



independent competition and regulatory commission

## Issues Paper

# **Water Abstraction Charge**

**July 2003**



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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For further information on this investigation or any other matters of concern to the commission please contact Ian Primrose, Chief Executive Officer, on 6205 0779.



## Foreword

The Independent Competition and Regulatory Commission (the Commission) was issued a reference on 23 May 2003 to advise on the appropriate level of charge to consumers of water known as the Water Abstraction Charge (WAC) and an appropriate methodology for the calculation of the charge in future years by the Treasurer.

### Matters to be considered

The reference issued under section 16(2)(a) of the *Independent Competition and Regulatory Commission Act 1997 (ICRC Act)*, directs the Commission specifically to consider and advise on the following:

- a) *The methodology for the calculation of the Water Abstraction Charge on an annual basis, the appropriate components of the charge including but not limited to catchment management costs, the opportunity cost of water usage, the environmental cost of extraction and the current value of water as a resource;*
- b) *An appropriate level for the Water Abstraction Charge;*
- c) *The value of a charge as a demand management tool and its impact on consumer behaviour;*
- d) *The impact of the charge on low income earners and larger households and concession payment requirements;*
- e) *Consideration of changes in the relative value of water due to environmental change, the costs of maintaining the quality and security of supply of water, drought conditions, flooding etc; and*
- f) *The impact of the charge on ACTEW Corporation's revenue and expenditure, including future infrastructure costs.*

The matters laid out in section 20 of the ICRC Act have application in the completion of this investigation. Those matters include requirements that the Commission have regard to the economic, environmental and social costs of the advice provided by the Commission to the Government. Although those obligations refer most specifically to the investigation and determination of pricing references, any consideration of water charges should properly have regard to those matters as well.

The Issues Paper is the first step in the investigation process. Later steps will include the release of a draft and a final report. In this Issues Paper, the Commission raises questions rather than provides answers, and canvasses possible matters of concern. The paper does not contain or indeed indicate the Commission's views. Rather, it serves as a focus for debate and a means of identifying other issues that may or should be considered. No position is being argued in this paper but the paper is designed to draw out community views.

The reference requires the Commission to present its final report to the Minister. To provide for the process outlined in the ICRC Act to be completed, the Commission has determined a timetable as follows:

### Timetable for inquiry

<b>Milestone</b>	<b>Date</b>
Release of Issues Paper	23 July 2003
Submissions close on Issues Paper	15 August 2003
Release of Draft Report	5 September 2003
Submissions close on Draft Report	3 October 2003
Possible public hearing	10 October 2003
Release of Final Report	24 October 2003

In the process leading to the release of the final report the Commission invites submissions in writing on this Issues Paper and on the Draft Report, when it is released. The Commission's processes are transparent, thus information and submissions to the Commission will be made publicly available, except where the Commission agrees that some material should be made confidential to prevent injury to individuals.

The Commission welcomes views and is open to requests for discussion of issues where that would benefit the inquiry. For further information about this Issues Paper or the inquiry process please contact the Commission.

Paul Baxter  
Senior Commissioner

23 July 2003

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# 1. Introduction

In 1994 the Council of Australian Governments (COAG) adopted a reform program for the Australian Water industry. The program included reforms to:

- natural resource management;
- pricing;
- future resource investment decisions;
- water trading regimes;
- relevant institutions;
- public consultation procedures.

As part of this reform program the ACT was required to introduce a pricing regime based on the level of consumption and which removed cross-subsidies. Furthermore, charging arrangements were required to have an access or connection component. The ACT was also required to provide a real rate of return on assets of the publicly owned organisation, ACTEW, the monopoly supplier of water services to consumers in the ACT.

