



# ICRC

independent competition and regulatory commission

## **Final decision**

Retail electricity price  
recalibration 2016–17

**Standing offer prices for the supply of  
electricity to small customers**

Report 2 of 2016, June 2016



The Independent Competition and Regulatory Commission is a Territory Authority established under the *Independent Competition and Regulatory Commission Act 1997* (the ICRC Act). The Commission is constituted under the ICRC Act by one or more standing commissioners and any associated commissioners appointed for particular purposes. Commissioners are statutory appointments. Joe Dimasi is the current Senior Commissioner who constitutes the Commission and takes direct responsibility for delivery of the outcomes of the Commission.

We have responsibilities for a broad range of regulatory and utility administrative matters. We have responsibility under the ICRC Act for regulating and advising government about pricing and other matters for monopoly, near-monopoly and ministerially declared regulated industries, and providing advice on competitive neutrality complaints and government-regulated activities. We also have responsibility for arbitrating infrastructure access disputes under the ICRC Act. In discharging our objectives and functions, we provide independent robust analysis and advice.

Our objectives are set out in section 7 of the ICRC Act and section 3 of the *Utilities Act 2000*.

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# Executive summary

## Introduction

The 2014–17 price direction for the supply of electricity to small customers requires the Independent Competition and Regulatory Commission (the Commission) to undertake an annual price recalibration process to determine the maximum prices that ActewAGL Retail can charge for its regulated retail tariffs for the period commencing 1 July 2016. This report sets out the Commission’s final decision on the annual price adjustment for 2016–17.

## Final decision on 2016-17 cost components

The maximum average percentage change in ActewAGL Retail’s basket of regulated tariffs in 2016–17 is an increase of 6.03 per cent. This change is equivalent to a real increase in the regulated retail price of about 4.46 per cent.

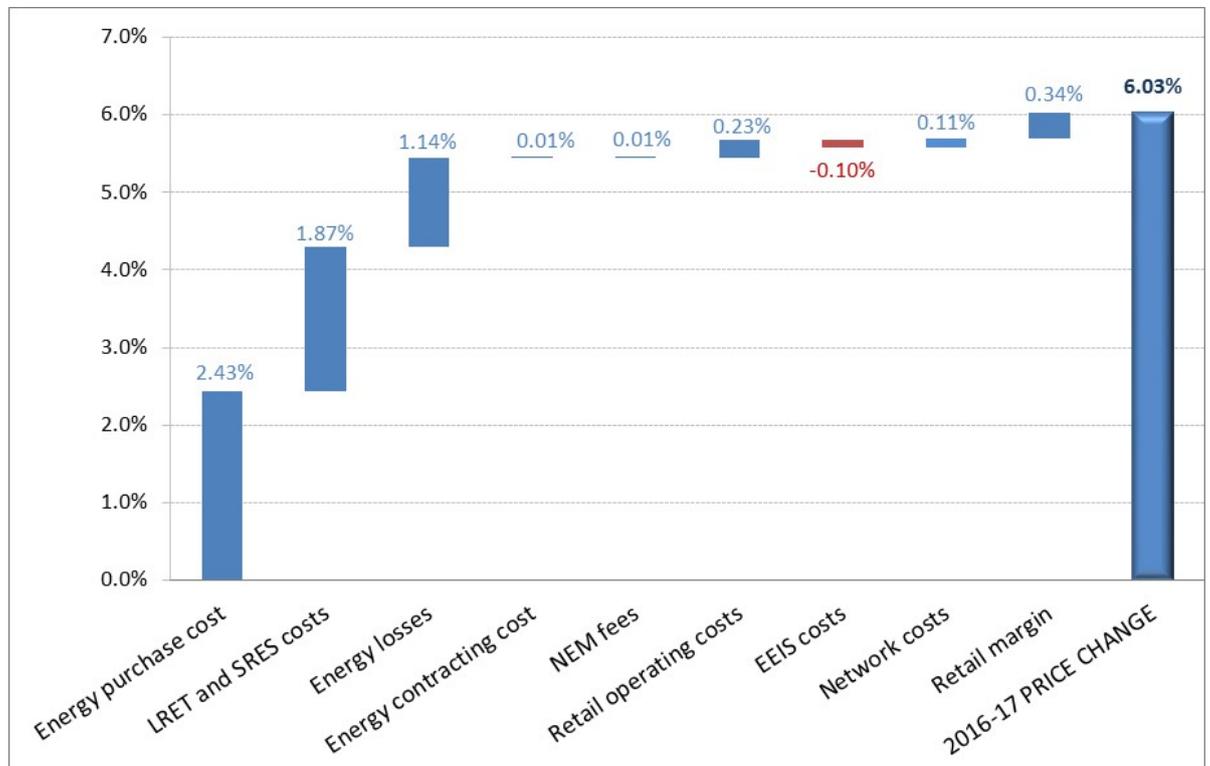
Table ES.1 sets out the Commission’s final decision on the cost components used to determine the maximum change in the regulated retail electricity price for 2016–17.

**Table ES.1 Final decision on cost elements, 2016–17**

	2015–16 (\$/MWh)	2016–17 (\$/MWh)	% change
Energy purchase cost	46.27	50.60	9.35
LRET and SRES costs	9.82	13.15	33.94
Energy losses	1.76	3.79	114.64
Energy contracting cost	0.86	0.87	1.51
NEM fees	0.86	0.87	1.51
<b>Total energy purchase cost</b>	<b>59.58</b>	<b>69.28</b>	<b>16.29</b>
Retail operating costs	14.15	14.56	2.88
Energy Efficiency Improvement Scheme costs	5.11	4.93	-3.58
<b>Total retail costs</b>	<b>19.26</b>	<b>19.49</b>	<b>1.17</b>
Network costs	89.08	89.28	0.22
<b>Total energy + retail + network costs</b>	<b>167.92</b>	<b>178.05</b>	<b>6.03</b>
Retail margin	10.15	10.76	6.03
<b>Total costs</b>	<b>178.07</b>	<b>188.81</b>	<b>6.03</b>

Figure ES.1 shows the contribution of the various cost components to the total change in prices from 2015–16 to 2016–17. The three primary drivers of the price increase are, in order of magnitude, the energy purchase cost, the costs of the national Large-scale Renewable Energy Target (LRET) and Small-scale Renewable Energy Scheme (SRES) and the energy losses component.

Figure ES.1 Components of the change in regulated retail electricity prices 2015–16 to 2016–17



Source: Commission's calculations

### Impact on customers

The annual impact on typical bills due to the price increase ranges from \$58 for a small residential customer to \$142 for a large residential customer. In the case of non-residential customers, the impact ranges from \$158 for a small non-residential customer to \$558 for a large non-residential customer.

# 1 Introduction

## 1.1 Background

On 20 September 2013, the Treasurer signed terms of reference under the *Independent Competition and Regulatory Commission Act 1997* (the ICRC Act) for a price direction for the supply of electricity by ActewAGL Retail to customers on its regulated retail tariff for the period commencing 1 July 2014. This was replaced by a revised terms of reference signed by the Acting Treasurer on 2 February 2014.<sup>1</sup>

In accordance with the terms of reference the Commission released its final report<sup>2</sup> and price direction<sup>3</sup> for the 2014 to 2017 period in June 2014. The price direction determined a maximum change in the average regulated retail price for 2014–15 and set out an annual price recalibration process for the subsequent two years of the regulatory period.

This report sets out the Commission's final decision on the annual price recalibration for 2016–17.

## 1.2 Structure of the report

The remainder of this report is structured as follows:

- Chapter 2 describes the annual recalibration process set out in the 2014–17 price direction.
- Chapter 3 establishes the efficient costs of supplying electricity to customers on the regulated tariff in accordance with the Commission's methodology.
- Chapter 4 sets out the Commission's final decision on the maximum allowed change in ActewAGL Retail's regulated retail electricity prices in 2016–17.
- Chapter 5 analyses the impact of the price change on customer bills.
- Appendix 1 reproduces the revised terms of reference.

