices in the Essential Energy supply area.⁹⁹

⁹⁶ This could be a network price that has a capacity charge element; that is, the prices charged to customers depend on their maximum consumption in a previous period.

⁹⁷ EnergyAustralia submission, January 2013, pp 17-18.

⁹⁸ Ibid, p 17.

⁹⁹ Ibid, p 17.

We have decided to invite Origin Energy to publish a plan that sets out how it will rationalise its remaining obsolete prices in the Essential Energy supply area over the determination period. This document will allow customers and other retailers to understand price movements for customers on obsolete prices. We consider that the transparency and subsequent benefits for the competitive market outweigh the administrative costs of developing and publishing this plan. While Origin does not believe that the legacy tariffs have acted as a barrier to competition, it indicated it would work with IPART on a rationalisation plan.¹⁰⁰

5.5 Key dates for adjusting regulated retail prices during the determination period

IPART Final Decision

- 5 IPART's final decision is that 'normal changes' in regulated retail prices will occur on 1 July. These changes include:
- annual changes in the N values as a result of AER's approval of network charges
 - annual changes in the R values as a result of IPART's 2013 determination and subsequent annual price review determinations.

This is consistent with our decision for the 2010 determination. However, we would like to release regulated retail prices as soon as practicable.

To set the regulated retail prices, Standard Retailers need both the R values (from our determination and annual review process) and the N values (from the AER's annual network price approval process). The timing of Standard Retailers accessing the N values is uncertain. Currently, the network prices are due to be finalised by 1 June each year. But if the network businesses do not submit complying proposals, network prices are released later than 1 June.

IPART has submitted a Rule change proposal that, if adopted, would have the network prices published by 1 May each year. The AEMC is currently considering this proposal. In its submission, EnergyAustralia outlined the difficulties arising from the timing of network price approvals and offered support for our Rule change proposal.¹⁰¹

Once the network prices are published the Standard Retailers develop their regulated prices. They then submit them to IPART for us to determine whether they comply with the weighted average price cap.

¹⁰⁰ Origin Energy submission, May 2013, p 31.

¹⁰¹ EnergyAustralia submission, May 2013, p 7.

We will link the annual regulated retail prices process to the release of the approved network prices and our R values, in order to facilitate regulated retail price setting as soon as practicable. By linking the submission of regulated retail prices to the approval of network prices, we deal with timing uncertainties, including:

- ▼ delays in the AER approving prices because the prices that the network businesses originally submitted did not comply and the AER seeks a revision from the network businesses
- ▼ uncertainty about whether the AEMC will change the Rules in response to our Rule change proposal and, if so, whether the dates that we have suggested will be adopted.

For the 1 July 2013 price changes, we are working with the Standard Retailers to approve the regulated prices as soon as practical.

For subsequent years, we consider that the Standard Retailers require 8 business days to develop their regulated retail prices once they have both the N and R values. We require at least 2 weeks to assess compliance and decide whether to agree to the prices (more time is required when the proposal is non-compliant).¹⁰²

Our proposed timeframe for the annual price setting process for 1 July 2014 and 1 July 2015 is set out in Table 5.1. We will publish the approved regulated prices on our website within 1 business day of approving them.

Table 5.1 Proposed timetable for annual price compliance, 1 July 2015 and 1 July 2016

Action	Timeframe	Days allowed for this task
IPART releases final annual review report	June	
AER approves network prices	May-June	
Standard Retailers have both R and N values	T	
Standard Retailers submit regulated price proposal	T+8	8 business days
IPART notifies Standard Retailers whether satisfied/not satisfied with proposal	T+18	10 business days
Final date for Standard Retailers to propose alternative Annual Pricing proposal	As notified by IPART (T2)	
Final date for IPART to notify Standard Retailers whether satisfied/not satisfied with alternative Annual Pricing Proposal	T2+10	10 business days

In addition, IPART will publish the final regulated prices within 1 business day of approval.

¹⁰² IPART will work with the Standard Retailer to streamline the price approval process to facilitate a 1 July 2013 price change.

Under the National Energy Consumer Framework (NECF), a retailer must provide 10 business days' notice of a price change. Notice must be provided by publishing the variation on the retailer's website and publishing a notice in a newspaper circulating in the State. A retailer can then inform each affected customer of the variation when the retailer sends the next bill to the customer. We will work with the AER and the AEMC (on our Rule change proposal regarding the timing of network price changes) and retailers to allow the retailers sufficient time to meet these requirements.

6 Total energy cost allowance

To supply their customers, electricity retailers need to purchase wholesale electricity through the National Electricity Market (NEM) and meet a range of associated costs. These costs – their total energy costs – represent around 40% of the total (retail + network) costs they incur.

In line with our terms of reference, we have estimated a total energy cost allowance for each Standard Retailer in each year of the determination period. This total allowance comprises 4 separate components:

- ▼ **An energy purchase cost allowance.** This reflects the costs an efficient Standard Retailer is likely to incur in supplying electricity to its regulated customers (including those associated with the carbon pricing mechanism) and managing the risks associated with this activity.
- ▼ **Green energy cost allowances.** These reflect the efficient costs the Standard Retailers incur in complying with:
 - the Small-scale Renewable Energy Scheme (SRES)
 - the Large-scale Renewable Energy Target (LRET), and
 - the Energy Savings Scheme (ESS).
- ▼ **Allowances for the market fees and ancillary charges** retailers pay under the National Electricity Rules.
- ▼ **An allowance for costs associated with energy losses**, which occur when electricity is transported along the transmission and distribution networks.

We calculated the energy purchase cost allowance based on each Standard Retailer's forecast regulated load over the determination period. In line with our terms of reference, we developed 2 separate regulated load forecasts: one for customers who consume between zero and 40 MWh per year (sub-40 MWh); and one for customers who consume between zero and 100 MWh per year (sub 100 MWh). In this chapter we present results for sub-100 MWh customers, in line with the definition of small retail customer included in the terms of reference.¹⁰³

We included the costs associated with changes in the SRES in 2012/13 that each Standard Retailer can pass through in its total cost allowance for 2013/14. (These amounts were established in our annual review of regulated prices for 2012/13.)

¹⁰³ Our results for sub-40 MWh customers is provided in Appendix C.

The section below provides an overview of our final decisions on the total energy cost allowance and its components for each Standard Retailer. The following sections discuss how we reached each of these decisions.

6.1 Overview of final decisions on the total energy cost allowance

6 IPART's final decisions on each Standard Retailer's total energy cost allowance for 2013/14 to 2015/16 and cost pass-through amounts for 2013/14 are as shown in Table 6.1.

Table 6.1 Final decisions on total energy cost allowance (\$2012/13, \$/MWh)

	2012/13 (current) ^a	2013/14	2014/15 indicative	2015/16 indicative
EnergyAustralia				
Energy purchase cost allowance ^b	87.76	79.88	81.22	69.03
LRET	4.55	5.08	5.25	6.15
SRES	5.52	4.60	3.15	2.05
ESS	1.55	1.84	1.93	1.93
NEM fees and ancillary services	0.87	1.04	1.04	1.04
Energy losses ^b	6.51	5.98	5.99	5.19
Total energy cost allowance	106.77	98.43	98.59	85.38
Cost pass through ^c	2.29	4.09		
Origin Energy (Endeavour Energy)				
Energy purchase cost allowance ^b	91.51	80.59	81.93	69.55
LRET	4.58	5.11	5.28	6.17
SRES	5.67	4.69	3.16	1.96
ESS	1.55	1.84	1.93	1.93
NEM fees and ancillary services	0.87	1.04	1.04	1.04
Energy losses ^b	7.89	6.40	6.41	5.54
Total energy cost allowance	112.08	99.67	99.74	86.19
Cost pass through ^c	2.25	4.26		
Origin Energy (Essential Energy)				
Energy purchase cost allowance ^b	84.35	69.39	70.56	58.83
LRET	4.56	4.98	5.15	6.03
SRES	5.77	4.53	3.10	1.94
ESS	1.55	1.84	1.93	1.93
NEM fees and ancillary services	0.87	1.04	1.04	1.04
Energy losses ^b	9.98	9.52	9.52	8.12
Total energy cost allowance	107.08	91.30	91.30	77.89
Cost pass through ^c	2.19	4.21		

^a The 2012/13 cost allowances are those included in our 2012 annual review indexed to \$2012/13 using inflation of 2.8%. The 2012/13 cost allowances are based on regulated customers with annual consumption up to 160 MWh per annum.

^b Based on sub-100 MWh regulated customers (see Appendix C for sub-40 MWh customers).

^c The cost pass through amounts include the value for energy losses.

Note: The energy purchase cost allowance has been calculated as 75% of the LRMC and 25% of the market-based energy purchase cost per MWh of forecast regulated load. Totals may not add due to rounding.

We made these final decisions after considering expert advice from our consultant, Frontier Economics (Frontier). We used the methodology set out in our issues paper¹⁰⁴ and Frontier's draft methodology paper.¹⁰⁵ We also took into account issues raised in our stakeholder consultations on these papers and the explicit guidance provided in our terms of reference.

6.2 Energy purchase cost allowance

7 IPART's final decisions on the energy purchase cost allowance are as shown on Table 6.2.

Table 6.2 Final decisions on the energy purchase cost allowance – sub-100 MWh (\$2012/13 \$/MWh)

	2012/13 (current) ^a	2013/14	2014/15 indicative	2015/16 indicative
EnergyAustralia	87.76	79.88	81.22	69.03
Origin Energy (Endeavour Energy)	91.51	80.59	81.93	69.55
Origin Energy (Essential Energy)	84.35	69.39	70.56	58.83

^a The 2012/13 cost allowances are those included in our 2012 annual review indexed to \$2012/13 using inflation of 2.8%. The 2012/13 cost allowances are based on regulated customers with annual consumption up to 160 MWh per annum.

Note: The energy purchase cost allowance has been calculated as 75% of the LRMC and 25% of the market-based energy purchase cost per MWh of forecast regulated load.

Source: Frontier Economics, IPART.

To reach these final decisions on the energy purchase cost allowance, we used an approach that involved the following steps:

- ▼ forecasting the regulated load of each Standard Retailer over each year of the determination
- ▼ developing other input assumptions needed for estimating energy costs, including capital and fuel costs of generation, and the weighted average cost of capital (WACC)
- ▼ deciding how to take account of the carbon pricing mechanism
- ▼ modelling the LRMC of electricity generation to meet the forecast regulated load
- ▼ modelling the market-based cost of purchasing electricity to meet the forecast regulated load

¹⁰⁴ IPART, *Review of regulated retail prices and charges for electricity 2013 to 2016 – Issues Paper*, November 2012.

¹⁰⁵ Frontier Economics, *Methodology Report – input assumptions and modelling – A draft report prepared for IPART*, November 2012.

- ▼ calculating the energy purchase cost allowance price floor (a weighted average comprised of 75% of the LRMC of generation and 25% of the market-based cost), and
- ▼ determining an appropriate energy purchase cost allowance for each Standard Retailer subject to the price floor and no lower than the market-based cost.

In estimating the LRMC of generation and the market-based energy purchase cost, we used methodologies consistent with those we used for our last 2 determinations.¹⁰⁶ We consider these to be transparent and predictable methodologies, as required by our terms of reference.

In determining an appropriate energy purchase cost allowance, we decided to set the allowance at the price floor described above. We did not consider including an additional allowance above the price floor to promote competition and the long-term interest of customers. Rather, as Chapter 3 discussed, we addressed this issue in setting a CARC allowance. (Our considerations in relation to the CARC allowance are discussed in Chapter 9.) Because we consider that the market-based cost reflects the short-term efficient cost of purchasing electricity, we would not set the energy purchase cost allowance below the market-based cost. Therefore, in the event the price floor is below the market-based energy cost, we would set the energy purchase cost allowance equal to the market-based cost.¹⁰⁷

Note that the requirement to establish the price floor as described above is a key difference between our terms of reference for this determination and for previous determinations. For the 2010 determination, for example, we were required to set the energy purchase cost allowance as the higher of the LRMC of generation and the market-based energy purchase cost.

6.2.1 Forecasting the regulated load profile of each Standard Retailer

The regulated load profile is important because it affects the cost of providing electricity to customers. In general, the more ‘peaky’ the regulated load profile, the more expensive it is for a retailer to supply the electricity.

As noted above, our terms of reference requires that we forecast each Standard Retailer’s regulated load profile for sub-40 MWh and sub-100 MWh customers.

¹⁰⁶ An exception is where we have used market forward prices to estimate the market-based energy purchase cost in 2013/14. This is discussed in section 6.2.5.

¹⁰⁷ In this instance the energy purchase cost allowance would not be contributing any margin on top of short-term efficient costs and therefore the CARC allowance would be set to provide all the required incentive to promote competition and the long-term interests of customers.

The approach we used to develop these regulated load forecasts is explained in detail in Frontier's final report.¹⁰⁸ In summary, it involves the following steps:

- ▼ collecting historical data on the Net System Load Profile (NSLP), Controlled Load Profile (CLP) and half-hourly consumption data from regulated customers with time-of-use meters
- ▼ determining the appropriate weights for the above components and combine them to form historical regulated load profiles
- ▼ using the historical regulated load profiles to generate 5,000 'synthetic' half-hourly regulated load forecasts using a Monte Carlo process¹⁰⁹
- ▼ selecting a 10% probability of exceedence (POE), a 50% POE and a 90% POE from these 5,000 forecast regulated load shapes (using both the annual energy under the load shape and the load factor¹¹⁰), and
- ▼ accounting for any trends in the load shape over time.

An important feature of this approach is that it captures the correlation between regulated load, system load and spot prices.

In applying this approach, we worked in close consultation with the Standard Retailers. Detailed information on the resulting forecast regulated load profile for each retailer is available from IPART on request. A summary of the regulated load profile is provided in Frontier's final report.¹¹¹

Compared to the 2010 determination period, the forecast regulated load shape for EnergyAustralia and for Origin Energy (Endeavour) is peakier in the 2013 period, while that for Origin Energy (Essential) is considerably less peaky.

In response to our draft report, Origin submitted that our forecast regulated load shapes in the Essential network area are flatter than their own data suggests. This would imply that they face an energy cost higher than we have estimated. Origin attributed the discrepancy to the difference in load profiles between regulated and market customers in the Essential network area. It proposed that IPART scale the load factor from the sub-40 and sub-100 MWh regulated load shapes to match the load factor for their own data.¹¹²

We have carefully considered the data provided by Origin however we have decided not to adjust the forecast regulated load in the Essential network area at this time. We disagree that any discrepancy would be the result of a difference between the load profile for regulated customers and market customers in the

¹⁰⁸ Frontier Economics, *Energy purchase costs - A final report prepared for IPART*, June 2013, pp 9-14.

¹⁰⁹ A Monte Carlo process estimates the probability of outcomes by running simulations of underlying processes.

¹¹⁰ The load factor is the ratio of the average to the maximum level of load over the year – it is a measure of how peaky the load shape is.

¹¹¹ Frontier Economics, *Energy purchase costs - A final report prepared for IPART*, June 2013, pp 14-25.

¹¹² Origin Energy submission, May 2013, pp 4, 10-15.

Essential network area. This is because the metering and settlement arrangements for customers with accumulation meters do not distinguish between regulated and market customers.

In our view a more probable cause of any discrepancy relates to risk that Origin faces as a tier 1 retailer in the Essential network area. Tier 1 retailers are settled in the market after all other retailers and are therefore left with any residual errors in the metering and settlement process. For example, these errors could relate to variation in energy losses or the controlled load profile.¹¹³ We consider that any discrepancy that arises due to metering and settlement is unrelated to price regulation (the issue would continue to exist if prices were deregulated). Therefore, any such issue should not be addressed through retail price regulation, but instead resolved between Origin and the market operator.

Our regulated load forecasts were developed in close consultation with the Standard Retailers. In the Essential network area the forecasts are based on publicly available historical data. These regulated load shapes would form the basis for settling tier 2 retailers and therefore competition among retailers for marginal customers will be based on the cost to serve the load shape we have forecast.

For the above reasons we have decided not to make an adjustment to the load factors in the Essential network area. In addition, Origin provided data for sub-160 MWh customers, which is not directly comparable with the sub-40 and sub-100 MWh data used in Frontier's modelling. Making an arbitrary change in the Essential area would be inconsistent with our approach in the Ausgrid and Endeavour Energy network areas, where the same arrangements are in place.

We will continue to engage with Origin and will consider any new information provided as part of next year's annual review.

6.2.2 Developing the other input assumptions

In addition to the forecast regulated load profiles, other input assumptions are needed to model the LRMC of generation and the market-based purchase cost. These include:

- ▼ the capital costs of generation
- ▼ fuel (coal and gas) costs of generation
- ▼ other operating costs of generation (taking into account the operating characteristics of generation)
- ▼ the WACC.

¹¹³ In this regard we note that recently published transmission loss factors in the Essential network area increased significantly and have been volatile in recent years.

Capital costs, fuel costs and other operating costs of generation

In our 2010 determination, we relied on publicly available data on the capital costs, fuel costs and operating costs of generation. However, we have identified several issues associated with relying on these third-party reports.¹¹⁴ In light of these issues, for the 2013 determination we sought expert advice on the appropriate input assumptions. We appointed Frontier Economics to provide this advice.

We consider that the input cost assumptions developed by Frontier are appropriate, and so have used them to make our final determination. Frontier has undertaken a robust process to produce these assumptions, which included benchmarking them against other published sources. We have published Frontier's final report on these input assumptions on our website.¹¹⁵

The key differences between the input cost assumptions we used for the final determination and those we used to update the energy purchase costs allowance for 2012/13 in our annual review relate to capital and fuel costs. Frontier's recommended capital costs for coal fired generation and coal cost assumptions for the 2013 determination period are higher than those we used in the 2012/13 annual review. However, its recommended gas capital costs and gas cost assumptions are lower.

We also used a different consultant (ACIL Tasman) to review wholesale gas costs as part of our review on regulated retail gas prices in NSW.¹¹⁶ We note that these consultants have different views on future gas prices in NSW, particularly from 2014/15, reflecting the considerable uncertainty in relation to the supply and demand dynamics in the gas market in the medium term. These different views on future gas prices are driven by different modelling assumptions, including how gas supplies committed to LNG developments should be treated. However, we note ACIL's estimates are not directly comparable to the Frontier analysis.

Some stakeholders submitted that our coal and gas cost assumptions were too low compared to their expectations, or compared to other sources of information.¹¹⁷ A common reason put forward by stakeholders was that the relevant gas price to use in the modelling is the price a generator would face over the long-term rather than the marginal cost in each year as used by Frontier.¹¹⁸ We recognise that retailers and generators enter into long-term contracts to

¹¹⁴ For example, we found it difficult to explain changes in these input assumptions and we could not obtain updated information when we needed it.

¹¹⁵ http://www.ipart.nsw.gov.au/Home/Industries/Electricity/Reviews/Retail_Pricing/Review_of_regulated_electricity_retail_prices_2013_to_2016

¹¹⁶ http://www.ipart.nsw.gov.au/Home/Industries/Gas/Reviews/Retail_Pricing/Review_of_regulated_gas_retail_prices_2013_to_2016

¹¹⁷ EnergyAustralia submission, May 2013, pp 12-17; Origin Energy submission, May 2013, pp 23-25; AGL submission, May 2013, pp 10-11.

¹¹⁸ For example, see Australian Power & Gas submission, May 2013, p 2; EnergyAustralia submission, May 2013, p 13.

manage their risks. However, we disagree that gas costs used in our modelling should represent a long-term average cost. We are trying to value this gas (whether under short or long-term contracts) on an annual basis. This will reflect the marginal costs or opportunity costs of supplying or consuming gas in each year. This not only promotes economic efficiency, but is consistent with the commercial decisions made by generators who typically make dispatch decisions based on opportunity/marginal costs.

There are 2 ways of estimating the marginal cost in a given year:

- ▼ Using a modelled approach giving consideration to the supply and demand dynamics in the gas market. This is the approach used by Frontier and ACIL Tasman, albeit they have made different assumptions about the supply and demand curves.
- ▼ Using market prices. This is difficult in the gas market as there are no observable forward prices. The current spot market provides an indication of the **current** supply and demand dynamics. From 2012/13 to 2013/14 there is only modest growth in demand expected and increased gas processing capacity, therefore gas costs for 2013/14 may be reasonably close to recent spot prices.

Frontier has prepared a detailed response to submissions on fuel costs in their final report.¹¹⁹

As noted above, we consider that Frontier's fuel cost assumptions are appropriate for use in our final determination. We note that Frontier's modelling of electricity price forecasts in 2013/14 which is based on these fuel costs are higher than the d-cyphaTrade price in 2013/14. This suggests that the market is not expecting generators to bid on the basis of fuel costs that are higher than Frontier's estimates.

We will reconsider and update our gas and other input cost assumptions in 2014/15 and 2015/16, as part of our annual review of the energy purchase cost allowance (discussed in Chapter 11). We will also be seeking revised proposals from gas Standard Retailers on wholesale gas costs as part of annual update of regulated retail gas prices.¹²⁰

¹¹⁹ Frontier Economics, *Input assumptions for modelling wholesale electricity costs - A final report prepared for IPART*, June 2013, pp 93-94, 101, 117-122, 133-137.

¹²⁰ Further information on IPART's final decision on regulated retail gas prices can be found [here](#).

The weighted average cost of capital

As for our previous determinations, we developed our own WACC estimates for the 2013 determination. As the WACC is an input for a number of separate calculations involved in determining the energy purchase cost allowance, we estimated a WACC for each specific calculation. These include:

- ▼ WACCs for various gas businesses (6.6% to 8.8%, real pre-tax) and for coal mining (8.4%, real pre-tax), which Frontier used in developing its fuel input cost assumptions.
- ▼ A WACC for electricity generation (8.0%, real pre-tax), which Frontier used in amortising capital costs as part of its modelling of the LRMC of generation (discussed in section 6.2.4 below).
- ▼ A WACC for electricity retailing (9.5%, real pre-tax), which Frontier used in calculating the volatility allowance included in the market-based energy purchase cost estimate (discussed in section 6.2.5). We also used this WACC in estimating the cost of complying with the SRES (discussed in section 6.3.2) and the retail margin allowance (discussed in Chapter 7).

The methodology we used to estimate these WACCs differs from the approach we used for the 2010 determination in some important ways. These differences reflect the recent decisions we have made as part of our ongoing review of our WACC method, including our decisions to:

- ▼ move to a post-tax WACC framework
- ▼ use different effective tax rates for different industries
- ▼ establish a WACC range using the midpoints of a WACC based on current market data and a WACC based on long-term averages.

Stakeholders were generally supportive of our approach for estimating the WACC in the draft decision.¹²¹ We have maintained this approach in this final report. Our final decisions on WACC are around 20 basis points lower than in our draft report. This is largely the result of the Reserve Bank of Australia cutting official interest rates. More discussion on our final decisions on WACC and a more detailed response to stakeholder submissions are provided in Appendix B.

6.2.3 Deciding how to take account of the carbon pricing mechanism

The carbon pricing mechanism increases the cost of generating electricity. This increases wholesale electricity prices, and thus the retail price of electricity. The carbon price is fixed until 1 July 2015, after which it will be determined by the market under a cap and trade scheme and linked to eligible international markets.

¹²¹ See EnergyAustralia submission, May 2013, p 35, AGL submission, May 2013, pp 14-15,

We have made a final decision to incorporate the carbon price in a manner consistent with our 2010 determination. It involves incorporating the cost of carbon emissions by estimating both the LRMC of generation and the market-based cost using a carbon-inclusive approach.

For the market-based cost, carbon costs feed into the bidding decisions made by generators in relation to the price and quantity of electricity they are willing to sell into the NEM. Ultimately, the carbon costs faced by different generators are reflected in the price of wholesale electricity.

For the LRMC of generation, these carbon costs are considered alongside other short run and long run costs (such as capital costs) in building a theoretical generation system that is able to supply the regulated load at least cost.

We have made a final decision to use the legislated carbon prices in the fixed price period until 2014/15. Thereafter we will use carbon prices from the Intercontinental Exchange's forward prices for European carbon permits. The forward price for 2015/16 is relevant to our estimates of energy purchase costs for 2015/16. In addition, these longer term carbon prices are relevant for Frontier Economics' LRMC modelling of Large-scale Generation Certificates prices (see section 6.3.1).

EnergyAustralia submitted that hedging the carbon liability in the floating price period warrants the inclusion of the value of call option premium to be included in the energy cost allowance.¹²² We consider that this is one of many business risks that retailers manage and does not require a specific allowance. Our regulatory package includes annual reviews of the energy cost allowance which aim to manage the risks associated with energy costs.

6.2.4 Modelling the LRMC of generation

The LRMC of electricity generation represents the least-cost combination of electricity generation plant required to meet each Standard Retailer's forecast regulated load.

For our final decision, we have continued to use a 'stand-alone' or 'greenfield' approach to estimate this LRMC. This approach effectively builds a whole new least-cost generation system designed to meet the regulated load. We have used this approach in the previous 2 determinations and stakeholders have indicated their support for this framework.¹²³ More information on the approach for

¹²² EnergyAustralia submission, May 2013, p 19.

¹²³ AGL submission, December 2012, p 13; Alinta Energy submission, December 2012, pp 5-6, Origin Energy submission, December 2012, p 11; EnergyAustralia submission, January 2013, p 26.

modelling the LRMC of generation is provided in Frontier Economics' methodology report.¹²⁴

In relation to the discount rate used in the modelling, we instructed Frontier to use a real post-tax WACC of 6.3%. This is equivalent to a real pre-tax WACC of 8.0% using an effective tax rate for electricity generation of 27%. We have provided a comprehensive summary of our final WACC decisions in Appendix B.

Frontier's final advice indicates that the LRMC of generation to meet the Standard Retailers' regulated load in 2013/14 is between \$72 and \$85 per MWh (Table 6.3).

Table 6.3 Frontier Economics' estimates of the LRMC of generation to meet each Standard Retailer's regulated load – sub-100 MWh (\$2012/13 \$/MWh)

	2012/13 (current) ^a	2013/14	2014/15 indicative	2015/16 indicative
EnergyAustralia	87.76	84.63	85.32	77.89
Origin Energy (Endeavour Energy)	91.51	85.01	85.70	78.30
Origin Energy (Essential Energy)	84.35	72.28	72.83	65.39

^a The 2012/13 cost allowances are those included in our 2012 annual review indexed to \$2012/13 using inflation of 2.8%. The 2012/13 cost allowances are based on regulated customers with annual consumption up to 160 MWh per annum.

Source: Frontier Economics, *Energy purchase costs – A final report prepared for IPART*, June 2013, p 33; IPART.

Frontier's final advice on the LRMC of generation for EnergyAustralia and Origin Energy (Endeavour) is lower relative to 2012/13. This is mainly because gas-fired generation forms a large proportion of generation under the LRMC modelling, and our gas input assumptions are lower relative to those used last year.

The LRMC of generation is considerably lower for Origin Energy (Essential) relative to 2012/13. This is because, in addition to lower gas prices, Origin Energy (Essential) is forecast to have a much flatter regulated load profile over the 2013 determination period than was forecast for the 2010 determination period.¹²⁵

The LRMC estimates in Table 6.3 are around \$1.50/MWh lower than in our draft report. This reflects updated input assumptions, in particular a fall in the WACC for electricity generation of around 20 basis points.

¹²⁴ Frontier Economics, *Methodology report – input assumptions and modelling – A draft report prepared for IPART*, November 2012, pp 15-18.

¹²⁵ Flatter regulated load shapes are less expensive to serve than peaky load shapes.

6.2.5 Modelling the market-based energy purchase cost

The market-based energy purchase cost takes into account the costs and risks that Standard Retailers' face in purchasing electricity in the wholesale market to meet the regulated load over the 2013 determination period.

We made a final decision to use the same modelling approach for market-based costs as we used in our previous 2 determinations. This approach involves 3 broad steps:

- ▼ forecasting spot prices
- ▼ forecasting contract prices, and
- ▼ based on these forecast prices, and forecasts of the regulated load profile, determining an efficient hedging strategy and the cost and risk associated with that strategy.

More information on this approach is provided in Frontier Economics' final report.¹²⁶

Some stakeholders submitted that Frontier's modelling approach understates the risks retailers face in purchasing electricity. They suggested that this produces prices that are lower than those actually borne by retailers.¹²⁷

Submissions from stakeholders in response to both our issues paper and draft decision generally relate to 2 aspects of Frontier's market-based modelling; spot price forecasts and the hedging strategy. Broadly, stakeholders commented on specific spot price outcomes and the overall distribution of spot price forecasts.¹²⁸ Submissions also related to the optimised approach to hedging that Frontier used in its modelling and that this may not be reflective of some retailer's actual hedging practices.¹²⁹

Frontier has prepared a detailed response to these submissions in its final report.¹³⁰ We have carefully considered these responses. In our view, Frontier's modelling framework adequately captures the risks involved in purchasing electricity in the wholesale market and provides an appropriate energy cost estimate.

¹²⁶ Frontier Economics, *Energy purchase costs – A final report prepared for IPART*, June 2013, pp 37-58.

¹²⁷ See EnergyAustralia submission, January 2013, pp 4; 26-27, 34-40, Lumo Energy submission, January 2013, pp 8-9.

¹²⁸ For example, see EnergyAustralia submission, May 2013, pp 20-25; Origin submission, May 2013, pp 16-23.

¹²⁹ For example, see EnergyAustralia submission, May 2013, p 23.

¹³⁰ Frontier Economics, *Energy purchase costs – A final report prepared for IPART*, June 2013, pp 62-79.

We have also made a number of final decisions in relation to this modelling framework including to:

- ▼ assume that growth in electricity demand in the NEM will be consistent with the medium growth scenario in the Australian Energy Market Operator's 2012 National Electricity Forecasting Report
- ▼ use publicly available market data on forward prices for electricity in 2013/14
- ▼ use a point-in-time estimate rather than a rolling average of contract prices
- ▼ base the market-based cost on the conservative point on the efficient frontier curve
- ▼ include a volatility allowance in the market-based cost.

The sections below discuss each of these final decisions and Frontier's advice on the market-based purchase cost.

Assuming growth in electricity demand in the NEM will be consistent with the medium growth scenario

We have made a final decision to source NEM (system) demand forecasts from the Australian Energy Market Operator's (AEMO's) 2012 National Electricity Forecasting (NEFR) report. This is consistent with our previous 2 determinations.

We have also made a final decision to use the medium growth scenario from the 2012 NEFR. In our 2012/13 annual review we relied on AEMO's low growth scenario. This was because AEMO had revised downward its outlook on energy demand, but not updated its forecasts.¹³¹ We note that the 2012 NEFR report provided much lower annual energy and maximum demand forecasts than in 2011. On this basis, we consider it appropriate to use the medium growth scenario. Stakeholders generally did not comment on this issue in our draft report, although AGL expressed support for this approach.¹³²

Using publicly available forward price data in 2013/14

There are several possible sources of forward price data, including modelled or simulated data, publicly available market data and retailers' actual forward costs. In our issues paper, we noted that publicly available market data has the advantage of being the most transparent source of information. However, market prices tend to be less reliable for predicting prices further into the future due to low traded volumes.¹³³

¹³¹ IPART, *Changes in regulated electricity retail prices from 1 July 2012 – Final Report*, June 2012, p 32.

¹³² AGL submission, May 2013, p 9.

¹³³ IPART, *Review of regulated retail prices and charges for electricity 2013 to 2016 – Issues Paper*, November 2012, p 48.

We have made a final decision to use publicly available forward prices from d-cypha Trade for 2013/14. This is consistent with our draft decision, but a change from our previous determinations where we estimated market-based energy purchase costs using modelled forward prices.¹³⁴

Our intention for the 2013 determination is to make use of market data where we consider this is reasonable. In this regard, we note there is sufficient liquidity in d-cypha Trade contracts for these to be a reliable source of information in 2013/14. However, for the latter 2 years of our determination there is much less trading in these contracts.¹³⁵ Therefore, for the final 2 years of the determination the market-based energy cost is reported based on the change in market-based energy costs using modelled forward prices.¹³⁶ We note that market-based costs for 2014/15 and 2015/16 are indicative only. We will conduct an annual review in both these years that will consider the appropriate forward prices to use.

Submissions to our issues paper and draft report provided broad support for using market forward prices, rather than modelled forward prices.¹³⁷ For example, AGL submitted in response to our draft report:

AGL is of the view that IPART's methodology for assessing the market-based cost should rely on transparent, available market data, and in circumstances where the market data cannot be used to represent a reliable indicator of retailer's costs then other options, such as modelled contract prices, should be considered¹³⁸

However, EnergyAustralia and Origin Energy submitted that the most appropriate source of market data would be over-the-counter (OTC) electricity contracts with the AFMA carbon pass through clause. This is because carbon inclusive futures prices (such as d-cypha Trade) factor in some probability that the carbon price will be repealed. Therefore, the full cost of carbon may not be reflected in to these futures prices.¹³⁹ In their submission to our draft report, EnergyAustralia estimated that d-cypha Trade futures prices for 2013/14 discount the full cost of carbon by around \$1.65/MWh. It suggests that a 'carbon pass through correction' be added to the energy cost allowance to reflect this discount if d-cypha Trade prices are used.¹⁴⁰

¹³⁴ While in previous reviews we have estimated market-based energy purchase costs using modelled forward prices, we have also compared this to market-based energy purchase costs using market forward prices.

¹³⁵ Some stakeholders also noted this lack of liquidity in later periods, for example, EnergyAustralia submission, January 2013, p 41.

¹³⁶ For example, the change in the market-based energy purchase cost based on modelled forward prices between 2013/14 and 2014/15 is around 1%. We have applied this rate of change to the market-based energy purchase cost in 2013/14 (based on d-cypha Trade forward prices).

¹³⁷ AGL submission, December 2012, p 15; EnergyAustralia submission, January 2013, p 4.

¹³⁸ AGL submission, May 2013, p 12.

¹³⁹ EnergyAustralia submission, January 2013, pp 40-44; Origin Energy submission, December 2012, p 12.

¹⁴⁰ EnergyAustralia submission, May 2013, pp 18-19.

In our view d-cypha Trade forward prices provide a reasonable indicator of the market's expectation of spot prices in 2013/14. For this reason we have not included a carbon correction to the energy cost allowance, which would also be sensitive to assumptions such as the emissions intensity in the NEM. We consider that using exchange traded data is more transparent than OTC price data. While OTC data can be obtained from different sources, it is difficult to verify how representative of the market these data are.

We note that ACIL Tasman also used contract prices from d-cypha Trade in 2013/14 for their recent advice on market-based energy costs for the Queensland Competition Authority.¹⁴¹

There are 2 important issues that arise as a consequence of using d-cypha Trade forward prices to estimate the market-based cost.

First, we need to account for the same volatility (in load, prices and the correlation of load and prices) as when we use modelled forward prices. The market-based energy cost based on modelled forward prices accounts for risks in 3 'states of the world' (based on POE 10, 50 and 90 load forecast scenarios).¹⁴² To account for this risk when using d-cypha Trade forward prices, we have applied the 'spread' of prices from the modelled approach to the d-cypha Trade market prices to infer POE 10 and POE 90 prices that coincide with the d-cypha Trade market prices.

We consider that it is necessary to use a hybrid approach, combining modelled and market outcomes, to adequately capture the risks faced by retailers. However, to address claims made by some retailers that our optimised approach to determining the hedging position does not reflect their practices, in our draft decision we compared our results to a scenario where retailers hedge only to a POE10 outcome, ignoring the POE 50 or 90 outcomes. We found that the energy purchase costs were reasonably close (the POE10 scenario produced costs that were around \$3/MWh higher). However, we consider that our optimised approach to hedging better reflects efficient costs. Submissions to our draft report did not provide specific comments on this issue and therefore we have not updated this analysis in our final report. More information is provided in Frontier's draft report.¹⁴³

¹⁴¹ ACIL Tasman, *Estimated Energy costs for 2013-14 retail tariffs – Prepared for the Queensland Competition Authority*, May 2013, p 39.

¹⁴² For more information on accounting for risk in energy purchase costs see Frontier Economics, *Methodology report – input assumptions and modelling – a draft report prepared for IPART*, November 2012, pp 25-28.

¹⁴³ Frontier Economics, *Energy purchase costs – A draft report prepared for IPART*, April 2013, pp 73-74.

Second, we need to estimate the contribution of the carbon price in 2013/14 for reporting purposes. This is because we can't directly observe the contribution of carbon to the d-cypha Trade forward price.¹⁴⁴ Consistent with our draft decision, to estimate the impact of the carbon price in 2013/14 for reporting purposes we have used the average NSW emission intensity.¹⁴⁵ This does not affect our overall pricing decision, only how we report the contribution of various factors to the overall price decision. Similarly, if the carbon price is repealed during 2013/14, we would need to estimate the incremental impact of this for the purposes of determining the extent of any cost changes to be passed through in regulated prices.

A number of submissions to our draft report noted the importance of accurately capturing the cost of carbon in the event it is repealed.¹⁴⁶ We agree with this view and note that the annual review process can manage this risk if the repeal became effective on 1 July. The cost pass-through mechanism would be used to manage the risk that the repeal took place during the financial year. This mechanism is designed to capture efficient and incremental costs. We are unable to provide specific details about how we would conduct this assessment as it would depend on the specific circumstances at the time.

Using a point-in-time estimate rather than a rolling average of contract prices

Estimating the market-based energy purchase cost requires a decision about whether the price of hedging contracts should be based on a point-in-time estimate or a rolling average of contract prices over a period of time.

There was considerable discussion of the use of a point in time estimate in stakeholders' submissions to our issues paper.¹⁴⁷ In broad terms, retailers submitted that this approach does not reflect their actual costs, or their actual trading practices. Some stakeholders also noted this in their submissions to our draft report.¹⁴⁸

¹⁴⁴ Where we estimate the market-based energy purchase cost using modelled forward prices, dealing with the carbon price is a binary decision – either the modelling accounts for it or it doesn't. Therefore, we can easily isolate the impact of the carbon price on energy costs by removing it from the modelling.

¹⁴⁵ The carbon estimate is around \$26/MWh, including losses and GST.

¹⁴⁶ EnergyAustralia submission, May 2013, p 9; Origin Energy submission, May 2013, pp 25-26; AGL submission, May 2013, p 12.

¹⁴⁷ AGL submission, December 2012, p 16; Alinta Energy submission, December 2012, p 1; Origin Energy submission, December 2012, p 13; EnergyAustralia submission, January 2013, pp 28-33; Lumo Energy submission, January 2013, pp 9-10.

¹⁴⁸ AGL submission, May 2013, pp 12-13; Alinta Energy submission, May 2013, p 3; EnergyAustralia submission, May 2013, pp 23-24.

When basing our forecasts of contract prices on prices published by d-cypha Trade, we have made a final decision to use a 40-day average of published trading prices immediately before the modelling is undertaken.¹⁴⁹ This is consistent with our draft decision and is similar to how we estimate certain WACC parameters. To some extent, this 40-day average also addresses concerns that the modelling is over-sensitive to the choice of a single day for the point-in-time.