In addition to the COAG reform obligations, the ACT imposed its own internal levy on water to address environmental management issues. A short-term levy was imposed to fund a program of environmental works to be undertaken by ACTEW Corporation. In the Commission's 1997 - 1998 price direction it was noted that ACTEW included a \$40 per customer Environmental Works Charge (EWC) as part of sewerage charges.<sup>1</sup>

In 1999 the Government replaced the EWC with a Water Abstraction Charge (WAC). The initial level of the charge was set at 10 cents per billable kilolitre of water, in line with advice provided by the Commission. The goal of the WAC was to bring the pricing of water into line with the reforms adopted by COAG in 1994. In addition to promoting efficient use, this charge also provides a return to the community on one of its most valuable resources.<sup>2</sup>

The WAC was to apply to all licensed use of water with the exception of some ground water use where it was not legally possible to impose a WAC. Importantly, it was determined that the revenue generated by the WAC would be paid to the ACT Government and not to ACTEW.

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<sup>1</sup> ACTEW Corporation was at that time a wholly owned government corporation with residual regulatory or government like functions remaining from its previous role as the provider and regulator of electricity and water services in the ACT. At the Government's direction ACTEW was to undertake environmental works, principally related to the sewerage network, which were to be funded from the EWC. ACTEW both collected and retained the revenue from the charge.

<sup>2</sup> Environment ACT, *ACT Water Quality Report 2000-2001*, page 38.

In the Commission's original determination, the charge was to recover the cost of such things as:

- maintaining water quality;
- maintaining and managing the catchment;
- dealing with environmental impacts; and
- establishing a scarcity value for water.

Further consideration in the original determination was given to the provisions of ACT water resources legislation and the requirements of COAG's water agreements, including:

- the extent to which abstraction reduces the quality of water in the catchments;
- the actual costs of water quality maintenance and the maintenance and management of the catchment;
- the environmental management costs; and
- the information and evidence on the scarcity effects of water.

After consideration of the issues listed above the Commission recommended in the 1999 Price Direction that the WAC be set at 10c/kL.<sup>3</sup>The WAC has applied unchanged from 1999, until the 2003-04 Budget included a revised charge of 20c/kL commencing 1 January 2004 and rising to 25c/kL from 1 July 2004. At the same time the Government sought the Commission's advice on several WAC related issues, particularly a method by which the WAC should be determined in future and an appropriate level for the WAC. The terms of the reference issued by the Treasurer are provided in Attachment A.

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<sup>3</sup> Page 62 of the Commission's May 1999 Price Direction for ACTEW's electricity, water and sewerage charges for 1999/2000 to 2003/2004. The components of the WAC in the 1999 Price Direction were 7.0c/kL for the scarcity value, 1.5c/kL for the catchment management costs and 1.5c/kL for the environmental costs.

## **2. Water Abstraction Charge Issues**

### **2.1. Introduction**

The Commission has been asked to consider and advise on a methodology for the calculation of the WAC and an appropriate level for the WAC. Twice before the Commission has been asked to provide advise on aspects of the WAC. As part of the 1999-2004 Price Direction the Commission provided advice on the level of the WAC and subsequent to that the Commission determined the operational details for charging the WAC to customers. In relation to this latter point, the Commission determined that the WAC was to be passed on by ACTEW to water users in the ACT through the charges made by ACTEW.<sup>4</sup>

As far as metered water customers are concerned the WAC forms part of the price of water. The WAC appears on their bills and is charged for every kilolitre of water they consume. The effective price water customers face becomes the regulated tariff plus the WAC. Any analysis of the effects of changes in the WAC must be undertaken with respect to the overall changes in the effective price. The first step is to examine the total costs of supplying water for consumptive purposes.

### **2.2. Cost of water supply compared to cost of collection and storage**

In order to achieve long-term economic efficiency in the market for municipal water in the ACT, the prices consumers face for water should reflect all the costs involved in collection and reticulation within the entire water system. The price that the Commission permits ACTEW to charge is predicated on generating sufficient revenue to cover those costs directly attributable to services provided by ACTEW. Costs not directly attributable to ACTEW but attributable to the collection and consumption of water are factored into the price of water through the WAC. To the extent that the WAC does not fully reflect these costs, or these costs are not recovered in the total cost that consumers pay for water, the market for water in the ACT is inefficient.

