

**Mid-term reviews of
Sydney Water Corporation's and
Sydney Catchment Authority's Operating
Licences**

Issues Paper

**INDEPENDENT PRICING AND REGULATORY TRIBUNAL
OF NEW SOUTH WALES**

**Mid-term reviews of
Sydney Water Corporation's and
Sydney Catchment Authority's Operating
Licences**

Issues Paper

Discussion Paper DP53

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Request for submissions

Submissions are invited from interested parties to all Tribunal investigations. Unless confidentiality is sought, the submissions are generally available for public inspection at the Tribunal's offices and will be promptly placed on our website in PDF format and remain there until 34 weeks after the release of an inquiry report. The Tribunal exercises its discretion not to exhibit any submissions based on their length or content (containing material that is defamatory, offensive, or in breach of any law).

For reviews/determinations, submissions are initially sought from agencies or relevant associations on their pricing proposals. These proposals are available about 46 weeks before the due date for public submissions to allow for their consideration in the preparation of other stakeholder submissions.

For this review, submissions from Sydney Water Corporation and Sydney Catchment Authority should be received no later than 5 April 2002.

Submissions from other stakeholders must be received by 3 May 2002.

All submissions should be sent to:

Mid-term reviews of SWC's and SCA's Operating Licences
Independent Pricing and Regulatory Tribunal
PO Box Q290
QVB Post Office NSW 1230

Confidentiality

Special reference must be made to any issues in submissions for which confidential treatment is sought and all confidential parts of submissions must be clearly marked. *However, it is important to note that confidentiality cannot be guaranteed as the Freedom of Information Act and section 22A of the Independent Pricing and Regulatory Tribunal Act provide measures for possible public access to certain documents.*

Public information about the Tribunal's activities

Information about the role and current activities of the Tribunal, including copies of latest reports and submissions can be found on the Tribunal's web site at www.ipart.nsw.gov.au.

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1 INTRODUCTION

The Operating Licences of Sydney Water Corporation (Sydney Water) and the Sydney Catchment Authority (Catchment Authority) are an important part of the regulatory framework that has been put in place to ensure customers of these monopoly service providers receive adequate levels of service. The licences include specific obligations and set out legally enforceable minimum service standards that Sydney Water and the Catchment Authority must meet.

Under the provisions in the Operating Licences, the Independent Pricing and Regulatory Tribunal (the Tribunal) is required to conduct mid-term reviews.¹ 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) require it to make its recommendations to the relevant Ministers by 30 September 2002.

This paper provides information and seeks comment on the key issues to be considered in the mid-term reviews of the Catchment Authority's and Sydney Water's Operating Licences and has the following format:

- background information on the Licences
- explanation of the review process
- key issues for the review of the Catchment Authority's Licence
- key issues for the review of Sydney Water's Licence.

1.1 Background

Sydney Water was established as a State Owned Corporation by the *Sydney Water Act 1994* (SW Act). The Act requires an Operating Licence to be developed and Sydney Water to conduct its operations in accordance with the Licence. Sydney Water was originally granted an Operating Licence on 1 January 1995 for a term of five years.

In response to the 1998 Sydney Water Inquiry the NSW Government created two separate bodies, one to manage the catchments and to supply bulk water (the Catchment Authority) and another to treat the water and supply it to customers (Sydney Water). The Catchment Authority was given the regulatory powers to manage the catchments to improve the quality of bulk water supplied to Sydney Water.

¹ The mid-term review is different from the annual audit of the Operating Licence. The annual audit examines Sydney Water's compliance against obligations under the Operating Licence. The mid-term review, on the other hand, examines how well the Operating Licence itself is functioning. In conducting its analysis, the mid-term review may draw on the findings of the annual audits which may help to identify any weaknesses in the Operating Licence.

In 1999, following the Inquiry, Sydney Water's Licence was also amended. Provisions that became the responsibility of the Catchment Authority were removed and consequential amendments were made. At this time, the Catchment Authority's Licence was also established. Both the amended Sydney Water Licence and the initial Catchment Authority Licence commenced on 2 July 1999 and expired on 31 December 1999.

In 1999 the NSW Government also requested the Tribunal to review Sydney Water's Operating Licence. Following a substantial public review process, new five year Operating Licences came into effect for both Sydney Water (1 January 2000) and the Catchment Authority (19 April 2000). Significant amendments to the Catchment Authority's licence included requirements for water quality monitoring, reporting and planning, increased requirements for its Risk Management Plan and provisions for customer relations. Changes to Sydney Water's licence included water quality requirements, obligations to establish internal/external dispute resolution procedures and extending obligations to report on ecologically sustainable development (ESD) indicators.

Recently the Tribunal has conducted a review of Sydney Water's system performance standards and customer contract. These are both schedules to Sydney Water's Operating Licence. Amendments to the performance standards were gazetted on August 24, 2001. The recommended terms of the Customer Contract were provided to the Minister for Energy on 23 November 2001.

There have been two audits of the Catchment Authority's Licence since it was introduced in 2000. The audit covering performance during 2000/01 has just been completed and is available on IPART's website. The first audit of Sydney Water's new licence is currently being completed. This will cover the period from January 2000 to June 2001. Subsequent audits will cover a 12 month period from July 1 to June 30 each year.

1.2 Review process

The Tribunal invites submissions from Sydney Water, the Catchment Authority, stakeholder organisations and members of the public on any issues they believe it should consider in this review. The Tribunal will also conduct a public workshop to obtain the views of stakeholders. Arrangements for the workshop will be publicised closer to the time.

