Review of prices for Sydney Water Corporation’s water, sewerage, stormwater and recycled water

From 1 July 2008

Water — Issues Paper
August 2007
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Water — Issues Paper DP92
August 2007
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Invitation for submissions

The Tribunal invites written comment on this document and encourages all interested parties to provide submissions addressing the matters discussed.

Submissions are due from Sydney Water by 14 September 2007 and from stakeholders and members of the public by 12 October 2007.

We would prefer to receive them by email <ipart@ipart.nsw.gov.au>.

You can also send comments by fax to (02) 9290 2061, or by mail to:

**Sydney Water Price Review 2007**
Independent Pricing and Regulatory Tribunal
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Our normal practice is to make submissions publicly available on our website <www.ipart.nsw.gov.au>. If you wish to view copies of submissions but do not have access to the website, you can make alternative arrangements by telephoning one of the staff members listed on the previous page.

We may choose not to publish a submission — for example, if it contains confidential or commercially sensitive information. If your submission contains information that you do not wish to be publicly disclosed, please indicate this clearly at the time of making the submission. A request for access to a confidential submission will be determined in accordance with the Freedom of Information Act 1989 and section 22A of the Independent Pricing and Regulatory Tribunal Act 1992.

If you would like further information on making a submission, the Tribunal’s submission policy is available on our website.
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Introduction

The Tribunal is responsible for setting charges for a range of monopoly services provided by Sydney Water. The Tribunal regulates charges for:

- the provision of general water, sewerage and stormwater services such as providing households with potable water and transporting/disposing of sewage from these properties
- the provision, or upgrading, of water supply, sewerage and drainage facilities for new developments
- the provision of recycled water and allowing for sewer mining.

The Tribunal made a determination of the maximum charges to apply to the services described in the first dot point above in 2005. This determination applies from 1 October 2005 to 30 June 2009. However, the Premier wrote to the Tribunal on 13 June 2007 requesting a new determination.

1.1 Impetus for the review of the October 2005 determination

In the 2005 determination the Tribunal made provision for initial expenditure by Sydney Water to investigate the development of a desalination plant for Sydney. However, the Tribunal did flag the potential need to make a new determination before the planned expiry of the determination in 2009 to provide for changed circumstances.

Sydney Water’s forecast expenditure has increased substantially since the 2005 determination. This increase relates principally to the decision to proceed with the proposed construction of a desalination plant and major recycled water projects.

As a result of this, the Premier has written to IPART requesting that it conduct a full determination which considers “all aspects of Sydney Water’s revenue and expenditure”. The Premier has requested that the determination take into account:

- the effects of climatic conditions on Sydney Water’s revenue position since the current determination was made on 1 October 2005
- the desalination project being undertaken by Sydney Water

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several recycling projects, such as the Western Sydney Recycled Water Initiative Replacement Flows Project and Camellia Recycled Water Project

other matters, such as the extension of the Water Savings Fund as part of the new Climate Change Fund and the extensions to existing rebates.\(^2\)

1.2 Scope of the review

This review will be conducted under section 12 of the IPART Act 1992. Price reviews conducted under section 12 require the Tribunal to consider a broad range of issues, including social and agency-specific concerns. These issues include those specified under section 15 of the IPART Act 1992, which requires the Tribunal to consider matters related to:

- consumer protection—protecting consumers from abuses of monopoly power; standards of quality, reliability and safety of the services concerned; social impact of decisions; effect on inflation
- economic efficiency—greater efficiency in the supply of services; the need to promote competition; effect of functions being carried out by another body
- financial viability—rate of return on public sector assets including dividend requirements; impact on pricing of borrowing, capital and dividend requirements of agencies
- environmental protection—promotion of ecologically sustainable development via appropriate pricing policies; considerations of demand management and least-cost planning.\(^3\)

In considering these matters, the Tribunal will need to balance the diverse needs and interests of stakeholders—such as customer affordability issues, environmental impacts and the maintenance of the overall quality of services provided to customers—as well as ensuring that Sydney Water is adequately recompensed for the services it provides.

The Tribunal will also take account of principles issued by the Council of Australian Governments (COAG) and contained in the National Water Initiative. The National Water Initiative has built on the principles established in the 1994 COAG Water Reform Framework.

In addition, the Minister for Water Utilities, pursuant to section 16A of the IPART Act, has directed the Tribunal to include in its price determination the efficient costs of the desalination plant and associated distribution infrastructure to be constructed by Sydney Water. The Minister also noted his intention to issue an additional section 16A direction related to the Replacement Flows Project of the Western Sydney Recycled Water Initiative and the Camellia Recycled Water Project.

\(^2\) The letter from the Premier is included in Appendix A.
\(^3\) The section 15 requirements are listed in full in Appendix C.
Section 16A of the IPART Act 1992 states in part:

i) The portfolio Minister for a government agency may direct the Tribunal ... to include in the maximum price an amount representing the efficient cost of complying with a specified requirement imposed on the agency.

The implications of the Minister’s direction is that the review of relevant costs to be undertaken by the Tribunal and its consultants will be limited to assessing whether the projects are being undertaken in the most cost-effective way possible to meet the Minister’s requirements. This is a more limited review than is required for Sydney Water’s other capital and operating expenditure. For the other expenditure the Tribunal and its consultants will need to consider whether the program of capital and operating expenditure that Sydney Water is proposing represents the best way of meeting the community’s requirements for water, sewerage, stormwater and recycled water services.

1.3 The review process

In conducting its review, the Tribunal will rely on its own research and analysis, as well as public consultation. As part of this consultation the Tribunal invites submissions to the review. Details on how to make submissions are provided at the front of this document, on the page facing the table of contents. To assist in identifying and understanding the key issues for this review the Tribunal has prepared this Issues Paper to encourage stakeholder comment. The Issues Paper lists a range of issues and questions on which the Tribunal seeks particular comment. However, stakeholders are free to raise and discuss any other issues that they believe are relevant to this review.

The Tribunal will also hold a public hearing as part of the review to provide a further opportunity for stakeholders to present their views.

