

**Information paper:  
Implementation of the  
ACT Government's announcements  
on Water Security**



**Regulatory period  
commencing 1 July 2008**

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# 1. Introduction

## 1.1 Purpose of this information paper

ACTEW Corporation Limited (ACTEW) is the licensed provider of water and wastewater services in the ACT under the *Utilities Act 2000*. The Independent Competition and Regulatory Commission (the Commission) is currently reviewing the prices to apply to ACTEW's water and wastewater services for the five-year period from 1 July 2008.

On 31 July 2007, ACTEW provided the Commission with a comprehensive submission<sup>1</sup> (the major submission) that:

- addressed the matters raised in the Terms of Reference for the price review;
- summarised ACTEW's functions, obligations and means of service delivery;
- reported on ACTEW's performance during the current regulatory period and the forecast costs of its planned program during the next;
- proposed a form of regulation to provide appropriate incentives for efficient performance and mitigate or compensate risks; and
- canvassed pricing structures for water and wastewater to promote an array of social, economic and environmental objectives.

The major submission outlined ACTEW's response to the ongoing drought conditions through a series of supply and demand focussed initiatives including a prudent capital expenditure program over the next regulatory period. The key challenge for ACTEW over the medium and long term is to build additional water supply assets that can cope, not just with very much reduced long term average inflow into the dams, but also with more frequent droughts which are longer and drier than that of 2001-2006, without having to impose high level water restrictions for extended periods.

The major submission noted also that a number of water security projects were currently under investigation by the ACT Government. Prime amongst these were an enlarged Cotter Dam, an Indirect Potable Use (IPU) scheme, and further facilities for abstraction of water from the Murrumbidgee River.

On 23 October 2007, the ACT Government announced a suite of measures intended to create a secure and sustainable water supply for Canberra. These measures include:

- enlargement of the Cotter Dam to increase capacity from the current 4 Gigalitres (GL) to 78 GL, with planning and design work to begin immediately and construction expected to be completed within three to five years;

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<sup>1</sup> ACTEW 2007, *Submission: Investigation into Prices for Water and Wastewater Services in the ACT*, Regulatory period commencing 1 July 2008, Submission to the Independent Competition and Regulatory Commission, 31 July

- the installation of infrastructure to increase the volume of water transferred from the Murrumbidgee River to the Googong Dam;
- pursuing the possibility of purchasing water from Tantangara Dam;
- design of a demonstration Water Purification Plant which if built, would produce water for purposes other than drinking;
- funding for demand reduction measures increased by \$2 million;
- requesting the relevant Government Departments and ACTEW to investigate the extension and enhancement of Permanent Water Conservation Measures; and
- requesting ACTEW and ActewAGL to implement a pilot smart metering program in the ACT, for commencement in 2008/09.

This information paper provides the Commission with indicative capital and operating costs for the upcoming regulatory period subsequent to this announcement by the ACT Government.

ACTEW's major submission to the Commission included a recommendation that the Commission implement a *contingent project mechanism* as part of its decision.<sup>2</sup> ACTEW advised that such a mechanism be implemented for proposed expenditure where:

- the cost of a project is known with some certainty, but its need is dependent on circumstances that are not known with certainty (*known cost, uncertain need*); or
- an event is known to be likely to occur during a regulatory period, but its capital costs are uncertain (*known need, uncertain cost*).

ACTEW put the case in its major submission that a contingent project mechanism has the advantage of allowing the regulator to exclude uncertain (in either need or cost) capex projects from the capex allowance, whilst also providing the regulated business with some certainty that, if the events occur, the known costs will be recovered or that once the costs become known, they will be recovered without unnecessary discussion over whether an event has occurred. In effect the mechanism removes one element of regulatory uncertainty relating to these circumstances.

Given the current uncertainty regarding the precise cost of the projects to be implemented in *Phase 1* of the Water Security Plan and the contingent nature of further projects, ACTEW recommends that the Commission approve the projects subject to later inclusion of their known and established costs in the price path.

The Commission's response to an uncertain need for augmentation of water supply sources in its 2004 decision was the creation of an *augmentation pass-through event*. ACTEW draws the Commission's attention to the discussion in its major submission of

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<sup>2</sup> The proposed contingent project mechanism was described on p67 of ACTEW 2007, *Submission: Investigation into Prices for Water and Wastewater Services in the ACT*, Regulatory period commencing 1 July 2008, Submission to the Independent Competition and Regulatory Commission, 31 July

desirable amendments to this mechanism should it be preferred to proceed this way in the forthcoming decision.<sup>3</sup>

ACTEW notes that, separate to these costs for the Water Security Plan, it will incur approximately \$300,000 per annum on project management costs over the next regulatory period. These costs were incorporated into ACTEW's operating expenditure proposal as outlined in its primary submission.