The timetable for the review process is provided below.

Action	Timeframe
Release of Issues Paper	March 2002
Sydney Water and the Catchment Authority's submissions due	5 April 2002
Public submissions due	3 May 2002
Public workshop	late May 2002
Final report to Minister	30 September 2002

To assist stakeholders to make their submissions, this issues paper provides information about Sydney Water, the Catchment Authority and their Licences. It also raises key issues that the Tribunal particularly wishes to receive comments on from stakeholders.

1.3 How to make a submission

Submissions are invited from interested parties to all Tribunal investigations. Unless confidentiality is sought, the submissions are generally available for public inspection at the Tribunal's offices and will be promptly placed on our website in PDF format and remain there until 34 weeks after the release of an inquiry report. The Tribunal exercises its discretion not to exhibit any submissions based on their length or content (containing material that is defamatory, offensive, or in breach of any law).

Submissions should be sent to:

Sydney Water Corporation and Sydney Catchment Authority Licence Review (Matter No. 01/370 and 01/372)

Independent Pricing and Regulatory Tribunal of New South Wales

PO Box Q290

QVB Post Office NSW 1230

Comments or inquiries about this review or the lodgement of submissions can be directed by telephone to Nigel Rajaratnam (02) 9290 8461 or Felicity Hall (02) 9290 8432.

2 SYDNEY CATCHMENT AUTHORITY

2.1 Key issues for the mid-term review

The Catchment Authority's Operating Licence requires that the mid-term review consider:

- 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)
- the performance criteria for the Catchment Infrastructure Works set out in Schedule 2 of the Licence (clause 8.1.3).

These issues are discussed in the following sections.

2.2 Is the licence fulfilling its objectives?

The objectives of the Catchment Authority's Licence are to enable and require the Authority to manage and protect the catchment area and catchment infrastructure works, supply bulk water and regulate certain activities within the catchment area.²

The Licence also requires the Catchment Authority to:

- meet the objectives and other requirements imposed on it in the SWCM Act
- comply with the quality and performance standards in the Licence
- be subject to an Annual Audit of compliance with the Licence.³

The Catchment Authority is subject to annual operational audits to assess compliance with its Operating Licence. The findings of the 2000/01 audit were released in December 2001. The Tribunal uses the findings of the audits to assist in assessing the Catchment Authority's compliance with the quality and performance standards in the Licence.

The SWCM Act⁴ lists the principal objectives of the Catchment Authority as:

- to ensure that the catchment areas and the catchment infrastructure works are managed and protected so as to promote water quality, the protection of public health and public safety, and the protection of the environment
- to ensure that water supplied by it complies with appropriate standards of quality
- where its activities affect the environment, to conduct its operations in compliance with the principles of ecologically sustainable development contained in section 6(2) of the *Protection of the Environment Administration Act 1991*

² Sydney Catchment Authority, *Operating Licence*, 19 April 2000, clause 2.1.

³ Sydney Catchment Authority, *Operating Licence*, 19 April 2000, clause 2.1.

⁴ Section 14(1), *Sydney Water Catchment Management Act 1998*.

- to manage the Authority's catchment infrastructure works efficiently and economically in accordance with sound commercial principles.

The Tribunal seeks comments on whether:

- ***the Operating Licence currently reflects the objectives and requirements of the Sydney Water Catchment Management Act 1998***
- ***the Operating Licence is fulfilling its objectives.***

2.3 Should the obligations in the MOU be incorporated into the licence?

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.⁵ The MOUs, therefore, are instruments used to manage drinking water quality within the Catchment Authority's area of operations.

The Catchment Authority's Licence requires it to enter into MOUs with the Water Administration Ministerial Corporation (WAMC), the Environment Protection Authority (EPA) and NSW Health. The Tribunal is required to review the MOUs to determine whether any of the obligations they contain should be incorporated into the Licence.⁶

2.3.1 Background

The MOUs are intended to aid the working relationships of organisations and to ensure that responsibilities and the levels of cooperation needed are clearly defined. The MOUs form a practical basis for the relationships between organisations and rely on the goodwill of the agencies involved. They do not constitute legal documents and the obligations they contain are not legal requirements. The Tribunal, in its review of the Licences, recommended that key water quality obligations in the MOUs for Sydney Water and the Catchment Authority be incorporated into their respective Licences.

The MOUs have been considered by the auditors as part of the previous and current audits of the Catchment Authority's licence. While the primary focus of the audit is on the obligations in the Operating Licence, the auditors are also required to report on SCA's performance in meeting the obligations in its MOUs.⁷

Successive audits of the Catchment Authority's Operating Licence have also highlighted the need for *effective partnerships* with regulators within the catchments if the Authority's water quality and catchment health objectives are to be met. The recent 2000/01 Operational Audit deemed the existing MOU with the EPA to be inadequate in identifying the full range of cooperative arrangements which could be developed between the parties.

However, the Catchment Authority sees the role of the MOU as defining the relationship between itself and regulators, rather than placing formal performance obligations on the parties which may duplicate existing legislative and Licence requirements.

⁵ Sydney Catchment Authority, *Operating Licence*, 19 April 2000, clause 3.3.2.

⁶ Sydney Catchment Authority, *Operating Licence*, 19 April 2000, clause 3.3.6.

