

## **Purpose of the workshop**

The Minister for Energy and the Minister for the Environment have requested the Independent Pricing & Regulatory Tribunal (Tribunal) to conduct a mid-term review of the Operating Licences for the Sydney Water Corporation and the Sydney Catchment Authority.

The workshop is being held as part of the Tribunal's public consultation process to;

- obtain comments on the issues of concern to stakeholders
- discuss recommendations through structured discussion.

As this is a public process, the transcript of the workshop will be made available for public access on the Tribunal's website, [www.ipart.nsw.gov.au](http://www.ipart.nsw.gov.au).

## **Format of the workshop**

Tribunal member, James Cox will chair the discussion. Members of the Secretariat will introduce each topic, and then participants on the round table will have the opportunity to present their position. In order to ensure that discussion proceeds smoothly and all the topics for discussion are covered, the Tribunal requests that:

- each speaker is limited to 5-7 minutes for each topic
- during this time, speakers are not interrupted
- only one representative of each participating organisation speaks per topic.

A general discussion, questions or comments from the floor will be heard at the discretion of the Chair following contributions from the invited participants. Additional matters can be discussed once the group has worked through the listed topics.

While the Tribunal requests that each participating organisation only nominate one representative, other representatives and observers may sit in the public gallery. Stakeholders in the gallery are able to attend any session in which they have an interest. There is no requirement to attend the whole day.

## **Agenda**

Discussion will broadly cover issues raised by the Tribunal's Issues Paper and submissions received by the Tribunal (available on the website [www.ipart.nsw.gov.au](http://www.ipart.nsw.gov.au)). The attached agenda outlines the session times. The workshop materials provide the main points for discussion and follow the order of the agenda.

**Mid-term Review Workshop  
Tuesday 23<sup>rd</sup> July 2002  
Grace Hotel, 77 York St**

**AGENDA FOR WORKSHOP**

<b>Item No</b>	<b>Time</b>	<b>Topic</b>	<b>Detail</b>
	9.00am	Tea & Coffee provided	<ul style="list-style-type: none"> <li>• Registration</li> </ul>
	9:30am	Introduction and proceedings for the day	
1	9:45am	<b>Review process and background</b>	<ul style="list-style-type: none"> <li>• History of Licence</li> <li>• Sydney Water and Catchment Authority's Licence</li> </ul>
2	10:00am	<b>Overview of demand &amp; supply balance</b> <ul style="list-style-type: none"> <li>• IPART presentation (10 mins)</li> <li>• SCA response/presentation (5 mins)</li> <li>• Round table discussion</li> <li>• Open discussion</li> </ul>	<ul style="list-style-type: none"> <li>• Water balance framework – reliability, environmental flows, restrictions, demand management</li> <li>• Reliability criteria – information requirements, licensing framework</li> </ul>
	11:30am	MORNING TEA	
3	11:45am	<b>Demand Management</b> <ul style="list-style-type: none"> <li>• IPART presentation (10 mins)</li> <li>• SWC response/presentation (5 mins)</li> <li>• Round table discussion</li> <li>• Open discussion</li> </ul>	<ul style="list-style-type: none"> <li>• Overview of Sydney Water's performance since 1995</li> <li>• Options to improve program</li> <li>• Options for future regulatory framework</li> </ul>
	1:15pm	LUNCH	
4	2:00pm	<b>Sydney Catchment Authority</b> <ul style="list-style-type: none"> <li>• IPART presentation (10 mins)</li> <li>• Round table discussion</li> <li>• Open discussion</li> </ul>	<ul style="list-style-type: none"> <li>• Memoranda of Understanding</li> <li>• Water quality obligations for human consumption</li> <li>• Risk Management Plan</li> </ul>
	3:00pm	AFTERNOON TEA	
5	3:15pm	<b>Sydney Water Corporation</b> <ul style="list-style-type: none"> <li>• IPART presentation (10 mins)</li> <li>• Round table discussion</li> <li>• Open discussion</li> </ul>	<ul style="list-style-type: none"> <li>• Aesthetic drinking water guidelines</li> <li>• Annual Drinking Water Quality Improvement Plan</li> <li>• Other grades of water</li> </ul>
	4:15pm	Concluding remarks	
	4:30pm	FINISH	

MATERIALS FOR WORKSHOP  
INDEX

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1	9.45am	Background	4
2	10.00am	Overview of supply/demand balance	5
		Reliability of supply	7
3	11.45am	Demand Management	11
4	2.00pm	Sydney Catchment Authority – other issues	15
5	3.15pm	Sydney Water Corporation – other issues	17

## 1 BACKGROUND

The role of an Operating Licence is to ensure that customers are adequately protected from abuses of monopoly power. This can be achieved through legally enforceable minimum service standards and performance obligations in the Licence.

The Licence is subject to an annual audit and the results of the audit provide public information on the utility's performance.

The Sydney Water Corporation's Operating Licence was originally granted in January 1995 and has been amended several times, most notably following the 1998 McClellan Inquiry. The current term expires in January 2005.

