



independent competition and regulatory commission

Information paper  
**Water and Wastewater  
Annual Price Reset  
2006–07**

**Report 6 of 2006  
February 2006**

The Independent Competition and Regulatory Commission (the Commission) was established by the *Independent Competition and Regulatory Commission Act 1997* (ICRC Act) to determine prices for regulated industries, advise government about industry matters, advise on access to infrastructure and determine access disputes. The Commission also has responsibilities under the Act for determining competitive neutrality complaints and providing advice about other government-regulated activities.

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# Foreword

The Independent Competition and Regulatory Commission (the Commission) is responsible for the regulation of water and wastewater services provided by ACTEW Corporation (ACTEW) in the ACT. The Commission has this role because of the monopoly characteristics of the water and wastewater network.

The Commission undertook a review of ACTEW's water and wastewater services during 2003–04 and established a price path to apply to these services from 1 July 2004 to 30 June 2008. After the review, ACTEW completed a series of reports investigating possible new water sources for the ACT and, in an attempt to secure a reliable supply, is now completing several projects identified in those reports. The costs of the reports and subsequent projects were not accounted for in the most recent price review and, therefore, were not taken into account in the determination of the current price path.

ACTEW has provided the Commission with a submission requesting the pass-through of costs associated with these reports and projects. This information paper attempts to outline the main issues identified by the Commission in its consideration of whether to allow the pass-through.

The Commission welcomes submissions on this information paper and proposes the following timetable.

<b>Event</b>	<b>Date</b>
Close of submissions on information paper	17 March 2006
Commission decision on ACTEW pricing submission	1 April 2006

Paul Baxter

Senior Commissioner

February 2006



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# 1 Introduction

The Independent Competition and Regulatory Commission (the Commission) is responsible for determining the tariffs that ACTEW Corporation (ACTEW) applies for the provision of water and wastewater services in the ACT. In order to determine these charges, the Commission undertakes a comprehensive inquiry into ACTEW's water and wastewater business on a regular basis, typically every four or five years. These inquiries result in the determination of a price path to apply for the length of the review period. The most recent review determined a price path to apply for the four years from 1 July 2004 to 30 June 2008.

The price path determined by the Commission includes annual price resets to account for movements in the consumer price index (CPI) and the 'X' factor.<sup>1</sup> In addition to adjustments due to these factors, the price determination included a series of 'pass-through' trigger events. Under the pass-through arrangements, ACTEW can put a submission to the Commission to pass through costs associated with projects unforeseen at the time of the price determination. Such a mechanism was included to allow some flexibility in the price determination to accommodate unexpected events.

After the completion of the review, ACTEW undertook an investigation of the ACT water supply and released a series of reports on possible new water sources for the ACT. Based on the findings of the reports, ACTEW is in the process of completing several projects in an attempt to secure a reliable water supply. The costs of undertaking these reports and subsequent projects were not expected at the time of the most recent price review and, therefore, were not taken into account in the determination of the current price path.

ACTEW has approached the Commission with a proposal to pass through the cost of these projects in water tariffs during 2006–07 and 2007–08.<sup>2</sup> The submission from ACTEW is available on the Commission's website or by contacting the Commission.<sup>3</sup>

This information paper discusses the possible pass-through of these costs. However, the Commission does not intend to finalise the treatment of the pass-through claims in this paper. Rather, the Commission will determine the appropriate way to deal with the claims, based on the Commission's analysis of the issues and the submissions received.

Section 2 of this information paper provides a brief overview of the current arrangements in the ACT, including a summary of the 2004–05 and 2005–06 water and wastewater price resets.

Section 3 discusses the proposal by ACTEW to pass through costs via water prices in 2006–07 and 2007–08.

Section 4 provides an analysis of the price impacts of the various pass-through proposals.

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<sup>1</sup> See the appendix for an explanation of the 'X' factor.

<sup>2</sup> ACTEW, *Proposal for the pass-through of water supply augmentation costs: Submission to the Independent Competition and Regulatory Commission*, 13 January 2006.

<sup>3</sup> [www.icrc.act.gov.au](http://www.icrc.act.gov.au) or (02) 6205 0158

The appendix contains a more detailed review of the Commission's approach to regulation, including a description of the price direction process, an analysis of customer usage, and an analysis of water tariffs and customer bills.

## 2 Overview of pricing arrangements

The Commission released its price direction for water and wastewater services in March 2004. Since the completion of that review, the Commission has performed two price resets in accordance with the price direction. The appendix to this paper contains details of the Commission's price-setting process as applied to water and wastewater in the 2004 price review.

In simple terms, the prices for ACTEW's water and wastewater services are set so that only prudent and efficient costs are recovered. This includes a return on the capital held by ACTEW and depreciation of that capital, as well as prudent and efficient operating costs. The price direction sets a price path that will last for the duration of the regulatory period prescribed in the direction. To implement the price direction, there are annual price resets, which allow for the inclusion of unforeseen events that impose additional costs on the network. These costs are then recovered through the cost pass-through provisions of the price direction.<sup>4</sup>

During the 2004–05 price reset, ACTEW and the Commission identified the water restrictions then current as a matter of concern. At that time, it was determined that it was not reasonable to either determine the likelihood of future water restrictions or forecast the effect of water restrictions. The 2004–05 price reset included no pass-through events.