## 1.2 The ACT Region's current water situation<sup>4</sup>

The continued drought in the ACT and region has translated into record low inflows into our water storages, and is creating uncertainty over the ability to secure our long term water supply. The key challenge for the medium to long term is to build additional water supply capacity that can cope with the reduced long term average inflows and more frequent droughts which are longer and drier than the current drought, without high level water restrictions for extended periods.

There has been a significant decrease in runoff to the ACT region's storages over the past six years. Inflows to the storages in 2006, in particular, were equal to the lowest on record. To meet demand, the region has significantly drawn on the volume of water in storage and it has been necessary to impose Temporary Water Restrictions to reduce the rate of use and ensure that water continues to be available for essential consumption if the drought continues.

There is also the emerging threat of climate change which the CSIRO estimates could reduce average inflows into our dams by 50%. If current weather conditions continue with little rain and/or low inflows, and without significant spring rains, it will be necessary to implement Stage 4 Water Restrictions in 2008. These restrictions, with a targeted reduction in use of 55% will, with the exception of some exempt requirements, prevent the use of all potable water outdoors. Such severe restrictions would have major impacts on the Canberra community and businesses.

Until recently it had been assumed that further significant upgrades of the supply infrastructure would not be needed until around 2023. However, despite the comprehensive planning, upgrades to supply infrastructure, and demand management initiatives that have been implemented in recent years, the extended period of unexpectedly low inflows has resulted in the need for the current review of the ACT Region's long-term water security.

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<sup>3</sup> ACTEW 2007A, *Submission: Investigation into Prices for Water and Wastewater Services in the ACT*, Regulatory period commencing 1 July 2008, Submission to the Independent Competition and Regulatory Commission, 31 July, p69

<sup>4</sup> Project details and background information reflect water supply security fact sheets and reports available at <http://www.thinkwater.act.gov.au>.

### *1.2.1 Projects already delivered*

In response to the variability of climate change and unpredictable rainfall patterns, the ACT Government and ACTEW have already delivered a number of projects to secure the ACT and region's water supply, including:

- major enhancements to the Stromlo and Googong Water Treatment Plants;
- new measures for extracting water from the Cotter Dam;
- the installation of submersible pumps in the Murrumbidgee River; and
- investing in a \$17 million stormwater harvesting project in partnership with the Australian Water Fund.

The ACT Government's and ACTEW's continued exploration of water security options, in addition to those measures already delivered, will ensure the ACT Region has sufficient water required to continue to grow and maintain Canberra as a sustainable city.

### *1.2.2 ACTEW reports and recommendations*

In July 2007, the ACT Government received ACTEW's final reports and recommendations on water security for the ACT region. The recommendations are based on extensive work conducted over the last few years assessing future water options and include: a combination of storage, an enlarged Cotter Dam; water transfer, a pipeline from the Murrumbidgee to Googong Reservoir; and demand management.

The recommendations also present the need for a water source that is not totally dependant on rainfall within ACT catchments. The options proposed were transfer of water from Tantangara Dam or a Water Purification Scheme (indirect potable re-use).

### *1.2.3 Water Security Taskforce*

The Chief Minister appointed a Water Security Taskforce (the Taskforce) and its Advisory Panel to further strengthen the focus on the critical water security issues, particularly advising the Government on ACTEW's recent water security recommendations.

The Taskforce and Advisory Panel considered ACTEW's final reports and recommendations, along with a suite of other options to secure the ACT region's future water supply. These included water trading, stormwater harvesting, water mining, demand management and regional water security options.

Planning for water security is complex due to uncertainty about how water availability and demand will be affected by future conditions. Climate variability and climate change are considered to be the most significant of all the unknowns. Given the level of uncertainty, the Taskforce and Advisory Panel consider that it is necessary to take action now to protect long-term water security for the ACT Region. The Taskforce concluded that it is not feasible to do nothing as this would expose the ACT Region to the risk of significant financial and social costs. The Taskforce's recommendations

encompass both water supply and demand measures for water security, and specific recommendations are made on each. The Taskforce's recommendations are reproduced in an addendum to this submission.