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<sup>1</sup> The terms of reference, shown in Appendix 1, was revised to change certain terminology to ensure consistency with the National Electricity Customer Framework and prescribed a three-year regulatory period.

<sup>2</sup> See <http://www.icrc.act.gov.au/wp-content/uploads/2013/10/Report-4-of-2014-Final-Report-Standing-offer-prices-for-the-supply-of-electricity-to-small-customers.pdf>.

<sup>3</sup> See <http://www.icrc.act.gov.au/wp-content/uploads/2014/10/Report-5-of-2014.pdf>.



## 2 Annual price recalibration process

### 2.1 The assessment process

Clause 8.2 of the 2014–17 price direction sets out an annual recalibration process for the 2015–16 and 2016–17 regulatory years as follows:

- (a) On or before 10 May, ActewAGL Retail must submit to the Commission the following information:
  - (i) Calculation of costs associated with achieving environmental objectives for the year in question, including Large-scale Renewable Energy Target (LRET), Small-scale Renewable Energy Scheme (SRES) and ACT Energy Efficiency Improvement Scheme (EEIS) costs, and any proposed adjustments.
  - (ii) Full accounting of all proposed pass-through event costs that may be claimed under clause 9 and its sub-clauses.
- (b) ActewAGL Retail must submit to the Commission for verification the updated network cost allowance for the regulated customer load as soon as ActewAGL Distribution's network charges are approved by the Australian Energy Regulator (AER).
- (c) As per clause 8.4, the Commission will determine the energy purchase cost component based on data available up to 31 May.
- (d) As per clause 8.4, the Commission will determine the value of  $Y^t$ , which is the percentage by which the weighted average price cap may adjust. The Commission will provide its determination to ActewAGL Retail on or before 7 June, although this date may be extended if approved network charges have not been published by the AER in time for the Commission to adhere to this date.
- (e) ActewAGL Retail must provide the Commission with its proposed schedule(s) of standing offer prices including the associated weighted average price cap calculations.
- (f) Subsequent to clause 8.1(e) occurring, the Commission will – subject to an assessment that the proposals are consistent with the Price Direction – approve the proposed prices within two business days of receipt of the proposed schedule(s).

The price direction also provides for the maintenance of current prices into the new regulatory year in the event the AER does not approve network costs in time to allow the Commission to determine the maximum average percentage change in prices for the new prices to apply on 1 July.

## 2.2 Calculating the value of Y<sup>t</sup>

Clause 8.2 of the price direction requires the Commission to determine Y<sup>t</sup> to be the percentage change in the cost index calculated from the components listed in Table 2.1.

**Table 2.1 Components of the cost-index model**

Component	Method
Energy purchase cost	As determined by the Commission at the time of the recalibration using the energy purchase cost model set out in clause 8.4 of the price direction
LRET and SRES costs	Estimates from ActewAGL Retail for the 2015–16 and 2016–17 years respectively, which are verified and applied using the Commission’s methodology
Energy Efficiency Improvement Scheme	Estimates from ActewAGL Retail for the 2015–16 and 2016–17 years as required, subject to a prudence and efficiency assessment, with costs determined using the Commission’s methodology
Energy losses	Calculated using the formula in Chapter 2 of the final report and using the Australian Energy Market Operator’s (AEMO) marginal loss factor and distribution loss factor estimates for 2015–16 and 2016–17 as appropriate
Energy contracting costs	Previous year’s value adjusted by the change in the consumer price index
National Electricity Market (NEM) fees	Previous year’s value adjusted by the change in the consumer price index
Retail operating costs	Previous year’s per customer value adjusted by the change in the consumer price index
Network costs	As determined and approved by the AER and applied by ActewAGL Retail to the standard retail contract customer load, and subsequently verified by the Commission
Cost pass-through	Cost pass-through verified by the Commission in current dollars as adjusted by the change in the consumer price index
Retail margin	Use a formula for the retail margin expressed in ex post terms, equivalent to a margin of 6.04 per cent measured ex ante

## 2.3 Calculation of the change in the consumer price index

Clause 8.3 of the price direction requires the Commission to calculate the percentage change in the consumer price index (CPI) for any relevant year t using the following formula, populated with the Australian Bureau of Statistics all groups index for the weighted average of eight capital cities:

$$\Delta\text{CPI}_t = \frac{\text{CPI}_{\text{Mar}(t-2)} + \text{CPI}_{\text{Jun}(t-2)} + \text{CPI}_{\text{Sep}(t-1)} + \text{CPI}_{\text{Dec}(t-1)}}{\text{CPI}_{\text{Mar}(t-3)} + \text{CPI}_{\text{Jun}(t-3)} + \text{CPI}_{\text{Sep}(t-2)} + \text{CPI}_{\text{Dec}(t-2)}} - 1$$

## 2.4 Information provided by ActewAGL Retail

### 2.4.1 Submission

ActewAGL Retail provided the Commission with a confidential submission on 10 May 2015 as required under clause 8.2(a) of the price direction. The submission

included information on the costs associated with the national and local environmental schemes.<sup>4</sup>

In its submission to the Commission, ActewAGL Retail foreshadowed that it is expecting to incur additional costs resulting from a range of reforms by the Australian Energy Market Commission (AEMC), including new metering arrangements flowing from the Power of Choice reforms. ActewAGL Retail contends that the new arrangements will require investment in information technology systems changes and new business processes. ActewAGL Retail expects the costs to be incurred in 2016–17, the final year of the current regulatory period, and 2017–18. The Commission will consider this matter as part of the investigation leading up to the next regulatory period commencing 1 July 2017.<sup>5</sup>

#### **2.4.2 Customer numbers and electricity usage**

On 13 May 2016, ActewAGL Retail provided the Commission with data on customer numbers and energy usage for the regulated load for the year to 31 March 2016. This data is required for the retail operating cost allowance calculations.

#### **2.4.3 Network costs**

The AER network pricing arrangements for 2016–17 did not follow the normal annual pricing proposal submission and approval process due to the Australian Competition Tribunal setting aside the AER’s 2015 electricity distribution decisions in February 2016.

A new process was agreed in May 2016 between the AER and ActewAGL Distribution, formalised through an enforceable undertaking, which involves network charges remaining constant in real terms (i.e. adjusted for inflation of about 1.5 per cent). ActewAGL Distribution’s enforceable undertaking containing the schedule of network charges for 2016–17 was published by the AER on 17 May 2016. ActewAGL Retail subsequently provided the Commission with its 2016–17 network cost allowance proposal for the regulated ACT customer load on 18 May 2016.

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<sup>4</sup> ActewAGL Retail, 2016: 8.

<sup>5</sup> Assuming that the Commission receives a terms of reference.



## 3 Analysis of efficient costs for 2016–17

### 3.1 Introduction

This chapter sets out the Commission’s determination of the efficient costs of supplying electricity to customers on standard retail contracts in 2016–17, the third and final year of the 2014–17 regulatory period, using the cost-index model. The Commission’s cost-index model is described in detail in the Commission’s draft report on standing offer prices for the supply of electricity to small customers from 1 July 2014 to 30 June 2017 published in February 2014.<sup>6</sup>

There are three main cost categories in the build-up to the total cost of providing electricity to customers:

- wholesale energy costs, which comprise energy purchase costs, LRET and SRES costs, energy losses, energy contracting costs and National Electricity Market (NEM) fees;
- network costs, which include transmission and distribution costs; and
- retail costs, which comprise retail operating costs and EEIS compliance costs.

Each of these categories and their components are estimated in the remainder of this chapter.

In Chapter 4 these individual cost components are added together and multiplied by a retail margin to produce an overall cost in dollars per megawatt hour (\$ per MWh). This cost is then compared to the cost calculated for 2015–16. This produces a maximum allowable percentage change that ActewAGL Retail can apply under the weighted average price cap to its basket of regulated retail tariffs in 2016–17.