Following this consultation, the Tribunal will release a draft report, and invite stakeholders to comment on its draft findings. The Tribunal will then consider these comments before making its final determination and releasing its final report.

An indicative timetable for the review is set out below.
Table 1.1 Indicative review timetable

<table>
<thead>
<tr>
<th>Task</th>
<th>Timeframe</th>
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<tbody>
<tr>
<td>Release Issues Paper</td>
<td>10 August 2007</td>
</tr>
<tr>
<td>Receive submission from Sydney Water</td>
<td>14 September 2007</td>
</tr>
<tr>
<td>Receive public submissions</td>
<td>12 October 2007</td>
</tr>
<tr>
<td>Public Hearing</td>
<td>7 December 2007</td>
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<tr>
<td>Release draft report</td>
<td>March 2008</td>
</tr>
<tr>
<td>Receive submissions to the draft report</td>
<td>April 2008</td>
</tr>
<tr>
<td>Release final report</td>
<td>June 2008</td>
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Note: Please note that these dates are indicative and may be subject to change.

In the past the Tribunal has experienced difficulties in completing its reviews on time due to delays in the provision of necessary information by regulated entities. Delays and the provision of supplementary information late in the review process can mean that work has to be suspended or reworked in the light of new information. Delays and new information not only adds to the work of the Tribunal, its staff and consultants but also limits the ability of stakeholders to input into the Tribunal’s processes.

To enable it to better manage delays in the provision of information and the provision of supplementary information the Tribunal intends to put in place mechanisms that will see it “stop the clock” where information is not received on time. Under this arrangement the timetable will be automatically extended by the extent of any information delays experienced. Where new information is provided the Tribunal reserves the right to “reset the clock” to reflect the need to rework and reconsider matters in the light of this new information. If the Tribunal “stops the clock” it will make a statement to this effect and publish a revised timetable on its website.

1.4 Purpose and structure of this Issues Paper

To assist stakeholders in making submissions, this paper explains how the price review will be undertaken, provides background information, and outlines the issues on which the Tribunal particularly seeks comments.

- Chapter 2 provides an overview of the regulatory framework for Sydney Water, including a discussion on the Tribunal’s price setting approach
- Chapters 3 provides an overview of the approach the Tribunal takes to determine Sydney Water’s revenue requirement
- Chapter 4 outlines the price setting process, including determining an appropriate price structure for Sydney Water’s monopoly services to promote economic efficiency and ecologically sustainable development, and analysing the likely customer and social impacts of any price changes.
2 Regulatory framework

In the absence of competitive markets, Sydney Water is regulated to achieve the joint aims of economic efficiency, social and environmental objectives. This chapter outlines the regulatory responsibilities in the water industry, the incentive regulation methodology adopted by the Tribunal, and other factors affecting the Tribunal’s pricing decisions, such as levels of service quality and customer impacts.

2.1 Regulators

IPART’s role as economic regulator is only one component of Sydney Water’s broad regulatory environment. Sydney Water is governed by its own Act and operating licence. Additionally, a number of primary government regulators have responsibility for all the metropolitan water agencies:

- IPART is responsible for setting maximum prices that can be charged by the metropolitan water agencies for monopoly services. It is also responsible for monitoring and reporting compliance with Sydney Water’s operating licence.
- Department of Water and Energy (DWE) has primary responsibility for the management of water resources throughout NSW. DWE issues Water Management Licences to water authorities, which regulate water extractions, environmental flow requirements in natural waterways and other resource management issues.
- Department of Environment and Climate Change (DECC) licenses sewage treatment facilities and ensures that effluent discharges do not harm receiving waters.
- NSW Health is responsible for regulating the quality and safety of drinking water.

2.2 Incentive Regulation

The Tribunal’s preferred approach to regulation is CPI±X incentive regulation. The Tribunal regulates Sydney Water by determining the maximum prices that the regulated businesses can charge for specific monopoly services. The Tribunal then sets out how these prices can rise or fall over the determination period to account for movements in general price inflation, efficiency gains, and significant changes in the operating environment, such as new environmental standards or customer service standards.
A critical element of the price setting process is the determination of the revenue requirement of Sydney Water. The Tribunal determines prices with the objective of generating the required level of revenue. The calculation is based on analysis of the efficient operating and capital costs that Sydney Water should incur in providing appropriate levels of service during the price path period.

The Tribunal calculates the businesses revenue requirement using the building block revenue methodology. The costs or ‘building blocks’ of service provision have been outlined by the Council of Australian Governments and can be categorised as operations costs, maintenance and administration costs, provision for the cost of asset consumption, provision for the cost of capital, and externalities.

An important part of regulation, however, is to encourage Sydney Water to achieve the efficiency targets implied in the building block approach. The CPI±X approach provides an incentive to the business to pursue efficiencies because for the regulatory period they retain the benefits in full (through higher profits) of any efficiency gains. If Sydney Water betters the efficiency target allowed in the revenue build-up, actual profits will be higher than the rate of return allowed in the revenue build-up. The reverse applies if Sydney Water does not achieve the expected efficiency improvements.

A detailed overview of the Tribunal’s price setting framework is included in Appendix B.

2.3 Service quality standards

The Tribunal, when it sets prices, assumes that existing standards of service required of Sydney Water will at least be maintained. Other regulatory instruments assist in maintaining service standards by prescribing minimum standards that must be met. These instruments include Sydney Water’s operating licence and discharge licenses issued by the DECC.

Generally what customers are willing to pay for a service is linked to the level of expected service quality. There is currently little product differentiation across Sydney Water’s area of operations given the nature of the services provided and the delivery systems used.

This may change with the introduction of competition and the greater availability of different grades of water, fit for different purposes.

Since the 2003 price determination for the metropolitan water agencies the Tribunal has been developing a standardized, reliable set of service quality indicators across the water businesses. More recently the National Water Commission has developed a set of indicators to be applied across water utilities throughout Australia. These indicators will broaden the Tribunal’s understanding of the level of service quality
that Sydney Water provides. There are provisions in Sydney Water’s customer contract for rebates and redress in the event of service failure.\textsuperscript{4}

\textsuperscript{4} Sydney Water Operating Licence, Schedule 6, Customer Contract, Clauses 7.1-7.6 Redress.
3 Revenue requirement

Sydney Water’s projections of required operating and capital expenditure for the determination period will form part of the assessment of its revenue needs. The Tribunal will seek detailed information on expenditure to date and projections of future requirements. The Tribunal will also consider what the proposed expenditure will imply for overall service quality and performance.