Progress on the infrastructure projects recommended by the Taskforce and supported by the Government will be dependent on how quickly the required detailed designs can be completed, the time to secure planning approvals, and the availability of construction materials and crews.

### 1.3 Structure of the information paper

The remainder of this paper outlines the measures to be undertaken by ACTEW in planning and implementing the Water Security Plan as announced by the ACT Government. Section 2 provides a description of the specific elements of the proposed Water Security Plan to be undertaken by ACTEW and their estimated capital and operating costs.



## 2. Description of specific projects

The taskforce recommendations call for ACTEW to implement immediately some projects under the Water Security Plan, while others will be implemented following further investigation. The projects in the former category—*Phase 1* projects—are:

- enlargement of the Cotter Dam;
- construction of the Murrumbidgee to Googong Transfer;
- design of a demonstration Water Purification Plant; and
- implementation of a pilot smart metering program in the ACT.

The remaining, contingent, projects requiring further investigation are:

- transfer of water from the Tantangara Reservoir; and
- construction of the demonstration Water Purification Plant.

Each is discussed below.

### 2.1 Phase 1 projects

#### 2.1.1 Enlargement of Cotter Dam

Enlarging the Cotter Dam was previously raised as an option for increasing water supply to the ACT region. In 2004/05 ACTEW undertook the *Future Water Options* studies which examined three new water supply options for the ACT. One of the options examined was enlarging the Cotter Dam to a preferred size of 78 GL. Following this report, further studies have been ongoing into the technical, cost, environmental and other aspects of the provision of a larger reservoir. Geotechnical investigations commenced at the site in March 2007.

Construction of the dam would add 74 GL to the water storage capacity in the ACT. Water from the reservoir would gravitate to the Cotter Pump Station where it would be pumped to the Mount Stromlo Water Treatment Plant before distribution. The extra volume of water to be pumped requires the existing Cotter Pump Station to be augmented with two more pumps.

Following the consideration of these options by the Waste Security Taskforce and its Advisory Panel, the ACT Government announced a plan to enlarge of the Cotter Dam for completion by the end of 2011. The enlarged Cotter Dam is to be 78 metres high with a two stage spillway. The dam crest level would be 50 metres higher than the existing dam and 76 metres above the riverbed level. Two saddle dams are also required in the lower saddles of the reservoir catchment to deliver the maximum dam capacity of 78 GL. The dam would supply up to 180 Megalitres (ML) per day to the Mount Stromlo Water Treatment Plant. The construction period would be about 20 months.

The total capital cost of this Cotter Dam enlargement is estimated to be \$145 million, comprising:

- \$119 million for the dam and associated works;
- \$2 million for pipelines;
- \$4 million for clearing and site preparation;
- \$15 million for the pump station infrastructure; and
- \$5 for million for miscellaneous works.

Initial estimates of capital and incremental operating costs (principally additional pumping and treatment costs) are set out in Table 1.

**Table 1: Estimates of capital and operating costs for the enlarged Cotter Dam**

<i>\$'000 nominal</i>	<i>2007/08</i>	<i>2008/09</i>	<i>2009/10</i>	<i>2010/11</i>	<i>2011/12</i>	<i>2012/13</i>
Capital cost	5,125	31,519	75,382	44,153	-	-
Operating cost	-	-	-	1,104	1,131	1,160

### 2.1.2 Murrumbidgee to Googong Transfer

The ACT Government announced a plan to transfer water from the Murrumbidgee River to the Googong Reservoir. This option, referred to as the Murrumbidgee-Googong Transfer (MGT) helps diversify and supplement the existing water supply by making better use of existing storage capacity through accessing and storing water that would otherwise flow out of the ACT. Up to 20 GL of additional water per year, nearly a third of our average annual use, could be sourced in this way. The MGT would also assist with accessing any future releases from Tantangara Dam in NSW.

The MGT is an expansion of what ACTEW has referred to as the *Angle Crossing* option whereby water would be transferred from the Murrumbidgee River near Angle Crossing to Googong Reservoir. Recent work undertaken by ACTEW since its July recommendation to the Government has indicated that other sites in the south of the ACT, such as Point Hut Crossing, may also be suitable.

ACTEW has been requested to:

- continue detailed design and secure the relevant approvals for the MGT, with an extraction point to be determined as part of this process. In doing so, the Government broadens the support it gave to ACTEW in June 2007 for progressing the Angle Crossing option;
- undertake a health risk assessment in close consultation with ACT Health as part of the detailed design to determine whether there is a need to upgrade the Googong Water Treatment Plant. This should include hydraulic modelling of Googong Reservoir;
- report to Government, on a regular basis, on progress on the above; and
- seek the approval of the ACT Chief Minister, Treasurer and Deputy Chief Minister to commence construction once all approvals have been secured.