The 2005–06 price reset allowed for a retrospective review of the effects of water restrictions on water revenue. The Commission committed only to allowing a pass-through in the following year's prices of those costs actually incurred by ACTEW by 31 December 2004. Effectively, the Commission determined that it would make no provision for forecast costs but instead only pass through actual costs incurred during the previous year. The Commission concluded that a pass-through of almost \$3.9 million was warranted for costs incurred through to 31 December 2004, and these additional costs were passed through in 2005–06 prices. The bulk of this pass-through was revenue forgone because of Stage 3 price restrictions, with about \$400,000 coming from additional drought taskforce costs.<sup>5</sup> The effects of this pass-through on water prices are detailed in the appendix.

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<sup>4</sup> See the appendix for an explanation of the pass-through provisions in the price direction.

<sup>5</sup> The Commission determined in 2004 that a pass-through event would occur only if Stage 3 water restrictions were reached. The Commission was satisfied that Stage 2 or lower water restrictions were incorporated in forecast water demand, but that projections of the likely effect on demand of Stage 3 restrictions could not be made confidently enough to ensure that consumers did not ultimately pay more for water than they should. Thus, the impact on demand of Stage 3 restrictions was to be treated as a trigger event for a recovery of revenue. This course was taken in preference to the inclusion of an arbitrary projected reduction in demand in the projected price path, which would have had the effect of increasing prices throughout the four-year price path period.

## 3 Annual price reset, 2006–07

ACTEW has submitted to the Commission a proposal to pass through costs associated with three projects in the 2006–07 annual price reset. These three projects are:

- the Future Water Options project
- the Cotter Catchment to Googong Dam water transfer scheme
- the fast tracking of the Cotter Catchment remediation works.

### 3.1 Future Water Options

#### 3.1.1 Background

The ACT Government released its ‘Think water, act water’ (TAW) water resource strategy in April 2004.<sup>6</sup> The TAW strategy included a request for ACTEW, in conjunction with the Chief Minister’s Department, to provide information on a range of scenarios to provide a reliable long-term source of water for the ACT and the region.<sup>7</sup>

In response to this requirement, ACTEW launched its Future Water Options (FWO) project on 30 April 2004. This project initially focused on investigating the three main water supply options identified in the TAW strategy. These were:

- building a new dam near Mount Tennant
- enlarging the existing Cotter Dam
- transferring water from Tantangara Dam in New South Wales into the ACT.

ACTEW has submitted a proposal to the Commission for the recovery of \$3,178,00 in costs associated with conducting the FWO project, incurred by 31 December 2005. The proposal suggests that these costs be treated as capital costs.<sup>8</sup>

#### 3.1.2 Options

The Commission has a range of options available to it for the treatment of ACTEW’s costs in undertaking the FWO project.

##### *Disallow the recovery of costs*

The Commission has previously stated that it would allow the recovery of ACTEW’s efficient costs for actions undertaken at the request of government. Therefore, the Commission could disallow the recovery, via water tariffs, of ACTEW’s FWO project costs if the Commission found no evidence that the government had requested ACTEW to undertake the project. However, the Commission notes the request in TAW that ACTEW, in conjunction with the Chief Minister’s

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<sup>6</sup> [www.thinkwater.act.gov.au](http://www.thinkwater.act.gov.au)

<sup>7</sup> TAW, *Volume 1: Strategy for sustainable water resource management in the ACT*, April 2004, p. 53.

<sup>8</sup> A discussion of capital costs compared to operating costs is contained in the appendix.

Department, provide information on a range of scenarios related to providing a reliable long-term water source.

### ***Allow the recovery of costs***

If the Commission were to allow the recovery of costs because the ACT Government had requested the work, the Commission would first assess the costs submitted by ACTEW to ensure their efficiency. In addition, the Commission would investigate the contribution that the Chief Minister's Department made to the project and would not allow ACTEW to recover the costs of that contribution.

Efficient costs, once established, could be treated either as capital costs or operating costs. ACTEW has proposed that the costs be passed through as capital costs, as part of the capital expenditure for the Cotter Catchment to Googong Dam bulk water transfer project.

### ***Allow the recovery of costs as capital costs***

Because capital costs are spread over a longer period than operating costs, the Commission could treat the FWO project costs as capital costs in order to reduce the pricing impact in the upcoming year. The FWO costs could also be treated as capital costs if it could be demonstrated that they relate directly to the construction of a capital project (the Cotter Catchment to Googong Dam water transfer).

### ***Allow the recovery of costs as operating costs***

The Commission could treat FWO project costs as operating costs, based on the specific nature of the costs. Had the Commission been aware of the FWO project at the time of the most recent price review, it is likely that these costs would have been included as operating costs, given that they could not be linked directly to any specific capital project when first proposed. In addition, the Commission notes that costs of a similar nature associated with the drought taskforce were included as operating costs as part of the 2005–06 annual water price reset.

Section 4 includes a discussion of the impact on pricing of these options.

## **3.2 Cotter Googong Bulk Transfer scheme**

### **3.2.1 Background**

The FWO project identified options for a secure water supply as alternatives to those originally listed in the TAWW strategy. The criterion for supply security adopted by ACTEW involved possible water restrictions for a maximum of 5% of the time. The FWO project's final recommendations to the ACT Government were to:

- transfer water from the Cotter Catchment to Googong Dam via pre-existing water pipes
- pump water from the Murrumbidgee River at Angle Crossing to Googong Dam via Burra Creek (later revised to recommend pumping water from the Cotter Pump Station)
- undertake additional technical analysis for each of the dam options.

Given the severe drought at the time, the ACTEW Board took the decision to begin work on the transfer of water from the Cotter Catchment to Googong Dam in mid-2005.