For the efficient long-term operation of the market for water in the ACT, prices set through the regulatory regime must achieve three goals:

- prices must send the right signals to consumers about the true costs of the water they consume;
- the regulatory regime must induce ACTEW to reticulate water in an efficient manner;
- prices need to send a signal to ACTEW and the wider community about the efficient level of investment in capital assets for the storage, treatment and delivery of water.

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<sup>4</sup> Page i of the Commission's February 2000 Pass Through of the Water Abstraction Charge: Price Direction.

## 2.3. Composition of the total cost of water

The costs of providing water to consumers in the ACT can be broken into four parts. The last three parts (below) potentially constitute the WAC.

1. Costs of providing and maintaining reservoirs and reticulation networks. These costs are borne by ACTEW. ACTEW recovers those costs from consumers through the price people pay for the water they use for residential and commercial purposes.
2. Costs of managing water catchments and associated costs. These costs are borne by the ACT Government and not recovered directly in the price paid for consuming water. Those costs need to be recovered from water users but separately from the costs recovered by the retail price for water services.
3. Environmental costs not directly borne by the ACT Government or ACTEW and its customers. These costs include damage to the ecosystem downstream, degradation to water for downstream users, damage to fisheries, and the effects of changes in the peak load flows.
4. Costs related to the scarcity value of water. There is an opportunity cost of water as each litre of water has an alternative use either within the ACT or downstream. This cost is also borne by the community as a whole, rather than by the water supply utility.

### 2.3.1. *Costs of providing and maintaining reservoirs and the reticulation network*

The costs directly attributable to provision of water are the operating and maintenance costs of reservoirs and the reticulation network, plus the cost of capital. Annual operating and maintenance costs are straightforward to measure. Capital costs are more problematic to determine. Issues such as whether to use historic or replacement cost, accounting or economic rates of depreciation and how to value the cost of capital make the measurement of capital not as straightforward as measuring annual operating and maintenance costs. Nevertheless, operating and maintenance costs and capital costs form the cost base for the pricing regulatory regime and are reviewed and approved by the Commission periodically as part of the setting of retail prices for water under the provisions of the *Independent Competition and Regulatory Commission Act 1997*.

### 2.3.2. *Water catchment maintenance and related costs*

The ACT Government bears the cost of managing the Territory's extensive water catchments and dams to ensure appropriate primary water quality. For example, costs associated with fires and their impact on run-off into dams, erosion, control of pollution and maintenance of catchment areas are borne by the Government. These costs are quantifiable, being included in departmental operating budgets. However, while measurable they are not transparent and play no, or at best a limited, role in moderating demand for water. To be most effective these costs need to be borne directly and transparently by those who use the resource, which is the cause of the expense being incurred.

### 2.3.3. *Environmental costs*

The consumption of water in the ACT imposes costs on downstream users and environments. While some of the environmental degradation may occur within the ACT most of the effects will be felt elsewhere. Potential environmental costs arise from two sources. While the ACT has a very effective sewage treatment facility, there is some degree of degradation of water quality. The use of water in the ACT also reduces and alters the flow of water downstream. The damage due to ACT water consumption is not borne by ACT water users but is a cost of water use.

### 2.3.4. *Scarcity value of water*

The ACT draws the water supplies primarily from the Queanbeyan and Cotter River systems. These rivers in turn flow into the Murrumbidgee River and are part of the Murray-Darling Basin (MDB). Water taken for consumptive use in this part of the MDB has implications for the availability of water in other parts of the Basin.

The scarcity value of water arises because there are alternative uses for water. There are two potential components to the scarcity value of water. Water not used or retained in the ACT has alternative uses downstream such as irrigation. This alternative use has a value as there is an active market trading water rights. Also, due to the fact that water is storable, water not used today can be used tomorrow. This implies water may have a scarcity value due to the opportunity to reduce current consumption to insure availability in the future.