The expected capital cost of this project is \$70 million in 2006/07 dollars. MGT is a long-term project that may take as long as three years to plan, obtain approvals, design, construct and bring on-line. It will not therefore solve more immediate concerns about water security.

Initial estimates of capital and incremental operating costs (principally additional pumping and treatment costs) for the Murrumbidgee to Googong Transfer are set out in Table 2.

**Table 2: Estimates of capital and operating costs for the Murrumbidgee to Googong Transfer**

<i>\$'000 nominal</i>	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Capital cost	1,025	44,126	29,076	-	-	-
Operating cost	-	-	2,154	2,208	2,263	2,319

### 2.1.3 Design of a Demonstration Water Purification Plant

The ACT Government has requested ACTEW to commence the design of a Demonstration Water Purification Plant and further analyse the recommendations made by the Expert Panel on Health (EPoH) and the eWater Cooperative Research Council (CRC) in regard to the Water Purification Plant (WPP).

The demonstration plant would use suitable technology to treat water in a planned and controlled manner so that the water produced complies with the national drinking water guidelines and other relevant standards. The intention is that water from the demonstration plant be used, but not as part of the ACT's drinking water supply. The plant would be required to demonstrate the ability to produce safe, potable water using the same technology as is proposed for a full scale plant.

Initial estimates of capital and incremental operating costs for the design of the Demonstration Water Purification Plant are set out in Table 3.

**Table 3: Estimates of capital and operating costs for design of the Demonstration Water Purification Plant**

<i>\$'000 nominal</i>	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Capital cost	3,075	3,152	-	-	-	-
Operating cost	-	-	-	-	-	-

Design only – excludes construction

### 2.1.4 Smart metering pilot

The ACT Government has requested that ACTEW and ActewAGL implement a pilot smart metering program in the ACT, for commencement in 2008/09. A smart metering pilot will seek to gauge the impact of the technology on:

- compliance with water restrictions;
- data accounting & analysis;
- remote automated reading;

- organisational capability; and
- water demand management.

The estimated cost of this program is \$5 million over two years. Initial estimates of capital and incremental operating costs for the smart metering pilot are set out in Table 4.

**Table 4: Estimates of capital and operating costs for the Smart metering pilot**

<i>\$'000 nominal</i>	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Capital cost	308	1,261	215	-	-	-
Operating cost	718	2,416	323	-	-	-

## 2.2 Contingent projects

As mentioned above, the Tantangara Transfer and construction of the Demonstration Water Purification Plant are contingent projects under the Water Security Plan.

### 2.2.1 Tantangara Transfer

In order to secure additional water from a source not largely dependent on rainfall within the ACT, the ACT Government has announced a plan to progress arrangements for the purchase and transfer of water from the Tantangara Reservoir, and for ACTEW and the Government to carry out the Water Security Taskforce's recommendations. The volume of water initially targeted to be obtained from this project could be in the range of 20 to 25 GL per year.

Under this option, the ACT would buy water from irrigators downstream of the ACT in New South Wales, Victoria or South Australia and enter into a commercial agreement with Snowy Hydro. Water would be transferred from the Snowy Mountains Scheme, most likely via the Tantangara Reservoir in NSW to the ACT's Corin or Googong Reservoirs.

It is estimated that about \$38 million may be spent on purchasing water rights from irrigators in the market but operating costs will depend upon the agreed commercial arrangements with Snowy Hydro and others as necessary.

Initial estimates of capital (principally purchase of water rights) and incremental operating costs for the Tantangara Transfer are set out in Table 5.

**Table 5: Estimates of capital and operating costs for the Tantangara Transfer**

<i>\$'000 nominal</i>	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Capital cost	38,950	-	-	-	-	-
Operating cost	-	3,749	3,936	4,133	4,339	4,556

## 2.2.2 Construction of a demonstration Water Purification Plant

The ACT Government has asked the Commonwealth to support construction of a demonstration Water Purification Plant, designed as part of *Phase 1* (see section 2.1.3 above), through the National Water Fund. ACTEW would contribute \$50 million towards the construction phase.