### 3.2 Change in the consumer price index

Following clause 8.3 of the price direction, the Commission has calculated the change in the consumer price index to be applied in 2016–17 as 1.51 per cent:

$$\Delta\text{CPI}_{2016-17} = \frac{106.8 + 107.5 + 108.0 + 108.4}{105.4 + 105.9 + 106.4 + 106.6} - 1 = 0.015083667$$

<sup>6</sup> Available at: <http://www.icrc.act.gov.au/wp-content/uploads/2013/10/Report-1-of-2014-Draft-report-web.pdf>.

### 3.3 Energy purchase cost

#### 3.3.1 Price direction requirements

Clause 8.4 of the price direction requires the Commission to calculate energy purchase costs for 2016–17 as follows:

$$EPC_s = FP_s \times [(1 - M_s) \times LS_s + M_s \times LR_s] \text{ and}$$

$$EPC = \sum_{i=1}^4 w_s \times EPC_s$$

where the following are defined for each quarter  $s$ :

- $EPC_s$  denotes the energy purchase cost.
- $FP_s$  denotes the forward price.
- $M_s$  denotes the forward price margin.
- $LS_s$  denotes the load shape.
- $LR_s$  denotes the load ratio.
- $w_s$  denotes the quarterly load weight.
- EPC without the subscript denotes the annual energy purchase cost.

#### 3.3.2 Forward price

The forward price is calculated using carbon-exclusive over-the-counter (OTC) contracting data provided by ICAP. Consistent with the 2015–16 price recalibration, the Commission has applied a 21-month averaging period in calculating the 2016–17 forward price.<sup>7</sup>

ICAP provides annual financial year contract data, while the Commission’s energy purchase cost model is constructed on a quarterly timeframe. Because of this difference, the Commission has adopted a single annual forward price for the relevant financial year rather than individual quarterly prices. Table 3.1 shows the forward prices for each calendar year quarter for the 2015–16 and 2016–17 financial years. The forward prices have been calculated as the simple average of ICAP prices over the 21-month period from 2 September 2013 to 31 May 2015 and 1 September 2014 to 31 May 2016 for 2015–16 and 2016–17, respectively.

<sup>7</sup> See ICRC, 2015: 8-10 for discussion on the Commission’s reasons for using a 21-month averaging period rather than the 23-month averaging period prescribed in the price direction.

**Table 3.1** Quarterly forward prices, 2015–16 and 2016–17 (dollars per MWh)

Year	Q3	Q4	Q1	Q2
2015–16	38.82	38.82	38.82	38.82
2016–17	42.61	42.61	42.61	42.61

Source: Commission's calculations based on ICAP data.

### 3.3.3 Uplift factor

A key element of the Commission's hedging strategy is the uplift factor which is applied to the forward price. The uplift factor comprises the load shape, the load ratio and the forward price margin. The forward price margin, set at 5 per cent, captures the observation that forward prices generally exceed average spot prices. The uplift factor is calculated as follows:

$$\text{Uplift factor} = (0.95 \times \text{load shape}) + (0.05 \times \text{load ratio})$$

#### Load shape

The load shape captures the relationship between the spot price and electricity load. The load shape is calculated using New South Wales spot prices and the net system load profile for ActewAGL Distribution, both reported by AEMO.

The quarterly average load shape for 2015–16 and 2016–17 is shown in Table 3.2, and the underlying quarterly load shape data from 2003–04 through 2015–16 is presented in Table 3.3.

**Table 3.2** Quarterly average load shape, 2015–16 and 2016–17

Year	Q3	Q4	Q1	Q2
2015–16 (average 2003–04 through 2015–16)	1.107	1.089	1.209	1.110
2016–17 (average 2003–04 through 2016–17)	1.105	1.089	1.197	1.105

Source: Commission's calculations using data from AEMO load profiles and AEMO aggregated price and demand data files.

**Table 3.3** Quarterly load shape, 2003–04 through 2015–16

Year	Q3	Q4	Q1	Q2
2003–04	1.251	1.043	1.192	1.104
2004–05	1.148	1.164	1.207	1.082
2005–06	1.114	1.149	1.360	1.145
2006–07	1.161	1.080	1.207	1.387
2007–08	1.134	1.075	1.105	1.100
2008–09	1.123	1.096	1.294	1.119
2009–10	1.086	1.254	1.254	1.109
2010–11	1.067	1.024	1.561	1.036
2011–12	1.047	1.032	1.035	1.043
2012–13	1.065	1.040	1.032	1.048
2013–14	1.044	1.070	1.054	1.033
2014–15	1.050	1.039	1.065	1.052
2015–16	1.077	1.090		

Source: Commission's calculations using data from AEMO load profiles and AEMO aggregated price and demand data files.

The price direction requires that, for quarters where the cost of carbon applies, the load shape is to be calculated after subtracting the cost of carbon from each half-hourly price. The *Clean Energy Legislation (Carbon Tax Repeal) Act*, which abolished the price on carbon received the Royal Assent on 17 July 2014. In light of this, the Commission applied a cost of carbon of zero for the 2016–17 financial year for the purpose of calculating the load shape for 2016–17.

### Load ratio

The load ratio for each quarter is calculated as the maximum of the observed ratio of the quarterly maximum load to the quarterly average load using AEMO data. To complete the calculation of the load ratio, the Commission adds 0.1 to the observed maximum to allow for the possibility of a higher peak. The load ratio for 2015–16 and 2016–17 and the underlying load data are shown in Table 3.4.

**Table 3.4** Quarterly load ratio, 2015–16 and 2016–17

Year	Q3	Q4	Q1	Q2
2003–04	1.786	2.156	1.702	2.013
2004–05	1.828	1.905	1.724	2.108
2005–06	1.808	1.960	1.888	2.063
2006–07	1.768	1.801	1.885	2.148
2007–08	1.927	1.708	1.891	1.863
2008–09	1.746	1.821	2.250	2.061
2009–10	1.764	2.172	2.236	2.196
2010–11	1.754	1.975	2.440	2.115
2011–12	1.868	2.137	2.039	2.001
2012–13	1.815	2.489	2.469	2.261
2013–14	2.030	2.193	2.621	2.322
2014–15	1.939	2.757	2.236	2.153
2015–16	1.996	2.505		
<b>Maximum through Q4 2014–15</b>	2.030	2.757	2.621	2.322
<b>Maximum through Q4 2015–16</b>	2.030	2.757	2.621	2.322
<b>Load ratio 2015–16</b>	2.130	2.857	2.721	2.422
<b>Load ratio 2016–17</b>	2.130	2.857	2.721	2.422

Source: Commission's calculations using data from AEMO load profiles.

### Load weights

Quarterly load weights are required to calculate the annual average energy purchase cost. The load weight for each quarter is equal to the historical average load in that quarter divided by the sum of the historical average load for all four quarters. The historical average load for a quarter is the simple average of the loads for that quarter for the period 2003–04 through 2015–16. The load used is the net system load profile for ActewAGL Distribution as reported by AEMO. The quarterly load weights for 2015–16 and 2016–17 are shown in Table 3.5.

**Table 3.5 Quarterly load weights, 2015–16 and 2016–17**

Year	Q3	Q4	Q1	Q2
2003–04	109.621	71.384	64.911	93.947
2004–05	108.849	68.535	65.910	90.063
2005–06	110.759	70.952	70.791	104.097
2006–07	109.656	70.494	70.773	95.027
2007–08	110.995	68.837	68.338	94.735
2008–09	114.401	67.694	70.945	96.657
2009–10	109.033	73.936	68.545	94.249
2010–11	111.748	66.593	63.059	94.546
2011–12	102.113	62.356	59.446	94.205
2012–13	101.811	59.272	58.250	85.369
2013–14	95.348	59.536	60.486	84.287
2014–15	96.815	53.697	52.247	85.559
2015–16	100.400	53.046		
<b>Average through Q4 2015–16</b>	106.762	66.107	65.587	93.380
<b>Average through Q4 2016–17</b>	106.273	65.102	64.475	92.728
<b>Load weights 2015–16</b>	0.322	0.199	0.198	0.281
<b>Load weights 2016–17</b>	0.323	0.198	0.196	0.282

Source: Commission's calculations using data from AEMO load profiles.