This chapter outlines the Tribunal’s approach to determining the capital and operating expenditure requirements and the key issues that will need to be considered.

3.1 Revenue requirement

In defining a revenue requirement the Tribunal assesses the future cash flow needs of the organisation. That cash requirement needs to be sufficient to cover the operations, maintenance and administration expenses of the entity, plus any return of and on capital. This can be represented by the formula (commonly described as the ‘the building block approach’):

\[ R = O + M + A + C + D \]

Where

- \( R \) = revenue requirement
- \( O \) = operations expenses
- \( M \) = maintenance expenses
- \( A \) = administration expenses
- \( C \) = return on capital
- \( D \) = return of capital (depreciation)

Capital expenditure requirement

As shown, in the formula above the revenue requirement does not include capital expenditure explicitly. Capital expenditure to maintain or augment the asset base is funded from the return of capital, injections of equity, and borrowings (or other

\[ \text{IPART, Rolling forward the regulatory asset bases of the electricity and gas industries, Discussion Paper, January 1999, p 5.} \]
financing approaches). Ultimately prudent and efficient capital expenditure is included in the asset base. Return of capital, commonly termed ‘depreciation’, may be more appropriately described as ‘maintenance of capital’.

The return on capital\(^6\) represents the Tribunal’s assessment of the opportunity cost of capital invested in Sydney Water by its owner. It ensures that efficient investment in capital continues into the future for the maintenance and growth of the infrastructure system.

Specific issues relating to Sydney Water’s capital requirements that the Tribunal will need to consider for this review are discussed further below.

### 3.1.2 Review of historical and proposed future capital expenditure

The Tribunal’s approach to the review and treatment of capital expenditure for this review will be similar to the 2005 determination. The 2005 review adopted a two stage regulatory test process – a forward-looking efficiency test of proposed capital expenditure for the coming regulatory period and a backward-looking prudence test of actual capital expenditure decisions in the current regulatory period.\(^7\) The prudence test is used to determine how much of the actual capital expenditure by Sydney Water in the current period will go into the opening value of the Regulatory Asset Base (RAB). The efficiency test is used to determine how much of Sydney Water’s proposed capital expenditure for the next period will go into the allowance for efficient capital expenditure.

As part of the submission process, the Tribunal seeks capital expenditure information from Sydney Water. This information should outline actual capital expenditure during the current regulatory period, proposed capital expenditure during the forthcoming regulatory period, together with actual and expected outcomes to be achieved by the capital expenditure in the current and upcoming regulatory periods.

The Tribunal considers sound asset management practices to be critical for maintaining long term system performance standards in the most efficient manner and, for this reason, will continue to take a close interest in the practices and performance of regulated businesses in this area. The Tribunal will be looking for evidence that Sydney Water has well developed and sound asset management practices and plans in place, and that capital expenditure programs are based on a robust asset management framework. Additionally, the Tribunal will be seeking assurance that the critical infrastructure of the businesses is not being run down.

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\(^6\) The Tribunal’s preferred approach for calculating the rate of return on capital is to use the Weighted Average Cost of Capital (WACC) to determine an appropriate range for the rate of return.

\(^7\) The efficiency test examines whether Sydney Water’s proposed capital expenditure represents (over the life of the asset) the best way of meeting the community’s need for the relevant services. By contrast, the prudence test assesses whether, in the circumstances that existed at the time, the decision to invest in the asset is one that the agency, acting prudently, would have expected to make. The prudence test is somewhat easier to satisfy than the efficiency test.
In past price determinations the Tribunal has employed industry experts to review Sydney Water’s asset management, the efficiency of proposed capital expenditure and the prudence of past capital expenditure. This has usually involved an examination by the consultant of the drivers of capital expenditure, the timing of proposed expenditure, customer demand growth and general asset management practices. This analysis combined with cost benchmarking and general consultant experience allows the consultant to make recommendations on the efficiency and prudence of the capital expenditure program. The Tribunal intends to repeat this process in the 2007 determination by engaging a consultant to review asset management and capital expenditure. The consultant will prepare a report which will be made available for public review. Interested stakeholders can comment on the consultant’s report as part of their submission to the Tribunal’s draft report.

In reviewing Sydney Water’s proposed capital expenditure the Tribunal (and its consultants) will need to take into consideration the Minister for Water Utilities’ directions under section 16A of the IPART Act.

IPART seeks comment on
1. the projected capital expenditure program
2. the prudence of Sydney Water’s past capital expenditure outlined in Sydney Water’s submission due 14 September 2007.

3.1.3 Rate of return on the RAB

There are several approaches for calculating the appropriate return on the RAB. In past determinations the Tribunal has used the real pre-tax WACC to determine an appropriate range for the rate of return. The WACC is the weighted average of the cost of debt and equity. The Tribunal used the Capital Asset Pricing Model to derive the cost of equity, and calculated the cost of debt as a margin over the risk free rate. This is consistent with the approach the Tribunal has used in other determinations.

For this review the Tribunal proposes to maintain the existing approach to calculating the rate of return for the RAB and will seek to update the parameters used in calculating the WACC.

IPART seeks comment on
3. an appropriate rate of return to apply on Sydney Water’s RAB

3.1.4 Asset lives

For this review the Tribunal will be considering the asset lives used to calculate the depreciation charge for the price determination. Currently in its modelling the Tribunal calculates the capital maintenance requirement based on the RAB, by using a straight line approach over the average life of the assets. This means that the total
value of the RAB is recovered within that period, which is assumed to be 70 years for existing assets and 100 years for new assets.

Sydney Water has raised some concerns that these assumptions do not accurately reflect lives of Sydney Water’s assets. The Tribunal proposes to engage consultants to conduct a review to assist it to determine appropriate asset lives for Sydney Water’s regulated assets. The consultant will review Sydney Water’s asset lives for different asset classes and the value of those assets. The consultant’s report will be made available for public review. Interested stakeholders can comment on the consultant’s report as part of their submission to the Tribunal’s draft report.