⁷ Sydney Catchment Authority, *Operating Licence*, 19 April 2000, clause 10.2.1(a).

As part of the Ministerial Requirements arising from the Audit, the Minister requested that IPART consider the issue of the appropriate role of the MOUs within the overall regulatory context.

The Tribunal seeks comments on:

- ***the appropriate role of the MOUs within the context of the SCA's Operating Licence and regulatory structure***
- ***whether the MOUs adequately define the roles/responsibilities of the relevant organisations***
- ***whether there are obligations in the MOUs that should be incorporated into the Operating Licence.***

2.4 Water quality obligations

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

- meet certain health guideline values contained in the 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.⁸

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.⁹

2.4.1 Background

The Catchment Authority is responsible for catchment management and supplying bulk water that meets the requirements in its licence. Sydney Water and smaller customers buy bulk water from the Catchment Authority and are responsible for managing water treatment and for distributing water that is fit to drink through their supply systems.

The Catchment Authority provides the first and second barriers for water quality protection. Monitoring and managing impacts of catchment activities on water quality (particularly those within the Special Areas¹⁰) is the first barrier and protects the quality of waters entering the storages. The second barrier is afforded by the large reservoirs and storages where water can be held for long periods of time, enabling settling out of sediments and most contaminants, before water is delivered to treatment plants.

The Catchment Authority has a Bulk Water Supply Agreement (BWSA) with Sydney Water that specifies certain aesthetic characteristics of the water that are consistent with the capacity of each of Sydney Water's water treatment facilities. Thus, the Catchment Authority must endeavour to ensure that the bulk water supplied to Sydney Water meets certain water quality parameters. The 2000/01 audit reported that overall 96 per cent of the

⁸ Sydney Catchment Authority, *Operating Licence*, 19 April 2000, clause 6.2.

⁹ Sydney Catchment Authority, *Operating Licence*, 19 April 2000, clause 6.5.

¹⁰ 'Special Areas' are defined in section 44 of the *Sydney Water Catchment Management Act 1998*.

water supplied for treatment met the requirements specified in the BWSA, with some non-conformances reported for iron, alkalinity, hardness and algae. Sydney Water indicated to the auditors that they considered the non-conformances to have resulted from naturally occurring weather and hydrological patterns that were largely beyond the control of the Catchment Authority and did not cause any significant interference with water treatment processes.

The Catchment Authority must also meet certain health guidelines specified in the Australian Drinking Water Guidelines 1996 and any updates to these guidelines. The relevant guidelines are for characteristics which may not be removed by subsequent treatment and which include pesticides, selected metals and radiological quality. The 2000/01 audit found that the Catchment Authority had fully complied with the health related guidelines.

The Licence requires that the Catchment Authority also endeavour to reach agreement with customers other than Sydney Water, on the arrangements to supply bulk water to those customers. The arrangements are to include water quality standards, the continuity of water supplied and the costs to be paid by customers. The 1999/2000 and 2000/01 audit reports found that a number of its customers did not have arrangements in place.¹¹

The Tribunal seeks comments on whether water quality obligations in the Operating Licence are adequate.

2.5 Review of the risk management plan

The Catchment Authority's Risk Management Plan (RMP) is a key instrument used to manage the barriers for water quality protection.¹² 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).

2.5.1 Background

The Sydney Water Inquiry identified a need to give statutory force to objectives and strategies for catchment management. The Inquiry recommended the establishment of a REP to provide this statutory power. The Inquiry intended the REP to bring together catchment management and other strategies in a coordinated and integrated manner. The REP was also intended to focus on water quality protection, catchment protection and ecologically sustainable land use.

REPs are developed under the *Environmental Planning and Assessment Act 1979*. The powers under this Act apply to both new developments and to redress and rectify existing hazards. REPs are managed and administered by the Department of Urban Affairs and Planning (DUAP).

¹¹ IPART, *Sydney Catchment Authority Operational Audit 1999/2000*, p 21.

¹² Apart from the RMP, the Catchment Authority may also incorporate other more specific risk management tools into its daily operations.

The *Draft Regional Plan for the drinking water catchments of Sydney and adjacent regional centres* was exhibited for public comment between October 2000 and May 2001 and more than 400 submissions were received. DUAP established five regional community groups to assist in developing the next version of the draft REP in response to concerns raised in the submissions. Public exhibition of the next draft of the REP is expected in mid 2002.

The draft REP for the drinking water catchments of Sydney and adjacent regional centres includes water quality objectives, processes for assessing development and for rectifying the impacts of existing development as well as catchment management strategies. The provisions are primarily directed at minimising impacts of existing and future developments.¹³

A State Environmental Planning Policy (SEPP 58) was introduced in 1999 to give the Catchment Authority some statutory power to manage the catchments while the REP was developed. SEPP 58 aims to:

- ensure that development in the hydrological catchment from which Sydney draws its drinking water supply does not have a detrimental impact on water quality
- provide a concurrence or notification role for the Chief Executive of the Sydney Catchment Authority in relation to development in the hydrological catchment that is likely to have an impact on water quality
- ensure that there is a consistent approach to the assessment and control of development in the hydrological catchment that is likely to have an impact on water quality.

The 2000/01 Operational audit found that the Catchment Authority had exhibited a high degree of compliance with SEPP 58.

In its June 1999 review of the Catchment Authority's Operating Licence, the Tribunal recommended a provision requiring the establishment of a RMP. This was intended to be a first step toward managing the catchment in the way intended by the Inquiry. It was envisaged that the Catchment Authority would have ownership of the RMP and that this document would be an important instrument for catchment management, particularly while the REP was under development.