Water is traded at two levels. Both permanent entitlements to water and temporary entitlements are traded. Permanent entitlements grant the right to divert a certain amount of water in perpetuity within the Murray-Darling Basin. Temporary trading as the name implies is for water to be used during the current season. Both markets for trading in the Murray-Darling Basin are robust with 87,000 ML of permanent entitlements and 606,000 ML of temporary entitlements traded in 2001/2002.<sup>5</sup> Trading rules have yet to be agreed for water passing through the ACT, and thus a direct market for traded water from the ACT is currently not available.

The Commission is seeking views about what components should be included in the calculation of WAC.

## **2.4. Measurement of the cost of water**

Measuring the potential components of the WAC is not straightforward. While the costs directly borne by the ACT Government are not problematic the other two components are. Environmental costs are especially difficult to measure. There are methods for valuing the costs of environmental damage. Examples include contingent valuation and survey methods. Disentangling the effects of ACT water use on the environment downstream from the effects of other users downstream of the ACT border could prove to be impossible.

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<sup>5</sup> Murray-Darling Basin Commission, *Water Audit Monitoring Report 2000/2001*.

ACT consumers already meet the cost of returning to the river system around 40% of the water 'consumed' in the ACT. This reflects the cost of the lower Molongolo water treatment facility which has particularly high standards for the quality of water returned to the Murrumbidgee River. To the extent that these environmental costs have already been met by ACT consumers should they be required to meet these environment costs again as part of the WAC?

The commission seeks views on the measurement of environmental costs and those environment costs that should be met in the WAC.

The 1999/2000 Price Direction used temporary entitlement trading prices as a means for determining part of the level of the WAC. One advantage of using this indicator is that it reflects the current scarcity cost of water. In times of drought or water shortage the temporary entitlement price could rise dramatically. One possibility is the WAC could be linked an index of temporary entitlement prices allowing the WAC to vary yearly or even seasonally. Under this scenario, the level of the WAC could change quarterly as the temporary entitlement price for water changes. Alternately an average price over the year could be used.

A further alternative is to use the price of water in the permanent entitlement market. This treats water as a capital stock and assigns a value to the right to consume a fixed amount of water in perpetuity. In this case the yearly scarcity value of water would be the amortised value of the capital cost of water. Both approaches have merits.

The Commission seeks input in determining the methodology for measuring the scarcity value of water.

## **3. WAC as a demand management tool**

### **3.1. Introduction**

Currently, the tariff for water has three components; a fixed charge, a charge per kilolitre for the first 175 kilolitres a consumer uses in the year and a higher charge for each kilolitre above the first 175 kilolitres. This type of tariff structure is called increasing-block pricing with a fixed component. The rationale behind increasing-block pricing is that it encourages conservation by penalising high levels of consumption while at the same time assuring consumers have access to a minimal amount of water for basic needs.

Currently the WAC is superimposed on the tariff and is charged at a constant 10 cents per kilolitre. In effect this means that WAC as a proportion of the total water bill paid is higher for users of minimal amounts of water. Thus for larger water users the relative impact of the WAC is less, the more water that is consumed. From a demand management perspective, this appears to be a perverse outcome of the current arrangement.

To address this issue, it might be reasonable for the WAC also to have an increasing-block structure. Indeed, it is conceivable for the WAC to have several steps; for example, a low rate for small usage, rising to an intermediate rate for normal usage levels, and rising again to a higher rate for high levels of usage.

However, notwithstanding these possible variations to the current arrangements, the question needs to be asked as to whether the WACr has any value as a demand management tool.

### **3.2. Effective demand management is partly determined by demand elasticity**

If the goal of the WAC is to assist in managing the demand for water, it is important to take into account whether the demand for water is elastic. Elasticity is measured as the ratio of the percentage change in quantity demanded in response to a percentage change in price. If a good or service has an elasticity of  $-1.0$  this implies a 10% increase in price would result in a 10% reduction in the quantity demanded.

Water is a good with relatively low elasticity of demand. A study undertaken by ACTEW indicates that in the ACT the demand elasticity of water is  $-0.22$ .<sup>6</sup> That is, increasing prices by 10% will result in a 2.2% reduction in demand.