As the first plant of its kind in inland Australia, the purpose of the plant would be to optimise and prove the proposed water purification process under real operational scenarios, to research the health issues surrounding the introduction of purified water to the drinking water system, to research the environmental issues associated with purifying used water and to develop a comprehensive water quality monitoring program.

Initial estimates of capital and incremental operating costs for the construction of a demonstration Water Purification Plant are set out in Table 6.

**Table 6: Estimates of capital and operating costs for the construction of a demonstration Water Purification Plant**

<i>\$'000 nominal</i>	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Capital cost	-	17,861	35,537	-	-	-
Operating cost	-	-	-	4,415	4,636	4,868

## 2.3 Overall capital and operating expenditure requirements

As outlined in the previous sections, five of the Water Security Measures will require significant capital and operating expenditures. Table 7 and Table 8 provide a breakdown, respectively, of the indicative incremental capital and operating expenditures over the final year of the current regulatory period, and the next regulatory period.

**Table 7: Indicative revised capital expenditure 2007/08 to 2012/13 – Water**

<i>\$'000 nominal</i>	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
<b>Water capex as per major submission</b>	<b>42,496</b>	<b>35,652</b>	<b>63,980</b>	<b>19,257</b>	<b>49,809</b>	<b>12,225</b>
Enlarged Cotter Dam	5,125	31,519	75,382	44,153	-	-
Murrumbidgee Extraction	1,025	44,126	29,076	-	-	-
Water Purification Plant demonstration - design	3,075	3,152	-	-	-	-
Smart Metering pilot	308	1,261	215	-	-	-
<b>Capital expenditure including Phase 1 WSP</b>	<b>52,029</b>	<b>115,710</b>	<b>168,654</b>	<b>63,409</b>	<b>49,809</b>	<b>12,225</b>
Water Purification Plant demonstration – build	-	17,861	35,537	-	-	-
Tantangara	38,950	-	-	-	-	-

**Table 8: Indicative revised operating expenditure 2007/08 to 2012/13 – Water**

<i>\$'000 nominal</i>	<i>2007/08</i>	<i>2008/09</i>	<i>2009/10</i>	<i>2010/11</i>	<i>2011/12</i>	<i>2012/13</i>
<b>Water opex as per major submission</b>	<b>50,908</b>	<b>51,948</b>	<b>50,961</b>	<b>52,898</b>	<b>54,221</b>	<b>58,001</b>
Enlarged Cotter Dam	-	-	-	1,104	1,131	1,160
Murrumbidgee Extraction	-	-	2,154	2,208	2,263	2,319
Water Purification Plant demonstration - design	-	-	-	-	-	-
Smart Metering pilot	718	2,416	323	-	-	-
<b>Operating expenditure including Phase 1 WSP</b>	<b>51,626</b>	<b>54,364</b>	<b>53,348</b>	<b>56,210</b>	<b>57,615</b>	<b>61,480</b>
Water Purification Plant demonstration – build	-	-	-	4,415	4,636	4,868
Tantangara	-	3,749	3,936	4,133	4,339	4,556

# Addendum: Recommendations of the Taskforce

## Supply initiatives

The Taskforce and its Advisory Panel recommended that:

1. **The Cotter Reservoir be enlarged by 2011.** In doing this, the relevant recommendations made by the Expert Panel on Health and the eWater Cooperative Research Centre (CRC) must be addressed, and ACTEW be requested to:
  - a) commence detailed planning and design immediately, including a detailed risk assessment to ensure that all potential risks can be adequately managed;
  - b) commence the development of a fish (and biota) management strategy to protect important fish species (and other biota) in the Cotter Reservoir;
  - c) secure all relevant approvals as soon as possible;
  - d) develop and implement best practice construction and operational management plans, in accordance with their normal practices; and
  - e) ensure that the community is informed of progress.

It was further recommended that Government:

- f) agree to the relevant land being made available for the construction, with this and the associated infrastructure becoming ACTEW's responsibility;
  - g) request the relevant Government Department(s) to investigate the development of enabling legislation to expedite construction of the enlarged Cotter Reservoir; and
  - h) request the Environmental Protection Authority to review the environmental flow guidelines requirements for an enlarged Cotter Reservoir.
2. **The Murrumbidgee-Googong Transfer (MGT) be progressed and ACTEW be requested to:**
  - a) continue detailed design and secure the relevant approvals to achieve the MGT, with an extraction point to be determined as part of this

process (and in doing so, broaden the support it gave to ACTEW in June 2007 for progressing the Angle Crossing option);

- b) undertake a health risk assessment in close consultation with ACT Health as part of the detailed design to determine whether there is a need to upgrade the Googong Water Treatment Plant. This should include hydraulic modelling of Googong Reservoir;
- c) report to Government, on a regular basis, on progress on the above; and
- d) seek the approval of the ACT Chief Minister, Treasurer and Deputy Chief Minister to commence construction once all approvals are secured.