As defined in clause 6.7.2 of the Licence, the purpose of the RMP is to:

- identify and assess sources of pollution in the Catchment Areas, how pollutants are modified between source and water storage, and evaluate the impact of pollution on the quality of Bulk Water supplied to customers
- identify opportunities to improve the operation of Catchment Infrastructure Works
- set out actions within the Catchment Authority's power to improve the quality of Bulk Water supplied to customers
- identify whether the Catchment Authority needs to enter into arrangements with agencies to address those problems outside its powers.

¹³ The REP is also complemented by the *Sydney Water Catchment (Environment Protection) Regulation 2001*. The regulation is an important part of the Catchment Authority's powers, allowing the Authority to enforce aspects of the *Protection of the Environment Operations Act 1997* with respect to unlicensed polluting activities within the catchments.

The 2000/01 audit report was critical of the narrow scope of the existing RMP, arguing the Plan needs to take a more holistic view of pollution sources and control measures to determine the overall risk to the public and whether further action is warranted to safeguard water quality. As a result of the auditors concerns the Minister placed a number of requirements on the Catchment Authority to expand the scope of the RMP and to assess the overall effectiveness of the control measures to ascertain whether additional controls are required.

The Tribunal seeks comments on:

- ***the adequacy, scope and effectiveness of the Catchment Authority's Risk Management Plan***
- ***whether there will be a continuing need for the Risk Management Plan when the Regional Environment Plan is finalised.***

2.6 Review of performance criteria

The Catchment Authority is responsible for managing and operating the Catchment Infrastructure Works. These works include dams and other water storages, water mains, monitoring devices and connected works. The Authority's operation of this infrastructure plays an important role in maintaining the quality of bulk water delivered to customers, minimising risks to human health and managing demand for water, including environmental flows.

Management of the infrastructure involves ensuring that they are designed, operated and managed to provide Sydney Water with a long-term standard of service which accords to specific performance criteria. The criteria require the Catchment Authority to manage water conservation in a manner consistent with the requirements placed on Sydney Water in its licence. The Catchment Authority must also ensure that Sydney Water does not have any further scope for demand management before it considers augmentation of its works.

Clause 8.1.3 of the Catchment Authority's Operating Licence requires the Tribunal to review the Catchment Infrastructure Works' performance criteria as part of the mid-term review.

2.6.1 Background

The Catchment Infrastructure Works performance criteria set out performance levels for reliability, robustness and security. Reliability and robustness relate to the level and frequency of water restrictions required to ensure long term water supply. Security is a measure of the likelihood that water reservoirs will fall to less than an agreed level of capacity. The criteria are shown in Table 1.

Table 1 Performance criteria under Schedule 2 of the Catchment Authority's Licence

Criteria	Description
Reliability	Catchment Authority is required to meet in full Sydney Water's Forecast Average Annual Demand requirements in not less than 97% of months, on average.
Robustness	Catchment Authority is required to ensure that it will not require a reduction in Sydney Water's Forecast Average Annual Demand in not less than 90% of years, on average.
Security	Catchment Authority is required to ensure that the level of its operating storage does not fall below 5%, on average, more than 0.001% of the time.
Drought reductions	<p>During drought, the System Criteria assumes that Sydney Water will reduce its demand for water from the Catchment Authority in accordance with the following restriction levels:</p> <ul style="list-style-type: none"> - 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.

The Catchment Authority measures its system performance using a mathematical model. Inputs to the model include long term forecasts of rainfall and river flows, as well as estimated annual water demand. The model incorporates Sydney Water's forecast average annual demand as specified in Schedule 2 in the Catchment Authority's Operating Licence. Forecast annual demand for 2001 is 588,000 megalitres, falling to 583,000 megalitres by 2004.

The Catchment Authority's performance against the performance criteria can effect the quality of water services provided by Sydney Water to its customers. For example, if the Catchment Authority does not meet the criteria, the frequency of water restrictions on customers may increase. In the draft bulk water agreement between the Catchment Authority and Sydney Water the performance criteria has been removed.

The Catchment Authority's ability to meet the performance criteria will, to some extent, depend on the success of Sydney Water's management of customer demand. This is discussed in section 3.6. The Catchment Authority has established a Demand Management Policy and Demand Management Strategy endorsed by the Board on 10 November 2000. The policy includes a commitment by the Catchment Authority to support Sydney Water in its demand management initiatives.

The 2000/01 Operational Audit found that the SCA was fully compliant with its performance standards, with the exception of the Security of Supply criteria.

The Security of Supply criteria is related to the likelihood of total water supply volumes falling to less than 5 per cent useable capacity in any month. The SCA's current performance is equivalent to 1 month in 6200 years, as compared to the existing standard which is equivalent to 1 month in 8333 years. Given that this criteria is calculated using a mathematical model which extrapolates 90 years of climatic and stream flow data to produce 180,000 model years of data, the auditors noted that there were significant uncertainties involved in modelling against such an extreme criteria.

As part of the Ministerial Requirements arising from the audit, the Minister has required that the current mid-term review process consider the applicability, appropriateness and accuracy of the existing criteria and the model used to calculate the performance criteria.