Recently in the ACT there has been extensively public comment to the effect that the price of water should be increased considerably to encourage a significant reduction in demand. This approach has been suggested partially in the context of the recent

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<sup>6</sup> Graham, David, & Scott, Shona. 1997, Price Elasticity and Sustainable Water Prices: Policy Directions: Page 11 (iv) "Price Elasticity Results: Aggregating consumption data across all Canberra Suburbs revealed that the short run price elasticity of demand for water in Canberra is  $-0.22$ ."

serious drought and the need to revert to water restrictions. An alternative view on the impact on water usage of a significant price change was put forward by the NSW Independent Pricing and Regulatory Tribunal (IPART), in its review of metropolitan water agency prices<sup>7</sup>, namely that:

*“It is sometimes suggested that price should be used as the means of reducing water users’ demand. Whilst the Tribunal could consider raising prices for demand management purposes it is far from convinced that this is either appropriate or likely to be successful in the absence of other initiatives.”*

The commission has some sympathy with the IPART position. Given the relatively inelastic estimates of demand for water in the ACT, the commission is concerned that price alone may not deliver the appropriate signal to consumers to reduce demand. At the same time it can be argued that there has not been enough actual experience in the ACT of “price shocks” to determine the true effect of moderate or large price movements. Estimates of the price elasticity for water (and indeed most goods and services) are good predictors of consumer behaviour for small price changes. However, the effects of larger price changes would need further investigation.

It is useful to think of water consumption in two very broad categories: discretionary, and non-discretionary. The elasticity associated with each category of consumption is likely to differ. Thus, the potential for price to affect consumption of water will relate to the consumption category in which individual consumers find themselves.

Furthermore, consumption of water has a positive relationship with income and size of property. As a national average, residential users account for 90% of connections to the water system in an urban environment. In the ACT residential users consume 64% of the water. Garden watering accounts for 52% of residential consumption.<sup>8</sup> It follows that a key area for demand management initiatives would be the residential end of the market. The effect of an increase in the WAC would be enhanced by government programs to encourage efficient water usage in the community in general and particularly by residential consumers. Efficient water use campaigns by the government in conjunction with notified price increases could be more effective than either program being run independently. The current water restrictions in the ACT combined with heightened awareness of the limited supply of water may provide the right environment where a significant increase in water prices will result in a more elastic response in demand management than the current demand elasticity estimates suggest.

This leads to a view that additional non-mandatory means of demand management such as educational advertising campaigns to reduce wasteful use of water, subsidies for the installation of water efficient household appliances and fixtures, and changes in water usage on lawns and gardens are a key to changing the community’s attitudes to using water. Usage patterns show that residential water use could be a substantial contributor to more efficient water use, including not only reductions in aggregate consumption but greater intensity of use from each kilolitre of water delivered to

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<sup>7</sup> IPART, 2002, Review of Metropolitan Water Agency Prices Issues Paper, page 25.

<sup>8</sup> ACTEW, *ACT Future Water Supply Strategy: Our Water, Our Future*, 1994.

residential premises. The current willingness to pay study being undertaken by ActewAGL will provide information on consumer's preparedness to pay for greater recycling infrastructure investment and services to the community as a whole. The commission will also be looking for information on preparedness on the part of individual householders to invest in domestic recycling technologies.

The commission is interested in views about the impact that substantial rises in water charges would have on the way water is used. In particular the commission is interested in hearing views about the role that recycling could play in demand management.



## **4. The impact of the WAC on low income earners and larger households and concession payment requirements**

### **4.1. Introduction**

Access to potable water for consumptive purposes is regarded as being an “essential service” in the Australian context. Tariff rates for water are often tailored in such a way as to price favourably the initial minimal amounts of water consumed by households. This is the experience in the Territory.

A WAC imposes an additional charge on water consumption which may not be stepped in some way so as to give favourable treatment to the first minimal levels of consumption. This may have adverse social implications for lower socio-economic groups, and may require some form of direct intervention by government by way of for example some form of subsidy or consumer service obligation (CSO) payment.