IPART seeks comment on

4 appropriate asset lives to apply for calculating Sydney Water’s depreciation charge for the price determination

### 3.1.5 Avoided costs

Recycled water schemes may enable a water and sewerage provider to avoid and/or defer costs. For example, this occurs where capital infrastructure upgrades to service growth or regulatory requirements are avoided or deferred by building a recycled water scheme. Sydney Water will need to separately identify these costs and, if approved by the Tribunal, these costs can be recovered from potable water, sewerage and stormwater customers. In this way, charges to users of the recycled water scheme can be reduced and adoption of new schemes may be encouraged.

The Tribunal seeks information on Sydney Water’s avoided costs from recycled water projects. The Tribunal will also need to collect projected future demands to be placed on these schemes.

IPART seeks comment on

5 Sydney Water’s projected level of, and justification for, the avoided or deferred costs from recycled water projects

### 3.1.6 Sydney Water’s Ability to Replace System Assets in the Future

IPART’s approach has been to establish a RAB ⁸ which represents the amount of financial capital invested by Sydney Water which should be maintained. This RAB is then rolled forward to take account of new capital expenditure, inflation, depreciation and disposals. The financial capital maintenance concept incorporated in this approach provides consistency in dealing with sunk costs, developer charges, and legacy issues. The prices derived from this RAB enable Sydney Water to earn a return on its investment consistent with its WACC.

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As Sydney Water’s assets reach the end of their useful lives the Tribunal allows the value of any replacement asset, including the replacement cost of assets previously funded by developers or through grants, to enter the RAB. Sydney Water is then able to recoup the value of the funds it outlays on the replacement (including the opportunity cost of the funds invested) through prices over the lives of the replacement assets. The recovery of the cost of assets over the life of the assets in question is consistent with normal commercial practice.

The mechanism described above will ensure that over time Sydney Water receives the income to which it is entitled to support its investments in its own business undertakings.

It is sometimes argued that asset values should reflect the cost of replacing those assets for reasons of funding. In this regard, King states:\(^9\):

> It can be argued that depreciation schedules need to be tied to current replacement costs to ensure that,
> 1. there are sufficient funds available to replace the asset at the end of its useful life and
> 2. there are minimal ‘price shocks’ to customers

The first of these arguments is clearly fallacious. The purpose of depreciation is not to allow the asset owner to raise capital internally for future investment projects. This is the function of the capital markets. When the current asset has finished its useful life, it will either be an economically sensible investment to replace the asset at that point in time or not. The existence of a pile of accumulated funds is irrelevant when considering the investment.

If the investment will not be able to yield an equivalent return to the next best option, then it should not be carried out using either existing or internal funds. If the new investment is profitable, then the money can be sourced from the capital markets and internal funds are not required.

However, the Auditor-General has raised concerns ‘about Sydney Water’s ability to fund the replacement of its system assets given the age and condition of the system and relevant regulatory pricing structures’.\(^10\) The Tribunal will consider the Auditor-General’s concerns as part of this review.

### 3.1.7 Adjustments to the RAB for developer charges

Under IPART’s price setting approach for Sydney Water, all forecast capital expenditure (for the existing system and for growth) is added to the RAB. As developer charges are recovered, the RAB is adjusted downwards to exclude the investments made by developers. In this way, the asset base used for calculating periodic charges only includes investments funded by Sydney Water.

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Depending on the rate of development, differences may arise between actual developer charge receipts and those forecast in the Development Service Plans.\textsuperscript{11} The Tribunal will closely review the revenue from developer charges to ensure that these are accurately deducted from the RAB.

### 3.1.8 Recycling projects

The Government has announced the construction of a number of large recycling projects including the Western Sydney Recycled Water Initiative and the Camellia Recycled Water Project.

The Tribunal has issued pricing guidelines for mandated recycled water schemes and high level pricing principles for voluntary recycled water schemes.\textsuperscript{12} The Tribunal has also determined the maximum recycled water charges that apply at Rouse Hill.\textsuperscript{13} The Tribunal requires that Sydney Water provide documentation as part of this review in support of its proposed recycled water charges.

As noted above, the Minister for Water Utilities has written to the Tribunal advising his intention to direct the Tribunal (under section 16A of the IPART Act 1992) to allow Sydney Water to recover in prices for all customers the efficient costs of the Western Sydney Recycled Water Initiative and the Camellia Recycled Water Project.

### 3.2 Operating expenditure

Another key component of the building block methodology is to provide sufficient revenue to meet the operation, maintenance and administration costs of the declared monopoly services provided by Sydney Water. The Tribunal will need to determine the efficient costs that Sydney Water will incur in operating the business effectively, having regard to service quality standards.

For this review Sydney Water will need to provide information on the past and future projected operating expenditures and the potential for future efficiency gains. It will also need to provide information about the drivers behind any projected real increases in operating expenditures during the determination period.

Specific issues relating to Sydney Water’s operating expenditure requirements that the Tribunal will need to consider for this review are discussed further below.

\textsuperscript{11} Sydney Water publishes Development Service Plans in support of its calculation of developer charges. The Plans include the various assumptions made in calculating the charges, including the rate of development.


\textsuperscript{13} Ibid.
3.2.1 Review of historical and proposed future operating expenditure

As in previous determinations, the Tribunal will engage an independent consultant to review the operating expenditure, asset management and capital expenditure of Sydney Water. The review will need to assess the efficiency of operations and the prudence and effectiveness of expenditure programs.

In addition, the Tribunal will conduct separate benchmarking and partial-productivity analysis to supplement the consultant’s review of operating expenditure. This will include an analysis of trends in costs and service quality indicators for Sydney Water compared to other utilities.

Sydney Water will incur additional costs related to the desalination plant and demand management projects mandated by the Government.

The Government has announced that the desalination plant will be powered by green energy, which will (based on current electricity prices) increase the operating costs of the plant but also provide external environmental benefits. Sydney Water will need to provide cost information on the desalination plant, including proposed operating rules, to enable the Tribunal to assess the efficient costs of operation.