The Tribunal seeks comment on:

- ***whether the performance standards are clear, concise and unambiguous***
- ***whether the current security criteria are applicable and appropriate***
- ***the effectiveness of the Catchment Authority in encouraging demand management.***

3 SYDNEY WATER CORPORATION

3.1 Key issues for the mid-term review

Sydney Water's Operating Licence requires that the mid-term review of its licence:

- 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 (clause 6.2.3)
- assess the effectiveness of the Annual Drinking Water Quality Improvement Plan and whether there is a continued need for the plan each year (clause 6.5.5)
- identify minimum standards and guidelines to regulate the supply of other grades of water (clause 6.7.2)
- assess the appropriateness of determining a water conservation target level for 2014/15 (clause 8.1.1c).

These issues are discussed in detail in the following sections.

The Tribunal is also required to consider any amendments to the performance standards adopted by Sydney Water (clause 7.3.4). The Tribunal has recently completed a review of Sydney Water's performance standards and recommended tightening existing standards as well as introducing performance indicators to provide greater insight into Sydney Water's performance.

The Minister for Energy has considered the Tribunal's recommendations and advice from the Ministry of Energy and Utilities in amending the existing performance standards. The amended performance standards and associated definitions were published in the Government Gazette and take effect from 1 July 2001.

Given this background, the Tribunal does not propose to further consider the issue of Sydney Water's performance standards as part of the mid-term review.

3.2 Is the licence fulfilling its objectives?

The objective of Sydney Water's Operating Licence is to enable and require Sydney Water to lawfully provide its services within its area of operations. Consistent with this objective, the Licence requires Sydney Water to:

- meet the objectives and other requirements imposed on it in the SW Act
- comply with the quality and performance standards in the Licence
- recognise the rights given to Customers and Consumers
- be subject to operational audits of compliance with the Licence
- establish a dispute resolution scheme.¹⁴

¹⁴ Sydney Water, *Operating Licence*, 12 April 2000, clause 2.1.

Sydney Water has already met a number of these requirements. Customer and consumer rights are incorporated in the licence itself and in Sydney Water's Customer Contract. The Tribunal has recently reviewed the Customer Contract and advised the Minister for Energy of its findings.

Sydney Water has developed internal dispute resolution processes that meet the requirements set out in the Operating Licence. It has also joined the Electricity and Water Ombudsman New South Wales (EWON). This satisfies the requirements of the Operating Licence to establish an external dispute resolution scheme.

Sydney Water is currently being audited against its licence for the period January 2000 to June 2001. The auditor's role (as defined under clause 10.2 of the Operating Licence) is to assess Sydney Water's compliance with the conditions in the licence. The report will be available on IPART's website in mid-April 2002.

The Tribunal seeks comments on whether:

- ***the Operating Licence reflects the objectives and the requirements of the Sydney Water Act 1994***
- ***the Operating Licence is fulfilling its objectives.***

3.3 Compliance with aesthetic drinking water guidelines

Sydney Water is required to comply with the 'health guideline values' of the *Australian Drinking Water Guidelines 1996* (1996 guidelines) including any amendments or updates specified by NSW Health. The 1996 guidelines also contain 'aesthetic guideline values'. Currently Sydney Water is not required to comply with these guidelines, although the Operating Licence provides that NSW Health (following consultation with the Minister) may require Sydney Water to comply with specified values. It should be noted that in relation to the aesthetic guideline values, NSW Health currently require Sydney Water to monitor and report performance for: taste, temperature, total dissolved solids and true colour.

The Operating Licence requires that Sydney Water commission an independent study of the costs and benefits of it complying with the aesthetic values of the 1996 guidelines. The Tribunal is required to consider this study as part of the mid-term review.

3.3.1 Background

In regards to drinking water, Sydney Water's primary concern is to provide a quality of water that meets all health guidelines values. However, in meeting these values, high levels of disinfectants may be required and this can affect the taste of drinking water. Customers are also concerned with these aesthetic factors.

Sydney Water has commissioned an independent study and a discussion paper was released on 1 October 2001. A three-week consultation period, including a series of workshops for the general public was held from 2 October to 23 October 2001. The final report was provided to the Tribunal in January 2002.

The independent study found that Sydney Water consistently meets the guideline values for all but two characteristics, namely chlorine or monochloramine, depending on the type of drinking water delivery system. In regards to chlorine or monochloramine, the study considered the most suitable technology options available to achieve compliance with the guideline values.

The study found that approximately 7,000 to 10,000 households (around 3-4 per cent of households in chlorinated systems) would benefit from improved compliance with the aesthetic values for chlorine. Two technical options, Pre-oxidation with Potassium Permanganate and Booster Chlorination were suggested for further investigation as they showed some net benefit to the community.

The study also found that approximately 80,000 to 190,000 households (around 5-15 per cent of households in chloraminated systems) would benefit from improved compliance with the aesthetic values for chloramine. However, the report recommended against progressing with the options studied due to the significant net costs to the community.¹⁵

The Tribunal seeks comments on the costs and benefits of Sydney Water complying with the aesthetic guideline values of the Australian Drinking Water Guidelines 1996.

3.4 Annual drinking water quality improvement plan

Australian water authorities typically deliver drinking water of a high standard.¹⁶ However, the *cryptosporidium* and *giardia* incidents relating to Sydney's water supply in 1998 underscore the need for water utilities to have adequate plans and reporting arrangements to safeguard water quality.