### **4.2. Relative impact of a WAC increase**

The Commission is aware that any increase in the price of water through an increase in the WAC is likely to affect negatively low-income earners and larger households.

The current pricing structure for water in the ACT as of 1 July 2003 is 43 cents/kL for the first 175 kilolitres in the year, 105 cents/kL for all kilolitres above 200 kilolitres and a fixed charge of \$125 per year. In addition, a customer pays 10 cents/kL WAC. Thus the effective price a water customer pays for water is 53 cents/kL for the first 175 kilolitres and 115 cents for each additional kilolitre. Based on these numbers, the effects on customers of the increase of 10 cents/kL in the WAC as announced by the Government in the 2003-04 Budget can be easily analysed.<sup>9</sup>

Consider a customer who consumes 175 kilolitres of water per year. Their yearly bill for water including the WAC is \$217.75. An increase of 10 cents per kilolitre in the WAC would result in a 19% increase in the effective price the customer faces.<sup>10</sup> This change yields a \$17.50 increase in their yearly bill assuming no change in their consumption pattern. If the consumer desired that their yearly bill remained at \$217.75, their consumption would need to fall to 147 kilolitres per year.<sup>11</sup> This is a 16% reduction in their consumption of water.

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<sup>9</sup> 10 cents is used in this example only as it makes the calculations of the effects easy. It should not be construed that the Commission is endorsing a 10 cents/kL increase in the WAC.

<sup>10</sup> The effective price a customer faces is the price they face for the last kilolitre of water they consume plus the water abstraction charge. The customer’s effective price rises from 53 cents per kilolitre to 63 cents per kilolitre.

<sup>11</sup> Based on an elasticity estimate of -0.22

Now consider a customer who consumes 400 kilolitres of water per year. Their yearly bill for water is \$476.50. An increase of 10 cent per kL in the WAC would result in a 9% increase in the effective price the customer faces. This change yields a \$40 increase in their yearly bill assuming no increase in their consumption pattern. If the customer desired that their yearly bill remained at \$476.50, their consumption of water would need to fall to 382 kilolitres per year. This is a 4.5% reduction in their consumption of water.

The above two examples demonstrate that even for relatively small increases in the effective price of water, households on limited budgets could face potential difficulties staying within their budget. Further, given the elasticity estimates in the previous section, a 19% increase in price would only result in a 4.2% decrease in consumption. This is far less than the 16% necessary in the first example. Larger households face similar constraints on their budgets as demonstrated in the second example although other demand management incentives may be best aimed at this segment of the market.

The Commission seeks community input on the possible social effects of increases in the WAC.

### **4.3. Concession payment requirements**

The ACT Government currently has a program, operated through its Essential Services Consumer Council (ESCC) and its CSO program, whereby it provides financial and other assistance to ACTEW customers who are having difficulties with meeting their water charges. Significantly, to the extent that a CSO is paid to assist pensioners meet their electricity and water charges, no CSO is paid on the WAC. However, when the ESCC approves payment of water charges for especially needy groups, government payment covers all charges including the WAC.

Any increase in water charges as a result of changes in the WAC is likely to increase demand for these support services and consequently be a further cost to the ACT Budget. This should not of itself create a financial problem for the ACT provided there is recognition in the revenue collected via the WAC that there needs to be some allowance for the social costs a higher WAC will create.

The question arises however as to what level of assistance should be provided to households when the WAC is intended in part to provide a demand management tool. Should consumers be encouraged to reduce their consumption levels as an alternative to paying higher total charges as demonstrated in the examples presented in section 4.2 above? If a “stepped WAC” charge was used whereby a lower WAC rate was applied to all consumers for their initial consumption of water, would this have the desired effect in terms of demand management, or could it be structured in such a way as to recover all the costs intended? The commission is particularly concerned not to give a benefit to all households in the community when there is only a limited number of households that potentially should be compensated or assisted in some way to redress any adverse financial implications of a higher WAC.