### Uplift factor over time

Table 3.6 shows the annual load shape and ratio and resulting uplift factor over the period 2009–10 to 2016–17. The uplift factor has been falling since 2012–13 and continued the declining trend in 2016–17.

**Table 3.6 Annual uplift factor, 2009–10 through 2016–17**

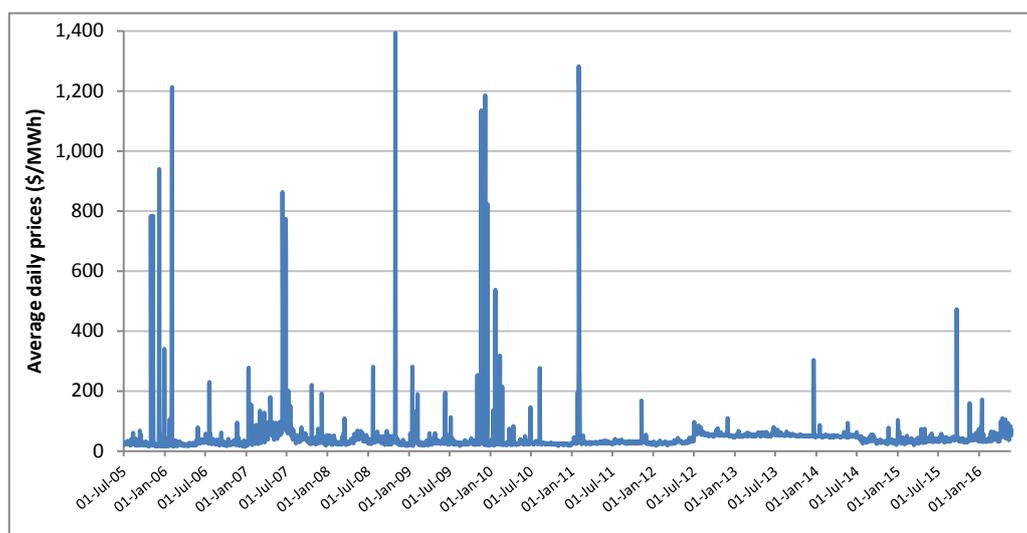
Year	Load shape	Load ratio	Uplift factor
2009–10	1.158	2.128	<b>1.207</b>
2010–11	1.160	2.203	<b>1.212</b>
2011–12	1.153	2.215	<b>1.207</b>
2012–13	1.153	2.253	<b>1.208</b>
2013–14	1.141	2.316	<b>1.200</b>
2014–15	1.132	2.374	<b>1.194</b>
2015–16	1.125	2.474	<b>1.192</b>
2016–17	1.120	2.473	<b>1.188</b>

Source: Commission's calculations.

The load shape, which captures the relationship between the spot price and load, has fallen in recent years due to the reduced volatility in the spot price in the New South Wales wholesale electricity market. An examination of the market shows that the

observed spot market price for electricity in New South Wales has remained relatively stable since 2011. Figure 3.1 shows the average daily price since 1 July 2005 which clearly shows that volatility remains low as compared to historical data.<sup>8</sup>

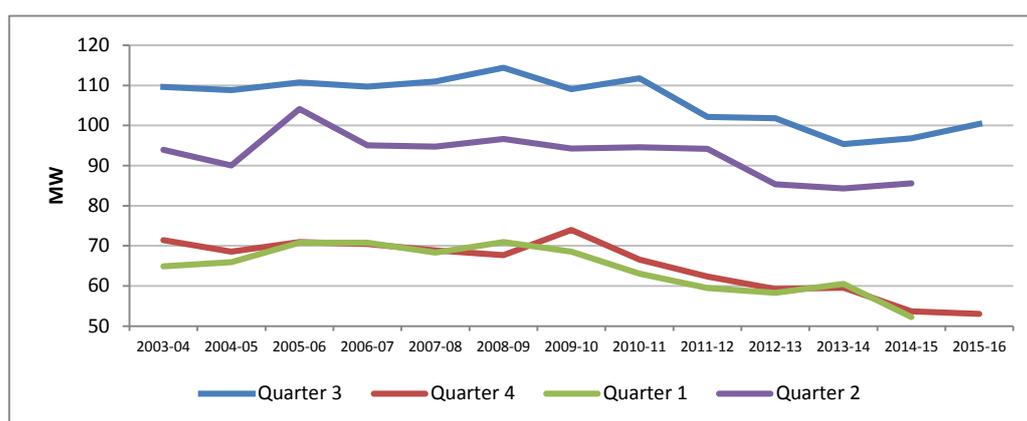
**Figure 3.1 New South Wales average daily electricity spot prices, July 2005 to May 2016**



Source: AEMO data.

In contrast to the load shape, the load ratio, which captures the peakiness of the load, has risen steadily in recent years and stabilised in 2015–16. This is despite a general reduction in average quarterly load over the last few years, as shown in Figure 3.2.

**Figure 3.2 Average quarterly ACT electricity load, 2003–04 to 2015–16**

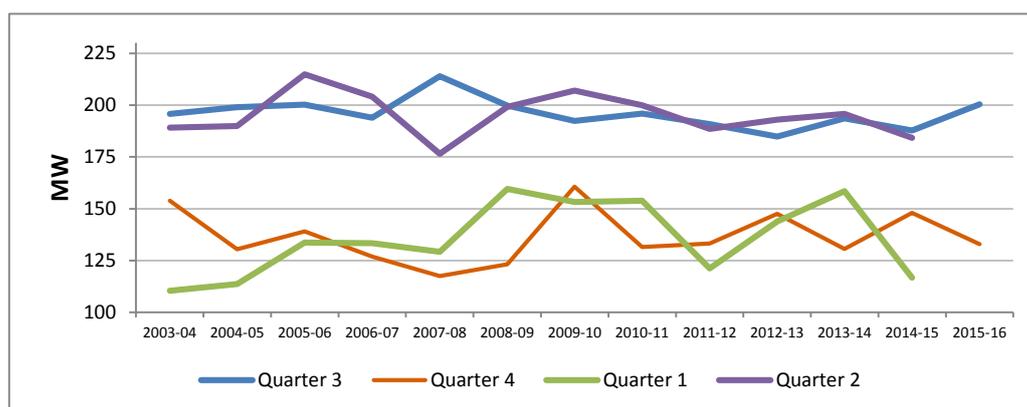


<sup>8</sup> The average daily price is equal to the average price for the 48 half-hour periods in each day. There is intraday variation in price that is not captured in the average daily price.

Source: AEMO data.

An explanation can be found in an examination of ACT quarterly maximum load, as shown in Figure 3.3. The data indicates that the maximum load has not fallen as much as the average load in recent years in the summer months, although 2015–16 shows a fairly sharp drop. The load ratio has risen, as it is the ratio of the maximum to the average load, and the average load has fallen faster than the maximum load.

**Figure 3.3 Maximum quarterly ACT electricity load, 2003–04 to 2015–16**



Source: AEMO data.

### 3.3.4 Energy purchase cost for 2015–16 and 2016–17

Table 3.7 shows the energy purchase cost calculated for 2015–16 in the Commission’s previous determination.

**Table 3.7 Energy purchase cost, 2015–16**

Component	Q3	Q4	Q1	Q2
Forward price (\$/MWh) (A)	38.82	38.82	38.82	38.82
Load shape (B)	1.11	1.09	1.21	1.11
Load ratio (C)	2.13	2.86	2.72	2.42
Forward price margin (D)	0.05	0.05	0.05	0.05
Uplift factor (E = (1 – D) × B + D × C)	1.16	1.18	1.28	1.18
<b>Energy purchase cost (\$/MWh) (A × E)</b>	<b>44.98</b>	<b>45.70</b>	<b>49.88</b>	<b>45.62</b>
<b>Annualised load-weighted EPC</b>				<b>46.27</b>

Source: ICRC, 2015: 17.