In reviewing Sydney Water’s proposed operating costs the Tribunal (and its consultants) will need to take into consideration the Minister for Water Utilities directions under section 16A of the IPART Act 1992.

IPART seeks comment on
6 the efficiency of the projected operating costs outlined in Sydney Water’s submission
7 whether there is scope for Sydney Water to achieve further efficiency gains over the next price determination period.

3.2.2 Bulk water charges from the Sydney Catchment Authority

A key operating expenditure item for Sydney Water is the cost that it pays the Sydney Catchment Authority (SCA) for the purchase of bulk water. The Tribunal is also responsible for setting the bulk water price that the SCA can charge Sydney Water and last set this price as part of the 2005 determination.

In past price determinations the Tribunal has set prices for Sydney Water and the SCA at the same time. However, for this review there is no scope to do this, without a separate price determination for the SCA. Since it is only two years since the Tribunal last conducted a price determination for the SCA, the Tribunal does not propose to conduct a further determination in 2007. Instead the Tribunal proposes to treat the SCA’s bulk water price as a pass-through cost for a new determination for Sydney Water. However, the Tribunal will give consideration to the length of this price review for Sydney Water so as to enable alignment of the timing of future determinations for the SCA and Sydney Water.
3.2.3 Changes to International Financial Reporting Standards and superannuation expenses

At the 2005 determination the Tribunal noted significant increases in the level of Sydney Water’s forecast operating expenses compared to prior years’ actuals. One cause of these differences was changes in Sydney Water’s capitalisation policies resulting from adoption of the International Financial Reporting Standards. Sydney Water will need to separately identify any further changes in its operating expenditure resulting from these new standards. Sydney Water will also need to separately identify variations in operating expenses associated with changes in the assessed liability for employee entitlements.

Some of these items (eg, the calculation of the liability for employee entitlements) can vary substantially from one year to the next based on assumptions adopted in their calculation. These variations may not necessarily impact on Sydney Water’s revenue requirements over the period of the price path but may, depending on the validity of the assumptions made, have a significant effect on Sydney Water future financial viability.

3.2.4 Demand management and other projects

In the 2005 determination the Tribunal provided for Sydney Water to pay a contribution of $30 million per annum to the Government’s Water Savings Fund.

The Tribunal notes that in his 2007/08 Budget Speech the Treasurer announced a $310m Climate Change Fund which consolidates existing water, energy and greenhouse related funds. It includes amongst other things:

- $100m rebate fund for households purchasing water and energy efficient appliances
- $100m Recycling and Stormwater Harvesting program to assist the private sector to complete the Sydney Recycled Water Grid
- $30m Public Facilities Fund to help schools, hospitals, libraries and other community facilities save energy and water
- $20m program to install a rainwater tank in every NSW Government school for general non-drinking uses and to assist with other water efficiency related capital works.

Sydney Water will need to clearly explain the status of the Water Savings Fund and how it relates to these additional projects.
Once the efficient costs to be recovered through Sydney Water’s charges are determined, the next step in the Tribunal’s process is to set prices to recover these costs. Prices are set based on an assumed level of water sales and customer numbers.

For this review the Tribunal will need to:

- forecast water sales and customer numbers to use for price setting purposes
- decide on the regulatory approach to pricing to assess the overall impact of each approach on customers and Sydney Water
- establish the level and rate of change of prices, having regard to cost recovery and customer impacts
- set the price structure, considering the incentive effects.

4.1.1 Determining appropriate water sales

Determining appropriate water sales and customer numbers are key factors in setting prices. In past determinations the Tribunal has relied on detailed customer numbers provided by Sydney Water with the Tribunal conducting some checks to ensure the robustness of the information.

Forecasting of water sales, however, is more difficult given their inherent volatility. Given this volatility if these forecasts are not reasonable, there is a risk that the prices the Tribunal sets will lead to Sydney Water significantly over or under recovering its required revenue. At the 2005 determination the Tribunal engaged McLennan Magasanik Associates (MMA) to conduct a review of the forecast water sales submitted by Sydney Water. MMA reviewed the key drivers behind forecast water sales (eg, population growth, pricing structures) and submitted a forecast based on its assessments.

The Tribunal notes that there is considerable uncertainty about the likely impact of several of these drivers of water demand. The 2005 price review was undertaken during a period of extensive debate about water resources and conservation measures in NSW. There was uncertainty about the duration of the drought currently affecting the Sydney Basin, and whether the water restrictions imposed on customers in these areas will continue to apply, be strengthened or be removed over the determination period.
For the current review, the levels of water supply in the dams that supply Sydney have increased substantially compared to the 2005 determination. Further, the Government has also announced the construction of the desalination plant which will boost water supplies for the Sydney region.

For this review, Sydney Water will need to provide detailed forecasts of water sales and separately identify the volumes of water sourced from the desalination plant compared to that sourced from the dams. It will need to ensure consistency between Sydney Water’s forecast costs of operating the desalination plant and the forecast water produced from the plant.

The Tribunal will assess the forecast water sales submitted by Sydney Water and may engage an independent consultant to conduct detailed analysis to test the robustness of these forecasts.

Given the inherent variability of water sales from year to year, the Tribunal will also consider mechanisms to deal with any substantial changes in the demand forecasts. These are discussed further below.

4.1.2 Length of price path and aggregate pricing approach

For this review the Tribunal will need to consider an appropriate length of price path. The Tribunal’s decision will, in part, depend on the reliability of the forecasts submitted by Sydney Water. If, for example, the expenditure profile can only be reliably predicted for two years, then a short price path may be more appropriate.

Another factor that will need to be considered when determining the length of the price path, is the alignment of the pricing determination for the SCA with Sydney Water, given the significance of the SCA’s bulk water charges for the Sydney Water’s operating costs.

Once the length of the price path is known, the Tribunal will need to decide on the aggregate pricing approach that it wishes to pursue. At the 2005 determination, the Tribunal adopted a P₀ approach where the increase granted in the first year was higher than subsequent years. A single X-factor was then set for subsequent years to ensure that prices change smoothly over the remaining determination period in real terms, and that an agency’s targeted revenue in the final year of the determination period equalled its notional revenue requirement for that year.