The Cotter–Googong Bulk Transfer (CGBT) scheme transfers excess water from the Cotter Catchment, to the west of Canberra, to Googong Dam in the east. In a typical year, because of insufficient storage capacity, water is spilt over the Cotter Dam. The intent of the CGBT is to transfer this water to Googong Dam, where it can be stored until required.

ACTEW has proposed recovering the costs associated with the CGBT, as identified in Table 1.

**Table 1 ACTEW Cotter–Googong Bulk Transfer scheme costs (\$000)**

	To Dec 05	Jan 06 – June 06	2006–07	2007–08
Capital cost	11,100	8,250	5,650	0
Operating cost	200	2,000	4,800	5,000

Source: ACTEW, *Proposal for the pass-through of water supply augmentation costs: Submission to the Independent Competition and Regulatory Commission*, 13 January 2006, p. 7.

### 3.2.2 Options

The Commission has a range of options available for the treatment of ACTEW’s costs for the CGBT scheme.

#### *Disallow the recovery of costs*

The Commission would disallow the recovery of these costs if it were unable to demonstrate the prudence of the CGBT project.

However, the Commission is conscious of a report commissioned by the ACT Office of Sustainability. The report reviewed the FWO implementation plan and recommended that the proposed CGBT scheme be implemented.<sup>9</sup>

#### *Allow the recovery of costs*

The Commission would allow the recovery of efficient costs if ACTEW were able to demonstrate the prudence of the CGBT project.

To assess the prudence (and efficiency) of projects, the Commission typically engages engineering consultants as part of the price review.<sup>10</sup> Given the time constraints in the annual price reset process, the Commission may be unable to verify the prudence (and efficiency) of the CGBT for the 2006–07 price reset. A possible approach would be for the Commission to allow a pass-through of the costs submitted for the next two years, and subsequently include the prudence and efficiency questions among the items to be considered by the Commission’s engineering consultants as part of the next price review in 2008. If this approach were adopted, an adjustment in the next price direction could be made for any discrepancies between those costs submitted by ACTEW and those found to be prudent and efficient as part of the review.

<sup>9</sup> Hunter Water Australia, *Review of Future Water Options Implementation Plan: Final Report for Office of Sustainability ACT Government*, August 2005, p. ii.

<sup>10</sup> The Commission’s approach to regulation involves first assessing projects for prudence (that is, determining whether the project should be undertaken). Only projects found to be prudent are allowed a cost recovery. Once the prudence of a project has been established, the efficiency of the costs is considered (that is, were the costs the most efficient for the success of the project?). Only efficient costs are allowed to be recovered.

### 3.3 Cotter Catchment remediation

#### 3.3.1 Background

As part of the CGBT, water is pumped from the Cotter Catchment to Googong Dam. However, the Cotter Catchment was severely damaged during the 2003 bushfires. This damage has affected the quality of water in Cotter Dam, increased turbidity levels and subsequently reduced the volume of water available to be transferred to Googong Dam—thus affecting the ability to maintain a secure supply.

The ACT Government committed to a remediation program to restore the Cotter Catchment. These works include revegetation of affected areas, road drainage and culvert works, and other rehabilitation activities. The program was to take place over approximately ten years. However, ACTEW has identified a need to fast-track the remediation works in the lower Cotter Catchment. This is aimed at improving water quality in the Cotter Dam to allow more water to be transferred to the Googong Dam in coming years.

ACTEW has proposed that the costs it has incurred for remediation works be passed through via water tariffs. Table 2 outlines the costs submitted by ACTEW.

**Table 2 ACTEW Cotter Catchment remediation costs (\$000)**

	To Dec 05	Jan 06 – June 06	2006–07	2007–08
Capital cost	1,245	3,515	2,100	200
Operating cost	335	1,905	1,700	0

Source: ACTEW, *Proposal for the pass-through of water supply augmentation costs: Submission to the Independent Competition and Regulatory Commission*, 13 January 2006, p. 7.

#### 3.3.2 Options

The Commission has a range of options available to it for the treatment of ACTEW's costs incurred in fast-tracking the remediation works in the Cotter Catchment.

##### ***Disallow the recovery of costs***

The recovery of costs could be disallowed if ACTEW were unable to demonstrate the need to fast-track the remediation works.

##### ***Disallow the recovery of costs via water tariffs***

The recovery of these costs via water tariffs could be disallowed if ACTEW were unable to demonstrate that it was the most appropriate organisation to incur the costs. The Commission notes that the ACT Government initiated the remediation works, and that it may therefore be appropriate that the government also pay any costs resulting from a requirement to fast-track the works. Potentially, such costs could be recovered via the Water Abstraction Charge (WAC).

The WAC is a charge levied by the government on each kilolitre of abstracted water, and is passed through by ACTEW in water bills. The Commission has no influence on the level of the WAC, although the Commission has twice given advice to the government on the determination of the

charge.<sup>11</sup> In the Commission's most recent report to government on the WAC, it recommended that:

The WAC should seek to recover reasonable costs associated with the management and operation of the ACT's water catchment and overall water administration and regulation, plus appropriate environmental costs and the scarcity value of water.<sup>12</sup>

***Allow the recovery of costs via water tariffs***

It may be appropriate for ACTEW to recover the incurred costs if evidence demonstrates the need to fast-track the works and if it can be shown that ACTEW is the appropriate body to undertake the works.