The Sydney Catchment Authority's Operating Licence was granted in 1999, following the McClellan Inquiry. The original Licence expired on 31 December 1999 and was subject to a substantial public review process, following which a new five year Licence came into effect from April 2000. The current term of the Licence expires in April 2005.

Under the provisions in the Operating Licences, the Tribunal is required to conduct mid-term reviews. The Operating Licences specify that the mid-term reviews must be undertaken:

- to determine whether the licences are fulfilling their objectives; and
- in relation to any other matter required to be reviewed by the licences.

The reviews are to be conducted under Part 4B of the *Independent Pricing and Regulatory Tribunal Act 1992*. The Tribunal's Terms of Reference (see Attachments 1 and 2 in the Issues Paper) require it to make its recommendations to the relevant Ministers by 30 September 2002.

The Tribunal has employed Montgomery Watson Harza Australia to assist in the review of Sydney Water's demand management program and targets.

## 2 OVERVIEW OF SUPPLY AND DEMAND BALANCE

### Water balance

The Tribunal is required to review two key aspects of Sydney’s water supply and demand balance as part of this review:

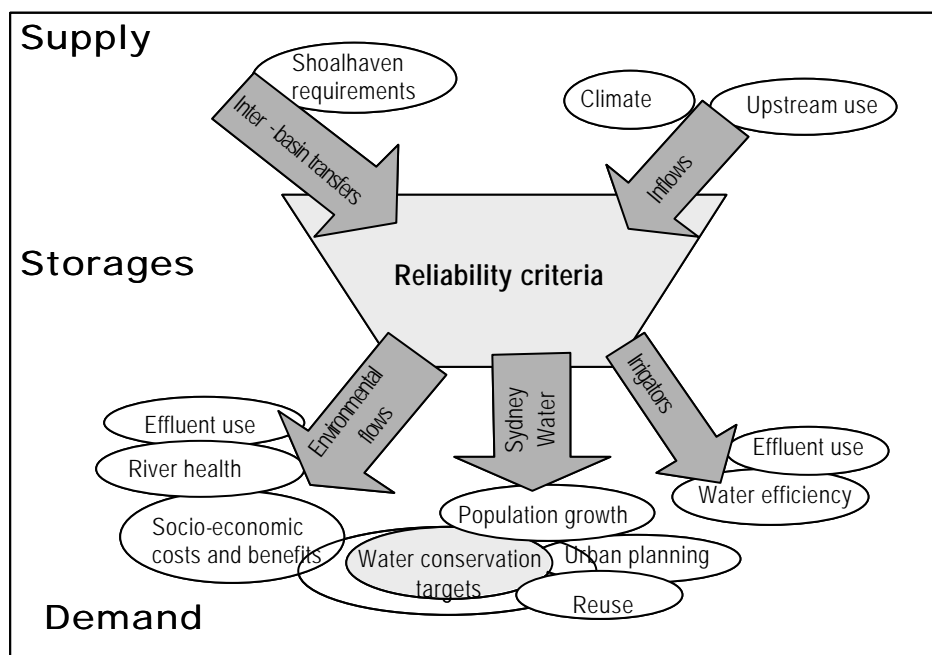
1. the **reliability criteria** in the Catchment Authority’s licence<sup>1</sup>; and,
2. a **water conservation target** level for 2014/15 to be included in Sydney Water’s licence.

These are two parts of the broader framework of Sydney’s water balance. There are interrelationships between all the parts of the framework which means it is important that changes to individual parts are not considered in isolation. The key components of this framework are illustrated in Figure 1. They include climate, water transfers from other catchments, demand from Sydney Water and other users as well as allocations for environmental flows.

The arrows in Figure 1 represent the inputs (supply) and outputs (demand) into and from the Catchment Authority’s storages. The bubbles highlight some of the factors that can affect the volume of these inputs and outputs.

The specific aspects of the framework to be reviewed by the Tribunal include Reliability Criteria and Water Conservation Targets. Setting reliability criteria, by limiting how and when restrictions can be imposed, helps to ensure that sufficient volumes of water are stored to provide for a continuous water supply. However, the higher the level of reliability the more water that needs to be stored. Setting water conservation targets is one way that demand can be reduced.

**Figure 1: Factors affecting the supply and demand balance**



<sup>1</sup> In these materials ‘reliability criteria’ refers collectively to all the *Catchment Infrastructure Works Performance Criteria* listed in Schedule 2 of the Catchment Authority’s licence (see Attachment 1)..

The Government has announced that it has indefinitely deferred the construction of a new dam to augment existing water supplies. This implies that future demand for water in Sydney must be met within the constraints of the Catchment Authority's existing infrastructure.

The Catchment Authority estimates in its submission that the safe yield<sup>2</sup> from its systems under the current operating rules and reliability criteria is about 600 GL per annum (+/- 5-10%).<sup>3</sup> Releases to Sydney Water are currently at about the same level as the estimated safe yield.