The Commission is seeking views as to ways in which any possible social effects of increases in the WAC can be redressed for relevant consumers.



## 5. Changes in the relative value of water

The Commission is cognisant of the fact that there are fluctuations from year-to-year in the conditions affecting the supply of water and especially the water catchment area. Severe drought and bushfires have had major impacts on the water system in the current year, and for some years to come. In the future, even if these events are infrequent, there may be altogether different sets of circumstances that influence the security of the system. Demand in relation to environmental water flows, growth in urban centres further down the river system, and demand for greater water quality as well as volume may mean that water is scarcer in future and of lower quality generally than today. How access to, and rights over, water will be handled is a major question now. These questions will be made more urgent by increasing population pressure and economic growth in both the ACT and along the river system. In setting a level for the WAC these considerations need to be taken into account.

The combination of the drought and the bushfires in the ACT over the past several years has raised questions about means by which the Territory might be protected from future droughts and protected to a degree from fire threats. A common suggested solution to these problems is for the construction of additional dams to provide substantial water reserves. The Government's policy is that a new dam should be deferred for as long as possible. That position has been held by governments throughout the 1990s, but is now being considered again in the Government's water strategy that is expected late in 2003. The commission will no doubt hear views on this issue in the context of this review. In making comments on this issue, interested parties should consider, as will the commission, the cost of constructing a new dam, the time it will take to build and fill, and the relative additional security of supply that a new dam will offer. The commission is aware of estimates of the cost of a new dam in the order of \$200 million to \$300 million and the time needed to design construct and fill a dam of about 15 years. The commission questions whether a new dam is the solution to the fears about the adequacy of the Territory's water supplies raised by recent natural disasters, given that:

- the ACT does not yet have a water cap established under the Murray-Darling Basin Commission Cap arrangements for the total Basin;
- there is over allocation of water in all states in the Murray-Darling Basin, other than the ACT;
- the Government's projections for population growth in the Territory over the next twenty five years show slow growth in the short term but then levelling off in the medium to long term, with a consequent tapering off in demand.

The commission is not concerned in the context of this paper to resolve the issue of a new dam, merely to take note of how a proposed dam might be paid for and what impact it would have on the cost and scarcity of water in future. This in turn could be argued to impact upon the relative value of water in the future. Evidence to hand seems to point to a high cost and low need. If a new dam were proposed, the cost of construction, maintenance and the recovery of the environmental costs could be very substantial.

**The Commission seeks views on the likely impact of future changes in supply and demand of water upon its relative value for present WAC setting purposes.**

## 6. Impact on ACTEW's revenue and infrastructure

The Commission notes that any increase in the level of the WAC will have a negative impact on the revenue collected by ACTEW to cover its water reticulation and treatment services. Based upon the elasticity of demand estimates previously discussed, an increase in the price for water will result in a small decrease in quantity demanded. The Commission provided for this effect when determining the maximum allowable revenue for ACTEW's water business during the previous price direction.<sup>12</sup>

The Commission is aware that as revenue falls, due to reduced consumption, some operating and maintenance costs are also likely to fall. This reduction of costs will reduce the impact of a demand fall on ACTEW's underlying profitability.

However, much of ACTEW's cost base is comprised of fixed costs such as a return on its fixed asset base and depreciation recovery of that asset base. These costs will continue into the short term at least while ACTEW reconfigures its business to meet a lower level of demand. If the level of consumption and use of water falls markedly then there is also a follow-on effect in terms of future capital costs. To the extent that these costs are indivisible or unable to be broken down into smaller items of equipment, there may continue to be ongoing capital costs at levels commensurate with higher levels of water demand.

It is difficult to gauge the impact of a reduction in ACTEW's revenues and in ACTEW's costs without knowing the size of the WAC and the potential impact on demand. The commission will give consideration to these impacts in determining prices in the upcoming review of ACTEW's water network business.

The Commission is seeking views on the possible impact of changes in the WAC on the revenue outcomes for ACTEW as the provider of water and wastewater services in the Territory.