It should be noted that, if it is decided to allow a pass-through of costs, only efficient costs would be passed through. The Commission may consider it appropriate to allow the pass-through of costs submitted by ACTEW during 2006–07 and 2007–08. However, the Commission may undertake a more comprehensive review of these costs as part of the investigation of operating and capital costs in the upcoming review. If it is found that efficient costs are different from those initially adopted by the Commission, an adjustment may be considered.

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<sup>11</sup> The Commission's most recent advice on the WAC can be found on the Commission's website (Report 13 of 2003, *Final Report—Water Abstraction Charge*, October 2003). The WAC was set at 10c/kL until 31 December 2003, 20c/kL from 1 January 2004 until 30 June 2005, and 25c/kL thereafter.

<sup>12</sup> ICRC, *Final Report—Water Abstraction Charge*, October 2003, Recommendation 3, p. 41.

## 4 Possible price impacts

The impact on prices of the proposed pass-through projects depends on the amount allowed and the mode in which the Commission determines to pass through the costs. However, ACTEW has provided an indicative impact on prices if the Commission allows the pass-through in the manner suggested by ACTEW.

### 4.1 ACTEW's indicative price impacts

Under ACTEW's suggested approach:

- costs associated with the FWO project are passed through as capital costs
- costs incurred in the CGBT are treated as capital or operating costs (depending on the nature of the item)
- costs related to the Cotter Catchment remediation works are treated as capital costs with an asset life of 11 years or as operating costs (depending on the item).

ACTEW states that treating costs in this manner is likely to result in an increase of 3c/kL in 2006–07, or approximately \$8 for a customer using 280 kL per year. The impact in 2007–08 is likely to be an increase of 18c/kL, or approximately \$50 for that customer.<sup>13</sup>

### 4.2 Impact of Stage 3 water restrictions

It should be noted that the impacts calculated by ACTEW do not take into account the pass-through of forgone revenue associated with Stage 3 water restrictions or costs related to the drought taskforce incurred during the 2005 calendar year. In setting prices for 2005–06, the Commission allowed a pass-through of costs incurred to 31 December 2004, amounting to approximately \$3.9 million. The Commission is yet to be formally notified of the final pass-through amount relating to Stage 3 water restrictions and drought taskforce costs incurred by ACTEW in 2005.

The effect of the pass-through of these costs depends on whether they are greater or less than the \$3.9 million already passed through. If the costs for 2005 exceed this amount, there will be an additional increase in the price of water.

Based on preliminary analysis, the Commission understands that the amount of the pass-through for Stage 3 water restrictions and the drought taskforce may be in the order of \$8 million, which is twice the amount of the previous year. A pass-through of this amount would have a significant effect on the price of water, similar to the increase experienced during 2005–06.

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<sup>13</sup> ACTEW, *Proposal for the pass-through of water supply augmentation costs: Submission to the Independent Competition and Regulatory Commission*, 13 January 2006, pp. 7, 8.

### 4.3 Deferred capital expenditure

A further issue that may affect 2006–07 water tariffs is the possible deferral of capital expenditure included in the current price direction. Deferring projects would mitigate the impact of the current pass-through proposals if the Commission were to subtract the deferred capital projects from the capital costs claimed as part of the pass-through proposal, as the Commission has already granted a return on ACTEW's expected capital expenditure in the current price path. If there were a one-for-one replacement of deferred capital projects with works on the CGBT scheme, there would be no impact on prices due to the capital expenditure on the CGBT. However, if the costs of works carried out on the CGBT scheme were in excess of those deferred, the regulated asset base would increase, and prices would subsequently rise.

In conclusion, many competing pressures affect water prices. These include the current pass-through claims, the way those claims are dealt with (that is, as operating or capital costs), previous pass-through events, the deferral of capital expenditure, and the price path adjustment.

# Appendix

This appendix presents a detailed overview of the way in which prices are determined, a statistical overview of household and commercial water consumption, a discussion of water tariffs, and analyses of typical water and wastewater bills.

## Price determinations

Water prices (or, more accurately, water tariffs) are basically determined in a two-step process. The first step is the Commission's price direction, which sets the rate at which average revenue per customer adjusts over the length of the regulatory period. The second step is the yearly price reset, which translates the average revenue per customer from the price direction into water tariffs for the year. It is at this point that consideration of a pass-through of unforeseen costs can occur. The price direction contains the conditions under which a claim for a pass-through can be made and the materiality test that the claim must satisfy.<sup>14</sup>

## Price direction

The Commission released its price direction in March 2004.<sup>15</sup> The price path review process included the release of an issues paper in July 2003, followed by the release of a draft decision in December 2003. In addition, the Commission held a public hearing in February 2004. As part of the review, the Commission engaged consultants to undertake an exhaustive review of all aspects of the water and wastewater businesses.

The first step of the price direction is to determine the efficient capital and operating costs of providing the regulated services over the life of the regulatory period. Whether costs are treated as capital costs or operating costs has an impact on prices.

Typically, costs associated with tangible, long-lived assets, including planning and construction costs of infrastructure works, are considered to be capital costs. These capital costs are included in the regulated asset base, and a return equal to the weighted average cost of capital is granted.<sup>16</sup> An allowance is also granted for depreciation. Generally, operating costs are unrelated to capital projects and can include recurrent operating costs, such as maintenance works and wages, and other costs not related to specific capital projects. Capital costs have a smaller immediate impact on prices because they are recovered over a longer period than operating costs, which are recovered as they are incurred.

Another aspect of the review of efficient costs was an allocation of those costs across the two regulated parts of the business—water and wastewater.