## Pressures on water balance

There are a number of factors, represented in Figure 1, that put upward pressure on demand and that could reduce supply. Three of the key factors are:

- Sydney's population will increase over time. Some forecasts estimate Sydney's population will increase to about 5 million people by 2020.
- The Government may commit to increased environmental flows to improve downstream river health and for other social and economic benefits.
- It may be important to manage water transferred from the Shoalhaven to the Sydney system differently so that future demands in the Shoalhaven can be met and environmental impacts are reduced.

## Potential management levers

While these are significant pressures on the demand and supply balance there is also potential to use a number of 'levers' to reduce demand and to increase supply. Some of these are listed below:

- Compliance with the water conservation targets in Sydney Water's licence would significantly reduce demand.
- Management of water used for irrigation downstream of the storages may reduce the volume of water needed for environmental flows.
- The reliability criteria in the catchment authority's licence could be relaxed. This has the potential to increase the supply available from the Catchment Authority's storages.
- Alternative water supply options including increased water reuse could be utilised.

A number of scenarios will be presented at the workshop that illustrate how some of these factors may interact to alter the supply and demand balance.

The Catchment Authority's reliability criteria and Sydney Water's water conservation targets are considered more specifically in the following sections.

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<sup>2</sup> Safe yield is defined in the Catchment Authority's submission as 'the amount of water can be withdrawn from a reservoir on an ongoing basis with an acceptably small risk of reducing the reservoir storage to zero'.

<sup>3</sup> Sydney Catchment Authority, *Submission to IPART's mid-term review of the Sydney Catchment Authority's Operating Licence*, p 31.

### 3 RELIABILITY OF SUPPLY

Attachment 1 sets out the performance criteria that the Tribunal is required to review. The criteria aim to ensure a reliable long term water supply for Sydney. Two key questions that need to be addressed in reviewing the criteria are:

1. What is an appropriate level of reliability?
2. What is the appropriate licensing framework to ensure this level of reliability?

#### Level of reliability

The four criteria in the licence relate to the frequency, duration and severity of restrictions and to minimising the risk that the Catchment Authority's storages will completely empty. This is consistent with criteria used in other parts of Australia and overseas.

The existing reliability criteria mean that if restrictions were applied for 12 months, they could only occur once every 33 years (on average) and that for most of the 12 months only level 1 restrictions (which require a 7 per cent reduction in demand) could be imposed. Preliminary research suggests that these criteria are relatively conservative compared to criteria and standards applied in other parts of Australia and overseas that may allow more frequent, longer and/or more severe restrictions. Some jurisdictions, however, aim for 100 per cent reliability. That is, restrictions are never imposed. Comparisons with other jurisdictions can be misleading since the geography, climate and customer base of each is unique and the required level of reliability for different water users varies.

Less stringent reliability criteria could allow an increased water supply from existing storages though also increases the risks to maintaining a continuous supply. In its submission, the Catchment Authority estimated that changing the reliability criterion from 97% to 95% could increase yield by 60 GL per annum. Increased yield would alleviate some of the pressures on the existing system. More water could be available to meet environmental flow requirements or it could reduce the need for inter-basin transfers from the Shoalhaven. Apart from environmental benefits, there are social and economic benefits of environmental flows and from reduced inter-basin transfers. There are also social and economic costs of more frequent and possibly more severe restrictions.

#### Licensing framework

The Tribunal needs to consider the appropriate framework for including the reliability criteria in the Catchment Authority's Operating Licence. Some of the limitations of the existing framework are listed below:

- the criteria are difficult to read and to understand
- assessment of performance against the criteria in the operational audit is based on probabilistic modelling
- the criteria are framed in terms of Sydney Water's forecast demand rather than its actual demand

*The criteria are difficult to read and to understand*

The criteria are expressed in a complex way which makes them difficult to interpret. In addition some of the terms and phrases used in the criteria are not defined and can

introduce ambiguity. For example, the Catchment Authority is required to meet Sydney Water's demand in full for 97% of months, 'on average'. It is not clear on what basis 'on average' is measured.

In other jurisdictions comparable criteria are framed in straightforward terms. For example in Melbourne the criteria are expressed as:

- a) The probability of water restrictions being imposed in the area of the retailer's licence is never greater than 5% of years; and
- b) Water restrictions are never imposed for more than 12 continuous months; and
- c) Water restrictions never exceed Level 3 restrictions as defined in the Drought Response Plan.<sup>4</sup>

It is important that licence conditions are clear and unambiguous and the Tribunal is concerned that any criteria it recommends be clearly expressed and well defined.

*How can the criteria be better expressed?*

#### *Assessment of performance against the criteria*

The Catchment Authority's performance against the criteria is assessed annually in the Operational Audit. Assessment is based on output from a mathematical model that is designed to simulate the impact of various monthly water supply and demand sequences on monthly storage volumes given certain operating constraints and restriction criteria. The 2000/01 auditors considered the methods and model used by the Catchment Authority were consistent with industry standards.<sup>5</sup> However, the probabilistic nature of the criteria and the assumptions and data used in the model mean that there are inherent uncertainties in assessing performance.