Our final decision to use a point-in-time approach is based on the principles of setting pricings that reflect outcomes in a competitive market. In particular, a point-in-time approach reflects that:

- ▼ Economic decisions should be based on the current value of assets, rather than their historic value.
- ▼ The extent to which retailers have entered into contracts in the past that are either cheaper or more expensive than today's contract prices is irrelevant as these are sunk costs. A competitive market would not allow a retailer to recover the costs of 'out of the money' contracts.
- ▼ Retailer's decisions around what retail price to offer customers should reflect expectations of the cost of supplying that customer and not the consequences of prior decisions.

We understand that in practice, retailers purchase contracts over a longer period of time. We do not expect that retailers would hedge their entire load on one day. However, it is the above principles that guide our decision to use a point-in-time approach.

Using the conservative point on the efficient frontier curve

An output of Frontier's market-based modelling is an efficient frontier curve for each Standard Retailer in each year. One end of the curve represents the highest estimate for an efficient retailer's purchase cost per MWh, with the lowest residual risk. The other end of the curve represents the lowest estimate of this cost produced by the model, with the highest residual risk.

We have made a final decision for the 2013 determination to use the conservative point on the efficient frontier curve. This is consistent with our draft decision, and the approach in our past 2 determinations. We prefer using the conservative point as this errs on the side of overestimating rather than underestimating the market-based purchase cost.

¹⁴⁹ For the final report, this is the 40 trading days up to and including 24 May 2013.

In its submission to our issues paper and draft report, AGL noted that retailers would generally be more risk averse than the conservative hedging position would imply.¹⁵⁰ In particular, they submit that retailers are concerned about low probability/high impact pool price events and will hedge more conservatively to reduce these risks.¹⁵¹ We note that Frontier's modelling framework captures the risk of high price events in a number of ways, for instance by including a proportion of high price events that have occurred in the past, and additional half-hours with prices set to the market price cap. Furthermore, if a preferred hedge position did involve more contract cover, the volatility allowance could be used to fund these contracts.

For the above reasons we consider that Frontier's modelling framework appropriately captures the risks involved in purchasing energy for customers. More discussion on this issue is provided in Frontier's final report.¹⁵²

Including a volatility allowance

In the last 2 determinations, Frontier Economics advised us to include a volatility allowance when calculating the market-based purchase cost. This compensates retailers for the additional cost associated with the volatile nature of the load that retailers serve and the wholesale electricity prices that they face.

The volatility of regulated load means that retailers are not able to perfectly manage variations in the expected cost of purchasing load through their contract portfolio (which Frontier assume consist only of swaps and caps). Therefore, they need additional working capital to cover the residual risk associated with the portfolio. We accepted this advice as we considered a volatility allowance was an efficient and therefore reasonable way to address this residual risk.

For the same reason, we instructed Frontier Economics to include a volatility allowance in estimating the market-based energy purchase cost for the 2013 determination. Frontier calculated this allowance using the same approach as for previous determinations, but with updated data. This approach is based on the standard deviation of the conservative point of each Standard Retailer's efficient frontier.¹⁵³

¹⁵⁰ AGL submission, December 2012, p 15; AGL submission, May 2013, p 13.

¹⁵¹ AGL submission, May 2013, p 13.

¹⁵² Frontier Economics, *Energy purchase costs – A final report prepared for IPART*, June 2013, pp 45-48.

¹⁵³ The amount of working capital allowed for each year was calculated as 3.5 times the standard deviation in energy costs (at the conservative point of the frontier) times the WACC.

EnergyAustralia submitted that there are also some cash flow mismatches that are not explicitly accounted for in the volatility allowance.¹⁵⁴ We consider that these costs (for example the cost of meeting AEMO prudential requirements) are part of the normal costs for running a retail electricity business. These, along with other retail costs, are captured within our cost allowances.

In addition, we note that the volatility allowance is not intended as the only compensation to retailers for the cost of managing risks in the energy market. The volatility in regulated load has been explicitly accounted for in forecasting the regulated load profiles (discussed above), and in modelling the overall market-based energy purchase cost.

Frontier Economics' estimates of the market-based energy purchase cost

Frontier Economics' estimates of the market-based energy purchase cost, using d-cypha Trade contract prices, indicate that this cost is between \$61 and \$67 per MWh in 2013/14 (Table 6.4). This cost includes the volatility allowance discussed above.

Table 6.4 Estimates of the market-based energy purchase cost – sub-100 MWh (\$2012/13 \$/MWh)

	2012/13 (current) ^a	2013/14	2014/15 indicative	2015/16 indicative
EnergyAustralia	68.24	65.62	68.94	42.44
Origin Energy (Endeavour Energy)	72.64	67.34	70.62	43.28
Origin Energy (Essential Energy)	66.86	60.70	63.75	39.15

^a The 2012/13 cost allowances are those included in our 2012 annual review indexed to \$2012/13 using inflation of 2.8%. The 2012/13 cost allowances are based on regulated customers with annual consumption up to 160 MWh per annum.

Source: Frontier Economics, *Energy purchase costs – A final report prepared for IPART*, June 2013, p 98, IPART calculations.

The market-based costs in 2013/14 are lower than in 2012/13. This is largely the result of using d-cypha Trade forward prices, rather than the modelled forward prices (discussed further below). The final results for 2013/14 are also between \$1 to \$1.50/MWh lower than in our draft report. This largely reflects updated forward prices which have fallen slightly since our draft report.¹⁵⁵

As discussed above, for the final 2 years of the determination we have rolled forward Frontier's estimates of the market-based cost in 2013/14 (which is based on d-cypha Trade forward prices) based on the change in modelled energy costs. Since there is little trade in d-cypha Trade contracts for 2014/15 and 2015/16, we consider that we cannot currently rely on these prices to estimate market-based energy purchase costs for these years. However, we consider that changes in the

¹⁵⁴ EnergyAustralia submission, January 2013, p 33.

¹⁵⁵ See Frontier Economics, *Energy purchase costs – A final report prepared for IPART*, June 2013, p 46.

modelled market-based energy purchase costs are likely to reflect the effect of market conditions on prices over the period of the determination. We note that the cost estimates in 2014/15 and 2015/16 are indicative only, and will be updated during our annual reviews.

Table 6.5 presents the market-based costs in 2013/14 (based on d-cypha Trade forward prices) and compares this to results using the modelled forward prices. Both reflect the underlying load shape.

Table 6.5 Frontier's advice on the market based energy purchase costs – Modelled forward prices versus d-cypha Trade data in 2013/14 – sub-100 (\$2012/13, \$/MWh)

	Modelled forward prices + volatility allowance	d-cypha Trade data ^a (including volatility allowance)
EnergyAustralia	78.81	65.62
Origin Energy (Endeavour Energy)	80.30	67.34
Origin Energy (Essential Energy)	70.25	60.70

^a Prices were adjusted to account for contract costs.

Note: d-cypha Trade data as at May 2013.

Source: Frontier Economics.

The market-based energy purchase cost using modelled forward prices is between \$10 to \$13/MWh higher than that for d-cypha Trade prices. This is because the d-cypha Trade contracts are trading at lower prices than Frontiers' modelled contract prices (modelled spot prices + 5% contract premium). This may reflect some carbon uncertainty and a more pessimistic outlook for system demand than is assumed in the AEMO 2012 NEFR.

6.2.6 Calculating the energy purchase cost allowance price floor and determining an appropriate allowance

After considering Frontier's advice on the LRMC of generation and the market-based energy purchase cost, we decided to accept Frontier's advice on both these costs.

We then calculated the energy purchase cost allowance price floor, in line with our terms of reference. This price floor comprises a weighted average of the LRMC of generation (75%) and the market-based energy purchase cost (25%). We then made a final decision to set the energy purchase cost allowance in line with this price floor. Our final decisions on the energy purchase cost allowances are summarised in Table 6.6.

Table 6.6 Final decision on the energy purchase cost allowance – sub-100 MWh (\$2012/13, \$/MWh)

	2012/13 (current) ^a	2013/14	2014/15 indicative	2015/16 indicative
EnergyAustralia	87.76	79.88	81.22	69.03
Origin Energy (Endeavour Energy)	91.51	80.59	81.93	69.55
Origin Energy (Essential Energy)	84.35	69.39	70.56	58.83

^a The 2012/13 cost allowances are those included in our 2012 annual review indexed to \$2012/13 using inflation of 2.8%. The 2012/13 cost allowances are based on regulated customers with annual consumption up to 160 MWh per annum.

Source: Frontier Economics, IPART.

Our final decisions on the energy purchase cost allowance are around \$1 to \$1.50/MWh lower than in our draft report. This reflects the updated estimates of the LRMC and market-based costs which are both lower than in our draft report.

For each Standard Retailer, our final decision on the energy purchase cost allowance for 2013/14 is also lower than the allowance we set for 2012/13. There are 2 main reasons for this:

- ▼ The first is that the estimated LRMC of generation makes up only 75% of the allowance, due to our decision to set the allowance in line with the floor price defined in our terms of reference. In contrast, the LRMC of generation makes up 100% of the allowance for 2012/13 (in line with the terms of reference for the 2010 determination).
- ▼ The second is that the estimated LRMC of generation for 2013/14 is lower than the LRMC for 2012/13 (as discussed in section 6.2.4 above)

Our final decision on the energy purchase cost allowance for Origin Energy (Essential) is considerably lower than those for the other 2 Standard Retailers, largely due to its much flatter forecast regulated load profile for the 2013 determination period.

6.3 Green energy cost allowances

- 8 IPART's final decisions on the cost allowances for complying with the Large-scale Renewable Energy Target (LRET), Small-scale Renewable Energy Scheme (SRES), the NSW Energy Savings Scheme (ESS), and cost pass-through applications in respect of incremental SRES costs in 2012/13 are as shown on Table 6.7.

Table 6.7 Final decisions on cost allowances for complying with LRET, SRES and ESS and cost pass-through amounts (\$2012/13 \$/MWh)

	2012/13 (current) ^a	2013/14	2014/15 indicative	2015/16 Indicative
EnergyAustralia				
LRET	4.55	5.08	5.25	6.15
SRES	5.52	4.60	3.15	2.05
ESS	1.55	1.84	1.93	1.93
Cost pass-through	2.29	4.09		
Origin Energy (Endeavour Energy)				
LRET	4.58	5.11	5.28	6.17
SRES	5.67	4.69	3.16	1.96
ESS	1.55	1.84	1.93	1.93
Cost pass-through	2.25	4.26		
Origin Energy (Essential Energy)				
LRET	4.56	4.98	5.15	6.03
SRES	5.77	4.53	3.10	1.94
ESS	1.55	1.84	1.93	1.93
Cost pass-through	2.19	4.21		

^a The 2012/13 cost allowances are those included in our 2012 annual review indexed to \$2012/13 using inflation of 2.8%.

Note: The cost pass-through amounts include the value of energy losses.

Source: Frontier Economics, IPART.

Note that these cost allowances are forward-looking allowances that reflect the costs of complying with these green schemes over the 2013 determination period. The cost pass-through amounts are backward-looking, and reflect the incremental costs of complying with the SRES in 2012/13 due to changes in the SRES in 2012/13 (to be recovered through retail prices in 2013/14).¹⁵⁶

In general, we aimed to use a market-based approach for estimating the cost of complying with each relevant green scheme for the 2013 determination. However, as this approach involves using the price at which the scheme's certificates are traded, we could only do so where there was sufficient liquidity in the relevant market to provide reliable price estimates. Where this was not the case, we used a cost-based approach (where the price of certificates is based on the resource costs associated with creating them) or another proxy measure of prices.¹⁵⁷

¹⁵⁶ These amounts were determined by IPART based on applications from the Standard Retailers received in March 2013, in line with the cost pass-through mechanism included in the 2010 determination.

¹⁵⁷ Under a cost-based approach, the price of certificates is based on the resource costs associated with creating certificates.

In general terms, to determine the cost allowance (in \$/MWh) for complying with each scheme in a given year, we:

- ▼ took the cost of a certificate (in \$), and
- ▼ multiplied this by the Standard Retailer's rate of liability (%) given its forecast regulated electricity load (ie, the number of certificates that they have to surrender).

6.3.1 Cost of complying with the Large-scale Renewable Energy Target

Under the LRET, electricity retailers are obliged to surrender a certain number of Large Scale Certificates (LGCs) per year, each of which represents 1 MWh of renewable energy generation from large-scale technology.

Estimating the cost of one LGC

Consistent with our draft report, we made a final decision to continue using a cost-based approach to estimate the cost of one LGC in each year of the determination period. We found that there was insufficient liquidity in the market for LGCs to rely on traded price data. We note that stakeholders expressed broad support this approach.¹⁵⁸

We asked Frontier Economics to estimate the cost of one LGC in each year of the determination period based on the LRMC of meeting the overall national target for that year.¹⁵⁹ Table 6.8 summarises its final estimates.

Table 6.8 Frontier Economics' final estimate of the cost of one LGC (\$2012/13)

	2012/13 (current) ^a	2013/14	2014/15 indicative	2015/16 indicative
LGC price	46.75	50.75	52.78	54.89

^a The 2012/13 certificate price is from our 2012 annual review, indexed to \$2012/13 using inflation of 2.8%.

Source: Frontier Economics, *Energy purchase costs - A final report prepared for IPART*, June 2013, p 87.

The estimated cost of an LGC has fallen by around \$1 since our draft report. This reflects the updated input assumptions, in particular a lower WACC. The WACC is used to amortise the capital costs of building renewable energy investments to meet the target (as part of the modelling Frontier used to estimate this cost).

¹⁵⁸ EnergyAustralia submission, January 2013, p 47; Origin Energy submission, December 2012, p 16.

¹⁵⁹ The LRMC of meeting the renewable energy target is calculated as an output from Frontier Economics' total cost optimisation model. The renewable energy target is imposed as a 'constraint' on the model which optimises thermal (non-renewable) and renewable markets concurrently. This means it accounts for any interaction between the wholesale pool price and the LGC price. This ensures that the costs associated with the LRET are not double-counted.

The higher cost of an LGC in 2013/14 relative to 2012/13 is mainly due to the use of a higher WACC in this determination relative to that in our 2012 annual review. Frontier's final report discusses its estimate for the cost of one LGC in more detail.

Estimating the number of LGCs that need to be surrendered

The annual targets for the LRET until 2020 are specified in legislation. The Clean Energy Regulator (CER) determines the number of certificates retailers must surrender per year based on these targets. This number is called the Renewable Power Percentage (RPP) and is published each year, along with estimates of the RPP in the following years.¹⁶⁰

The published RPP for 2013 is 10.65%.¹⁶¹ We converted this RPP, and estimated RPPs for 2014, 2015 and 2016, to a financial year basis using a simple average. Table 6.9 shows the resulting RPPs and compares them to the RPP we used in the 2012 annual review.

Table 6.9 Renewable Power Percentages

	2012/13 (current)	2013/14	2014/15	2015/16
RPP	9.78%	10.06%	9.99%	11.24%

Source: Frontier Economics, *Energy purchase costs - A final report prepared for IPART*, June 2013, p 86.

The RPPs in Table 6.9 are unchanged from our draft report.

Since our draft report we have updated energy loss factors (see section 6.5). A transmission loss factor is used to determine the relevant load for which the Standard Retailers are liable to surrender LGCs.¹⁶²

¹⁶⁰ The RPP is published in the *Renewable Energy (Electricity) Regulations 2001* (Cth) (regulations) prior to 31 March of the year in which it applies. If the RPP for a year is not published prior to 31 March then the default formula in section 39(2)(b) of the *Renewable Energy (Electricity) Act 2001* (Cth) applies and is used to determine the default RPP for the given year. We note that the Australian Government has recently indicated its intention to bring forward the release of the RPP to 1 December of the preceding compliance year.

¹⁶¹ <http://ret.cleanenergyregulator.gov.au/For-Industry/Liable-Entities/Renewable-Power-Percentage/rpp>

¹⁶² The transmission loss factor is used to adjust load from the node to the distribution connection point, where liability for the LRET and SRES is measured. Note that final cost allowances are presented at the node.

Calculating the cost of complying with the LRET

Using the inputs set out in Tables 6.8 and 6.9 above, Frontier calculated each Standard Retailer's cost of complying with the LRET (Table 6.10).

Table 6.10 Frontier Economics' final estimate of the costs of complying with the LRET (\$2012/13, \$/MWh)

	2012/13 (current) ^a	2013/14	2014/15 indicative	2015/16 indicative
EnergyAustralia	4.55	5.08	5.25	6.15
Origin Energy (Endeavour Energy)	4.58	5.11	5.28	6.17
Origin Energy (Essential Energy)	4.56	4.98	5.15	6.03

^a The 2012/13 cost allowances are those included in our 2012 annual review indexed to \$2012/13 using inflation of 2.8%

Source: Frontier Economics, *Energy purchase costs – A final report prepared for IPART*, June 2013, p 88.

The final estimates for 2013/14 in Table 6.10 are marginally lower than our draft decision due to the lower LGC price. They also reflect the updated transmission loss factors, which increased significantly in the Essential network area (from 0.29% to 2.31%). The final cost in 2013/14 is around \$0.50/MWh higher than the cost of complying with the RET in 2012/13. This is due to:

- ▼ the higher RPP in 2013/14 as a result of the higher targets specified in the legislation, and
- ▼ the higher estimated cost of one LGC, due to an increase in the WACC as discussed above.

We considered Frontier's final estimate, and the reasons for the increase in the cost of complying with the LRET relative to 2012/13. We made a final decision to set each Standard Retailer's cost allowance for complying with the LRET in line with this estimate.

6.3.2 Cost of complying with the Small-scale Renewable Energy Scheme (SRES)

Under the SRES, retailers are obliged to surrender Small-scale Technology Certificates (STCs) generated when households and small businesses take up small-scale technologies like solar panels and solar hot water heaters. Each STC represents 1 MWh of renewable energy from small-scale generation (except for the Solar Credits multiplier effect).¹⁶³

The total number of STCs retailers must surrender per year is not capped – rather it depends on the extent to which customers take up small-scale technologies.

¹⁶³ The Solar Credits multiplier allows more STCs to be created than MWh of renewable energy produced. This means that the number of certificates created exceeds the renewable energy generated.

The price retailers pay for certificates is determined by the market; however, certificates can also be bought through the CER's clearing house for a set price of \$40.¹⁶⁴

Estimating the cost of one STC

We have made a final decision to use a market-based approach for estimating the cost of one STC. This is consistent with our draft decision, but a change from the 2010 determination where we set this cost in line with the fixed clearing house price of \$40.

We consider there is sufficient liquidity in the market for STCs to rely on traded price data. In addition, we consider that the market for STCs has matured. In our view, the various policy decisions that have affected the market for STCs in the past (such as feed-in tariffs and solar credits) are unlikely to cause the same volatility in the market in the future.

Retailers generally supported the continued use of the \$40 clearing house price as opposed to our market-based approach.¹⁶⁵ In general, submissions agreed with our view that in future there is likely to be less volatility in the market for STCs. However, it was suggested that this provides support for continuing with the \$40 clearing house price, as STC prices should trade close to this level. EnergyAustralia also submitted that if we use a market-based approach then a premium should be added to the price to reflect additional risk for retailers.¹⁶⁶

We consider that our market-based approach will capture any trend for STC prices to more closely reflect the \$40 clearing house price. As discussed below, our approach incorporates prices over 40 recent trading days. We also note that our updated STC prices for our final decision are much closer to the \$40 clearing house price, consistent with the trend in the STC market since our draft report. We do not consider that our approach creates a risk for retailers that requires a premium to be added to prices.

To estimate the cost of one STC, Frontier used the current spot price of certificates (ie, not a forward price) and applied a holding cost of 9.5% per annum (in line with our final decision on the electricity retailing real pre-tax WACC, discussed in section 6.2.2 above). Frontier used a 40-day weighted average spot price.¹⁶⁷ This produced the certificate prices shown in Table 6.11. The estimated STC price for 2013 is around \$3 higher than our draft report reflecting an upward trend in traded prices since this time.

¹⁶⁴ CER manages the STC Clearing House. See <http://ret.cleanenergyregulator.gov.au/About-the-Schemes/sres>

¹⁶⁵ AGL submission, May 2013, p 15; Origin Energy submission, May 2013, p 26; EnergyAustralia submission, May 2013, p 26; Australian Power & Gas submission, May 2013, p 3.

¹⁶⁶ EnergyAustralia submission, May 2013, p 26.

¹⁶⁷ Based on the 40 days until 31 May 2013.

Table 6.11 Frontier Economics' final estimate of the cost of one STC (\$2012/13)

Year	\$/certificate
2013	37.43
2014	38.49
2015	37.55
2016	36.63

Note: Spot price and trading volume data provided by TFS Green.

Source: Frontier Economics, *Energy purchase costs - A final report prepared for IPART*, June 2013, p 90.

Certificate prices are on a calendar year basis, to match how the liability for the scheme is determined. Note that the \$40 clearing house price creates a cap on prices. Because the holding cost is increasing in real terms and the \$40 clearing house price is decreasing in real terms, there is a point at which a retailer would prefer to pay the clearing house price. This occurs in 2015 (which is why certificate prices trend lower in 2015 and 2016).

Estimating the number of STCs that need to be surrendered

The binding Small-scale Technology Percentage (STP) prescribed for 2013 is 19.7%.¹⁶⁸ The CER also recently updated its indicative non-binding STPs from 2014 to 2016. We have used the binding and non-binding STPs in Table 6.12.

Table 6.12 Small-scale Technology Percentages used in making final decision (% of eligible load)

Calendar Year	STP
2013	19.70%
2014	8.98%
2015	8.49%
2016	3.97%

Source: *Renewable Energy (Electricity) Regulations 2001* (Cth).

Calculating the cost of complying with the SRES

The compliance obligations for surrendering STCs are based on calendar year quarters, and are weighted towards the first 2 quarters of each year. That is, retailers are obliged to surrender around 35% and 25% of their total year's obligation in Q1 and Q2 of the relevant year.

Similar to our approach with the LRET, we also updated the loss factors used to determine the relevant load for which the Standard Retailers are liable to surrender certificates.

¹⁶⁸ The STP is published in the *Renewable Energy (Electricity) Regulations 2001* (Cth) (regulations) prior to 31 March of the year in which it applies.

Using the certificate prices and the STPs outlined above, Frontier calculated the quarterly costs and tallied them into financial years. This resulted in the cost allowances for complying with the SRES shown in Table 6.13.

Table 6.13 Frontier Economics' final estimate of the costs of complying with the SRES (\$2012/13, \$/MWh)

	2012/13 (current) ^a	2013/14	2014/15 indicative	2015/16 indicative
EnergyAustralia	5.53	4.60	3.15	2.05
Origin Energy (Endeavour Energy)	5.68	4.69	3.16	1.96
Origin Energy (Essential Energy)	5.77	4.53	3.10	1.94

^a The 2012/13 cost allowances are those included in our 2012 annual review indexed to \$2012/13 using inflation of 2.8%.

Source: Frontier Economics, *Energy purchase costs – A final report prepared for IPART*, June 2013, p 92.

The final cost allowances in 2013/14 are higher than in our draft report due to the increase in the estimated STC price. The main reason that the allowances are lower in the final 2 years of the determination period is that the estimated STP is lower in these years.

The 2012/13 allowances in Table 6.13 do not include the additional amounts being sought by the Standard Retailers in their cost pass-through applications (see below).

Cost pass-through applications in relation to the SRES

Standard Retailers have notified IPART that a Positive Pass Through Event occurred in 2012/13.¹⁶⁹ The event relates to the changes in the Standard Retailers' liability under SRES that occurred in March 2013.

Last year, when we set the SRES allowance for 2012/13, we used an estimated rate of liability (STP) based on the CER's non-binding estimates for 2013. However, the binding STP the CER published in March 2013 (19.70%) is significantly higher than this estimate (7.94%). This means we under-estimated the cost of complying with the SRES in 2012/13.

¹⁶⁹ The Standard Retailers' cost pass-through applications are available on our website: http://www.ipart.nsw.gov.au/Home/Industries/Electricity/Reviews/Retail_Pricing/Review_of_regulated_electricity_retail_prices_2013_to_2016

The 2013 binding STP is the trigger event for the Standard Retailer's cost pass through applications. We have assessed these applications and determined that:

- ▼ the setting of the 2013 binding STP constitutes a Regulatory Change Event, and therefore a Pass Through Event in respect of the 2012/13 year for each Standard Retailer, and
- ▼ this Regulatory Change Event passes the materiality threshold test for each Standard Retailer.

We reached the same conclusion last year when we assessed the Standard Retailers' cost pass-through applications as part of our 2012 annual review. The trigger event last year was the setting of the 2012 binding STP.

As Appendix D explains, in calculating the cost pass-through amount, we change only the STP. That is, we calculate this amount as if we knew the correct liability at the time that we made the decision. Therefore, we did not revisit the \$40 certificate price which we applied during 2012/13.

Our assessment of the efficient incremental costs arising from the current Pass Through Event are summarised in Table 6.14. These amounts will be recovered in regulated prices over 2013/14.

Table 6.14 Final decision on cost pass-through amounts for the change in Standard Retailers' SRES liability (\$2012/13, \$/MWh)

	Pass through amount
EnergyAustralia	4.09
Origin Energy (Endeavour Energy)	4.26
Origin Energy (Essential Energy)	4.21

Note: Pass through amounts include the retail margin, time value of money and energy losses.

Since our draft decision we have updated the retail WACC which is used to adjust the increment costs for the time value of money. This resulted in a very small change to the final cost allowances. This is discussed further in Appendix D.

Note that these amounts are different to the amounts proposed by the Standard Retailers. The main reasons for the differences are:

- ▼ For EnergyAustralia, it calculated its incremental costs based on its forecast regulated load 2012/13, rather than that for 2013/14 (which is smaller). The load for 2013/14 needs to be used because it is in this year that the incremental costs will be recovered from regulated customers.
- ▼ For Origin Energy, it understated its quarterly liability for certificates in the first 2 quarters of 2013 (and this understated its incremental cost).

6.3.3 NSW Energy Savings Scheme

The NSW Energy Savings Scheme (ESS) establishes legislated annual energy savings targets for electricity retailers (and other participants). To meet their target, the Standard Retailers must surrender an appropriate number of Energy Savings Certificates (ESCs) or pay a penalty.

Estimating the cost of an ESC

In our view, there is a lack of depth in the observed spot market for ESCs that makes it difficult to rely on the traded price data to estimate the cost of an ESC. We also consider it would be difficult to use a cost-based approach for this estimate (as we did in calculating the cost of complying with the LRET). This is because a cost-based approach involves estimating the cost of overcoming barriers to the take-up of energy efficiency projects, as opposed to the cost of energy efficiency projects themselves (these should be at least cost-neutral).

Therefore, we have made a final decision to continue to use the base penalty price (currently \$27.07 per MWh) as a proxy for the price of ESCs. This equates to an after-tax price of \$38.70/MWh. Where the penalty price is paid, a liable entity cannot claim a tax deduction and therefore the after-tax penalty price is used as a proxy for the price of ESS certificates. This approach is consistent with our draft decision and is broadly supported by stakeholders.¹⁷⁰

Estimating the number of ESCs that need to be surrendered

Retailers' ESS compliance obligations are defined as a proportion of their liable NSW electricity sales in the relevant calendar year. We converted these obligations to a financial year basis using a simple average. These are summarised in Table 6.15 below.

Table 6.15 Compliance obligation for ESS liability (% of annual liable electricity sales)

	Compliance obligation (%)
2013/14	4.75%
2014/15	5.00%
2015/16	5.00%

Source: http://www.ess.nsw.gov.au/For_Liable_Entities/Targets_and_penalties

¹⁷⁰ AGL submission, May 2013, p 15; Origin Energy submission, December 2012, p 16; EnergyAustralia submission, May 2013, pp 25-26.

Calculating the cost of complying with the ESS

Based on the after-tax penalty prices and the compliance obligations above, we calculated the cost allowances for complying with the ESS for each Standard Retailer shown on Table 6.16. This is unchanged from our draft decision. The increase in these costs in 2014/15 and 2015/16 reflects the increase in retailers' obligations under the scheme.

Table 6.16 Final decision on the cost of complying with the ESS (\$2012/13, \$/MWh)

	2012/13 (current) ^a	2013/14	2014/15 indicative	2015/16 indicative
EnergyAustralia	1.55	1.84	1.93	1.93
Origin Energy (Endeavour Energy)	1.55	1.84	1.93	1.93
Origin Energy (Essential Energy)	1.55	1.84	1.93	1.93

^a The 2012/13 allowance has been indexed from \$2011/12 to \$2012/13 using inflation of 2.8%.

Source: IPART.

6.4 Market fees and ancillary fees

9 IPART's final decisions on the cost allowances for market fees and ancillary fees imposed under the National Electricity Rules are as shown in Table 6.17.

Table 6.17 Final decisions on cost allowances for market fees and ancillary charges (2012/13 \$/MWh)

	2012/13 ^a	2013/14	2014/15	2015/16
NEM fees	0.40	0.35	0.35	0.35
Ancillary services	0.47	0.69	0.69	0.69
Total	0.87	1.04	1.04	1.04

^a The 2012/13 allowance has been indexed from \$2011/12 to \$2012/13 using inflation of 2.8%.

Source: Frontier Economics, Energy purchase costs - A final report prepared for IPART, June 2013, pp 93-95.

In line with our terms of reference, we have calculated allowances for the costs of market fees and ancillary service fees as imposed by AEMO under the National Electricity Rules. We have also made a final decision **not** to review the allowance for these fees as part of the annual review (discussed in Chapter 11).

6.4.1 NEM market fees

AEMO imposes fees on retailers to recover the costs of operating the market. NEM fees are levied on retailers on a per MWh basis according to their electricity purchases.

We engaged Frontier Economics to provide advice on an allowance for market fees as imposed under the National Electricity Rules. Frontier noted that as these

fees are based on the budgeted revenue requirements of AEMO and these requirements are relatively stable, the fees are relatively easy to predict. As it did for our previous 2 determinations, it based its estimate of market fees on AEMO's most recent budget documents. As noted in some submissions¹⁷¹, the budget has been updated since our draft decision. While the updated budget is reflected in Frontier's final advice, overall the allowance remains unchanged from the draft report at \$0.35/MWh. More information is provided in Frontier's final report.¹⁷²

Given that market fees are a relatively small component of costs and are also relatively predictable we have accepted Frontier Economics' advice. We consider that the resulting allowances for NEM fees (Table 6.17) are appropriate inputs to our final determination.

6.4.2 Ancillary charges

Ancillary service charges cover ancillary services purchased by AEMO to ensure the power system remains in a secure state. We also engaged Frontier Economics to provide advice on an allowance for ancillary charges as imposed under the National Electricity Rules.

Frontier noted that ancillary service costs are more difficult to estimate than NEM fees, as they depend on the cost of services that AEMO sources on a competitive basis. However, while these charges are required on an ad-hoc basis, they are reasonably constant over time, with a few notable outliers.

Frontier forecast ancillary service costs based on average real ancillary services costs in NSW over the past 10 financial years. In their submission, EnergyAustralia noted a preference to use a 3-year averaging period.¹⁷³ However, we agree with Frontier's advice that using a longer period avoids the risk that the result is affected by an outlier.¹⁷⁴ On this basis, Frontier advised that an appropriate allowance for ancillary fees is \$0.69/MWh, which is unchanged from their draft advice.

We note that ancillary service charges are a relatively small component of costs and that Frontier's approach for estimating these costs is sufficiently robust. We have accepted its final advice. We consider that the resulting allowances (Table 6.17) are appropriate inputs to our final determination.

¹⁷¹ Origin Energy submission, May 2013, p 27; EnergyAustralia submission, May 2013, p 26.

¹⁷² Frontier Economics, *Energy purchase costs - A final report prepared for IPART*, June 2013, pp 93-96.

¹⁷³ EnergyAustralia submission, May 2013, p 27.

¹⁷⁴ Frontier Economics, *Energy purchase costs - A final report prepared for IPART*, June 2013, pp 93-96.

6.5 Energy losses

10 IPART's final decision on the cost allowance for each Standard Retailer's energy losses in 2013/14 are as shown in Table 6.18.

Table 6.18 Final decision on energy loss factors and cost allowance for energy losses (% and \$/MWh, \$2012/13)

	2012/13 (current) ^a	2013/14	2014/15 indicative	2015/16 indicative
EnergyAustralia				
%	6.49	6.47	6.47	6.47
\$/MWh	6.51	5.98	5.99	5.19
Origin Energy (Endeavour Energy)				
%	7.57	6.87	6.87	6.87
\$/MWh	7.89	6.40	6.41	5.54
Origin Energy (Essential Energy)				
%	10.28	11.64	11.64	11.64
\$/MWh	9.98	9.52	9.52	8.12

^a The 2012/13 cost allowances are those included in our 2012 annual review indexed to \$2012/13 using inflation of 2.8%.

Source: IPART.

We have included allowances for the costs Standard Retailers incur when some of the energy they purchase in the NEM is lost as it moves via the transmission and distribution networks to their customers' premises. Retailers charge their customers based on the energy consumption recorded at the customer's meter, but must buy more than this amount of energy to account for losses of transporting this energy to customers. Therefore, they incur costs equivalent to the total energy they purchase minus the total energy they bill customers for.

To calculate these costs we use the appropriate loss factor in percentage terms (including both transmission and distribution losses), and apply this to the sum of our decisions on the energy purchase cost allowance, NEM fees and green energy cost allowances to determine an allowance in \$/MWh.

Since our draft report, we have updated these allowances to account for the most recent loss factors published by AEMO.¹⁷⁵ While this resulted in relatively small decreases in the energy loss factors for EnergyAustralia and Origin (Endeavour), we note the energy losses for Origin (Essential) increased more significantly. This increased the cost allowance for energy losses for Origin (Essential) by around \$1/MWh since our draft decision.

¹⁷⁵ See AEMO, *Distribution Loss Factors for the 2013/14 Financial Year*, (April 2013) and *List of Regional Boundaries and Marginal Loss Factors for the 2013-14 Financial Year*, (May 2013).

7 Retail margin allowance

The Standard Retailers face a range of risks over the 2013 determination period. Some of these are systematic risks associated with supplying electricity to small customers on regulated tariffs. These systematic risks include:

- ▼ The risk of variation in their regulated load profile due to changes in economic conditions that affect the demand for electricity. This may mean their actual regulated load profile is different to that assumed in setting regulated prices (but still within the normal range).
- ▼ The risk of variation in wholesale electricity spot and contract prices due to changes in economic conditions and demand. This may mean their actual energy purchase costs are different to those assumed in setting regulated prices (but still within the normal range).
- ▼ General business risk due to changes in economic conditions. This may mean that their actual costs and revenues are different to those assumed in setting regulated prices due to factors such as unexpected changes in interest rates or exchange rates.

We consider it appropriate to compensate the Standard Retailers for the systematic risks they face through the retail margin allowance, and have set an appropriate retail margin that takes account of these risks.

We recognised that the Standard Retailers also face non-systematic risks – for example, those arising from uncertainties about market and policy developments over the period. We have addressed the non-systematic risks from unforeseen regulatory and taxation change events through other mechanisms (see Chapter 11).

The sections below provide an overview of our final decisions on the retail margin allowance, and explain the approach we used to set this margin and each of the key steps in this approach.

7.1 Overview of final decisions on retail margin

- 11 IPART's final decisions are that the appropriate retail margin to include in regulated retail tariffs is 5.7% of EBITDA, and that this margin should be:
- expressed as a fixed percentage of each Standard Retailer's total costs in supplying small customers on regulated tariffs (retail and network)
 - calculated in dollar terms for the purpose of setting the value of the regulated retail price controls (R values), and recalculated at each annual cost review so the dollar amount remains consistent with 5.7% of total costs as other cost elements are updated.

Consistent with our draft report our final decision on the appropriate retail margin is consistent with the mid-point of the reasonable range for this margin recommended by our expert consultant, Strategic Finance Group (SFG). SFG has used the same approach as it used for the 2010 determination and results in a margin that is marginally higher than the retail margin (5.4%) adopted for our 2010 determination. Our final decision to set the retail margin as a fixed percentage of total costs, and recalculate the margin in dollar terms within the determination period is consistent with our terms of reference, which requires that prices reflect the efficient costs of supply in each year of this period.

Our decision to set the retail margin allowance relative to the retailers' EBITDA (earnings before interest, tax, depreciation and amortisation) is consistent with the approach we used for the 2010 and 2007 determinations. We consider this to be more appropriate than a margin based on EBIT (earnings before interest and tax), as the retail operating cost allowance does not include depreciation and amortisation costs. All references to the retail margin in this report are based on EBITDA unless otherwise stated.

We have considered stakeholder comments on our issues paper, draft methodology reports and our draft report, including arguments for adopting a margin towards the upper end of the reasonable range, however, we considered that our decision provide retailers with an appropriate retail margin allowance.

7.2 Approach for setting the retail margin

As set out in our issue paper,¹⁷⁶ we used the same approach to set the retail margin as we used for the 2010 determination. However, we have updated this approach to take into account recent developments that affect the analysis of the retail margin and considered more information.

¹⁷⁶ IPART, *Review of regulated retail tariffs and charges for electricity 2013 to 2016 – Issues Paper*, November 2012.

We engaged SFG to provide expert advice on the feasible range for the retail margin over the 2013 determination period. We asked it to derive this range by using 3 alternative approaches for estimating the margin (as it did for the 2010 and 2007 determinations):

- ▼ expected returns
- ▼ benchmarking
- ▼ bottom-up.

We then selected an appropriate retail margin from within this range, and made a final decision on whether to set the margin as a fixed percentage or a fixed dollar amount over the determination period.

We provided SFG with cost allowances to base its cost assumptions for all of the above approaches. We also instructed SFG to use a discount rate of 7.0% post tax real in assuming the cost of capital for the expected returns and benchmarking approaches.

7.3 Estimated range provided by the expected returns approach

The expected returns approach estimates the expected cash flows that a retailer will earn from small customers and the systematic risk associated with these cash flows, and then determines a retail margin that will compensate investors for this systematic risk. Its basic principal is that the retail margin should be set at a level that achieves a balance between the systematic risk to the net cash flows to the electricity retailers and the systematic risk assumed when estimating the cost of capital for those same electricity retailers.

SFG's estimate of the retail margin using the expected returns approach was 3.9% to 4.8% up from 3.5% to 4.7% in 2010.¹⁷⁷ EnergyAustralia expressed concern that the expected returns approach may not fully capture the risk associated with a prudent energy retailer.¹⁷⁸

In its draft report SFG used data provided by the Standard Retailers and estimated that a retailer's costs are 20% fixed and the remaining 80% increase in proportion to volume. In forming this estimate SFG initially assumed that all energy purchase costs are variable costs, and this resulted in a fixed cost estimate of 16%. SFG then rounded this up to 20% to adjust for the possibility that fixed costs may be understated.

¹⁷⁷ SFG, *Estimation of the regulated profit margin for electricity retailers in New South Wales*, June 2013, pp 5, 15.

¹⁷⁸ EnergyAustralia submission, May 2013, p 28.