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<sup>14</sup> For a pass-through event to occur, its value must be in excess of the materiality threshold. This is to ensure that only major events not foreseen as part of the price review are included in prices.

<sup>15</sup> ICRC, *Final Report and Price Direction—Investigation into Price for Water and Wastewater Services in the ACT*, Report 8 of 2004, March 2004.

<sup>16</sup> The regulated asset base represents the value of assets upon which a return is granted. The weighted average cost of capital represents the rate of return received on the regulated asset base.

The efficient costs, once established, determine the revenue needed by the business to recover them. The required revenue is the sum of operating costs, depreciation and the return on capital. The Commission's approach to regulation is to adjust the average revenue each year over the regulatory period by the CPI plus an 'X' factor. The X factor smooths out cost variations over the regulatory period and ensures that, in the absence of unforeseen events, consumers do not face price shocks or fluctuating prices. The Commission sets the X factor so that the present discounted value of future revenue equals the present discounted value of future costs.

In the 2004 price direction, the Commission determined that the X factor would be 2.5% for water and 1% for wastewater. This implied that the average revenue per customer for the water portion of the business would rise by 2.5% above the CPI each year for the four years of the price direction. The X factor was positive mainly because of the additional capital expenditure planned for the construction of the Stromlo Water Treatment Plant, which was completed by the end of 2004. There were also additional costs associated with bushfire and drought recovery.

### **Price resets**

Every year by 1 March, ACTEW must provide the Commission with revised water and wastewater tariffs for the regulatory year to begin on 1 July. Prices are set to recover total allowable revenue, which is the average revenue allowed (as given by the price direction) multiplied by the forecast number of customers. For water, this is where forecast demand enters into the price determination. As part of the 2004–05 price reset, the Commission decided against attempting to model the likelihood of future water restrictions or attempting to forecast the effect on demand of Stage 3 water restrictions. This left open the option for ACTEW to attempt to recover forgone revenue due to Stage 3 water restrictions as a pass-through event.

### **Pass-through conditions**

In the March 2004 price direction, the Commission determined a price path to apply to water and wastewater services for the four years from 1 July 2004 to 30 June 2008. Included in this direction were a series of pass-through events, allowing some flexibility in the price path to account for unexpected events, the impact of which could not be determined at the time of the review. Consequently, the Commission stated that ACTEW, when submitting proposed tariffs as part of the annual price reset process, may:

... seek to incorporate in proposed tariffs the effects of pass-through events. A pass-through event is an event that has occurred or is reasonably anticipated by ACTEW to occur that satisfies the materiality test in clause 6.7 and is either:

- a change in taxes event
- an act of terrorism
- major natural disaster
- a subvention payment event

- a service standard event

or

- an augmentation event.<sup>17</sup>

The Commission stated that:

An augmentation event occurs where ACTEW is required to fund or contribute to the funding of a major augmentation to ACTEW's water supply that was not included in the costs reasonably foreseen by the commission and ACTEW and incorporated in this price direction.<sup>18</sup>

The Commission determined a materiality threshold for pass-through events, such that:

... the annualised cost incurred by ACTEW or forecast to be incurred as a result of the event occurring is at least \$1.5 million (in 2002–03 dollar terms) in any one year above the costs reasonably foreseen by the Commission and ACTEW and incorporated in this price direction.

The annualised cost in any one year is equal to the amount of additional operating expenditure incurred in that year plus 15 per cent of the additional capital expenditure incurred in that year.<sup>19</sup>

ACTEW has submitted to the Commission a proposal to pass through the costs associated with the CGBT, the Cotter remediation works and the costs of the FWO studies in water prices for 2006–07 and 2007–08. ACTEW claims that these works constitute an augmentation event.

## Customer usage

This section contains a brief discussion of the distribution of customer water use. Figure 1 shows the distribution of typical customer usage as the proportion of customers using water within various consumption intervals. This is the typical consumption profile that the Commission has approved for price resets.

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<sup>17</sup> ICRC, *Final Report and Price Direction—Investigation into Prices for Water and Wastewater Services in the ACT*, March 2004, Appendix 1, Section 6.1, p. 182.

<sup>18</sup> ICRC, *Final Report and Price Direction—Investigation into Prices for Water and Wastewater Services in the ACT*, March 2004, Appendix 1, Section 6.6, p. 185.