A desirable characteristic of licence conditions is that compliance against them is easily measured. The Tribunal is interested in stakeholder views on the appropriateness of annual audit assessments of performance against the reliability criteria and whether there may be more effective means of monitoring compliance.

*Are there better ways to assess performance against the reliability criteria?*

#### *The criteria are framed in terms of forecast rather than actual demand*

The current licence conditions mean that assessment of the Catchment Authority's performance is based on its ability to meet Sydney Water's forecast demand, rather than Sydney Water's actual demand. These annual demand forecasts are specified in the Catchment Authority's licence and assume Sydney Water will meet its water conservation

<sup>4</sup> Melbourne Water and South East Water Limited, *Bulk Water Supply Agreement*.

<sup>5</sup> Independent Pricing and Regulatory Tribunal, *Sydney Catchment Authority Operational Audit 2000/2001*, prepared by Egis Consulting, October 2001.



targets. Sydney Water has exceeded these forecasts in recent years. This means that the audit results reflect a theoretical rather than an actual situation.

If Sydney Water was on track to meet the water conservation targets in its licence actual and forecast demand would be better aligned. The Catchment Authority is also required to manage water conservation consistent with the requirements in Sydney Water's licence.

These split but interdependent responsibilities of the Catchment Authority and Sydney Water for water conservation and maintaining a reliable supply mean that both need to perform adequately to ensure a reliable water supply.

*How can the need for Sydney Water and the Catchment Authority to work together to maintain reliability be better addressed in licence conditions?*

## **Proposed way forward**

The Tribunal proposes not to recommend changes to the reliability criteria at the mid term review but to reconsider the criteria at the end of term Operating Licence review. The Tribunal recognises that adjusting the existing criteria can have significant impacts on other aspects of the supply and demand balance which in turn can have social, environmental and economic impacts. It believes that there are two key areas of work required prior to the end of term review before it can recommend any changes:

1. The Tribunal needs to give further consideration to how the limitations of the existing framework can be addressed in the criteria.
2. A range of information is needed to better understand the impacts of changing the reliability criteria and the interrelationships between these and other parts of the water balance. Much of this information will become available prior to the end of term review. For example, the Hawkesbury-Nepean River Management Forum is expected to make recommendations to Government on environmental flows in 2003.

Table 1 lists information that the Tribunal believes will help to inform its review of the reliability criteria at the end of term review.

**Table 1: Information requirements for review of the reliability criteria**

<b>Information Required</b>	<b>Source</b>	<b>Availability</b>
<p><b>System capabilities</b></p> <p><i>An understanding of the capacity of the existing infrastructure, its operating rules including inter-basin transfers, and modelling of how these would be affected by changes to the reliability criteria.</i></p>	Expert Panel, Catchment Authority, Sydney Water	2003
<p><b>Population projections</b></p> <p><i>Estimates of Sydney's population and populations in catchment areas to at least 2020.</i></p>	Planning NSW, Sydney Water, Catchment Authority	Ongoing
<p><b>Urban design</b></p> <p><i>An understanding of how planned urban expansion and consolidation may affect demand for water (in Sydney and catchment areas).</i></p>	Planning NSW, Sydney Water, Catchment Authority	Ongoing
<p><b>Environmental flows</b></p> <p><i>Information on the allocations necessary for environmental flows and how they will affect the amount of water available for other uses.</i></p>	Hawkesbury Nepean Forum, Department of Land and Water Conservation	2003
<p><b>Water sharing planning</b></p> <p><i>An understanding of how water sharing plans will affect inter-basin transfers from the Shoalhaven and demand for and efficiency of downstream irrigation.</i></p>	Department of Land and Water Conservation	Ongoing
<p><b>Demand management</b></p> <p><i>An understanding of the potential for demand management savings and how these will affect the supply and demand balance.</i></p>	IPART Consultancy	2002
<p><b>Community preferences</b></p> <p><i>An understanding of the community's attitudes towards and acceptance of restrictions and water conservation measures.</i></p>	Research by Sydney Water and Catchment Authority including consultation with stakeholders	end 2003
<p><b>Other jurisdictions</b></p> <p><i>An understanding and evaluation of regulatory frameworks and instruments used to manage reliability in other jurisdictions</i></p>	Catchment Authority Consultancy, Melbourne Watersmart Committee, Secretariat research.	2002

## 4 DEMAND MANAGEMENT

Another part of the Water Balance equation is managing the demand for water. Water conservation targets were first introduced in Sydney Water's 1995 Operating Licence and have been carried forward into the current licence. The current Licence requires Sydney Water to meet the following target levels:

- 364 litres per capita per day by 2004/05
- 329 litres per capita per day by 2010/11.<sup>6</sup>

These targets were ambitious and represented a 28 percent and 35 percent reduction in consumption compared to 1990/91.