In response to our draft report, several retailers raised concerns regarding SFG's estimated proportion of fixed and variable costs.¹⁷⁹ Origin noted that rounding the proportion of fixed costs to 20% does not adequately recognise fixed energy costs and future increases in network fixed charges. Based on its analysis of Frontier Economics' hedging strategy, Origin estimated that the proportion of fixed costs from hedging is around 3% of the total cost base and that the underfunding of network investment will imply a shift to fixed costs.¹⁸⁰

SFG has considered submissions to the draft report. SFG indicates that based on the available information there is insufficient evidence to suggest that the fixed component of network charges will increase.¹⁸¹ Distribution businesses have proposed different arrangements for the fixed and variable components of network tariffs in 2013/14, however overall there is no significant change to the fixed component. Beyond this, it is unclear as to what tariff restructuring may occur.

With respect to the fixed costs of energy purchases SFG notes that their 20% fixed cost assumption implicitly incorporates an assumption that 8% of energy purchase costs are fixed. Having re-considered Frontier Economics advice on energy purchase costs, SFG maintains its view that its cost assumption of 20% fixed charges and 80% volume-related charges is appropriate.

In its submission to the issues paper EnergyAustralia questioned whether the one-to-one relationship between electricity consumptions and GDP still holds. They note that customers have reduced consumptions in response to higher electricity bills and also that the 2012 National Electricity Forecast Report forecasts of energy demand for FY2013 is 8.8% lower relative to 2011 Electricity Statement of Opportunities (ESOO).¹⁸²

For the 2010 review, we undertook analysis on the relationship between growth in GDP and growth in demand for electricity from small retail customers. Both SFG and we found there is insufficient evidence to depart from the assumption of a one-for-one relationship between GDP and electricity sales to small retail customers.¹⁸³ SFG has further considered this relationship as part of its work for this review. During a period when economic indicators are either one standard deviation above or below average we would expect change to energy consumption which is 2% above or below trend.¹⁸⁴

¹⁷⁹ AGL submission, May 2013, p19, EnergyAustralia submission, May 2013, p 28, Origin Energy submission, May 2013, pp 29-30.

¹⁸⁰ Origin Energy submission, May 2013, p 30.

¹⁸¹ SFG, *Estimation of the regulated profit margin for electricity retailers in New South Wales*, June 2013, p 12.

¹⁸² EnergyAustralia submission, January 2013, p 58.

¹⁸³ IPART, *Review of regulated tariffs and charges for electricity 2010-2013 – Final Report*, March 2010, p 131.

¹⁸⁴ SFG, *Estimation of the regulated profit margin for electricity retailers in New South Wales*, June 2013, p 10.

7.4 Estimated range provided by the benchmarking approach

The benchmarking approach examines the reported margins of comparable listed firms to establish a range of the retail margin. The underlying assumption of this approach is that the retail margin for an electricity retail business should be broadly consistent with those for other comparable retail businesses. SFG's estimate for the retail margin using the benchmarking approach remained unchanged from their draft report at 6.3% to 6.6%, which is around 0.3% lower than the 6.5% to 6.9% in 2010.¹⁸⁵ Submissions to our draft report did not comment on this approach.

In identifying comparable listed firms for this approach, SFG considered data associated with retailing as suitable for this benchmarking analysis. This enabled it to examine data from a large number of retailers in Australia, the United States, the United Kingdom, Canada and New Zealand – in total, over 690 retail firms using data from 1980 to 2012. In taking this expansive view, SFG recognised the trade-offs between examining data from a large number of comparable firms versus ensuring these firms face the same risks and growth prospects as an electricity retailer in NSW. In SFG's opinion, it was important to consider data from a large number of comparable firms as it improves the statistical reliability of its estimates.¹⁸⁶

We also support SFG's decision to use a large sample of comparable retail firms. In our view, this larger sample size makes SFG's results more rigorous and reliable than those provided in 2010 and 2007, which were based on a more limited sample size.

7.5 Estimated range provided by the bottom-up approach

The bottom-up approach starts from an assumed investment base and cost estimates, then determines the earnings and revenue which would allow the retailer to earn an expected return equal to its estimated cost of capital. SFG's estimate for the retail margin using this approach was 5.6% to 7.0%,¹⁸⁷ a slight reduction from the draft report of 5.7% to 7.1%. The range in our 2010 review was 4.6% to 6.3%.¹⁸⁸

¹⁸⁵ SFG, *Estimation of the regulated profit margin for electricity retailers in New South Wales*, June 2013, pp 5, 22.

¹⁸⁶ Ibid, p 19.

¹⁸⁷ Ibid, p 5.

¹⁸⁸ Ibid, p 29.

As SFG explained in its report, it has updated its bottom-up approach since the 2010 review to include 2 transactions that occurred in December 2010 – Origin acquiring Country Energy and Integral Energy and TRUenergy acquiring EnergyAustralia. For both this review and the 2010 review, SFG used its own methodologies and collected its own data, on the cost of investing in retail energy businesses. (More detailed information on these methodologies, including the approach used to estimate the asset base and the margins under alternative asset base estimates, is provided in SFG’s report.)¹⁸⁹ SFG used 12 transactions from 1999 to 2010 and placed two-thirds weight on average multiples from the most recent 7 transactions (2006 to 2010) and one-third weight on average multiples from the older transactions (1999 to 2002).

We acknowledge that the estimated range for the retail margin derived with a bottom-up approach depends on the key assumptions used in this approach. We note that SFG’s report provides a detailed explanation of its approach and how the estimates vary under different asset base valuations. Submission to our draft report did not comment on this approach.

7.6 Cost of capital assumptions used in the expected returns and bottom-up approaches

As for the discount rate used in estimating the LRMC of generation (see Chapter 6), we determined the appropriate discount rate for the purpose of estimating the retail margin, and instructed SFG to use this rate in its analysis.

Our final decisions on WACC are outlined in Appendix B. There are some important changes in our approach to WACC since our 2010 determination, including:

- ▼ moving to a post-tax WACC framework
- ▼ using effective tax rates for different industries
- ▼ establishing a WACC range using the midpoints of 40-day and long-term average WACCs.

¹⁸⁹ SFG, *Estimation of the regulated profit margin for electricity retailers in New South Wales*, June 2013, pp 22-29.

There is a slight reduction in the updated WACC from the draft report (20 basis points) largely reflecting the recent interest rate cut by the Reserve bank. We found that a discount rate of 7.0% post tax real (equivalent to a real pre-tax WACC of 9.5% using an effective tax rate for electricity retail of 20%) is appropriate for this purpose, after considering a range of parameters. In our view, the 2 key parameters in relation to the cost of capital for electricity retailers are the equity beta and the gearing level. Our analysis indicates that relative to other businesses we regulate, electricity retailing is significantly riskier. Electricity retailing also seems to be more risky than generation. In particular, electricity retailers tend to have a lower asset base and higher revenue volatility. Therefore, consistent with our draft decision, we decided to adopt:

- ▼ a lower target gearing level of 20%
- ▼ an equity beta of 0.9 to 1.1, to reflect our view that the equity beta of electricity retailers is likely to be higher than our water equity beta range of 0.6 to 0.8.¹⁹⁰

For the final decision the WACC is given by the midpoint of the WACC range, where the WACC range is established using the midpoints of the WACCs using the 40-day average and the long-term averages.

Appendix B outlines our consideration of stakeholder comments, and provides detail on the key market parameters underlying our final decision on the appropriate discount rate.

7.7 Selecting an appropriate margin within the feasible range

SFG's recommended range for the retail margin provided by the 3 approaches discussed above is 5.3% to 6.1% of a retailer's total electricity sales (EBITDA).¹⁹¹ SFG's recommended retail margin is 5.7%.¹⁹² This is based on an average of the margins estimated from all 3 approaches.

While it could be argued that any value chosen within this range is reasonable, we consider the best way to select the appropriate retail margin is to weight the estimates provided by each approach equally. Therefore, we agree with SFG's recommendation to use the average.

The resulting retail margin of 5.7% is similar to the retail margin in the 2010 determination of 5.4%.

¹⁹⁰ For example, see IPART, *Hunter Water Corporation – Prices of water, sewerage, stormwater drainage and other services from 1 July 2013 to 30 June 2017 – Draft Report*, March 2013, p 80.

¹⁹¹ SFG calculate this as the average of the upper and lower bounds of the EBITDA margin ranges estimated from all 3 approaches. See SFG, *Estimation of the regulated profit margin for electricity retailers in New South Wales*, June 2013, p 6.

¹⁹² Ibid, p 2.

Retailers generally supported the current approach to the retail margin however, they generally felt the 5.4% margin in the 2010 determination is too low given the risks they face. Several retailers argued that we should select a retail margin towards the higher end of the range.¹⁹³ EnergyAustralia in response to the draft report believes 5.7% is still insufficient.¹⁹⁴ EnergyAustralia proposed in response to our Issues paper that a risk premium should be added to account for the volume uncertainty and that an appropriate margin is between 6.5% to 7%. EnergyAustralia adds that this will encourage new competitors to enter the market.¹⁹⁵

Origin supports our proposed approach to only account for systematic risks in the retail margin, but only provided that specific risks are adequately accounted for in other allowances and mechanisms. Origin also proposed that increased regulatory risk be accounted for in headroom or, in the absence of this, that retail margins be set to account for increased regulatory risk which is not accounted for elsewhere.¹⁹⁶

We agree that the retail margin allowance should account for retailers' **systematic risk only** as we account for **specific risks** retailers face through the other cost allowances and additional regulatory mechanisms. We also agree that cost allowances should be based on efficient costs. The level of regulated retail prices will have a significant effect on the development of the competitive market. In our view, our Determination needs to have regard to the costs of acquiring and retaining customers in the competitive market if it is to promote competition. This includes providing supply side incentives for retailers to enter the market and compete for customers and demand side incentives for customers to engage in the competitive market and seek out competitive offers. These costs will be provided via the appropriate CARC allowance for the 2013 period (see Chapter 9).

We consider that our final decision reflects an appropriate retail margin because it provides the Standard Retailers with a retail margin consistent with the margin an efficient retailer would require.

¹⁹³ AGL, submission, May 2013 p 17; Qenergy, submission, May 2013, p 1.

¹⁹⁴ EnergyAustralia submission, May 2013, p 28.

¹⁹⁵ EnergyAustralia submission, January 2013, p 58.

¹⁹⁶ Origin Energy submission, December 2012, p 18.

7.8 Setting the retail margin as a fixed percentage amount

Consistent with our draft decision we have decided to set the retail margin as a fixed percentage of each retailer's total costs (retail and network) for the determination period. We calculated this percentage in dollar terms for the purpose of setting the value of the regulated retail price controls (R values), and will update this calculation at each annual cost review to reflect updates in the total costs. This will ensure that the dollar amount remains consistent with 5.7% of total costs in each year of the determination period. This decision is consistent with our 2010 decision.

Some stakeholders have expressed support for this approach, as it ensures the margin remains consistent with the determination as other cost elements are revised during the determination period.¹⁹⁷

One consequence of setting the retail margin as a fixed proportion of costs is that the retail margin allowance (expressed as a dollar amount) increases whenever energy, retail and network costs increase.

¹⁹⁷ AGL submission, December 2012, p 23; EnergyAustralia submission, May 2013, p 28.

8 Retail operating cost allowance

In supplying their customer base, the Standard Retailers incur a variety of costs associated with their retail functions. These can be categorised as:

- ▼ **retail operating costs (ROC)**, which include customer service (eg, operating call centres, billing and collecting revenue), finance, IT systems and regulation (eg, paying licence fees), and
- ▼ **customer acquisition and retention costs (CARC)**, which include marketing campaigns, discounts and other incentives for customers to switch retailers or market offers.

In previous determinations, we have considered both these retail cost categories together and set a single retail cost allowance. However, as Chapter 3 explained, for the 2013 determination we considered them separately, and set 2 distinct allowances. This chapter focuses on the ROC allowance; Chapter 9 focuses on the CARC allowance.

Our final decision for the ROC allowance is the same as our draft decision. To make this decision, we estimated the efficient level of retail operating costs a Standard Retailer is likely to incur using a similar method to the one we used for our 2010 determination. This involved:

- ▼ Deciding how to characterise a Standard Retailer for the purpose of this analysis.
- ▼ Determining a range for the efficient ROC of a Standard Retailer (on a per customer basis). This involved undertaking a bottom-up analysis, using information provided by the NSW Standard Retailers on their historic, current and forecast ROC, and adjusting the results to remove costs recovered elsewhere in the regulatory package and any inefficient costs.
- ▼ Assessing the reasonableness of this range by comparing it with data on the ROC of publicly listed retailers, and with other regulators' decisions on ROC.
- ▼ Determining the ROC allowance by deciding on the point within the range that best meets the objectives and terms of reference for the 2013 determination.
- ▼ Considering whether this range should be adjusted within the determination period to take account of likely productivity improvements during this period.

The sections below provide an overview of our final decision on the ROC allowance, and then discuss the analysis and considerations underpinning this decision in more detail.

8.1 Overview of final decision on retail operating cost allowance

12 IPART's final decision is that the retail operating cost allowance for each Standard Retailer for each year of the determination period is as shown in Table 8.1.

Table 8.1 Final decision on retail operating cost allowance (\$2012/13)

All Standard Retailers	\$/customer
Retail operating costs (before adjustment for late payment fees)	110-116
Adjustment to remove costs recovered through late payment fee	- 3.8
ROC allowance	110.0

Our final decision on the ROC allowance represents the mid-point of our estimated range for the NSW Standard Retailer's efficient retail operating costs, and is consistent with the ROC incurred by publicly listed companies. This allowance will be held constant in real terms throughout the determination period, to incorporate an increase in productivity similar to the increase expected in the economy as a whole.

We note that our final decision is around \$27 per customer (or around 33%) higher in real terms than the ROC allowance we set for 2012/13 in the 2010 determination. This reflects the higher level of forecast efficient ROC indicated by the information provided by retailers.

Our final decision for the ROC allowance is the same as our draft decision. We received a number of submissions on our estimate of ROC, all from electricity retailers.¹⁹⁸ Retailers supported the move to a higher estimate of ROC and considered that this reflected the efficient costs of providing retail services for a standard retailer. Origin and EnergyAustralia noted that the allowance for the draft decision was lower than the costs that could be achieved by a second tier retailer or new entrant retailer. EnergyAustralia also noted that it would be unable to achieve the costs from the ROC allowance until the transitional arrangements with Ausgrid following the purchase of the retailer from the NSW Government are completed.

¹⁹⁸ Origin submission, May 2013, p 27; EnergyAustralia submission, May 2013, pp 28-29; Australian Power and Gas submission, May 2013, p 3, and AGL submission, May 2013, pp 17-18.

8.2 Defining a Standard Retailer

As the terms of reference do not characterise a NSW Standard Retailer, we adopted the following definition for the purpose of determining the efficient level of retail operating costs:

- ▼ an incumbent retailer that has achieved economies of scale (ie, has efficient costs)
- ▼ a standalone retailer in NSW that is not vertically integrated into electricity distribution in NSW
- ▼ serves retail customers, including small retail customers, in NSW and other jurisdictions across the NEM
- ▼ can offer retail customers standard form and negotiated customer supply contracts
- ▼ has an existing customer base to defend.

This is the same definition that we used for previous determinations, and proposed in our issues paper for this determination.¹⁹⁹ We note that several retailers submitted that defining retail costs based on an incumbent will preclude new entrants into the market and is therefore inconsistent with the requirement to set prices at a level that encourages competition.²⁰⁰ We have addressed this point of view by determining a separate CARC allowance to balance the requirements of the terms of reference, including the requirement to promote competition. Therefore, we have continued to set the ROC allowance to reflect the short-term efficient costs of a Standard Retailer.

Following the draft decision, EnergyAustralia noted that this approach goes some way to promoting competition but that a small entrant retailer is likely to face both higher ROC and higher CARC than a standard retailer. We consider that the ROC allowance should be estimated based on the costs of retailers that have achieved economies of scale.

8.3 Bottom-up analysis on retail operating costs

The Standard Retailers provided information on their estimated ROC per customer for 2012/13 and their forecast ROC per customer for each year of the determination period. They also provided information on costs per customer across specific cost categories.

¹⁹⁹ IPART, *Review of regulated retail prices and charges for electricity 2013 to 2016 – Issues Paper*, November 2012, pp 61-62.

²⁰⁰ Alinta Energy submission, December 2012, p 6; Lumo Energy submission, December 2012, p 11.

We analysed these data and had discussions with the retailers to understand what cost items are included and what factors drive these costs, and test the reasonableness of the data. We then adjusted the data to exclude any costs that are recovered through other cost allowances or elements of the regulatory package, and any costs we consider to be inefficient.

In particular, we excluded costs associated with late bill payment, as these are recovered through the late payment fee. As Chapter 13 discusses, we have made a final decision to set this fee to recover a larger part of the likely efficient cost associated with late bill payment. Because retailers have not separately identified and excluded these costs from their forecast ROC, we have subtracted an estimate from these forecast costs.²⁰¹ To calculate the appropriate amount to subtract, we considered the level of the final late payment fee (\$10.90) and information provided by the Standard Retailers on how often they charge this fee. This resulted in an amount of \$3.80 per customer.

We also excluded:

- ▼ Costs associated with amortisation and depreciation (which are recovered through the retail margin).
- ▼ Transitional costs associated with the sale of electricity retailers by the NSW Government (which we consider to be inefficient). However, some of the costs under the Transitional Services Agreement (TSA) would need to be incurred by EnergyAustralia if the TSA were not in place.

We found that forecast efficient ROC for a Standard Retailer is in the range of \$110 to \$116 per customer for each year of the 2013 determination period. This range for the efficient ROC is substantially higher than the allowance of \$82.60 for 2012/13 set in our 2010 determination. There are several reasons for this.

The first reason is that the retailers submit that the information provided by the Standard Retailers (prior to being sold) for the 2010 determination underestimated ROC. At the time we made this determination, these retailers were still owned by the state and stapled to the distribution businesses. Therefore, their ROC forecasts reflected how they allocated these costs between their retail and distribution arms. Now that the retail businesses have been sold to private companies, the ROC associated with those businesses is easier to forecast. Several retailers' submissions support this view. For example, EnergyAustralia submitted:

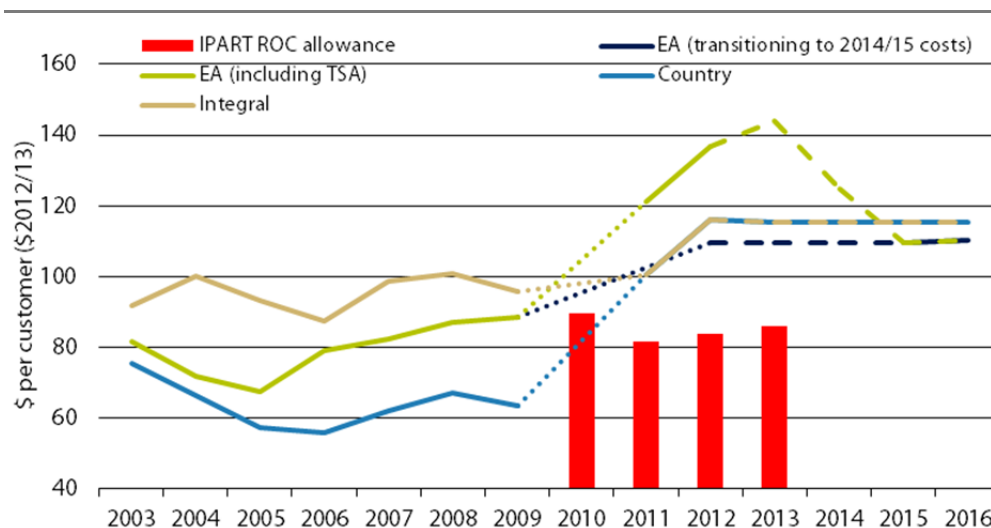
In previous determinations, we believe the [retail] costs have been set at a level of efficiency that cannot be achieved by even the largest retailers in the market.²⁰²

²⁰¹ Note that one component of costs associated with late payment is a change in working capital. This would not currently appear as ROC and would appear in the retail margin. We exclude it from ROC for simplicity.

²⁰² EnergyAustralia submission, January 2013, p 52.

A comparison of the ROC allowance included in the 2010 determination and the Standard Retailers' actual ROC over this determination period also supports this view. As Figure 8.1 shows, this allowance was below actual costs.

Figure 8.1 Standard Retailers' actual and forecast ROC compared with ROC allowance, 2003 to 2016 (\$2012/13)



Note: Standard Retailer costs for 2003 to 2012 reflect data provided by retailers on historic costs (except for 2010 as actual data are not available). Those for 2013 to 2016 reflect forecasts provided by the Standard Retailers. TSA is the transitional service agreement between EnergyAustralia and Ausgrid. TSA costs are expected to be temporary however, EnergyAustralia notes that 'it is difficult to cleanly exclude' TSA costs given categorisation and timing issues. The efficient ROC of EnergyAustralia would fall below the TSA inclusive costs. All EnergyAustralia data excludes depreciation and amortisation costs. Country and Integral Energy were purchased by Origin Energy in 2011 and cost information for 2013 to 2016 is the same for both businesses.

Source: Standard Retailers and IPART.

The other reason why the efficient range for ROC has increased compared to the 2010 determination is that these costs have increased due to a range of drivers, including the following:

- ▼ **Additional bad debts and associated administration costs.** EnergyAustralia submitted that increases in network and carbon costs and declining economic conditions have increased both the risk of non-payment and the amount lost when debts are eventually written off. This has necessitated higher working capital to allow customers to pay bills in arrears. It has also led to higher complaints, credit and collection and call centre costs.²⁰³ AGL submitted that carbon pricing has impacted on bills and subsequently on bad debts.²⁰⁴
- ▼ **Increases in the number of connections with solar panels.** EnergyAustralia submitted that higher connections with solar panels have resulted in extra handling time in processing connection orders and quotes; extra billing complexity; and extra time and complexity in answering customer queries. It also submitted that technology costs are likely to change over the next few years given smart metering technologies and pricing, the digital environment and further regulatory changes.²⁰⁵
- ▼ **The Clean Energy Act 2011.** AGL submitted that this legislation has resulted in additional administration costs.²⁰⁶

We have considered changes in cost categories from 2009 to 2016. We have used this period to avoid interim issues related to transitional arrangements following the sale of electricity retailers by the NSW Government. From 2009 to 2016, Standard Retailers expect ROC per customer to increase in real terms by an average of \$29 per customer. This average increase is being driven by other costs (\$13), bad and doubtful debt (\$11) and corporate overheads (\$9). These increases are offset somewhat by declining average collection costs (\$7). Changes across many categories are influenced by changes in the way that costs are allocated.

8.4 Cost information of publicly listed companies

While corporate organisation and accounting treatment make comparisons difficult, information from publicly listed companies provides a benchmark for assessing the reasonableness of Standard Retailer's retail operating cost estimates. The retail operating costs (or cost to serve) reported by public companies are shown in Table 8.2 and includes both incumbent and (smaller) new entrant retailers.

²⁰³ EnergyAustralia submission, January 2013, p 53.

²⁰⁴ AGL submission, December 2012, p 21.

²⁰⁵ EnergyAustralia submission, January 2013, p 54.

²⁰⁶ AGL submission, December 2012, p 21.

Table 8.2 Retailers' publicly reported cost to serve (\$/ customer)

Retailer	2010/11	2011/12	Comment
AGL	66	63 (reported) 108 (submitted to IPART)	Does not include operating costs related to a) Merchant Energy (managing the wholesale energy portfolio) b) corporate costs or c) full customer acquisition costs (these costs are amortised). Includes electricity and gas retail operations. The adjusted net operating cost per customer (excluding CARC) is estimated at \$108 in 2011/12. This includes operating costs related to Merchant Energy and Corporate costs.
Origin	112	115	The cost to serve is after the impacts of the TSA provision unwind and excludes the costs associated with the transition to the new SAP system and integration of the acquired NSW retail business.
APG	184	191	Includes electricity and gas retail operations.
Lumo	95	113	Excludes bad and doubtful debt costs.

Note: Results for Lumo are for the year to March.

Source: AGL submission, December 2012, p 22; AGL, 2012 Full Year Results: 12 Months to 30 June 2012, August 2012, p 15; Origin, 2012 Full Year Results Announcement: Financial Year Ended 30 June 2012, August 2012, p 36; Lumo 2012 (with clarification on bad and doubtful debt from Lumo), The Consolidated Australian Energy Group: Infratil Investor Day, July 2012, p 43; APG, Australian Power & Gas FY12 Full-year results – Appendix 4E and Audited Full Year Statutory Accounts, p 7; August 2012, and IPART.

We note that:

- ▼ Origin Energy's publicly reported cost to serve is consistent with the ROC information it submitted to us, both in total and by category where this can be compared.
- ▼ AGL's publicly reported cost to serve (\$63 per customer) is less than the ROC information it had also provided to us (\$108 per customer). The publicly reported cost is directly related to AGL's retail business and does not include operating costs related to managing its wholesale energy portfolio and corporate overheads.
- ▼ Figures reported by new entrant retailers, Lumo and APG highlight the large range in retail operating costs reported by retailers and suggests that new entrant retailer costs are higher than the larger incumbent retailers (after accounting for bad and doubtful debt).

In their submissions, EnergyAustralia, AGL and Origin Energy indicated that the apparent discrepancies in retail costs reported by publicly listed companies are due to the application of different accounting methodologies (for instance, capitalisation of retail costs) and the allocation of expense items.²⁰⁷ AGL suggested it is difficult to compare the retail costs reported by publicly listed companies, saying:

It is often unclear if these costs include non-commodity energy products such as solar panels, costs of managing energy portfolio, range of customers or treatment of customer acquisition costs including goodwill from corporate acquisition.²⁰⁸

In addition, AGL submitted that its publicly reported costs to serve of \$63 per customer represent costs which are directly related to the retail business and do not include operating costs related to Merchant Energy, corporate costs or amortised customer acquisition costs incurred during the year. It indicated that when these costs are incorporated into ROC per customer estimates, the adjusted cost to serve for 2011/12 will be around \$108 per customer with an additional \$32 per customer associated with CARC.²⁰⁹

EnergyAustralia suggested that organisational structure and methods of reporting customer numbers may also lead to discrepancies. For instance, corporate overheads may or may not be fully allocated to business units in publicly reported cost to serve data. Alternatively, account numbers could refer to the number of meters a listed company is financially responsible for, or the number of meters for which they have an active service agreement. Therefore, it suggested that we should not rely on retail costs reported by publicly listed companies as heavily as we have in the past.²¹⁰

We broadly agree with arguments that costs reported to the market may not fully capture costs of serving small retail customers. We consider that these cost estimates are nevertheless consistent with our final decision.

8.5 Other regulators' decisions on ROC

While there is a degree of circularity in looking at other regulators' decisions that have themselves considered our past decisions, these do provide a guide as to information available to other regulators. There are also differences in the costs included and excluded in decisions about retail operating costs.

We considered the decisions on ROC made by regulators, ranging from \$82 to \$121 per customer (in 2012/13 dollars) (see Appendix E). The decision at the upper end of this range included customer acquisition costs.

²⁰⁷ AGL submission, December 2012, p 22; EnergyAustralia submission, January 2013, pp 55-57; Origin Energy submission, December 2012, p 18.

²⁰⁸ AGL submission, December 2012, p 22.

²⁰⁹ AGL submission, December 2012, p 22.

²¹⁰ EnergyAustralia submission, January 2013, pp 56-57.

We note that our finding on the range for forecast efficient ROC in the 2013 period is higher than recent decisions on ROC made by other regulators. Nevertheless, we consider this range is reasonable.

8.6 Deciding on the ROC allowance

To make our final decision on the ROC allowance, we considered what point within the range for forecast efficient ROC best meets our terms of reference for this determination. For the 2010 determination, we chose the midpoint of the range, as we considered this was a “measured choice that balanced our efficiency and competition criteria”.²¹¹ For the 2013 determination, we have aimed to select a point that reflects the most efficient point, in line with our systematic approach to exercising our discretion and balancing the shorter and longer term objectives for this determination (see Chapter 3).

We note that conceptually, setting the ROC allowance at the lower end of the range may reflect the ‘most efficient’ level of these costs. However, on balance, we consider that the middle of the range is the appropriate point for this determination.²¹² This takes account of the fact that retailers’ capital expenditure decisions are not captured in the methodology used to estimate the retail margin. If retailers have lower ROC because of higher capital expenditure, then setting ROC at the low end of the range may understate their total costs given our method for estimating the retail margin. Further, choosing the lower end of the range may place too much weight on one retailer’s data, given that the differences across retailers’ data are driven partly by differences in their reporting and cost allocation methods.

For these reasons, we decided to set the ROC allowance at \$110 per customer for each Standard Retailer, in line with the mid-point of the range for a Standard Retailer’s efficient ROC.

8.7 Adjusting the ROC allowance within the determination period to account for productivity improvements

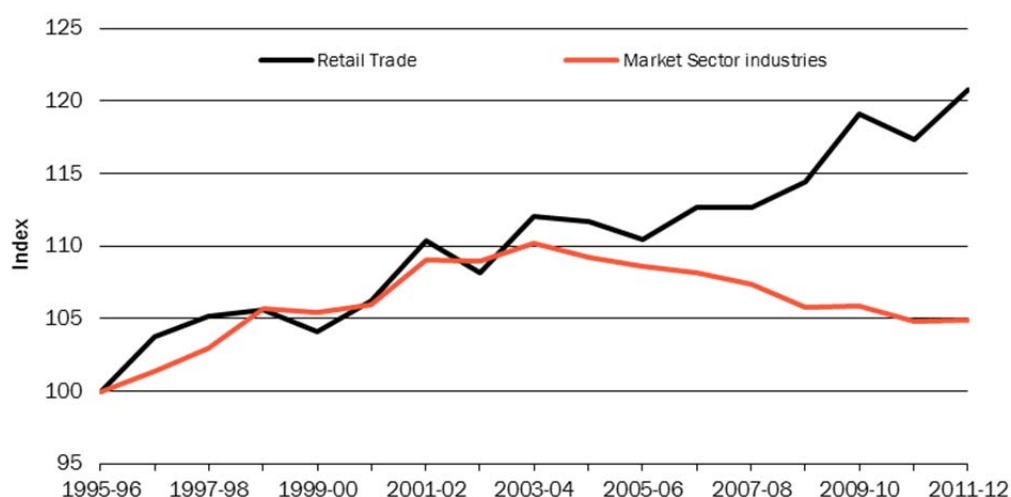
The retail electricity sector may become more productive through time. For example, improvement in IT systems and electronic communication could reduce costs associated with billing and call centres. This may be offset by other factors, such as the increases in costs associated with bad debts over the most recent regulatory period.

²¹¹ IPART, *Review of regulated retail tariffs and charges for electricity 2010-2013 - Final Report*, March 2010, p 120.

²¹² We rounded up from the midpoint to \$110 per customer.

Across all market sectors there has been a multi-factor productivity decline for the past 8 years, and small annual growth of 0.3% from 1995/96 to 2011/12. In the retail trade sector productivity growth has been stronger, averaging 1.2% over the same period (Figure 8.2).

Figure 8.2 ABS multi-factor productivity, retail trade and market sector industries



Data source: ABS, *Estimates of Industry Multifactor Productivity, Australia: Detailed Productivity Estimates*, Cat. No. 5260.0.55.002, December 2012.

For sectors that we regulate using a cost index approach, such as rural and regional buses and private ferries, we have sought to reflect productivity improvements through using multi-factor productivity indices across all market sectors of the economy. For those industries we regulate using a building block approach, productivity adjustments are reflected in the estimates of efficient costs.²¹³

We have made a final decision to hold retail operating costs constant in real terms for the duration of the determination period. This incorporates a level of productivity improvement similar to that of the economy as a whole. For example, electricity retailers will face increases in wages that are likely to be higher than the change in the CPI, and will hence have to achieve productivity gains to ensure that costs are constrained to increase only by the change in the CPI.

²¹³ IPART, *Information Paper - Adjusting industry cost indices to share productivity gains with customers*, October 2012, p 2.

This approach may understate the extent of productivity growth possible in the provision of retail electricity. For example, if retail electricity could achieve similar productivity growth to that historically experienced for retail trade then it may be able to reduce its costs in real terms. Because information provided to us suggests that costs for retail electricity have, in recent years, risen faster than CPI, we have not sought to adopt a more aggressive adjustment for productivity growth at this time.

9 Customer acquisition and retention cost allowance

As Chapter 3 discussed, as part of our systematic approach to exercising our discretion and balancing the shorter and longer term objectives for this determination, we have set a distinct allowance for customer acquisition and retention costs. While we determined the other cost allowances in line with our estimates of the efficient short-term costs of supply (to the extent possible within the requirements of our terms of reference), we set the CARC allowance to reflect our view of the additional incentive (on top of the other cost allowances) required to promote competition in the NSW retail electricity market. That is, we explicitly used the CARC allowance as the mechanism for ensuring we set regulated prices at a level that facilitates the continued development of competition in the long-term interests of consumers of electricity. (See Box 9.1 for more information.) As Chapter 3 discussed, in our view, a competitive market offers customers the best protection from higher than efficient prices in the short term. It can also deliver better customer outcomes in the long term, including better ‘value for money’ service through reduced costs and/or innovation.

The method we used to make our final decision on the CARC allowance recognises that it is the overall level of regulated retail prices, rather than of the CARC allowance itself, that influences the development of the competitive market. We had regard to the costs an efficient retailer is likely to incur in acquiring and retaining customers in the competitive market. We also had regard to the need to balance the short and long-term interests of customers. The method we used also recognises that the other cost allowances we have set, particularly the energy purchase cost allowance, may already be higher than the efficient level due to requirements in the reference.

Box 9.1 Relationship between regulated prices and competition

The level of regulated retail prices has a significant effect on the development of the competitive market. If prices are set too close to estimates of the short-term efficient cost of supply, there is likely to be little to gain from participating in the competitive market, either for retailers or customers. There is also a risk that given the imperfect information available, setting prices to reflect the forecast efficient costs, particularly in dynamic retail energy markets, creates the potential for price regulation to distort the competitive market.

However, if prices are set sufficiently above this cost, there will be clear incentives for retailers to enter and compete in the market, and for customers to move off regulated prices and seek better offers in the competitive market. This should lead to higher levels of retailer activity, including greater investment and innovation in the market. Over time as competition develops, it should provide better 'value for money' for consumers through lower cost and/or better quality services.

The main steps involved in this method are:

1. Forming a view of the margin, or incentive, on top of the forecast efficient short-term cost of supply likely to be sufficient to ensure that regulated retail prices balance the promotion of competition and the long-term interests of consumers, with efficient cost recovery and the short-term interests of customers.
2. Estimating the extent to which the other cost allowances we have determined already provide a margin on top of the efficient short-term cost of supply.
3. Considering the extent to which other non-price measures within and outside our regulatory package for this determination are likely to promote competition.
4. Considering the results of the above steps and exercising our judgement to decide on an appropriate CARC allowance for each Standard Retailer for each year of the determination period.

The sections below provide an overview of our final decision on the CARC allowance, and then discuss the analysis and considerations underpinning this decision in more detail.

9.1 Overview of final decision on CARC allowance

13 IPART's final decision is that the CARC allowance for each Standard Retailer for each year in the determination period is as shown in Table 9.1.

Table 9.1 Final decision on the CARC allowance (\$2012/13 \$/MWh)

	2013/14	2014/15 <i>indicative</i>	2015/16 <i>indicative</i>
EnergyAustralia	7.74	9.71	0.00
Origin Energy (Endeavour Energy)	8.75	10.69	0.00
Origin Energy (Essential Energy)	13.32	15.19	2.32

This final decision reflects our view of the additional financial incentive – on top of the other cost allowances – that regulated retail prices should include to ensure the level of these prices encourages competition in the retail electricity market and supports the long-term interests of consumers of electricity, as required by our terms of reference. As explained in this chapter the CARC allowance has been set to zero in 2015/16 for EnergyAustralia and Origin Energy (Endeavour). The difference between the energy purchase cost allowance floor price and market based costs is sufficiently large in this year, meaning that there is no need for regulated prices to include an additional incentive. The figures for 2014/15 and 2015/16 are indicative only and will be updated as part of the annual review.

In reaching this decision, we found that for 2013/14:

- ▼ Regulated retail prices need to be **\$22/MWh** above the efficient short-term cost of supply to promote a level of competition that is in the long-term interests of customers, as well as promote efficient cost recovery. In our view, including a lower or higher incentive in regulated prices is unlikely to appropriately balance the long and short-term interests of customers.
- ▼ Due to the requirement that we set the energy purchase cost allowance no lower than the weighted average of the LRMC of generation (75%) and the market-based purchase cost (25%), the other cost allowances already include incentives that are **\$9 to \$14/MWh** above this efficient cost in 2013/14.
- ▼ Therefore, a CARC allowance ranging from **\$8 to \$13/MWh** is sufficient to ensure the level of regulated prices is \$22/MWh above the forecast short-term efficient cost of supply in 2013/14.

We note that our decisions mean that in 2013/14, a typical residential customer with annual consumption of 6.5MWh who has not entered the competitive market will pay \$143 a year more than the efficient cost of supplying this amount of electricity. However, we also note that customers can avoid paying some or all of these additional costs by finding a better offer in the competitive market and moving off regulated prices. Some current market offers are below our estimates of the short-term efficient cost of supply. We are satisfied that our final decision

reflects an appropriate balance between the short-term and long-term objectives for the determination, as it:

- ▼ Still promotes efficient cost recovery.
- ▼ Promotes competition and the longer term interests of consumers by:
 - Providing supply-side incentives for retailers to enter the market and actively compete for customers. As competition increases, it should encourage retailers to pursue longer term efficiencies and innovations to improve their competitive position, which will benefit customers. As discussed in Chapter 3, regulation will always be an inferior way of driving these improvements compared to competition. An analysis of market offers suggests that prices paid by some customers are below our estimates of the short-term efficient cost of supply.
 - Providing demand-side incentives for customers to consider the offers available in the competitive market. As customer participation in the market increases, it should provide further incentives for retailers to compete, and reduce customer reliance on regulated prices.
- ▼ Reduces the risk that, given the imperfect information available to us to assess the efficient cost of supply, our determination distorts the competitive market (and thus potentially discourages the development of competition).
- ▼ Promotes stability in the retail electricity market in terms of the incentives built into regulated retail prices.²¹⁴
- ▼ Makes clear to stakeholders that we view competition as the most effective means of customer protection in the short term, and innovation and 'value for money' in the longer term.

We have made a final decision to update the CARC allowance as part of our annual reviews (see Chapter 11). This includes considering the level of incentives that should be included in prices to balance the long and short-term interests of customers²¹⁵ and the extent to which the energy purchase cost allowance already provides incentives for competition. This will ensure that regulated prices continue to balance the long and short-term interests of customers in the retail electricity market throughout the determination period.

²¹⁴ The level of incentives built into prices under our final decision (\$22/MWh) is slightly below the incentives in the 2010-13 Determination (\$24-29/MWh). The level of incentive in this final decision is calculated based on the CARC and the difference between the estimates of the long run marginal cost and the market based energy cost. However, we have increased the retail cost allowance to better reflect the efficient cost faced by Standard Retailers over the 2013-16 period. Overall, the level of regulated prices is broadly in line with the 2010 Determination.

²¹⁵ As in this final decision, we will have regard to the observed level of competition, as well as the costs an efficient retailer is likely to incur in acquiring and retaining customers in the competitive market.