<sup>19</sup> *ibid.*

**Figure 1 Typical year consumption distribution**

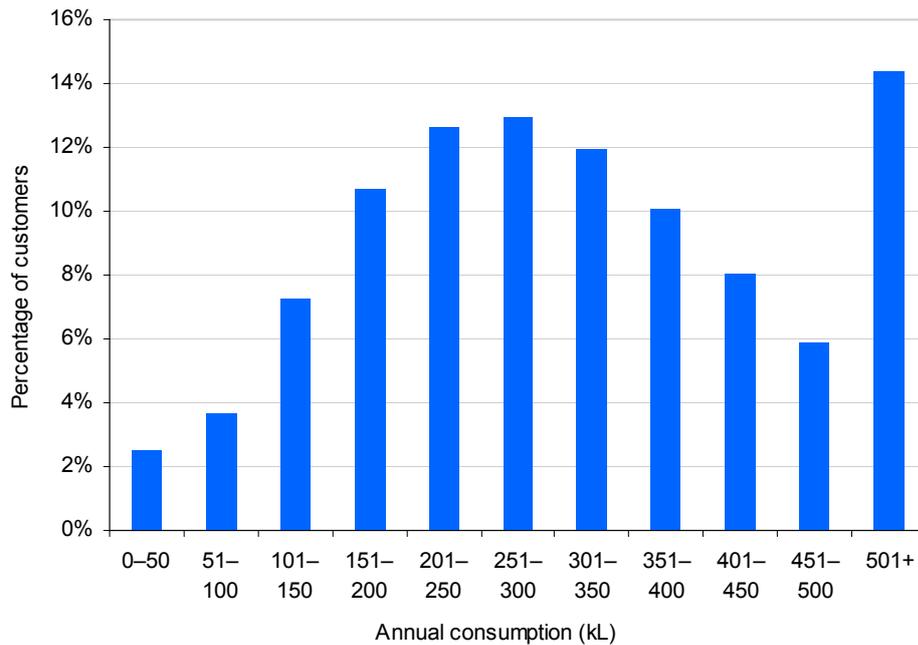


Figure 1 shows that 50% of households use less than 300 kilolitres per year, 80% of households use less than 450 kilolitres and just over 14% use more than 500 kilolitres.

The effect of Stage 3 water restrictions can be easily demonstrated by comparing the distribution of water consumption for a typical year with the distribution in a year with water restrictions.

Figure 2 compares the distribution of customer consumption for the restriction year of 2003–04 with the distribution in a typical year.

**Figure 2 Comparison of consumption distribution in restriction year and typical year**

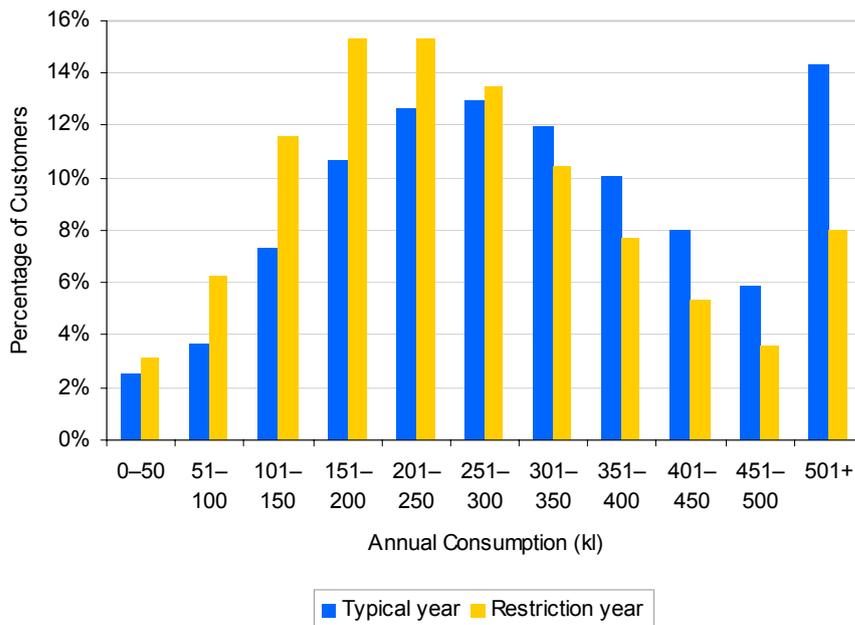
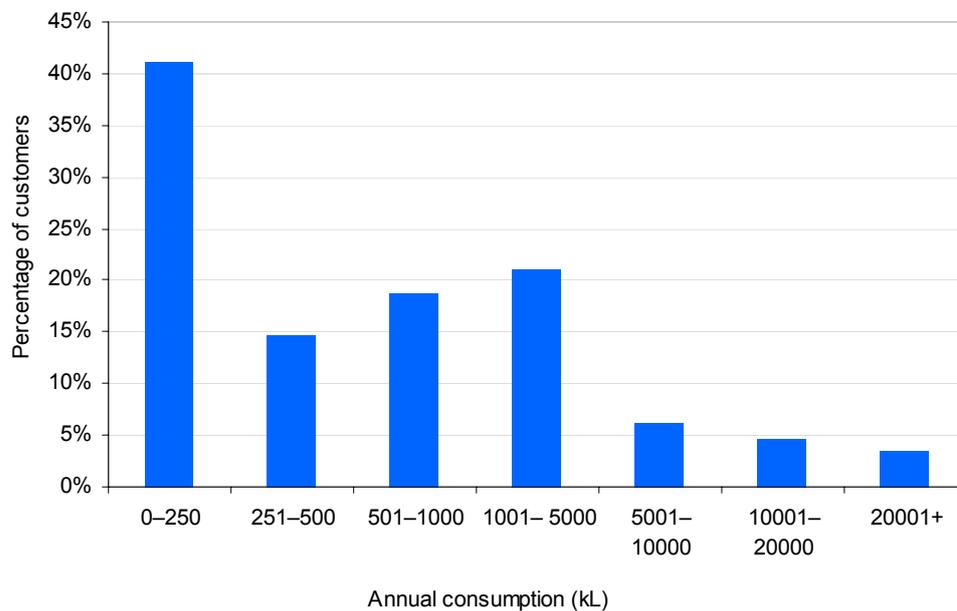


Figure 2 shows that a greater percentage of customers consume a smaller annual volume of water; that is, water restrictions (especially Stage 3 restrictions) result in reduced usage by households. It is also evident that a greater percentage of households consume less than 300 kilolitres per year in a water restriction year. The percentage of households using less than 300 kilolitres per year rose to 65% in the water restriction year as compared to the 50% observed in a typical year. The Commission’s own research found that Stage 3 restrictions result in an average reduction in household water consumption of 20%.