Sydney Water has previously argued against the glide path approach because it only receives its full revenue requirement in the final year of the price determination, forfeiting revenue in the intervening years. The Tribunal will evaluate this argument and may consider alternative approaches to enable Sydney Water to achieve its full revenue requirement over the determination period, taking into consideration the obligations under section 15 of the IPART Act 1992.
IPART seeks comment on
8 the length of the price path that should apply for this review
9 the appropriateness of adopting a glide path.

4.1.3  Determining appropriate prices and structure of the prices

In determining an appropriate price structure the Tribunal takes account of a range of matters including how the price levels and structure promote economic efficiency, ecologically sustainable development and demand management. It also considers the potential impact on customers of alternative price levels and structures. The diversity of these factors may require the Tribunal to trade-off different factors, for example, customer affordability issues with revenue impacts.

Two-tiered usage charge

A key element of the Tribunal’s price structure in previous metropolitan water determinations has been the use of two-part tariffs with a fixed and usage component to recover the user share of efficient costs. The benefit of the two-part tariff is that it provides Sydney Water with some revenue stability through the fixed charge, and also provides a signal to extractors to use water efficiently through the volume-based usage charge.

At the 2005 Determination the Tribunal decided to restructure Sydney Water’s water charges for residential customers, to provide a strong conservation signal in relation to discretionary water use. A key component of this determination was the introduction of a two tier pricing structure for water usage. The principal aim of this change is to encourage water conservation around the home. The tariff arrangement was particularly intended to target discretionary outdoor water use such as garden and lawn irrigation. The restructured charges apply to single dwellings and other individually metered residential properties such as community title developments. Higher two-tiered variable usage charges were accompanied by lower fixed service charges.

Under this structure, water usage up to 100 kilolitres per quarter was charged at $1.20/kL in 2005/06 (increasing to $1.31/kL in 2008/09), while usage beyond this amount was charged at $1.48/kL (increasing to $1.85/kL in 2008/09). The water service charge was reduced by 23 per cent over the determination period.

The price structure determined at the 2005 determination was also based on an earlier investigation conducted by the Tribunal on alternative price structures for retail and wholesale water prices, to assess the potential to reduce demand for water in the Sydney basin. A key finding of this investigation was that the most suitable price structure for Sydney was likely to be an ‘inclining block’ structure that includes a two-tiered variable usage charge and a lower fixed access charge. The Tribunal

14 These charges are in 2005/06 dollars.
found that this price structure could potentially be used to send a strong signal about the need to reduce water consumption that particularly targets discretionary water consumption.

In addition, the Tribunal concluded that the potential adverse impacts of this price structure on vulnerable customers could be minimised by setting the consumption level at which the higher tier 2 usage charge applies (the step quantity) at a level that ensures that the bulk of households can meet their basic, non-discretionary needs without incurring this charge.

The Tribunal also concluded that it may be appropriate to increase the level of the usage charge to send a stronger signal about the scarcity of all water and, in particular, to set the charge with reference to a reliable estimate of the long run marginal cost (LRMC) of achieving and maintaining a supply/demand balance.

For this review the Tribunal will examine the two-tiered usage charge determined at the 2005 price determination. The Tribunal will consider the evidence available on the success of the ‘inclining block’ tariff in providing a water conservation signal.

It will also examine whether this structure is consistent with the LRMC of water supply. The cost of the desalination plant proposal provides a basis for estimating the LRMC.

The Tribunal also proposes to conduct further research on alternative approaches for setting water prices including the use of scarcity pricing. Scarcity pricing has been advocated by a number of commentators as a better means of bringing the demand for water into line with the available supply. Under such an approach the price of water would increase during droughts when rainfall decreases and water storage levels decrease. Conversely, lower prices would apply where water is in relative abundance such as when water storages are at a near full storage level.

Where the supply/demand imbalance appears to be short term or intermittent in nature, a pricing mechanism that allocates existing supply of water (for instance, through a combination of scarcity pricing and other demand management measures, such as water restrictions) is likely to be efficient because restricting demand will generally be less costly than increasing supply.15

In the long term, however, the supply of water should adjust to maintain the supply/demand balance. In this context, it may be more appropriate for usage prices to reflect the LRMC of water, rather than the short term scarcity of water. Further, setting prices to reflect the short term changes in supply of water may result in perverse outcomes, for example, very low usage prices may be required when the dams are overflowing such that usage prices do not inform customers about the costs of providing them with water in the long term.

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15 For instance, if supply is insufficient to meet demand for 1 out of every 20 years due to drought, investing in additional supply capacity to ensure that demand can be met at all times (including drought) will result in capacity that is surplus to requirements for 19 or of every 20 years.
IPART seeks comment on

10 the two-tiered usage price for water
11 the advantages and disadvantages of scarcity pricing for Sydney Water.

Reflecting the costs of the desalination plant in prices

There are a wide range of issues relating to how best to reflect the costs of the desalination plant in prices.

The first issue that the Tribunal will need to consider is whether the costs of the desalination plant, or a proportion of these costs, should be recovered through developer charges rather than the periodic charges. This largely depends on whether the plant has been constructed to meet the likely future demands placed on Sydney’s water supply due to new growth or whether it is constructed to ensure security of water supply for existing customers. If the plant, for example, has been constructed to meet future demand from new growth areas then it may be consistent with existing pricing policies to recover part of these costs through the upfront developer charges.

If the costs of the desalination plant are to be recovered through the periodic charge, the Tribunal will need to consider whether the costs should be reflected in the fixed component of the two-part tariff or whether it should be reflected also in the usage component of the charge. This will, in part, relate to the operating rules of the plant.

Another issue related to the desalination plant is the point in the price path that these costs should begin to be reflected in water prices. One option, for example, is to allow the capital costs related to the construction of the plant to be recovered from users prior to the plant commencing operation. This may mean a fixed charge being levied on users prior to the commencement of the plant with the usage component of the charge only commencing once the plant is operated. The Tribunal will consider these timing issues for the desalination plant as part of its inquiry processes.