9.2 Forming a view on the margin above efficient cost of supply required to promote competition

We used 2 broad approaches to help us consider what margin on top of the efficient short-term cost of supply is likely to be sufficient to ensure that regulated retail prices promote competition and the long-term interests of consumers:

- ▼ **Top down or ‘outcomes based’ analysis.** This involved observing the level of regulated retail prices historically and the corresponding outcomes in the competitive market, both in NSW and in other jurisdictions.
- ▼ **Bottom-up analysis.** This involved considering the costs incurred by retailers to acquire new customers and retain existing customers on either regulated prices or market contracts.

We then exercised our judgement to form the view that a margin of \$22/MWh is likely to be sufficient.

9.2.1 Top-down analysis

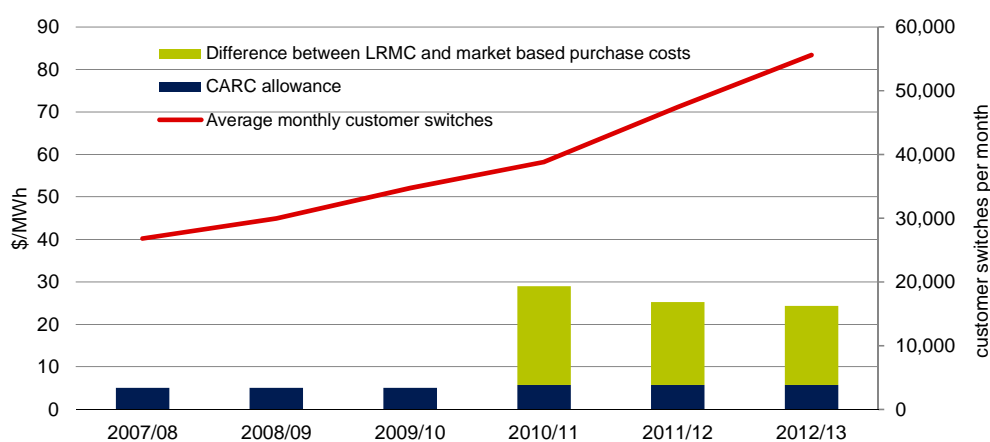
In our top-down analysis, we considered the historical levels of competitive activity in retail markets, both in NSW and other jurisdictions, and related these to the level of regulated retail prices. This can be considered an ‘outcomes based’ approach to assessing the extent to which regulated prices have promoted competition, and thus the level of CARC necessary to continue to promote competition.

Our analysis shows that during the 2007 determination period, regulated prices were approximately \$5/MWh above the efficient cost of supply. However, during the 2010 determination period, the margin above efficient costs (or incentive) included in regulated prices increased to \$24 to \$29/MWh.²¹⁶ This was primarily the result of the requirement in our terms of reference for that determination that we set the electricity purchase cost allowance in line with the LRMC of generation, and this cost being significantly above the market-based electricity purchase cost.

²¹⁶ This analysis assumes that there are only 2 sources of ‘additional incentives’ in regulated prices – the EPCA (the extent to which prices are above efficient short-term costs) and CARC – and all other cost allowances are set at efficient levels. Given the imperfect information we have in setting efficient cost allowances, there may be additional or reduced incentives in some of the other cost allowances.

Our comparison of the incentive included in regulated prices with observed indicators of competitive market outcomes over these determination periods suggests there is a clear relationship between these incentives and the level of competition in the market. For example, Figure 9.1 compares the incentive included in regulated prices with the average monthly switching rate. It shows that when the incentive in regulated prices increased in the 2010 period, the switching rate also increased.

Figure 9.1 Incentives included in regulated prices and observed customer switching in NSW, 2007/08 – 2012/13 (\$2012/13, \$/MWh)



Note: Customer switching for 2012/13 is based on AEMO data from July 2012 to May 2013.

Data source: IPART calculations, AEMO switching data.

Table 9.2 compares the incentives included in regulated prices²¹⁷ with indicative discounts included in market offers (relative to regulated prices), the average switching rate, and the percentage of customers remaining on regulated prices over the same period. It shows that when the incentive included in regulated prices increased in the 2010 period, all these observed market outcomes also improved.

²¹⁷ After considering the difference between the estimates of the long run marginal cost and the market based energy cost and the CARC allowances together (consistent with our approach in this determination).

Table 9.2 Incentives in regulated prices and observed market outcomes (2007/08 – 2012/13) \$2012/13

	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Incentives in regulated prices (\$/MWh)	5.1	5.1	5.1	29.0	25.3	24.3
Market offers (% discount on regulated price)	4-5%	4-5%	4-5%	5-10%	5-12%	5-15%
Switching rates in NSW	9%	10%	12%	13%	16%	19%
% of customers on regulated prices	64%	68%	65%	59%	50%	40% ^a

^a Percentage of small customers on regulated prices as at May 2013.

Note: The market offer information is indicative, reflecting our broad observations on retailer offers from our price comparator website, retailers' websites and statements we have made in the past. It does not capture upfront discounts or non-price incentives offered by retailers.

Source: AEMO, IPART.

Evidence from other jurisdictions suggests a similar relationship. For example, in Victoria in the years prior to deregulation, higher margins on standing offer tariffs between 2004 and 2007 occurred alongside increasing retail market competition.²¹⁸ The ESC recently reported that retailer's margins decreased in the last few years prior to full deregulation but subsequently increased, however, there are challenges in measuring retail margins in a competitive deregulated market (where prices and costs cannot easily be observed).²¹⁹ In Queensland, lower incentives in regulated retail prices²²⁰ (relative to those in NSW and Victoria) have occurred alongside relatively lower levels of customer switching (which ranged between 10% to 15% over the past 12 months, compared to between 16% to 23% in NSW).²²¹

²¹⁸ In its report for the AEMC, CRA estimated indicative (net or EBIT) margins on Victorian standing offer tariffs of between 7% to 18% between 2004 and 2007. See CRA, *Impact of Prices and Profit Margins on Energy Retail Competition in Victoria*, November 2007, p 3.

²¹⁹ We note that the ESC based its analysis on standing offers and one published market offer per retailer. Their analysis was not based on actual retailer cost data but rather proxies using publicly available data. Consequently, the analysis may not provide an accurate representation of market offers. ESC, *Retailer margins in Victoria's electricity market*, Discussion paper, May 2013, p 1.

²²⁰ Queensland regulated retail prices include a headroom allowance of 5% of retail costs (see QCA, *Draft Determination – Regulated Retail Electricity Prices 2013-14*, February 2013, p 56). This is below the \$24/MWh of additional incentives included in NSW regulated retail prices currently.

²²¹ AEMO, *National Electricity Market Monthly Retail Transfer Statistics – May 2013*, p 2. Available at: <http://www.aemo.com.au/Electricity/Data/Metering/Retail-Transfer-Statistical-Data>

We recognise there are challenges in trying to determine the precise relationship between these variables, for example:

- ▼ Customer switching is an observable measure of competition – in terms of measuring retailer conduct and customer engagement – but an imperfect one.²²²
- ▼ Switching rates may be influenced by a range of other factors – including the overall level of retail prices, and other non-price measures that may encourage and/or assist customers to engage in the competitive market.
- ▼ There can be a lag between the supply-side incentives created by regulated prices and observable market outcomes, as both retailers and customers may not immediately respond to price incentives.

However, we consider it reasonable to conclude that the incentives included in regulated prices will significantly influence the level of competitive activity. The evidence suggests that as the incentives in regulated retail prices increase, so does the level of competitive behaviour by retailers and market participation by customers.

9.2.2 Bottom-up analysis

In our bottom-up analysis, we considered the costs incurred by retailers to acquire and retain customers in the competitive market. These costs included those upfront or direct costs associated with sales, as well as other indirect costs or reductions in revenue associated with providing ongoing discounts or other incentives to entice customers onto market contracts.

These costs will vary through time as a result of the level of competition, the nature and position of the retailer in the market and the sales and marketing channels used. The type and frequency of costs incurred depend on a number of factors:

- ▼ the type of retailer and their position in the market – for example, new entrant retailers may incur higher costs in order to retain a customer base than incumbents
- ▼ the prevalence of dual fuel customers (electricity and gas) and the impact that this has on lowering overall customer acquisition costs²²³
- ▼ the methods used to acquire customers and the rules associated with these different sales methods.

²²² A maturing competitive market, may exhibit lower levels of switching as retailers are incentivised to offer cost effective and innovative products to existing customers to reduce churn. In contrast, higher levels of switching may indicate declining customer satisfaction (eg, Vodafone's recent experience). However, this is more challenging to observe.

²²³ Bell Potter, *Australian Power & Gas (APK), Electrifying and energising*, September 2011, p 8.

We have considered current estimates of **direct** customer acquisition and retention costs by reviewing the information provided to us by the NSW Standard Retailers, reviewing information provided by retailers to the market, and reviewing other regulators' decisions. Table 9.3 summarises our findings of the direct costs associated with acquisition of new customers. It shows that the estimates of these costs range widely. Nonetheless, these estimates suggest these costs are significant.

Table 9.3 Summary of estimated direct customer acquisition cost (\$2012/13)

Source of estimate	\$ per new customer	\$ per customer per annum
Retailer information submitted to IPART	182	48
Other regulatory decisions	-	43
IPART 2010 determination	-	40
Market information (acquisition costs only)	129-193	34-51

Note: Converted to \$ per customer using a discount rate of 9.7% and a period based on a churn rate of 20%.

Data source: IPART. AGL 2012, *Full Year Results Presentation*, p.25. Bell Potter 2011, *Australian Power & Gas (APK), Electrifying and energising*, September. Origin 2012, *2012 Full Year Results Announcement: Financial Year Ended 30 June 2012*, August.

In addition, retailers incur **indirect** customer acquisition and retention costs (in terms of reduced revenues or margins). In particular, the discounts included in market offers (relating to regulated prices) are a major driver of customer switching. This is because competition between retailers to secure customers for relatively homogenous products like electricity tends to be price based.

Market discounts in NSW currently range from 5% to 15% off the usage component of regulated prices over the contract. The costs to retailers of offering these discounts are significant and, in our view, are an important element in considering the costs associated with acquisition and retention.

We note that EnergyAustralia submitted that there are **other indirect costs** such as advertising and market and sales staff that should be included in the CARC allowance.²²⁴

²²⁴ EnergyAustralia submission, May 2013, p 32.

Based on the above information, we consider it is reasonable to conclude that:

- ▼ Retailers incur a direct acquisition cost of around \$150 per new customer, or approximately \$40 per customer per annum. The direct costs of retention are likely to be significantly lower. In our view this is likely to capture the costs of any upfront credits/rebates, commissions to sales agents as well as advertising and other marketing costs. We will consider further information on acquisition costs as part of the annual review.
- ▼ Retailers incur indirect cost (in terms of ongoing market discounts) of around 8% off regulated prices, or approximately \$150 per customer per annum for a typical NSW customer.²²⁵ We note that retailers offer higher (or lower) discounts, some of which are linked to the regulated price.
- ▼ To recover these costs over 4 years, regulated prices would need to be approximately \$29/MWh above the short-term efficient cost of supply. We note that as churn increases (or decreases) these costs may be incurred over a shorter (or longer) timeframe.

Box 9.2 provides a simple example of how acquisition and retention costs are incurred and recovered over time.

²²⁵ This represents the cost of offering an 8% discount off regulated prices (usage component only, assuming average rate of 28c/kWh) for a 6.5 MWh pa customer.

Box 9.2 Simple example of how retailers incur and recover CARC over time

Retailers incur a range of costs to acquire and retain customers in a competitive market. The 2 main costs are the direct (or upfront) cost associated with acquiring new customers, and the indirect (or ongoing) cost associated with providing market discounts on usage charges.

The table below provides a simple example of how these costs are incurred by retailers offering market contracts and recovered over time, and the extent to which regulated prices need to be above short-term efficient costs if retailers are to recover these costs.

It shows a simple discounted cash flow (DCF) analysis for a hypothetical retailer offering a market contract. This retailer could have regulated and market customers. It assumes that this retailer:

- ▼ Earns a 5.7% retail margin, equivalent to \$116 per annum on a \$2,042 annual bill (average bill across NSW).
- ▼ Incurs an upfront one-off acquisition cost of \$150 per customer.
- ▼ Incurs an ongoing cost, or reduction in revenue of \$146 per customer per annum. This represents the cost of offering an 8% discount off regulated prices (usage component only, assuming average rate of 27.5c/kWh) for a typical residential customer with annual consumption of 6.5MWh.
- ▼ Retains the customer for 4 years.

This analysis suggests that for a retailer to earn a 5.7% margin or a return of \$116 per year (NPV equivalent of \$371), it costs \$188 per typical residential customer per year or around \$29/MWh in customer acquisition and retention costs.

Simple DCF analysis for a hypothetical retailer acquiring a market customer (\$ per year)

Year	1	2	3	4	PV/NPV
5.7% margin in prices	116	116	116	116	371
Additional incentives in prices	188	188	188	188	
Direct acquisition costs	-150				
Indirect costs of offering ongoing market discount	-146	-146	-146	-146	
Net margin	9	159	159	159	371

Note: Assuming a discount rate of 9.7%.

9.2.3 IPART's view of the margin on top of the efficient short-term costs likely to be sufficient to promote competition

After considering both our top-down and bottom-up analyses and using our own judgement, we formed the view that including a margin of **\$22/MWh** on top of the short-term efficient cost of supply should ensure that regulated prices promote a level of competition that is in the long-term interests of customers. We consider this view is reasonable because:

- ▼ It provides a sufficient incentive for retailers to compete in the market. To recover the upfront and ongoing costs of acquiring new customers over 4 years from only regulated customers would require prices to be \$29/MWh above short-term efficient costs. However we recognise that entering a market, or expanding market share is not costless, and that it is reasonable to expect a retailer to experience reduced margins for some customers during this period. Setting prices \$22/MWh above efficient costs means that a retailer should be able to offer a competitive market price and recover around 75% of its upfront and ongoing costs of acquiring new customers over 4 years.²²⁶
- ▼ Some customers will remain on regulated retail prices and the Standard Retailers will earn higher margins on these customers. Other market customers will receive higher or lower discounts, or retailers will be able to retain them at lower cost than acquiring a new customer.²²⁷
- ▼ It provides a sufficient incentive for customers to consider market offers available in the competitive market, to switch between retailers or engage with their current retailers, and encourages customers to reduce their reliance on regulated retail prices.

²²⁶ We consider it reasonable to conclude that to recover the costs of acquisition over 4 years, regulated prices would need to be approximately \$29/MWh above short-term efficient costs. We consider it reasonable for \$22/MWh (or around 75% of these costs) to be included in regulated prices.

²²⁷ In most markets there are a mix of higher margin customers and low margin customers, typically related to the level of customer engagement and potentially customer consumption.

- ▼ It represents a reasonable balance between the short- and long-term interests of customers. While some stakeholders submitted that we had provided too much weight to the long²²⁸ or short term²²⁹ interests of customers, some stakeholders submitted that IPART's draft decision appropriately balanced these objectives.²³⁰ EnergyAustralia questioned why we had not included the entire amount of the forecast costs of acquiring and retaining customers.²³¹ In our view, including a greater proportion of the costs of acquiring and retaining customers in the competitive market in regulated prices is likely to promote further competition. However, it is also likely to lead to short-term inefficiencies as a result of regulated customers paying more than the cost of supply. The Act and our terms of reference require us to balance these objectives.
- ▼ It provides a level of stability between IPART determinations in terms of the incentives built into regulated prices, thus manages the risk that volatility in these incentives discourages retailers from competing in the NSW market. While updating the level of incentives, the energy purchase cost allowance and resulting CARC allowance as part of the annual review may not provide price certainty to stakeholders,²³² we consider it necessary to ensure regulated prices continue to balance the long and short-term interests of customers in the retail electricity market throughout the determination period.

9.3 Estimating the extent to which the other cost allowances already provide a margin above efficient costs

As noted above, we recognise that the other cost allowances we have set may already be higher than the short-term efficient cost of supply due to constraints in our terms of reference for the 2013 determination. In particular, as Chapter 6 discussed, we are required to set the energy purchase cost allowance (EPCA) no lower than the weighted average of the LRMC of generation (75%) and the market-based purchase cost (25%). This requirement creates a price floor for the EPCA that is not necessarily in line with the efficient short-term purchase cost. In general, we would expect this efficient cost to be equal to the market-based purchase cost.

Therefore, we estimated the extent to which the other cost allowances already provide a margin above efficient costs by calculating the difference between our final decision on the EPCA and our estimate of the market-based purchase price. As Chapter 6 indicated, we made a final decision to set the EPCA in line with the price floor. As Table 9.4 shows, this decision is approximately \$9 to \$14/MWh higher than the market-based cost in 2013/14. Therefore, we consider it

²²⁸ See PIAC submission, May 2013, p 3.

²²⁹ See EnergyAustralia, May 2013, pp 29-33.

²³⁰ See AGL submission, May 2013, p 4; APG submission, May 2013, p 2; Origin Energy submission, May 2013, p 27.

²³¹ EnergyAustralia, May 2013, p 33.

²³² AGL submission, May 2013, p 16.

reasonable to conclude that the other cost allowances are already \$9 to \$14/MWh above the short-term efficient cost of supply.

Table 9.4 Difference between our final decision on the EPCA and the market-based purchase cost (\$2012/13 \$/MWh)

	2013/14	2014/15 indicative	2015/16 indicative
EnergyAustralia	14.26	12.29	26.59
Origin Energy (Endeavour Energy)	13.25	11.31	26.26
Origin Energy (Essential Energy)	8.69	6.81	19.68

Note: This is calculated using the LRMC and market based energy purchases costs for sub-100 MWh customers.

9.4 Considering the extent to which other non-price measures are likely to promote competition

We also recognise that other aspects of our determination and measures from retailers and Government to improve customer engagement represent non-price measures that are likely to promote competition. If these measures provide a strong incentive for retailers to compete and customers to participate in the market, there may be less need for regulated prices to include a financial incentive than suggested by the analysis discussed above.

As Chapter 5 discussed, we have made final decisions to use a slightly more light-handed form of regulation for the 2013 determination period. In particular, we will remove the additional constraint on Origin Energy (in the Essential Energy area) that limited its ability to increase individual regulated prices by more than a specified amount, and also remove the requirement for it to obtain IPART's approval to transfer customers between regulated prices. These constraints were imposed in previous determinations to protect customers while the Standard Retailer rationalised its obsolete regulated prices. Removing the constraints allows Origin Energy to complete the process relatively quickly. This may promote increased competition in some parts of the Origin Energy (Essential Energy area) area where there are still numerous regulated prices. However, this action alone is not likely to provide a significant incentive for competition in the overall market.

In addition, we have recommended that the NSW Government consider introducing an opt-in model for regulated prices if it decides to retain retail price regulation. While we consider that this would create a significant incentive for competition, it is a matter for the Government to decide. Further, even if it did decide to adopt such a model, it could not be implemented immediately (see Chapter 5).

As chapter 4 discussed, there are other actions and policy reforms that we consider would improve the competitiveness of the retail market, including improving the quality and suitability of market information, and the timing of network price changes. We encourage retailers, network businesses and Governments to assist in further improve the competitiveness of the retail market.

Given the above, we consider that the extent to which other non-price measures – either within or outside our determination – will promote competition is not significant enough to reduce the need for regulated prices to include an incentive.

9.5 Deciding on an appropriate CARC allowance for each Standard Retailer

After considering the analysis discussed above, we decided on an appropriate CARC allowance by:

- ▼ taking our view that a margin of \$22/MWh on top of the short-term efficient cost of supply should ensure that regulated prices promote a level of competition that is in the long-term interests of customers
- ▼ deducting the difference between our final decision on the EPCA and the market-based purchase cost to ensure there is no ‘double-counting’.

This calculation is shown in Table 9.5.

Table 9.5 Calculating the appropriate CARC allowance (\$2012/13 \$/MWh)

	2013/14	2014/15 indicative	2015/16 indicative
<i>IPART view on necessary margin above short-term efficient costs</i>	22	22	22
<i>Less margin already included in EPCA</i>			
EnergyAustralia	14.26	12.29	26.59
Origin Energy (Endeavour supply area)	13.25	11.31	26.26
Origin Energy (Essential supply area)	8.69	6.81	19.68
<i>Final decision on CARC allowance</i>			
EnergyAustralia	7.74	9.71	0.00
Origin Energy (Endeavour supply area)	8.75	10.69	0.00
Origin Energy (Essential supply area)	13.32	15.19	2.32

Note: We have made a final decision not to round the CARC allowances to the nearest dollar.

The difference between the Standard Retailers’ CARC allowances results from the differences in the LRMC of generation and market-based purchase cost in their supply areas. These differences mean that a greater proportion of the margin required to promote competition is included in the EPCA for EnergyAustralia, so a smaller additional margin needs to be included via the CARC allowance.

The CARC allowance has been set to zero in 2015/16 for EnergyAustralia and Origin. The difference between the floor and market based costs in the EPCA is larger than \$22 MWh in this year, meaning that there is no need for regulated prices to include an additional incentive. The figures for 2014/15 and 2015/16 are indicative only and will be updated as part of the annual review.

10 Regulated retail price controls

After making our final decisions on the total energy cost allowance, the retail cost allowance and the retail margin allowance (discussed in Chapters 6 to 9), we converted these allowances into the regulated price controls (or R values) for each Standard Retailer. The retailers must use these R values (and the N values) to calculate the maximum annual amount by which they can increase their regulated retail prices under the WAPC form of regulation.

As discussed in Chapter 5, the R values within the WAPC are set to allow each Standard Retailer to fully recover the total cost allowances that we have determined for 2013/14. There are separate R values for the fixed and variable components of regulated prices. The fixed R values are expressed as \$ per customer, while the variable R values are expressed as \$ per MWh.

The section below sets out our final decisions on the R values for each Standard Retailer for 2013/14. The subsequent sections summarise our final decisions on each Standard Retailer's cost allowances and discuss how we calculated the R values for the final determination.

Please note that the N values in the WAPC are set to allow each Standard Retailer to fully recover the actual costs it incurs in paying the network fees and levies. These network fees are determined by the AER and are not affected by our 2013 determination. Therefore, this chapter focuses only on the R values.

10.1 Overview of final decision on the R values

14 IPART's final decision is to set the regulated retail price controls (R values) as shown in Table 10.1 below.

Table 10.1 Final decision on R values for 2013/14 – sub-100 MWh (\$2012/13)

	2012/13	2013/14
EnergyAustralia		
Fixed R - \$ per customer	101.5	82.5
Variable R - \$ per MWh	122.7	125.2
Cost pass-through	2.3	4.1
Origin Energy (Endeavour Energy)		
Fixed R - \$ per customer	101.5	82.5
Variable R - \$ per MWh	126.9	126.4
Cost pass-through - \$ per MWh	2.3	4.3
Origin Energy (Essential Energy)		
Fixed R - \$ per customer	101.5	82.5
Variable R - \$ per MWh	126.3	126.8
Cost pass-through - \$ per MWh	2.2	4.2

Note: The 2012/13 R values were set under the 2010 determination and are based on regulated customers with annual consumption up to 160 MWh per annum.

10.2 How we set the R values for the final determination

To set the R values for each retailer and each year, we disaggregated each of the efficient cost allowances into their fixed and variable cost components, and calculated the cost per unit for each group of components.

The fixed cost components account for 75% of retail operating costs. These costs are expressed in terms of dollars per customer, and are the same for all 3 retailers. Therefore, we set a single fixed R value per year that is common to all 3 retailers.

The variable cost components include 100% of total energy costs, 25% of retail operating costs (after the adjustment for double counting of late payment costs), 100% of customer acquisition and retention costs and 100% of the retail margin. These costs are expressed in terms of dollars per MWh. These costs vary for each retailer (because the total energy cost allowance and the dollar value of the margin vary by retailer).

10.3 Using the R values in the WAPC

As explained in chapter 5, for each year of the determination, the R values are an input to the WAPC. The WAPC will be calculated using:

1. the relevant R values set by IPART as part of this determination
2. the N values, which are equivalent to the actual network charges incurred by the retailer
3. the relevant quantities, including consumption figures and customer numbers for each tariff.

10.4 Network component (N values) in the WAPC

The N values are based on actual network prices imposed by the network businesses and approved by the AER.

Table 10.2 shows the average real changes in network distribution prices for small customers from 1 July 2013 that we have used in presenting the average price changes for this report. However, actual network prices will be included in the calculation of the weighted average price cap for regulated prices.

Table 10.2 Estimate of average real changes in distribution network prices for small customers (%)

	2013/14
EnergyAustralia	-0.77%
Origin Energy (Endeavour Energy)	-2.79%
Origin Energy (Essential Energy)	-5.40%

Note: Nominal prices converted to \$2012/13 using inflation of 2.5%. Changes in network prices exclude the contribution to the Climate Change Levy.

Source: Distribution businesses.

Table 10.3 summarises our final decisions on the retail costs allowances and compares these final decisions to the allowances for 2012/13 included in our 2012 annual review.

**Table 10.3 Changes in cost allowances for each Standard Retailer (\$2012/13)
– sub-100 MWh**

Description	2012/13	2013/14
EnergyAustralia		
Electricity purchase cost (\$/MWh)	87.76	79.88
Green costs (\$/MWh)	11.63	11.52
NEM fees (\$/MWh)	0.87	1.04
Energy losses (\$/MWh)	6.51	5.98
<i>Total energy cost allowance (\$/MWh)</i>	<i>106.77</i>	<i>98.43</i>
Cost pass-through (\$/MWh)	2.29	4.09
Retail operating costs (\$/customer)	82.6	110.00
Customer acquisition and retention costs (\$/MWh)	5.3	7.74
Retail margin allowance (%)	5.4	5.7
Origin Energy (Endeavour Energy)		
Electricity purchase costs (\$/MWh)	91.51	80.59
Green costs (\$/MWh)	11.81	11.64
NEM fees (\$/MWh)	0.87	1.04
Energy losses (\$/MWh)	7.89	6.40
<i>Total energy cost allowance (\$/MWh)</i>	<i>112.08</i>	<i>99.67</i>
Cost pass-through (\$/MWh)	2.25	4.26
Retail operating costs (\$/customer)	82.6	110.00
Customer acquisition and retention costs (\$/MWh)	5.3	8.75
Retail margin allowance (%)	5.4	5.7
Origin Energy (Essential Energy)		
Electricity purchase costs (\$/MWh)	84.35	69.39
Green costs (\$/MWh)	11.88	11.35
NEM fees (\$/MWh)	0.87	1.04
Energy losses (\$/MWh)	9.98	9.52
<i>Total energy cost allowance (\$/MWh)</i>	<i>107.08</i>	<i>91.30</i>
Cost pass-through (\$/MWh)	2.19	4.21
Retail operating costs (\$/customer)	82.6	110.00
Customer acquisition and retention costs (\$/MWh)	5.3	13.32
Retail margin allowance (%)	5.4	5.7

Note: Columns may not add due to rounding. The margin is calculated on an EBITDA basis (including both the network and retail components). The 2012/13 cost allowances are those included in our 2012 annual review indexed to \$2012/13 using inflation of 2.8%. The customer acquisition and retention costs for 2012/13 have been converted to \$/MWh using annual consumption of 7.59 MWh.

11 Annual reviews and cost pass-through mechanism

As Chapter 3 discussed, we need to ensure the regulatory package we establish for the 2013 determination period addresses all the relevant risks Standard Retailers are likely to face during that period, without double counting.²³³ While we account for many risks within specific cost allowances, for our 2010 determination, we decided that certain risks were best addressed through either:

- ▼ annual reviews of specified cost allowances within the determination period (to address non-systematic risks stemming from uncertainty in the market, policy and regulatory environment, which affects the level and volatility of wholesale electricity prices), or
- ▼ a carefully defined cost pass-through mechanism (to address the risk of material change in the Standard Retailers' costs due to unforeseen regulation or taxation change events outside retailers' control).

As part of our 2013 review, we considered how effective these mechanisms have been in managing these risks, and whether changes are required to improve their effectiveness or reflect the terms of reference for the 2013 determination. The sections below provide an overview of our final decisions, and then discuss these decisions in more detail.

²³³ That is, no risk should be addressed or compensated for through more than one element of the regulatory package.

11.1 Overview of final decisions on annual reviews and cost-pass-through mechanism

Based on our analysis and stakeholders' comments, we found that the annual reviews and the cost pass-through mechanism included in the 2010 determination have been effective in managing the risks they were intended to address. Accordingly, we have decided that the regulatory package for the 2013 determination period will include:

- ▼ **An annual review for 2014/15 and 2015/16.** The annual reviews will be similar to those in our 2010 determination. The key differences are that:
 - The approach for the reviews will include inviting the Standard Retailers to submit annual pricing proposals by mid-January, and IPART assessing each proposal to determine its reasonableness having regard to the terms of reference and the Act, then deciding whether to adopt or reject it.
 - The scope of our assessment will be expanded to include the customer acquisition and retention cost allowance.
 - We provide guidance on how we will undertake the annual reviews without 'locking in' detailed elements.
- ▼ **A cost pass-through mechanism** that enables Standard Retailers to pass through the incremental, efficient costs associated with defined regulatory or taxation change events. This mechanism will be nearly identical to the one included in the 2010 determination.

Our final decisions are consistent with our draft report. Table 11.1 summarises these decisions on the annual reviews and cost pass-through mechanism.

Table 11.1 Summary of the final decisions on annual cost reviews and cost pass through mechanism

	Annual reviews	Cost pass-through mechanism
Scope	Limited to review of the energy purchase cost allowance (including LRMC and market-based cost allowances), energy losses, green costs and the customer acquisition and retention cost allowance	Limited to regulatory and taxation events. IPART would assess efficient and incremental costs associated with any eligible event.
Frequency	Once per year in 2014/15 and 2015/16	When eligible regulatory and/or taxation events occurs.
Timing	IPART invites Standard Retailers to submit annual pricing proposals by mid-January, releases a draft report in April and a final report in June in time for 1 July price change	Application within 90 days of eligible event and IPART aims to assess application within 60 days. Therefore price changes are not limited to 1 July price changes with some flexibility around timing.
Trigger	No trigger; set timetable for review	Regulatory or taxation change event.
Symmetry	Adjusts for cost increases and decreases	Adjusts for cost increases and decreases.
Materiality	No materiality threshold	0.25% of regulated N + R revenue

In making these decisions, we considered EnergyAustralia's suggestion that there is a risk that unforeseen major changes in the regulatory, policy and market environments will affect the suitability of the methodologies we intend to use to conduct the annual cost reviews and apply the cost pass-through mechanism. It proposed we consider providing for an additional regulatory mechanism – such as a 'special review' – to ensure we can alter our methodologies if necessary. It noted 2 specific concerns:

- ▼ the risk that the carbon pricing mechanism be repealed and replaced with another emissions reduction method that places different costs on industry and customers which are accounted for in our regulated price setting methodology
- ▼ the risk that the NSW Government implements an opt-in proposal during the determination period, which leads to significant changes in the number or type of customers remaining on a regulated tariff that mean that a different price setting method is required.²³⁴

In its submission to our draft report, EnergyAustralia further noted that a special review may be needed given the relationship between the carbon price and other energy cost inputs. It submitted that the cost pass-through mechanism may not capture these related elements as they are out of scope.²³⁵

²³⁴ EnergyAustralia submission, January 2013, p 51.

²³⁵ EnergyAustralia submission, May 2013, p 9.

After carefully considering this issue, we are satisfied that our final decisions on the regulatory package for the 2013 determination period adequately address the risks associated with major changes to the regulatory, policy and market environments. Our cost pass-through mechanism is sufficiently broad to capture the regulatory and taxation change events that we are concerned about. Furthermore, we consider our framework for cost pass-throughs will adequately capture the efficient and incremental costs associated with any repeal of the carbon price legislation.

In light of the above, we do not consider the inclusion of a 'special review' is required. This is consistent with the view in our draft report.

11.2 Annual cost reviews

15 IPART's final decisions are that:

- we will conduct an annual review of the following cost allowances for each Standard Retailer for 2014/15 and 2015/16:
 - the energy purchase cost allowance, including the LRMC of generation and the market-based cost (which includes a volatility allowance)
 - the cost allowances for complying with obligations under the RET and ESS (green cost allowances)
 - the cost allowance for energy losses
 - the customer acquisition and retention cost allowance
- we will invite each Standard Retailer to submit an annual pricing proposal (without prescribing an approach or method for estimating its proposed prices) and assess the reasonableness of each proposal against the terms of reference and Act
- in assessing the reasonableness of the annual pricing proposals, we will estimate each cost allowance
- the annual reviews will be subject to a consultation and approval process under which IPART will:
 - invite the Standard Retailers to submit their annual pricing proposals by mid-January
 - issue a draft report in April
 - invite public submissions and allow 4 weeks for responses
 - issue a final report in June
 - set the R values in the WAPC to reflect the energy cost and customer acquisition and retention allowances and the recalculated retail margin in dollar terms.

We consider annual reviews continue to be the most appropriate mechanism for managing the risks associated with changes in the level and volatility of wholesale electricity prices over the 2013 determination period. They are also necessary to ensure that regulated retail prices continue to balance the objectives for this determination (particularly promoting efficiency, competition, the long-term interests of customers and the stability of the market). In addition, they are consistent with our terms of reference, which require us to allow for a periodic review of the energy purchase cost allowance and the allowances for complying with green schemes.

Stakeholders were broadly supportive of continuing to use annual reviews to address risks associated with the volatility of certain energy costs influenced the market, policy and regulatory environments. However, retailers provided a number of specific comments on these reviews, which are discussed further below.

The sections below discuss the final decisions on the annual cost reviews that differ from the 2010 determination. These include our decisions on the scope and approach for these reviews.

11.2.1 Scope of the annual reviews

The scope of the annual reviews will include setting:

- ▼ the energy purchase cost allowance, including both the LRMC of generation and the market-based cost (including the volatility allowance)
- ▼ the green cost allowances
- ▼ the cost allowance for energy losses, and
- ▼ the customer acquisition and retention cost (CARC) allowance.

This is the same as the current scope, except it has been expanded to include the CARC allowance. We consider that we need to decide on this cost allowance in annual reviews. This is because, under our approach for making this determination, this allowance is used as the mechanism to ensure that regulated retail prices balance the requirements of the terms of reference, including promoting competition and supporting the long-term interests of customers. Our review of the CARC allowance will include considering the level of incentives that should be included in prices to balance the long and short-term interests of customers²³⁶ and the extent to which the energy purchase cost allowance already provides incentives for competition. This will ensure that regulated prices continue to balance the long and short-term interests of customers in the retail electricity market throughout the determination period.

²³⁶ As in this final decision, we will have regard to the observed level of competition, as well as the costs an efficient retailer is likely to incur in acquiring and retaining customers in the competitive market.

We continue to consider that our decisions on the allowances for energy purchase costs, other green costs and energy losses need to be set through annual reviews. This is because these are volatile costs which can change materially, or costs outside the control of retailers.

In general, stakeholders submitted that the current scope of the annual review remains appropriate for the 2013 period. However, EnergyAustralia proposed that we extend the annual review (or the cost pass-through mechanism) to incorporate changes in the retail operating cost allowance. It submitted that smart meters and related technologies may become more widely available during the determination period, and that this could affect retail operating costs.²³⁷ After considering EnergyAustralia's submission, we decided not to include retail operating costs because:

- ▼ they do not tend to be volatile over time
- ▼ they are within retailers' control (ie, changes in these costs should be considered a normal business risk)
- ▼ the cost pass through mechanism will capture any material change in retail operating costs driven by regulatory or taxation changes.

AGL submitted that any significant change to the level of incentives in regulated prices may be detrimental for competition.²³⁸ We recognise that providing a degree of stability between IPART determinations in terms of the incentives built into regulated prices, manages the risk that volatility in these incentives discourages retailers from competing in the NSW market. This was one of the factors we considered in determining the appropriate incentive to be included in regulated prices for 2013/14. While updating the level of incentives, the energy purchase cost allowance and resulting CARC allowance as part of the annual review may not provide price certainty to stakeholders, we consider it necessary to ensure regulated prices continue to balance the long and short-term interests of customers in the retail electricity market throughout the determination period.

11.2.2 Approach for the annual reviews

Our final decision on the approach for the annual reviews differs from the approach under the 2010 determination in several important ways:

- ▼ First, we will invite each Standard Retailer to submit an annual pricing proposal to us. We will then assess this proposal to determine whether it is reasonable having regard to the terms of reference and Act, and thus whether or not to agree with it.
- ▼ Second, while we will make decisions on each of the relevant cost allowances as part of the assessment of the retailers' annual pricing proposals, we will be less prescriptive about the methods we will use. This will ensure we can

²³⁷ EnergyAustralia submission, January 2013, p 51.

²³⁸ AGL submission, May 2013, p 16.

respond to the Standard Retailers' proposals and make the 'right' economic decisions that meet the terms of reference and Act, based on the evidence available at the time.

11.2.3 Inviting retailers to submit annual pricing proposals

In its submission to our Issues Paper, EnergyAustralia proposed we use a more light-handed approach whereby annual reviews are based on the Standard Retailers' pricing proposals for the coming year.²³⁹ Under this approach, IPART would assess these proposals to determine whether they are 'reasonable' having regard to the terms of reference and the Act. We would then decide whether or not to agree with them based on this assessment.

We think this proposal has merit, while noting that in making our decisions for annual reviews, we would still need to ensure that the resulting cost allowances and R values are consistent with the terms of reference for the 2013 determination and the Act. In particular, we consider the proposal will provide greater opportunity for retailers to be involved in the annual review and take ownership of pricing outcomes. This is consistent with our view that given the increased competitiveness of the market, there should be more reliance on competition to protect consumers and provide them with better outcomes (see Chapter 4).

In light of the above, we have made a final decision to commence the annual reviews by inviting each Standard Retailer to submit an annual pricing proposal. Under this approach, we will have discretion to adopt this proposal – either in full or in part – provided that:

- ▼ in assessing the proposal, we have regard to the terms of reference and the Act
- ▼ we are satisfied that the proposal is based on robust evidence.

Our terms of reference require that the energy purchase cost allowance be set using a transparent and predictable methodology. EnergyAustralia sought clarification on whether this means IPART would set the energy purchase cost allowance only by using the outputs of Frontier's modelling; or alternatively whether Frontier's analysis would be used to verify energy costs put forward in annual pricing proposals.²⁴⁰

Our intention is that Standard Retailers use the key elements of our methodology, or propose using their own methodologies, for developing annual pricing proposals. We will have regard to Frontier's advice on energy costs to assess the energy purchase cost allowances proposed by the Standard Retailers. Further guidance on how we will assess retailers' proposals is provided in section 11.2.4 below.

²³⁹ EnergyAustralia submission, January 2013, pp 20-22.

²⁴⁰ EnergyAustralia submission, May 2013, p 8.

11.2.4 Assessing annual pricing proposals

It is important that our annual reviews use a transparent and predictable methodology. However, there also needs to be some flexibility in this methodology. Stakeholders' comments and our own experience in conducting annual reviews during the 2010 period indicate that 'locking in' detailed elements of the methodology in the determination can create problems in the annual reviews – if, for example, circumstances change or the necessary data are not available.