Table 3.8 shows the calculated energy purchase cost for 2016–17. The quarterly load weights from Table 3.5 are multiplied by the quarterly energy purchase cost in Table 3.8 and summed to give the 2016–17 annual energy purchase cost of \$50.60 per MWh, \$4.33 per MWh or 9.3 per cent higher than the energy purchase cost for the previous year.

**Table 3.8 Energy purchase cost, 2016–17**

Component	Q3	Q4	Q1	Q2
Forward price (\$/MWh) (A)	42.61	42.61	42.61	42.61
Load shape (B)	1.11	1.09	1.20	1.10
Load ratio (C)	2.13	2.86	2.72	2.42
Forward price margin (D)	0.05	0.05	0.05	0.05
Uplift factor (E = (1 – D) × B + D × C)	1.16	1.18	1.27	1.17
<b>Energy purchase cost (\$/MWh) (A × E)</b>	<b>49.27</b>	<b>50.17</b>	<b>54.25</b>	<b>49.88</b>
<b>Annualised load-weighted EPC</b>				<b>50.60</b>

Source: Commission's calculations.

### 3.4 Large-scale Renewable Energy Target and Small-scale Renewable Energy Scheme costs

The costs of complying with the national LRET and SRES requirements are calculated in this section. Key data inputs into the cost calculations are provided in Table 3.9.

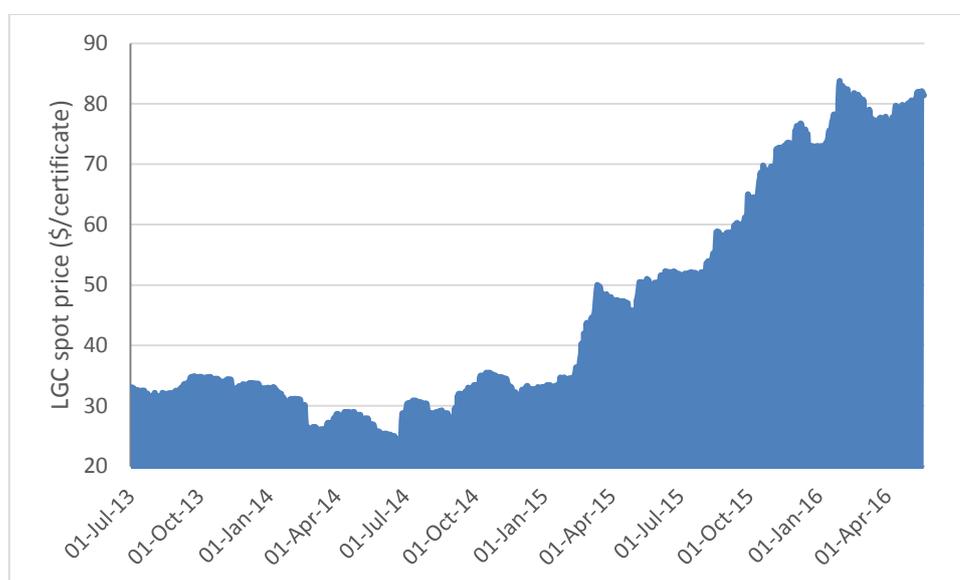
**Table 3.9 LRET and SRES data, 2016 and 2017**

	2016	2017
Renewable power percentage	12.75%	15.49%
Average LGC spot price (\$/certificate)	36.81	70.34
Small-scale technology percentage	9.68%	9.02%
Average STC spot price (\$/certificate)	38.76	39.91
Half-yearly load weights	0.528	0.472

Sources: Clean Energy Regulator (2016); ICAP price data; ActewAGL Retail half-yearly load weight data.

#### LRET

Figure 3.4 shows daily spot prices for Large-scale Generation Certificates (LGC) from July 2013 to May 2016. The average price of LGCs for calendar year 2016 is \$36.81. The price of LGCs for calendar year 2017, averaged over the 11-month period from 1 July 2015 to 31 May 2016, is \$70.34. The increase reflects the sharp rise in spot prices over the last year or so.

**Figure 3.4 LGC spot prices, July 2013 to May 2016**

Source: ICAP data.

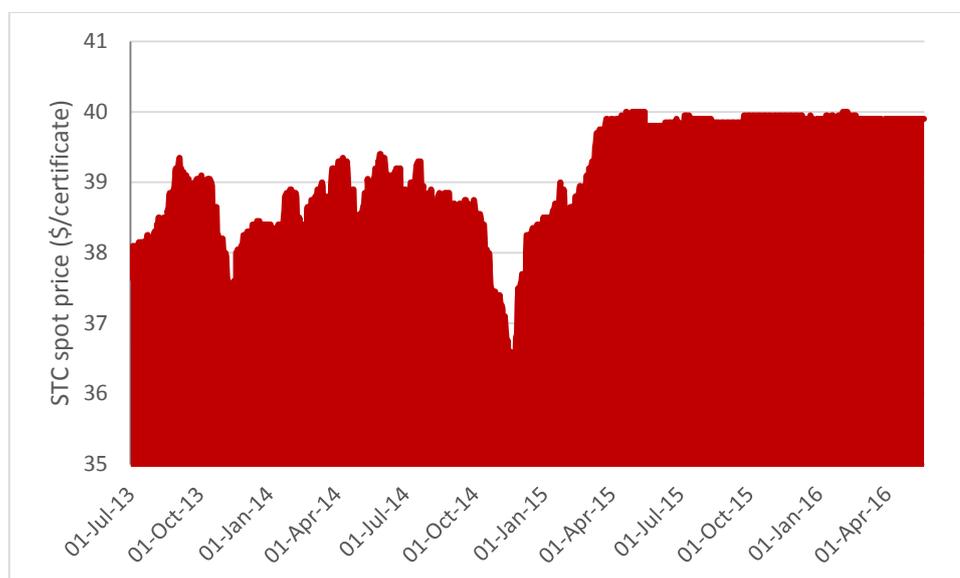
The average LGC price for 2017 increases to \$ 77.37 when adjusted by 10 per cent for the opportunity cost of holding certificates over a 12-month period. The renewable power percentage for 2016 is 12.75 per cent and is estimated at 15.49 per cent for 2017.<sup>9</sup> This produces a LRET allowance for 2016–17 of \$8.80 per MWh.

## SRES

Figure 3.5 shows daily spot prices for Small-scale Technology Certificates (STC) from July 2013 to May 2016. The average price of STCs for calendar year 2016 is \$38.76. The price of STCs for calendar year 2017, averaged over the 11-month period from 1 July 2014 to 31 May 2016, is \$39.91, very close to the \$40 clearing house price. This becomes \$43.90 when adjusted for the holding cost. The small-scale technology percentage for 2016 is 9.68 per cent and is estimated at 9.02 per cent for 2017.<sup>10</sup> This produces a SRES allowance for 2016–17 of \$4.25 per MWh.

<sup>9</sup> Clean Energy Regulator, 2016: 1. The non-binding RPP was estimated using the default formula set out in section 39(2)(b) of the *Renewable Energy (Electricity) Act 2000 (Commonwealth)*.

<sup>10</sup> Clean Energy Regulator, 2016: 1.

**Figure 3.5** STC spot prices, July 2013 to May 2016

Source: ICAP data.

### Cost adjustment

The Commission’s approach allows for a cost adjustment resulting from any difference between the actual 2016 small-scale technology percentage and renewable power percentage and the estimated numbers used in the 2015–16 decision. The Commission has calculated an adjustment of \$0.10 per MWh for 2015–16 for these costs to be included in the LRET and SRES cost allowance for 2016–17.