IPART seeks comment on whether the costs of the desalination plant should be

12 incorporated in upfront developer charges or Sydney Water’s periodic prices or a combination of both
13 recovered through the fixed component of the two-part tariff or a mix of fixed and usage components
14 reflected in Sydney Water’s prices prior to the plant being operational.

Implications of pricing for third party access

The NSW Government has recently introduced the Water Industry Competition Act 2006 which provides for introducing third party access to monopoly infrastructure in the NSW water and wastewater industry to promote competition. The success or failure of this strategy will depend partly on how access is priced.
The Tribunal is conscious of the need to ensure consistency between the access price framework and the approach to setting Sydney Water’s retail prices as part of this review. If the approaches for setting access and retail prices are inconsistent this could send perverse signals to Sydney Water and access seekers.

For example, the Tribunal currently sets a uniform retail tariff for all of Sydney Water’s area of operations (known as ‘postage stamp pricing’). This means that some (low cost) geographic systems contribute toward the cost of other systems (via a ‘contribution’ to postage stamp pricing), creating a margin between actual costs and the retail price in these systems. If this contribution is not maintained while postage stamp pricing continues then a new entrant could exploit this situation by targeting customers in these low cost systems.

The access pricing regime is still in its infancy and the level of new entrants to the industry is unknown at this stage. Nevertheless, for this review the Tribunal will consider how the retail price framework might be affected by potential access pricing frameworks.

**Trade waste and miscellaneous charges**

As part of its price determination for Sydney Water the Tribunal will also need to set trade waste charges and miscellaneous charges. The Tribunal has previously engaged independent consultants to review the trade waste charges (in 2003) and miscellaneous charges (in 2005) and to provide advice on individual charges that should be set.

At this stage the Tribunal does not propose to engage consultants to conduct a separate review of trade waste and miscellaneous charges. However, the Tribunal will focus on any specific substantial charges Sydney Water might propose compared to the 2005 review.

**Customer impacts**

The Tribunal is currently conducting a household survey which seeks to, amongst other things, collect data on households’ utility bills. The Tribunal will use the data collected from this survey to assist in its review of the potential customer impacts of the Tribunal’s 2007 determination for Sydney Water.

**Charging strata units**

As part of its past legal determination, the Tribunal has provided substantial detail on how customers in multi-dwelling properties should be charged. Since Sydney Water’s last price determination the Secretariat has received a number of complaints regarding Sydney Water’s application of the determination. Sydney Water should conduct a detailed review of the last determination and identify amendments to the determination to remove any potential inequities. For this determination, the
Tribunal will also conduct its own legal review of the 2005 determination, with specific focus on Sydney Water’s approach to charging multi-dwelling properties.

4.2 Adjusting prices to deal with risk

In addition to deciding on maximum prices for monopoly services over the determination period, the Tribunal will need to consider its regulatory framework in relation to dealing with risk. These include, for example:

- a mechanism to address the risks associated with variations between Sydney Water’s forecast consumption used in setting prices and the actual consumption
- a mechanism to address the risks associate with unforseen costs.

4.2.1 Consumption variation mechanism

At the 2005 metropolitan water price determination the Tribunal adopted a mechanism to address risk to an agency of variations between forecast and actual consumption. The Tribunal considered several options to address the impact of consumption volatility, including:

- no adjustments for demand variation
- price adjustment in the subsequent determination period to account for variation outside a certain deadband
- an annual price adjustment mechanism to account for variation outside a deadband of +/- 10 per cent, combined with a final ‘wash-up’ adjustment as part of the subsequent determination for all variations unrecovered/not passed through.

The Tribunal considered that making no adjustments for demand variation may result in excessive risk borne by the water agency. It did not support the option of making annual price determinations as this was contrary to the objectives of price certainty and effectively allocates all risks to customers. The Tribunal supported the option of making price adjustments in the subsequent determination where the variation was outside a deadband of +/- 10 per cent.

For this review the Tribunal will consider whether this adjustment mechanism should be maintained. The Tribunal will consider approaches adopted by other jurisdictions for dealing with consumption forecast risk.

The Tribunal will consider whether adjustments to prices should also be made to reflect variations from forecasts of sales from different water sources (ie, the Sydney Catchment Authority and the desalination plant). If Sydney Water is required to source more water from the desalination plant, for example, this will result in higher costs for the organisation than expected. Some price adjustment mechanisms could be considered to allow prices to more accurately reflect the cost of providing the service.
The Tribunal will also need to review Sydney Water’s actual consumption compared to that used in the 2005 price determination and consider whether some adjustment should be made as part of the 2007 determination where the consumption variation is outside the defined deadband.

### 4.3 Cost pass-through mechanisms

At the 2005 determination the Tribunal considered whether to introduce a mechanism to deal with material changes in costs due to non-controllable external events, such as those relating to regulatory, licence or Government policy obligations. The Tribunal decided against introducing such a mechanism.

The primary reason for this decision was that the IPART Act does not allow the Tribunal to review costs for the water sector during a determination period without making a new determination. Otherwise the costs associated with the pass-through event would be passed through without being subject to scrutiny by the Tribunal. This would be inconsistent with the cost pass-through mechanisms the Tribunal has adopted in the electricity sector and with the Tribunal’s general approach to regulation.

As part of this review, the Secretariat proposes to investigate mechanisms for dealing with risk used by other regulators including the water regulator in the United Kingdom, OFWAT, and the Essential Services Commission in Victoria.
Appendices
A Letter from Premier

Premier of New South Wales
Australia

13 JUN 2007

Dr Michael Keating AC
Chairman
Independent Pricing and Regulatory Tribunal
PO Box Q280
QVB POST OFFICE NSW 1230

Dear Dr Keating

Pursuant to section 12 of the Independent Pricing and Regulatory Tribunal Act 1992, I write to request the Independent Pricing and Regulatory Tribunal (the Tribunal) to make a new price determination for Sydney Water Corporation’s monopoly services.