Therefore, our final decision on the annual reviews aims to provide **guidance** on how we will assess retailers' proposals – without limiting the methods they can use to develop their proposals, or prescribing every detail of the methods we will use. The key elements of our proposed methodology for updating the energy purchase cost allowance (and key differences between our final decision and the 2010 determination) are that:

- ▼ We will update our estimates of energy purchase costs, energy losses, the various green cost allowances and CARC allowances to help us in assessing the reasonableness of the retailers' proposed annual price changes.
- ▼ In considering the energy purchase cost allowance in the annual review, we intend to use the same approach we used in setting the allowance for 2013/14 with respect to the LRMC of generation and market-based purchase cost. For the market-based cost, this includes having regard to both modelled price outcomes and publicly available electricity forward price market data that we consider appropriate. While this will involve updating the same input assumptions as were updated during the 2010 period, we have:
 - not specified the data sources we will use in updating these assumptions or the approaches we will use (discussed further below), and
 - not limited our update of the WACC to the market-based parameters.
- ▼ In considering the green cost allowances, we will use a market-based approach where we consider there is sufficient liquidity in the market. We will review the market for each relevant green scheme to see if there are sufficient reliable data on traded market prices to estimate the costs of complying with the scheme. If there is, we will use these data; if not, we will decide on the next best approach at the time (such as a cost-based approach or some other proxy of prices).
- ▼ In estimating the CARC allowance (which was not included in the scope of annual reviews under the 2010 determination), we will use the same framework as we used to estimate this allowance for the first year of the determination. This will involve:
 - ▼ estimating the costs of acquiring and retaining customers in a competitive market to facilitate competition, and
 - ▼ estimating the extent to which these costs are already recovered through the energy purchase cost allowance.

AGL submitted that changing our sources for modelling inputs and assumptions in annual reviews could have a material influence on the level of regulated prices. It suggested this could add additional volatility to regulated prices.²⁴¹ Our intention is to use the same sources for our modelling inputs and assumptions during annual reviews. However, we retain the discretion to consider other sources of information if we consider this is appropriate, including considering whether the new sources of data provide robust evidence or estimates of costs.

In relation to considering the WACC, we noted stakeholders' concern that only updating the market parameters limited our ability to determine a WACC that reflects market conditions during the 2010 period.²⁴² We agree that our main objective should be to determine an updated WACC that meets the objectives of the terms of reference, and that our decision on the annual cost reviews should provide us with sufficient discretion to do that. The only parameters we propose not to update are beta and gamma as the value of these parameters tends to be relatively stable over time, and the work involved in updating them is significant so we intend to maintain our estimated values for them over the determination period.

11.3 Cost pass-through mechanism

16 IPART's final decision is to establish a cost pass-through mechanism that:

- allows the Standard Retailers to pass through incremental and efficient costs associated with events that comply with the following definition:
 - regulatory change events, which may include:
 - changed obligations in relation to green energy schemes
 - changed obligations in relation to government-imposed hardship policies
 - unforeseen AEMO charges (such as a reserve trader or direction event)
 - a retailer of last resort (ROLR) event,
 which change the nature, scope, standard or risk of the services or the manner in which a retailer is required to undertake any activity.
 - certain taxation change events, excluding:
 - income tax and capital gains tax
 - stamp duty
 - penalties, charges, fees and interest on late payments, or deficiencies in payments, relating to any tax

²⁴¹ AGL submission, May 2013, p 16.

²⁴² AGL submission, December 2012, p 20; Energy Australia submission, January 2013, p 51.

- any tax that replaces or is similar to any of the taxes referred to above, and includes any licence fee payable by retailers
- AEMO fees
 - which change the nature, scope, standard or risk of the services or the manner in which a retailer is required to undertake any activity.
- allows a Standard Retailer or IPART to initiate a cost pass-through review within 90 days of an eligible regulatory or taxation change event occurring
- requires that to initiate such a review, a Standard Retailer must apply to IPART, identifying the eligible change event and setting out the associated incremental and efficient cost increases it proposes to pass through
- includes a materiality threshold of 0.25% of the Standard Retailers' proposed regulated retail revenue in NSW for the year in which the event occurs (including the network use of system component of retail tariffs) with the threshold defined on a per event basis
- is symmetrical in that cost increases and decreases can be passed through to regulated retail tariffs in NSW
- is subject to a review and approval process that includes IPART:
 - checking that the event is consistent with the defined regulatory and/or taxation change events
 - checking that the costs the retailer proposes to pass through are incurred as a direct result of the event and are incremental (ie, ensuring they are not already included in the cost allowances for the 2013 determination)
 - assessing whether the proposed costs represent an efficient or reasonable response to the event (including considering whether the retailer has failed to take any action that could have reduced the costs incurred)
 - determining the total costs associated with the regulatory and/or taxation event that the retailer can pass through in each year
 - issuing a draft report within 30 business days of receiving a Standard Retailer's application, inviting stakeholder comments and issuing a final report within a further 30 business days (unless IPART notifies stakeholders of an alternative timeframe)
 - resetting the R values and the recalculated retail margin in dollar terms
- provides for a price change on a date agreed by IPART once it has approved the total costs to be passed through.

We consider a cost pass-through mechanism continues to be the most appropriate means to approach the risks associated with unanticipated changes in regulation, legislation or taxation. We also think the current mechanism has been successful in managing these risks over the 2010 period and so material changes to the mechanism are not required. Therefore, our final decision on the

cost pass-through mechanism is largely the same as our decision for the 2010 determination.

In making this final decision, we noted that stakeholders generally expressed support for maintaining the current cost pass through mechanism. However, some retailers suggested adjustments to some specific elements of the mechanism, including the:

- ▼ materiality threshold
- ▼ scope of the mechanism
- ▼ timing for recovery of costs pass-through via the mechanism.

Our consideration of these suggestions is discussed below.

11.3.1 Materiality threshold for cost pass-through

EnergyAustralia proposed a change to the materiality threshold, which is a key element of the cost pass through mechanism. It proposed that this threshold be considered on a cumulative basis, rather than a per event basis.²⁴³

We considered this issue in our 2007 determination, when the cost pass-through mechanism was first included in a retail price determination. At that time, we concluded that the mechanism should be designed with a materiality threshold on a per event basis. This limits the pass through of costs to those events that have a material impact on a retailer's financial position. The inclusion of a materiality threshold on this basis helps to ensure the pass through amount is not outweighed by the administrative costs of assessing the pass through event.²⁴⁴ We maintain this view.

EnergyAustralia also suggested that the definitions related to the cost pass-through mechanism (included in the determination itself) be adjusted to "allow for cost pass-through events that may impact by a different amount in later years than that in which the trigger event occurs".²⁴⁵

The materiality threshold relates to average annual incremental costs over the determination period relative to regulated revenue in the year in which the event occurs. Therefore, to the extent that incremental costs are different in later years of the determination period, these are captured under our current definition. Therefore, we consider that no changes are needed to the definitions related to the cost pass through mechanism.

²⁴³ EnergyAustralia submission, January 2013, p 19.

²⁴⁴ IPART, *Regulated electricity retail tariffs and charges for small customers 2007 to 2010 – Final Report and Determination*, June 2007, pp 65-66.

²⁴⁵ EnergyAustralia submission, January 2013, p 19.

11.3.2 Scope of cost pass-through mechanism

As discussed in section 11.2.1 above, EnergyAustralia proposed that we extend the scope of either the annual review or the cost pass-through mechanism to incorporate changes in the retail operating cost allowance. As indicated above, we don't consider this necessary, as retail operating costs don't tend to be volatile over time and are typically within retailers' control. However, if material changes in these costs did occur as a result of a regulatory or taxation change event, they could be captured by the current cost pass-through mechanism.

11.3.3 Timing of recovery of costs pass-through via the mechanism

Several retailers suggested changes related to the timing of the recovery of costs passed through via the mechanism:

- ▼ AGL suggested the mechanism should allow costs to be recovered in the same period as they occur.²⁴⁶
- ▼ EnergyAustralia suggested the mechanism should include a more flexible framework for the timing of SRES cost pass throughs.²⁴⁷
- ▼ EnergyAustralia also suggested that when the retail margin is recalculated as part of a cost pass-through decision, the calculation should be based on when the cost pass through event occurred.²⁴⁸

In relation to the first of these suggestions, we note that the current cost pass-through mechanism already provides for a price change on a date other than 1 July. This means costs associated with an event can be recovered in the same year as they were incurred, provided the change event occurs in the first part of the year. If this event occurs in the last months of the year, it is more practical and efficient to delay the price change to 1 July. We consider the time value of money in assessing the cost pass-through amount.

In relation to the second suggestion, we note that the Australian Government recently agreed to bring forward the date for setting SRES liabilities.²⁴⁹ The date of release for the Small-scale Technology Percentage will be brought forward to 1 December of the preceding compliance year (starting in December 2013). This would allow Standard Retailers to include the binding Small-scale Technology Percentage in their annual pricing proposals to IPART (in mid-January). On this basis, we do not consider the timing arrangements for the cost pass through mechanism need to change.

²⁴⁶ AGL submission, December 2012, p 11.

²⁴⁷ EnergyAustralia submission, January 2013, pp 48-50.

²⁴⁸ Ibid, p 19.

²⁴⁹ Australian Government response to the Climate Change Authority's Renewable Energy Target Review Final Report, p 7, available at: <http://www.climatechange.gov.au/media/whats-new/~media/publications/renewable-energy/governmentt-response-to-cca-review-pdf.pdf>

In relation to the third suggestion, under the current cost pass-through mechanism, retailers are already compensated for the retail margin that they would have earned on their incremental costs. The percentage margin that is applied is based on the retail margin that IPART applied under the determination. This is the retail margin that would have applied at the time the pass-through event occurred.

12 Impact of price increases on customers

As previous chapters have discussed, under our final determination regulated retail electricity prices will increase by a modest amount from 1 July 2013. Given this, we expect the impact of these price increases on customers will also be modest. However, as they come on top of relatively large increases over the past 5 years, some customers may continue to experience difficulty paying their energy bills.

In addition, the impact of the price increases on **individual** customers will vary – depending on factors such as their electricity usage and Standard Retailer, the regulated price they are on, and how they respond to the price increases (eg, whether they can reduce their usage to manage their bills).

Given this, we conducted a set of analyses to explore the likely range of impacts on customers. In particular, we analysed:

- ▼ the impact of the final determination on annual electricity bills for typical residential and small business customers for each Standard Retailer
- ▼ changes in household electricity bills and incomes since 2007/08, taking into account both rising prices and falling consumption
- ▼ the impact of the final determination on energy bills as a proportion of household disposable income, and how this varies for different households across NSW
- ▼ which types of household are likely to be most affected by the regulated price increases that have occurred since 2007/08.

The sections below summarise our key findings then discuss our analysis in detail.

12.1 Overview of key findings on the impact of the price increases on customers

Under our final determination, the annual electricity bills of ‘typical customers’ – those with the median electricity usage for their supply area – change by:

- ▼ between a \$15 reduction and a \$62 increase for residential customers, and
- ▼ between a \$23 reduction to a \$100 increase for small business customers.²⁵⁰

Customers with larger than the median electricity usage will experience larger changes in their bills. Those in the EnergyAustralia supply area will face the largest bill increases and those in the Origin Energy (Essential Energy) supply area will experience small decreases.

While these bill increases are modest in dollar terms, they come after a sustained period of large price increases. Regulated retail prices have doubled in real terms since 2002/03, with most of the increase occurring after 2007/08. Bills have increased by less than prices – by about 75% in real terms – because households have reduced their consumption. But bills have increased far more rapidly than household incomes. Consequently, some customers are experiencing difficulty paying their energy bills.

A useful measure of energy affordability is the proportion of household disposable income spent on energy (electricity and gas bills). Our analysis indicates that for the **vast majority** of households, energy bills will represent less than 6% of their disposable income in 2013/14. However, some low-income households will spend more than 6% of their disposable income on energy. Some of these households already find it difficult to pay their energy bills and further price increases may exacerbate energy affordability for low-income households. The households most likely to be affected by any further price increases are those who have low-incomes²⁵¹ as well as one or more of the following characteristics:

- ▼ high energy usage that is difficult to reduce
- ▼ live in the Origin Energy (Essential Energy) supply area
- ▼ high housing costs.

²⁵⁰ The typical customer bills estimated in this chapter differ from those presented in Chapter 1. In Chapter 1 we compare bills for customers consuming 6,500 kWh (the state average consumption for regulated residential customers in 2011/12). We also use an indicative price based on the average cost per kWh of supplying all regulated customers. However, the analysis in this chapter uses the median consumption within **each** territory and uses **actual** prices.

²⁵¹ To simplify our analysis, we define low-income households as those with incomes below \$39,000 per year. However, large households with higher incomes may face similar financial circumstances. In particular, there are likely to be a number of these households in the \$39,000 to \$48,000 income band.

We note that energy supply disconnections due to non-payment of bills increased in 2011/12, and there was a rapid growth in demand for Energy Accounts Payment Assistance scheme (EAPA) vouchers.²⁵²

12.2 Impact of final determination on typical customer bills in each supply area

To analyse the impact of our final determination on customers' electricity bills, we estimated an annual bill for 3 types of typical customer in each Standard Retailer's supply area: residential customers with controlled load; residential customers without controlled load; and small business customers.²⁵³ We defined a 'typical customer' as one with the median annual electricity usage for that customer type in that supply area.

This analysis indicates that in 2013/14:²⁵⁴

- ▼ Typical residential customers with a controlled load (eg, off-peak hot water) will face between a \$15 reduction and a \$62 increase in their annual electricity bill.
- ▼ Typical residential customers without a controlled load will face between a \$14 reduction and a \$49 increase. The smaller impact is because the median usage for customers of this type is lower than for customers with a controlled load – mainly because a larger proportion also use gas or live in semi-detached dwellings and apartments, which are associated with lower usage.
- ▼ Typical small business customers face between a \$23 reduction and a \$100 increase (Table 12.1).

This analysis also indicates that among typical residential customers, those in the EnergyAustralia supply area (which covers a large share of metropolitan NSW) face the largest dollar increase in their bills. Typical customers in the Origin (Essential Energy) supply area will experience small decreases in their bills.

²⁵² IPART, *Information Paper - Customers service performance of electricity retail suppliers 1 July 2007 – 30 June 2012*, December 2012, p 8.

²⁵³ Controlled load is typically off-peak hot water systems where the network controls the time that the unit heats.

²⁵⁴ The increases in typical electricity bills do not take account of the rebates available to low and middle-income households from 1 July 2013. Low-income households holding a Pensioner Concession Card or a Health Care Card will be eligible to receive a Low Income Household Rebate on their bills of \$225 in 2012/13 (up from \$215 in 2012/13). When these rebates are taken into account, the 2013/14 annual bills for households receiving rebates will be lower than those shown in Table 12.1.

Table 12.1 Impact of final decision on indicative annual bills for typical customers in 2013/14 (\$, nominal)

Standard supply area	Electricity usage MWh pa	Bill in 2012/13 \$ pa	Bill in 2013/14 \$ pa	Increase \$	Increase %
Residential					
With controlled load^a					
EnergyAustralia	7.7	1,943	2,005	62	3.2
Origin Energy (Endeavour)	7.7	1,917	1,942	25	1.3
Origin Energy (Essential)	5.8	2,121	2,106	-15	-0.7
Without controlled load					
EnergyAustralia	4.7	1,516	1,565	49	3.2
Origin Energy (Endeavour)	4.8	1,563	1,584	20	1.3
Origin Energy (Essential)	4.2	1,943	1,929	-14	-0.7
Business (less than 100 MWh pa)					
EnergyAustralia	11.0	3,138	3,239	100	3.2
Origin Energy (Endeavour)	10.0	2,585	2,619	34	1.3
Origin Energy (Essential)	7.5	3,250	3,227	-23	-0.7

^a About 70% of customers in the Origin Energy (Essential Energy) standard supply area are on a controlled load tariff, compared to about 35% in the EnergyAustralia area and 43% in the Origin Energy (Endeavour) area.

Note: Electricity bills are calculated based on regulated prices and assumes the price increase applies equally to the daily supply charge and the charge for the amount of electricity used. Figures are in nominal dollars. Forecast inflation is 2.5%. The volume for each supply area is the median consumption for the particular customer group in 2011/12. Residential customer bills include GST, and business customer bills exclude GST.

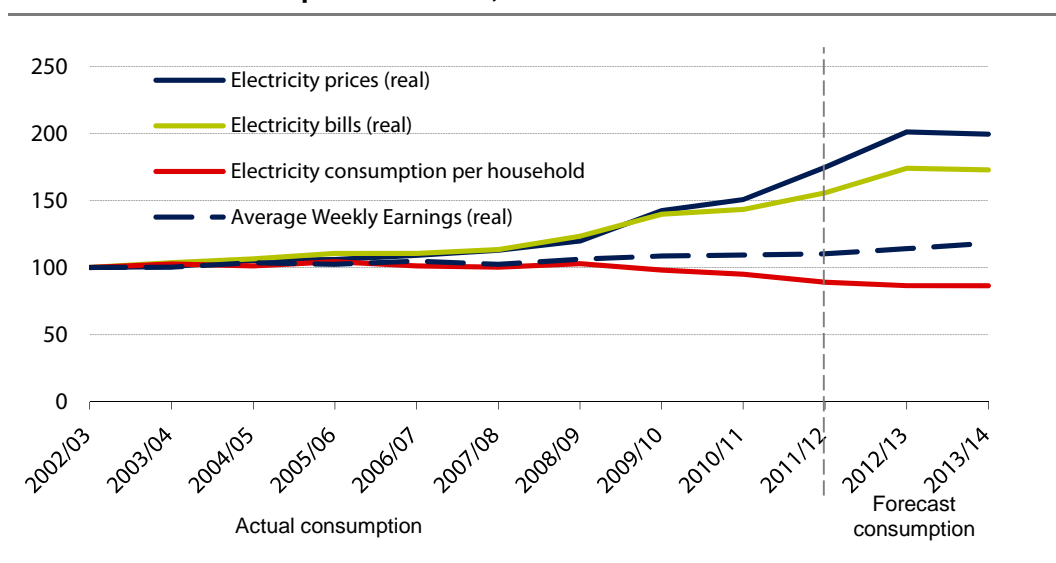
Source: Ausgrid, Endeavour Energy and Essential Energy, IPART calculations.

12.3 Changes in household electricity bills and incomes since 2002/03

Regulated electricity prices have doubled in real terms in the 11-year period from 2002/03 to 2013/14. However, average household electricity bills have increased by only about 75% in real terms in this period. This is because average consumption per household has fallen.

But although they are consuming less electricity, households are still spending more of their income on electricity bills. This is because average incomes have risen by less than bills over the period (see Figure 12.1).

Figure 12.1 Changes in household income and electricity prices, consumption and bills, 2002/03 to 2013/14

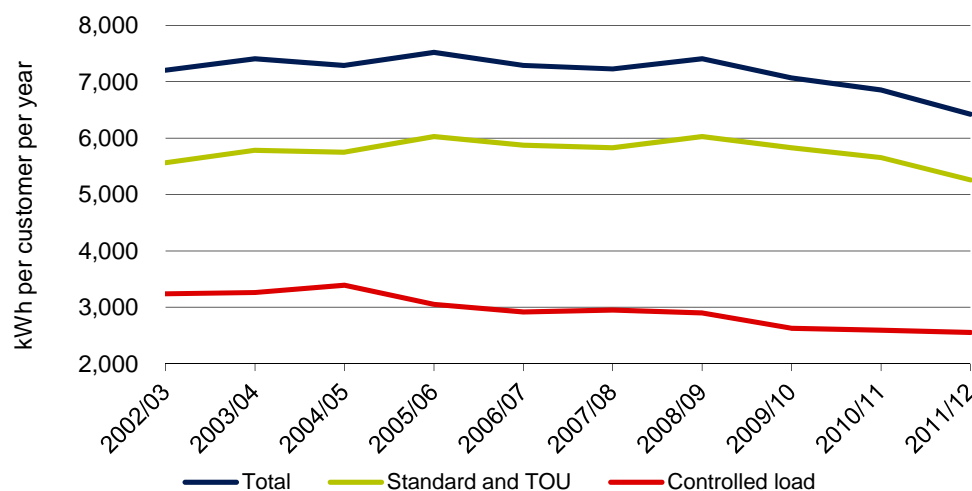


Sources: Ausgrid, Endeavour Energy and Essential Energy; ABS, *Average weekly earnings, Australia*, November 2012, Catalogue 6302.0, Table 11A; IPART calculations.

Average household electricity consumption fell by 11% between 2002/03 and 2011/12. Until 2008/09, most of this decrease was due to a decrease in controlled load consumption (ie, mainly electricity used for hot water). Since then, average continuous consumption (ie, non-controlled load consumption) has also fallen (Figure 12.2). There are many possible reasons for the decrease in total residential consumption, including:

- ▼ policy initiatives to reduce the amount of electricity (and water) used for hot water²⁵⁵
- ▼ other policy initiatives, for example, to make lighting more energy efficient
- ▼ changes in the mix of housing, with more multi-unit dwellings (which tend to be more energy efficient) than detached houses being built
- ▼ old appliances being replaced by new, more energy efficient appliances
- ▼ households responding to the price increases since 2008/09, and
- ▼ a heightened awareness of environmental issues.

²⁵⁵ For example, low-flow showerheads as a water-saving measure and policies to encourage the use of gas and solar hot water systems instead of electric hot water systems.

Figure 12.2 Average electricity consumption per household in NSW, 2002/03 to 2011/12

Note: Consumption includes all of the electricity that is generated by households by solar PV units where the customer has gross metering arrangements. This includes the vast majority of solar customers in NSW. It excludes the electricity that is used within the household for those solar customers with net metering arrangements.

Sources: Ausgrid, Endeavour Energy and Essential Energy, IPART calculations.

12.4 Impact of electricity price increases on energy bills as a proportion of disposable income

To consider the impact of the final determination on households we focused primarily on household energy bills as a proportion of household disposable income, where disposable income means income after accounting for tax.²⁵⁶ This is a useful measure, as it takes into account movements in household incomes as well as energy bills. In addition:

- ▼ We focused on energy bills – both electricity and gas – where possible. This is because some households use gas for hot water, space heating and/or cooking, whereas other households use electricity for these purposes. We also took into account rebates on energy bills.
- ▼ We focused our most detailed analysis on metropolitan NSW (Sydney, Blue Mountains, Illawarra, Hunter and Central Coast) because we have detailed information on energy usage, energy costs, and household characteristics from our Household Surveys in these areas. For country NSW, we conducted a simpler analysis using available information.

²⁵⁶ We also took into account the Commonwealth Government's Household Assistance Package, which was introduced in 2012 to compensate households for the introduction of the carbon price. For an explanation of how we did this, and for more about the Package, see IPART, *Changes in regulated electricity retail prices from 1 July 2012– Final Report*, June 2012, pp 68-69 and pp 76-82.

The sections below discuss the key factors that influence energy affordability and then discuss the key findings of our analysis.

12.4.1 What factors influence energy bills as a proportion of disposable income?

There are many interrelated factors that influence what proportion of a household's disposable income its energy bills represent. The main factors are the size of the household's disposable income, as well as how much energy it uses, and the prices it pays for energy.

Household income

Household income varies widely across NSW. For example, the median disposable household income in some postcode areas of Sydney exceeds \$120,000 per annum, while in other areas (particularly inland) it is less than \$40,000 per annum.²⁵⁷

Energy usage

Household energy usage also varies widely. We know from our household surveys that some of the major drivers of this usage relate to a household's:²⁵⁸

- ▼ **Characteristics.** For example, these include the number of people in the household, the household structure (eg, family with young children, or older adults with no children at home, etc.), household income and dwelling type (eg, a detached house, or a semi-detached dwelling or apartment).
- ▼ **Location.** This is because different areas of NSW have different temperatures in winter and summer, which influences the amount of energy required for heating and cooling. In addition, housing stock differs across NSW. In inland areas it is predominantly detached houses, whereas in the coastal areas it tends to include more semi-detached dwellings and units.²⁵⁹ Detached houses generally require more energy for heating and cooling.
- ▼ **Energy-using appliances and usage patterns.** For example, this includes the number, type and efficiency of the large energy-using appliances the household owns, and how often it uses them.

²⁵⁷ Based on the 2011 ABS Census, inflated to 2013/14 prices using the change in average weekly earnings until 2011/12 and for 2012/13 and 2013/14 using the NSW Treasury's forecast increase in the average wage index of 3.5%.

²⁵⁸ See IPART, *Determinants of residential energy and water consumption in Sydney and surrounds. Regression analysis of the 2008 and 2010 household survey data*, December 2011.

²⁵⁹ For example, in Sydney and surrounding areas, detached dwellings made up 61% of the dwelling stock in 2011, while outside of Sydney these dwellings made up 83% of the dwelling stock. (ABS 2011 Census, *Basic Community Profile for Greater Sydney*, Table 31 and *Basic Community Profile for Rest of NSW*, Table 31.)

Energy prices

The prices a household pays for electricity depends mainly on which supply area it is located in, as this is a big driver of its retailer's costs in buying and transporting energy.

A household's energy prices also depend on whether or not it has a controlled load electricity supply, because electricity that is on a controlled load price is cheaper than other types of energy.²⁶⁰

In addition, these prices depend on whether or not the household uses gas as well as electricity, and if so, how many of its large energy-using appliances run on gas. Households that use gas pay 2 service availability charges, and may therefore pay higher bills if they do not use much gas. On the other hand, households that use large amounts of gas (particularly for heating) may pay lower bills because gas usage charges are lower than electricity usage charges for non-controlled load electricity. Households in metropolitan NSW are much more likely to use gas, as access to gas distribution networks is limited outside Sydney.

A household's final energy bill also depends on whether or not it receives a rebate.

12.4.2 How do energy bills as a proportion of disposable income vary across NSW?

To help understand whether households living in certain locations are likely to face more significant impacts than those living in other locations, we examined how energy usage, energy bills and income vary across NSW. We used information on the median household in each postcode area.²⁶¹ Our analysis indicates that median households in inland areas tend to spend more of their disposable income on energy than do households in coastal areas. In a small number of these inland areas, the median energy bill will represent more than 7% of the median disposable household income in 2013/14. This compares to less than 4% in most areas in Sydney.

²⁶⁰ Analysis of our household survey data suggests that controlled load electricity is cheaper than gas. See IPART, *Determinants of residential energy and water consumption in Sydney and surrounds. Regression analysis of the 2008 and 2010 household survey data*, December 2011, pp 45-55.

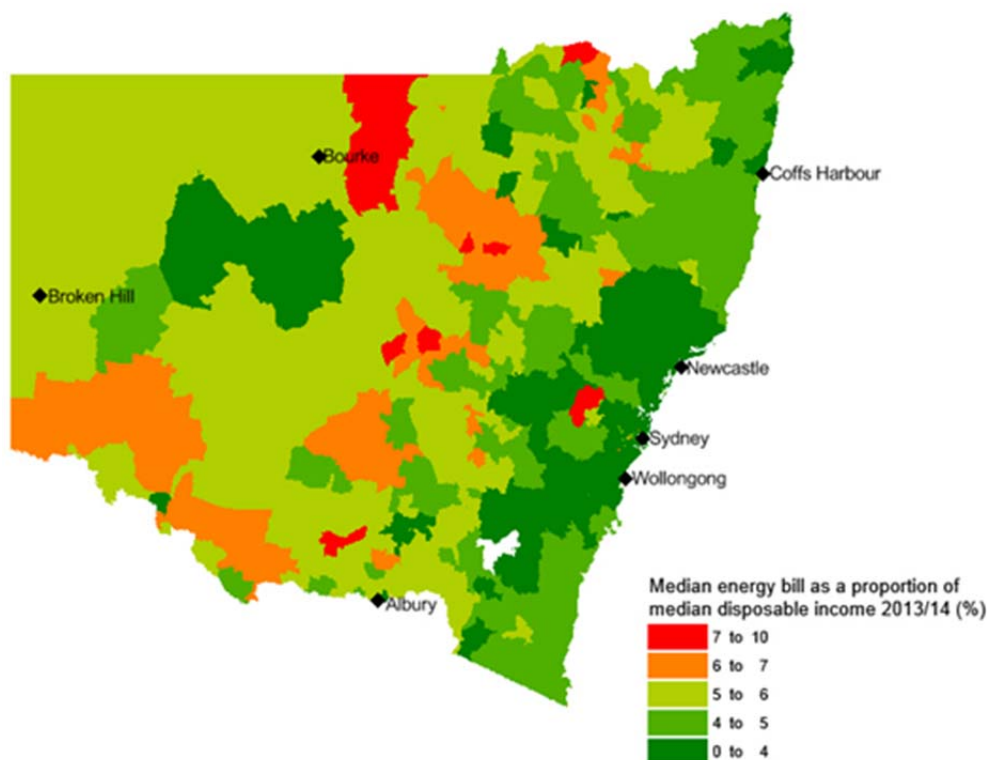
²⁶¹ For Sydney and surrounding areas, energy use and bills are for a single local government area or a statistical division rather than for each post code area.

This is mainly because:

- ▼ median household energy usage tends to be higher in the inland areas
- ▼ energy (mainly electricity) prices in country NSW are higher than those in Sydney and surrounding areas, and
- ▼ median household income tends to be lower in inland areas compared to Sydney and surrounding areas.

This finding suggests that the impact of high electricity prices is likely to be more significant for households in inland areas than for those in coastal areas (Figure 12.3). We note that there are also factors in country NSW that may offset this impact, the most important being lower housing costs. However, even when housing costs are excluded from disposable incomes (using median housing costs from the 2011 Census), we found that median households in country areas will spend more of their remaining disposable incomes on energy than those in metropolitan areas (Figure 12.4).

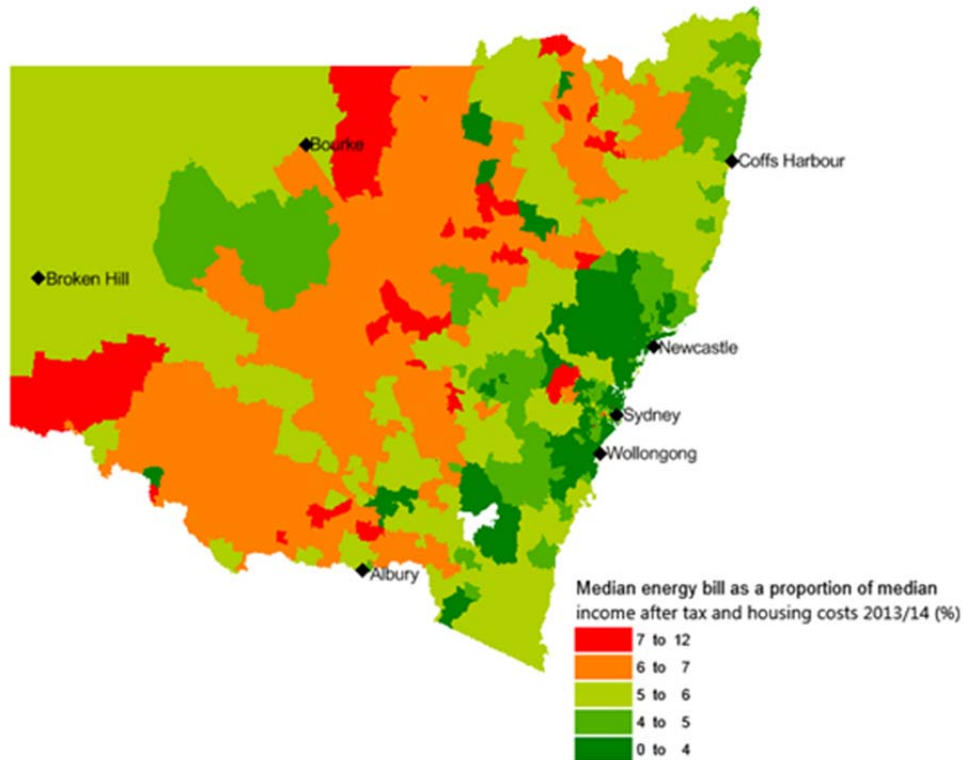
Figure 12.3 Indicative energy bills as a proportion of household disposable income across NSW



Note: Median 2011/12 electricity use is used as a proxy for energy use in each postcode in Origin Energy's (Essential Energy) standard supply area. Median energy use (electricity + gas) is used for larger regions in the EnergyAustralia and Origin Energy (Endeavour Energy) standard supply areas. Electricity use in these areas has been adjusted to reflect the fall in average usage per household. Median energy bills in 2013/14 are adjusted for customer rebates and include GST. Median household income is income from the 2011 ABS Census inflated to 2013/14 using the NSW Treasury's forecast increase in the average wage index of 3.5%. Disposable income is household income adjusted for income tax and the impact of the carbon compensation package.

Sources: Essential Energy data; IPART 2008 and 2010 Household Survey; ABS, *Average weekly earnings, Australia, November 2012*, Catalogue 6302.0, Table 11A; NSW Government, *2012-13 Half-Yearly Review*, 20 December 2012, p 26; ABS Census 2011, DataPacks; IPART calculations.

Figure 12.4 Indicative energy bills as a proportion of household income after tax and housing costs across NSW



Note: Median 2011/12 electricity use is used as a proxy for energy use in each postcode in Origin Energy's (Essential Energy) standard supply area. Median energy use (electricity + gas) is used for larger regions in the EnergyAustralia and Origin Energy (Endeavour Energy) standard supply areas. Electricity use in these areas has been adjusted to reflect the fall in average usage per household. Median energy bills in 2013/14 are adjusted for customer rebates and include GST. Median household income is income from the 2011 ABS Census inflated to 2013/14 using the NSW Treasury's forecast increase in the average wage index of 3.5%. Housing costs are from the ABS 2011 Census, weighted average of median mortgage payments and median rents inflated to 2013/14 using RBA indicator housing loan rates and the Sydney CPI index for rents respectively.

Sources: Essential Energy data; IPART 2008 and 2010 Household Survey; ABS, *Average weekly earnings, Australia, November 2012*, Catalogue 6302.0, Table 11A; *NSW Government, 2012-13 Half-Yearly Review*, 20 December 2012, p26; ABS Census 2011, DataPacks; ABS 6401.0 - *Consumer Price Index, Australia, Dec 2012*, Catalogue 6401.0, Table 11; RBA, Statistical Table, Indicator Lending Rates – F5, available at http://www.rba.gov.au/statistics/tables/index.html#interest_rates; IPART calculations.

12.4.3 How do energy bills as a proportion of disposable income vary in metropolitan NSW?

Our household surveys in the Sydney, Blue Mountains, Illawarra, Hunter and Central Coast areas provide a good profile of energy use according to different household characteristics and income categories in metropolitan NSW. Using these data, information about changes in average electricity usage since our surveys and our 2013 final determination on regulated electricity prices, we found that more than 75% of all households in this area will spend less than 6% of their disposable income on energy bills in 2013/14. In addition, only 5% of households in this area are likely to spend more than 10% of their disposable income on energy.

As Figure 12.5 shows, median household spending on energy across all income categories will be just less than 4% of disposable income.²⁶² However, looking in different income categories, median household spending on energy varies quite widely:

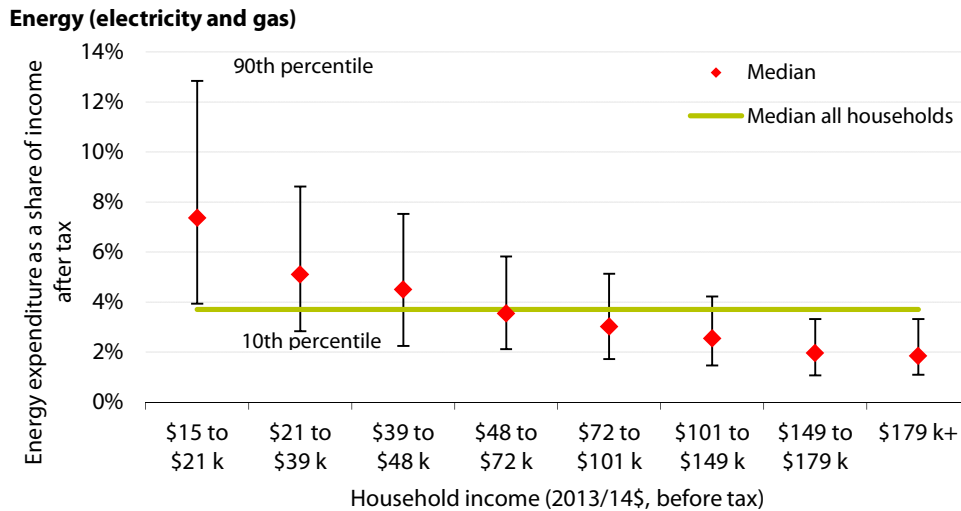
- ▼ In the middle and higher income categories (more than \$48,000 per year), median household spending on energy will range from about 2% to 4% of disposable income.
- ▼ In the 2 low-income categories (\$39,000 or less per year), median spending on energy will range from around 5% to 7% of disposable income.

Between households with similar disposable incomes in the lower income categories, there is substantial variation. For example, in the lowest income category households with median energy use are likely to spend about 7% of their disposable income on energy, while those in the 10th percentile will spend about 4%, and those in the 90th percentile will spend about 13%. In the second lowest income category, median households will spend about 5% of their disposable income on energy, but those in the 90th percentile will spend about 9% on energy.²⁶³

²⁶² Note that the figure in this section cannot be directly compared to the figure reported in our 2012 report (IPART, *Changes in regulated electricity retail prices from 1 January 2012 – June 2013*, p 73). For this report we made an adjustment to the consumption data to take into account the fall in consumption since 2009/10.

²⁶³ For information about why energy bills vary so much between low-income households in Sydney, see IPART, *Changes in regulated electricity retail prices from 1 July 2012 – Final Report*, June 2012, Appendix E.

Figure 12.5 Annual spending on energy as a share of disposable household income — Sydney and surrounding regions, 2013/14



Note: The income for the middle of each band is used to calculate disposable income. Disposable income as a share of household income is derived from ABS household income distribution data for 2009/10. Income for each band is inflated to 2011/12 using the change in average weekly earnings. Income forecasts for 2012/13 and 2013/14 use NSW Treasury's forecast increase in the average wage index of 3.5%. Disposable income in 2012/13 and 2013/14 is further adjusted for the impact of the carbon compensation package. Customer bills have been adjusted to reflect lower average electricity consumption per household. Customer bills are net of the Low Income Household Rebate. We have assumed that gas prices will increase by 9% on 1 July 2013. Distributions are presented without weighting survey responses.

A **percentile** is the value below which a certain percentage of observations fall. For example, the 10th percentile is the value below which 10% of the observations may be found. In the above diagram, 10% of customers in each income band would fall below the bottom of the vertical line (paying less than that amount) and 10% of customers would pay more than the top of the vertical line.