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<sup>12</sup> Page 59 of the Commission's May 1999 Price Direction for ACTEW's electricity, water and sewerage charges for 1999/2000 to 2003/2004.



## **Attachment 1: Reference issued by the ACT Treasurer**

Australian Capital Territory

# **Reference to the Independent Competition and Regulatory Commission to investigate water sewerage and trade waste pricing for the period 1 July 2004 to 30 June 2009 and other water related matters**

Disallowable instrument DI2003-70

made under the

***Independent Competition and Regulatory Commission Act 1997, Section 15 (Nature of industry references) and Section 16 (Terms of industry references) Reference for Investigation Under Section 15***

Pursuant to subsection 15(1) of the Act, I refer to the Independent Competition and Regulatory Commission (the "Commission") the matter of:

1. the provision of advice to the Government on the appropriate methodology for the determination of the water abstraction charge, the appropriate level for the charge, and the impact on consumers; and
2. an investigation into and determination of a price path for regulated water, sewerage and trade waste services provided by ACTEW Corporation.

### ***Specified Requirements in Relation to Investigation Under Section 16***

Pursuant to subsection 16(1) of the Act, I specify the following requirements in relation to the conduct of the investigation: The investigation is to be conducted in two stages and consider the following matters:

## **Stage I**

### ***Specified Requirements in Relation to Investigation Under Section 16(2)(b)***

The Commission should advise on the charge to utility service providers and extractors of water from Territory-owned water resources. Specifically, the Commission should consider and advise on:

- a) The methodology for the calculation of the Water Abstraction Charge on an annual basis, the appropriate components of the charge, including but not limited to catchment management costs, the opportunity cost of water usage, the environmental cost of extraction and the current value of water as a resource;
- b) An appropriate level for the Water Abstraction Charge;
- c) The value of the charge as a demand management tool and its impact on consumer behaviour;
- d) The impact of the charge on low income earners and larger households and concession payment requirements;
- e) Consideration of changes in the relative value of water due to environmental change, the costs of maintaining the quality and security of supply of water, drought conditions, flooding etc; and
- f) The impact of the charge on ACTEW Corporation's revenue and expenditure, including future infrastructure costs.

*Specified Requirements in Relation to Investigation Under Section 16(2)(a)*

The Commission should report to Government on Stage I of these terms of reference by 31 August 2003.

## **Stage II**

*Specified Requirements in Relation to Investigation Under Section 16(2)(b)*

The Commission is to review and report on an appropriate costing and pricing methodology and pricing level for regulated water, sewerage and trade waste services for the five -year period 1 July 2004 to 30 June 2009.

As provided under section 20(2), (3) and (4) of the Act, the Commission will have regard to such matters as standards of service, efficiency, appropriate rates of return, the cost of provision of services; the principles of ecologically sustainable development, social impacts, demand management, requirements for maintenance and renewal of infrastructure, the effect of price inflation; and arrangements entered in to by the regulated service provider; and specifically,

- a) Examination of the impact on cost and revenue structures of unmetered properties;
- b) Coverage of services and analysis of which services are contestable;
- c) Consideration of appropriate incentives for ACTEW;
- d) The value of water and sewerage assets in the ACT and appropriate, risk-adjusted, commercial rates of return on capital utilised;
- e) Future capacity requirements;

- f) The impacts on consumers and demand, including disadvantaged consumers, low income earners and large households, and the adequacy of concessions for services; and
- g) The impact on ACTEW's Community Service Obligations.

*Specified Requirements in Relation to Investigation Under Section 20B* Reset principles

The Commission is also to consider the principles which should apply to any price reset during the period.

*Specified Requirements in Relation to Investigation Under Section 20C*

The Commission should advise on effective dates of the price direction.

*Specified Requirements in Relation to Investigation Under Section 16(2)(a)*

The Commission should report to Government on Stage II of these terms of reference by 31 March 2004.

Ted Quinlan  
Treasurer  
14 May 2003