### Total allowance

The calculated LRET and SRES allowance for 2015–16 and 2016–17 is summarised in Table 3.10. The allowance for 2016–17 of \$13.15 per MWh is \$3.33 per MWh or 33.9 per cent more than the allowance for the previous year.

**Table 3.10** LRET and SRES allowance, 2015–16 and 2016–17 (dollars per MWh)

	2015–16	2016–17
LRET	4.51	8.80
SRES	4.87	4.25
Cost adjustment from previous year	0.44	0.10
<b>Total cost</b>	<b>9.82</b>	<b>13.15</b>

Source: Commission’s calculations.

### 3.5 Energy losses

The distribution loss factor reported by AEMO for 2016–17 is 1.0508.<sup>11</sup> The marginal loss factor reported by AEMO for the Canberra connection point in 2016–17 is 1.0095.<sup>12</sup> Using the Commission’s formula this generates an energy loss allowance of \$3.79 per MWh for 2016–17. This is about 115 per cent higher than the energy losses allowance granted in 2015–16. This is due to the increase in the marginal loss factor over this period and a higher LRET and SRES cost allowance for 2016–17.

According to AEMO, in 2016–17 New South Wales is expected to import more energy from Queensland and less from Victoria compared to the 2015–16 marginal loss factor study. This has resulted in increases in marginal loss factors at connection points in southern and western New South Wales, including Canberra, due to reduced power imports from Victoria.<sup>13</sup>

### 3.6 Energy contracting costs

The energy contracting cost allowance is adjusted by the annual change in the consumer price index. The Commission has calculated an allowance of \$0.87 per MWh for energy trading and management costs for 2016–17. This is based on an adjustment of the 2015–16 cost allowance of \$0.86 per MWh for a change of 1.51 per cent in the consumer price index.

### 3.7 National Electricity Market fees

The cost allowance for NEM fees is adjusted by the annual change in the consumer price index. The Commission has calculated an allowance of \$0.87 per MWh for NEM fees for 2016–17. This is based on an adjustment of the 2015–16 cost allowance of \$0.86 per MWh for a change of 1.51 per cent in the consumer price index.

### 3.8 Retail operating costs

The price direction requires the retail operating cost allowance for 2016–17 to be calculated by adjusting the 2015–16 per customer allowance of \$117.53 by the change in the consumer price index of 1.51 per cent. This adjustment takes the per customer allowance to \$119.31 for 2016–17.

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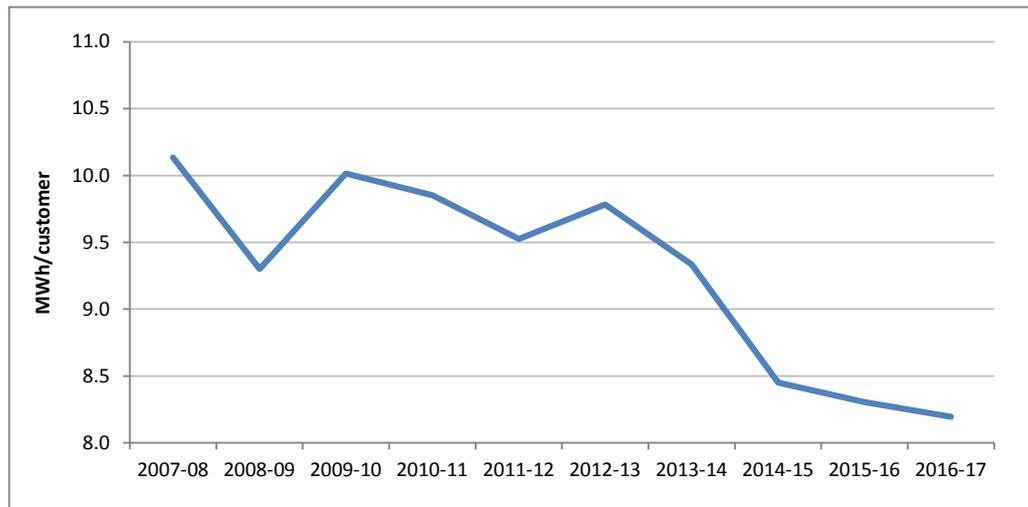
<sup>11</sup> AEMO, 2016a: 18. Distribution loss factors notionally describe the average electrical energy losses for electricity transmitted on a distribution network between a distribution network connection point and a transmission network connection point.

<sup>12</sup> AEMO, 2016b: 16. Marginal loss factors represent electrical transmission losses.

<sup>13</sup> AEMO, 2016b: 30.

This value is then converted into an allowance of \$14.56 per MWh for retail operating costs for 2016–17 using customer numbers and energy usage for the year to 31 March 2016 provided by ActewAGL Retail. This represents a 2.88 per cent increase over the 2015–16 cost allowance of \$14.15 per MWh. The reason for the above inflation rise in the per MWh allowance is due to the continued decrease in the average per customer energy usage, as shown in Figure 3.6.

**Figure 3.6** Average annual energy use per regulated tariff customer, 2007–08 to 2016–17



Source: ActewAGL Retail data.

## 3.9 Energy Efficiency Improvement Scheme costs

### 3.9.1 Introduction

The ACT Government’s Energy Efficiency Improvement Scheme (EEIS) places a mandatory obligation on all active retailers in the ACT to promote energy efficiency measures in households and small businesses. The EEIS scheme, which was initially legislated to finish on 31 December 2015, has been extended for the period 2016 to 2020.

Key elements of the extended scheme that directly impact retailer costs, such as the energy savings targets, have been determined by the ACT Government following passage of the *Energy Efficiency (Cost of Living) Improvement Amendment Bill 2015*. The emissions factor for electricity, which was estimated at 0.89 on average for the period 2013 to 2015, has been reduced to 0.40 for the 2016 to 2020 period. In addition, the energy saving target in the extended scheme has been reduced from 14 per cent to 8.6 per cent for each year of the 2016 to 2020 period.

The price direction requires the EEIS cost allowance to be calculated using the Commission’s methodology and cost estimates provided by ActewAGL Retail, subject to a forward-looking prudence and efficiency assessment. The Commission’s methodology is designed to capture the actual costs incurred by ActewAGL Retail in

complying with the scheme.<sup>14</sup> In practice, since the Commission relies on forecast and estimated costs in order to determine cost allowance in advance of the actual cost being incurred, provision is made for an ex post cost adjustment.

### 3.9.2 ActewAGL Retail submission

ActewAGL Retail provided the Commission with information on its EEIS compliance costs in its May 2016 submission. Table 3.11 shows ActewAGL Retail’s forecast abatement costs for the EEIS for the second half of 2015–16 and 2016–17. ActewAGL Retail expects to spend about \$11.6 million in 2016–17 to abate about 80,000 t CO<sub>2</sub>-e at an average cost of \$144.88 per t CO<sub>2</sub>-e.<sup>15</sup>

**Table 3.11 ActewAGL Retail EEIS abatement costs and targets, 2016–17**

	Jan–Jun 2016	Jul–Dec 2016	Jan–Jun 2017
Compliance costs (\$ million, 2012–13)	5,305,147	5,934,971	5,676,113
Energy Savings Obligation (t CO <sub>2</sub> )	36,617	40,961	39,177
Planned abatement (t CO <sub>2</sub> )	36,617	40,961	39,177
<b>Abatement cost (\$ per t CO<sub>2</sub>-e)</b>	<b>144.88</b>	<b>144.88</b>	<b>144.88</b>

Source: ActewAGL Retail, 2016: 6.

In its submission ActewAGL Retail noted that, due to a number of reasons including expected operational efficiencies gained from achieving scale in some activities, it expects its estimated costs from January 2016 to be slightly lower than the Commission’s forecast applied in the 2015–16 price adjustment exercise. As a result, ActewAGL Retail proposed a negative adjustment for the difference between the Commission’s original forecast and the revised expected cost for the period January to June 2016.