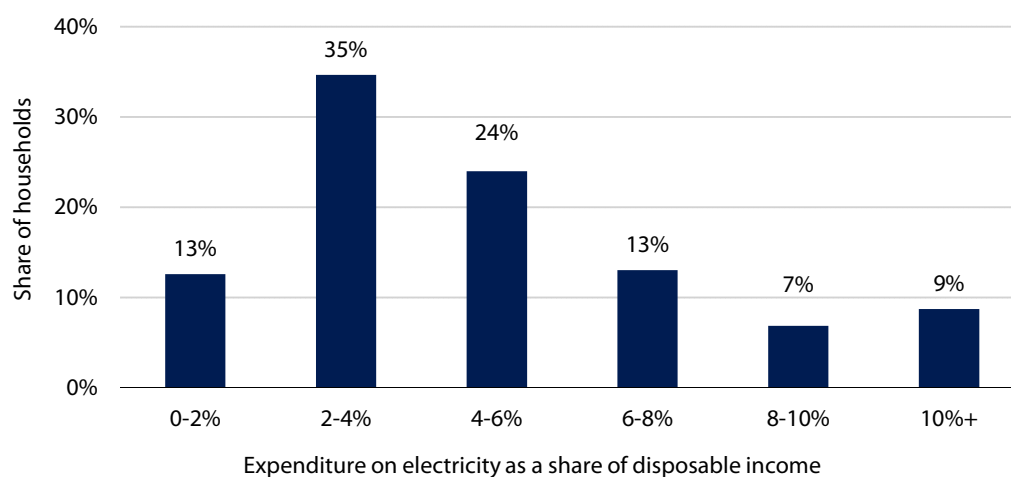
Sources: IPART Household Surveys, 2008 and 2010; ABS, ABS, *Average weekly earnings, Australia*, November 2012, Catalogue 6302.0, Table 11A; NSW Government, *2012-13 Half-Yearly Review*, 20 December 2012, p26; Consumption data from Ausgrid, Endeavour Energy and Essential Energy; IPART calculations.

12.4.4 How do energy bills as a proportion of disposable income vary in country NSW?

Because we have not conducted household surveys in areas outside of metropolitan areas, we do not have detailed income and consumption data for households in country NSW. Also, as noted above, we have no information about gas usage in these areas. For these reasons, we have conducted a simpler analysis for country areas, using electricity bills as a proxy for energy bills.

We combined information on median household electricity use and median household disposable income across each postcode in the Origin Energy (Essential Energy) standard supply area. We found that about 70% of all households in country NSW will spend less than 6% of their disposable income on energy in 2013/14. In addition, around 9% of households in country NSW are likely to spend more than 10% of their disposable income on energy (Figure 12.6).²⁶⁴

Figure 12.6 Distribution of annual spending on electricity as a share of disposable household income — Origin Energy (Essential Energy) supply area, 2013/14



Note: Distribution based on Sydney distribution adjusted to reflect median income and median electricity bills in each postcode in Origin Energy's (Essential Energy) standard supply area. Customer bills are net of the Low Income Household Rebate and medical rebates.

Source: ABS Census 2011, Table B02; Essential Energy data; ABS Catalogue No. 6302.0: *Average weekly earnings, Australia*, November 2012; IPART analysis.

12.5 Household types most likely to be having difficulty paying their bills

As discussed above, despite the increases in regulated electricity (and gas) prices since 2007/08, more than 75% of households in metropolitan NSW will spend less than 6% of their disposable income on energy bills in 2013/14, and about half will spend less than 4%. In country NSW, about 70% will spend less than 6% of their disposable income on energy bills. This suggests that most households can afford to pay their energy bills without foregoing other essential purchases.

²⁶⁴ The distribution of customers by expenditure on income for country areas is based on applying the shape of the distribution for Sydney with adjustments for each postcode according to its median electricity bill and median income.

However, our analysis suggests that some households may experience some difficulty in paying their energy bills. These are households that have:

- ▼ low disposable incomes, and
- ▼ high electricity (or energy) use which is difficult to reduce.

A household's ability to reduce its energy usage in response to higher prices depends largely on what drives its current usage, and the extent to which these drivers are within their control. For example, it may be difficult for a low-income household to reduce its usage if the usage is high for one or more of the following reasons:

- ▼ there are many people in the household²⁶⁵
- ▼ the household has few occupants but lives in a 'family sized' detached house
- ▼ the dwelling and appliances are not energy efficient but the household has insufficient income to make improvements
- ▼ the dwelling is rented and the landlord is unwilling to make it more energy efficient (for example, by replacing an old hot water system or an old stove)
- ▼ the household lives in an area with more extreme temperatures.

In addition, some low-income households pay a large part of their disposable income on housing costs.²⁶⁶ These households are likely to be the most affected by high electricity bills. For example, our 2010 household survey found that 24% of low-income households that are paying off mortgages had approached their electricity supplier because they had experienced financial difficulties paying their electricity bills over the past year.²⁶⁷ For low-income renters, the corresponding figure was 18%, while for low-income households that had paid off their home it was only 5%.

²⁶⁵ The number of people in the household (particularly people aged 16 year or older) is one of the main reasons why low-income households use such different amount of energy. (See IPART, *Changes in regulated electricity retail prices from 1 July 2012 – Final Report*, June 2012, Appendix E.6.)

²⁶⁶ For example, 17% of Sydney households in this income category were renting privately, and 5% were paying off their home in 2010 (IPART 2010, *Residential energy and water use in Sydney, the Blue Mountains and Illawarra: Results from the 2010 household survey, Electricity, Gas and Water – Research Report*, December, Appendix E, Table 1).

²⁶⁷ IPART, *Residential energy and water use in Sydney, the Blue Mountains and Illawarra: Results from the 2010 household survey – Research Report*, December 2010, Figure 8.5, p 141.

One indicator of the prevalence of households having difficulty paying their electricity bills is the number having their electricity supply disconnected due to non-payment. The number of residential customers disconnected for non-payment of bills increased by 25% between 2010/11 and 2011/12. As a percentage of total residential customers, the rate of disconnections due to non-payment increased from 0.6% to 0.8%. As a proportion of total disconnection for non-payment, the number of pensioners disconnected increased from 14% in 2009/10 to 22% in 2011/12.²⁶⁸

Another indicator is the growth in demand for Energy Accounts Payment Assistance scheme (EAPA) vouchers in 2011/12 compared to previous years. The Energy Accounts Payment Assistance operates to provide short-term relief to people experiencing financial stress. Community welfare groups have indicated a heightened demand for EAPA vouchers in 2011/12.²⁶⁹

²⁶⁸ IPART, *Information Paper - Customers service performance of electricity retail suppliers 1 July 2007 – 30 June 2012*, December 2012, pp 7-8.

²⁶⁹ *Ibid*, p 8.

13 Regulated non-tariff charges

The Standard Retailers are able to impose several non-tariff charges on small customers on regulated prices, in line with the *Electricity Supply Act 1995*. These include a:

- ▼ security deposit
- ▼ late payment fee
- ▼ dishonoured cheque fee.

The determination specifies the maximum level for each of these fees²⁷⁰ as well as restrictions on their imposition.

Since we made the 2010 determination, the NSW Government has adopted the National Energy Customer Framework (NECF) and this framework will commence on 1 July 2013. The NECF includes a set of National Electricity Retail Rules (the Rules), which include provisions for the level and imposition of security deposits, as well as provisions about the imposition of late payment fees. In April 2013, the Minister for Resources and Energy made the *National Energy Retail Law (Adoption) Regulation 2012* (the Regulation)^{271,272}. The Regulation sets out additional conditions on the imposition of the late payment fee. It will also commence on 1 July 2013. Both the Rules and the Regulation will apply to all customers, and there are some specific provisions that apply to those on regulated prices.

Our determination refers to the conditions and restrictions set out in the Rules and Regulation in relation to:

- ▼ the amount, and conditions on imposing, security deposits; and
- ▼ the conditions on imposing late payment fees.

In the 2010 determination, we included clauses in the determination covering these matters. To assist us in making these decisions, we convened a working group comprising customer advocates, electricity retailers, and government organisations and considered comments made in submissions.

²⁷⁰ The determination provides that the maximum amount of the security deposit is to be calculated in accordance with the methodology specified under the Rules.

²⁷¹ Made under the *National Energy Retail Law (Adoption) Act 2012*.

²⁷² http://www.energy.nsw.gov.au/__data/assets/pdf_file/0018/450009/National-Energy-Retail-Law-Adoption-Regulation.pdf

The sections below provide an overview of our final decisions, and then discuss our decisions and considerations on each non-tariff charge in more detail.

13.1 Overview of final decisions on regulated retail charges

In relation to security deposit, we have decided to refer to the provisions included in the Rules.

In relation to the late payment fee, we have decided to set a maximum level of \$10.90 which reflects the full efficient costs to retailers associated with late payment, based on our analysis of market fees. We have also decided to refer to the conditions for imposing this fee on small customers set out in the Regulation.

In relation to the dishonoured cheque fee, we have decided to continue to set this fee at 2 times the regular GST-exclusive fee the standard retailer is charged by the bank or financial institution. A standard retailer may only impose the fee where it incurs a bank or other financial institution fee for that dishonoured cheque.

For the Standard Retailers, these decisions ensure they will be required to comply with the provisions set out in the Rules and the Regulation. EnergyAustralia supported referring to the Rules and Regulations.²⁷³

For regulated customers, the decisions generally mean that the level and conditions for imposing non-tariff fees will be broadly the same as under the 2010 determination. The main exception is the level of the late payment fee, which will be substantially higher. This is because previously some of the costs associated with this fee have been recovered through regulated prices (ie, they have been taken into account in setting the retail operating cost allowance) and the remainder through the late payment fee. For this determination, we have decided that all these costs will be recovered through the late payment fee.

²⁷³ EnergyAustralia submission, May 2013, p 34.

13.2 Security deposit

IPART Final Decision

17 IPART's final decision is to adopt the provisions relating to security deposits as set out in the Rules. Generally, these are to set the maximum level of the security deposit at 37.5% of the average annual electricity account and provide that:

- for residential customers, a security deposit can be required prior to commencement of supply only if the customer:
 - has an outstanding debt owed to the Standard Retailer in relation to an electricity retail bill and the customer has refused and refuses to make an arrangement to pay that debt, or
 - has been responsible for the illegal use of electricity within the previous 2 years
 - does not have a satisfactory credit history in the reasonable opinion of the Standard Retailer, and has been offered a payment plan and has refused or failed to agree to this offer
 - refused to provide acceptable identification.
- for business customers, security deposits can be required only if the customer:
 - does not have a satisfactory credit history in the reasonable opinion of Standard Retailer, or
 - is a new business, or
 - was responsible for the illegal use of electricity within the past 2 years.

The maximum level of the security deposit in the Rules is the same as the current maximum level (although it is expressed in a different way). Both the working group and stakeholder submissions expressed support for maintaining this charge at the current level.²⁷⁴

Our decision on when a security deposit can be required is largely the same as those in the current determination. The key difference is that the 2010 determination provides that Standard Retailers are also allowed to require a security deposit at any time during a regulated residential customer's first year of supply in certain circumstances. The NSW Government recently changed the NSW regulations to remove this provision. Under the Rules Standard Retailers will be able to require a security deposit only when the residential customer first requests the sale and supply of electricity.

²⁷⁴ For example, see EnergyAustralia submission, January 2013, p 59.

However, Standard Retailers will be able to collect security deposits from regulated business customers during the currency of the contract, consistent with NECF.

13.3 Late payment fee

IPART Final Decision

18 IPART's final decision is to increase the maximum level of the late payment fee to \$10.90 (excluding GST) and provide that this fee must be waived or not levied as set out in the Rule and the Regulation. Generally, this will include:

- If the customer is a hardship customer.
- If the customer receives the Low Income Household Rebate.
- If the time for payment of the bill concerned has been extended and that time has not expired.
- If that bill, or another bill given to the customer under the contract is the subject of a matter being considered by the energy ombudsman.
- If the bill is subject to an arrangement to pay by instalment under a payment plan.
- If the retailer is aware that the customer has sought assistance to pay the bill from a participating community welfare organisation that issues such vouchers.
- Where all or part payment is by a voucher issued under the Energy Accounts Payment Assistance Scheme.

The 2010 determination set a maximum level for the late payment fee of \$7.50. This level was set to partly recover the efficient costs associated with late payment,²⁷⁵ with the remainder recovered through the retail operating cost allowance included in regulated retail prices.

In their submissions, the Standard Retailers argued that all the costs of late payment should be recovered through the late payment fee, as the customers who impose these costs should bear them.²⁷⁶ In our draft decision we set the maximum level of the late payment fee (\$10.90) to reflect our view of the efficient costs associated with late payment and excluded these costs from the retail operating cost allowance.

²⁷⁵ These costs include those associated with late payment notices, disconnection warnings, field visits, disconnections, mercantile agents and foregone interest.

²⁷⁶ EnergyAustralia submission, January 2013, p 59; Origin Energy submission, December 2012, p 19.

We consider that it is appropriate to recover the full efficient costs of late payment in the late payment fee given that there are protections for vulnerable customers included in the Regulation. Further, customers who impose the additional costs should pay them, rather than all customers (including vulnerable customers) bearing additional costs. We also consider that full cost recovery will aid the transition to deregulation, where there can be full cost recovery in the late payment fees.²⁷⁷

The current regulated fee for late payment is \$7.50 (excluding GST). Evidence from market rates suggests that late payment costs are likely to be higher than this.²⁷⁸ For example, under market contracts:

- ▼ AGL charges \$14 for late payment fees. For some offers it also provides a 4% pay-on-time discount off usage charges, which is equivalent to an additional \$19 per bill paid on time.
- ▼ EnergyAustralia offers a 3% discount when you pay bills on time and no late payment fees. For an average bill and quarterly billing this would amount to \$17 per bill paid on time.
- ▼ Origin charges \$12 for late payment fees and a 2% pay on time discount off the usage component of the bill. For an average bill and quarterly billing this would imply an advantage for paying on time in total of \$21.
- ▼ Lumo offers a 5% early bird discount for paying bills before the due date. For an average bill and quarterly billing this is equivalent to \$28 per bill paid on time. It charges no other late payment fee.

Neither EnergyAustralia nor Origin Energy provided us with detailed estimates of the costs associated with late payment (as we requested). Instead, we had regard to the range of late payment fees included in market-based supply contracts to estimate the efficient cost. We decided to adopt the lower bound of this range.

²⁷⁷ Some retailers offer pay-on-time discounts, some impose late payment fees and some do both.

²⁷⁸ Based on review of <http://www.myenergyoffers.nsw.gov.au/> website.

The Combined Pensioners and Superannuants Association of NSW (CPSA) and Energy Water Ombudsman NSW (EWON) expressed concerns following our draft decision to increase the late payment fee from \$7.50 to \$10.90.²⁷⁹ These submissions noted that electricity retailers had not provided evidence to support a move to a higher late payment fee and that, despite provisions to ensure the fee did not overly impact of customers facing financial hardship, there would still be customers under financial stress impacted either through lack of knowledge of or reluctance to access such provisions.

We invited retailers to provide more evidence on the costs of late payment in their responses to our draft report. The retailers did not provide sufficient further information.

In arriving at our final decision, we have carefully considered these submissions.

We continue to view the lower bound as an appropriate estimate of the costs associated with late payment in the absence of specific information from retailers. We consider that the market has provided us with evidence to make a decision on the costs of late payment. The range from offers that we reviewed was from \$12 to \$33 (including GST), as set out above. Setting the fee at the lower end of this range may understate costs associated with late payment. We consider that moving to a level that reflects the minimum likely costs of late payment appropriately balances our view that the late payment fee should be cost reflective while recognising that retailers have not provided specific cost information to us.

Our final decision on the provisions about imposing the late payment fee refers to the provisions in the Regulation and those in the Rule. These provisions are consistent with the 2010 determination, except that the 2010 determination also provides that the late payment fee:

- ▼ must be waived where considered appropriate by EWON
- ▼ may only be levied:
 - on or after a date at least 5 business days after the due date, and
 - after the customer has been notified in advance that the late payment fee will be charged if the bill is not paid or alternative arrangements entered into, within 5 business days of the due date.

²⁷⁹ EWON submission, May 2013, p 2 and Combined Pensioners & Superannuants Association of NSW submission, May 2013, p 6.

While stakeholders who attended our roundtable meeting considered these provisions remained appropriate, we decided to include only those provisions in the Regulation. In our view, the restrictions on charging the late payment fee should be the same for regulated customers and market customers. Providing additional restrictions for regulated customers could make regulated prices 'more attractive' than market prices to some customers. This would not support the competitiveness of the market, and thus would not be consistent with our terms of reference.

13.4 Dishonoured cheque fee

IPART Final Decision

19 IPART's final decisions are to:

- maintain the level of the dishonoured cheque fee at 2 times the regular (GST-exclusive) fee charged by the bank or financial institution
- continue to provide that the Standard Retailers may only charge this fee where they actually incur a bank or financial institution fee for the dishonoured cheque.

Neither the Rules nor the Regulation specifically address dishonoured cheque fees. However, our final decision is to continue to set this fee, as required by the Electricity Supply Act.

Payment by cheque is not a common payment form and, therefore, the incidence of dishonoured cheque fees is low. At our workshop there was general acceptance of the current arrangements. Further, as stakeholders did not raise any concerns about the current level or provisions for this fee in submissions, we have decided not to change them.

14 Recommended action to improve energy policy and competition in the long-term interest of customers

As Chapter 2 discussed, electricity prices have more than doubled in nominal terms over the past 6 years. Most of this price rise is due to increased network costs and, to a lesser extent, the increasing costs of a range of green schemes imposed by both the Commonwealth and State governments.

As the economic regulator of electricity prices for small customers in NSW, IPART is well-placed to comment on energy policy settings and identify how they can be improved to better serve the long-term interests of customers. Over the past determination period, we have recommended a range of actions to mitigate future price increases, and improve government-funded customer assistance measures.

We are pleased that some significant reforms to energy policy have been made over the past year. However, many actions can still be taken to improve outcomes for customers, including actions to increase the competitiveness of the NSW electricity market and facilitate the removal of price regulation. The sections below provide an overview of our recommended actions, then discuss them in detail and set out our specific recommendations.

14.1 Overview of recommended actions

In our view, action should be taken in the coming years to:

1. **Complete current reforms to energy policy** related to network regulation and green schemes. Implementing reforms will benefit all electricity customers by reducing the potential for higher than necessary price rises in the future.
2. **Improve retailer and customer engagement in the electricity market.** This action will also benefit all electricity customers, by increasing the competitiveness of the market and better enabling small customers to benefit from the market.
3. **Improve outcomes for specific groups of customers** who need additional, targeted assistance or support in the current policy and market environment. In particular, we consider there is a need to:
 - **review arrangements for customers who cannot readily access the competitive market**, to ensure they are not disadvantaged by our decision to continue to set the customer acquisition and retention cost allowance to

reflect our view of the additional incentive required to promote competition in the NSW retail electricity market, including reviewing the arrangements for customers in residential parks to ensure that they are appropriate given developments in the competitiveness of the market.

- **review customer assistance measures** to ensure the current expenditure targets the most vulnerable customers, and are comprehensive, complementary and cost-effective.

14.2 Action to complete current reforms to energy policy

Over the past 2 years there has been considerable focus on energy policy related to network regulation and green schemes, and the need for reform to this policy to mitigate future price increases.

Progress has been made in many areas. In particular, significant reforms have been made to the National Electricity Rules, to help ensure future network prices more closely reflect efficient costs. The new Rules will apply for the next network determination from 1 July 2014. Networks NSW has indicated that it expects network price increases to be broadly in line with inflation over the next 6 years.²⁸⁰

However, further action is required to fully implement some of the proposed reforms, and realise their full potential benefits for all electricity customers. We are particularly concerned that the following reforms are completed to reduce the potential for higher than necessary price increases in the future:

- ▼ Changing the merits review arrangements under the National Electricity Law to provide a more balanced framework. The Standing Council on Energy and Resources (SCER) has indicated that it is developing a package of regulatory changes.²⁸¹ We encourage SCER to implement the recommendations from its expert panel.
- ▼ Adopting the recommendations of the Australian Energy Market Commission (AEMC) on setting reliability standards for electricity network businesses.
- ▼ Closing the Renewable Energy Target (RET) Scheme because it is not complementary to the carbon pricing mechanism, distorts investment in the energy market, and continues to add significantly to electricity prices – particularly those paid by households and small businesses. At a minimum, we consider that the RET requires substantial overhaul, as outlined in our submission to the Climate Change Authority.²⁸²

²⁸⁰ Letter from Networks NSW to IPART, dated 12 October 2012.

²⁸¹ Standing Council on Energy and Resources, *Meeting Communique*, 31 May 2013, p 1.

²⁸² IPART's submission is available at http://www.ipart.nsw.gov.au/Home/Quicklinks/IPART_Submissions_to_External_Reviews

IPART has provided detailed commentary on these reforms in submissions to various reviews.²⁸³

14.3 Action to improve retailer and customer engagement in the market

As we have previously indicated, we consider an effectively functioning competitive market offers customers the best protection from higher than efficient prices in the short term. It can also deliver better customer outcomes in the long term, including better ‘value for money’ services through reduced costs and/or innovation.

While we have found that the competitiveness of the market has improved significantly (see Chapter 4), further action can be taken to improve the functioning of the market, and better enable small customers to extract benefits from competition. This includes action to:

- ▼ Improve retailers’ engagement with customers, so they make their offers more accessible and easier to understand and compare. Further, retailers need to take action to ensure that customers understand how their prices might change during the term of a contract to improve customer confidence in the market.
- ▼ Encourage customers to actively engage in the competitive market through education campaigns.

This action is in the interests of both retailers and customers and is consistent with some of the recommendations arising from the National Energy Affordability Roundtable.²⁸⁴

14.4 Action to improve outcomes for specific groups of customers

The actions recommended above will improve outcomes for all small electricity customers. While the vast majority of customers can access the market (albeit with assistance in some circumstances²⁸⁵), there are some specific groups of customers that cannot readily access the market. A targeted response needs to be developed to address concerns about these customers.

²⁸³ For further detail on these recommendations, please see http://www.ipart.nsw.gov.au/Home/Quicklinks/IPART_Submissions_to_External_Reviews

²⁸⁴ Australian Energy Ombudsmen, Energy Retailers Association of Australia and ACOSS, *National Energy Affordability Roundtable Report to the Standing Council on Energy and Resources (SCER)*, May 2013, pp 4-10.

²⁸⁵ For example, IPART’s price comparator website is accompanied by a multilingual telephone line, assisting customers without access to the internet or with reading or language barriers.

In the coming year(s), we have identified 2 specific customer groups for whom a targeted response is required. These include:

- ▼ customers who are unable to access the competitive market, including those who are unable to enter into a market contract and those who live in areas where competition is still limited
- ▼ customers facing financial hardship.

14.4.1 Customers who are unable to access the competitive market

While the vast majority of customers can access the competitive retail electricity market, there are 2 groups of customers who do not enjoy ready access:

- ▼ Customers in the far west region of NSW, where competition is still limited due to barriers to entering this part of the market.
- ▼ Residents of residential parks (including caravan parks and boarding houses), must buy their energy from the proprietor or operator. Under the *Electricity Supply Act 1995*, that proprietor or operator can charge them up to the regulated price.²⁸⁶

Some stakeholders have raised concerns that this is likely to put them at a price disadvantage during the 2013 determination period.²⁸⁷ This is due to our decision to base regulated prices on efficient costs **plus** an additional incentive for competition via the customer acquisition and retention allowance (discussed in Chapter 9). Unlike other customers, this customer group may not be readily able to avoid paying the additional allowance.

It is possible for the proprietors of residential parks to pass on lower market rates. A targeted response to concerns about residents of residential parks needs to be developed. We consider that the relevant regulations and arrangements should be reviewed to reflect developments in the competitive market since the provisions were made in the *Electricity Supply Act*. We note that the arrangements for customers in boarding houses will differ to those in residential parks, reflecting recent changes. Our recommended review should be consultative and recommend the most appropriate arrangements. Such a review would be timely as the NSW Government considers the future of retail price regulation.

²⁸⁶ *Electricity Supply Act 1995*, s72.

²⁸⁷ PIAC submission, May 2013, p 5.

Our determination at least partly addresses concerns about customers in the far west region of NSW. As Chapter 4 discussed, limited competition in this region could result from the still high number of obsolete regulated tariffs, many of which are below the cost-reflective level. We have invited Origin Energy to provide a plan of how it will rationalise its obsolete tariffs. This will both reduce the number of regulated prices on offer and ensure that all individual regulated prices are at or moving to cost-reflective levels. This should improve the confidence of second tier retailers to contest that market.

14.4.2 Customers facing financial hardship

Our customer impact analysis for NSW illustrates that the customers most vulnerable to rises in energy prices are those households that have low incomes and high levels of energy consumption (see Chapter 12). Some of these households may find it difficult to reduce their consumption due to factors such as a high number of household members, inefficient appliances and low-quality housing. They are most likely to face genuine financial hardship due to their electricity bills.

Governments have a limited budget for customer assistance, given the numerous demands across the range of government expenditure priorities. Both the Commonwealth and State governments provide financial assistance to households for their energy bills. This has primarily been through income support, energy rebates and emergency assistance.

However, due to the segmented nature of the available information and the delivery of customer assistance measures, it is difficult to both identify vulnerable households experiencing affordability problems and to deliver the most effective and cost-efficient assistance measures. For this reason, we consider it is important to review the current customer assistance measures to ensure that the current expenditure is well targeted, assisting the most vulnerable customers in a complementary, comprehensive, cost effective and efficient manner.



Appendices

A Terms of Reference

Terms of Reference for an investigation and report by the Independent Pricing and Regulatory Tribunal (IPART) on regulated retail tariffs and regulated retail charges to apply between 1 July 2013 and 30 June 2016 under Division 5 of Part 4 of the *Electricity Supply Act 1995*.

A.1 Reference to IPART under section 43EA

The NSW Minister for Resources and Energy (the Minister) refers to IPART for investigation and report under section 43EB of the *Electricity Supply Act 1995* (the Act) the determination of regulated retail tariffs and regulated retail charges to apply to small retail customers in each standard retail supplier's supply district in New South Wales for the period commencing on 1 July 2013 and terminating on 30 June 2016 or such earlier date as may be directed by the Minister.

A.1.1 Background

The continuation of price regulation is underpinned by 2 guiding principles:

- ▼ to protect customers from retailers exerting market power where competition is ineffective or yet to be assessed, and
- ▼ to facilitate competition in the electricity market.

A key objective for changing the energy costs methodology is to place downward pressure on regulated retail electricity prices.

The NSW electricity retail market has changed markedly over the past few years. The sale by the former Government of the state owned electricity retail businesses has seen the consolidation of the market share of the 3 major retailers. These retailers have approximately 83% of the electricity market.

Customers are increasingly moving away from regulated tariffs. Currently, just over half of small retail customers remain on regulated prices in NSW compared with around 66% at the time the 2010 to 2013 determination was completed.

To assist the transition to an effective competitive market, the definition of a *small retail customer* for the purposes of price regulation will be reduced from customers using less than 160 MWh of electricity per year to customers using less than 100 MWh of electricity per year.

The Australian Energy Market Commission (AEMC) has commenced a review of the effectiveness of competition in the NSW energy retail market. This review is scheduled to be completed by September 2013.

In this context, the operation of Division 5, Part 4, of the *Electricity Supply Act 1995*, which deals with *regulated retail tariffs and regulated retail charges*, will be extended to allow IPART to make a determination of regulated electricity retail tariffs and charges that will apply from 1 July 2013 to 30 June 2016.

Pending the outcomes of the AEMC's analysis, the Government has set these terms of reference in order to continue to support the objectives of efficient cost recovery, effective competition and maintaining the financial viability of standard retail suppliers.

The NSW Government is concerned about electricity price pressures on customers and is aware of the need to balance these impacts on customers, whilst at the same time facilitating an environment for effective competition to continue to develop.

The NSW Government has implemented a range of measures to assist low-income and vulnerable customers meet their energy costs and to place downward pressure on electricity prices. On 1 July 2011, the NSW Government replaced the former Energy Rebate with the Low Income Household Rebate and increased the rebate amount from \$145 per year to \$200 per year. This was further increased to \$215 per year on 1 July 2012. The Government has also increased the Medical Energy Rebate in line with the Low Income Household Rebate.

As from 1 July 2012, the NSW Government commenced the new \$75 Family Energy Rebate for customers who have been assessed as eligible for the Commonwealth Government's Family Tax Benefit A or B. Customers eligible for both the Family Energy Rebate and the Low Income Household Rebate will receive a combined payment of up to \$250 per year. In addition to the increased financial assistance provided to eligible customers, the NSW Government:

- ▼ is reforming the state's 3 distribution businesses to place downward pressure on network charges, which contribute to around half the total cost of electricity bills
- ▼ implemented a new dividends policy that will cap dividends of the NSW Government owned electricity businesses at existing forecast levels

- ▼ commissioned a review of the electricity network reliability licence conditions in response to concerns about the impact of reliability-related capital expenditure on power prices
- ▼ closed the former Government's financially unsustainable Solar Bonus Scheme to new customers to reduce impacts on energy prices, and
- ▼ announced the closure of the Greenhouse Gas Reduction Scheme (GGAS) upon the commencement of Federal Government's Carbon Pricing Mechanism.

A.1.2 Matters that must be taken into account

For the purposes of section 43EB(2) of the Act, in undertaking the review set out in this referral, IPART should ensure its determination reflects the efficient costs faced by a Standard Retail Supplier meeting the forecast demand of the regulated customers they are obliged to serve.

IPART's determination for each year this referral is in force should:

- ▼ result in prices that recover the efficient costs of supplying small retail customers
- ▼ apply any change in the regulated tariffs on 1 July 2013 and annually thereafter on 1 July or on a date determined by IPART, and
- ▼ support the long-term interests of consumers of electricity and the stability of the electricity market.

These Terms of Reference refer to 3 distinct cost components for Standard Retail Suppliers:

- ▼ Energy Costs;
- ▼ Retail Costs, and
- ▼ Retail Margin.

Energy Costs

Energy costs include energy purchases from the National Electricity Market (NEM), greenhouse and renewable energy costs, NEM fees and energy losses.

The Energy Purchase Cost Allowance should be set, using a transparent and predictable methodology.

The Energy Purchase Cost Allowance for each year must be set no lower than the weighted average of the market based approach and the long run marginal cost with the market based approach ascribed a 25% weighting and the long run marginal cost ascribed a 75% weighting.

In addition, IPART must determine the appropriate Energy Purchase Cost Allowance (subject to the floor price) that facilitates competition and promotes efficient investment in, and the efficient operation and use of, electricity services for the long-term interests of consumers of electricity.

IPART must develop and consult on the methodology for determining the Energy Purchase Cost Allowance.

IPART must determine 2 separate regulated load forecasts for the purposes of this determination; one for customers who consume between zero and 40 MWh per year and one for customers who consume between zero and 100 MWh per year. This will be developed, in consultation with the Standard Retail Suppliers to ensure that the efficient costs of a reasonable forecast regulatory load are recovered.

Additionally, IPART should have regard to the efficient costs of meeting any obligations that Standard Retail Suppliers must comply with, including the costs of complying with greenhouse and energy efficiency schemes (including State and Commonwealth schemes in place or introduced during the period this referral is in force). IPART is required to include the final results of the analysis of the total cost impact of these green schemes on the tariffs, expressed as a specified amount based on a typical electricity bill for a residential customer of New South Wales in its Final Report.

IPART should allow for a periodic review of the Energy Purchase Cost Allowance, including the costs of complying with greenhouse and energy efficiency schemes.

IPART should allow for market fees and ancillary fees as imposed by the Australian Energy Market Operator (AEMO) under the National Electricity Rules.

IPART should allow for energy losses as published by AEMO.

Retail Costs

Standard Retail Suppliers incur retail operating costs in supplying electricity customers, which include the costs associated with customer service (eg, operating call centres, billing and collecting revenue), finance, IT systems, and regulation (eg, licence fees).

IPART should determine an allowance for retail operating costs based on efficient costs. IPART should take into account NSW Standard Retail Suppliers' efficient costs and other available information on efficient operating costs for retailers.

IPART should ensure regulated retail tariffs are set at a level which encourages competition in the retail electricity market by considering the risks involved in operating a retail energy business and including customer acquisition and retention costs in the retail cost allowance.

Retail Margin

IPART will determine an appropriate margin giving consideration to any material risks not compensated for elsewhere arising from supplying small customers.

A.1.3 Consultation

IPART should consult with stakeholders, conduct public hearings or workshops and consider submissions, within the timetable for the investigation and reporting. IPART must make its reports available to the public.

A.1.4 Timing

IPART is to release an Issues Paper (including methodology) and a Draft Report and Draft Determination before releasing its Final Report and Final Determination. It must release its Final Report in time for price changes to come into effect on 1 July 2013.

A.1.5 Definitions

Carbon Pricing Mechanism means that carbon pricing mechanism established under the *Clean Energy Act 2011* (Cth).

Energy Purchase Cost Allowance for a Standard Retail Supplier is an allowance to at least cover the efficient costs of purchasing electricity and managing the risks associated with purchasing electricity, from the National Electricity Market in order to supply electricity for its regulated load, excluding:

- ▼ Costs of compliance with greenhouse and energy efficiency schemes (other than the Carbon Pricing Mechanism, which is included in the wholesale energy costs).
- ▼ Costs of compliance with any obligations imposed under an applicable law relating to the reporting of greenhouse gas emissions, energy production or energy consumption.
- ▼ Costs related to physical losses of energy arising during the transporting of energy over the transmission and distribution systems, as published by AEMO.

- ▼ Any other costs (not referred to in the dot points above) relating to the Standard Retail Supplier's retail supply business or the recovery of any retail margin relating to that business.

Regulated retail tariff means a tariff for or in relation to the supply of electricity required to be charged to a small retail customer under a standard form customer supply contract, being a tariff specified in a determination in force under Division 5 of Part 4 of the *Electricity Supply Act 1995*.

Small retail customer means a customer that consumes electricity at less than 100 MWh per year. A small retail customer is eligible for supply under a standard form customer supply contract.

Standard retail supplier means a retail supplier to whose retail supplier's licence is attached a standard retail supplier's endorsement. A standard retail supplier must impose tariffs and charges for or in relation to supplying electricity under a standard form customer supply contract in accordance with any relevant determination of IPART under Division 5 of Part 4 of the *Electricity Supply Act 1995*.

Standard form customer supply contract means a contract entered into under Division 3 of Part 4 of the *Electricity Supply Act 1995*.

B Weighted Average Cost of Capital (WACC)

The WACC for a business is the expected cost of its various classes of capital (debt and equity), weighted to take into account the relative share of debt and equity in the total capital structure. In making this final determination, we have made final decisions on the WACC for 5 industry sectors. These include:

- ▼ **WACC for electricity generation**, which is used as a discount rate to amortise capital costs in modelling the long run marginal cost (LRMC) of electricity generation.
- ▼ **WACC for electricity retailing**, which is used to estimate the retail margin and to compensate businesses for the time value of money in cost pass-through applications. The retail electricity WACC is also used to calculate the volatility premium associated with market-based energy purchase costs.
- ▼ **WACC for coal mining**, which is used as an input for forecasting coal input costs. Specifically, the coal mining WACC is used to amortise mining costs for new entrant coal mines.
- ▼ **WACC for gas production/processing and LNG**, which is used for forecasting gas input costs. The WACC is used to amortise costs for gas processing plant and LNG facilities.
- ▼ **WACC for gas transmission**, which is used for forecasting gas input costs. The WACC is used to amortise costs for gas pipelines.

B.1 Interim WACC methodology

B.1.1 How we estimate the WACC

We are currently reviewing our WACC methodology. We have decided to release an interim report concurrently with this report before releasing our final decision on the WACC methodology in December 2013. Our interim WACC methodology is summarised in Box B.1. Our interim decision is to use the midpoint of the WACC range. We have set our WACC range with reference to the midpoints of the WACC ranges estimated using current market data and long-term averages. We adopted this interim methodology for our draft decision.

In our interim report, we outline that our default position will be to choose the midpoint of the WACC range unless there is strong evidence to indicate otherwise. This is consistent with giving equal weights to the WACCs generated using current market data and long-term averages. We will then consider relevant financial market data and other information to assess the appropriateness of the default WACC, and we may or may not adjust the default WACC within the range. To minimise uncertainty in our WACC decision we will establish a transparent and consistent framework as to how we use the additional financial market information in deciding the WACC point estimate.²⁸⁸

Box B.1 Interim decision on WACC methodology

1. Estimate a WACC range based on current market data with a 40-day averaging period.
 2. Estimate a WACC range based on long-term averages with a 10-year averaging period.
 3. Establish a WACC range using the midpoints of these 2 WACC ranges (in Steps 1 and 2). The midpoint WACC, the average of the upper and lower bound of the WACC range, is the default WACC point estimate.
 4. Having regard to relevant financial market information, assess the appropriateness of the default WACC point estimate (ie, whether a WACC point estimate should be above, below or at the midpoint WACC within the range).
-

Step 1 in Box B.1 is similar to our previous WACC methodology in that the estimated cost of capital reflects current market data. But, there are 2 major differences:

1. Under our interim approach a proxy for the expected MRP to estimate the expected cost of equity using current market data is Bloomberg's daily estimate of the implied MRP averaged over 40 days. The implied MRP estimate changes over time. Under our previous approach, we used a fixed MRP range of 5.5% to 6.5% based on the historical long-term arithmetic average as a proxy for the expected MRP to estimate the expected cost of equity using current market data.

²⁸⁸ Our interim report on the WACC methodology can be found on our website: http://www.ipart.nsw.gov.au/Home/Industries/Research/Reviews/WACC/Review_of_method_for_determining_the_WACC.

2. The market-based WACC parameters (ie, risk-free rate, inflation rate, debt margin and Bloomberg's daily estimate of the implied MRP) are averaged over 40 days. Our previous methodology used an averaging period of 20 days. We decided to increase the averaging period from 20 days to 40 days based on our consultation with local banks. The banks commented that an increase in the short-term regulatory averaging period from 20 to 40 days may be sufficient to address the potential concerns that the utilities we regulate are not able to access the swap market without shifting the market within the 20-day period. This advice was conditional on the total size of the debt of utilities subject to a single determination.

Table B.1 sets out the approach used to estimate the market-based parameters in Steps 1 and 2 under the interim approach.

Table B.1 Estimating the expected cost of capital using current market data and long-term averages

Parameter	Expected cost of capital using current market data	Expected cost of capital using long-term averages
Risk-free rate ^a	- 40-day average of 10-year Commonwealth Government bond yield	- 10-year average of 10-year Commonwealth Government bond yield
Inflation ^a	- 40-day average of swap market implied inflation with a 10-year term-to-maturity	- Breakeven inflation based on Commonwealth Government bonds with 10-year term-to-maturity averaged over 10 years ^c
Debt margin ^a	- Our current bond portfolio and the 7-year Bloomberg fair value curve (BFV)	- 10-year average of 7-year BFV
MRP	- 40-day average of the implied MRP from Bloomberg ^b	- Historical arithmetic average MRP of 5.5-6.5%

^a IPART's standard approach is to use a 5-year term-to-maturity to determine an appropriate WACC. However, for the 2013 electricity review, we decided to adopt a 10-year term-to-maturity. Hence the risk-free rate, inflation adjustment and debt margin are estimated based on the 10-year term-to-maturity.