Sydney Water's Operating Licence requires it to prepare, to the satisfaction of NSW Health, three drinking water quality plans. These are:

- a Five-Year Drinking Water Quality Management Plan
- an Annual Drinking Water Quality Improvement Plan
- a Drinking Water Incident Management Plan.

As part of the mid-term review, 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 each year.

3.4.1 Background

Sydney Water's drinking water quality planning framework aims to translate long term goals to medium and short term strategies. These strategies are implemented through drinking water quality projects funded as part of the annual capital works and operating budgetary process.

¹⁵ A full copy of the independent study is available on Sydney Water's website www.sydneywater.com.au

¹⁶ Water Services Association of Australia, *WSAAfacts 2000 – The Australian Urban Water Industry*, p 33.

The purpose of the Five-Year Plan is to implement the first phase of longer term drinking water strategies and integrate them with Operating Licence requirements under the Memorandum of Understanding (between Sydney Water and NSW Health) and recommendations of the 1998 Sydney Water Inquiry.

The Annual Drinking Water Quality Improvement Plan outlines the specific projects funded through the capital works program that will be undertaken during the next 12 to 24 months. These projects are derived from both the Five Year Plan and from drinking water quality monitoring results, through periodic system inspections and evaluations. Examples of the actions included in the 1999/2000 plan are:

- conducting process audits at Water Filtration Plants to optimise plant performance
- installing stand-by fluoride dosing systems at Water Filtration Plants
- installing pH buffering at Greaves Creek Water Filtration Plant.

The auditors commented in the 1999 Operational Audit of Sydney Water that the draft 2000/01 Improvement Plan was a worthwhile document. However it placed each delivery system in its most favourable light.¹⁷ For example, the Improvement Plan claimed the North Richmond Water Filtration Plant performed well against the 1996 Drinking Water Quality Guidelines. However the Operational Audit found that this plant was non-compliant against the total coliform guidelines in 1999.¹⁸ Following the auditors' comments Sydney Water immediately revised the draft plan.

The Tribunal seeks comments on:

- ***the effectiveness of the Annual Drinking Water Improvement Plan and whether there is a continued need for the Plan***
- ***whether the Five Year Plan is sufficient to ensure that strategies to improve water quality are implemented.***

3.5 Minimum standards for non-drinking water

For some customers, Sydney Water supplies water that is not required to meet drinking water quality guidelines. For example, commercial customers may be supplied with recycled water for use in industrial processes. While it is not necessary for all water to be suitable for drinking, other grades of water need to be fit for the purpose for which they are supplied.

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.¹⁹ 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.²⁰ The minimum standards and guidelines themselves are not specified in the Operating Licence.

¹⁷ Licence Regulator, *1999 Operational Audit of the Sydney Water Corporation*, July 2000, p 335.

¹⁸ Sydney Water has subsequently revised the Plan.

¹⁹ Sydney Water, *Operating Licence*, clause 6.7.2.

²⁰ Sydney Water, *Operating Licence*, clause 6.7.1.

3.5.1 Background

There are a number of benefits in supplying customers with other grades of water. A key benefit is increased water re-use and recycling. This reduces overall demand on limited water resources consistent with Sydney Water's demand management objectives and the re-use target set in the Operating Licence. Increased reuse also reduces effluent discharge into waterways.

There can be increased risks in supplying water of different grades. These are primarily health risks with problems likely to occur when the water is used for purposes other than those intended. Health risks particularly apply to residential uses of recycled water but may have a lesser relevance for recycled water used for irrigation or industrial purposes.

Currently Sydney Water supplies various grades of water that comply with a range of guidelines. Water for irrigation uses, such as watering golf courses, generally comply with the NSW EPA guidelines for *The Utilisation of Treated Effluent by Irrigation*. Recycled water supplied to residents in the Rouse Hill development areas meets the *NSW Guidelines for Urban and Residential Use of Reclaimed Water* that were established by the NSW Recycled Water Coordination Committee. Other grades for industrial use are generally supplied at a standard agreed with the customer. The application of minimum standards need to consider the different end uses of recycled water.

The Tribunal seeks comments on the minimum standards and guidelines that should be applied to other grades of water.

3.6 Water conservation target for 2014/15

Water conservation is important for a range of reasons including:

- social and economic benefits - by avoiding the capital costs of new dams
- environmental protection/conservation - by avoiding the construction of dams, allowing water for environmental flows and reduced effluent discharge with reuse
- financial benefits - through increasing system efficiency and reducing leakage.

Water conservation targets were first introduced in Sydney Water's 1995 Operating Licence. The 1995 licence required Sydney Water to take action to reduce the quantity of water it draws from all sources to the following target levels:

- 379 litres per capita per day by 2000/01 (a 25 per cent reduction compared to 1990/91 levels)
- 329 litres per capita per day by 2010/11 (a 35 per cent reduction compared to 1990/91 levels).²¹

²¹ The 1995 Operating Licence also required Sydney Water to reduce unaccounted for losses from its water systems over the terms of such relevant licences to at most 15 per cent by the year 2000/01.

The 2010/11 target above was carried forward into Sydney Water's new Operating Licence. A target for 2004/05 was also introduced in the new licence. The new 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 2010/11.²²

As part of this review, the Tribunal is required to determine the appropriateness of setting a water conservation target for 2014/15.

3.6.1 Historical water consumption

Total water demand in the Sydney Water supply area has fallen from 1837ML/day in 1990/91 to 1712ML/day in 2000/01. In per capita terms average water use has been declining since the early 1980s and has fallen 18 per cent since 1990/91, from 506 litres per capita per day (lcd) to 427 lcd in 2000/01.