Stakeholders have indicated their concern that Sydney Water may not achieve the 2004/05 targets. Stakeholders have also questioned the existing incentives for Sydney Water to implement water conservation strategies.

Montgomery Watson Harza Australia (MWH) was engaged by the Tribunal to:

- review the effectiveness of Sydney Water's Demand Management Strategy and recommend ways to improve the existing program
- evaluate alternative water conservation strategies that could be adopted by Sydney Water
- evaluate the appropriateness of water conservation targets and alternative regulatory frameworks.

MWH has interviewed a number of stakeholders in formulating recommendations for this area. MWH's full report is available from the Tribunal's website [www.ipart.nsw.gov.au](http://www.ipart.nsw.gov.au).

### Performance since 1995

MWH's key findings in regards to Sydney Water's demand management performance include:

- Sydney Water did not commence implementation of initiatives under a formal Demand Management Program until 1999/00, as indicated in table 1 below. Prior to 1999/00 there was reliance on the introduction of quarterly billing, a two-part tariff and temporary water restrictions.
- Sydney Water has managed to achieve savings of approximately 22 gigalitres per annum (GL/a) between June 1999 and June 2002, coming mainly from the residential retrofit program, leakage reduction program and water recycling at its Sewerage Treatment Plants.<sup>7</sup>

<sup>6</sup> Sydney Water, *Operating Licence*, clause 8.1.1.

<sup>7</sup> Overall the per capita demand for Sydney has fallen from the baseline of 506 Lcd in 1991 to 411 Lcd in 2002, a reduction of 18.6%.

Table 1. Expenditure and savings achieved

<b>Program</b>	<b>98/99 (\$m)</b>	<b>99/00 (\$m)</b>	<b>00/01 (\$m)</b>	<b>01/02 (\$'m)</b>	<b>Estimated total savings from program (GL/a)</b>
Residential	0.05	4.23	10.95	6.52	4.51
Business		1.15	1.00	0.46	0.45
Leakage reduction		0.30	1.00	2.37	5.1
Recycled water					12.12
Other		0.45	1.41	1.99	
<b>Total</b>	<b>\$0.05m</b>	<b>\$6.13m</b>	<b>\$14.36m</b>	<b>\$11.34m</b>	<b>22.18GL/a</b>

### Opportunities to improve the existing Program

The 2004/05 per capita target translates to a volumetric target of between 530 to 570 GL/a (depending of assumed population growth). If Sydney Water is to achieve these targets, based on total demand of 610 GL/a, additional savings in the order of 40 to 80 GL/a are required.

MWH has provided a detailed analysis of Sydney Water's program and recommended ways to improve the program. Key areas to achieve greater savings include:

- fast-tracking the retrofit of Department of Housing's homes to be completed in 1 to 2 years (additional savings of 10 GL/a are expected from this total housing stock).
- improving leakage management through improved dividing valve maintenance, additional flow-metering and reduction of zone sizes. This will provide improved measurement of leakage and provide a sustainable long term solution (additional savings of 15 GL/a are proposed for the period up to 2005).
- remove barriers from the major user program by providing free audits and other incentives to the business sector.

MWH has also identified the need for Sydney Water to improve implementation planning (budgets, activities) of demand management programs.

### Sydney Water's revised 2002/03 Program (approved July 2002)

Sydney Water has indicated that its

Board recently endorsed a revised mix of demand management initiatives to accelerate demand savings. The revised program increases the effort on programs that have proven successful, such as leakage reduction, and incorporates new measures, such as the Landscape Assessment Program and the Rainwater Tank Rebate Scheme.<sup>8</sup>

Under the revised program a budget of \$18 million has been allocated for 2002/03, which includes \$2m for loans to businesses to implement water saving measures.

<sup>8</sup> Email from Sydney Water 12 July 2002.

## Proposed regulatory framework

MWH identified several limitations with the current per capita targets:

- the targets do not clearly reflect the key objective of limiting demand to prevent the construction of a new dam and provide for environmental flows
- it is difficult to measure Sydney Water's performance in contributing to reductions in consumption, given that there are a range of other factors that affect water consumption (eg population growth)

A new regulatory framework will need to improve monitoring of Sydney Water's performance and provide clear incentives. The Tribunal proposes the following regulatory framework which is based largely on MWH's recommendations.

### *Short term framework*

The Tribunal's preferred approach for the short term (over next two years) is to more closely monitor Sydney Water's demand management performance.

The proposed framework includes:

- **Target:** retain the existing per capita targets in the Licence
- **Program reporting by sector (residential, commercial & industrial), leakage and recycling:** Sydney Water to report on demand management activities for 2002/03 and 2003/04 (see Attachment 2 for reporting schedule)
- **Data collection and reporting:** Sydney Water to provide:
  - water balance data using the IWA water balance table (see Attachment 3)
  - Infrastructure Leakage Index (IWA methodology)
  - data on effluent reuse and stormwater reuse
- **Audit.** The annual audit should be expanded to include performance assessment in relation to activities under the demand management program, and compliance assessment in data collection and reporting.