^b We currently use the implied MRP from Bloomberg to estimate the expected cost of capital using short-term averages. Further work is required on how to best estimate the expected MRP using current market data. We have engaged SFG to assist us with this task.

^c The breakeven inflation is derived from the Fisher equation where inflation rate = $(1 + \text{nominal rate}) / (1 + \text{real rate}) - 1$. For this estimation, we used the 10-year Australian government bond (Mnemonic: FCMYGBAG10D) and indexed bond (FCMYGBAGID), sourced from the RBA website.

B.1.2 Our objective in determining the WACC and benchmark entity

Our regulatory framework is one of incentive regulation to promote efficient service provision and efficient pricing. Consistent with this, in determining the WACC used in our price setting process, we aim to set a value that reflects the efficient cost of capital for a 'benchmark entity'. That is, the WACC needs not reflect the actual financing decisions for a business under its existing structure and ownership. As with other costs our objective is to determine an efficient benchmark cost.

Our interim decision is that, in determining the WACC used in our price setting process, the benchmark entity in determining the WACC should be a firm that operates in a competitive market and faces similar risks to the regulated business subject to our decision.

This is a change from our discussion paper on the WACC methodology where we proposed to use the test of the cost of capital for a new entrant in a competitive market. We found that the benchmark cost of debt for the efficient firm operating in a competitive market is consistent with the objective of efficient pricing and is more readily observable and independent of the specific form of regulation chosen. Being based on the efficient cost of capital for a broad pool of firms we consider that it is also consistent with the reasonable expectations of the asset owners and the long-term interests of consumers. For more detailed discussion on the objectives for setting the WACC and the benchmark entity, refer to the interim report on the WACC methodology which is released concurrently with this report.

B.1.3 Why do we consider both current market data and long-term averages in determining the WACC?

The use of the benchmark of an efficient entity operating in a competitive market and facing similar risks focuses our attention on the following questions:

- ▼ How are target rates of return used in investment decisions formed and adjusted over time?
- ▼ What are the financing strategies of such firms?

Based on the consultations we have conducted for our WACC review to date, we have formed a view that an efficient financing strategy is likely to be based on a mix of current market rates and historical averages.

- ▼ Expectations on the target rates of return used in investment decisions are likely to be influenced by historical rates, but prevailing rates will be used to finance investments. When making investment decisions, firms would evaluate how much they expect to earn from a new investment relative to how much they expect to pay for servicing debt and equity. We consider that firms considering investment in long-lived assets would form these expectations based on their experience of historical returns, particularly when there is a large discrepancy between currently available rates and historical rates. Firms may compare the historical rates with the prevailing rates and decide to engage in market-timing to obtain more attractive rates by deferring or advancing their investments. When firms decide to go ahead with their investments, they will be financed at the prevailing rates.

- ▼ Using a cost of debt that has regard to both current rates and longer term averages is consistent with the outcome of financing strategies of unregulated businesses. Business financing strategies need to be sufficiently flexible to adjust to changing conditions in financing markets and product markets while also seeking to minimise financing costs over time. In practice, the resulting financing strategies employ a mix of different instruments: floating rate debt, fixed rate debt, locally issued debt, offshore debt, currency swaps, interest rate swaps and hybrid debt/equity securities. This conclusion is supported by the observation that there are active markets in all these forms of securities that are accessed by a wide range of companies. As a result, the effective interest cost of an unregulated business is likely to be a mix of current and past interest rates. However, the weighting of each and the maturity structure of debt will not be constant over time. Financing strategies and the composition of debt portfolios will vary as businesses respond to opportunities offered by current interest rates, expectations of future rates, and current and future financing needs.
- ▼ Using a cost of equity that is based on both current market data and long-term averages is consistent with estimates of the cost of equity by independent experts. Currently, many independent expert reports incorporate adjustments to partially offset the current low risk-free rates or alternatively use an estimate of the market risk premium based on current market data.²⁸⁹
- ▼ Market analysts often adopt a similar approach. The assumptions they use in assessing companies commonly reflect long-term views but are adjusted when there are more sustained variations from current rates. Similarly, we understand that target rates of return firms typically use in evaluating investment decision are relatively stable. While they may be adjusted from time to time in response to current rates, they are strongly influenced by long-term averages and expectations.

²⁸⁹ Focus Minerals Ltd, *Notice of Annual General Meeting*, 23 October 2012; Regis Resources, *Meeting Booklet*, 9 November 2012; Talison Lithium, *Scheme Booklet – Part 1*, 26 October 2012; Endocoal, *Scheme Booklet – Attachment F*, 29 January 2013; Endocoal, *Scheme Booklet – Attachment F*, 29 January 2013; Grant Thornton, *Norton Gold Fields Limited – Independent Expert's Report and Financial Services Guide*, 13 July 2012; Grant Thornton, *Republic Gold Limited – Independent Expert's Report and Financial Services Guide*, 13 September 2012.

B.2 Summary of our final decision

Our final decision on the WACC for each industry sector is shown in Table B.2.

Table B.2 Final decision on the WACCs (real post-tax, %)

Industry sector	Draft decision ^a	Final decision ^b
Electricity generation	6.5	6.3
Electricity retail	7.2	7.0
Coal mining	7.0	6.8
Gas production/processing and LNG	6.8	6.6
Gas transmission	5.5	5.3

^a Market data as of 19 March 2013.

^b Market data as of 22 May 2013.

Note: Each WACC reflects the midpoint of our estimated feasible range as of 22 May 2013.

Source: Bloomberg and IPART analysis.

Table B.2 shows the final decision on the WACCs for all 5 industry sectors. For comparison we also show our draft decision on the WACCs. For the final decision, we have updated the market-based WACC parameters (ie, risk-free rate, debt margin, inflation and market) to 22 May 2013. For each industry, we establish a WACC range based on the 2 midpoints of the WACCs estimated using current market data and long-term averages. The final decision WACC is the midpoint of this range.

The WACCs in the final decision are slightly lower than those in the draft decision for all 5 industry sectors. This is due to the updating of the WACC parameters to market data as of 22 May 2013. There has been no change to the methodology used in the draft decision or any of the other parameters.

Table B.3 sets out the parameters used to estimate the WACCs using current market data and long-term averages. We present the parameters used in the draft decision for comparison. Section B.4 sets out the parameters used for each industry sector in detail.

Table B.3 WACC parameter values

Parameter	Draft decision		Final decision	
	Current market data	Long-term averages	Current market data	Long-term averages
Averaging period	40 days	10 years	40 days	10 years
Update date	19 March 2013	19 March 2013	22 May 2013	22 May 2013
Risk-free rate ^a	3.5%	5.2%	3.2%	5.2%
Inflation adjustment ^a	2.8%	2.7%	2.9%	2.7%
Debt margin ^a	- Range: 1.8-2.6% - Median: 2.0%	2.4%	- Range: 1.8-2.5% - Median: 2.0%	2.4%
Market risk premium (MRP)	7.4%	- Range: 5.5-6.5% - Midpoint: 6%	7.3%	- Range: 5.5-6.5% - Midpoint: 6%
Gearing	- Electricity generation: 40% - Electricity retail: 20% - Coal mining: 24% - Gas production /processing and LNG: 25% - Gas transmission: 52%	- Same gearing ratio applies	- Same gearing ratio applies	- Same gearing ratio applies
Equity beta	- Electricity generation: 0.95-1.15 - Electricity retail: 0.90-1.10 - Coal mining: 0.89-1.09 - Gas production /processing and LNG: 0.85-1.05 - Gas transmission: 0.80-1.00	- Same equity beta range applies	- Same equity beta range applies	- Same equity beta range applies

^a The risk-free rate, inflation adjustment and debt margin are based on a 10-year term-to-maturity.

Source: Bloomberg and IPART analysis.

Our final decisions on the (real post-tax) WACC have been used as inputs to a range of calculations for our final report. We have provided these decisions to our consultants, SFG and Frontier Economics, along with the real pre-tax WACC, real pre-tax cost of debt, gearing ratio and real post-tax cost of equity that are implied by our final decision, as shown in Table B.4.

Table B.4 Underlying WACC parameters used in modelling for the Final determination as at 22 May 2013(%)

	Final decision WACC	Real pre-tax WACC	Real pre-tax cost of debt	Real post-tax cost of equity	Risk-free rate
Electricity generation	6.3	8.0	3.6	8.2	4.2
Electricity retail	7.0	9.5	3.6	7.9	4.2
Coal mining	6.8	8.4	3.6	7.8	4.2
Gas production /processing and LNG	6.6	8.8	3.6	7.5	4.2
Gas transmission	5.3	6.6	3.6	7.2	4.2

Source: IPART analysis.

For this review, we considered the information contained in 6 independent expert reports to choose an appropriate WACC within the range. The 6 independent expert reports include BDO Corporate Finance (2012a²⁹⁰; 2012b²⁹¹), Ernst & Young (2012²⁹²; 2013²⁹³), and Grant Thornton (2012a²⁹⁴; 2012b²⁹⁵). We used these reports to identify how financial market practitioners estimated investors' expected returns. In doing this, we focused on:

- ▼ the values and estimation methodologies used for the WACC parameters
- ▼ the recommended expected cost of debt and cost of equity
- ▼ whether any adjustments to the expected cost of debt and cost of equity were made.

Below we summarise what market data are used in these reports and discuss how this information is incorporated in choosing the point estimates for the expected cost of equity and cost of debt and hence the WACCs for our final decision.

²⁹⁰ Focus Minerals Ltd, *Notice of Annual General Meeting*, 23 October 2012.

²⁹¹ Regis Resources, *Meeting Booklet*, 9 November 2012.

²⁹² Talison Lithium, *Scheme Booklet – Part 1*, 26 October 2012.

²⁹³ Endocoal, *Scheme Booklet – Attachment F*, 29 January 2013.

²⁹⁴ Grant Thornton, *Norton Gold Fields Limited – Independent Expert's Report and Financial Services Guide*, 13 July 2012.

²⁹⁵ Grant Thornton, *Republic Gold Limited – Independent Expert's Report and Financial Services Guide*, 13 September 2012.

WACC parameters used in the independent expert reports

Risk-free rate

BDO Corporate Finance (2012a; 2012b) and Ernst & Young (2012; 2013) used the prevailing risk-free rate at the time of their valuation. Grant Thornton (2012a) averaged the risk-free rate over 180 and 360 days, and Grant Thornton (2012b) averaged the risk-free rate over 30 and 60 trading days.

Market risk premium

BDO Corporate Finance (2012a; 2012b) noted that the implied MRP obtained from Bloomberg was 8%, and considering both historical MRP and the Bloomberg MRP they adopted a MRP range of 6% to 8%. Ernst & Young (2012; 2013) stated a MRP range of 4% to 8%. They used a MRP of 6% in the expected cost of equity estimation. Grant Thornton (2012a; 2012b) established a MRP range of 6% to 8% based on the historical MRP and used 6% in the expected cost of equity estimation.

Debt margin/Cost of debt

BDO Corporate Finance (2012a; 2012b) used the actual cost of debt of the company being valued. Ernst & Young (2012) used a nominal pre-tax cost of debt of 6.1%. They considered the margin implicit in corporate bond yields over government bond yields and the debt ratings of comparable companies. Grant Thornton (2012a) used a range of 8.5% to 9.0% for the nominal cost of debt. This was based on the weighted average interest rates on credit outstanding for large and small businesses over the last 12 months as published by RBA and current cost of debt of the company being valued. Grant Thornton (2012b) used a nominal cost of debt of 12% based on discussions with the management of the company being valued.

Adjustments made to the market-based WACC parameters in light of current conditions

Ernst & Young (2012; 2013) considered the current risk-free rate is at historically low levels and hence added to their expected cost of equity estimation a specific risk premium ranging from 2% to 4%. In their reports, Ernst & Young stated that:

We believe that the current risk-free rate (usually estimate with reference to the 10 year Government bond rate) is at historically low levels. Most market observers regard this as inconsistent with current share prices, the observe volatility in markets and general economic uncertainty. In response, many valuers have either used a

normalised risk-free rate, increase their estimates of the market risk premium or have include an additional risk factor in their calculations of the cost of equity.²⁹⁶

Grant Thornton (2012b) added a specific risk premium called 'alpha factor' of 2% to their estimated cost of equity, which was based on a MRP of 6% and the prevailing 5-year risk-free rate. They stated that one of the reasons for including the alpha factor was to take account of the current easing in monetary policy and the influence on the risk-free rate.

How we have used independent expert reports in selecting an appropriate WACC within the feasible range

To select an appropriate WACC estimate within the range, we first examined what should be appropriate point estimates for the expected cost of equity and expected cost of debt within their respective ranges. Table B.5 shows the estimated cost of equity and cost of debt ranges with their midpoints for the 5 industries.

Table B.5 Cost of equity, cost of debt and WACC for 5 industries as at 22 May 2013 (%)

Industry sector		Cost of equity ^a	Cost of debt ^b	WACC ^c
Electricity generation	Range	7.8-8.6	2.4-4.8	5.6-7.1
	Midpoint	8.2	3.6	6.3
Electricity retail	Range	7.4-8.3	2.4-4.8	6.4-7.6
	Midpoint	7.9	3.6	7.0
Coal mining	Range	7.4-8.2	2.4-4.8	6.2-7.4
	Midpoint	7.8	3.6	6.8
Gas production /processing and LNG	Range	7.1-8.0	2.4-4.8	5.9-7.2
	Midpoint	7.5	3.6	6.6
Gas transmission	Range	6.7-7.7	2.4-4.8	4.5-6.2
	Midpoint	7.2	3.6	5.3

^a Real post-tax cost of equity.

^b Real pre-tax cost of debt.

^c Real post-tax WACC.

Source: Bloomberg and IPART analysis.

²⁹⁶ Talison Lithium, *Scheme Booklet – Part 1*, 26 October 2012, p 62; Endocoal, *Scheme Booklet – Attachment F*, 29 January 2013, p 216.

In selecting the appropriate expected cost of equity and cost debt, we considered the evidence documented in the 6 independent expert reports. The 6 independent expert reports provided several valuable implications for selecting an appropriate WACC within the range.

- ▼ With respect to the risk-free rate, the independent experts generally seemed to agree that current risk-free rate is unusually low as compared to the historical average.
- ▼ With respect to the expected MRP, the independent experts either
 - considered the expected MRP using current market data
 - chose a MRP range higher than our MRP range of 5.5% to 6.5%.
- ▼ Given the unusual current market conditions, the independent experts made adjustments to the expected cost of equity estimation. Most independent experts included an additional risk premium in calculating the expected cost of equity, which subsequently increased the WACC.

Based on the evidence, we considered that appropriate point estimates for the expected cost of equity and the expected cost of debt should be chosen, having regard to both current market data and long-term averages. The independent experts added a specific risk premium ranging from 2% to 4% to the expected cost of equity, but they did not specify how much significance they place on the historical risk-free rate. On balance, we considered that choosing the midpoint cost of equity and cost of debt is consistent with the evidence obtained from the independent expert reports. Hence, we obtained the WACC for our final decision which is at the midpoint of the WACC range. The midpoint of our range reflects the expected cost of capital based on an equal weighting of the information obtained from current market data and historical data.

In response to our draft report, EnergyAustralia (EA) and AGL submitted that our interim approach for estimating the WACC which considers both current market data and long-term averages is more appropriate than the previous approach used in our 2010-13 determination.²⁹⁷ While welcoming the approach in our draft report, Origin maintained the view that we should use longer term averages to calculate the WACC.²⁹⁸

The interim WACC methodology reflects our best view on how the WACC should be estimated at this point in time. While further work is being undertaken on several issues related to the WACC methodology, we decided to maintain our interim WACC methodology for the current review.

²⁹⁷ EnergyAustralia submission, May 2013, p 35; AGL submission, May 2013, p 14.

²⁹⁸ Origin Energy submission, May 2013, p 26.

B.3 Final decisions on common market-based parameters

Four market-based parameters are commonly applied to all 5 industry sectors involved in the electricity and regulated retail price determinations. These are the risk-free rate, inflation, debt margin and a proxy for the expected MRP using current market data. For the final determination, we have updated the market-based parameters to 22 May 2013. The sections below outline our final decisions and analysis on these parameters.

B.3.1 Risk-free rate

20 IPART's final decision is to use the risk-free rates shown on Table B.6 in determining the WACC for all 5 industry sectors.

Table B.6 Final decision on risk-free rate for 5 industry sectors

Averaging period	Risk-free rate
40 days	3.2%
10 years	5.2%

Note: Market data are as at 22 May 2013.

Source: Bloomberg.

The risk-free rate is used as a point of reference in determining both the expected cost of equity and the cost of debt within the WACC. In both the CAPM and the cost of debt calculation, the risk-free rate is the base to which a premium or margin is added to reflect the riskiness of the specific business for which the rate of return is being derived.

We changed our approach to calculating the expected cost of debt in April 2011. One of the changes we applied was to use a 5-year target term-to-maturity instead of 10 years. This change was based on advice provided by Professor Kevin Davis.²⁹⁹ He argued that setting the cost of debt using a 10-year term-to-maturity will not achieve NPV-neutrality over a regulatory period. His advice was provided assuming that it is applied to the regulatory pricing reviews using a building block approach.³⁰⁰

²⁹⁹ Professor Kevin Davis, *Determining debt costs in access pricing*, December 2010.

³⁰⁰ We have noted in our draft methodology paper that this argument may not apply in estimating WACC for an unregulated business. IPART, *Weighted average cost of capital – Draft Methodology Paper*, November 2012, p 7.

We are of the view that since in this review there is no issue with ensuring NPV-neutrality between regulatory periods, the term-to-maturity should be consistent with the expected life of the assets – that is, the 10-year term-to-maturity. Adopting a 10-year term-to-maturity is consistent with the previous electricity price review in 2010 and the subsequent annual updates.³⁰¹ Maintaining a 10-year term-to-maturity is also consistent with AGL and Origin's submissions to our draft methodology paper on the WACC. For example, AGL submitted that:

AGL remains of the view the risk-free rate should reflect government debt instruments with a term-to-maturity consistent with the industry in question. In terms of electricity generation, a 10-year term-to-maturity will more accurately reflect the time value risk/volatility generation projects are exposed to.³⁰²

We note that unlike electricity generators, coal mining and gas businesses, electricity retail businesses are not capital-intensive and do not have long-lived assets. If we decided the target term-to-maturity based on the expected life of a business's assets, a shorter target term-to-maturity such as 5 years would be more appropriate for electricity retailers. However, on balance, we have decided to apply a consistent target term-to-maturity for all industry sectors involved in the electricity and gas retail price review.

B.3.2 Inflation rate

21 IPART's final decision is to use the inflation rates shown on Table B.7 in determining the WACC for all 5 industry sectors.

Table B.7 Final decision on inflation rate for all 5 industry sectors

Averaging period	Inflation rate
40 days	2.9%
10 years	2.7%

Note: Market data are as at 22 May 2013.

Source: Bloomberg and the RBA.

The inflation rate is used to convert nominal parameters into real parameters. For the final determination, we have:

- ▼ Used an inflation rate of 2.9% to estimate the expected cost of capital using current market data. This reflects the 40-day average of the swap market-implied inflation with a 10-year term-to-maturity.
- ▼ Used an inflation rate of 2.7% to estimate the expected cost of capital using long-term averages. This reflects the 10-year average breakeven inflation rate based on the Fisher equation using the 10-year Government bond and indexed bond.³⁰³

³⁰¹ We also note that we used a term-to-maturity of 10 years in the last annual update (2012) which took place after we changed our policy to using a 5-year term-to-maturity (April 2011).

³⁰² AGL submission, December 2012, p 25.

³⁰³ Data are sourced from the RBA website: www.rba.gov.au/statistics/tables/xls/f02dhist.xls

B.3.3 Debt margin

22 IPART's final decision is to use the debt margins shown on Table B.8 in determining the WACC for all 5 industry sectors.

Table B.8 Final decision on debt margins for all 5 industry sectors

Averaging period	Debt margin
40 days	1.8-2.5% with a median of 2.0%
10 years	2.4%

Note: The debt margins include 12.5 basis points for debt raising costs. Market data are as at 22 May 2013.

Source: Bloomberg.

The debt margin represents the cost of debt a company has to pay above the nominal risk-free rate. For the final determination, we have:

- ▼ Used a debt margin range of 1.8% to 2.5% with a median of 2.0% to estimate the expected cost of capital using current market data. This estimate is based on an interquartile range and median of the 40-day averages of the debt margins of the 7-year BFV and a portfolio of BBB+ and BBB rated Australian corporate bonds issued in Australian and the US.
- ▼ Used a debt margin of 2.4% to estimate the expected cost of capital using long-term averages. This estimate is based on the 10-year average of the 7-year BFV.

The debt margins include an allowance of 12.5 basis points for debt raising costs.

In response to our draft determination, Origin submitted that for consistency bonds with maturity of 10 years should be used with the 10-year risk-free rate. AGL expressed a similar view and suggested we should extrapolate the 7-year BFV to 10 years.

To estimate the expected cost of debt using current market data we use a sample of bonds with a target term-to-maturity of 10 years and the 7-year BFV. To estimate the expected cost of debt using long-term averages we use the 7-year BFV. While we target a 10-year term-to-maturity this may not be possible in our sample of bonds as there are few Australian bonds that have term-to-maturities as long as 10 years. We currently do not extrapolate the 7-year BFV to 10 years. For the final determination, we decided to continue using the 7-year BFV without any adjustment.

B.3.4 Market risk premium

23 IPART's final decision is to use the market risk premiums shown on Table B.9 in determining the WACC for all 5 industry sectors.

Table B.9 Final decision on MRPs for all 5 industry sectors

Averaging period	MRP
40 days	7.3%
10 years	5.5-6.5% with a midpoint of 6.0%

Note: Market data are as at 22 May 2013.

Source: Bloomberg.

The MRP is the expected rate of return over the risk-free rate that investors would require for investing in a well-diversified portfolio of risky assets. The MRP is an expected return and is not directly observable. It therefore needs to be estimated through proxies.

In recent years, market conditions have become significantly volatile and the risk-free rate has declined to historical lows. As a result, the use of the expected MRP using historical long-term averages has been criticised for underestimating the 'true value' of the expected MRP. In response to our draft methodology paper on the WACC, retailers submitted that our expected MRP does not reflect current market conditions. In its submission, EA considered various expected MRPs (eg, historical, survey-based and implied MRPs) and suggested an MRP of 7.0% is appropriate.³⁰⁴ AGL submitted that an appropriate estimate of the expected MRP is higher than 7%.³⁰⁵ Origin Energy argued that the time horizon of both the expected MRP and the risk-free rate should be aligned to ensure consistency.³⁰⁶

For the final determination, we have

- ▼ Used a MRP of 7.3% to estimate the expected cost of capital using current market data. This estimate is based on the 40-day average of the implied MRP obtained from Bloomberg.³⁰⁷
- ▼ Used a MRP range of 5.5% to 6.5% with a midpoint of 6.0% to estimate the expected cost of capital using long-term averages. This estimate is based on the historical arithmetic average MRP. This is consistent with Brailsford et al. (2012) which shows that the historical MRP in Australia is 6.1%.³⁰⁸

³⁰⁴ EnergyAustralia submission, January 2013, Appendix A, pp 5-6.

³⁰⁵ AGL submission, December 2012, p 25.

³⁰⁶ Origin Energy submission, December 2012, p 30.

³⁰⁷ We are currently reviewing the methods for estimating the expected MRP using current market data as part of our review of WACC methodology. However, in the interim, we decided to use Bloomberg's estimate of the implied MRP as a proxy for the expected MRP using current market data.

³⁰⁸ Brailsford, T., Handley, J.C., and Maheswaran, K., 2012, *The historical equity risk premium in Australia: post-GFC an 128 years of data*, Accounting and Finance 52, pp 237-247.

B.4 Final decisions on industry-specific parameters

For the final determination, we have used the same industry-specific parameters as in the draft determination.

We conducted our own analysis to determine appropriate equity betas and gearing ratios for electricity generation and retailing. We engaged SFG to provide appropriate equity betas and gearing ratios for coal mining, gas production/processing and LNG and gas transmission. The sections below summarise our final decisions on the gearing ratios and equity betas for the 5 industry sectors. Sections B.5 and B.6 explain the analysis that underpins these decisions in detail.

B.4.1 Gearing

24 IPART's final decision is to use the gearing ratios shown on Table B.10 in determining the WACC for each industry sector.

Table B.10 Final decision on gearing ratio for each industry sector

Industry sector	Gearing ratio
Electricity generation	40%
Electricity retailing	20%
Coal mining	24%
Gas production/processing and LNG	25%
Gas transmission	52%

Source: IPART and SFG analyses.

The gearing ratio is the ratio of debt to total assets in a business's capital structure. In determining this ratio, our current practice is to adopt a benchmark capital structure (rather than the actual financial structure of the regulated entity) to ensure that customers will not bear the costs associated with an inefficient financial structure. For the final determination we decided to maintain the same gearing ratios as in the draft determination.

Compared to our 2010 review of retail electricity prices, we have reduced the gearing ratio for:

- ▼ electricity generation from 50% to 40%
- ▼ electricity retail from 30% to 20%.

We note that the reduction in the gearing ratio for electricity generation, in particular, addresses the concerns regarding the internal consistency of the WACC parameters which were raised in submissions to our draft methodology paper on the WACC³⁰⁹. Retailers submitted that our gearing ratio of 50% for electricity generation used for the 2010 determination is inconsistent with our credit rating assumption of BBB/BBB+. AGL and Origin submitted that an appropriate gearing ratio is 25% to 30% and 15% to 25%, respectively.³¹⁰

However, in response to our draft report, AGL submitted that the 40% gearing ratio used for the electricity generation WACC is incompatible with a BBB/BBB+ credit rating and debt margin, and that the debt margins for generation and retail should reflect the differential in their gearing ratios. It suggests that, given the higher gearing ratio for generation, it would be more appropriate to select a debt margin in the upper range of the 1.8-2.7% range quoted for electricity generation in our draft report.³¹¹ EA also suggested that a 40% gearing ratio for generation is inconsistent with a BBB/BBB+ credit rating.³¹²

While it is reasonable to consider that the debt margins may differ for generation and retail based on the assumed gearing ratios, we note that our estimate would fall within a reasonable confidence interval for both generation and retail based on our sample of data. Also, we consider that, rather than the generation debt margin being higher than our estimate, it is more likely that the retail debt margin is lower than our estimate.³¹³ In this regard, we consider that the BBB/BBB+ credit rating is reasonable for the 40% gearing ratio.

We have not previously determined the gearing ratios for coal mining, gas production/processing and LNG and gas transmission. Our final decisions on these parameters reflect SFG's advice.

³⁰⁹ IPART, *Weighted average cost of capital – Incorporating a return on capital in the 2013 electricity determination – Draft Methodology Paper*, November 2012.

³¹⁰ AGL submission, December 2012, p 27; Origin Energy submission, December 2012, p 32.

³¹¹ AGL submission, May 2013, p 15.

³¹² EnergyAustralia submission, May 2013, p 35.

³¹³ We decided to use a 10-year term-to-maturity for electricity retailers for consistency across the industries involved in this review. Electricity retailers are not capital-intensive and do not have long-lived assets and if we used a 5-year term-to-maturity for electricity retailers, the debt margin for them would have been lower than our current estimate for electricity retailers and generators. In this case, the debt margin estimates would reflect the differential in their gearing ratios between electricity retailers and generators.

B.4.2 Equity beta

25 Our final decision is to use equity betas shown in Table B.11.

Table B.11 Final decision on equity beta for each industry sector

Industry sector	Equity beta
Electricity generation	0.95 to 1.15
Electricity retail	0.90 to 1.10
Coal mining	0.89 to 1.09
Gas production/processing and LNG	0.85 to 1.05
Gas transmission	0.80 to 1.00

Source: IPART and SFG analyses.

The equity beta is a security-specific parameter that measures the extent to which the return of a particular security varies in line with the overall return of the market. It represents the systematic or market-wide risk of a security that cannot be avoided by holding it as part of a diversified portfolio. It is important to note that the equity beta does not take into account business-specific or diversifiable risks. We determine a benchmark equity beta applicable to one particular industry.

Compared to our 2010 determination, we have increased the equity beta for electricity generation from 0.9–1.1 to 0.95–1.15. For electricity retailing, the equity beta is the same as in our previous determinations.

We have not previously determined equity betas for coal mining, gas production/processing and LNG and gas transmission. Our final decisions on these parameters reflect SFG's advice.

B.5 IPART's analysis on the equity beta and gearing ratio for electricity generation and retailing

Ideally, to obtain the industry-specific parameters such as gearing ratios and equity betas, we would conduct a proxy company analysis by identifying and analysing a large number of stand-alone electricity generation and retail firms. However, the majority of the listed electricity firms are diversified businesses operating in a combination of electricity generation, distribution, transmission and/or retail businesses. This makes it difficult to identify stand-alone generation or retail electricity businesses.

Given the sample availability, we took the following 3 steps to estimate appropriate betas and gearing ratios for electricity generation and retailing industries.

1. First, we selected a set of diversified electricity businesses and estimated their gearing ratios and equity betas. This analysis produced the gearing ratio and beta estimates for a well-diversified electricity business containing generation, transmission, distribution and/or retail segment. Based on these estimates, we determined an appropriate equity beta and gearing ratio for a diversified electricity business which has electricity generation and retail segments.
2. We then allocated the equity betas and gearing ratios to the electricity generation and retail businesses given the equity beta and gearing ratio of the diversified business with 2 segments (determined in Step 1) and their relative systematic risks. These allocations were based on the basic portfolio theory according to which a portfolio's beta (gearing) is a weighted average of the betas (gearings) of the consisting assets.
3. For electricity generation, we used available evidence to check whether the chosen gearing ratio and equity beta are reasonable. Bloomberg reports the proportion of an electricity firm's total revenues attributable to the generation activity. We selected firms which earn more than 50% of their total revenue from electricity generation and constructed a sample of electricity generation businesses. We estimated the gearing ratio and equity beta for this sample, and compared them with the chosen gearing ratio and equity beta for generation.³¹⁴

³¹⁴ We are not able to do the same for electricity retail as Bloomberg does not report the proportion of an electricity firm's total revenues attributable to electricity retail activity.

B.5.1 Selecting sample of diversified electricity businesses

Our sample included electricity firms listed in Australian, UK and US markets. All data such as stock returns, market returns, market capitalisation and total debt were downloaded from Bloomberg. There were a total of 21,117 monthly stock returns from 78 comparable firms in the sample. The sample period is from February 1973 to October 2012. Table B.12 shows the list of diversified electricity businesses in the sample.

Our sample selection criteria were closely aligned with those in the SFG report (2009).³¹⁵ From Bloomberg, we identified all electric power generation, transmission and distribution companies using the following 2 industry classifications:

- ▼ Standard Industry Classification (SIC) codes: 4911 and 4932 which represent Electric Services and Electric & Other Services combined, or
- ▼ Global Industry Classification Standard (GICS) codes: 551010 (Electric Utilities) and 551030 (Multi-Utilities with Electric, Gas and/or Water utility operations).

This results in an initial sample of 101 firms (85 US firms, 8 UK firms and 8 Australian firms). From the initial sample of 101 firms, we eliminated 23 firms based on the following filtering rules:

- ▼ overseas listed, or
- ▼ at least 12-months returns are unavailable, market capitalisation or total liabilities is unavailable, or traded much less frequently compared to the rest of the sample.

Table B.12 List of diversified electricity businesses

Company name	Ticker	Country
AGL Energy Ltd	AGK AU Equity	AU
Australian Power and Gas Co Ltd	APK AU Equity	AU
DUET Group	DUEDA AU Equity	AU
ERM Power Ltd	EPW AU Equity	AU
APA Sub Group	HDF AU Equity	AU
Solco Ltd	SOO AU Equity	AU
SP AusNet	SPN AU Equity	AU
Spark Infrastructure Group	SKI AU Equity	AU
Andes Energia PLC	AEN LN Equity	UK
Centrica PLC	CNA LN Equity	UK
Jersey Electricity PLC	JEL LN Equity	UK
National Grid PLC	NG/ LN Equity	UK
SSE PLC	SSE LN Equity	UK

³¹⁵ SFG, *Equity beta and gearing estimates for electricity retail and generation businesses*, 14 July 2009.

Company name	Ticker	Country
Telecom Plus PLC	TEP LN Equity	UK
AES Corp	AES US Equity	US
ALLETE Inc	ALE US Equity	US
Alliant Energy Corp	LNT US Equity	US
Ameren Corp	AEE US Equity	US
American Electric Power Co Inc	AEP US Equity	US
Avista Corp	AVA US Equity	US
Beacon Power Corp	BCONQ US Equity	US
Black Hills Corp	BKH US Equity	US
Calpine Corp	CPN US Equity	US
CenterPoint Energy Inc	CNP US Equity	US
CH Energy Group Inc	CHG US Equity	US
Cleco Corp	CNL US Equity	US
CMS Energy Corp	CMS US Equity	US
Consolidated Edison Inc	ED US Equity	US
Covanta Holding Corp	CVA US Equity	US
Dominion Resources Inc/VA	D US Equity	US
DTE Energy Co	DTE US Equity	US
Duke Energy Corp	DUK US Equity	US
Edison International	EIX US Equity	US
El Paso Electric Co	EE US Equity	US
Empire District Electric Co/The	EDE US Equity	US
Entergy Corp	ETR US Equity	US
Environmental Power Corp	EPGRQ US Equity	US
Exelon Corp	EXC US Equity	US
FirstEnergy Corp	FE US Equity	US
GenOn Energy Inc	GEN US Equity	US
Great Plains Energy Inc	GXP US Equity	US
GreenHunter Energy Inc	GRH US Equity	US
Hawaiian Electric Industries Inc	HE US Equity	US
IDACORP Inc	IDA US Equity	US
Integrus Energy Group Inc	TEG US Equity	US
ITC Holdings Corp	ITC US Equity	US
MDU Resources Group Inc	MDU US Equity	US
MGE Energy Inc	MGEE US Equity	US
Nacel Energy Corp	NCEN US Equity	US
NextEra Energy Inc	NEE US Equity	US
NiSource Inc	NI US Equity	US
Northeast Utilities	NU US Equity	US
NorthWestern Corp	NWE US Equity	US
NRG Energy Inc	NRG US Equity	US
NV Energy Inc	NVE US Equity	US

Company name	Ticker	Country
OGE Energy Corp	OGE US Equity	US
Ormat Technologies Inc	ORA US Equity	US
Otter Tail Corp	OTTR US Equity	US
Pepco Holdings Inc	POM US Equity	US
PG&E Corp	PCG US Equity	US
Pinnacle West Capital Corp	PNW US Equity	US
Plug Power Inc	PLUG US Equity	US
PNM Resources Inc	PNM US Equity	US
Portland General Electric Co	POR US Equity	US
PPL Corp	PPL US Equity	US
Public Service Enterprise Group Inc	PEG US Equity	US
SCANA Corp	SCG US Equity	US
Sempra Energy	SRE US Equity	US
Southern Co/The	SO US Equity	US
TECO Energy Inc	TE US Equity	US
UIL Holdings Corp	UIL US Equity	US
Unitil Corp	UTL US Equity	US
UNS Energy Corp	UNS US Equity	US
US Geothermal Inc	HTM US Equity	US
Vectren Corp	VVC US Equity	US
Westar Energy Inc	WR US Equity	US
Wisconsin Energy Corp	WEC US Equity	US
Xcel Energy Inc	XEL US Equity	US

Source: Bloomberg.

B.5.2 Selecting sample of electricity generation businesses

We also identified electricity generation utilities. This sample was used in Step 3 described above. Bloomberg classifies 23 stocks as power generation utilities listed in Australian, Canadian, UK, US and New Zealand markets. It also reports the proportion of total revenues attributable to power generation activity. We selected firms which earn more than 50% of their total revenue from electricity generation segment.³¹⁶ Although not classified as a power generation, we have added 2 Australian stocks (ie, Origin Energy Limited and AGL Energy Limited) which are known to have an electricity generation business. As a result, there are a total of 3,267 monthly stock returns from 25 sample firms. The sample period is from August 1990 to October 2012. Table B.13 shows the list of electricity generation businesses in the sample.

³¹⁶ In some cases, this is not useful as segments are reported as “electricity”, “gas” and so on. Also, we are aware that the percentage of generation activities reported by Bloomberg is not totally free of error. An example is that Bloomberg reports that Origin Energy Limited earns 78% of its total revenue from the electricity generation activity, while Origin Energy also earns substantial revenue from the electricity retail activity.

Table B.13 List of electricity generation businesses

Company	Country
APR Energy PLC	UK
Algonquin Power & Utilities Corp	CA
Alterra Power Corporation	CA
Boralex Inc.	CA
Contact Energy	NZ
Calpine Corporation	US
Capital Power Corporation	CA
Capstone Infrastructure Corporation	CA
Dominion Resources Inc.	US
Drax Group PLC	UK
ERM Power Ltd	AU
GenOn Energy Ltd	US
Helius Energy PLC	UK
Innergex Renewable Energy Inc	CA
KSK Power Ventur PLC	UK
MAXIM Power Corp.	CA
Northland Power Inc	CA
NRG Energy	US
NZ Windfarms Ltd	NZ
Rurelec PLC	UK
SSE PLC	UK
TransAlta Corporation	CA
Renewable Energy Generation Ltd	UK
Origin Energy Limited	AU
AGL Energy Limited	AU

Source: Bloomberg.

B.5.3 Determining gearing ratios

Determining a gearing ratio for a diversified electricity business with generation and retail segments

To determine appropriate gearing ratios for electricity generation and retail, we begin by analysing the gearing ratios of the diversified electricity businesses in our sample shown in Table B.12. An average sample firm has a gearing ratio of 57% (median 60%).

We considered this market evidence to determine the gearing level for a diversified electricity business comprising 2 segments, which are electricity generation and retail. We conjectured that a business having 2 segments would have a lower level of gearing ratio (holding other things constant) due to a lower

level of diversification. As a result, we reduced a gearing level for a diversified business with electricity generation and retail to 33% (Table B.14).

Determining a gearing ratio for electricity retailing

We then considered market evidence to choose an appropriate gearing level for an electricity retail business. The SFG analysis in 2010 shows that the average gearing ratio for typical retailers across Australia, UK and US is 19% during the period of 1980-2008.³¹⁷

Whether or not an electricity retailer would carry less or more debt than a typical retailer is debatable. On the one hand, we view that an electricity retailer would be able to sustain more debt than a typical retailer as customer demand for electricity is more stable. Although we consider that sales will be still contingent on market conditions and competition from other electricity retailers, it is not like a typical retailer selling a product in which its entire market can evaporate when a competitor makes its product obsolete. On the other hand, electricity purchase costs are volatile, so the risk to the electricity retailer depends very much on the effectiveness of its hedging arrangements and this could affect its gearing ratio.

Unfortunately, we do not have empirical evidence to show whether the electricity retailers carry higher or lower debt than typical retailers. In this case, our best conjecture would be to set the electricity retailers' gearing ratio at the same level as the average gearing ratio of the typical retailers. Therefore, we decided to adopt a gearing ratio of 20% for electricity retailing.