### 3.9.3 Commission’s consideration

#### Forecast costs for 2016–17

The Commission has estimated ActewAGL Retail’s forecast abatement cost for the 2016–17 regulatory year, as shown in Table 3.12. The forecast cost of \$4.93 per MWh accounts for the recent changes in the emissions factor and the energy savings targets, and an adjustment of minus \$0.06 for 2015–16.

<sup>14</sup> The methodology is set out in the Commission’s 2014 draft report. See ICRC, 2014a: 78-85.

<sup>15</sup> Note that the \$41 per t CO<sub>2</sub>-e approved in previous years by the Commission is equivalent to \$148.50 per t CO<sub>2</sub>-e under the extended scheme’s new emissions factor and energy savings target.

**Table 3.12 Forecast EEIS cost, 2016–17, dollars per MWh**

Year	Cost allowance per tonne	Emissions factor	Energy savings target	Cost per MWh	Half-yearly load weights
Jul–Dec 2016	144.88	0.40	8.6%	\$4.98	52.8%
Jan–Jun 2017	144.88	0.40	8.6%	\$4.98	47.2%
Adjustment 2015–16				-\$0.06	
<b>2016–17 (\$ per MWh)</b>				<b>\$4.93</b>	

Source: Commission's calculations using ActewAGL Retail data.

### Prudence and efficiency

The Commission assessed the prudence and efficiency of ActewAGL Retail's EEIS costs in the 2014 price determination process. The Commission found ActewAGL Retail's forecast costs for 2014–15 of about \$41 per t CO<sub>2</sub>-e abated to be prudent and efficient.<sup>16</sup>

The Commission determined that the decision to spend money was necessary as ActewAGL Retail is legally obligated to implement the scheme, and was therefore prudent. As for efficiency, the Commission concluded that it was satisfied that ActewAGL Retail had undertaken a robust expenditure decision-making process to meet its EEIS compliance requirements and that its proposed costs were below the cost ceiling based on the scheme's penalty rate for non-compliance.

ActewAGL Retail continues to use the same contractor to implement the same abatement activities, and the forecast costs for 2016–17 are less than the amount determined by the Commission as prudent and efficient in 2014. As such, the Commission's conclusion is that ActewAGL Retail's proposal for 2016–17 is prudent and efficient.

### Allowance

In conclusion, the Commission's final decision is to determine an allowance of \$4.93 per MWh for EEIS costs in 2016–17.

## 3.10 Network cost allowance

### 3.10.1 Network costs

Consistent with the price direction, the Commission passes through the network charges determined by the AER and applied by ActewAGL Retail to the standard customer contract retail load.

<sup>16</sup> ICRC, 2014c: 23-27.

As discussed in section 2.4.3, the AER published ActewAGL Distribution’s enforceable undertaking containing the schedule of network charges for 2016–17 on 17 May 2016. The enforceable undertaking sets out that:

- a. the network use of system tariffs and the tariffs for those standard control services which do not relate to network use of system to be applied in the 2016-17 regulatory year are the relevant tariffs set out in the 2015-16 Pricing Proposal, adjusted for changes in the consumer price index; and
- b. the tariffs for alternative control services are to be applied in the 2016-17 regulatory year in accordance with the Final Determination.<sup>17</sup>

ActewAGL Retail subsequently provided the Commission with its 2016–17 network cost allowance proposal for the regulated ACT customer load on 18 May 2016.

Based on ActewAGL Distribution's approved network charges, ActewAGL Retail proposed a network cost allowance of \$89.28 per MWh to apply to regulated retail tariffs in 2016–17. The Commission examined this proposal and determined an amount of \$89.28 per MWh as the network cost allowance for 2016-17.

The 2016–17 allowance is 0.22 per cent higher than the 2015–16 allowance of \$89.08 per MWh, less than the 1.5 per cent CPI adjustment set out in the enforceable undertaking. This is due to a smaller decline in customers on the regulated retail tariff in 2016–17 than the fall in energy consumed, compared to the previous year.

### **3.10.2 Identifying feed-in tariff compliance costs**

In its final report for the 2014 price determination, the Commission indicated that it would identify and report on ActewAGL Distribution’s feed-in-tariff cost allowance for 2015–16 and 2016–17 in the annual recalibration exercise.<sup>18</sup> This was done for 2015–16, using information provided in ActewAGL Distribution’s 2015–16 pricing proposal to the AER.

The Commission is, however, unable to report on 2016–17 feed-in-tariff costs as the AER network pricing arrangements for 2016–17 did not require ActewAGL Distribution to submit its usual annual pricing proposal, which separately identifies jurisdictional scheme costs.

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<sup>17</sup> ActewAGL Distribution, 2016: 2.

<sup>18</sup> Feed-in-tariff costs are not directly incurred by ActewAGL Retail but are passed on to its ACT customers through the network cost allowance.

### 3.11 Retail margin

The price direction requires the retail margin to be calculated at 6.04 per cent applied to all cost components, excluding the retail margin allowance. This generates an allowance of \$10.76 per MWh for 2016–17.



## 4 Final decision on 2016–17 cost components

This chapter presents the Commission’s final decision on the efficient costs, their constituent components and the allowed percentage change that will apply in the weighted average price cap from 1 July 2016.

Table 4.1 sets out the Commission’s final decision on the cost components used to determine the maximum change in the regulated retail electricity price for 2016–17.

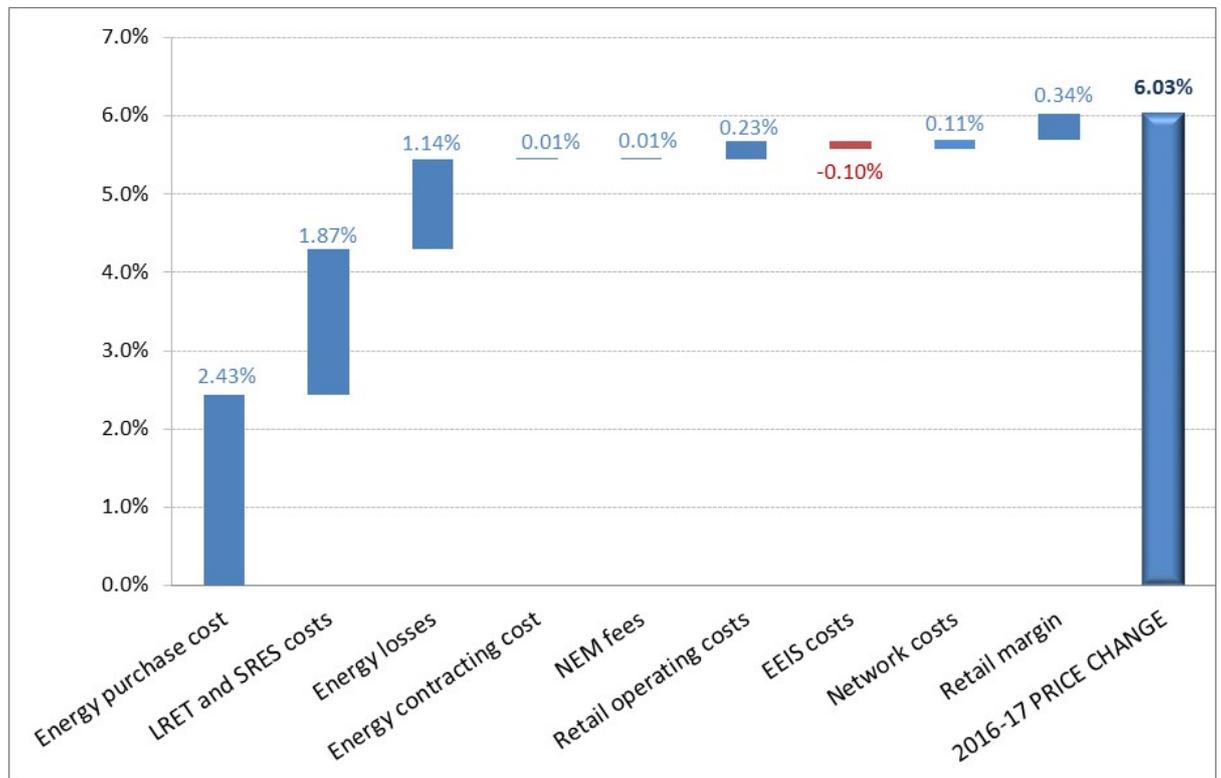
**Table 4.1 Final decision on cost elements, 2016–17**