My intention is for the Tribunal to make a full determination, which considers all aspects of Sydney Water’s revenue and expenditure. The determination should take into account the effects of climatic conditions on Sydney Water’s revenue position since the current determination was made on 1 October 2005. The determination should also take into account the desalination project being undertaken by Sydney Water. Sydney Water is already incurring costs relating to this project, and as such I request that the determination be made in a timeframe that is consistent with the construction and commissioning of the project, and the financial sustainability of Sydney Water. The determination should consider financial information that will become available on the award of contracts for the desalination project.

The determination should also take into account several recycling projects, including the Western Sydney Recycled Water Initiative Replacement Flows Project and Camellia Recycled Water Project. Other matters, such as the extension of the Water Savings Fund as part of the new Climate Change Fund and the extensions to existing rebates, should also be considered when making the new determination.

Yours sincerely

[Signature]

Morris Iemma MP
Premier

[Address details]
The Tribunal currently adopts a CPI±X incentive regulation framework for setting metropolitan water prices. The Tribunal regulates Sydney Water’s monopoly water, sewerage, stormwater and recycled water services by determining maximum charges.\(^\text{16}\)

The Tribunal’s approach to setting maximum prices involves the following steps:

1. determine Sydney Water’s notional revenue requirement based on an analysis of the efficient operating and capital costs the business should incur to provide appropriate levels of service during the price path period.

2. identify appropriate forecast metered water sales and customer numbers.

3. identify the broad pricing approaches that could feasibly be applied for the agency to translate the revenue requirement into prices, and assess the impact of each approach on customers and Sydney Water. The approaches considered will include:

   i) unsmoothed revenue requirement – where prices (and X factors) are set to match the profile of the notional revenue requirement

   ii) smoothed revenue requirement – where a single X-factor is set to ensure that an agency’s targeted revenue equals its notional revenue requirement in NPV terms throughout the determination period

   iii) glide path – where a single X-factor is set to ensure that prices change smoothly over the determination period in real terms, and that an agency’s targeted revenue in the final year of the determination period equals its notional revenue requirement for that year

   iv) P-nought adjustment and glide path – where two X-factors are set. The first X factor is set to deliver a P-nought adjustment to prices in the first year of the determination period. The second X-factor is set so that average prices increase smoothly over the rest of the determination period and the expected revenue in the final year of the period is equal to the notional revenue requirement in that year.

\(^{16}\) In regards to the pricing of recycled water and developer charges the Tribunal has issued guidelines for establishing these charges. The exception to this is the recycled water to Rouse Hill where the Tribunal sets a maximum charge to apply in this area.
4. Identify feasible pricing structures and calculate actual prices for all or a selection of the pricing options identified in Step 3, then assess the implications of these prices in the context of the factors in section 15 of the IPART Act. Specifically, this includes considering the impact of prices on customers and the agency’s financial viability:

i) in considering customer impact, typical analysis would consider the magnitude of real price increases in 2007/08 compared to 2006/07, and over the whole determination period; the effect of these increases on average bills, and relative bill size compared with other NSW agencies and other jurisdictions

ii) in considering financial viability and sustainability, the Tribunal will need to examine the agency’s forecast credit rating, taking into account its existing cash/debt levels and its ability to pay dividends; and the ‘benchmark financial structure’ consistent with the WACC parameter assumptions made by the Tribunal in this determination

iii) in considering economic efficiency, the Tribunal will need to examine the signals sent to customers and cost reflectivity.

5. Decide on the pricing structure and level for the determination to take account of the interests of the agencies, customers and stakeholders, recognising that the balancing of these different interests could mean that the target revenue derived by prices is less than the Tribunal’s determined notional revenue requirement.

For the 2007 price determination, the Tribunal proposes to maintain the general approach to setting prices adopted in past metropolitan price determinations. This involves setting a maximum price for individual services, including miscellaneous and trade waste charges.
Section 15 Requirements

In making determinations the Tribunal is required by the IPART Act 1992 to have regard to the following matters (in addition to any other matters the Tribunal considers relevant):

a) the cost of providing the services concerned
b) the protection of consumers from abuses of monopoly power in terms of prices, pricing policies and standard of services
c) the appropriate rate of return on public sector assets, including appropriate payment of dividends to the Government for the benefit of the people of New South Wales
d) the effect on general price inflation over the medium term
e) the need for greater efficiency in the supply of services so as to reduce costs for the benefit of consumers and taxpayers
f) the need to maintain ecologically sustainable development (within the meaning of section 6 of the Protection of the Environment Administration Act 1991) by appropriate pricing policies that take account of all the feasible options available to protect the environment
g) the impact on pricing policies of borrowing, capital and dividend requirements of the government agency concerned and, in particular, the impact of any need to renew or increase relevant assets
h) the impact on pricing policies of any arrangements that the government agency concerned has entered into for the exercise of its functions by some other person or body
i) the need to promote competition in the supply of the services concerned
j) considerations of demand management (including levels of demand) and least cost planning
k) the social impact of the determinations and recommendations
l) standards of quality, reliability and safety of the services concerned (whether those standards are specified by legislation, agreement or otherwise).
## D List of issues for comment

The Tribunal has sought comment on the following issues throughout the report:

1. the projected capital expenditure program
   
2. the prudence of Sydney Water’s past capital expenditure
   
3. an appropriate rate of return to apply on Sydney Water’s RAB
   
4. appropriate asset lives to apply for calculating Sydney Water’s depreciation charge for the price determination
   
5. Sydney Water’s projected level of, and justification for, the avoided or deferred costs from recycled water projects
   
6. the efficiency of the projected operating costs outlined in Sydney Water’s submission
   
7. whether there is scope for Sydney Water to achieve further efficiency gains over the next price determination period.
   
8. the length of the price path that should apply for this review
   
9. the appropriateness of adopting a glide path.
   
10. the two-tiered usage price for water

11. the advantages and disadvantages of scarcity pricing for Sydney Water.

12. whether the costs of the desalination plant should be incorporated in upfront developer charges or Sydney Water’s periodic prices or a combination of both

13. whether the costs of the desalination plant should be recovered through the fixed component of the two-part tariff or a mix of fixed and usage components

14. whether the costs of the desalination plant should be reflected in Sydney Water’s prices prior to the plant being operational.
D  List of issues for comment