The mechanism to establish short-term framework for program reporting, data collection, and audit is through a Ministerial requirement.

### *Long term framework*

The long term framework for demand management needs to reflect the overall availability of water. By the end of term licence review the elements of the water demand and supply balance should be better understood. For example, the Expert Panel will have reported to government on environmental flows.

At the end of term review of the licence (commencing January 2004), the Tribunal will require a proposal from Sydney Water on the total water savings (ML/annum) for 2009/10. To support the total savings, Sydney Water will need to provide lists of activities and associated indicative savings (on an annual basis) for the Leakage, Recycling (effluent and stormwater), Residential, and Business (commercial and industrial) Programs. The estimate

of water savings should be derived using cost effectiveness evaluation analysis in a Least Cost Planning framework.

The Tribunal will seek comments from stakeholders on Sydney Water's proposal and may also seek independent advice.

The Tribunal proposes that the 2005 Operating Licence be amended to incorporate the long term framework:

- **Target for total water savings for 2009/10 (GL per annum)**
- **Annual program reporting by sector:** Sydney Water to report on demand management activities and achieved savings for the following categories:
  - Leakage from water supply system
  - Recycling of effluent and stormwater
  - Residential sector
  - Business program (including separate reporting on commercial and industrial)

See Attachment 2 for the reporting schedule.

- **Data collection and reporting:** Sydney Water to provide:
  - water balance data using the IWA water balance table (see Attachment 3)
  - Infrastructure Leakage Data (IWA methodology)
- **Audit.** The annual audit should include compliance with the targeted savings, and performance assessment in relation to estimated water savings and activities by program, and data collection and reporting.

Another option that the Tribunal will consider during the upcoming pricing review is to consider additional incentives through penalty pricing.

*What is the best way to regulate Sydney Water's demand management performance in the short term and in the longer term?*

## 5 SYDNEY CATCHMENT AUTHORITY

Other issues that the Tribunal is required to consider in the mid-term review of the Catchment Authority's Operating Licence include:

- whether the licence is fulfilling its objectives
- whether any obligations in its Memoranda of Understanding with other organisations should be incorporated into the Licence (clause 3.3.6)
- the water quality obligations in the Licence for the supply of bulk water (clause 6.5)
- the continued need for a Risk Management Plan in light of the requirements under the Regional Environment Plan (clause 6.7.7)

### Licence meeting its objectives

All stakeholders have indicated that the objectives of the Operating Licence are appropriate and reflect the objectives of the *Sydney Water Catchment Management Act 1998*. However, the Total Environment Centre (TEC) believes an additional objective should be included in the licence that requires the Catchment Authority to conduct its operations in accordance with ESD principles. This is a principal objective listed under the *Sydney Water Catchment Management Act 1998*.

The Catchment Authority's licence requires it to meet the objectives and other requirements imposed on it in the Act.<sup>9</sup>

*Should the Licence be changed to include an additional objective that requires the Catchment Authority to conduct its operations in accordance with ESD principles?*

### Memoranda of Understanding

The purpose of the Memoranda of Understanding (MOUs) between the Catchment Authority and various organisations is to form the basis for cooperative relationships with a view to furthering the objectives of the Licence and the Act.<sup>10</sup> The Catchment Authority's Licence requires it to enter into MOU with the Water Administration Ministerial Corporation (WAMC), the Environment Protection Authority (EPA) and NSW Health. The signatories to these MOUs indicate in their submissions that their respective roles are adequately defined in the MOUs.

Most other stakeholders have also indicated that the MOUs are adequate and that the key requirements in the MOUs are already incorporated into the Catchment Authority's Operating Licence.

*Should the Tribunal incorporate additional obligations from the MOU in the licence?*

<sup>9</sup> Sydney Catchment Authority, *Operating Licence*, 19 April 2000, clause 2.1.2.

<sup>10</sup> Sydney Catchment Authority, *Operating Licence*, 19 April 2000, clause 3.3.2.

## Review of Risk Management Plan

The Catchment Authority's Risk Management Plan (RMP) is a key instrument used to manage the barriers for water quality protection. The Catchment Authority was required by its Operating Licence to develop a RMP after the completion of the first audit.

The Tribunal is required to review the need for the RMP in light of the requirements under the Regional Environmental Plan (REP). The REP has not been completed and it is not clear when a final REP will be in place.