Determining a gearing ratio for electricity generation

Given the gearing ratios of 33% for the overall business and 20% for the electricity retail, we can calculate what should be the gearing ratio of electricity generators. We obtained segment weights (ie, the proportion of market value allocated to each segment) for electricity generation and retail from the components of energy costs in 2012/13³¹⁸ excluding network cost based on our 2012 annual review of retail electricity prices.³¹⁹ The calculation to estimate the gearing ratio for generation is based on the fact that the gearing ratio of the overall business having electricity generation and retail segments should be a weighted average of the segments' gearing ratios. The resulting gearing ratio for electricity generation is 40%.

³¹⁷ SFG, *Estimation of the regulated profit margin for electricity retailers in New South Wales*, 16 March 2010, Table 9, p 26.

³¹⁸ IPART modelling from the 2012 annual review of regulated retail electricity prices.

³¹⁹ While using the energy cost as a proxy for a segment weight is not entirely satisfactory, the energy cost is the best proxy available as we do not observe the market value for each individual segment.

Table B.14 summarises the gearing ratios for electricity generation, retail and our hypothetical diversified electricity business with 2 segments, and the segment weights used to calculate the gearing ratio for electricity generation.

Table B.14 Gearing ratios of generation, retail and overall businesses

	Gearing	Weight
Electricity generation	40%	66%
Electricity retail	20%	34%
Overall	33%	100%

Source: IPART analysis.

Assessing appropriateness of the gearing ratio for electricity generation

Lastly, we assessed whether a gearing ratio of 40% is appropriate based on available market evidence. In our sample of electricity generation firms, both mean and median of the sample firms' gearing ratios are 44%. This suggests that our decision on the gearing ratio of 40% for electricity generation is reasonable.

B.5.4 Determining equity betas

To estimate equity betas of electricity generation and retail businesses, we

1. Determined an appropriate beta for a diversified electricity business based on:
 - a) the average of individual betas estimated using diversified electricity businesses
 - b) the beta of an equally-weighted index³²⁰ consisting of diversified electricity businesses.
2. Then derived the equity betas of electricity generation and retail businesses based on the beta of a diversified electricity business (determined in Step 1) and gearing ratios shown in Table B.14. In determining the equity beta for an electricity generation business, we also considered available market evidence.

³²⁰ To construct the electricity index, we converted non-US stock returns and market returns to US dollar returns. We constructed an equally-weighted stock index using whichever firms are listed during each return month in the diversified electricity sample. The market index is a weighted index of US S&P 500 Index (Bloomberg ticker: SPX Index), UK FTSE 100 Index (UKX Index) and Australian S&P/ASX 200 Index (AS51 Index). The weights for the market index are given by the number of stocks comprising the stock index at each point in time. The sample period starts from June 1992 since this is the first month in which all market index returns are available.

How we estimate beta

We estimated betas using 2 different OLS regressions.

1. A constant beta is estimated using the following OLS regression, which assumes that the relationship between excess stock and market returns is constant regardless of the market conditions.

$$r_{i,t} - r_{f,t} = \alpha_i + \beta_i(r_{m,t} - r_{f,t}) + \varepsilon_{i,t} \quad (1)$$

where

- ▼ $r_{i,t}$, $r_{m,t}$ and $r_{f,t}$ = return on stock i , the return on the equity market and the risk-free rate, respectively in month t ³²¹
 - ▼ α_i and β_i are the alpha and beta of stock i
 - ▼ $\varepsilon_{i,t}$ = an error term for stock i during month t .
2. Betas are estimated allowing the relationship between excess stock and market returns to vary depending on the market conditions (ie, up market and down market).

$$r_{i,t} - r_{f,t} = \alpha_i + \beta_{up}(r_{m,t} - r_{f,t})I + \beta_{down}(r_{m,t} - r_{f,t})(1 - I) + \varepsilon_{i,t} \quad (2)$$

where

- ▼ I = an indicator variable which takes the value of 1 when excess market return is positive, and 0 otherwise
- ▼ $r_{i,t}$, $r_{m,t}$, $r_{f,t}$, α_i and $\varepsilon_{i,t}$ are the same as above.
- ▼ β_{up} is the beta of a stock i when excess market return is positive (ie, up market) and β_{down} is the beta when excess market return is negative (down market).

Empirical betas and a beta for a diversified electricity business

Our beta analyses based on the individual electricity businesses and the electricity index show similar results. The re-levered betas at 33% gearing range between 0.4 and 0.5 assuming a constant relationship between stock and market returns. Allowing the relationship between stock and market returns to vary, we obtained different beta estimates. We focused on the down market betas (β_{down}) given current market conditions since the global financial crisis (GFC). The betas in the down market are higher than in the up market, showing that the returns of the diversified electricity business are more sensitive to the movement of the market during the down market. The down market betas range from 0.4 to 0.7.

³²¹ In the electricity index analysis, $r_{i,t}$ is the return of an equally weighted stock index, $r_{m,t}$ is the return of an weighted index of market returns, and $r_{f,t}$ is the US risk-free rate proxied by the yield on the 10-year Government security.

Based on this evidence and our judgement, we decided to increase the equity beta for a diversified electricity business to the value of 1.³²²

Estimating equity betas for electricity generation and retailing

Given the equity beta of 1 for a diversified electricity business (ie, our overall business), we determined equity betas for electricity generation and retail businesses by:

1. forming a view on their relative systematic risks
2. calculating an asset beta for our overall diversified business with generation and retail segments
3. choosing an asset beta for the stand-alone retail business given the relative risks
4. deriving asset and equity betas for a stand-alone generation business.

Form a view on relative systematic risks

As discussed in Section B.5.3, our view is that electricity retailers face greater risks than generators.

Calculate an asset beta for a diversified electricity business with generation and retail segments

We used the following equation to calculate the asset beta of a diversified electricity business given its equity beta of 1 and gearing ratio of 33%. We assumed a tax rate of 30% and a debt beta of 0.15 (Davis, 2005)³²³.

$$\text{Beta}_{\text{equity}} = \text{Beta}_{\text{asset}} * \left(1 + \frac{D}{E} * (1 - \text{tax}) \right) - \text{Beta}_{\text{debt}} * \left(\frac{D}{E} * (1 - \text{tax}) \right) \quad (3)$$

where

- ▼ $\text{Beta}_{\text{equity}}$ = equity beta
- ▼ $\text{Beta}_{\text{asset}}$ = asset beta
- ▼ D/E = Debt-to-equity ratio
- ▼ tax = tax rate
- ▼ $\text{Beta}_{\text{debt}}$ = debt beta.

³²² Betas discussed here are adjusted based on Vasicek method (1973). We also used Blume adjustment. The results are very similar.

³²³ Davis, K., *The systematic risk of debt: Australian evidence*, Table II, p 39, 2005.

Based on equation (3), we solved for $Beta_{asset}$ given $D/E=0.49$,³²⁴ $Beta_{equity} = 1$, $Beta_{debt} = 0.15$ and $tax = 30\%$. We found that the diversified electricity business with generation and retail segments has an asset beta of 0.78.

Select an asset beta for electricity retail

We do not have any empirical evidence to claim whether the equity of a retailer has above or below average systematic risk. Therefore, we considered that the best equity beta estimate for retail is 1. Based on equation (3), we calculated the asset beta for electricity retail given $Beta_{equity} = 1$ and $D/E = 0.25$. We found that the asset beta for electricity retail is 0.87.

Derive an asset beta for electricity generation

With the asset betas of electricity retail and the overall business, we derived the asset beta for electricity generation. We calculated the asset beta for electricity generation based on that the diversified business' overall asset beta as a weighted average of the asset betas of generation and retail segments, where weights are given by Table B.14. We found that the asset beta for generation is 0.74. Given the asset beta of 0.74, we found that the equity beta value for electricity generation is 1.01 using equation (3).

Assessing appropriateness of the gearing ratio for electricity generation

We considered the following evidence to assess whether the equity beta value of 1.01 is appropriate for an electricity generation business:

- ▼ The Energy Market Authority (EMA) of Singapore used an equity beta of 1 for electricity generation.³²⁵
- ▼ The Commission for Energy Regulation (CER) used an equity beta of 1.8 for electricity generation.³²⁶
- ▼ In their submission to the Essential Services Commission, AGL notes that in other WACC estimates for the electricity generation sector the equity beta of an independent power producer has been estimated to be 1.75.³²⁷

Based on the evidence, we decided to increase the equity beta midpoint for electricity generation from 1 to 1.05. The equity beta range for electricity generation is therefore 0.95 to 1.15.

³²⁴ 0.49 is derived from $\frac{D}{E} = \frac{33\%}{67\%}$ where 33% is the gearing ratio determined for a diversified electricity business.

³²⁵ EMA, *Review of the long run marginal cost (LRMC) parameters for setting the vesting contract price for the period 1 January 2013 to 31 December 2014*, Draft Final Determination Paper, pp 4-5, 21 August 2012.

³²⁶ CER, *Best new entrant price 2007 – A decision and response paper by the Commission for Energy Regulation*, Table 1, p 7, 1 August 2006.

³²⁷ AGL, *2011-2014 Electricity standing contract – Wholesale cost investigation*, p 38, 15 November 2012.

B.6 SFG's analysis on the equity beta and gearing ratio for coal mining, gas production/processing and LNG and gas transmission

For its analysis on the equity beta and gearing ratio for coal mining, gas production/processing and LNG, gas transmission, SFG used OLS regression beta estimates and average gearing ratios of 374 stocks listed in Australia, UK, US and New Zealand. To form its recommendations on these parameters, SFG:

1. Estimated asset betas, equity betas and gearing ratios based on the sample. SFG used OLS regressions to estimate equity betas and derived asset betas using the equation (3) in Section B.5.4, where the gearing ratio is given by the average gearing ratio of the sample firms.
2. Assumed that the asset betas derived in Step 1 are correct and the true equity betas are all equal to 1, but the gearing ratios used in Step 1 (ie, average gearing ratios of the sample firms) are unreliable. SFG derived the gearing ratio given the asset betas in Step 1 and equity betas of 1, based on the equation (3).
3. Assumed that the gearing ratios used in Step 1 are correct and the true equity betas are all equal to 1, but the asset betas derived in Step 1 are unreliable. SFG re-estimated the asset betas based on the equation (3) given the gearing ratios in Step 1 and equity betas of 1.
4. Placed equal weights on the asset betas, equity betas and gearing ratios estimated in Steps 1, 2 and 3 to reach final recommendation for the asset betas, equity betas and gearing ratios for 3 industries.

More information on SFG's analysis is provided in its report, which is available on our website.³²⁸

B.7 Post-tax WACC and effective tax rate

26 IPART's final decision is to use a post-tax WACC and effective tax rates as shown in Table B.15.

Table B.15 Effective tax rates

Industry sector	Effective tax rate (%)
Electricity generation	27
Electricity retail	30
Coal mining	23
Gas production/processing and LNG	30
Gas transmission	28

Source: Bloomberg and IPART analysis.

³²⁸http://www.ipart.nsw.gov.au/Home/Industries/Electricity/Reviews/Retail_Pricing/Review_of_regulated_electricity_retail_prices_2013_to_2016

In the 2009 review of regulated retail electricity prices, we applied the pre-tax WACC framework. We used an assumed statutory tax rate of 30% under the pre-tax framework. In most cases, this overstated the tax that would be paid by a comparable commercial business. In 2011, we decided to include tax as a separate cost building block and apply a post-tax WACC to estimate the cost of capital. The review specified that the post-tax WACC framework was to be applied to water reviews, but also said that:

We also make decisions in other areas that involve the use of a WACC but are not regulated in the same way. These include transport reviews, one-off reviews and the determination of retail electricity tariffs. As applying a post-tax framework for these reviews may be more difficult, we will assess its applicability on a case-by-case basis.³²⁹

Although there is concern that it is difficult to estimate the tax liability for an integrated energy business, we are of the view that the same WACC framework should be applied across all industries to maintain regulatory consistency. Therefore, we adopted the post-tax WACC framework for the 2013 determination. We estimated the tax liability using effective tax rates derived from a set of proxy companies.

In principle, we would expect that the tax expense as a ratio of economic income would be less than the statutory income tax rate, particularly where assets are relatively new. The 2 main reasons are:

- ▼ Economic depreciation is typically smaller in the early years of an asset's life relative to tax depreciation.
- ▼ Nominal interest payments can be deducted for tax purposes but is not accounted for in a pre-tax real WACC.

In their submissions, AGL, EnergyAustralia and Origin Energy questioned the benefits of moving to a post-tax WACC framework for this determination, given the difficulty in estimating the tax liability for an integrated energy business. However, we are of the view that the same WACC framework should be applied across all industries to maintain regulatory consistency.

Consistent with our draft report we determined a benchmark effective tax rate applicable to each industry based on a set of proxy companies. As we do not have information on tax depreciation and taxable income, we sought to look at proxy companies and estimated effective tax rates based on observable market data. Bloomberg provides a company's effective tax rate as income tax expense as a percentage of pre-tax income. We are of the view that using proxy companies provides a reliable estimate of the effective tax rate in absence of sufficient information to accurately estimate an energy business's actual tax liability.

³²⁹ IPART, *The incorporation of company tax in price determinations*, p 3, December 2011.

We used the same sets of proxy companies as were used to estimate equity betas and gearing ratios for electricity generation, electricity retail, coal mining, gas production/processing and LNG, and gas transmission. However, unlike the equity beta and gearing ratio analyses which are based on international proxy firms, we focused on Australian firms for the purpose of estimating effective tax rates. Since we do not have stand-alone electricity retailers, we used typical retail businesses to estimate the effective tax rate for electricity retailers.

For all other industries except for gas production/processing and LNG, our final decision on the effective tax rate is based on the median effective tax rates of the sample firms over the period from 2002 to 2012. For gas production/processing and LNG, we used the statutory tax rate of 30% since the median effective tax rate of the sample firms was 31.9%, which is higher than the statutory tax rate.

B.8 Complete WACC tables for 5 industries

In this section, for each industry we first present a table showing the individual WACC parameters and WACC values estimated using current market data and long-term averages. We then present a table showing the final WACC range and midpoint.

B.8.1 Electricity generation

Table B.16 Estimating WACCs using current market data and long-term averages for electricity generation as of 22 May 2013

Parameter	Current market data	Long-term averages
Averaging period	40 days	10 years
Nominal risk free rate	3.2%	5.2%
Inflation	2.9%	2.7%
Debt margin	1.8-2.5%	2.4%
MRP	7.3%	5.5-6.5%
Debt funding	40%	40%
Equity beta	0.95-1.15	0.95-1.15
Cost of equity (real post-tax)	7.1-8.5%	7.5-9.7%
Cost of debt (real pre-tax)	2.2-2.7%	4.8%
WACC (real post-tax)	5.1-6.2%	6.4-7.8%
Midpoint WACC (real post-tax)	5.6%	7.1%

Source: Bloomberg and IPART analysis.

Table B.17 WACC range and midpoint for electricity generation as of 22 May 2013

	Lower bound	Midpoint	Upper bound
Real post-tax WACC	5.6%	6.3%	7.1%

Source: Bloomberg and IPART analysis.

B.8.2 Electricity retailing

Table B.18 Estimating WACCs using current market data and long-term averages for electricity retailing as of 22 May 2013

Parameter	Current market data	Long-term averages
Averaging period	40 days	10 years
Nominal risk free rate	3.2%	5.2%
Inflation	2.9%	2.7%
Debt margin	1.8-2.5%	2.4%
MRP	7.3%	5.5-6.5%
Debt funding	20%	20%
Equity beta	0.90-1.10	0.90-1.10
Cost of equity (real post-tax)	6.7-8.1%	7.3-9.4%
Cost of debt (real pre-tax)	2.2-2.7%	4.8%
WACC (real post-tax)	5.8-7.1%	6.8-8.5%
Midpoint WACC (real post-tax)	6.4%	7.6%

Source: Bloomberg and IPART analysis.

Table B.19 WACC range and midpoint for electricity retailing as of 22 May 2013

	Lower bound	Midpoint	Upper bound
Real post-tax WACC	6.4%	7.0%	7.6%

Source: Bloomberg and IPART analysis.

B.8.3 Coal mining

Table B.20 Estimating WACCs using current market data and long-term averages for coal mining as of 22 May 2013

Parameter	Current market data	Long-term averages
Averaging period	40 days	10 years
Nominal risk free rate	3.2%	5.2%
Inflation	2.9%	2.7%
Debt margin	1.8-2.5%	2.4%
MRP	7.3%	5.5-6.5%
Debt funding	24%	24%
Equity beta	0.89-1.09	0.89-1.09
Cost of equity (real post-tax)	6.7-8.1%	7.2-9.3%
Cost of debt (real pre-tax)	2.2-2.7%	4.8%
WACC (real post-tax)	5.6-6.8%	6.6-8.3%
Midpoint WACC (real post-tax)	6.2%	7.4%

Source: Bloomberg and IPART analysis.

Table B.21 WACC range and midpoint for coal mining as of 22 May 2013

	Lower bound	Midpoint	Upper bound
Real post-tax WACC	6.2%	6.8%	7.4%

Source: Bloomberg and IPART analysis.

B.8.4 Gas production/processing and LNG

Table B.22 Estimating WACCs using current market data and long-term averages for gas production/processing and LNG as of 22 May 2013

Parameter	Current market data	Long-term averages
Averaging period	40 days	10 years
Nominal risk free rate	3.2%	5.2%
Inflation	2.9%	2.7%
Debt margin	1.8-2.5%	2.4%
MRP	7.3%	5.5-6.5%
Debt funding	25%	25%
Equity beta	0.85-1.05	0.85-1.05
Cost of equity (real post-tax)	6.4-7.8%	7.0-9.1%
Cost of debt (real pre-tax)	2.2-2.7%	4.8%
WACC (real post-tax)	5.3-6.5%	6.4-8.0%
Midpoint WACC (real post-tax)	5.9%	7.2%

Source: Bloomberg and IPART analysis.

Table B.23 WACC range and midpoint for gas production/processing and LNG as of 22 May 2013

	Lower bound	Midpoint	Upper bound
Real post-tax WACC	5.9%	6.6%	7.2%

Source: Bloomberg and IPART analysis.

B.8.5 Gas transmission

Table B.24 Estimating WACCs using current market data and long-term averages for gas transmission as of 22 May 2013

Parameter	Current market data	Long-term averages
Averaging period	40 days	10 years
Nominal risk free rate	3.2%	5.2%
Inflation	2.9%	2.7%
Debt margin	1.8-2.5%	2.4%
MRP	7.3%	5.5-6.5%
Debt funding	52%	52%
Equity beta	0.80-1.00	0.80-1.00
Cost of equity (real post-tax)	6.0-7.4%	6.7-8.8%
Cost of debt (real pre-tax)	2.2-2.7%	4.8%
WACC (real post-tax)	4.0-5.0%	5.7-6.7%
Midpoint WACC (real post-tax)	4.5%	6.2%

Source: Bloomberg and IPART analysis.

Table B.25 WACC range and midpoint for gas transmission as of 22 May 2013

	Lower bound	Midpoint	Upper bound
Real post-tax WACC	4.5%	5.3%	6.2%

Source: Bloomberg and IPART analysis.

B.9 IPART's past WACC decisions

Table B.26 and Table B.27 compare our final decisions on the WACC for electricity generation and retailing with our decisions for the 2012 annual review and the 2010 determination

As indicated above, the WACC methodology used to make our final decisions is different from that used in our past decisions:

- ▼ We applied our interim WACC methodology (see Section B.1).
- ▼ We determined the WACC in post-tax framework and hence estimated effective tax rates to be able to estimate tax expense separately.

- ▼ Dividend imputation factor (Gamma) is reduced from a range of 0.5-0.3 to 0.25. However, Gamma is not an input to the WACC estimation as we calculate post-tax WACCs.

Table B.26 Electricity generation

	2013 Final Decision	2012 Annual update	2010 Review
WACC range (real post-tax)	5.6-7.1%	4.2-6.0% ^a	5.9-7.8% ^a
WACC midpoint (real post-tax)	6.3%	5.1% ^a	6.8% ^a
WACC range (real pre-tax)	7.2-8.8% ^b	5.0-7.4%	6.8-9.4%
WACC midpoint (real pre-tax)	8.0% ^b	6.2%	8.0%
Selected WACC	6.3% (real post-tax)	7.1% (real pre-tax)	8.0% (real pre-tax)

^a In the 2010 review and 2012 annual update, we used the real pre-tax WACCs. The real post-tax WACCs are estimated for comparison.

^b Based on the effective tax rates shown in Table B.15.

Source: IPART, *Changes in regulated electricity retail prices from 1 July 2012 – Final Report*, p 102, June 2012; IPART, *Review of regulated retail tariffs and charges for electricity 2010-2013 – Final Report*, p 233, March 2010.

Table B.27 Electricity retail

	2013 Final decision WACC	2012 Annual update	2010 Review
WACC range (real post-tax)	6.4-7.6%	4.8-6.7% ^a	6.5-8.5% ^a
WACC midpoint (real post-tax)	7.0%	5.7% ^a	7.4% ^a
WACC range (real pre-tax)	8.8-10.1% ^b	5.8-8.7%	7.7-10.8%
WACC midpoint (real pre-tax)	9.5% ^b	7.2%	9.1%
Selected WACC	7.0% (real post-tax)	8.0% (real pre-tax)	9.1% (real pre-tax)

^a In the 2010 review and 2012 annual update, we used the real pre-tax WACCs. The real post-tax WACCs are estimated for comparison.

^b Based on the effective tax rate in Table B.15.

Source: IPART, *Changes in regulated electricity retail prices from 1 July 2012 – Final Report*, p 102, June 2012; IPART, *Review of regulated retail tariffs and charges for electricity 2010-2013 – Final Report*, p 233, March 2010.

C Information on cost allowances for load profiles for customers consuming less than 40MWh annually

In Chapters 6, 9 and 10 we presented our final decision on the cost allowances and the resulting R values for regulated customers with consumption up to 100 MWh per annum. However, the terms of reference requires us to consider the load profile for customers consuming less than 40 MWh per annum. This alternative load profile would allow the NSW Government to lower the threshold for eligibility for a regulated price without IPART needing to remake its determination.

This appendix sets out cost estimates and the resulting R values for regulated customers with consumption up to 40 MWh per annum.

Long run marginal cost of generation

Table C.1 LRMC of generation to meet each Standard Retailer's regulated load – sub-40 MWh (\$2012/13, \$/MWh)

	2012/13	2013/14	2014/15 indicative	2015/16 indicative
EnergyAustralia	87.76	86.38	87.09	79.67
Origin Energy (Endeavour Energy)	91.51	84.49	85.17	77.77
Origin Energy (Essential Energy)	84.35	71.80	72.33	64.89

Note: The 2012/13 cost allowances are those included in our 2012 annual review, and indexed to \$2012/13 using inflation of 2.8%. The 2012/13 cost allowances are based on regulated customers with annual consumption up to 160 MWh per annum.

Source: Frontier Economics.

Market-based energy purchase cost

Table C.2 Market-based energy purchase cost – including volatility allowance – sub-40 MWh (\$2012/13, \$/MWh)

	2012/13	2013/14	2014/15 indicative	2015/16 indicative
EnergyAustralia	68.24	65.48	68.78	42.33
Origin Energy (Endeavour Energy)	72.64	67.05	70.32	43.10
Origin Energy (Essential Energy)	66.86	60.40	63.42	38.95

Note: The 2012/13 cost allowances are those included in our 2012 annual review, and indexed to \$2012/13 using inflation of 2.8%. The 2012/13 cost allowances are based on regulated customers with annual consumption up to 160 MWh per annum.

Source: Frontier Economics, IPART

Energy Purchase Cost allowance

Table C.3 Final decision on the EPCA – sub-40 MWh (\$2012/13, \$/MWh)

	2012/13	2013/14	2014/15 indicative	2015/16 indicative
EnergyAustralia	87.76	81.16	82.51	70.34
Origin Energy (Endeavour Energy)	91.51	80.13	81.46	69.10
Origin Energy (Essential Energy)	84.35	68.95	70.10	58.41

Note: The 2012/13 cost allowances are those included in our 2012 annual review, and indexed to \$2012/13 using inflation of 2.8%. The 2012/13 cost allowances are based on regulated customers with annual consumption up to 160 MWh per annum.

Source: Frontier Economics, IPART.

Energy losses

Table C.4 Final decision on energy losses – sub-40 MWh (\$2012/13, \$/MWh)

	2012/13	2013/14	2014/15 indicative	2015/16 indicative
EnergyAustralia	6.51	6.07	6.08	5.28
Origin Energy (Endeavour Energy)	7.89	6.37	6.37	5.51
Origin Energy (Essential Energy)	9.98	9.47	9.47	8.07

Note: The 2012/13 cost allowances are those included in our 2012 annual review, and indexed to \$2012/13 using inflation of 2.8%. The 2012/13 cost allowances are based on regulated customers with annual consumption up to 160 MWh per annum.

Source: IPART.

CARC allowance

Table C.5 Final decision on the CARC allowance – sub-40MWh (\$2012/13 \$/MWh)

	2013/14	2014/15 indicative	2015/16 indicative
EnergyAustralia	6.3	8.3	0
Origin Energy (Endeavour Energy)	8.9	10.9	0
Origin Energy (Essential Energy)	13.5	15.3	2.5

Note: The CARC allowance has been set to zero in 2015/16 for EnergyAustralia and Origin Energy (Endeavour).

Regulated Retail Price Controls (R values)

Table C.6 Final decision on R values for 2013/14 – sub-40 MWh (\$2012/13)

	2012/13	2013/14
EnergyAustralia		
Fixed R - \$ per customer	101.5	82.5
Variable R - \$ per MWh	122.7	125.2
Cost pass-through	2.3	4.1
Origin Energy (Endeavour)		
Fixed R - \$ per customer	101.5	82.5
Variable R - \$ per MWh	126.9	126.1
Cost pass-through - \$ per MWh	2.2	4.3
Origin Energy (Essential)		
Fixed R - \$ per customer	101.5	82.5
Variable R - \$ per MWh	126.3	126.4
Cost pass-through - \$ per MWh	2.2	4.2

Note: The 2012/13 R values were set under the 2010 determination and are based on regulated customers with annual consumption up to 160 MWh per annum.

D Cost pass-through applications

The cost pass through mechanism enables Standard Retailers to pass through the incremental, efficient costs associated with defined regulatory or taxation change events.

As discussed in Chapter 6, the Standard Retailers recently submitted cost pass through applications in relation to their liability for the Small-scale Renewable Energy Scheme (SRES) in 2012/13.³³⁰ Because of a recurring timing issue, last year in our 2012 annual review we estimated the SRES cost allowance for 2012/13 using:

- ▼ 6 months of the **binding** 2012 Small-scale Technology Percentage (STP), and
- ▼ 6 months a **non-binding** (or estimated) 2013 STP

Due to the timing of the release of the binding STP (by the end of March for the current calendar year), we need to use an estimated STP in determining prices. If the binding STP turns out to be significantly different to the estimated STP, we may end up significantly over or under-estimating costs.

Recently, the binding 2013 STP was prescribed in the Regulations.³³¹ At 19.70%, the rate of liability for 2013 is significantly higher than the Clean Energy Regulator's earlier non-binding estimate of 7.94%, which we used in our 2012 annual review. This is the trigger even for the current cost pass through applications.

³³⁰ The cost pass through applications are available on our website: http://www.ipart.nsw.gov.au/Home/Industries/Electricity/Reviews/Retail_Pricing/Review_of_regulated_electricity_retail_tariffs_and_charges_2013_to_2016

³³¹ *Renewable Energy (Electricity) Regulations 2001* (Cth).

D.1 Assessment process

The process for assessing cost pass through applications is set out in the 2010 determination and involves determining:³³²

- ▼ whether the event qualifies as a Pass Through Event (ie, a Regulatory Change Event or a Taxation Change Event)
- ▼ whether the event results in materially higher or lower costs for the Standard Retailer (ie, the incremental cost must pass the materiality threshold test), and
- ▼ the appropriate pass through amounts for the event.

Our assessment of the cost pass through applications is provided below.

D.2 Our assessment of cost pass through applications

Based on our assessment of the cost pass through applications in respect of the change in Standard Retailers' liability under SRES, we determined that:

- ▼ this constitutes a Regulatory Change Event, and therefore a Pass Through Event in respect of the 2012/13 year for each Standard Retailer, and
- ▼ this Regulatory Change Event passes the materiality threshold test for each Standard Retailer.

We reached the same conclusion last year when we assessed cost pass through applications as part of our 2012 annual review. The trigger event last year was the setting of the 2012 binding STP.

The sections below discuss our assessment in detail.

D.2.1 The change in SRES liability is a Pass Through Event

The 2010 determination defines a 'Pass Through Event' to mean a 'Regulatory Change Event' or a 'Tax Change Event'.

We are satisfied that the change in the binding 2013 STP qualifies as a Regulatory Change Event. This is because it meets 2 key requirements:

- ▼ The prescription of the binding 2013 STP involved an **amendment to the Regulations**.³³³ This constitutes the coming into operation of an amendment to an Applicable Law for the purposes of the 2010 determination.

³³² Schedule 4, clauses 3.2 and 4.2 of the 2010 determination.

³³³ The *Renewable Energy (Electricity) Regulations 2001* (Cth), clause 23A was amended by the *Renewable Energy (Electricity) Amendment Regulation 2013 (No.2)* (Cth) to insert the binding 2013 STP (accessible at <http://www.comlaw.gov.au/Details/F2013L00475>).

- ▼ The binding 2013 STP **substantially varies the manner in which Standard Retailers have to undertake an activity in order to provide Pass Through Services** (ie, in complying with compulsory SRES obligations).

D.2.2 The incremental costs pass the materiality threshold test

Once we are satisfied that a Pass Through Event has occurred, we need to assess whether the efficient incremental costs arising from this event meets the materiality threshold test. This requires that average annual incremental costs incurred or saved over the term of the determination exceeds 0.25% of the Standard Retailer's total revenue arising out of regulated retail prices for the year in which the event occurs.

To establish the efficient, incremental costs arising from the change in Standard Retailers' liability under SRES, we:

- ▼ recalculated the cost of complying with SRES in 2012/13 (using the same methodology as the 2012 annual review and holding all modelling input assumptions constant, other than updating for the binding 2013 STP)³³⁴
- ▼ subtracted the cost of complying with SRES from the 2012 annual review from the revised cost of complying with SRES calculated above, to determine the incremental SRES costs, and
- ▼ adjusted the incremental SRES costs for:
 - ▼ the retail margin that would have been earned on the incremental costs (5.4% in 2012/13)
 - ▼ the time value of money representing the delay between incurring the additional liability and when retailers are able to recover these costs (consistent with earlier assessments, we have assumed a 9-month recovery period and the updated real pre-tax WACC for an electricity retailer of 9.5%).

Table D.1 shows that the annual incremental costs range between 0.9% to 1.1% of Standard Retailers' notional revenue for 2012/13. This exceeds the materiality threshold of 0.25% of total revenue for the relevant year.

³³⁴ For more information on our approach for estimating the cost of complying with the SRES in 2012/13 see IPART, *Changes in regulated electricity retail prices from 1 July 2012 – Final Report*, June 2012, pp 41-44.

Table D.1 Materiality threshold test for the change in Standard Retailers' SRES liability (\$2012/13)

	Incremental cost (\$m)	Notional revenue for 2012/13 (\$m)	Proportion of total revenue (%)
EnergyAustralia	19.6	1,764.2	1.1
Origin Energy (Endeavour Energy)	7.7	851.8	0.9
Origin Energy (Essential Energy)	14.8	1,605.5	0.9

D.2.3 Pass through amounts to be passed through in 2013/14

The incremental costs for 2012/13 set out in Table D.1 will be passed through to customers in 2013/14 prices. To determine the amount in \$/MWh passed through to retail prices we divided the aggregate dollar figures in Table D.1 by the load forecast for 2013/14. These load forecasts are based on the forecast change in regulated customers.

In calculating the cost pass through allowances, we have used the \$40 certificate price that we included in the 2010 determination and updated only the STP.³³⁵ This calculates the cost pass through as if we knew the correct liability at the time of making the decision.

The Positive Pass Through Amounts that we have determined for each Standard Retailer are set out in Table D.2. Since our draft decision we have updated the retail WACC used to adjust the incremental costs for the time value of money. The real pre-tax WACC for electricity retail has reduced from 9.7% to 9.5% since our draft decision. This had a small impact on the final cost allowances; a reduction of \$0.01/MWh for Origin (Endeavour) and Origin (Essential).

Table D.2 Final decision on the pass through amounts for the change in Standard Retailers' SRES liability (\$2012/13, \$MWh)

	Pass through amount
EnergyAustralia	4.09
Origin Energy (Endeavour Energy)	4.26
Origin Energy (Essential Energy)	4.21

Note: Pass through amounts include the retail margin, time value of money and energy losses.

These load forecasts are measured at the customer's premises, allowing for the value of energy losses.

³³⁵ Under the 2013 determination, IPART is using a market-based estimate of STP prices rather than assuming the \$40 clearing house price. However, this cost pass through application uses the \$40 from our 2010 determination.

The pass through amounts in Table D.2 are different to the amounts proposed by the Standard Retailers. The main reasons for the differences are summarised below:

- ▼ In the case of EnergyAustralia, their incremental costs were not recovered through the 2013/14 regulated load – they instead used load from 2012/13 (which is larger). The 2013/14 load needs to be used because it is in this year that the incremental costs will be recovered from regulated customers.
- ▼ For Origin Energy, they calculated quarterly liability of certificates in the first 2 quarters of 2013 using 50% of the annual load – not 60% as required under the scheme (this understated their incremental liability).

E Other regulatory decisions on retail operating costs

Table E.1 Electricity retail costs in other regulatory decisions 2010 to 2012

Regulator	Period	Retail cost/ customer		Comments
		Nominal	2012/13\$	
QCA	July 2010 to June 2011	\$86	\$90	An escalated benchmark approach has been applied since the 2007/08 decision. QCA estimates 2009/10 retail operating costs represents a 3.3% increase on the estimated costs for 2010/11. The escalation factor is based on a 40/60 weighting of CPI and WPI.
QCA	July 2011 to June 2012	\$89	\$91	QCA applied a 60% WPI and 40% CPI weighting for the escalation factor to 2010/11 retail operating cost base (3.43%). No improvements in productivity were estimated. The ROC estimate includes FRC-related costs. Excludes \$41.91 per customer for customer acquisition costs and a further \$1.16 per customer for regulatory fees.
OTTER	July 2010 to June 2013	\$94	\$99	OTTER's decision was set to recover costs attributable to the non-contestable customer base. The decision was based on Aurora's forecast ROC and relevant benchmarks. OTTER's allowance for retail costs excludes depreciation costs, which are accounted for in the retail margin. OTTER considers that FRC costs are not appropriate as FRC is yet to be adopted in Tasmania. OTTER noted that costs of marketing and customer acquisition are not typically included in allowances for non-contestable customers.
QCA	July 2012 to June 2013	\$86	\$86	The QCA set 3 different ROC allowances to reflect the costs of supplying customers of different sizes. The ROC allowance of \$83.78 per small customer was adopted as a benchmark. This was consistent with the top of the IPART 2010 range of \$83.78 which includes an allowance for the costs associated with late payments. Small customer ROC was escalated by the CPI (3.0%). Regulatory fees of \$1.21 per customer were separately estimated for 2012/13 and added to the total.
ICRC	July 2010 to June 2012	\$105	\$110	The ICRC established an initial ROC estimate in 2003 on the basis of information provided by the regulated retailer and benchmarking. This estimate was then escalated in subsequent years according to movements in the CPI. The ROC estimate includes FRC costs of \$10.57 per customer. No allowance was made for customer acquisition costs. Sales and marketing costs (being primarily the costs of communicating the TFT arrangements to non-contestable franchise) are included as efficient costs. Noting that its allowance is greater than the allowance set out in the determinations from IPART (2010) and the QCA, the ICRC commented that the recovery of similar fixed costs across a larger customer base could account for some of the difference. Once adjusted for economics of scale, the ICRC considered its allowance for ROC is consistent with those in other jurisdictions.

Regulator	Period	Retail cost/ customer		Comments
		Nominal	2012/13\$	
ICRC	July 2012 to June 2014	\$90	\$90	ROC includes costs incurred by the incumbent retailer in providing retail services to regulated customers. These costs include: billing services, including meter reading; call centre costs; customer information costs (including sales and marketing costs); and general operating overhead costs. The ICRC made an allowance of \$11.23/MWh for ROC based on an adjustment of the 2011/12 cost allowance of \$10.86/MWh for movements in the CPI (10.86×1.0339). Based on a medium customers using 8,000 kWh.
ESCOSA	January 2011 to June 2014	\$115	\$121	ESCOSA set ROC through a combination of benchmarking against ROC allowances granted in other jurisdictions, and through reference to the actual operating costs incurred by AGL SA in retailing electricity to standing contract customers. ROC includes the following retailer functions: customer service; sales and marketing; revenue collection; management and support (including corporate functions). Customer acquisition costs are not explicitly provided for, but included in the ROC estimate. ESCOSA's consultant, LECG, estimated retail operating costs at \$76.60 and separately estimated customer acquisition costs at \$41.90 per customer. Excludes \$12.55 per customer for the Renewable Energy Efficiency Scheme.
ERAWA	July 2013 to June 2016	\$78	\$82	Frontier Economics provided advice to ERAWA on the efficient level of ROC in Western Australia over 2012/13 to 2015/16. This was based on Synergy's actual operating costs (2006/07 to 2010/11) and forecast operating costs (2011/12 to 2015/16) as well as benchmarking against allowances in other regulatory decisions and against public information on these costs. Frontier estimated efficient ROC of \$78 per customer per annum in 2012/13 for non-contestable customers (both residential and SME). This excludes depreciation and customer acquisition costs.

Note: In its final report for 1 July 2013 price changes, the QCA adopted IPART's draft retail operating cost allowance, without the \$3.80 deduction for late payment fees due to retailers in Queensland not levying late payment fees. Our ROC allowance in our final report is the same as our ROC allowance in the draft report.

Data Source: IPART, *Review of regulated retail tariffs and charges for electricity 2010-2013 - Final Report*, March 2010; Queensland Competition Authority, *Final Determination Regulated Retail Electricity Prices 2012-13*, May 2012; Queensland Competition Authority, *Final Decision Benchmark Retail Cost Index for Electricity: 2011-12*, May 2011; Queensland Competition Authority, *Final Decision Benchmark Retail Cost Index for Electricity: 2010-11*, May 2010; Office of the Tasmanian Economic Regulator, *Investigation of maximum prices for declared retail electrical services on mainland Tasmania, Final Report*, October 2010; Independent Competition and Regulatory Commission, *Retail prices for franchise electricity customers 2012-14, Final report*, June 2012; Independent Competition and Regulatory Commission, *Final Decision Retail Prices for Non-contestable Electricity Customers 2010-2012*, June 2010; Frontier Economics, *Retail Operating Costs*, prepared for the Economic Regulation Authority of Western Australia, March 2012; Essential Services Commission of South Australia, *2010 Review of Retail Electricity Standing Contract Price Path, Final Inquiry Report & Final Price Determination*, December 2010, and IPART.