The relative water use by the major customer sectors has also changed over time. Consumption in the residential sector has increased from 49 per cent to 69 per cent of total consumption from 1975/76 to 2000/01. This increase appears to be driven mainly by population growth in the Sydney basin. In the same period, industrial consumption fell from 23 to 12 per cent of total consumption. This reduction is largely due to a general shift in Sydney's economic base away from heavy industry toward commercial activity.²³

3.6.2 Sydney Water's strategy to achieve targets

As discussed above, the water conservation targets were first established in the 1995 Licence. In October 1995 Sydney Water first published its Demand Management Strategy which canvassed various options to reduce water consumption.²⁴ In December 1999 the Strategy was revised, although aspects of the strategy had been implemented since 1998. The revised strategy was developed using a least-cost planning approach that included modelling of the potential demand reduction from various options. The programs adopted include a combination of water efficiency, water recycling and leakage reduction strategies. There are also other measures in Sydney Water's demand management program that are outside of its control, such as adopting national standards for appliances.

Sydney Water's Demand Management Strategy 2000-2005 outlines programs designed to enable Sydney Water to meet its water conservation targets. Some examples are:

- rebates on water efficient showerheads
- active leakage control of Sydney Water's systems
- effluent recycling for industrial users in Wollongong.²⁵

²² Sydney Water, *Operating Licence*, clause 8.1.1.

²³ In absolute terms, industrial water use has also fallen from 106,894ML to 63,048ML between 1975/76 and 2000/01.

²⁴ In 1990/91 usage pricing was first introduced which aimed to encourage improved water conservation. At this time, Sydney Water also introduced a communication program to encourage water conservation.

²⁵ To date, the Strategy does not appear to have emphasised specific programs to reduce outdoor usage.

Sydney Water has invested significant resources in developing and implementing its strategy and has adopted some innovative approaches. Monitoring the success of its strategies has identified that while some, such as leakage control, are achieving higher than expected savings, others have achieved lower than anticipated savings or have not been possible to implement.

Sydney Water has also recently reviewed its demand management program and is currently using its least cost planning model to assess different demand management options.

The Tribunal, with the assistance of consultants, will review the effectiveness of the Demand Management Strategy since 1995 and consider alternative programs or strategies. The Tribunal will consider the strategies adopted and the implementation of these strategies, including Sydney Water's ability to build relationships with key players.²⁶

The Tribunal seeks comment on:

- ***the effectiveness of Sydney Water's Demand Management Strategy in reducing water consumption***
- ***how this program could be improved (eg improved communication strategy, targeting of different stakeholders).***

3.6.3 Framework for setting a target²⁷

Water conservation is an important element of the long-term, sustainable management of Sydney's water supply. When evaluating the future water needs of Sydney, both supply and demand factors need to be considered. Some important factors are drought security, demand management, environmental flows and supply augmentation. Demand management is, therefore, only one aspect of managing Sydney's water resources.

The targets in the Operating Licence are the primary institutional incentive to reduce water sales. However, there is not a commercial imperative for Sydney Water to meet this target. The Tribunal will therefore need to consider whether these targets provide sufficient incentive for Sydney Water to encourage its customers to conserve water. If the targets are not sufficient, the Tribunal will also consider whether there are alternative ways to ensure that Sydney Water addresses the issue of water conservation.

The Tribunal will also need to consider the role of the Sydney Catchment Authority in supporting Sydney Water to achieve its demand management target. Sydney Water and the Catchment Authority are responsible for managing water supply/demand and system losses in Sydney. The two organisations have distinct responsibilities, although they are required to work together to manage these issues.

²⁶ The consultants may also assist the Tribunal to consider the appropriate form of a target.

²⁷ The Victorian Government has begun a public process to determine a strategy for Melbourne's water resources. The initial issues paper provides some discussion on the alternative demand management strategies and regulatory options such as setting water conservation targets. The paper is available from the website www.nre.vic.gov.au

The water conservation targets in Sydney Water's Operating Licence are designed to reduce demand. The performance criteria in the Catchment Authority's Licence (discussed in section 2.6) are designed to regulate aspects of supply including reliability, robustness and security. Sydney Water also has a role in managing water supply through its systems, including reducing leakage.

Ideally the aspects of supply and demand should be managed and regulated in an integrated manner since they are interdependent. Management and planning should account for environmental, social and economic objectives.

Setting individual targets for any of a number of factors including per capita water demand, leakage from supply systems or frequency of restrictions may not always allow for flexible and innovative approaches to be adopted. Targets may play a role in management and planning but are likely to be most effective if they are part of a broader, integrated framework.

The Tribunal seeks comment on whether:

- ***the current incentives for Sydney Water to reduce demand for water are sufficient***
- ***there are alternative incentive mechanisms to encourage Sydney Water to reduce demand for water, including how the current regulatory arrangements could be improved to ensure an integrated approach to managing both demand and supply.***

3.6.4 Factors to consider when setting water conservation targets

The Tribunal will need to consider a range of factors in setting a target. These include:

- whether setting a target is an effective incentive to encourage water conservation and whether there are alternative ways to ensure that Sydney Water addresses the issue of water conservation
- the appropriate form for a water conservation target (eg consumption vs savings²⁸, aggregate vs per capita/household consumption), whether the target should be adjusted for weather patterns and whether there should be separate targets for each major water consumption 'sector'.