Stakeholders have indicated that the RMP should be retained at least until the REP is finalised and that parts of the RMP will remain necessary even after implementation of the REP. This is because the REP will not cover some aspects of the Catchment Authority's operations such as its management of the catchment infrastructure works.<sup>11</sup> The Catchment Authority also recognised some deficiencies in the RMP in its submission and has proposed to review the document.<sup>12</sup>

*Should the RMP be removed from the Licence prior to the finalisation of the REP?*

## Water quality obligations

In supplying bulk water to its customers, the Catchment Authority is required to:

- meet certain health guideline values contained in the Australian Drinking Water Guidelines
- meet site specific standards for bulk water contained in its Bulk Water Supply Agreement with Sydney Water (these only relate to aesthetic characteristics such as turbidity, colour, hardness and alkalinity)
- liaise with customers to whom it supplies bulk water for treatment, to help ensure treated water consumed by humans is not harmful to human health.<sup>13</sup>

The Tribunal is required to review these obligations and make recommendations as to whether they should be amended and, if so, the nature of the amendments.<sup>14</sup>

NSW Health, in its submission, stated that additional health related water obligations in the licence were unnecessary. The Catchment Authority also believes the existing obligations are adequate. Some stakeholders are concerned that there should be obligations to implement best practice guidelines for *Cryptosporidium* and *Giardia* as well as for other health related issues such as endocrine disrupting chemicals.

*Are the existing water quality obligations for bulk water adequate?*

<sup>11</sup> Sydney Catchment Authority, *Submission to IPART's Mid-Term Review of the Sydney Catchment Authority's Operating Licence*, April 2002.

<sup>12</sup> Sydney Catchment Authority, *Submission to IPART's Mid-Term Review of the Sydney Catchment Authority's Operating Licence*, April 2002.

<sup>13</sup> Sydney Catchment Authority, *Operating Licence*, 19 April 2000, clause 6.2.

<sup>14</sup> Sydney Catchment Authority, *Operating Licence*, 19 April 2000, clause 6.5.



## 6 SYDNEY WATER CORPORATION

Other issues that the Tribunal is required to consider in the mid-term review of the Sydney Water's Operating Licence include:

- review whether the licence is fulfilling its objectives
- review the study on the costs and benefits of Sydney Water complying with aesthetic drinking water guidelines
- assess the effectiveness of the Annual Drinking Water Quality Improvement Plan and whether there is a continued need for the plan each year
- identify minimum standards and guidelines to regulate the supply of other grades of water.

### Licence fulfilling objectives

In their submissions all stakeholders have indicated that the objectives of the Operating Licence are appropriate and reflect the objectives of the *Sydney Water Act 1994*. The Total Environment Centre (TEC) has, however, indicated that an additional objective should be added to the Licence requiring Sydney Water to conduct its operations in accordance with ESD principles. This objective is listed in the *Sydney Water Act 1994*, however, it is not explicitly listed in the Licence objectives.

Stakeholders have also indicated that the Sydney Water's compliance with the Operating Licence requirements has been good, with the exception of meeting the demand management targets.

Given that the Act already incorporates ESD principles (and the Licence requires Sydney Water to comply with the objectives of the Act) there may not be an additional benefit from explicitly listing the ESD principals as an objective of the Licence.

*Should the Licence be changed to include an additional objective that requires Sydney Water to conduct its operations in accordance with ESD principles?*

### Compliance with aesthetic drinking water guidelines

Under the Licence, the Minister for Health is required to specify aesthetic guideline values that must be complied with. Aesthetic guideline values have not been specified at this stage. Sydney Water, however, does publish results of aesthetic characteristics (such as turbidity, true colour and iron) in the *Quarterly Drinking Water Quality Report*.

Sydney Water has commissioned consultants to review the costs and benefits of meeting these specific aesthetic guideline values. The consultants have concluded that there is substantial cost of meeting guideline values related to chlorine and monochloramine and these costs outweigh the benefits achieved.

NSW Health and the TEC have indicated their concern that complying with certain aesthetic drinking water guidelines may be costly and divert expenditure away from activities that would benefit health related guideline values. TEC supports the inclusion of requirements

for Sydney Water to comply with the aesthetic drinking water guideline values (except for those related to chlorine and monochloramine). NSW Health supports the inclusion of aesthetic guidelines but indicates that health related guidelines should take precedence over aesthetic guidelines where there could be conflict.

The recently gazetted Operating Licence for Hunter Water Corporation provides an approach, in regards to aesthetic guidelines, that overcomes stakeholders' concerns. Hunter Water's Operating Licence requires it to comply with aesthetic guideline values for pH, true colour, turbidity, aluminium, iron and zinc. The Licence also specifies that where there is an inconsistency between the health related guideline values and the aesthetic values, the health related value is to prevail.

*Should Sydney Water be required to report performance against aesthetics values in the short term? Should Sydney Water adopt the 'Hunter Water model' in regards aesthetic guidelines at the end of term review?*

### **Annual Drinking Water Quality Improvement Plan**

The Licence requires the Tribunal to assess the effectiveness of the Annual Drinking Water Quality Improvement Plan and whether there is a continued need for this plan.

Sydney Water supports removing the Improvement Plan from the Licence but including it in the MOU with NSW Health. NSW Health supports removal of the Annual Plan and notes that the Five-Year Plan could be amended to include greater annual reporting on activities and future works.

Other stakeholders have indicated support for maintaining the Annual Plan and believe that it acts to drive the implementation of the Five-Year Plan.