3. **Arrangements for the Tantangara option be progressed**, to secure additional water from a source not largely dependent on rainfall within the ACT, and to this end ACTEW is to:

- a) pursue commercial negotiations; and
- b) undertake further investigations of alternative(s) to optimise the transfer of water from Tantangara to ACT storages.

In addition, it was recommended that:

- c) ACTEW be given support to secure needed water rights;
- d) the relevant Government Department(s) pursue the needed inter-governmental negotiations and any ACT legislative changes required as a priority; and
- e) ACTEW and the relevant Government Department(s) work collaboratively and report to Government on a regular basis on progress on the above.

4. **Further consideration not be given to the Water Purification Scheme until the completion of further extensive analyses**, which address the relevant recommendations made by the Expert Panel on Health and the eWater CRC, including those foreshadowed by ACTEW. Detailed design of the Water Purification Plant should also be progressed and then a review of the need for additional infrastructure undertaken before a decision is made to progress to construction. In addition:

- a) the Cotter Reservoir must be enlarged prior to the scheme becoming operational;
- b) only a dual membrane (reverse osmosis) Water Purification Plant is to be considered;

- c) a demonstration plant is to be constructed and monitored with the community able to tour the facility and be provided with information on its operation. Water from the demonstration plant is to be used, but not as part of the ACT's drinking water supply;
  - d) the issues of brine management (including disposal) and the need for a wetland to be resolved; and
  - e) the relevant Government Department(s) and ACTEW investigate using water from the purification plant for specific purposes other than supplementing drinking water. This is aimed at creating long-term business and industry opportunities. Report to Government on a regular basis on progress on the above.
5. **Additional greenhouse gas emissions associated with the operation of the water security projects are voluntarily offset**, and that ACTEW and ActewAGL further investigate how such offsets should be obtained (within the context of the energy and emissions market).

## Demand management initiatives

Regarding demand management options, the Taskforce and its Advisory Panel recommended that:

6. **Demand Management Incentive Programs be continued** to achieve the *Think water, act water* targets of a reduction in per person consumption of mains water by 12% by 2013 and 25% by 2023; and an increase in the use of reclaimed water from 5% to 20% by 2013, and that the relevant Government Department(s) and ACTEW investigate and report to the Government on:
- a) the most effective mechanism for delivering demand management programs with a focus on achieving the targets efficiently; and
  - b) accelerating and expanding existing programs, particularly for the commercial sector and those activities that re-use water.
7. **The extension of Permanent Water Conservation Measures be investigated** by the relevant Government Department(s) and ACTEW:
- a) review the existing Permanent Water Conservation Measures and trial the revised arrangements when the current water restrictions are lifted;
  - b) review the existing water restrictions scheme in conjunction with a) above; and c) seek community views in designing the enhanced Permanent Water Conservation Measures and review existing water restrictions, and canvas the community's willingness to pay to avoid

extreme levels of water restrictions, and/or support for enhanced water conservation measures to avoid extreme levels of water restrictions.

8. **The metering of water be improved in the ACT** by ACTEW and ActewAGL being requested to implement a pilot smart metering program in the ACT, for commencement in 2008/09. The pilot program should measure changes in consumption and community attitudes and the community should then be informed of the results. If successful, a citywide program should be designed and costed, and cost recovery options identified.

It was noted that a mandatory requirement that all new multi-residential properties install unit meters will be introduced from February 2008. This initiative is strongly supported.

In addition to the above specific supply and demand recommendations, the Water Security Taskforce and its Advisory Panel recommend that:

9. **The Think water, act water strategy be updated**, and the relevant Government Department(s) develop a supporting water cycle management policy and program to effectively integrate all aspects of the resource including the management of catchments, supply and demand, quality and quantity issues, wastewater, stormwater and cross-border issues.
10. **Progress in implementing the Water Security Program be monitored**, and that:
  - a) the Chief Executive's Water Group (a high level cross-Government and ACTEW group) oversee the Program and regularly report to Government; and
  - b) the community is kept informed and engaged, for example, by public information programs, fostering public discussions and routinely reviewing information on the Government water website. This is to be done jointly by Government and ACTEW.