The Tribunal seeks comments on the most appropriate level and form for Sydney Water's water conservation target.

²⁸ A demand management target could, for example, be expressed in terms of water saved through Sydney's Water's demand management programmes and leakage control activities rather than in terms of consumption. This may better reflect the agency's performance since it has more control over these programmes than overall per capita consumption.

GLOSSARY

ARMCANZ	Agriculture and Resource Management Council of Australia and New Zealand
BWSA	Bulk Water Supply Agreement
Catchment Authority	Sydney Catchment Authority
CSIRO	Commonwealth Science and Industrial Research Organisation
DLWC	Department of Land and Water Conservation
DUAP	Department of Urban Affairs and Planning (now called NSW Planning)
EPA	Environmental Protection Authority
EWON	Energy and Water Ombudsman NSW
IPART	Independent and Regulatory Tribunal of NSW
ML	Megalitres
MOU	Memorandum of Understanding
NHMRC	National Health and Medical Research Council
NSW	New South Wales
NSW Health	NSW Health Department
OFWAT	Office of Water Services, United Kingdom
PIAC	Public Interest Advocacy Centre
PDF	Portable Document Format
REP	Regional Environment Plan
RMP	Risk Management Plan
SEPP	State Environmental Planning Policy
SWCM Act	Sydney Water Catchment Management Act 1998
SW Act	Sydney Water Act 1994
Sydney Water	Sydney Water Corporation
Tribunal	Independent Pricing and Regulatory Tribunal of NSW
UK	United Kingdom
WAMC	Water Administration Ministerial Corporation

TERMS OF REFERENCE

Mid-term review of Operating Licence for Sydney Catchment Authority

1. The Tribunal is requested, pursuant to section 4B of the *Independent Pricing and Regulatory Tribunal Act 1992* to conduct the mid-term review of Sydney Catchment Authority's Operating Licence.
2. As is required under clause 2.3.1 of the Operating Licence the Tribunal must review whether the licence is fulfilling its objectives.
3. As required under the Operating Licence the Tribunal must:
 - a) advise the Minister on whether any obligations in the Memoranda of understanding should be incorporated into the Licence (clause 3.3.6)
 - b) review the Catchment Authority's obligations under clause 6.2 of its licence for water supplied for Water Treatment (clause 6.5)
 - c) review the need for the Risk Management Plan in light of the requirements under the Regional Environmental Plan (clause 6.7.7). The Tribunal should consider whether the risk management plan achieves its purpose and the objectives of the licence relating to catchment management
 - d) review the Catchment Infrastructure Works performance criteria set out in Schedule 2 of the operating licence (clause 8.1.3). In reviewing the performance criteria the Tribunal should have regard to:
 - (i) the need to maintain an adequate level of security for the water supply
 - (ii) demand management objectives
 - (iii) the need to ensure environmental flows are achieved in rivers below the Authority's dams
 - (iv) the Government policy to avoid augmentation of the Catchment Infrastructure Works.
 - e) consider other aspects of the Catchment Authority's performance that are relevant to an assessment of whether the Operating Licence is meeting its objectives.
4. When recommending the terms of the operating licence, the Tribunal must:
 - a) take into account relevant considerations from the reviews of the licences of the Sydney Water Corporation and Hunter Water Corporation
 - b) consult with relevant parties as necessary
 - c) consider the impact of performance standards on the cost of service provision.

The Tribunal's review and recommendations must be provided by 30 September 2002.

TERMS OF REFERENCE

Mid-term review of Operating Licence for Sydney Water Corporation

1. The Tribunal is requested, pursuant to Part 4B of the *Independent Pricing and Regulatory Tribunal Act 1992* to conduct the mid-term review of Sydney Water Corporation's Operating Licence.
2. As required under clause 2.3.1 of the Operating Licence the Tribunal must review whether the licence is fulfilling its objectives.
3. As required under the Operating Licence the Tribunal:
 - a) must report on the independent study commissioned by Sydney Water on the costs and benefits of complying with the aesthetic guideline values of the NHMRC and ARMCANZ Australian Drinking Water Guidelines 1996 (clause 6.2.3)
 - b) must assess the continued effectiveness of the Annual Drinking Water Quality Improvement Plan and whether there is a continued need for the plan each year (clause 6.5.5)
 - c) must identify minimum standards and guidelines to regulate the supply of Other Grades of Water (clause 6.7.2)
 - d) must consider the appropriateness of determining a water conservation target level for 2014/15 (clause 8.1.1)
 - e) must consider any amendment to performance standards adopted by Sydney Water Corporation (clause 7.3.4)
 - f) may consider other aspects of the Sydney Water Corporation's performance that are relevant to an assessment of whether the Operating Licence is meeting its objectives.
4. The Tribunal is not required to include any terms that amend, substitute or modify the provisions of the *Sydney Water Act 1994* in its recommendations for the amended or substitute Operating Licence but may include such recommendations in its report to the Minister under clause 2.3.4 of the Operating Licence.
5. In determining whether the Operating Licence is fulfilling its objectives and in recommending any amendments to the terms of the Operating Licence, the Tribunal:
 - a) must take into account relevant considerations from the reviews of the licences of the Sydney Catchment Authority and Hunter Water Corporation
 - b) must consult with relevant parties as necessary
 - c) may consider the impact of performance standards on the cost of service provision.

The Tribunal's review and recommendations must be provided by 30 September 2002.