Given the differences in opinion among stakeholder, the Tribunal believes that there it is prudent to maintain the Annual Improvement Plan in the Licence. There has only been one audit of the Licence and the Annual Plan also provides a useful discipline for Sydney Water to include projects derived from drinking water quality monitoring results, through periodic inspections and evaluations (as well as projects from the Five Year Plan).

Further, maintaining the Annual Plan in the Licence ensures transparency of Sydney Water's activities regarding drinking water quality and provides customers with greater confidence in the system.

*Should the Annual Improvement Plan be maintained in the Licence and further consideration to this issue being given at the end-term review?*

## Minimum standards for non-drinking water

Sydney Water's Operating Licence requires that minimum standards and guidelines to regulate the supply of other grades of water be identified in this review.

The existing provision in the licence is that other grades of water must be supplied according to relevant guidelines and requirements prescribed by the Environment Protection Authority, NSW Health, the Department of Land and Water Conservation, the Department of Agriculture, other relevant government agencies and the NSW Recycled Water Coordination Committee. The Customer Contract specifies that recycled water complies with relevant guidelines and requirements prescribed by the relevant agencies noted above.

Sydney Water does not support introducing standards for other grades of water in the Licence, but believes that compliance should focus on system management and quality assurance. NSW Health and the EPA have indicated that standards for other grades of water should not be prescribed in the Licence. The TEC, on the other hand, believes that specifying standards in the Licence will help to provide the public with greater confidence regarding effluent reuse.

There may not be a strong case for introducing specific standards for 'other grades of water' in the Licence. Non-drinking water is supplied to specific customers on a 'fit for purpose' basis that is negotiated between Sydney Water and the customer. Imposing specific standards for each purpose may be difficult and would limit Sydney Water's flexibility in providing this water. While guidelines and requirements (administered by the EPA, NSW Health, DLWC) are in place to regulate the quality of non-drinking water, no standards appear to be available at this stage.

*Should specific standards for 'other grades of water' be applied in the Licence?*

## Attachment 1 Catchment Authority's Performance Criteria

## Catchment Infrastructure Works performance criteria

- (a) Reliability is to be not less than 97%, and is defined as the percentage of months, on average, that the Authority will meet in full Sydney Water Corporation's Forecast Average Annual Demand requirements referred to in paragraph (f) below. This means it is estimated that, on average, restrictions will not need to be applied more often than 30 months in 1,000 months. ("Reliability")
- (b) Robustness is to be not less than 90%, and is defined as the percentage of years, on average, that the Authority will not require a reduction in Sydney Water Corporation's Forecast Average Annual Demand for Bulk Raw Water referred to in paragraph (f) below. This means it is estimated that, on average, not more than 10 years in 100 years will be affected by restrictions. For the purposes of this clause, a "year" is each period of 12 months commencing on 1 July and a year will have been affected by restrictions if in any day of that year a restriction has been applied. ("Robustness")
- (c) Security is to be not less than 5%, and is defined as the level of the Authority's operating storage below which actual storage is not to fall, on average, more often than 0.001% of the time. This means it is estimated that, on average, the level of operating storage will not fall below 5% more often than one month in 100,000 months. ("Security") (Reliability, Robustness and Security together comprise the "System Criteria")
- (d) During drought the System Criteria assume that, contingent upon the Authority giving Sydney Water Corporation reasonable prior written notice of the need to do so, Sydney Water Corporation will reduce its demand for water from the Authority in accordance with the following restriction levels:-
  - Level I. at least a 7% demand reduction, not more than 3% of time;
  - Level II. at least a 12% demand reduction, not more than 1% of time;
  - Level III. at least a 20% demand reduction, not more than 0.5% of time;
  - Level IV. at least a 30% demand reduction, not more than 0.3% of time;
  - Level V. at least a 50% demand reduction, not more than 0.05% of time.("Drought Restrictions")



### Attachment 3 IWA Water Balance table

A	B	C	D	E
System input volume [m <sup>3</sup> /year]	Authorised consumption [m <sup>3</sup> /year]	Billed authorised consumption [m <sup>3</sup> /year]	Billed metered consumption (including water exported) [m <sup>3</sup> /year]	Revenue water [m <sup>3</sup> /year]
		Unbilled authorised consumption [m <sup>3</sup> /year]	Billed unmetered consumption [m <sup>3</sup> /year]	
			Unbilled metered consumption [m <sup>3</sup> /year]	
		Unbilled unmetered consumption [m <sup>3</sup> /year]		
	Water losses [m <sup>3</sup> /year]	Apparent losses [m <sup>3</sup> /year]	Unauthorised consumption [m <sup>3</sup> /year]	
			Metering inaccuracies [m <sup>3</sup> /year]	
		Real losses [m <sup>3</sup> /year]	Real losses on raw water mains and at the treatment works (if applicable) [m <sup>3</sup> /year]	
			Leakage on transmission and/or distribution mains [m <sup>3</sup> /year]	
Leakage and overflows at transmission and/or distribution storage tanks [m <sup>3</sup> /year]				
Leakage on <i>service connections</i> up to the <i>measurement point</i> [m <sup>3</sup> /year]				