The distribution of commercial use is quite different from the observed distribution of use by households. A large percentage of commercial customers use less than 250 kilolitres per year. However, while very few households (less than 1%) use more than 1000 kilolitres per year, 35.4% of commercial customers do so. Figure 3 shows the distribution of use for commercial customers.

**Figure 3** Distribution of commercial customer usage



## Water tariffs

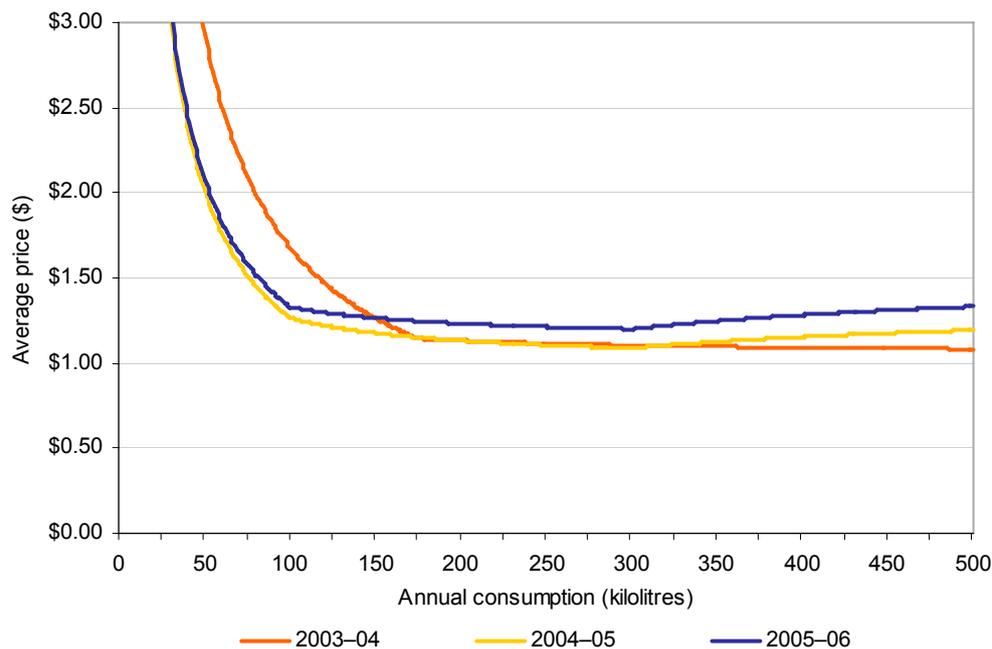
Table 3 shows the water tariffs for the past three years. The last year of the previous price direction was 2003–04, and the first two years of the current price direction are 2004–05 and 2005–06. There were several changes in the structure of prices from the previous price direction to the current price direction. These changes are readily apparent in Table 3.

**Table 3** Water tariffs, 2003–04 to 2005–06

2003–04 tiers	2003–04 prices	2004–05 prices	2005–06 prices	2004–06 tiers
0 to 175 kilolitres	\$0.43	\$0.515	\$0.58	0 to 100 kilolitres
Above 175 kilolitres	\$1.05	\$1.00	\$1.135	100 to 300 kilolitres
		\$1.35	\$1.53	Above 300 kilolitres
Fixed charges	\$125.00	\$75.00	\$75.00	Fixed charges

The first change the Commission required was that there be three tiers in the price of water, starting in 2004–05, compared to the two tiers in the 2003–04 tariffs. Second, the Commission reduced the fixed charges from \$125 to \$75 per year. The Commission sought a ‘U’ shape in the average price for water (calculated as the total water bill, not including the WAC and wastewater charges, divided by the number of kilolitres of water consumed). Prior to 2004, the average price of water was declining<sup>20</sup>; that is, as a customer consumed additional kilolitres of water, the average price fell. The Commission determined in the 2004 price direction that the average price should be U-shaped.<sup>21</sup> The implication is that, above a given level of consumption, the average price paid for each additional kilolitre of water would increase as consumption increases. This is demonstrated in Figure 4 for the three years 2003–04 through 2005–06.

**Figure 4 Average price of water, 2003–04 to 2005–06**



In Figure 4, the average price for water in 2004–05 begins to rise at 300 kilolitres per year. Additionally, the changes in the tariff structure brought in by the 2004 price direction resulted in the total bills of water customers with low levels of consumption being lower than in the previous year for the same quantity of water consumed. The crossover point, at which 2004–05 bills are higher, is at 316 kilolitres per year. Thus, all customers with consumption levels below this amount experienced a reduction in the water component of their bills without any change in behaviour.

The motivation for this change in the structure of water tariffs was to increase the incentives for large users of water to reduce their usage, without penalising small users.

As described above, the Commission’s approach to regulating the price of water results in expected revenue for ACTEW that recovers efficient costs. Therefore, if the bills of some customers are increased, other customers must see their bills reduced.

<sup>20</sup> Note that the presence of a fixed charge guarantees that the average price will fall as the consumer begins to consume levels of water above 0 kilolitres per year.

<sup>21</sup> An curve of the average price is U-shaped if it falls for a number of units, reaches a minimum, and then rises again.

## Water and wastewater bills

The bills that customers of ACTEW receive for water and wastewater services contain four components: the fixed water charge, the volumetric charge for water, the charge for wastewater services, and the WAC. Table 4 shows the annual bills for water and wastewater for the three years from 2003–04 to 2005–06 for an ACT water customer who consumes 300 kilolitres of water per year in each of the three years, assuming no change in usage patterns.