	2015–16 (\$/MWh)	2016–17 (\$/MWh)	% change
Energy purchase cost	46.27	50.60	9.35
LRET and SRES costs	9.82	13.15	33.94
Energy losses	1.76	3.79	114.64
Energy contracting cost	0.86	0.87	1.51
NEM fees	0.86	0.87	1.51
<b>Total energy purchase cost</b>	<b>59.58</b>	<b>69.28</b>	<b>16.29</b>
Retail operating costs	14.15	14.56	2.88
Energy Efficiency Improvement Scheme costs	5.11	4.93	-3.58
<b>Total retail costs</b>	<b>19.26</b>	<b>19.49</b>	<b>1.17</b>
Network costs	89.08	89.28	0.22
<b>Total energy + retail + network costs</b>	<b>167.92</b>	<b>178.05</b>	<b>6.03</b>
Retail margin	10.15	10.76	6.03
<b>Total costs</b>	<b>178.07</b>	<b>188.81</b>	<b>6.03</b>

The maximum average percentage change in ActewAGL Retail’s basket of regulated tariffs in 2016–17 is an increase of 6.03 per cent. This change is equivalent to a real (adjusted for inflation) increase in the regulated retail price of about 4.46 per cent.

Figure 4.1 shows the contribution of the various cost components to the total change in prices from 2015–16 to 2016–17. The three primary drivers of the price increase are, in order of magnitude, the energy purchase cost, LRET and SRES costs and the energy losses component.

**Figure 4.1** Components of the change in regulated retail electricity prices 2015–16 to 2016–17<sup>19</sup>



Source: Commission's calculations.

Subsequent to ActewAGL Retail providing the Commission with its proposed schedule of standing offer prices for 2016–17, including the associated weighted average price cap calculations, the Commission will, subject to an assessment that the proposals are consistent with the price direction, approve the proposed prices.

<sup>19</sup> This chart shows the cumulative effect of sequentially introducing the positive or negative contribution of each of the components of the cost-index model to the total change in the index value of 6.03 per cent from 2015–16 to 2016–17.

## 5 Impacts on customers

Table 5.1 presents estimated electricity bills for a range of typical residential customers in 2016-17 resulting from the electricity price increase of 6.03 per cent.<sup>20</sup> A small customer may be representative of a single person living in an apartment, an average customer of a small family in a townhouse, and a large customer of a large family in a detached house. The annual impact on these typical bills due to the price increase ranges from \$58 for a small customer to \$142 for a large customer.

**Table 5.1 Estimated annual bill changes for residential customers, 2016–17**

Customer consumption type	Annual usage (kWh)	Estimated annual bill 2015–16 (\$)	Estimated annual bill 2016–17 (\$)	Change (\$)
Large	12,000	2,349	2,491	142
Average	8,000	1,658	1,758	100
Small	4,000	968	1,026	58

Source: Commission's calculations.

Table 5.2 presents estimates of annual electricity bills for a range of typical non-residential customers resulting from the electricity price increase of 6.03 per cent. The impact on a typical bill ranges from \$158 for a small non-residential customer to \$558 for a large non-residential customer.

**Table 5.2 Estimated annual bill changes for non-residential customers, 2016–17**

Customer consumption type	Annual usage (kWh)	Estimated annual bill 2015–16 (\$)	Estimated annual bill 2016–17 (\$)	Change (\$)
Large	40,000	9,241	9,799	558
Average	25,000	5,928	6,285	358
Small	10,000	2,615	2,772	158

Source: Commission's calculations.

<sup>20</sup> The Commission has no information on the reduction in electricity consumption that the EEIS has brought about and therefore cannot estimate the impact of the scheme on the bills of customers in 2016–17 who will benefit from this scheme.



# Appendix 1 Terms of reference

Australian Capital Territory

## Independent Competition and Regulatory Commission (Price Direction for the Supply of Electricity to Certain Small Customers) Terms of Reference Determination 2014

Disallowable instrument DI2014–10

made under the

*Independent Competition and Regulatory Commission Act 1997* ('the Act'), Section 15 (Nature of industry references) and Section 16 (Terms of industry references).

### 1. Interpretation

In this instrument:

"*National Energy Retail Law (ACT)*" has the same meaning as in the *National Energy Retail Law (ACT) Act 2012*.

"*small customer*" has the same meaning as in the *National Energy Retail Law (ACT)*.

"*standing offer prices*" has the same meaning as in the *National Energy Retail Law (ACT)*.

"*ActewAGL Retail*" means the partnership of ACTEW Retail Ltd (ACN 074 371 20) and AGL ACT Retail Investments Pty Ltd (ACN 093 631 586).

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### 2. Reference for investigation under Section 15

Pursuant to section 15(1) of the Act, I refer to the Independent Competition and Regulatory Commission (the 'Commission') the provision of a price direction for the standing offer prices for the supply of electricity to those persons who are a *small customer*, and who consume less than 100MWh of electricity over any consumption period of 12 consecutive months.

The price direction will be for the period of 1 July 2014 to 30 June 2017 with provision for annual reviews by 30 June 2015 and 30 June 2016. Pursuant to section 15(4) of the

Act, the price direction determined by the Commission under these terms of reference is to apply only to the authorised electricity retailer **ActewAGL Retail**.

### 3. **Terms of reference for investigation under section 16**

Pursuant to section 16(1) of the Act, I require that the Commission consider the following matters in relation to the conduct of the investigation:

1. The Commission should consider the following matters:
  - a. The impact on direct electricity costs of changes in government policies and pass through of those costs to regulated prices including, but not restricted to:
    - i. the Commonwealth Government’s carbon pricing mechanism;
    - ii. Commonwealth and ACT retailer obligation energy efficiency schemes;
    - iii. the Commonwealth Government’s Large-scale Renewable Energy Target and Small-scale Renewable Energy Scheme; and
    - iv. any other schemes implemented to address climate change relevant to electricity pricing.
  - b. The efficient and prudent cost of managing risk in the cost of purchasing electricity.
2. The Commission must identify and report on the cost allowance of the ACT Feed-in Tariffs (small and large scale) for the year(s) or period for which its determination is being made.
3. The Commission must identify and report on the efficient costs of complying with the *Energy Efficiency (Cost of Living) Improvement Act 2012*.
4. The Commission must produce its final report in time reasonably sufficient to allow **ActewAGL Retail** to make any necessary changes to its billing system and to provide information on the new tariff to customers for implementation effective 1 July 2014.

Katy Gallagher MLA

Acting Treasurer

2 February 2014

## Abbreviations and acronyms

AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
Commission	Independent Competition and Regulatory Commission
CPI	Consumer price index
EEIS	Energy Efficiency Improvement Scheme
ICRC	Independent Competition and Regulatory Commission
ICRC Act	<i>Independent Competition and Regulatory Commission Act 1997 (ACT)</i>
kWh	kilowatt hour
LGC	Large-scale Generation Certificate
LRET	Large-scale Renewable Energy Target
MWh	megawatt hour
NEM	National Electricity Market
OTC	Over-the-counter
SRES	Small-scale Renewable Energy Scheme
STC	Small-scale Technology Certificate



## References

- ActewAGL Distribution (2016) '*National Electricity Law: Undertaking to the Australian Energy Regulator given for the purposes of section 59A of the National Electricity (ACT) Law by ActewAGL Distribution (ABN 76 670 568 688)*'. Canberra. 17 May 2016.
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