**Table 4 Annual water bills for a typical ACT customer (300 kL/year), 2003–04 to 2005–06**

Year	2003–04	2004–05	2005–06
Wastewater charge	\$354.20	\$375.32	\$389.00
Water fixed charge	\$125.00	\$75.00	\$75.00
Water volumetric charge	\$206.50	\$251.50	\$285.00
Water Abstraction Charge <sup>22</sup>	\$45.00	\$60.00	\$75.00
<b>Total</b>	<b>\$730.70</b>	<b>\$761.82</b>	<b>\$824.00</b>

The increase in the annual bill from 2003–04 to 2004–05 was driven by increases in the wastewater charge and the WAC. Total charges for water excluding the WAC (the sum of the fixed and volumetric charges) fell for this typical customer. In 2003–04, the sum of fixed and volumetric charges for water was \$331.50; in 2004–05, this fell by \$5 to \$326.50. While the total charges for water (fixed and volumetric) remained roughly unchanged, there was a change in the relative size of these two components as part of the Commission’s approach to water tariffs in the 2004 price determination. The increase from 2004–05 to 2005–06 includes an increase in the wastewater charge and the WAC, as in the previous comparison, but also contains an increase in the water volumetric component. This is because the Commission’s only avenue for pass-through events is an increase in the volumetric charge for water. The increases in the total bills customers received were 4.3% in 2004–05 over 2003–04, and 8.2% in 2005–06 over 2004–05.

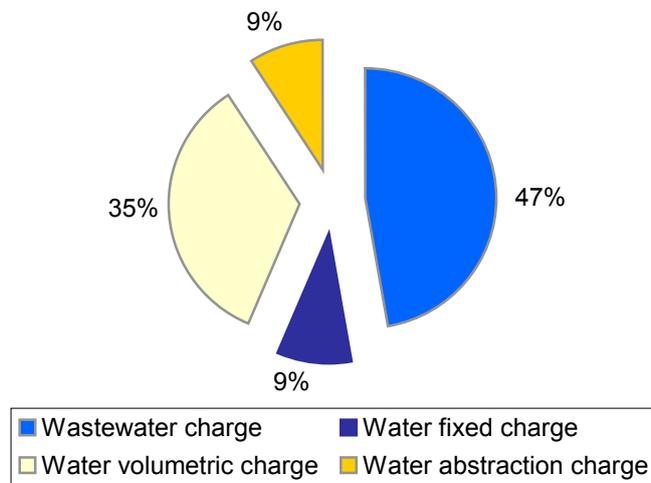
Because the annual change in average revenue for water is the CPI plus 2.5% and the annual change for wastewater is the CPI plus 1%, if the CPI were 2.5%, water bills should increase by 5% and wastewater bills should increase by 3.5%.<sup>23</sup> The 4.3% increase in 2003–04 is consistent with these numbers. The 2005–06 increase is higher due to the extra pass-through, as explained above.

To provide a clearer description of the components of a typical bill, figures 5 and 6 show the breakdown of customers’ water and wastewater bills, including the WAC, for 2005–06 and 2003–04 for a customer who purchases 300 kilolitres of water per year.

<sup>22</sup> The WAC rose from 10c/kL to 20c/kL on 1 January 2004; the Commission assumes an average WAC of 15c/kL for 2003–04.

<sup>23</sup> The CPI used in the 2004–05 price reset was 2.77%; the CPI used in the 2005–06 price reset was 2.34%.

**Figure 5 Water and wastewater bill breakdown, 2005–06**



**Figure 6 Water and wastewater bill breakdown, 2003–04**

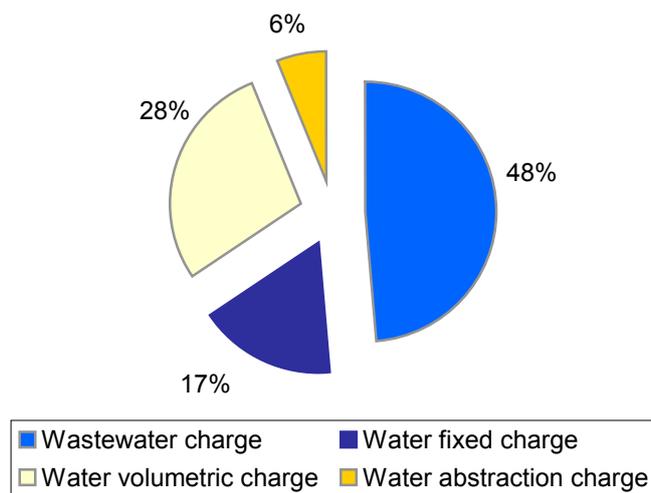


Figure 5 shows that 44% of the customer’s annual bill is dependent on the volume of water usage (that is water volumetric charge plus the water abstraction charge). This has risen from 34% in 2003–04. This change is due to the restructuring of the water tariffs in the Commission’s 2004 price direction, as well as to the increase in the WAC. The increase in the proportion of a customer’s bill related to usage gives customers who reduce their consumption a greater opportunity to reduce their bills.

## Glossary and abbreviations

ACTEW	ACTEW Corporation
Commission	Independent Competition and Regulatory Commission
CGBT	Cotter–Googong Bulk Transfer
CPI	consumer price index
FWO	Future Water Options
ICRC Act	<i>Independent Competition and Regulatory Commission Act 1997</i>
TWAW	‘Think Water, Act Water’ water resource strategy
WAC	Water Abstraction Charge